HOW TO READ THE STANDARD OF TURNING INSERTS

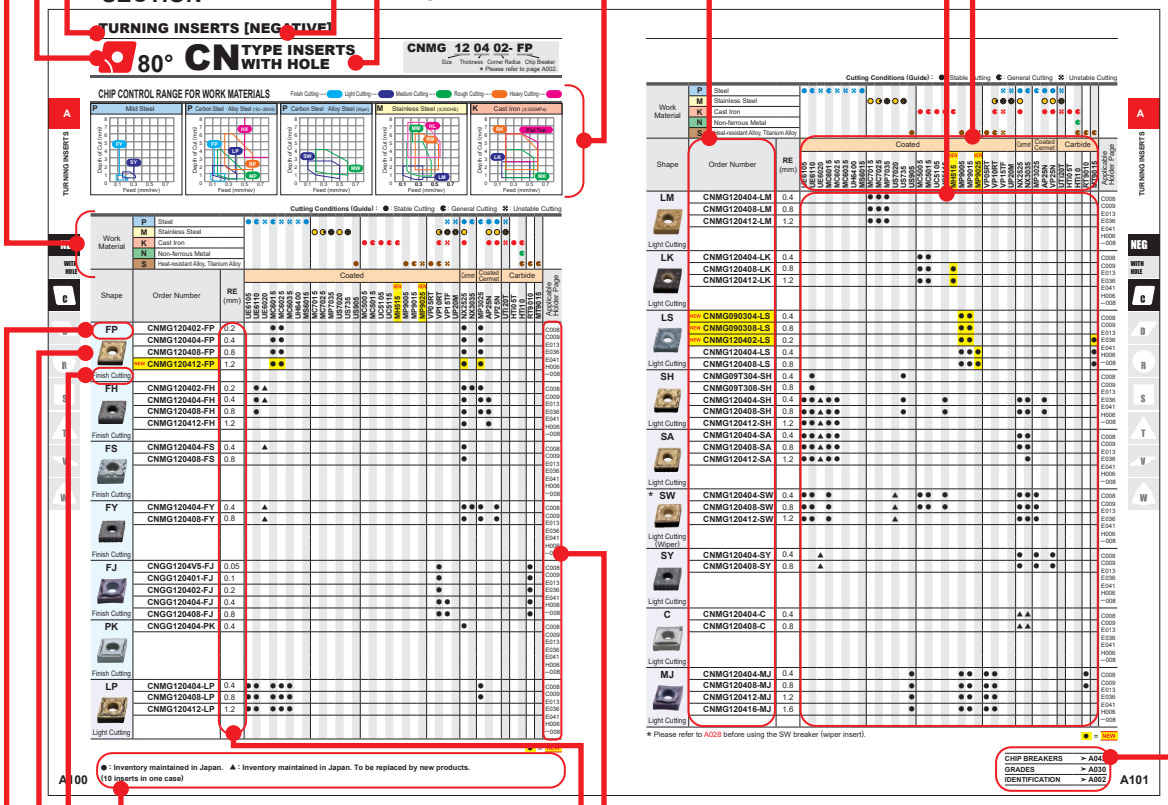
●How this section page is organised

①Organised according to turning insert shape.
(Refer to the index on the next page.)
②Inserts are arranged in order of :
• Negative inserts (with hole|without hole)
• Positive inserts (with hole|without hole)
③Breakers 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 :

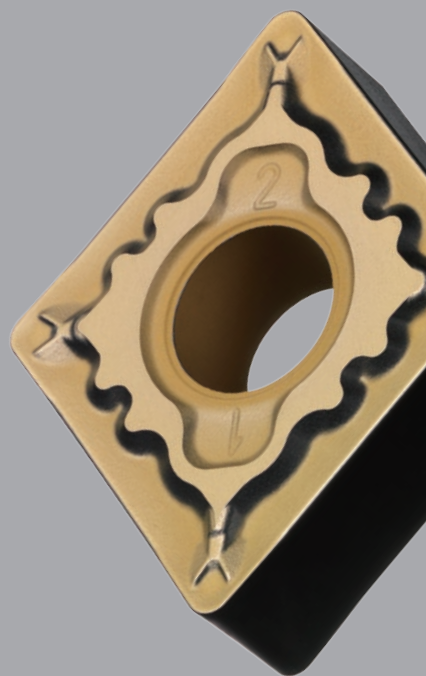


●To Order : Please specify
①insert number and ②grade.

TURNING TOOLS

INSERT STANDARDS
INSERT GRADES

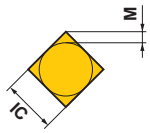
STANDARD OF INSERTS

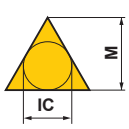


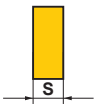
IDENTIFICATION

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 Design

① Insert Shape







Triangular insert with a facet (Secondary Cutting Edge)

③ Tolerance Class

Symbol	Tolerance of Nose Height **M** (mm)	Tolerance of Inscribed Circle **IC** (mm)	Tolerance of Thickness **S** (mm)
A	±0.005	±0.025	±0.025
F	±0.005	±0.013	±0.025
C	±0.013	±0.025	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
J	±0.005	±0.05–±0.15	±0.025
K*	±0.013	±0.05–±0.15	±0.025
L*	±0.025	±0.05–±0.15	±0.025
M*	±0.08–±0.18	±0.05–±0.15	±0.13
N*	±0.08–±0.18	±0.05–±0.15	±0.025
U*	±0.13–±0.38	±0.08–±0.25	±0.13

The surface of insert with * mark is sintered.

Detail of M Class Insert Tolerance

●Tolerance of Nose Height **M** (mm)

D.I.C.	Triangular	Square	Rhombic 80°	Rhombic 55°	Rhombic 35°	Round
6.35	±0.08	±0.08	±0.08	±0.11	±0.16	–
9.525	±0.08	±0.08	±0.08	±0.11	±0.16	–
12.70	±0.13	±0.13	±0.13	±0.15	–	–
15.875	±0.15	±0.15	±0.15	±0.18	–	–
19.05	±0.15	±0.15	±0.15	±0.18	–	–
25.40	–	±0.18	–	–	–	–
31.75	–	±0.20	–	–	–	–

●Tolerance of Inscribed Circle **IC** (mm)

D.I.C.	Triangular	Square	Rhombic 80°	Rhombic 55°	Rhombic 35°	Round
6.35	±0.05	±0.05	±0.05	±0.05	±0.05	–
9.525	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
12.70	±0.08	±0.08	±0.08	±0.08	–	±0.08
15.875	±0.10	±0.10	±0.10	±0.10	–	±0.10
19.05	±0.10	±0.10	±0.10	±0.10	–	±0.10
25.40	–	±0.13	–	–	–	±0.13
31.75	–	±0.15	–	–	–	±0.15

③ Tolerance Class

①	②	③	④
C	N	M	G

② Normal Clearance

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

Major Normal Clearance

④ Fixing and/or for Chip Breaker

Metric

Symbol	Hole	Hole Configuration	Chip Breaker	Figure	Symbol	Hole	Hole Configuration	Chip Breaker	Figure
W	With Hole	Cylindrical Hole + One Countersink (40–60°)	No		A	With Hole	Cylindrical Hole	No	
T	With Hole		One Sided		M	With Hole	Cylindrical Hole	Single Sided	
Q	With Hole	Cylindrical Hole + Double Countersink (40–60°)	No		G	With Hole	Cylindrical Hole	Double Sided	
U	With Hole		Double Sided		N	Without Hole	–	No	
B	With Hole	Cylindrical Hole + One Countersink (70–90°)	No		R	Without Hole	–	Single Sided	
H	With Hole		One Sided		F	Without Hole	–	Double Sided	
C	With Hole	Cylindrical Hole + Double Countersink (70–90°)	No		X	–	–	–	Special Design
J	With Hole		Double Sided						

Symbol R	Symbol W	Symbol V	Symbol D	Symbol C	Symbol S	Symbol T	Diameter of Inscribed Circle (mm)
	02		04	03	03	06	3.97
	L3	08	05	04	04	08	4.76
	03	09	06	05	05	09	5.56
06							6.00
	04	11	07	06	06	11	6.35
	05	13	09	08	07	13	7.94
08							8.00
09	06	16	11	09	09	16	9.525
10							10.00
12							12.00
12	08	22	15	12	12	22	12.70
15	10		19	16	15	27	15.875
16							16.00
19	13		23	19	19	33	19.05
20							20.00
			27	22	22	38	22.225
25							25.00
25			31	25	25	44	25.40
31			38	32	31	54	31.75
32							32.00

⑤ Insert Size

*Thickness is from the bottom of the insert to the top of the cutting edge.

Symbol	Thickness (mm)
S1	1.39
01	1.59
T0	1.79
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
06	6.35
07	7.94
09	9.52

⑥ Insert Thickness

⑤	⑥	⑦	⑧	⑨	⑩
12	04	08	(E)	(N)	-MP

⑦ Insert Corner Configuration

Symbol	Corner Radius (mm)
00	Sharp Nose
V3	0.03
V5	0.05
01	0.1
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
28	2.8
32	3.2
00 : Inch M0 : Metric	Round Insert

⑧ Cutting Edge Symbol

Figure	Feature	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 Cutting Direction

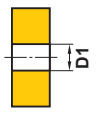
Figure	Hand	Symbol
	Right	R
	Left	L
	Neutral	N

⑩ Chip Breaker

LP	MP	RP
LM	MM	RM
LK	MK	RK
LS	MS	RS
FP	LP	MP
MA	SW	MW
HZ	HX	HV

The above table shown as reference example.

HOLE GEOMETRY

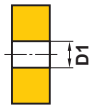
Type A	Type B	Type C	Type D
			

NEGATIVE

Insert Number		Dimensions (mm) D1	Hole Type
CNGA CNGG CNGM CNMA CNMG CNMM CNMP	0903○○	3.81	A
	09T3○○	3.81	A
	0904○○	3.81	A
	1204○○	5.16	A
	1606○○	6.35	A
	1906○○	7.93	A
	2509○○	9.12	A
DNGA DNGG DNGM DNMA DNMG DNMM DNMX	1104○○	3.81	A
	1504○○	5.16	A
	1506○○	5.16	A
SNGA SNGG SNMA SNMG SNMM	0903○○	3.81	A
	1204○○	5.16	A
	1506○○	6.35	A
	1906○○	7.93	A
	2507○○	9.12	A
	2509○○	9.12	A
TNGA TNGG TNGM TNMA TNMG TNMM TNMX	1103○○	2.26	A
	1603○○	3.81	A
	1604○○	3.81	A
	2204○○	5.16	A
	2706○○	6.35	A
	3309○○	7.93	A
VNGA VNGM VNGG VNMA VNMG VNMM	1604○○	3.81	A
WNGA WNMA WNMG	0603○○	3.81	A
	06T3○○	3.81	A
	0604○○	3.81	A
	0804○○	5.16	A
	1006○○	6.35	A
RNMG	090300	3.81	A
	120400	5.16	A
	150600	6.35	A
	190600	7.93	A
	250900	9.12	A
	310900	12.7	A

POSITIVE

Insert Number		Dimensions (mm) D1	Hole Type
CCET	0602○○	2.8	B
	09T3○○	4.4	B
CCGB CCMB CCGH CCMH	0602○○	2.8	B
CCGT	03S1○○	2.0	B
	04T0○○	2.4	B
	0602○○	2.8	B
	09T3○○	4.4	B
	1204○○	5.5	B
CCMT	0602○○	2.8	B
	0803○○	3.4	B
	09T3○○	4.4	B
	1204○○	5.5	B
CCGW CCMW	03S1○○	2.0	B
	04T0○○	2.4	B
	0602○○	2.8	B
	09T3○○	4.4	B
	1204○○	5.5	B
CPGT	0802○○	3.4	B
	0903○○	4.4	B
CPGB CPMB CPMH	0802○○	3.5	D
	0903○○	4.5	D
CPMX	0802○○	3.5	D
	0903○○	4.6	D
DCET DCGT	0702○○	2.8	B
	11T3○○	4.4	B
DCGW DCMW DCMT	0702○○	2.8	B
	11T3○○	4.4	B
	1504○○	5.5	B
DEGX	1504○○	5.1	C
RCMX	1003M0	3.6	D
	1204M0	4.2	D
	1606M0	5.2	D
	2006M0	6.5	D
	2507M0	7.2	D
	3209M0	9.5	D

Type A	Type B	Type C	Type D
			

POSITIVE

Insert Number		Dimensions (mm) D1	Hole Type
RCGT RCMT	0602M0	2.8	B
	0803M0	3.4	B
	10T3M0	4.4	B
SCMT SCMW	09T3○○	4.4	B
	1204○○	5.5	B
SPMW	0903○○	4.6	B
	1203○○	5.7	B
SPMT	0903○○	4.4	B
	1203○○	5.5	B
SPGX	0903○○	4.8	D
	1203○○	5.9	D
TCGT TCMT TCGW TCMW	0601○○	2.3	B
	0802○○	2.3	B
	0902○○	2.5	B
	1102○○	2.8	B
	1303○○	3.4	B
	16T3○○	4.4	B
TEGX	1603○○	4.4	D
TPGX	0802○○	2.5	C
	0902○○	3.0	C
	1103○○	3.5	C
	1603○○	4.8	D
	1604○○	4.8	D
TPMX	0802○○	2.7	C
	0902○○	3.2	C
	1103○○	3.7	C
	1103○○R/L	3.5	C
	1603○○	4.8	D
TPGB TPMB TPGH TPMH	0802○○	2.4	D
	0902○○	2.9	D
	1103○○	3.4	D
	1603○○	4.4	D
TPGT	1603○○	4.4	B
TPGV	0902○○	2.8	B
	1103○○	3.4	B

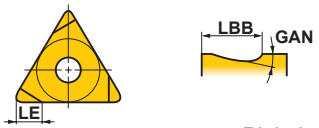
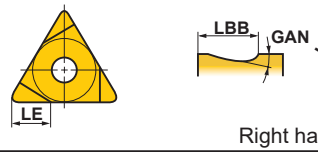
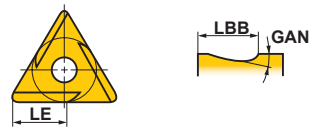
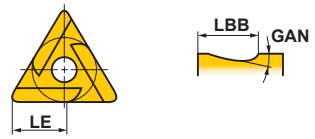
Insert Number		Dimensions (mm) D1	Hole Type
VBET VBGT VBMT VBGW	1103○○	2.9	B
	1604○○	4.4	B
VCGT VCMT VCGW VCMW	0802○○	2.4	B
	1103○○	2.8	B
	1303○○	3.4	B
	1604○○	4.4	B
VPET VPGT	0802○○	2.42	B
	1103○○	2.85	B
VDGX	1603○○	4.5	D
WBGT WBMT	0201○○	2.3	B
	L302○○	2.3	B
WCGT WCMT WCGW WCMW	0201○○	2.3	B
	L302○○	2.3	B
	0402○○	2.8	B
	06T3○○	4.4	B
WPGT WPMT	0402○○	2.8	B
	0603○○	4.4	B
XCMT	1503○○	2.8	B

PRECISION BREAKER SYSTEM

STANDARD OF INSERTS WITH HAND OF TOOL

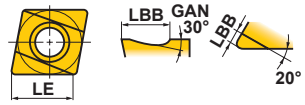
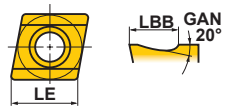
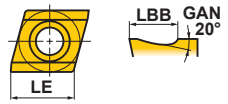
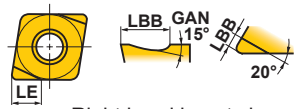
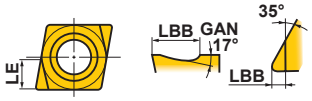
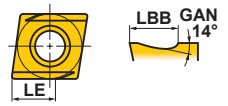
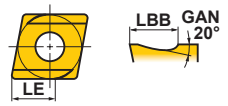
●NEGATIVE INSERTS

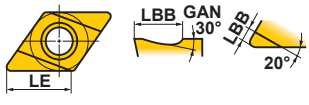
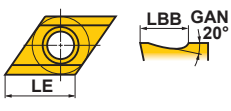
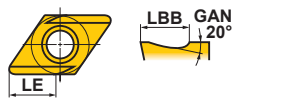
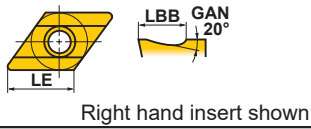
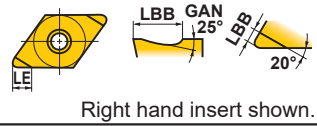
Unit : mm

Geometry	Insert Number	LBB	LE	GAN
 Right hand insert shown.	**DNGG150404R/L**	2.8	14.9	15
	DNGG150408R/L	2.8	14.3	15
	DNGG150604R/L	2.8	14.9	15
	DNGG150608R/L	2.8	14.3	15
 Right hand insert shown.	**SNGG090304R/L**	1.8	1.6	15
	SNGG090308R/L	1.8	1.6	15
	SNGG120404R/L	2.3	3.7	15
	SNGG120408R/L	2.3	3.7	15
 Right hand insert shown.	**TNGG160402R/L-FS**	1.3	2.7	15
	TNGG160404R/L-FS	1.3	2.8	15
	TNGG160408R/L-FS	1.3	3.1	15
 Right hand insert shown.	**TNGG160402R/L-F**	2.5	5.1	15
	TNGG160404R/L-F	2.5	5.2	15
	TNGG160408R/L-F	2.5	5.5	15
 Right hand insert shown.	**TNGG160402R/L-K**	1.5	7.1	15
	TNGG160404R/L-K	1.5	5.4	15
	TNGG160408R/L-K	1.5	5.1	15
 Right hand insert shown.	**TNGG110302R/L**	1.3	3.2	15
	TNGG110304R/L	1.3	3.0	15
	TNGG110308R/L	1.3	2.7	15
	TNGG160304R/L	2.3	5.4	15
	TNGG160402R/L	1.3	8.7	15
	TNGG160404R/L	2.3	5.4	15
	TNGG160408R/L	2.3	5.1	15
	TNGG220404R/L	2.8	9.4	15
	TNGG220408R/L	2.8	9.1	15
 Right hand insert shown.	**VNGG160404R/L**	1.8	15.6	15
 Right hand insert shown.	**VNGG160402R/L-F**	2.5	7.4	15
	VNGG160404R/L-F	2.5	7.6	15

●POSITIVE INSERTS

Unit : mm

Geometry	Insert Number	LBB	LE
 Right hand insert shown.	CCET0602V3R/L-SR	2.2	6.4
	CCET060201R/L-SR	2.2	6.3
	CCET060202R/L-SR	2.2	6.2
	CCET060204R/L-SR	2.2	6.0
	CCET09T3V3R/L-SR	3.2	9.6
	CCET09T301R/L-SR	3.2	9.5
	CCET09T302R/L-SR	3.2	9.4
	CCET09T304R/L-SR	3.2	9.2
 Right hand insert shown.	CCET060200R/L-SN	1.0	6.4
	CCET0602V3R/L-SN	1.0	6.4
	CCET060201R/L-SN	1.0	6.3
	CCET060202R/L-SN	1.0	6.2
	CCET060204R/L-SN	1.0	6.0
	CCET09T300R/L-SN	1.5	9.6
	CCET09T3V3R/L-SN	1.5	9.6
	CCET09T301R/L-SN	1.5	9.5
	CCET09T302R/L-SN	1.5	9.4
	CCET09T304R/L-SN	1.5	9.2
 Right hand insert shown.	CCET0602V3R/LW-SN	1.0	6.4
	CCET09T3V3R/LW-SN	1.5	9.6
 Right hand insert shown.	CCGH060202(M)R/L-F	1.2	3.6
	CCGH060204(M)R/L-F	1.4	4.4
 Left hand insert shown.	CCGT03S1V3L-F	0.8	1.4
	CCGT03S101(M)R/L-F	0.8	1.4
	CCGT03S102(M)R/L-F	0.8	1.5
	CCGT03S104(M)R/L-F	0.8	1.6
	CCGT04T0V3L-F	1.0	1.7
	CCGT04T001(M)R/L-F	1.0	1.8
	CCGT04T002(M)R/L-F	1.0	1.8
	CCGT04T004(M)R/L-F	1.0	2.0
 Right hand insert shown.	CCGT0602V3R/L-SS	1.0	3.0
	CCGT060201(M)R/L-SS	1.0	3.0
	CCGT060202(M)R/L-SS	1.0	3.0
	CCGT09T3V3R/L-SS	1.0	5.0
	CCGT09T301(M)R/L-SS	1.0	5.0
	CCGT09T302(M)R/L-SS	1.0	5.0
	CCGT09T304MR/L-SS	1.0	5.0
 Right hand insert shown.	CCGT0602V3R-SN	1.0	3.0
	CCGT060201(M)R/L-SN	1.0	3.0
	CCGT060202(M)R/L-SN	1.0	3.0
	CCGT09T3V3R/L-SN	1.5	5.0
	CCGT09T301(M)R/L-SN	1.5	5.0
	CCGT09T302(M)R/L-SN	1.5	5.0
	CCGT09T304(M)R/L-SN	1.5	5.0
 Right hand insert shown.	CPGT080204R/L-F	1.8	5.5
	CPGT090302R/L-F	1.8	5.4
	CPGT090304R/L-F	1.8	5.5

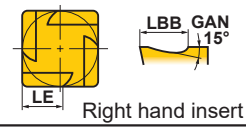
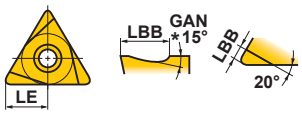
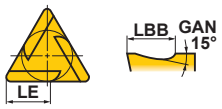
Geometry	Insert Number	LBB	LE
 Right hand insert shown.	DCET0702V3R/L-SR	2.5	7.7
	DCET070201R/L-SR	2.5	7.6
	DCET070202R/L-SR	2.5	7.4
	DCET070204R/L-SR	2.5	7.1
	DCET11T3V3R/L-SR	3.7	11.6
	DCET11T301R/L-SR	3.7	11.4
	DCET11T302R/L-SR	3.7	11.3
	DCET11T304R/L-SR	3.7	11.0
 Right hand insert shown.	DCET070200R/L-SN	1.0	7.7
	DCET0702V3R/L-SN	1.0	7.7
	DCET070201R/L-SN	1.0	7.6
	DCET070202R/L-SN	1.0	7.4
	DCET070204R/L-SN	1.0	7.1
	DCET11T300R/L-SN	1.5	11.6
	DCET11T3V3R/L-SN	1.5	11.6
	DCET11T301R/L-SN	1.5	11.4
	DCET11T302R/L-SN	1.5	11.3
	DCET11T304R/L-SN	1.5	11.0
 Right hand insert shown.	DCET0702V3R/LW-SN	1.0	7.7
	DCET11T3V3R/LW-SN	1.5	11.6
 *DCGT11T3□□type : 14° Right hand insert shown.	DCGT070202R/L-F	1.0	3.0
	DCGT070204R/L-F	1.0	3.2
	DCGT11T302R/L-F	1.0	3.0
	DCGT11T304R/L-F	1.0	3.2
 Right hand insert shown.	DCGT0702V3R/L-SS	1.0	3.5
	DCGT070201R/L-SS	1.0	3.5
	DCGT070202(M)R/L-SS	1.0	3.5
	DCGT11T3V3R-SS	1.0	6.5
	DCGT11T301(M)R/L-SS	1.0	6.5
	DCGT11T302(M)R/L-SS	1.0	6.5
	DCGT11T304MR/L-SS	1.0	6.5
 Right hand insert shown.	DCGT0702V3R-SN	1.0	3.5
	DCGT070201(M)R/L-SN	1.0	3.5
	DCGT070202(M)R/L-SN	1.0	3.5
	DCGT11T3V3R/L-SN	1.5	6.5
	DCGT11T301(M)R/L-SN	1.5	6.5
	DCGT11T302(M)R/L-SN	1.5	6.5
	DCGT11T304(M)R/L-SN	1.5	6.5
 Right hand insert shown.	DEGX150402R/L	2.8	15.2
	DEGX150404R/L	2.8	14.9
 Right hand insert shown.	DEGX150402R/L-F	2.5	7.4
	DEGX150404R/L-F	2.5	7.6

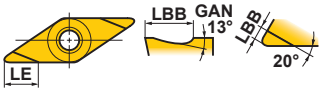
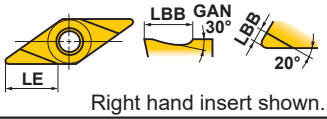
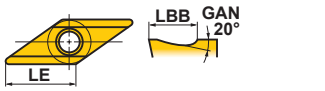
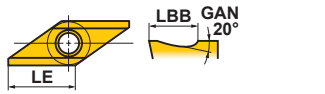
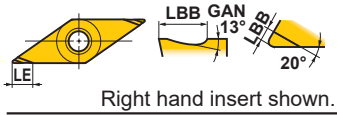
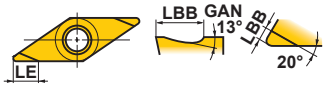
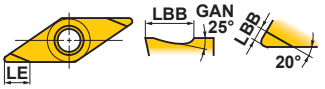
PRECISION BREAKER SYSTEM

STANDARD OF INSERTS WITH HAND OF TOOL

●POSITIVE INSERTS

Unit : mm

Geometry	Insert Number	LBB	LE
 Right hand insert shown.	SPGR090304R	1.8	1.6
 Left hand insert shown.	TCGT0601V3L-F	1.0	2.9
	TCGT060101L-F	1.0	3.0
	TCGT060102R/L-F	1.0	3.0
	TCGT060104R/L-F	1.0	3.2
 Right hand insert shown.	TEGX160302R/L	2.0	6.0
	TEGX160304R/L	2.0	6.0
 *TPGH1603□□type : 14° Right hand insert shown.	TPGH080202R/L-FS	0.9	2.7
	TPGH080204R/L-FS	0.9	2.9
	TPGH090202R/L-FS	1.0	3.0
	TPGH090204R/L-FS	1.0	3.2
	TPGH110302R/L-FS	1.4	4.2
	TPGH110304R/L-FS	1.4	4.4
	TPGH160304R/L-FS	2.0	6.1
	TPGH160308R/L-FS	2.0	6.5
 Right hand insert shown.	TPGR110304R/L	1.3	3.0
	TPGR160304R/L	2.3	5.4
	TPGR160308R/L	2.3	5.1
 Right hand insert shown.	TPGX080202R/L	1.3	3.9
	TPGX080204R/L	1.3	4.1
	TPGX090202R/L	1.6	4.8
	TPGX090204R/L	1.6	5.0
	TPGX090208R/L	1.4	4.7
	TPGX110302L	1.8	5.4
	TPGX110304R/L	1.8	5.5
	TPGX110308R/L	1.8	5.9

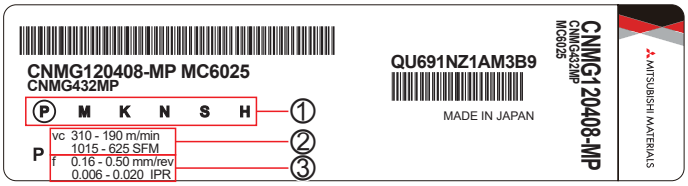
Geometry	Insert Number	LBB	LE
 Right hand insert shown.	VBGT110302R/L-F	1.0	3.0
	VBGT110304R/L-F	1.0	3.2
	VBGT160402R/L-F	1.5	4.5
	VBGT160404R/L-F	1.5	4.7
 Right hand insert shown.	VBET1103V3R/L-SR	2.5	7.3
	VBET110301R/L-SR	2.5	7.3
	VBET110302R/L-SR	2.5	7.4
	VBET110304R/L-SR	2.5	7.6
 Right hand insert shown.	VBET110300R/L-SN	1.0	11.0
	VBET1103V3R/L-SN	1.0	11.0
	VBET110301R/L-SN	1.0	10.8
	VBET110302R/L-SN	1.0	10.5
	VBET110304R/L-SN	1.0	11.0
 Right hand insert shown.	VBET1103V3R/LW-SN	1.0	11.0
 Right hand insert shown.	VPET080201R-SRF	0.8	2.4
	VPET080202R-SRF	0.8	2.5
	VPET1103V3R-SRF	1.0	2.9
	VPET110301R-SRF	1.0	3.0
	VPET110302R-SRF	1.0	3.0
 Right hand insert shown.	VCGT080202R/L-F	0.8	2.5
	VCGT080204R/L-F	0.8	2.6
 Right hand insert shown.	VDGX160302R/L	2.0	6.0
	VDGX160304R/L	2.0	6.1
 Right hand insert shown.	WBGT0201V3L-F	1.0	2.0
	WBGT020101L-F	1.0	2.0
	WBGT020102L-F	1.0	2.1
	WBGT020104L-F	1.0	2.2
	WBGTL302V3L-F	1.0	2.0
	WBGTL30201L-F	1.0	2.0
	WBGTL30202R/L-F	1.0	2.1
	WBGTL30204R/L-F	1.0	2.2
 Right hand insert shown.	WCGT020102R/L	1.0	2.1
	WCGT020104R/L	1.0	2.2
	WCGTL30202L	1.0	2.1
	WCGTL30204L	1.0	2.2
 Right hand insert shown.	WPGT040204R/L-FS	1.0	3.2
	WPGT060304R/L-FS	1.0	3.2

TOOL NAVI

■ OUTLINE

TOOL NAVI supports our customers with information and suitable cutting conditions for each work material by selecting an 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.

①Work 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 : Aluminium alloy, non-ferrous metal
S : Material reference : Titanium alloy 320HB, Ni, Co-Based Alloy 400HB
H : Hardened steel 60HRC

②Cutting 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

③Feed rate

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

*3. N :Life based on each grade. For stable 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=0.3mm
H ··· VB=0.1mm

■ TOOL LIFE

Cutting speed has a large affect on tool life. TOOL NAVI is based on Taylor's equation (relationship vc 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 a 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 a new cutting speed.

● P Grade (Steel) cutting speed coefficient values.

Grade \ Tool Life	15min	30min	45min	60min	90min
UE6105	1.00	0.79	0.69	0.63	0.55
MC6015	1.00	0.82	0.72	0.67	0.59
MC6025	1.00	0.83	0.75	0.69	0.62
MC6035	1.00	0.88	0.82	0.78	0.73
MP3025	1.00	0.85	0.77	0.72	0.65
NX2525	1.00	0.87	0.80	0.76	0.70

● 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

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

Grade \ Tool Life	15min	30min	45min	60min	90min
MC5005	1.00	0.83	0.75	0.70	0.63
MC5015	1.00	0.83	0.75	0.69	0.62

(ex.) Medium cutting of steel
The 1st recommendation : MC6025
Indexable inserts : CNMG120408-MP
Recommended cutting speed : vc=310m/min
(Tool life : 15min.)

↓

Tool life required by the customer : 30min.

310×0.83≒257m/min

■ HARDNESS OF THE WORK MATERIAL

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

Work Material	Soft ← (Hardness of Workpiece) → Hard											
	120HB	140HB	160HB	180HB	200HB	220HB	240HB	260HB	280HB	300HB	320HB	340HB
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

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

●Selection of optimum inserts for turning

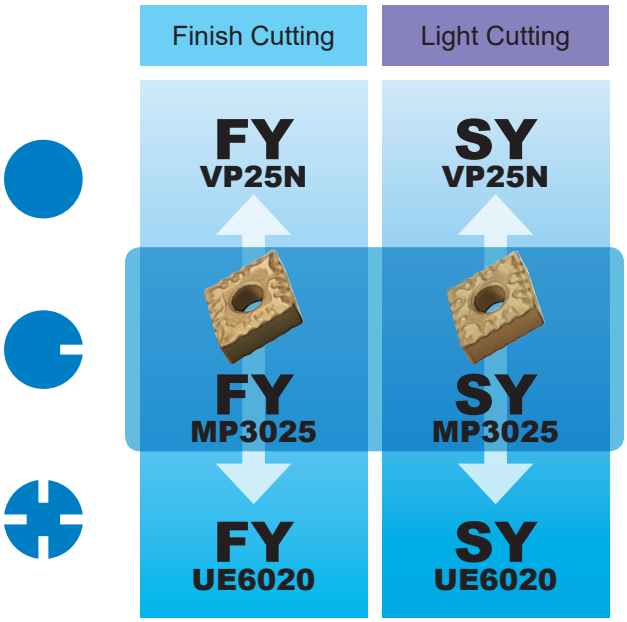
The following diagrams show for each type of work material, the optimal combination of suitable grades and chip breakers for each application area in turning.

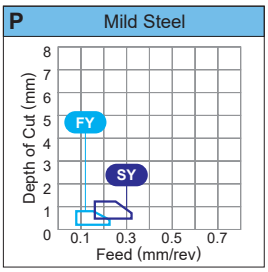
■CUTTING CONDITIONS

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

■CUTTING AREA

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



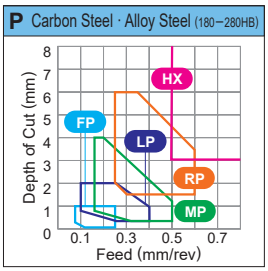


P Mild Steel (Ex : SS400, S10C)

NEGATIVE INSERTS

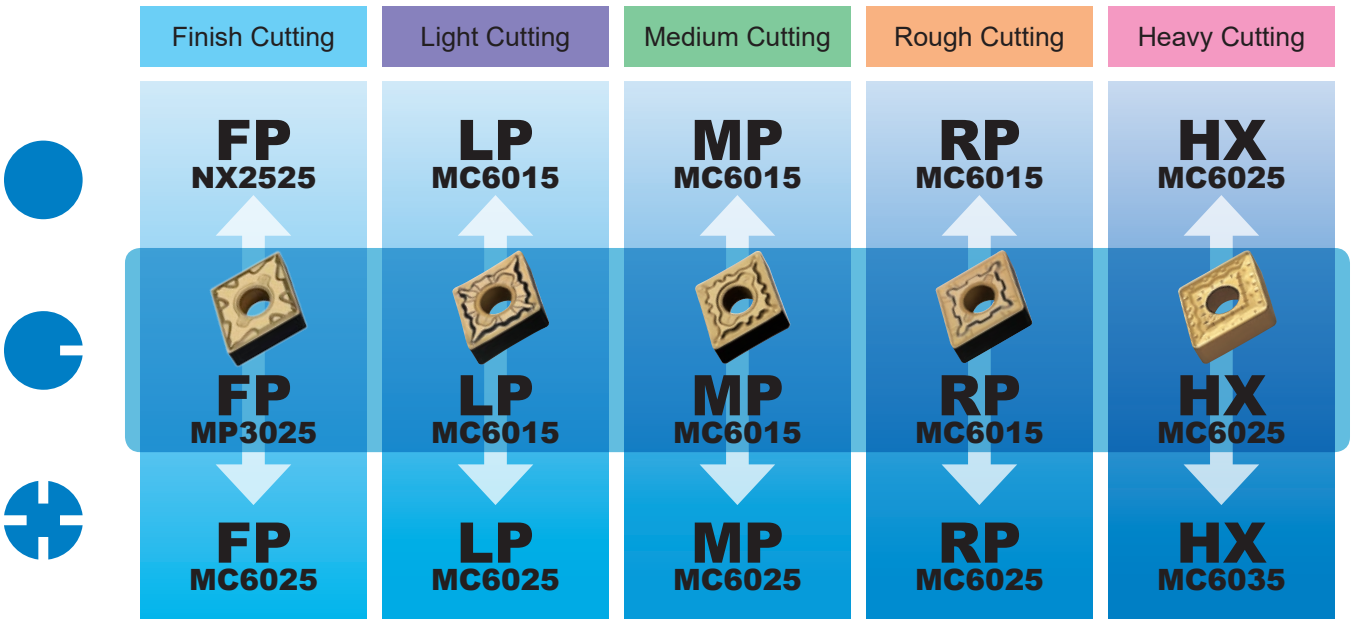
vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	FY	VP25N	285—450	0.09—0.23	0.20—0.80
	L	SY	VP25N	260—410	0.16—0.33	0.50—1.20
General Cutting	F	FY	MP3025	275—425	0.09—0.23	0.20—0.80
	L	SY	MP3025	255—385	0.16—0.33	0.50—1.20
Unstable Cutting	F	FY	UE6020	285—465	0.09—0.23	0.20—0.80
	L	SY	UE6020	260—425	0.16—0.33	0.50—1.20



- Stable Cutting
- General Cutting
- Unstable Cutting

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



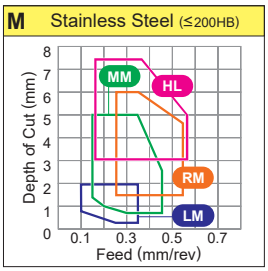
P Carbon Steel • Alloy Steel (Ex : S45C, SCM440)

NEGATIVE INSERTS

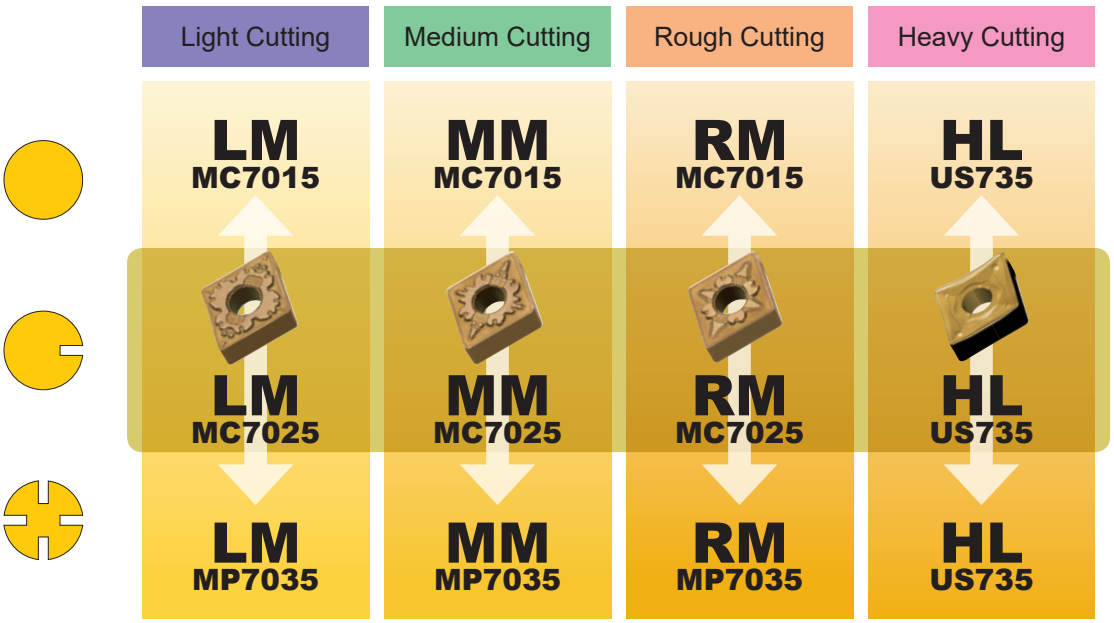
vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	FP	NX2525	210–300	0.08–0.25	0.10–1.00
	L	LP	MC6015	210–360	0.10–0.40	0.30–2.00
	M	MP	MC6015	195–330	0.16–0.50	0.30–4.00
	R	RP	MC6015	185–310	0.25–0.60	1.50–6.00
	H	HX	MC6025	165–265	0.50–1.26	3.00–11.00
General Cutting	F	FP	MP3025	215–330	0.08–0.25	0.10–1.00
	L	LP	MC6015	210–360	0.10–0.40	0.30–2.00
	M	MP	MC6015	195–330	0.16–0.50	0.30–4.00
	R	RP	MC6015	185–310	0.25–0.60	1.50–6.00
	H	HX	MC6025	165–265	0.50–1.26	3.00–11.00
Unstable Cutting	F	FP	MC6025	230–375	0.08–0.25	0.10–1.00
	L	LP	MC6025	210–345	0.10–0.40	0.30–2.00
	M	MP	MC6025	195–315	0.16–0.50	0.30–4.00
	R	RP	MC6025	185–295	0.25–0.60	1.50–6.00
	H	HX	MC6035	140–200	0.50–1.26	3.00–11.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING



● Stable Cutting	L Light Cutting
◕ General Cutting	M Medium Cutting
✣ Unstable Cutting	R Rough Cutting

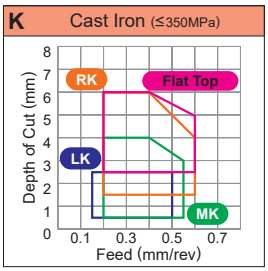


M Stainless Steel (Ex : SUS304, SUS316)

NEGATIVE INSERTS

vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	L	LM	MC7015	180—285	0.10—0.30	0.30—2.00
	M	MM	MC7015	160—260	0.15—0.45	0.70—5.00
	R	RM	MC7015	155—245	0.25—0.55	1.50—6.00
	H	HL	US735	75—140	0.40—1.00	1.50—8.00
General Cutting	L	LM	MC7025	165—220	0.10—0.30	0.30—2.00
	M	MM	MC7025	150—200	0.15—0.45	0.70—5.00
	R	RM	MC7025	140—190	0.25—0.55	1.50—6.00
	H	HL	US735	75—140	0.40—1.00	1.50—8.00
Unstable Cutting	L	LM	MP7035	95—155	0.10—0.30	0.30—2.00
	M	MM	MP7035	90—145	0.15—0.45	0.70—5.00
	R	RM	MP7035	85—135	0.25—0.55	1.50—6.00
	H	HL	US735	75—140	0.40—1.00	1.50—8.00



● Stable Cutting	L Light Cutting
◔ General Cutting	M Medium Cutting
✚ Unstable Cutting	R Rough Cutting
	H Heavy Cutting

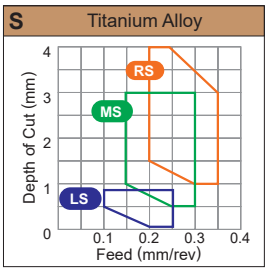
K Cast Iron • Ductile Cast Iron (Ex : FC300)

NEGATIVE INSERTS

vc : Cutting Speed
f : Feed
ap : Depth of Cut

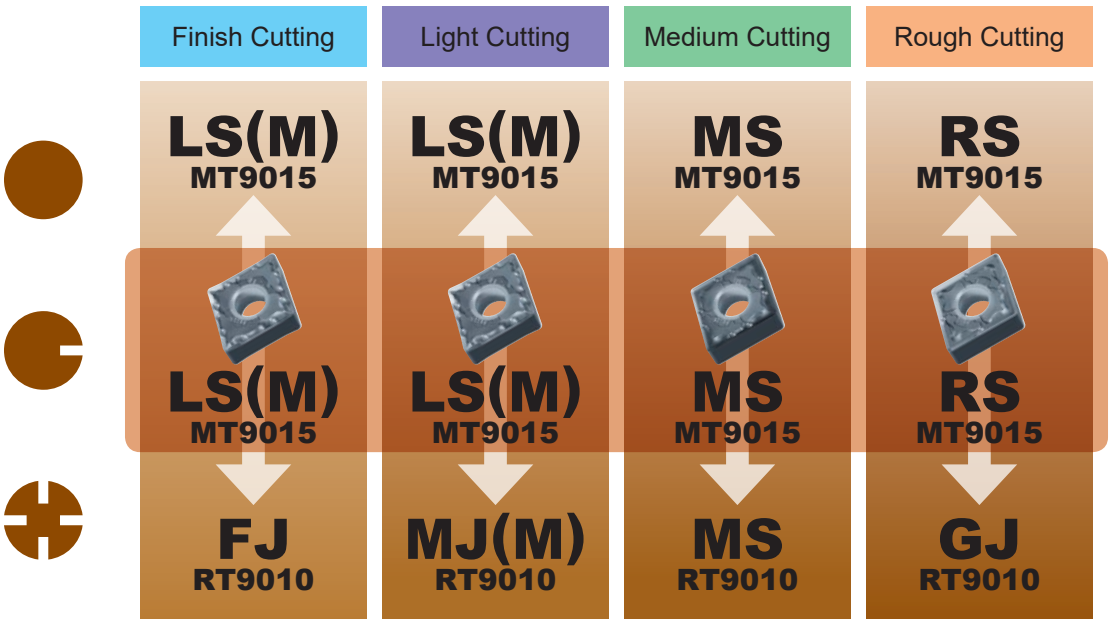
	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
● Stable Cutting	L	**LK**	**MC5005**	230—365	0.10—0.40	0.30—2.00
	M	**MK**	**MC5005**	210—335	0.20—0.55	1.00—4.00
	R	**RK**	**MC5005**	195—315	0.25—0.60	1.50—6.00
	H	**Flat Top**	**MC5005**	195—315	0.20—0.60	2.50—6.00
◔ General Cutting	L	**LK**	**MC5015**	205—335	0.10—0.40	0.30—2.00
	M	**MK**	**MC5015**	190—305	0.20—0.55	1.00—4.00
	R	**RK**	**MC5015**	180—285	0.25—0.60	1.50—6.00
	H	**Flat Top**	**MC5015**	180—285	0.20—0.60	2.50—6.00
✚ Unstable Cutting	L	**LK**	**MC5015**	205—335	0.10—0.40	0.30—2.00
	M	**MK**	**MC5015**	190—305	0.20—0.55	1.00—4.00
	R	**RK**	**MC5015**	180—285	0.25—0.60	1.50—6.00
	H	**Flat Top**	**MC5015**	180—285	0.20—0.60	2.50—6.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING



- Stable Cutting
- General Cutting
- Unstable Cutting

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

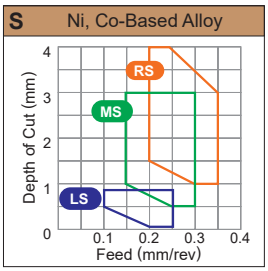


S Titanium Alloy (Ex : Ti-6Al-4V)

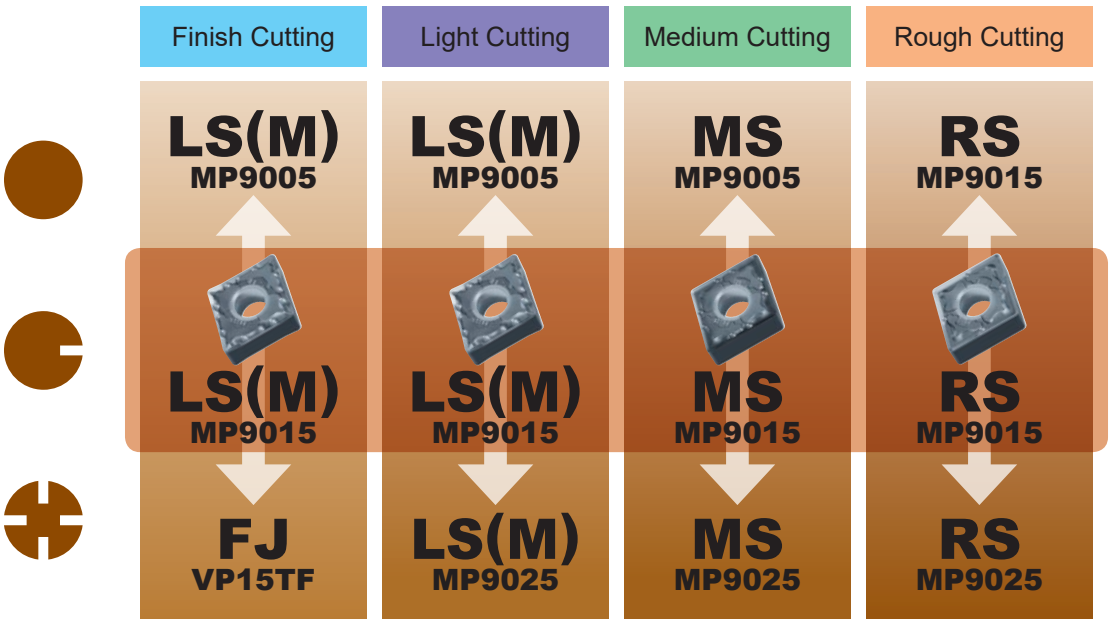
NEGATIVE INSERTS

vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	1st Recommendation Grade	vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	LS(M)	MT9015	40—85	0.10—0.25	0.20—0.80
	L	LS(M)	MT9015	40—85	0.10—0.25	0.20—0.80
	M	MS	MT9015	40—80	0.10—0.25	0.50—4.00
	R	RS	MT9015	35—75	0.20—0.35	1.00—4.00
General Cutting	F	LS(M)	MT9015	40—85	0.10—0.25	0.20—0.80
	L	LS(M)	MT9015	40—85	0.10—0.25	0.20—0.80
	M	MS	MT9015	40—80	0.10—0.25	0.50—4.00
	R	RS	MT9015	35—75	0.20—0.35	1.00—4.00
Unstable Cutting	F	FJ	RT9010	45—95	0.07—0.20	0.10—1.00
	L	MJ(M)	RT9010	40—85	0.07—0.25	0.40—1.50
	M	MS	RT9010	40—80	0.10—0.25	0.50—4.00
	R	GJ	RT9010	35—75	0.16—0.35	1.00—3.00



● Stable Cutting	F Finish Cutting
◔ General Cutting	L Light Cutting
✚ Unstable Cutting	M Medium Cutting
	R Rough Cutting



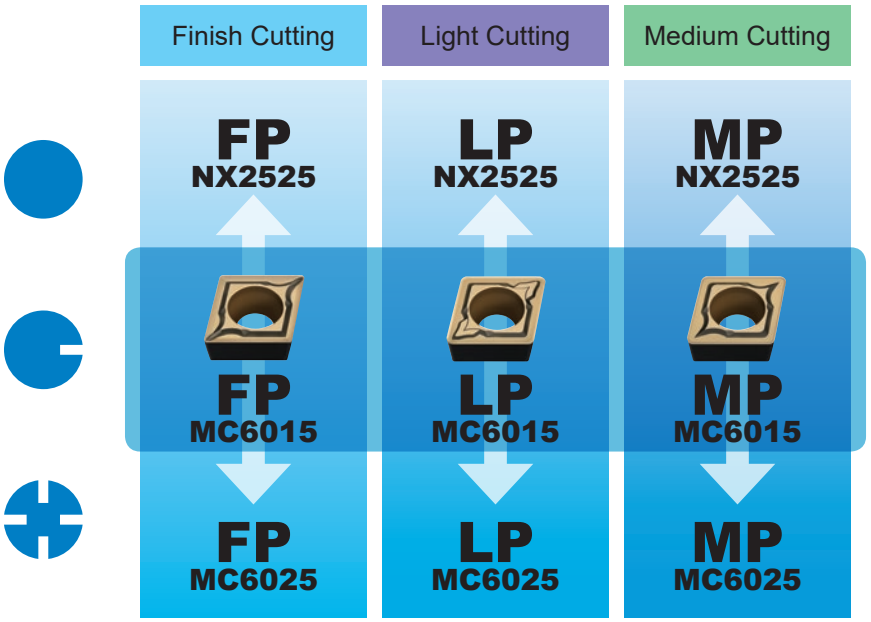
S Ni, Co-Based Alloy (Ex : Inconel718)

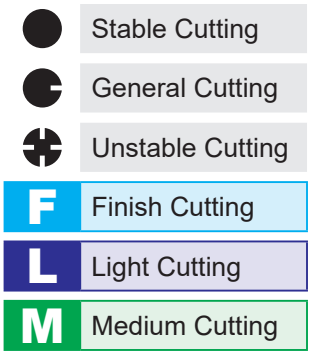
NEGATIVE INSERTS

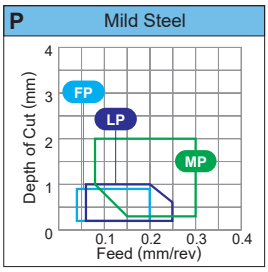
vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	LS(M)	MP9005	30—110	0.10—0.25	0.20—0.80
	L	LS(M)	MP9005	30—110	0.10—0.25	0.20—0.80
	M	MS	MP9005	30—100	0.10—0.25	0.50—4.00
	R	RS	MP9015	20—75	0.20—0.35	1.00—4.00
General Cutting	F	LS(M)	MP9015	25—85	0.10—0.25	0.20—0.80
	L	LS(M)	MP9015	25—85	0.10—0.25	0.20—0.80
	M	MS	MP9015	25—80	0.10—0.25	0.50—4.00
	R	RS	MP9015	20—75	0.20—0.35	1.00—4.00
Unstable Cutting	F	FJ	VP15TF	20—40	0.07—0.20	0.10—1.00
	L	LS(M)	MP9025	20—30	0.10—0.25	0.20—0.80
	M	MS	MP9025	20—30	0.10—0.25	0.50—4.00
	R	RS	MP9025	15—25	0.20—0.35	1.00—4.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING





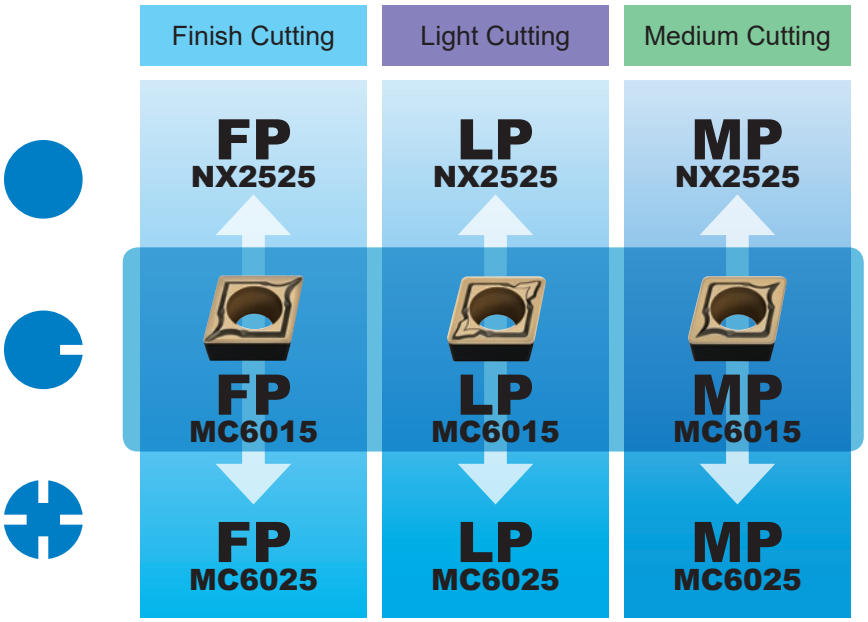


P Mild Steel (Ex : SS400, S10C)

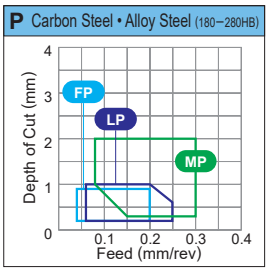
7°POSITIVE INSERTS WITH HOLE

vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	FP	NX2525	225—320	0.04—0.20	0.20—0.90
	L	LP	NX2525	225—320	0.06—0.25	0.20—1.00
	M	MP	NX2525	185—270	0.08—0.30	0.30—2.00
General Cutting	F	FP	MC6015	250—425	0.04—0.20	0.20—0.90
	L	LP	MC6015	250—425	0.06—0.25	0.20—1.00
	M	MP	MC6015	210—355	0.08—0.30	0.30—2.00
Unstable Cutting	F	FP	MC6025	250—405	0.04—0.20	0.20—0.90
	L	LP	MC6025	250—405	0.06—0.25	0.20—1.00
	M	MP	MC6025	210—340	0.08—0.30	0.30—2.00



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



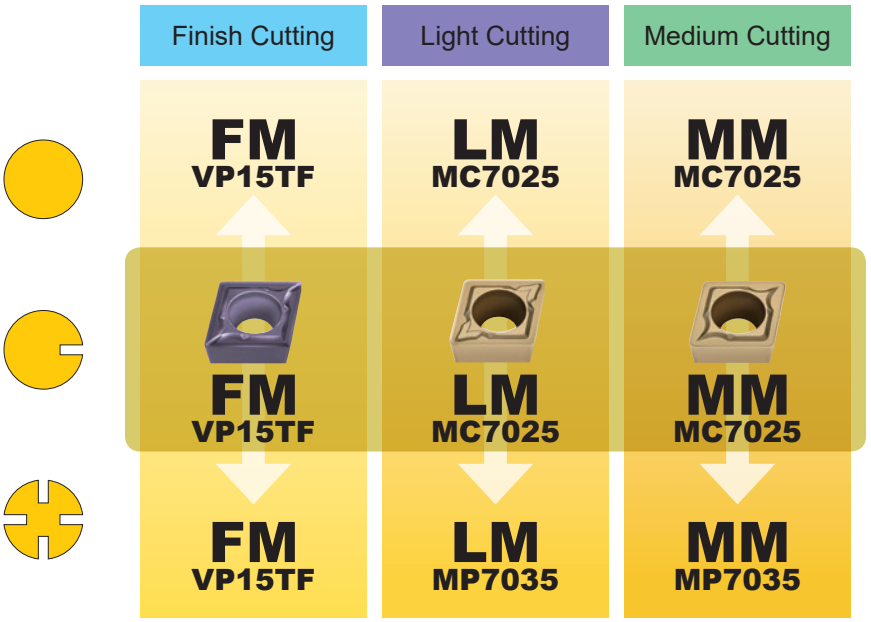
P Carbon Steel • Alloy Steel (Ex : S45C, SCM440)

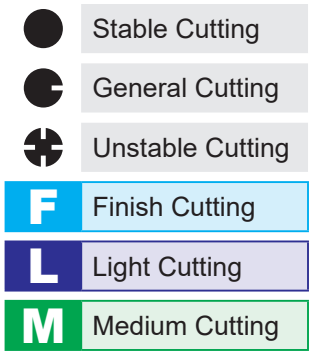
7°POSITIVE INSERTS WITH HOLE

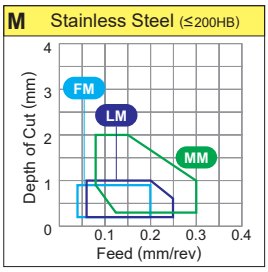
vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	FP	NX2525	165–240	0.04–0.20	0.20–0.90
	L	LP	NX2525	165–240	0.06–0.25	0.20–1.00
	M	MP	NX2525	140–200	0.08–0.30	0.30–2.00
General Cutting	F	FP	MC6015	185–315	0.04–0.20	0.20–0.90
	L	LP	MC6015	185–315	0.06–0.25	0.20–1.00
	M	MP	MC6015	155–260	0.08–0.30	0.30–2.00
Unstable Cutting	F	FP	MC6025	185–300	0.04–0.20	0.20–0.90
	L	LP	MC6025	185–300	0.06–0.25	0.20–1.00
	M	MP	MC6025	155–250	0.08–0.30	0.30–2.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING





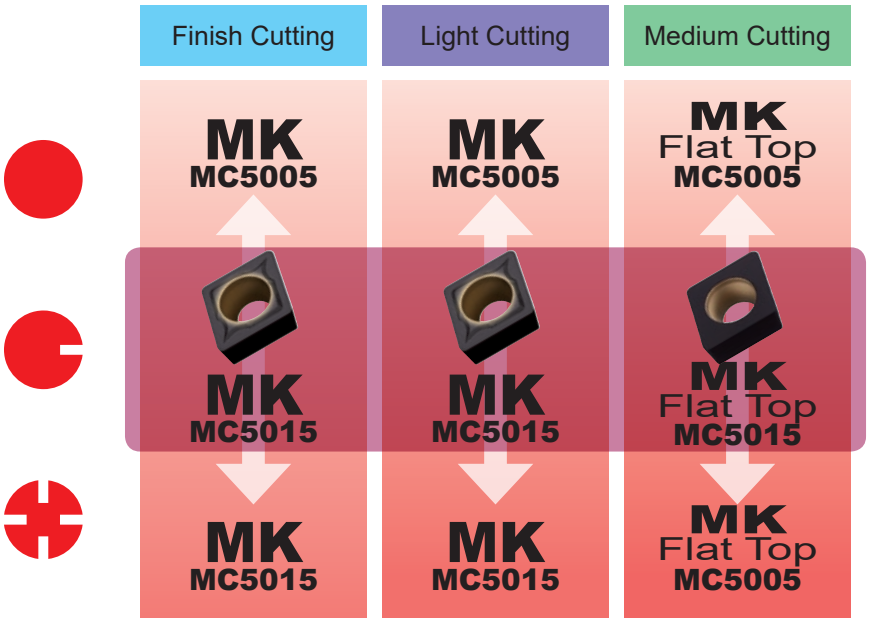


M Stainless Steel (Ex : SUS304, SUS316)

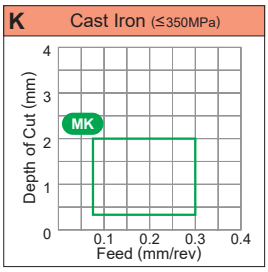
7°POSITIVE INSERTS WITH HOLE

vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	FM	VP15TF	75—125	0.04—0.20	0.20—0.90
	L	LM	MC7025	140—190	0.06—0.25	0.20—1.00
	M	MM	MC7025	120—160	0.08—0.30	0.30—2.00
General Cutting	F	FM	VP15TF	75—125	0.04—0.20	0.20—0.90
	L	LM	MC7025	140—190	0.06—0.25	0.20—1.00
	M	MM	MC7025	120—160	0.08—0.30	0.30—2.00
Unstable Cutting	F	FM	VP15TF	75—125	0.04—0.20	0.20—0.90
	L	LM	MP7035	85—135	0.06—0.25	0.20—1.00
	M	MM	MP7035	70—115	0.08—0.30	0.30—2.00



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



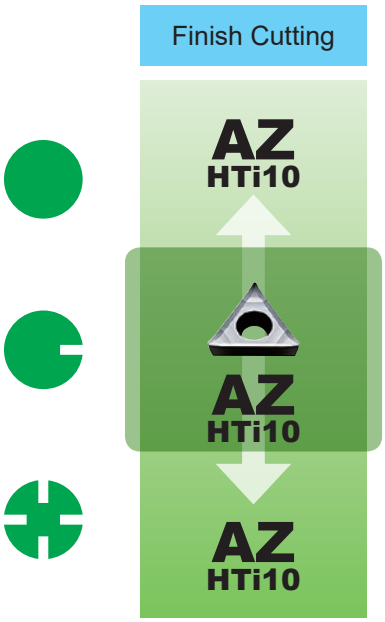
K Cast Iron • Ductile Cast Iron (Ex : FC300)

7°POSITIVE INSERTS WITH HOLE

vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	**MK**	**MC5005**	165—265	0.08—0.30	0.30—2.00
	L	**MK**	**MC5005**	165—265	0.08—0.30	0.30—2.00
	M	**MK, Flat Top**	**MC5005**	165—265	0.08—0.30	0.30—2.00
General Cutting	F	**MK**	**MC5015**	150—240	0.08—0.30	0.30—2.00
	L	**MK**	**MC5015**	150—240	0.08—0.30	0.30—2.00
	M	**MK, Flat Top**	**MC5015**	150—240	0.08—0.30	0.30—2.00
Unstable Cutting	F	**MK**	**MC5015**	150—240	0.08—0.30	0.30—2.00
	L	**MK**	**MC5015**	150—240	0.08—0.30	0.30—2.00
	M	**MK, Flat Top**	**MC5015**	150—240	0.08—0.30	0.30—2.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING



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

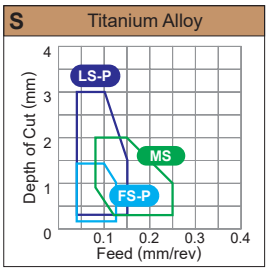
N Aluminium Alloy (Ex : A6061, A7075)

7°POSITIVE INSERTS WITH HOLE

vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00
General Cutting	F	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00
Unstable Cutting	F	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00

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



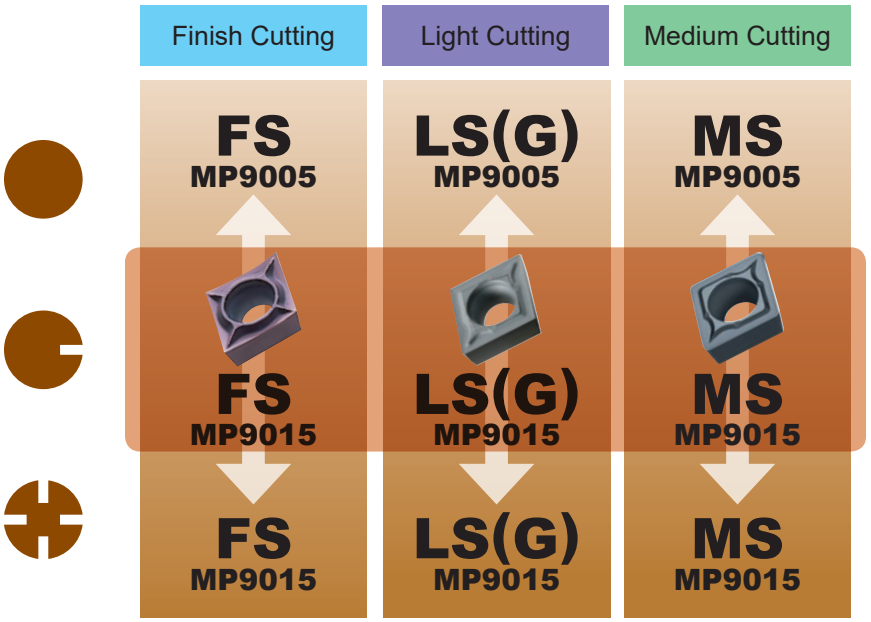
S Titanium Alloy (Ex : Ti-6Al-4V)

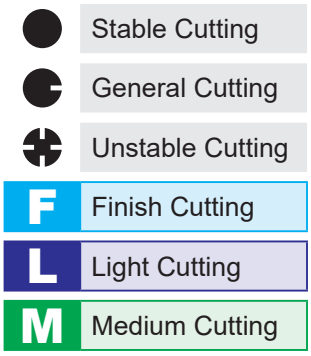
7°POSITIVE INSERTS WITH HOLE

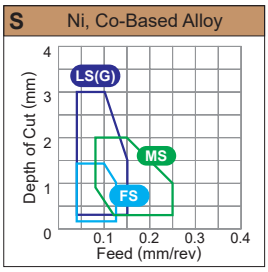
vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	FS-P	MT9005	40—80	0.04—0.12	0.20—1.40
	L	LS-P	MT9005	40—80	0.04—0.15	0.30—3.00
	M	MS	MT9005	35—65	0.08—0.25	0.30—2.00
General Cutting	F	FS-P	MT9005	40—80	0.04—0.12	0.20—1.40
	L	LS-P	MT9005	40—80	0.04—0.15	0.30—3.00
	M	MS	MT9005	35—65	0.08—0.25	0.30—2.00
Unstable Cutting	F	FS-P	MT9005	40—80	0.04—0.12	0.20—1.40
	L	LS-P	MT9005	40—80	0.04—0.15	0.30—3.00
	M	MS	MT9005	35—65	0.08—0.25	0.30—2.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING







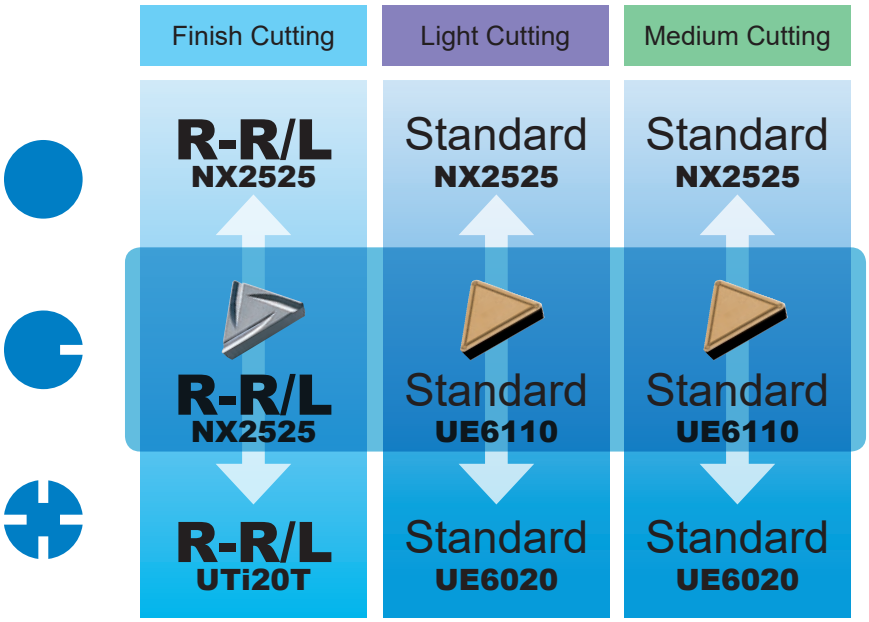
S Ni, Co-Based Alloy (Ex : Inconel718)

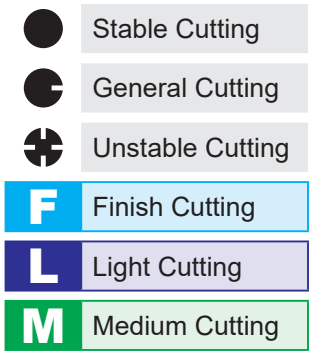
7°POSITIVE INSERTS WITH HOLE

vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	FS	MP9005	25—95	0.04—0.12	0.20—1.40
	L	LS(G)	MP9005	25—95	0.04—0.15	0.30—3.00
	M	MS	MP9005	20—80	0.08—0.25	0.30—2.00
General Cutting	F	FS	MP9015	20—75	0.04—0.12	0.20—1.40
	L	LS(G)	MP9015	20—75	0.04—0.15	0.30—3.00
	M	MS	MP9015	20—60	0.08—0.25	0.30—2.00
Unstable Cutting	F	FS	MP9015	20—75	0.04—0.12	0.20—1.40
	L	LS(G)	MP9015	20—75	0.04—0.15	0.30—3.00
	M	MS	MP9015	20—60	0.08—0.25	0.30—2.00

* The G class is recommended for the above FS/LS breaker





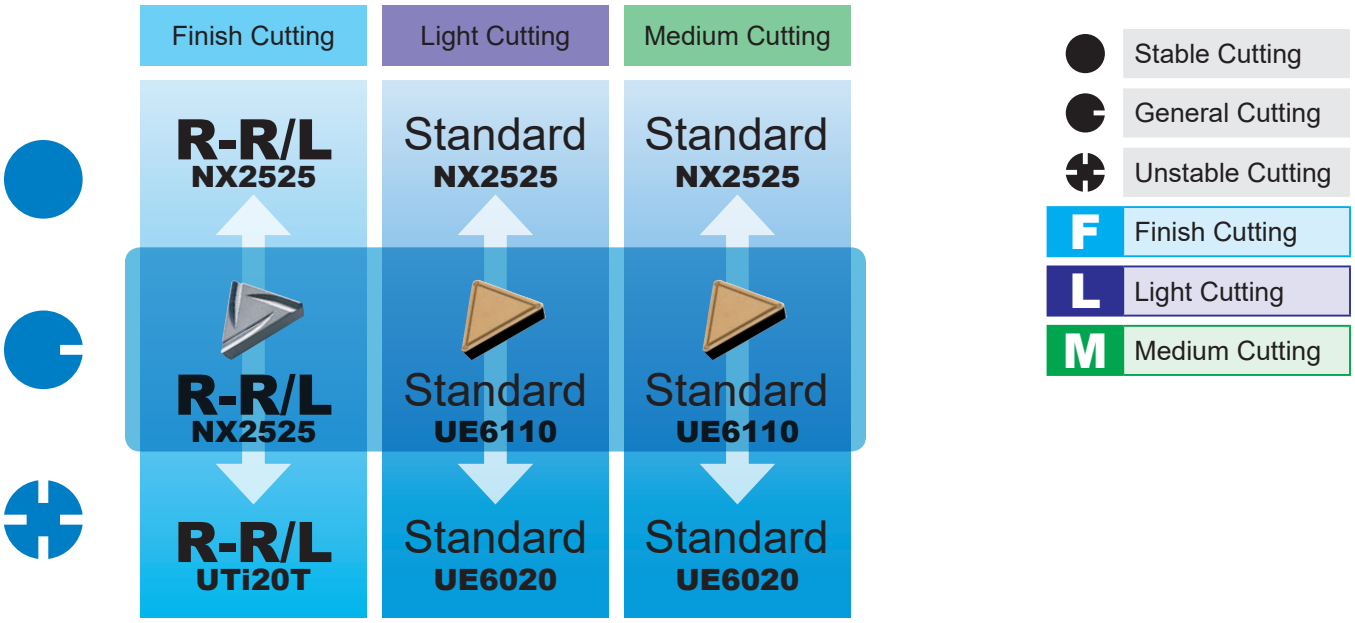
P Mild Steel (Ex : SS400, S10C)

11°POSITIVE INSERTS WITHOUT HOLE

vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	Chip Breaker	Grade	1st Recommendation vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	**R-R/L**	**NX2525**	225—320	0.05—0.12	0.20—0.60
	L	**Standard**	**NX2525**	185—270	0.08—0.30	0.30—2.00
	M	**Standard**	**NX2525**	185—270	0.08—0.30	0.30—2.00
General Cutting	F	**R-R/L**	**NX2525**	225—320	0.05—0.12	0.20—0.60
	L	**Standard**	**UE6110**	210—355	0.08—0.30	0.30—2.00
	M	**Standard**	**UE6110**	210—355	0.08—0.30	0.30—2.00
Unstable Cutting	F	**R-R/L**	**UTi20T**	115—165	0.05—0.12	0.20—0.60
	L	**Standard**	**UE6020**	195—320	0.08—0.30	0.30—2.00
	M	**Standard**	**UE6020**	195—320	0.08—0.30	0.30—2.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

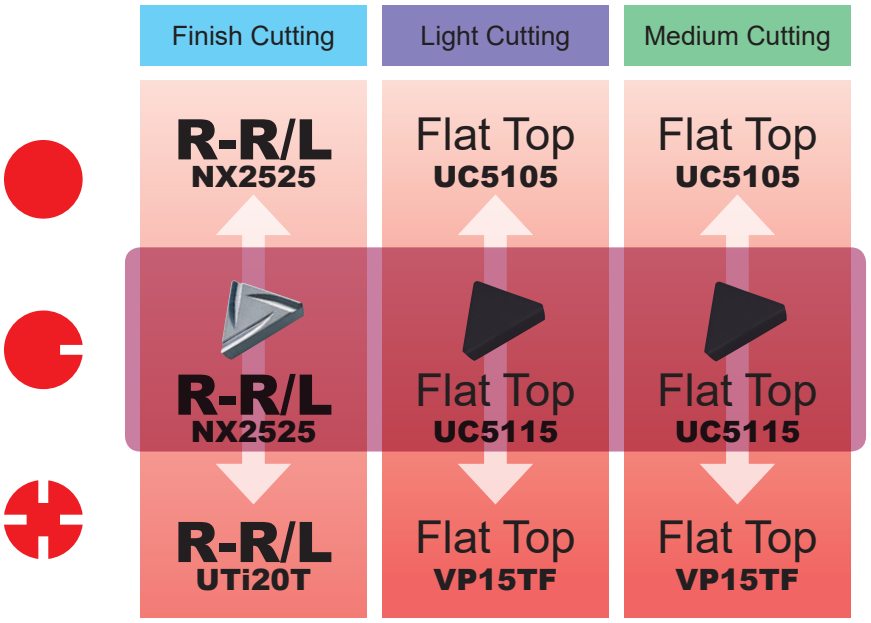


P Carbon Steel • Alloy Steel (Ex : S45C, SCM440)

11°POSITIVE INSERTS WITHOUT HOLE

vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	1st Recommendation				
		Chip Breaker	Grade	vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	**R-R/L**	**NX2525**	165—240	0.05—0.12	0.20—0.60
	L	**Standard**	**NX2525**	140—200	0.08—0.30	0.30—2.00
	M	**Standard**	**NX2525**	140—200	0.08—0.30	0.30—2.00
General Cutting	F	**R-R/L**	**NX2525**	165—240	0.05—0.12	0.20—0.60
	L	**Standard**	**UE6110**	155—260	0.08—0.30	0.30—2.00
	M	**Standard**	**UE6110**	155—260	0.08—0.30	0.30—2.00
Unstable Cutting	F	**R-R/L**	**UTi20T**	85—120	0.05—0.12	0.20—0.60
	L	**Standard**	**UE6020**	145—240	0.08—0.30	0.30—2.00
	M	**Standard**	**UE6020**	145—240	0.08—0.30	0.30—2.00



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

K Cast Iron • Ductile Cast Iron (Ex : FC300)

11°POSITIVE INSERTS WITHOUT HOLE

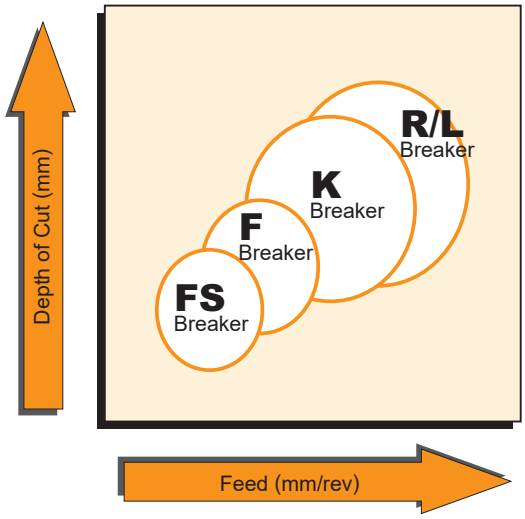
vc : Cutting Speed
f : Feed
ap : Depth of Cut

	Cutting Area	1st Recommendation				
		Chip Breaker	Grade	vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	**R-R/L**	**NX2525**	145—200	0.05—0.12	0.20—0.60
	L	**Flat Top**	**UC5105**	135—245	0.08—0.30	0.30—2.00
	M	**Flat Top**	**UC5105**	135—245	0.08—0.30	0.30—2.00
General Cutting	F	**R-R/L**	**NX2525**	145—200	0.05—0.12	0.20—0.60
	L	**Flat Top**	**UC5115**	130—240	0.08—0.30	0.30—2.00
	M	**Flat Top**	**UC5115**	130—240	0.08—0.30	0.30—2.00
Unstable Cutting	F	**R-R/L**	**UTi20T**	80—115	0.05—0.12	0.20—0.60
	L	**Flat Top**	**VP15TF**	115—160	0.08—0.30	0.30—2.00
	M	**Flat Top**	**VP15TF**	115—160	0.08—0.30	0.30—2.00

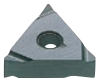
PRECISION BREAKER SYSTEM

ANGULAR AND PARALLEL CHIP BREAKERS (NEGATIVE INSERTS)

■CHIP CONTROL RANGE

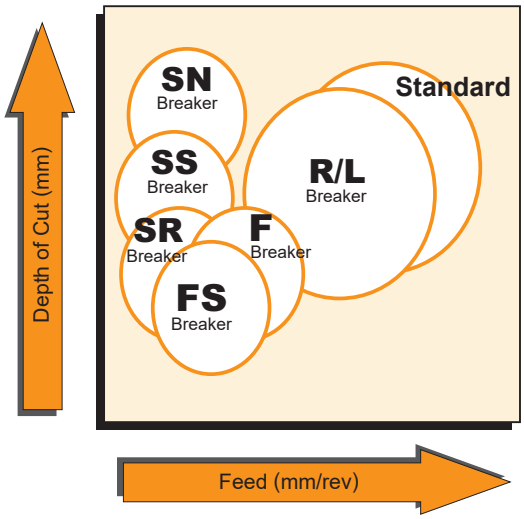


■FEATURES OF CHIP BREAKER

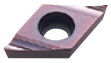
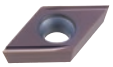
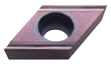
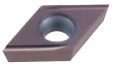
Breaker	Features	DNGG Type	SNGG Type	TNGG Type	VNGG Type
FS	● For precision finishing. ● Small width lead breaker for good chip control. ● Sharp cutting edge gives a good surface finish.	—	—		—
F	● For finish cutting. ● Lead breaker controls chip flow. ● Sharp cutting edge gives a good surface finish.	—	—		—
K	● Parallel breaker for light cutting. ● Excellent chip control for low to medium feed rates.	—	—		—
R/L	● Parallel breaker for medium cutting. ● Good chip control for medium feed rates.				

ANGULAR AND PARALLEL CHIP BREAKERS (POSITIVE INSERTS)

■CHIP CONTROL RANGE



■FEATURES OF CHIP BREAKER

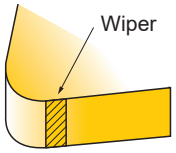
Breaker	Features	**CCET** Type	**CCGT** Type	**DCET** Type	**DCGT** Type	**VBET** Type
SR	●The wide lead breaker for medium cutting is suitable for automatic lathe machining. ●The insert design for low resistance controls chip flow.		—		—	
SS	●The parallel breaker for light cutting is suitable for automatic lathe machining. ●Excellent chip control at low feed rates.	—		—		—
SN	●The parallel breaker for general purpose is suitable for automatic lathe machining. ●Excellent chip control for low to medium feed rates.					

Breaker	Features	**CCGH/CCGT** Type	**CPGT** Type	**DCGT** Type	**TPGH** Type	**TCGT** Type	**VBGT/VCGT** Type	**WBGT** Type	**WCGT** Type	**WPGT** Type
FS	●For precision finishing. ●Small width lead breaker for excellent chip control. ●Sharp cutting edge gives a good surface finish.	—	—	—		—	—	—	—	
F	●For finish cutting. ●Lead breaker controls chip flow. ●Sharp cutting edge gives a good surface finish.				—				—	—
R/L	●Lead breaker for light cutting. ●Good chip control for low to medium feed rates.	—	—	—	—	—	—	—		—
Standard	●For light cutting. ●Good chip control for low to medium feed rates.	—		—	—	—	—	—	—	

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 workpiece 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.

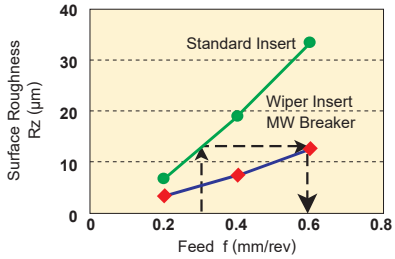
●Improving Chip Control
Under high feed conditions, the chips generated become thicker and are more easily broken, thus, chip control is improved.

Wiper insert + High feed (The feed rate is doubled.)

Finished surface Same surface roughness

Standard insert + The conventional feed condition

*Please use a wiper insert at high feed rate.



<Cutting Conditions>
Workpiece : JIS S45C
Insert : CNMG120408-○○
Cutting Speed=200m/min
Depth of Cut=1.5mm
Feed Speed=0.2−0.6mm/rev
Wet Outer Diameter Cutting

<Ex>The surface roughness does not deteriorate even if the feed rate is doubled (0.3→0.6)!

■A wiper insert + machining at high feed rate
- Reduced machining time (per workpieces)
- Increased number of workpieces (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)

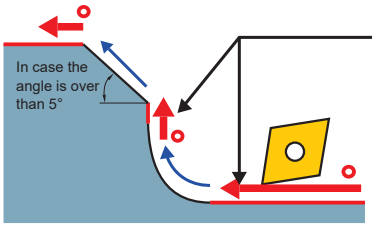
- Reducing cycle times
- Increased productivity
- Avoiding Line-Stoppage

<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.



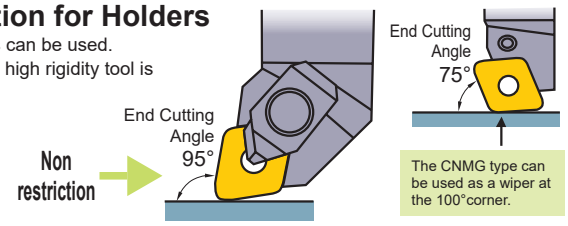
Rz(W)=Rz×0.5

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

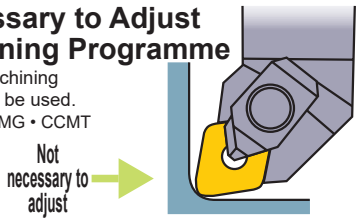
Effective uses of a wiper insert
Non effective uses of a wiper insert

■ 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.)



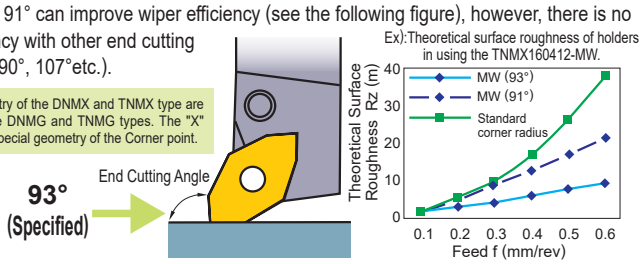
■Not Necessary to Adjust the Machining Programme
Conventional machining programmes can be used. (The CNMG • WNMG • CCMT types are based on the ISO/ANSI.)



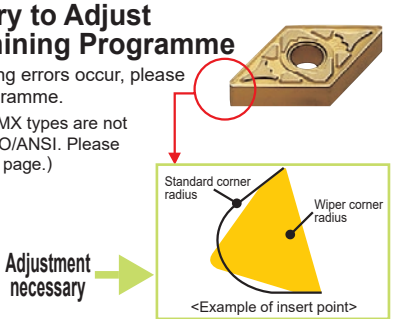
■ Special attention is necessary when using the DNMX • TNMX types due to the special top face geometry

●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.



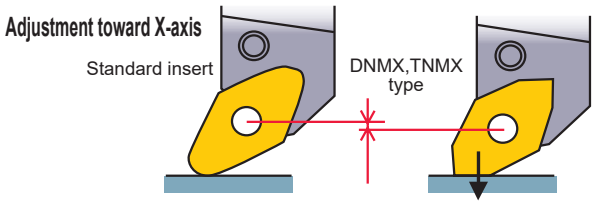
●Necessary to Adjust the Machining Programme
When machining errors occur, please adjust the programme.
(The DNMX•TNMX types are not based on the ISO/ANSI. Please refer to the next page.)



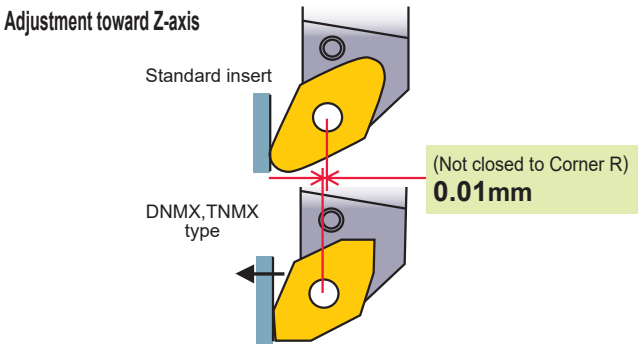
■Adjustment of machining programmes for DNMX • TNMX types

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

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



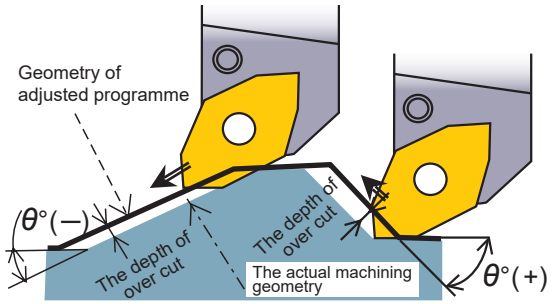
Corner radius 0.4,0.8: **0.04 mm**
Corner radius 1.2 : **0.05 mm**



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 (θ =60°—70°) and is not machined completely.



Classification

Corner Radius	Taper Angle θ°															
	-25—-15	-10	-5	**0**	5	10	15	20—35	40	45	50	55	60—65	70	75—85	**90**
1.2	0.04	0.03	0.01	**0**	0.02	0.03	0.04	0.05	0.04	0.04	0.02	0.01	-0.01	0	0.01	**0**
0.8	0.03	0.02	0.01	**0**	0.01	0.02	0.03	0.04	0.03	0.03	0.02	0	-0.01	0	0.01	**0**
0.4	0.02	0.01	0.01	**0**	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0	-0.01	-0.01	0	**0**

The number→+numbers:adjustment of relief angle, -numbers:adjustment of drive-in angle (mm)

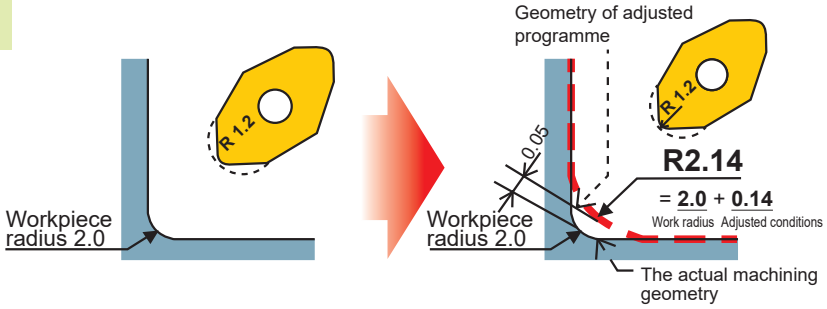
B) Adjusting a Corner R *Necessary to maintain a correct corner radius.

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 0.4 →	Work Radius**+0.05**(mm)
Corner Radius 0.8 →	Work Radius**+0.11**(mm)
Corner Radius 1.2 →	Work Radius**+0.14**(mm)

Ex) : In case of machining R 2.0 when using a corner R 1.2 type insert.



The Easy-to-correct Method

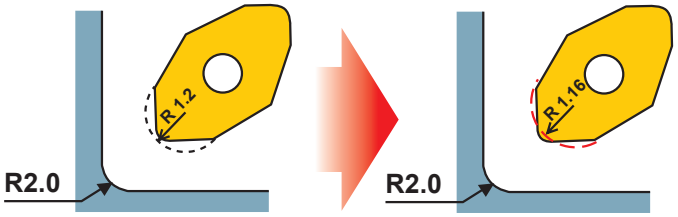
In correcting corner radius:
It is not necessary to adjust the machining programme, however, machining errors can occur within max. ±0.03mm due to correcting by an approximate number.

Corner Radius Correction Input the correction number of each corner radius.

The value of corrected corner radius
= approximation
*No adjusting the machining the programme in this case.

The corner radius of a insert	The value of corrected corner radius = approximation
Corner Radius 0.4 →	**R0.36**(mm)
Corner Radius 0.8 →	**R0.76**(mm)
Corner Radius 1.2 →	**R1.16**(mm)

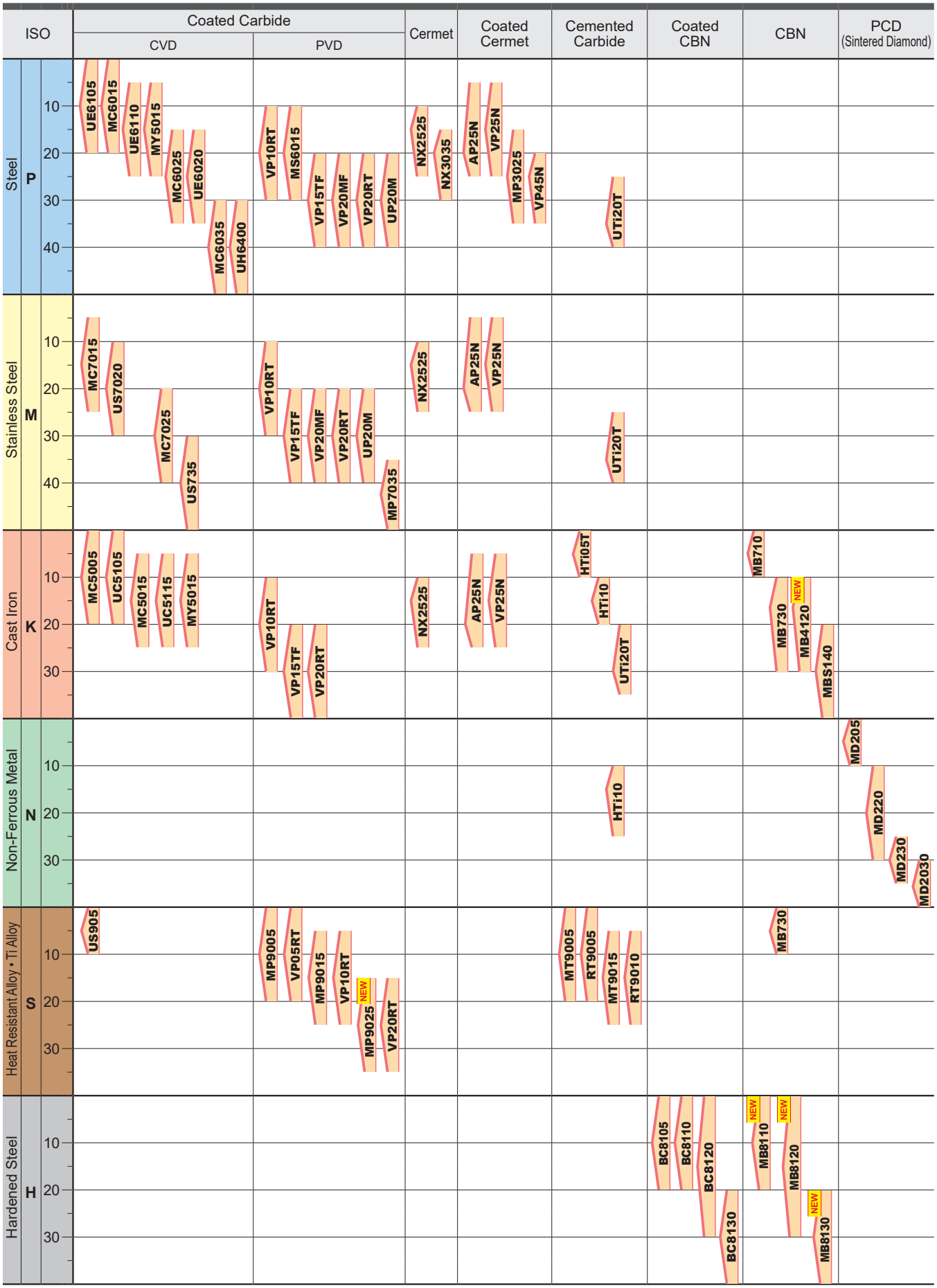
Ex):In the case of machining a corner with a radius R 2.0 when using an insert with a corner radius R 1.2.



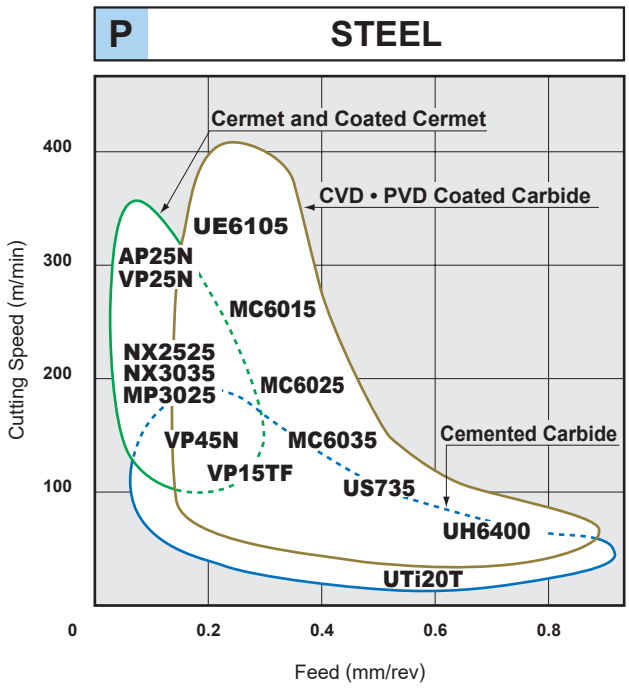
Others) The value of correction is same for both DNMX and TNMX. Discriminate them by the size of corner radius.

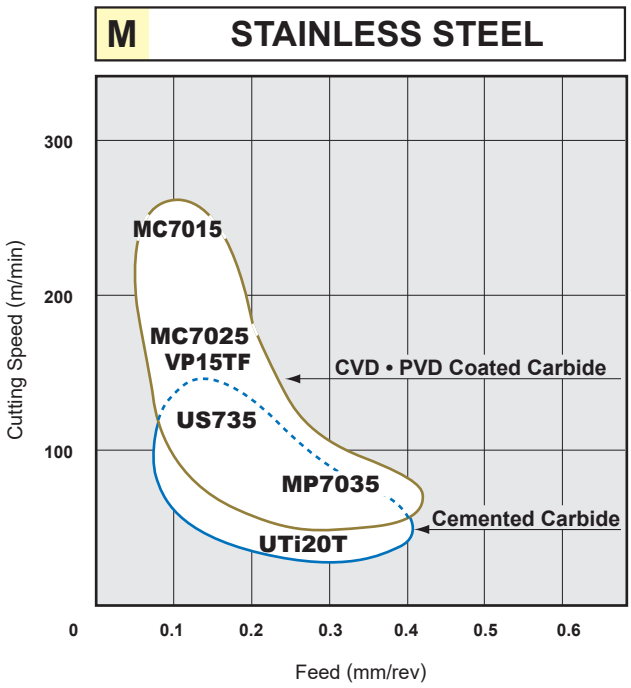
GRADES FOR TURNING

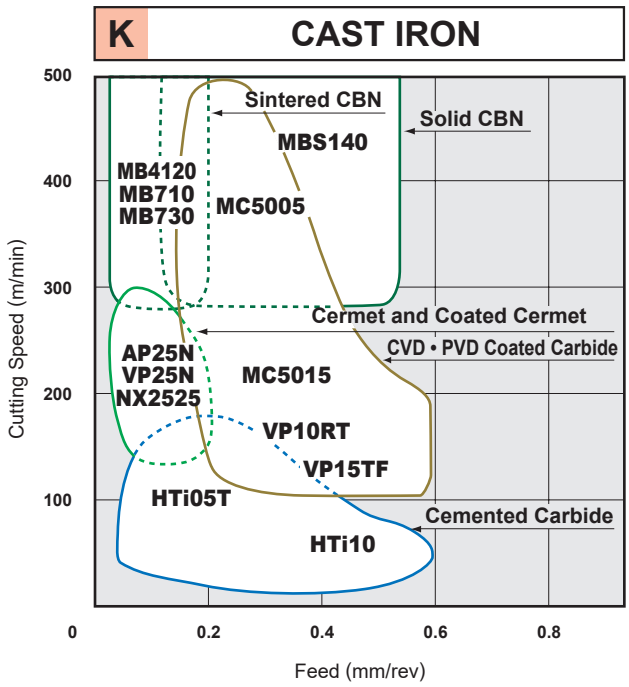
●INDEXABLE INSERT GRADES FOR TURNING

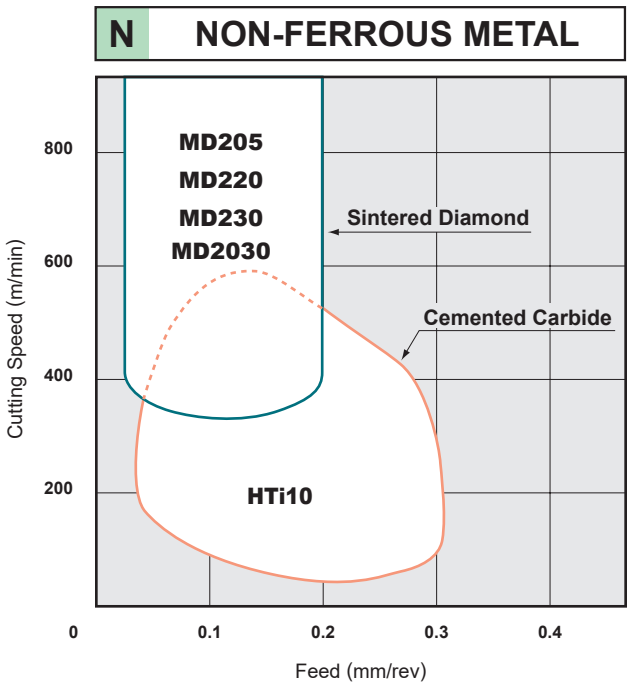


TURNING APPLICATION RANGE





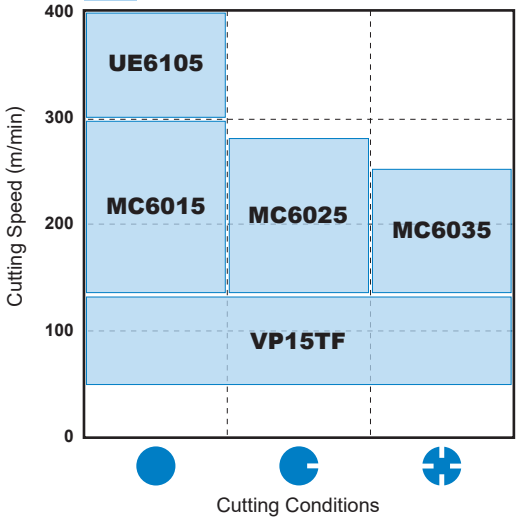




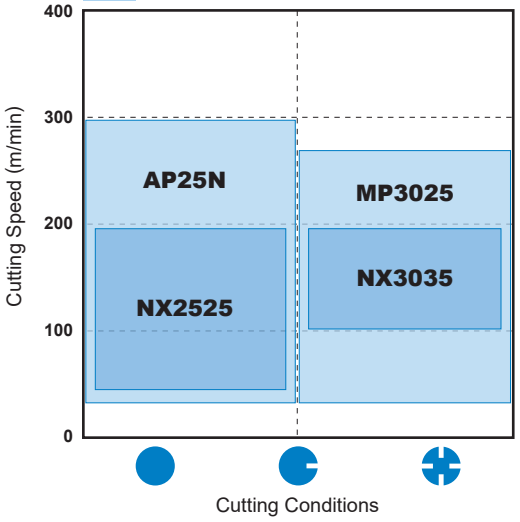
TURNING APPLICATION RANGE

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

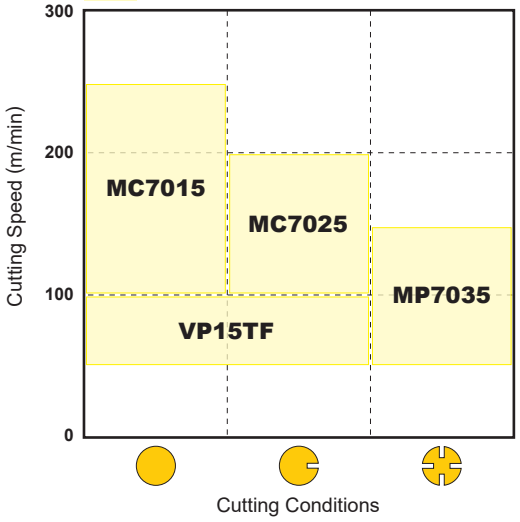
P STEEL (Medium to Rough Cutting)



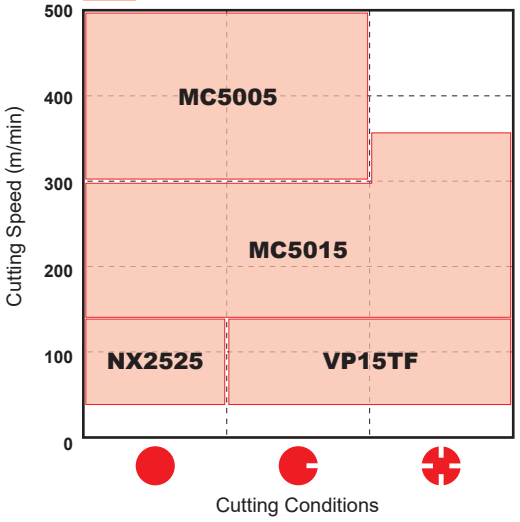
P STEEL (Finish Cutting)



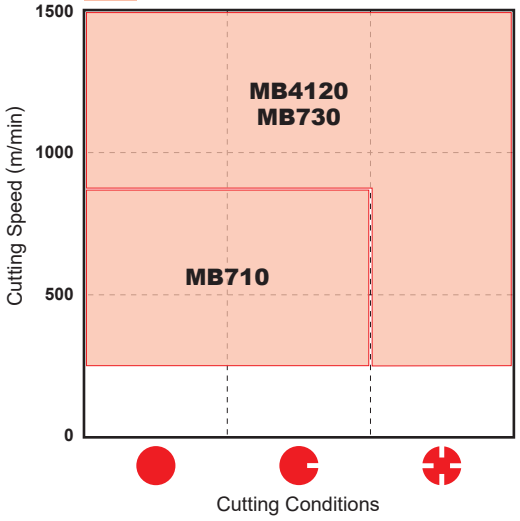
M STAINLESS STEEL



K CAST IRON



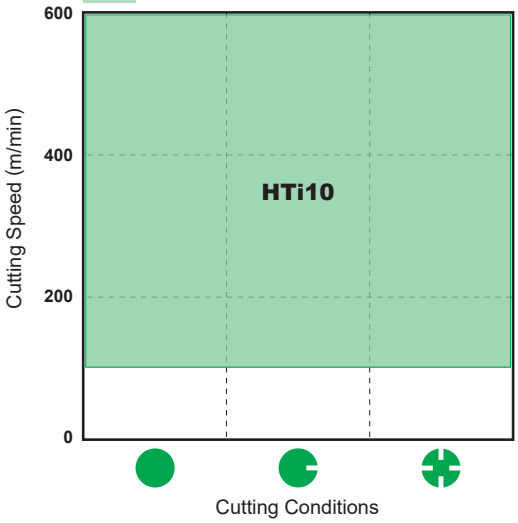
K CAST IRON (CBN)



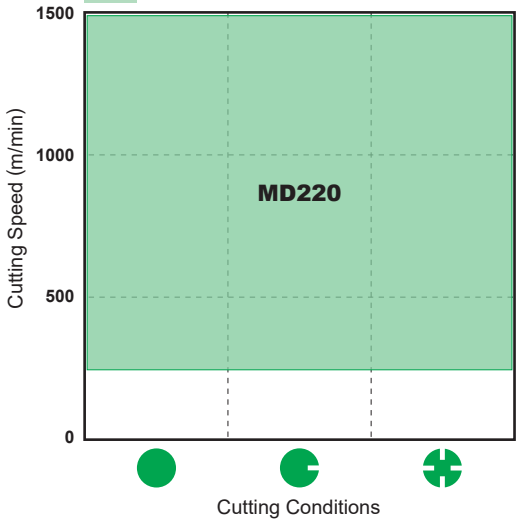
CUTTING CONDITIONS

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

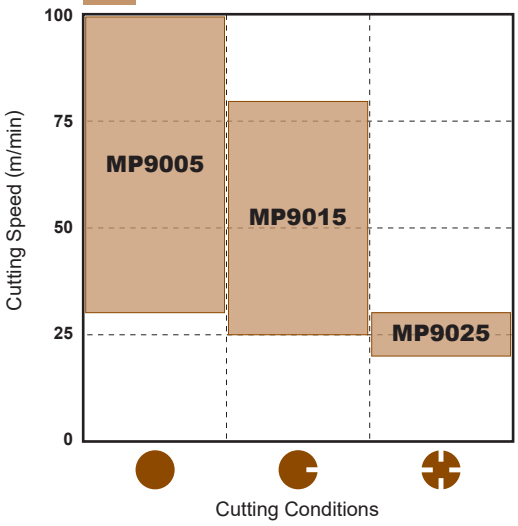
N NON-FERROUS METAL



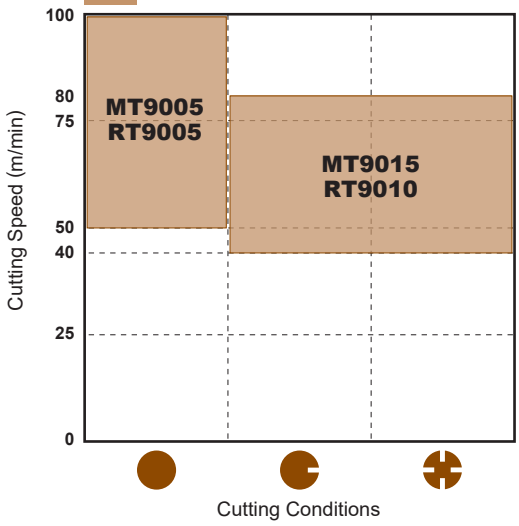
N NON-FERROUS METAL (PCD)



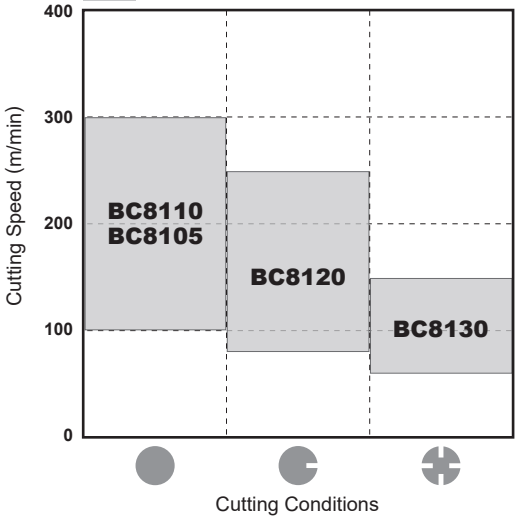
S HEAT RESISTANT ALLOY



S TITANIUM ALLOY



H HARDENED MATERIALS (CBN)



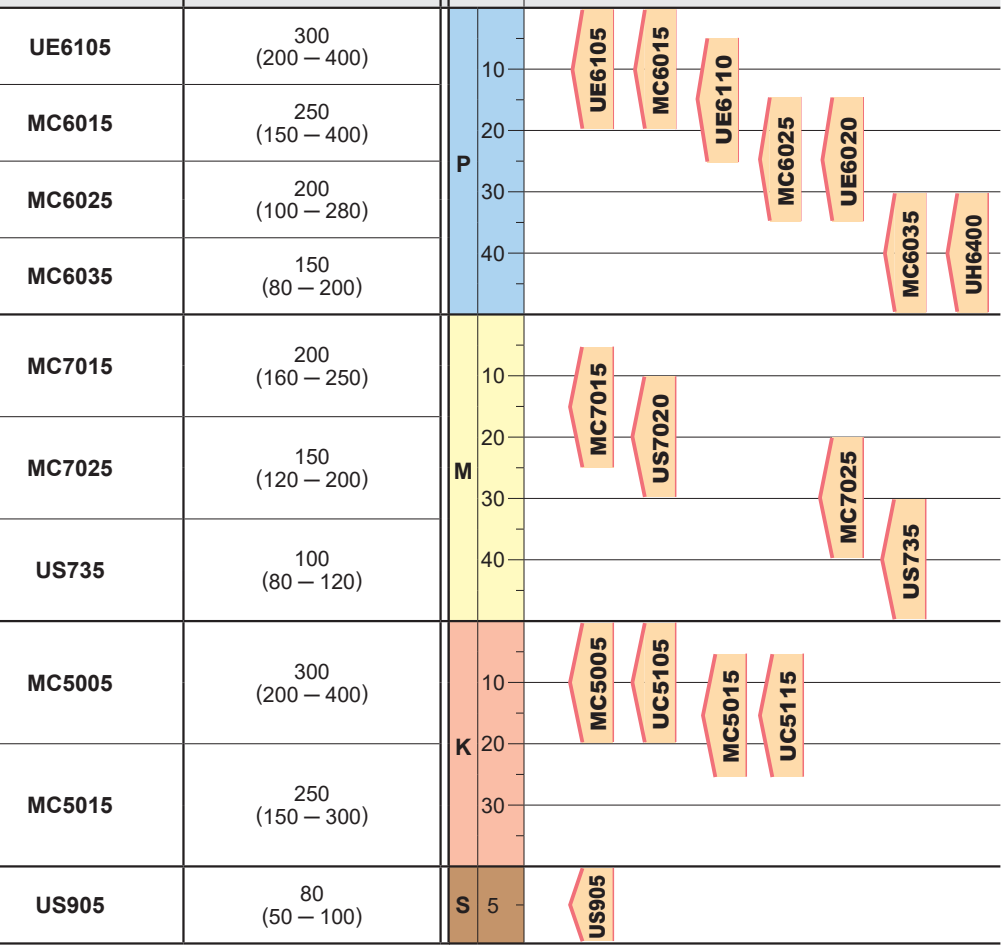
COATED CARBIDE (CVD)

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

■ SELECTION STANDARD

●TURNING

Work Material		Cutting Mode	Recommended Grade	Recommended Cutting Speed (m/min)
P	Steel	Continuous Cutting	**UE6105**	300 (200 — 400)
			MC6015	250 (150 — 400)
			MC6025	200 (100 — 280)
		Interrupted Cutting	**MC6035**	150 (80 — 200)
M	Stainless Steel	Continuous Cutting	**MC7015**	200 (160 — 250)
			MC7025	150 (120 — 200)
		Continuous and Interrupted Cutting	**US735**	100 (80 — 120)
K	Cast Iron Ductile Cast Iron	Continuous Cutting	**MC5005**	300 (200 — 400)
		Interrupted Cutting	**MC5015**	250 (150 — 300)
S	Heat Resistant Alloy	Continuous and Interrupted Cutting	**US905**	80 (50 — 100)



High reliability for a wide range of steel machining.

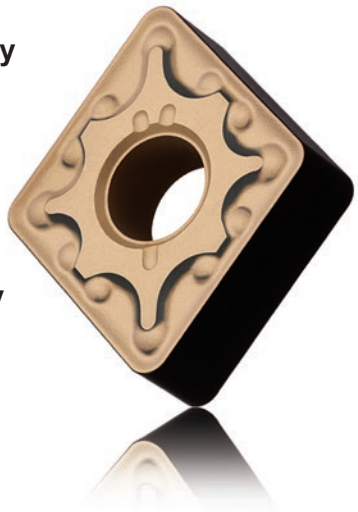
MC6015

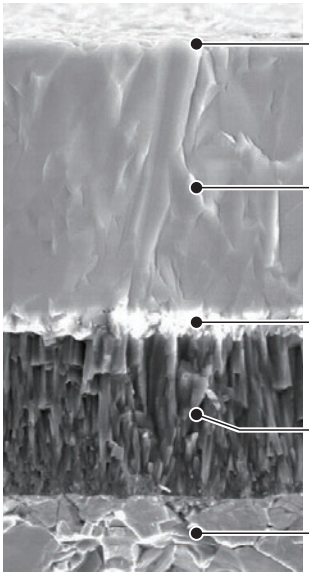
Nano-Texture Technology

The optimized crystal growth in linear direction of Nano-texture coating technology maintains fine surface and provides outstanding wear and chipping under high speed cutting conditions.

TOUGH-Grip Technology

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





Smooth coating surface
Prevents abnormal damage, welding and chipping

Ultra thick layer Nano-texture Al_2O_3
Delivers outstanding wear resistance even at high temperature

TOUGH-Grip
Prevents delamination of a coating

Nano-texture TiCN
Provides superior wear resistance and chipping resistance

Special carbide substrate
Prevents crack development
Stable tool life

■ GRADE CHARACTERISTICS

Work Material		Grade	Substrate	Coating Layer	
			Hardness (HRA)	Composition	Thickness
P	Steel	**UE6105**	90.8	Accumulated TiCN-Al2O3-Ti Compound	Thick
		MC6015	90.2	Accumulated TiCN-Al2O3-Ti Compound	Thick
		UE6110	90.3	Accumulated TiCN-Al2O3-Ti Compound	Thick
		MC6025	90.2	Accumulated TiCN-Al2O3-Ti Compound	Thick
		UE6020	90.0	Accumulated TiCN-Al2O3-Ti Compound	Thick
		MC6035	89.5	Accumulated TiCN-Al2O3-Ti Compound	Thick
		UH6400	89.5	Accumulated TiCN-Al2O3-Ti Compound	Thick
M	Stainless Steel	**MC7015**	90.7	TiCN-Al2O3-TiN	Thin
		US7020	90.5	TiCN-Al2O3-TiN	Thin
		MC7025	89.4	TiCN-Al2O3-TiN	Thin
		US735	89.0	Ti Compound	Thin
K	Cast Iron Ductile Cast Iron	**MC5005**	91.0	TiCN-Al2O3	Thick
		UC5105	92.2	TiCN-Al2O3	Thick
		MC5015	91.0	TiCN-Al2O3	Thick
		UC5115	91.0	TiCN-Al2O3	Thick
	Heat Resistant Cast Steel	**MH515**	91.0	TiCN-Al2O3	Thick
S	Heat Resistant Alloy	**US905**	92.2	TiCN-Al2O3-TiN	Thin

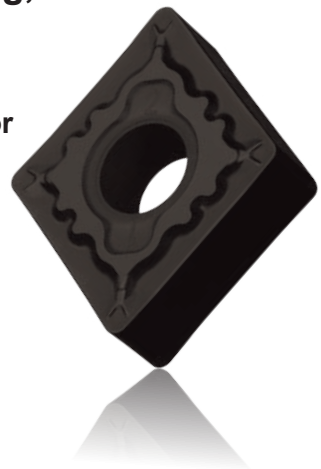
Note 1) Hardness shows representative value of the substrate.

For interrupted cutting, medium to low surface speeds

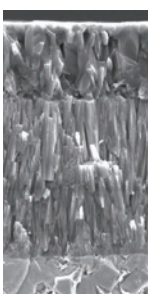
MC6035

Prevents severe damage for increased stability

The smooth coating surface provides excellent welding resistance.
With the thickened TiCN, MC6035 also achieves superior wear resistance for increased stability.



MC6035

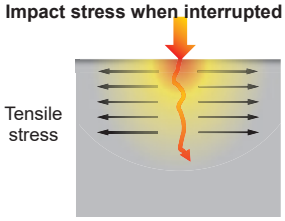


MC6025

Reducing the effect of severe fracturing

By reducing the tensile stress in the coating layer during interrupted cutting, crack development caused by impact stress is prevented.

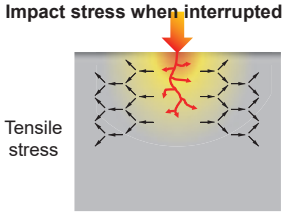
Impact stress when interrupted cutting



Conventional products tend to result in fracturing because impact stress is transmitted deep into the coating layer during interrupted cutting.

Conventional coating

Impact stress when interrupted cutting



MC6035 has succeeded in alleviating tensile stress in the coating layer therefore, cracks that can develop by impact stress can be prevented when interrupted cutting.

MC6035

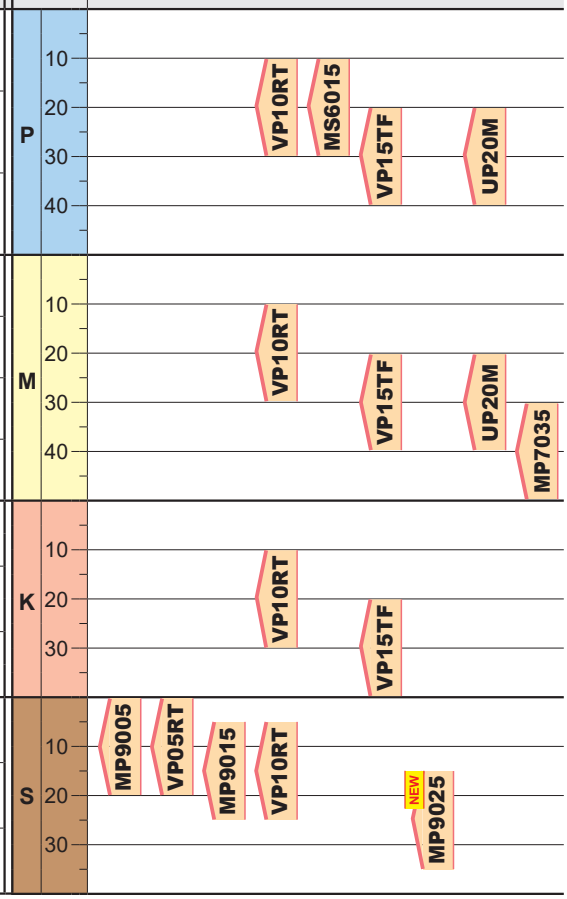
COATED CARBIDE (PVD)

- 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.

■ SELECTION STANDARD

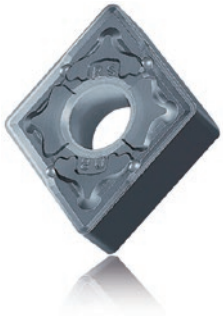
●TURNING

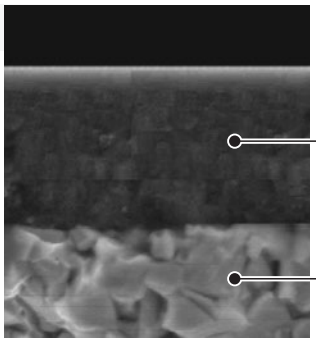
	Work Material	Recommended Grade	Recommended Cutting Speed (m/min)
P	Steel	**VP10RT**	120 (100 — 150)
		VP15TF	120 (100 — 150)
		UP20M	120 (100 — 150)
M	Stainless Steel	**VP10RT**	120 (100 — 150)
		VP15TF	120 (100 — 150)
		VP20MF	120 (100 — 150)
		UP20M	120 (100 — 150)
K	Cast Iron	**VP10RT**	120 (100 — 150)
		VP15TF	120 (100 — 150)
		VP20RT	120 (100 — 150)
S	Heat Resistant Alloy	**MP9005**	60 (30 — 100)
		MP9015	50 (25 — 80)
		MP9025	25 (20 — 30)



ISO Turning Inserts for Difficult to Cut Materials

NEW MP9005/MP9015/MP9025





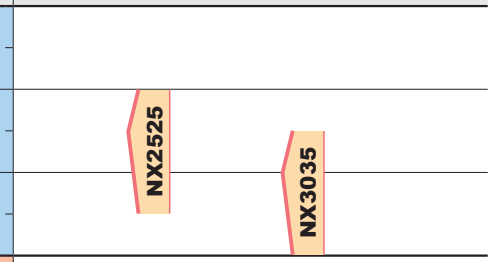
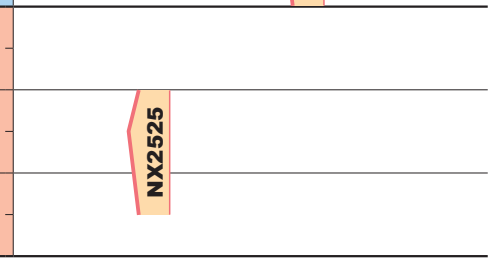
ISO Grade	Grade	Concept	Application
S01	**MP9005**	Top-quality grade focusing on wear resistance	Heat Resistant Alloy Finish-Medium Cutting
S10	**MP9015**	First recommendation for general applications	Heat Resistant Alloy Medium-Rough Cutting
S30	NEW **MP9025**	Prevents severe damage for increased stability.	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 (m/min)	ISO	Application Range
P	Steel	Continuous Cutting	**NX2525**	220 (180 — 250)	P	
		Interrupted Cutting	**NX3035**	200 (190 — 260)		
K	Cast Iron Ductile Cast Iron	Finishing	**NX2525**	180 (150 — 210)	K	

■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.

■SELECTION STANDARD

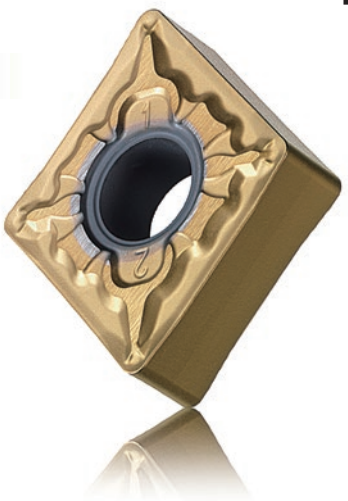
●TURNING

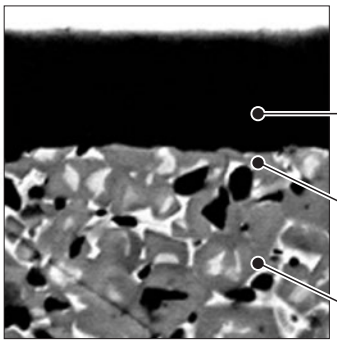
	Work Material	Cutting Mode	Recommended Grade	Recommended Cutting Speed (m/min)	ISO	Application Range
P	Steel	Continuous Cutting	**VP25N AP25N**	240 (190 — 290)	P	VP25N, AP25N, MP3025, VP45N
P	Steel	Interrupted Cutting	**MP3025**	230 (180 — 280)	P	VP25N, AP25N, MP3025, VP45N
K	Cast Iron Ductile Cast Iron	Finishing	**VP25N AP25N**	160 (110 — 230)	K	VP25N, AP25N

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 (m/min)	ISO	Application Range
P	Steel	**UTi20T**	100 (60 — 130)	P 10 20 30	UTi20T
M	Stainless Steel	**UTi20T**	100 (60 — 130)	M 10 20 30	UTi20T
K	Cast Iron	**HTi05T**	120 (80 — 150)	K 10 20 30	HTi05T, HTi10, UTi20T
		HTi10	100 (50 — 150)		
		UTi20T	100 (50 — 150)		
N	Non-Ferrous Metal	**HTi10**	300 (100 — 600)	N 10 20 30	HTi10
S	Heat Resistant Alloy Ti Alloy	**MT9005 RT9005**	70 (50 — 100)	S 10 20 30	MT9005, RT9005, MT9015, RT9010
		MT9015 RT9010	60 (40 — 80)		

■MAIN COMPONENT AND APPLICATION

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

■GRADE CHARACTERISTICS

ISO	Grade	Hardness (HRA)
P M	**UTi20T**	90.5
K N	**HTi05T**	92.5
	HTi10	92.0
S	**MT9005/RT9005**	92.2
	MT9015/RT9010	92.0

Note 1) Hardness shows representative value of the substrate.

MICRO-GRAIN CEMENTED CARBIDE (SOLID TOOLS)

●Compared to normal cemented carbide, micro-grain types have higher wear resistance and toughness.

■SELECTION STANDARD

Cutting Tool	Recommended Grade	Work Material
PCB Miniature Drill	**SF10** **MF10** **MF20**	Non-Metal
Solid Carbide Drill Turning Inserts Milling Inserts	**TF15**	Steel • Cast Iron
Solid End Mill	**HTi10** **TF15** **MF10**	Steel • Cast Iron
Gear Hob Reamer Tap etc.	**TF15** **MF20** **MF30**	Steel • Cast Iron, etc.

■GRADE CHARACTERISTICS

Grade	Grade Characteristics *		ISO	Wear Resistance	Fracture Resistance	Corrosion Resistance
	Hardness(HRA)	T.R.S (GPa)				
HTi10	92.0	3.2	K10	◎	○	○
TF15	91.0	4.0	K20	◎	○	◎
SF10	92.7	3.8	K01	◎	○	◎
MF10	93.0	4.0	K01	◎	○	◎
MF20	92.0	4.4	K10	○	◎	◎
MF30	90.7	4.3	K20	○	◎	◎

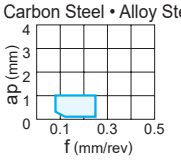
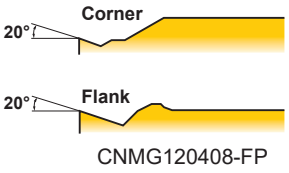
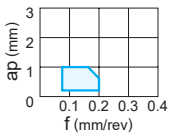
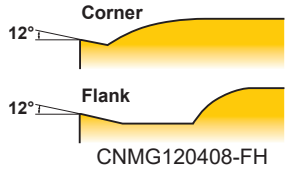
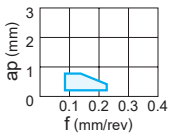
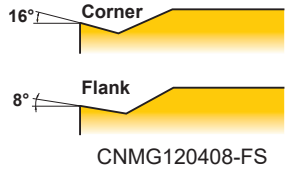
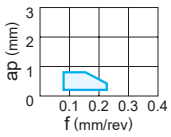
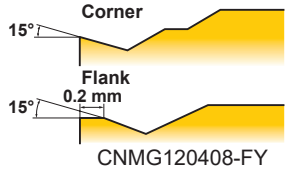
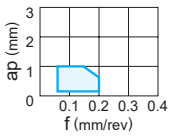
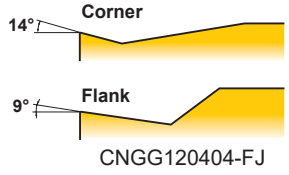
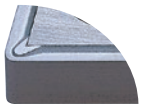
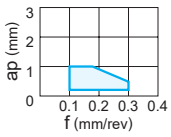
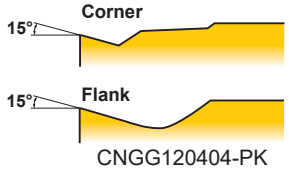
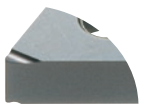
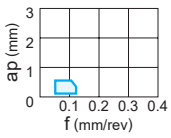
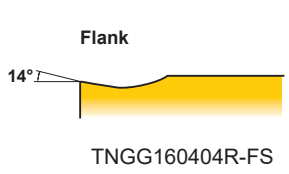
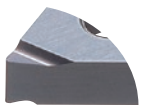
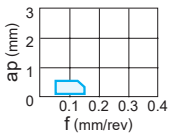
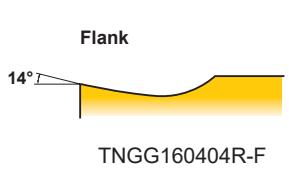
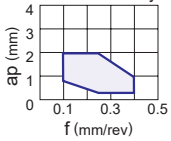
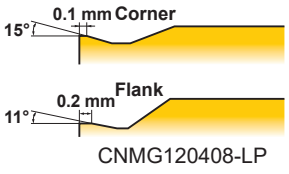
* After HIP

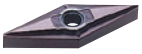
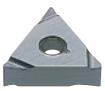
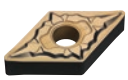
Note 1) Hardness shows representative value of the substrate.

Memo

CLASSIFICATION

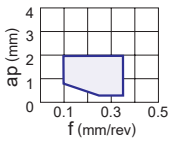
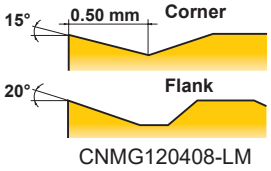
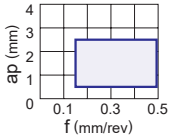
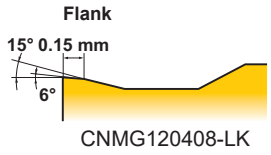
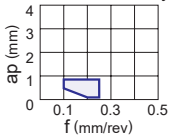
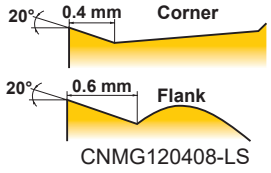
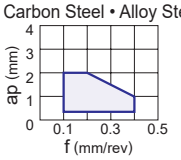
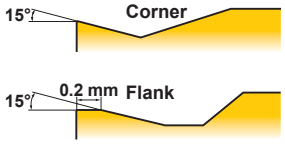
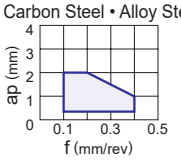
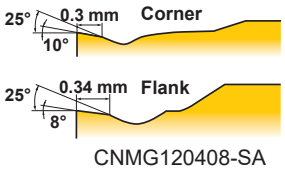
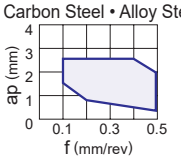
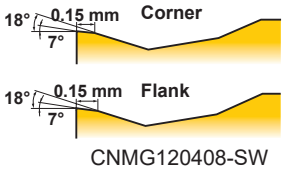
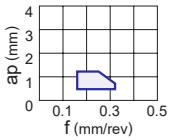
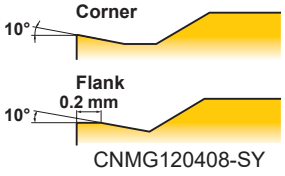
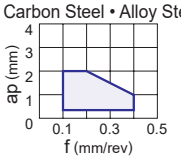
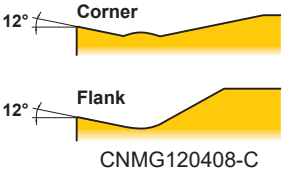
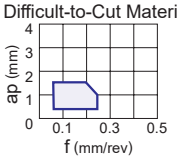
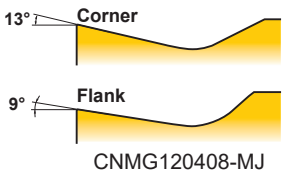
NEGATIVE INSERTS WITH HOLE

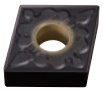
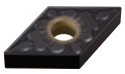
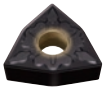
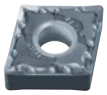
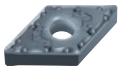
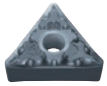
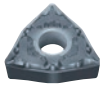
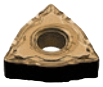
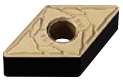
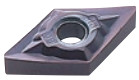
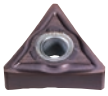
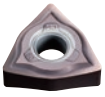
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M	**FP** 	**First recommendation for finishing carbon steel and alloy steel** Controls chip clogging during high-feed cutting and prevents chips of soft work materials from running onto their surfaces. Large rake angle suppress chatter vibration and deformation in processing of low rigidity work material.	Carbon Steel • Alloy Steel   CNMG120408-FP
		FH 	**First recommendation for finishing carbon steel and alloy steel** Stable chip control even at small depth of cut.	Carbon Steel • Alloy Steel   CNMG120408-FH
		FS 	**Alternative chipbreaker for finishing mild steel** Stable chip control even at small depth of cut. Sharp edge gives best performance.	Mild Steel   CNMG120408-FS
		FY 	**First recommendation for finishing mild steel** Effectively controls adhesive chips. Suitable for mild steel finishing.	Mild Steel   CNMG120408-FY
	G	**FJ** 	**Alternative chip breaker for finishing difficult-to-cut materials** Ideal for heat-resistant alloy and titanium alloy. The sharp edge produces good cutting surface. The curved edge allows smooth chip discharge.	Difficult-to-Cut Materials   CNGG120404-FJ
		PK 	**Alternative chipbreaker for finishing carbon steel and alloy steel** G class insert tolerance is suitable for workpieces requiring close dimensional tolerances. Stable chip control even at small depth of cut.	Carbon Steel • Alloy Steel   CNGG120404-PK
		R/L-FS 	**Chipbreaker for precise finishing** A narrow lead chipbreaker for good chip control. The sharp edge produces a good surface finish.	Carbon Steel • Alloy Steel   TNGG160404R-FS
		R/L-F 	**Chipbreaker for finishing** Lead chipbreaker controls chip flow. The sharp edge produces a good surface finish.	Carbon Steel • Alloy Steel   TNGG160404R-F
Light Cutting	M	**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   CNMG120408-LP

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CNMG_FP  A100	DNMG_FP  A107	SNMG_FP  A115	TNMG_FP  A121	VNMG_FP  A128	WNMG_FP  A132		FP 
	CNMG_FH  A100	DNMG_FH  A107	SNMG_FH  A115	TNMG_FH  A121	VNMG_FH  A128	WNMG_FH  A132		FH 
	CNMG_FS  A100	DNMG_FS  A107	SNMG_FS  A115	TNMG_FS  A121	VNMG_FS  A128	WNMG_FS  A132		FS 
	CNMG_FY  A100	DNMG_FY  A107		TNMG_FY  A121		WNMG_FY  A132		FY 
	CNGG_FJ  A100	DNGG_FJ  A107			VNGG_FJ  A128			FJ 
	CNGG_PK  A100	DNGG_PK  A107		TNGG_PK  A121				PK 
				TNGG_R/L-FS  A121				R/L-FS 
				TNGG_R/L-F  A122	VNGG_R/L-F  A128			R/L-F 
	CNMG_LP  A100	DNMG_LP  A108	SNMG_LP  A115	TNMG_LP  A122	VNMG_LP  A128	WNMG_LP  A132		LP 

CLASSIFICATION

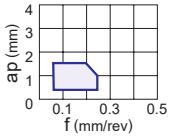
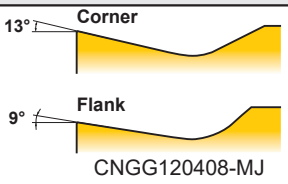
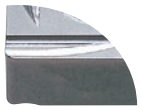
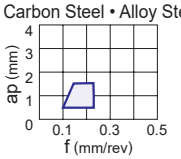
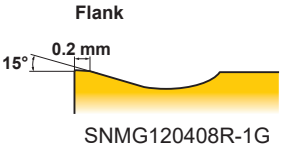
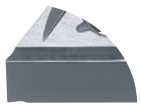
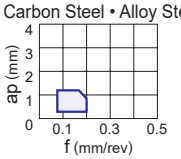
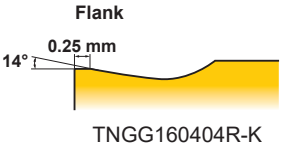
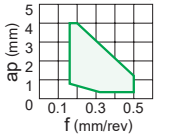
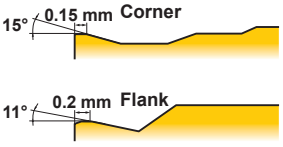
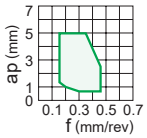
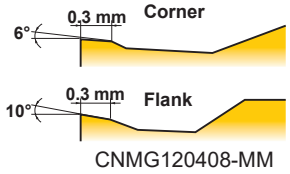
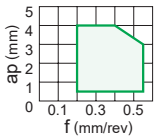
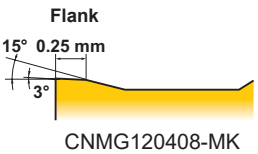
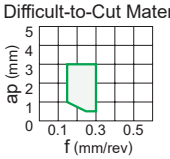
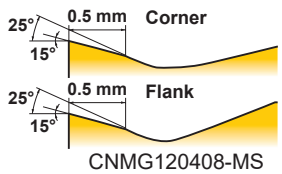
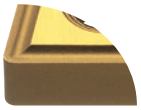
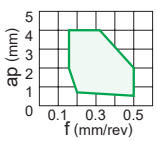
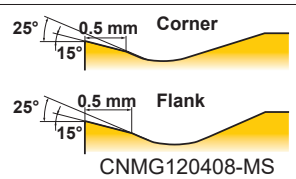
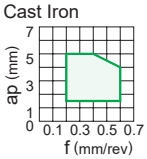
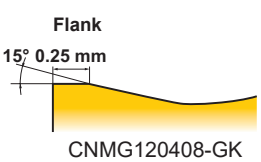
NEGATIVE INSERTS WITH HOLE

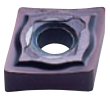
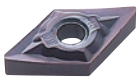
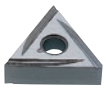
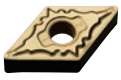
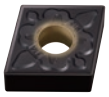
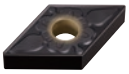
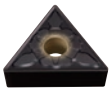
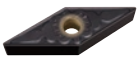
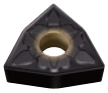
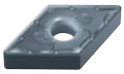
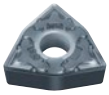
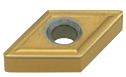
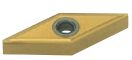
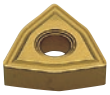
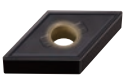
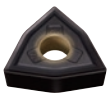
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Light Cutting	M	**LM** 	**First recommendation for light cutting of stainless steel** Stable chip control at light cutting range. Breaker with high rake angle provides excellent burr control.	Stainless Steel   CNMG120408-LM
		LK 	**First recommendation for light cutting of cast iron** Narrow positive land provides low cutting resistance and excellent finish.	Cast Iron   CNMG120408-LK
		LS 	**First recommendation for light cutting of difficult-to-cut materials** **Alternative chipbreaker for light cutting of stainless steel** Enhanced chip disposal for depth of cut smaller than the corner R.	Heat Resistant Alloy   CNMG120408-LS
		SH 	**Alternative chipbreaker for light cutting of carbon steel and alloy steel** Can be used at low depth of cuts and high feed rates. The curved edge allows smooth chip discharge. Recommended for workpieces in the 160—250HB range.	Carbon Steel • Alloy Steel   CNMG120408-SH
		SA 	**Alternative chipbreaker for light cutting of carbon steel and alloy steel** Superior chip control at small depth of cuts. Covers copying and back turning with wavy edge. Recommended for workpieces in the 200—300HB range.	Carbon Steel • Alloy Steel   CNMG120408-SA
		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   CNMG120408-SW
		SY 	**First recommendation for light cutting of mild steel** Effectively controls adhesive chips. Suitable for mild steel light cutting.	Mild Steel   CNMG120408-SY
		C 	**Alternative chipbreaker for light cutting of carbon steel and alloy steel** Suitable for light cutting. The curved edge allows smooth chip discharge.	Carbon Steel • Alloy Steel   CNMG120408-C
		MJ 	**Alternative chip breaker for light cutting of difficult-to-cut materials** Ideal for heat-resistant alloy and titanium alloy. 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   CNMG120408-MJ

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CNMG_LM  A101	DNMG_LM  A108	SNMG_LM  A115	TNMG_LM  A122	VNMG_LM  A128	WNMG_LM  A132		LM 
	CNMG_LK  A101	DNMG_LK  A108	SNMG_LK  A115	TNMG_LK  A122	VNMG_LK  A129	WNMG_LK  A133		LK 
	CNMG_LS  A101	DNMG_LS  A108		TNMG_LS  A122	VNMG_LS  A129	WNMG_LS  A133		LS 
	CNMG_SH  A101	DNMG_SH  A108	SNMG_SH  A115	TNMG_SH  A122	VNMG_SH  A129	WNMG_SH  A133		SH 
	CNMG_SA  A101	DNMG_SA  A109	SNMG_SA  A116	TNMG_SA  A122	VNMG_SA  A129	WNMG_SA  A133		SA 
	CNMG_SW  A101	DNMX_SW  A109		TNMX_SW  A123		WNMG_SW  A133		SW 
	CNMG_SY  A101	DNMG_SY  A109	SNMG_SY  A116	TNMG_SY  A123		WNMG_SY  A133		SY 
	CNMG_C  A101	DNMG_C  A109	SNMG_C  A116	TNMG_C  A123		WNMG_C  A133		C 
	CNMG_MJ  A101	DNMG_MJ  A109		TNMG_MJ  A123	VNMG_MJ  A129	WNMG_MJ  A133		MJ(M) 

CLASSIFICATION

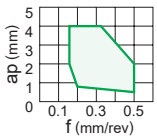
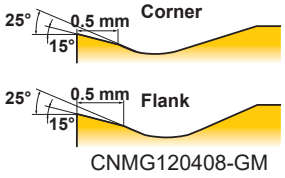
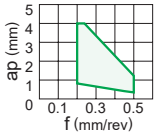
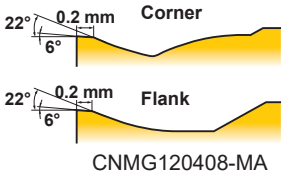
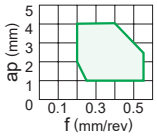
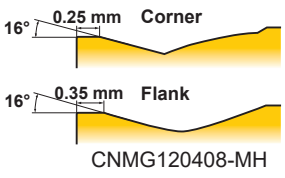
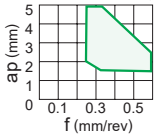
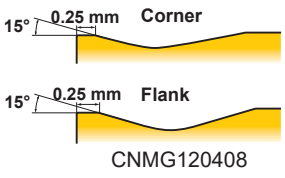
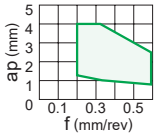
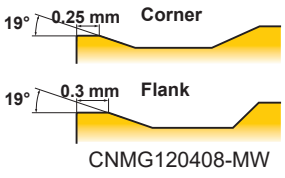
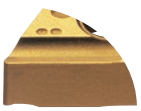
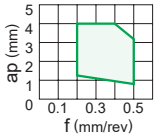
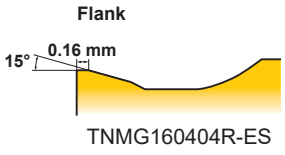
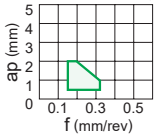
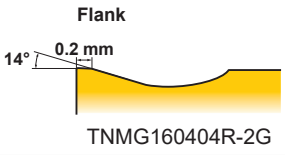
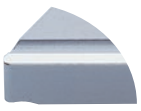
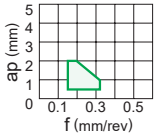
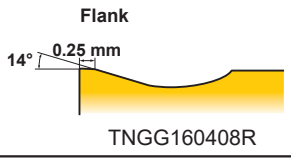
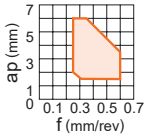
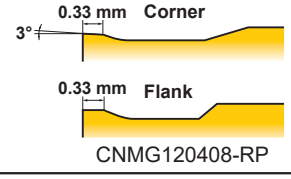
NEGATIVE INSERTS WITH HOLE

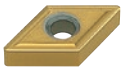
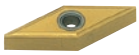
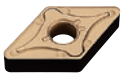
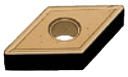
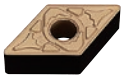
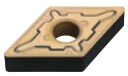
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Light Cutting	G	**MJ** 	**Alternative chip breaker for light cutting of difficult-to-cut materials** Double sided chipbreaker, Single sided chipbreaker (D type, V type). The sharp edge produces a good surface finish. Ideal for heat-resistant alloy and titanium alloy. The curved edge allows smooth chip discharge.	Difficult-to-Cut Materials   CNGG120408-MJ
	M	**R/L-1G** 	**Alternative chipbreaker for light cutting of carbon steel and alloy steel** Parallel chipbreaker controls chip flow. Suitable for finish-light cutting. Precision chipbreaker.	Carbon Steel • Alloy Steel   SNMG120408R-1G
	G	**R/L-K** 	**Chipbreaker for Light cutting** Parallel chipbreaker. Excellent chip control at low to medium feed rates.	Carbon Steel • Alloy Steel   TNGG160404R-K
Medium Cutting	M	**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   CNMG120408-MP
		MM 	**First recommendation for medium cutting of stainless steel** Optimized land geometry by simulation analysis technology controls the plastic deformation of the corner and achieves the long tool life.	Stainless Steel   CNMG120408-MM
		MK 	**First recommendation for medium cutting of cast iron** Optimum balance between sharpness and high edge strength for general use.	Cast Iron   CNMG120408-MK
		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   CNMG120408-MS
		MS 	**Alternative chipbreaker for medium cutting of stainless steel, mild 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   CNMG120408-MS
		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   CNMG120408-GK

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CNGG_MJ  A102	DNGM_MJ  A109			VNGM_MJ  A129			MJ(G) 
			SNMG_R/L-1G  A116	TNMG_R/L-1G  A123				R/L-1G 
				TNGG_R/L-K  A123				R/L-K 
	CNMG_MP  A102	DNMG_MP  A109	SNMG_MP  A116	TNMG_MP  A123	VNMG_MP  A129	WNMG_MP  A134		MP 
	CNMG_MM  A102	DNMG_MM  A110	SNMG_MM  A116	TNMG_MM  A123	VNMG_MM  A129	WNMG_MM  A134		MM 
	CNMG_MK  A102	DNMG_MK  A110	SNMG_MK  A117	TNMG_MK  A123	VNMG_MK  A129	WNMG_MK  A134		MK 
	CNMG_MS  A102	DNMG_MS  A110	SNMG_MS  A117	TNMG_MS  A124	VNMG_MS  A130	WNMG_MS  A134		MS 
	CNMG_MS  A103	DNMG_MS  A110	SNMG_MS  A117	TNMG_MS  A124	VNMG_MS  A130	WNMG_MS  A134		MS 
	CNMG_GK  A103	DNMG_GK  A110	SNMG_GK  A117	TNMG_GK  A124	VNMG_GK  A130	WNMG_GK  A135		GK 

CLASSIFICATION

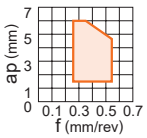
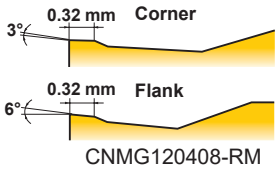
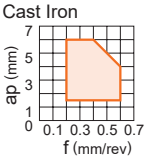
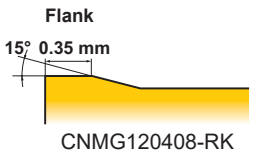
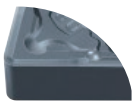
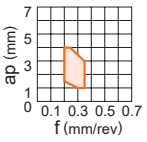
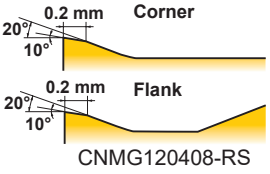
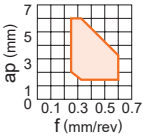
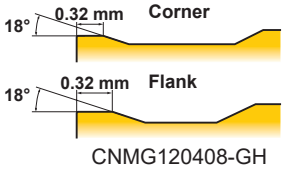
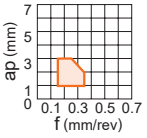
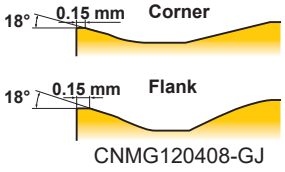
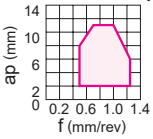
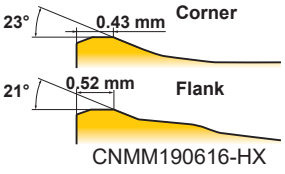
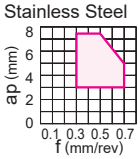
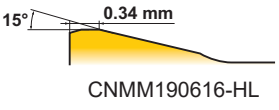
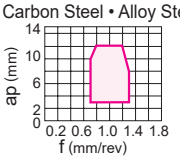
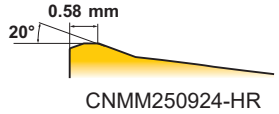
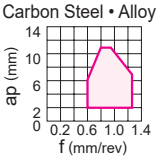
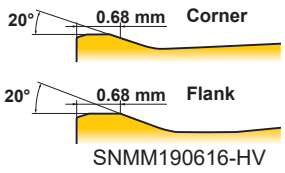
NEGATIVE INSERTS WITH HOLE

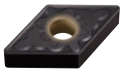
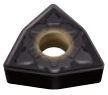
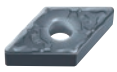
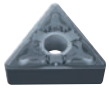
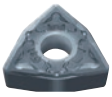
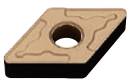
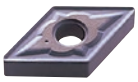
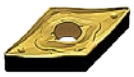
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M	**GM** 	**Alternative chip breaker for light to medium cutting of stainless steel** Alternative chip breaker of main chip breaker LM and MM. Excellent notch wear resistance for light to medium cutting.	Stainless Steel   CNMG120408-GM
		MA 	**First recommendation for medium cutting of carbon steel and alloy steel** Ideal for general cutting applications. Positive land provides sharp cutting action.	Carbon Steel • Alloy Steel   CNMG120408-MA
		MH 	**Alternative chipbreaker 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   CNMG120408-MH
		Standard 	**Alternative chipbreaker 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   CNMG120408
		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   CNMG120408-MW
		R/L-ES 	**Alternative chipbreaker for medium cutting of stainless steel** Good balance of edge strength and sharpness. Right- or left-hand breaker for unidirectional chip control.	Stainless Steel   TNMG160404R-ES
		R/L-2G 	**Alternative chipbreaker 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 chipbreaker.	Carbon Steel • Alloy Steel   TNMG160404R-2G
	G	**R/L** 	**Medium cutting** Parallel chipbreaker. Good chip control for medium feed rates.	Carbon Steel • Alloy Steel   TNGG160408R
Rough Cutting	M	**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   CNMG120408-RP

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CNMG_GM  A103	DNMG_GM  A111	SNMG_GM  A117	TNMG_GM  A124	VNMG_GM  A130	WNMG_GM  A135		GM 
	CNMG_MA  A103	DNMG_MA  A111	SNMG_MA  A117	TNMG_MA  A124	VNMG_MA  A130	WNMG_MA  A135		MA 
	CNMG_MH  A103	DNMG_MH  A111	SNMG_MH  A117	TNMG_MH  A124	VNMG_MH  A130	WNMG_MH  A135		MH 
	CNMG  A104	DNMG  A111	SNMG  A118	TNMG  A125	VNMG  A130	WNMG  A135	RNMG  A114	Standard 
	CNMG_MW  A104	DNMX_MW  A111		TNMX_MW  A125		WNMG_MW  A135		MW 
				TNMG_R/L-ES  A125				R/L-ES 
				TNMG_R/L-2G  A125				R/L-2G 
		DNGG_R/L  A111	SNGG_R/L  A118	TNGG_R/L  A125	VNGG_R/L  A131			R/L 
	CNMG_RP  A104	DNMG_RP  A112	SNMG_RP  A118	TNMG_RP  A126		WNMG_RP  A135		RP 

CLASSIFICATION

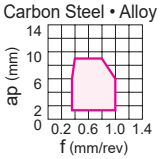
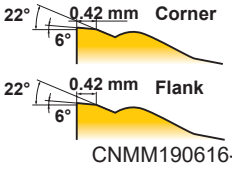
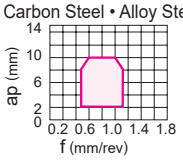
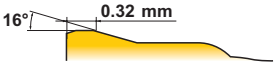
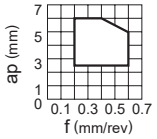
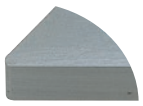
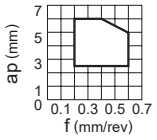
NEGATIVE INSERTS WITH HOLE

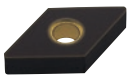
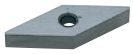
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Rough Cutting	M	**RM** 	**First recommendation for rough cutting of stainless steel** Excellent fracture resistance at interrupted cutting due to the optimum land angle and honing geometry.	Stainless Steel   CNMG120408-RM
		RK 	**For rough cutting of carbon steel, alloy steel and First recommendation for rough cutting cast iron** Seating surface and wide land 3 or more times that of conventional products and provide high cutting stability for interrupted machining and scale removal.	Cast Iron   CNMG120408-RK
		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   CNMG120408-RS
		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   CNMG120408-GH
		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   CNMG120408-GJ
Heavy Cutting	M	**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 chipbreaker for good chip control.	Carbon Steel • Alloy Steel   CNMM190616-HX
		HL 	**First recommendation for heavy cutting of stainless steel** **Alternative chipbreaker for heavy cutting of carbon steel and alloy steel** Low resistance due to narrow flat land. Achieves high chip breaking ability.	Stainless Steel   CNMM190616-HL
		HR 	**Alternative chipbreaker 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   CNMM250924-HR
		HV 	**Alternative chipbreaker 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 chipbreaker prevents chip jamming.	Carbon Steel • Alloy Steel   SNMM190616-HV

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CNMG_RM  A104	DNMG_RM  A112	SNMG_RM  A118	TNMG_RM  A126		WNMG_RM  A135		RM 
	CNMG_RK  A105	DNMG_RK  A112	SNMG_RK  A119	TNMG_RK  A126		WNMG_RK  A136		RK 
	CNMG_RS  A105	DNMG_RS  A112	SNMG_RS  A119	TNMG_RS  A126		WNMG_RS  A136		RS 
	CNMG_GH  A105	DNMG_GH  A112	SNMG_GH  A119	TNMG_GH  A126		WNMG_GH  A136		GH 
	CNMG_GJ  A105	DNMG_GJ  A112				WNMG_GJ  A136		GJ 
	CNMM_HX  A105		SNMM_HX  A119					HX 
	CNMM_HL  A105	DNMM_HL  A113	SNMM_HL  A119	TNMM_HL  A127				HL 
	CNMM_HR  A106		SNMM_HR  A119					HR 
	CNMM_HV  A106		SNMM_HV  A119					HV 

CLASSIFICATION

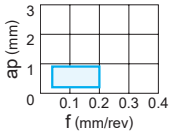
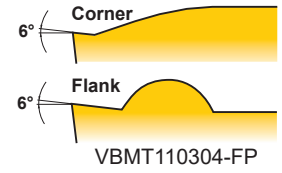
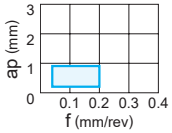
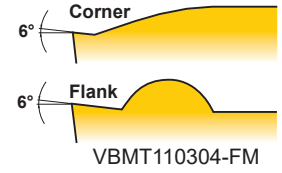
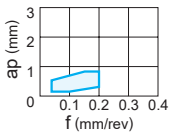
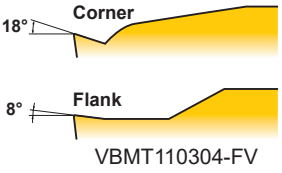
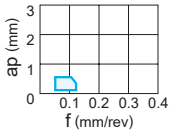
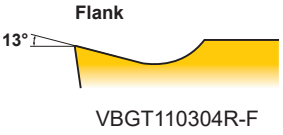
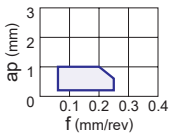
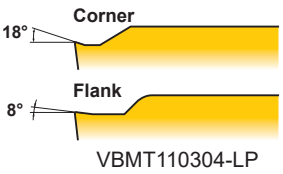
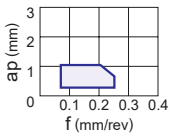
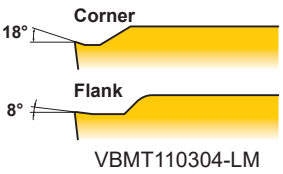
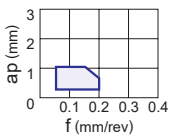
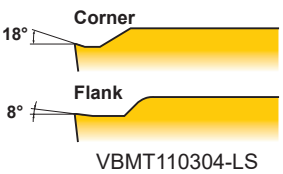
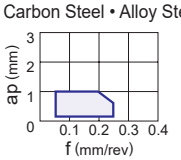
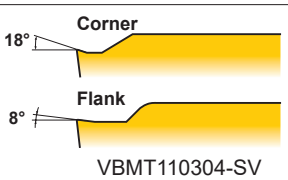
NEGATIVE INSERTS WITH HOLE

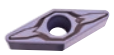
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry	
Heavy Cutting	M	**HZ** 	**Alternative chipbreaker for heavy cutting of carbon steel and alloy steel** Covers the lower end of the heavy cutting region. Low cutting resistance due to positive land and curved edge. Teardrop dots improve chip control without increasing cutting resistance.	Carbon Steel • Alloy Steel 	 CNMM190616-HZ
		HM 	**Alternative chipbreaker for heavy cutting of carbon steel and alloy steel and stainless steel** Flat land provides outstanding balance between cutting edge strength and sharpness.	Carbon Steel • Alloy Steel 	 CNMM190616-HM
For Cast Iron	M	**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 	 CNMA120408
	G	**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 	 DNGA150408

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CNMM_HZ  ➔ A106	**DNMM_HZ**  ➔ A113	**SNMM_HZ**  ➔ A120	**TNMM_HZ**  ➔ A127				**HZ** 
	CNMM_HM  ➔ A106		**SNMM_HM**  ➔ A120					**HM** 
	CNMA  ➔ A106	**DNMA**  ➔ A113	**SNMA**  ➔ A120	**TNMA**  ➔ A127	**VNMA**  ➔ A131	**WNMA**  ➔ A136		**Flat Top(M)** 
		DNGA  ➔ A113	**SNGA**  ➔ A120	**TNGA**  ➔ A127	**VNGA**  ➔ A131			**Flat Top(G)** 

CLASSIFICATION

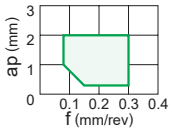
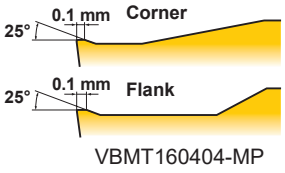
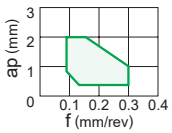
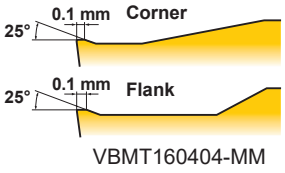
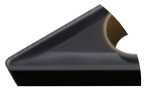
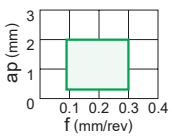
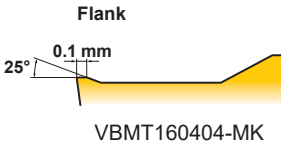
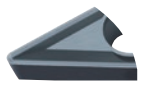
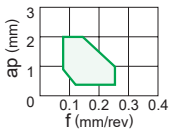
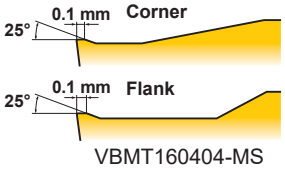
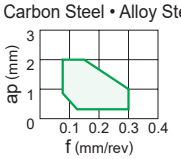
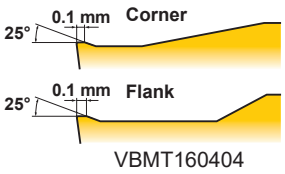
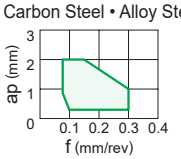
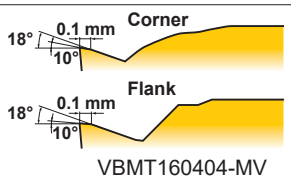
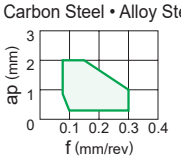
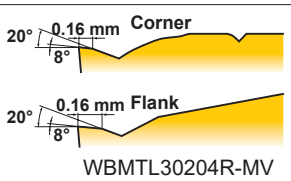
5° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M	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   VBMT110304-FP
		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   VBMT110304-FM
		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   VBMT110304-FV
	G	R/L-F 	**Finishing** Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel   VBGT110304R-F
Light Cutting	M	LP 	**First recommendation for light cutting of carbon steel and alloy 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   VBMT110304-LP
		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   VBMT110304-LM
		NEW 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   VBMT110304-LS
		SV 	**Alternative chipbreaker 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   VBMT110304-SV

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
					VBMT_FP  A167			FP 
					VBMT_FM  A167			FM 
					VBMT_FV  A167			FV 
					VBGT_R/L-F  A167	WBGT_R/L-F  A175		R/L-F 
					VBMT_LP  A167			LP 
					VBMT_LM  A167			LM 
					VBMT_LS NEW  A168			NEW LS 
					VBMT_SV  A168			SV 

CLASSIFICATION

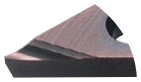
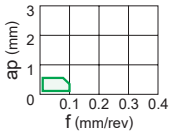
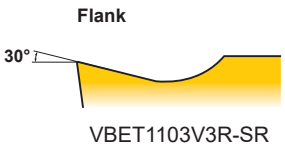
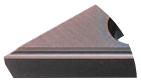
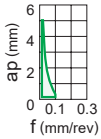
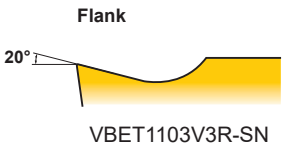
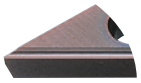
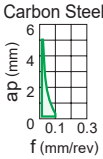
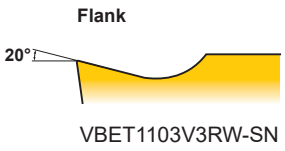
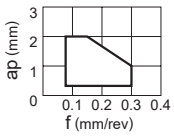
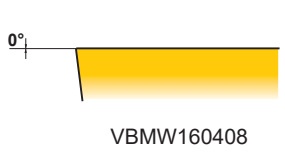
5° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M	**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 depth of cut.	Carbon Steel • Alloy Steel   VBMT160404-MP
		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 depth of cut.	Stainless Steel   VBMT160404-MM
		MK 	**First recommendation for medium cutting of cast iron** Optimum balance between sharpness and high edge strength for general use.	Cast Iron   VBMT160404-MK
		NEW **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 depth of cut.	Difficult-to-Cut Materials   VBMT160404-MS
		Standard 	**Alternative chipbreaker 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   VBMT160404
		MV 	**Alternative chipbreaker 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   VBMT160404-MV
		R/L-MV 	**Alternative chipbreaker 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   WBMTL30204R-MV

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
					VBMT_MP  A168			MP 
					VBMT_MM  A168			MM 
					VBMT_MK  A168			MK 
					NEW VBMT_MS  A168			NEW MS 
					VBMT  A168			Standard 
					VBMT_MV  A169			MV 
						WBMT_R/L-MV  A175		R/L-MV 

CLASSIFICATION

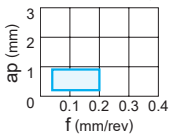
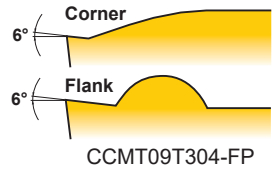
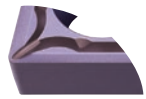
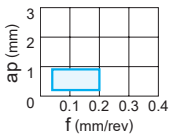
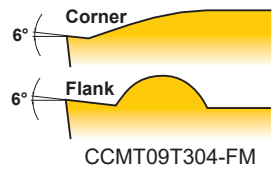
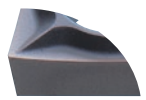
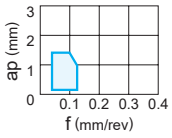
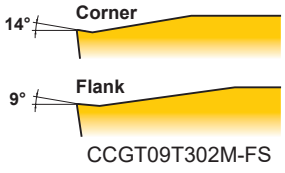
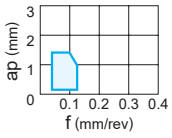
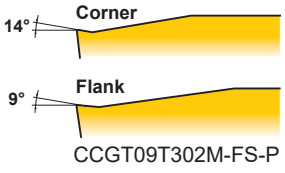
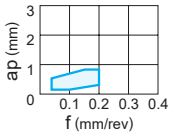
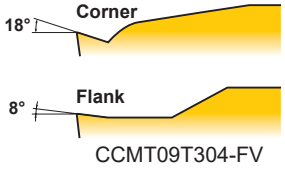
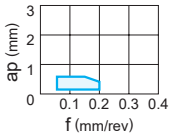
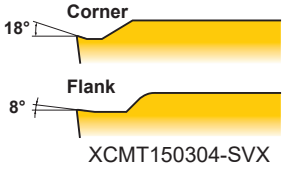
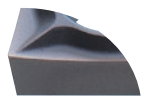
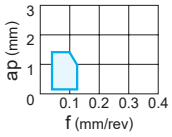
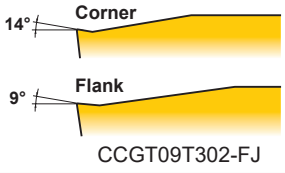
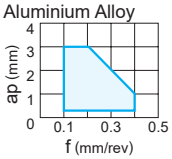
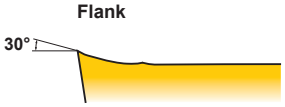
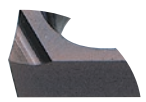
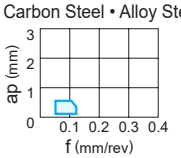
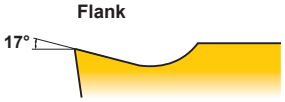
5° POSITIVE INSERTS WITH HOLE

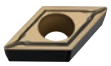
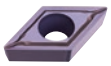
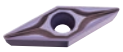
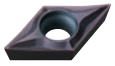
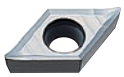
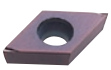
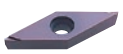
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	E	**R/L-SR** 	**Chipbreaker for Medium cutting of automatic lathe machining** A wide lead chipbreaker. Insert designed for low resistance chip control.	Carbon Steel • Alloy Steel   VBET1103V3R-SR
		R/L-SN 	**Chipbreaker for Medium cutting of automatic lathe machining** A parallel chipbreaker. Excellent chip control for low to medium feed rates.	Carbon Steel • Alloy Steel   VBET1103V3R-SN
		R/LW-SN 	**Chipbreaker for Medium cutting of automatic lathe machining** A parallel chipbreaker. Excellent chip control for low to medium feed rates. The wiper produces good cutting surface.	Carbon Steel • Alloy Steel   VBET1103V3RW-SN
For Cast Iron	M	**Flat Top** 	**Chipbreaker for Heavy cutting of cast iron** Flat top. Most effective for unstable machining due to its high edge strength.	Cast Iron   VBMW160408

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
					VBET_R/L-SR  A169			R/L-SR 
					VBET_R/L-SN  A169			R/L-SN 
					VBET_R/LW-SN  A169			R/LW-SN 
					VBMW  A169			Flat Top 

CLASSIFICATION

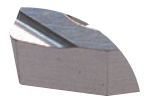
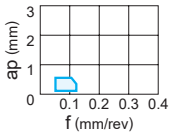
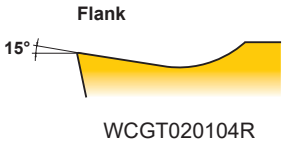
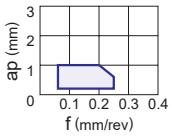
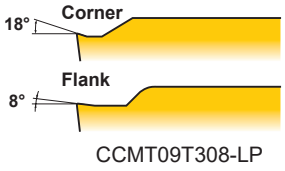
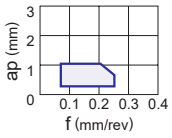
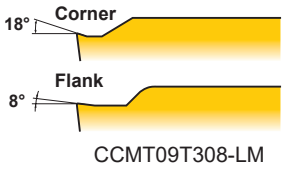
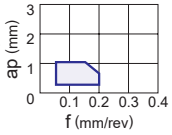
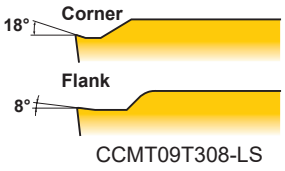
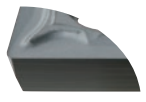
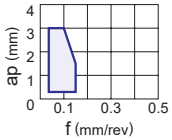
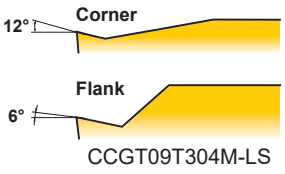
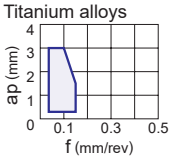
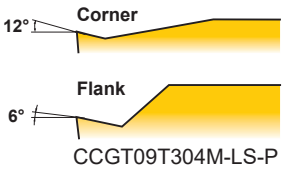
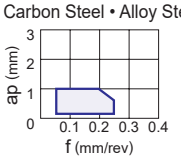
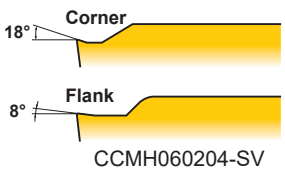
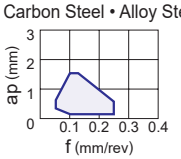
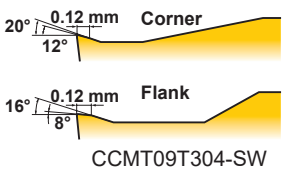
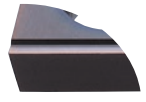
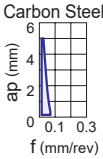
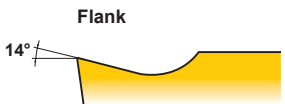
7° POSITIVE INSERTS WITH HOLE

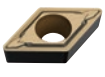
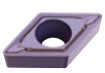
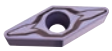
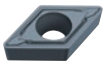
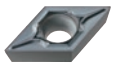
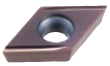
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M	FP 	**First recommendation for finishing carbon steel, alloy steel and mild steel** Breaker protrusion at the corner tip controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	Carbon Steel • Alloy Steel   CCMT09T304-FP
		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   CCMT09T304-FM
	G	NEW FS 	**First recommendation for finishing difficult-to-cut materials** Ideal for heat-resistant alloy, titanium alloy and Cobalt chromium alloy. The sharp edge produces a good surface finish. The curved edge allows smooth chip discharge.	Difficult-to-Cut Materials   CCGT09T302M-FS
		NEW FS-P 	**First recommendation for finishing titanium alloys** Ideal for Cobalt chromium alloy and Copper alloy. 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 alloys   CCGT09T302M-FS-P
	M	FV 	**Alternative chipbreaker 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   CCMT09T304-FV
		SVX 	**Alternative chipbreaker 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   XCMT150304-SVX
	G	FJ 	**Alternative chipbreaker for finishing difficult-to-cut materials** Ideal for heat-resistant alloy and titanium alloy. The sharp edge produces a good surface finish. The curved edge allows smooth chip discharge.	Difficult-to-Cut Materials   CCGT09T302-FJ
		AZ 	**Chipbreaker 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.	Aluminium Alloy   DCGT11T304-AZ
		R/L-F 	**Chipbreaker for finishing** Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel   CCGT03S102L-F

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round	Breaker Name and Cross Section
	CCMT_FP  A140	DCMT_FP  A149	SCMT_FP  A157	TCMT_FP  A160	VCMT_FP  A170				FP 
	CCMT_FM  A140	DCMT_FM  A149	SCMT_FM  A157	TCMT_FM  A160	VCMT_FM  A170				FM 
	CCGT_FS NEW  A140	DCGT_FS NEW  A149							NEW FS 
	CCGT_FS-P NEW  A140	DCGT_FS-P NEW  A149							NEW FS-P 
	CCMT_FV  A140	DCMT_FV  A149	SCMT_FV  A157	TCMT_FV  A160	VCMT_FV  A170				FV 
							XCMT_SVX  A178		SVX 
	CCGT_FJ  A140								FJ 
	CCGT_AZ  A141	DCGT_AZ  A149		TCGT_AZ  A160	VCGT_AZ  A170			RCGT_AZ  A156	AZ 
	CCGT_L-F CCGH_R/L-F  A141	DCGT_R/L-F  A150		TCGT_R/L-F  A160	VCGT_R/L-F  A170				R/L-F 

CLASSIFICATION

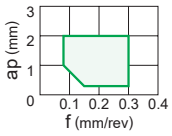
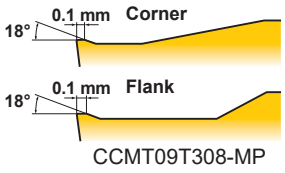
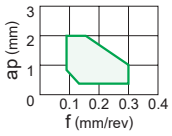
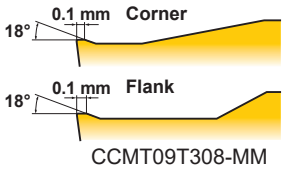
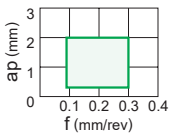
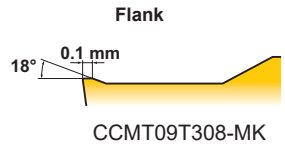
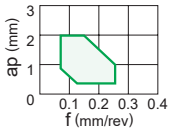
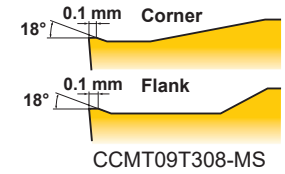
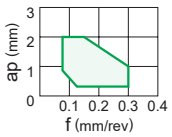
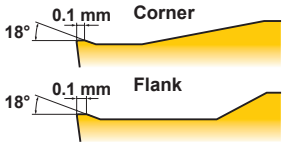
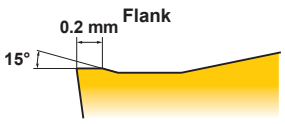
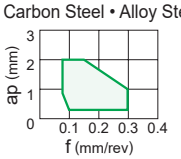
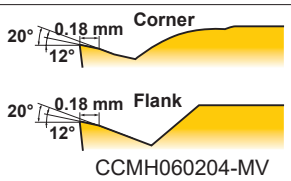
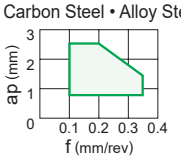
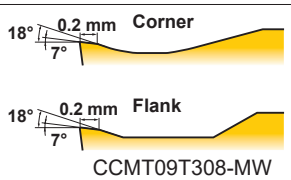
7° POSITIVE INSERTS WITH HOLE

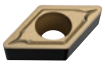
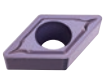
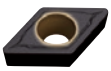
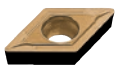
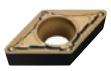
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	G	R/L 	**Chipbreaker for finishing** Lead chipbreaker. Excellent chip control at low feed rates.	Carbon Steel • Alloy Steel   WCGT020104R
Light Cutting	M	LP 	**First recommendation for light cutting of carbon 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   CCMT09T308-LP
		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   CCMT09T308-LM
		NEW 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   CCMT09T308-LS
	G	NEW LS 	**First recommendation for light cutting of difficult-to-cut materials** Ideal for heat-resistant alloy, titanium alloy and Cobalt chromium alloy. Parallel cutting edge. Achieves stable chip control in a wide range of areas from low to medium depth of cuts.	Difficult-to-Cut Materials   CCGT09T304M-LS
		NEW LS-P 	**First recommendation for light cutting of titanium alloys** Ideal for Cobalt chromium alloy and Copper alloy. Parallel cutting edge. Achieves stable chip control in a wide range of areas from low to medium depth of cuts. Lapping of the top surface gives a mirror finish for improved welding resistance.	Titanium alloys   CCGT09T304M-LS-P
	M	SV 	**Alternative chipbreaker 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   CCMH060204-SV
		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   CCMT09T304-SW
	G	R/L-SS 	**Chipbreaker for light cutting of automatic lathe machining** A parallel chipbreaker. Excellent chip control at low feed rates.	Carbon Steel • Alloy Steel   CCGT09T302R-SS

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round	Breaker Name and Cross Section
						WCGT_R/L  A176			R/L 
	CCMT_LP  A141	DCMT_LP  A150	SCMT_LP  A157	TCMT_LP  A161	VCMT_LP  A170				LP 
	CCMT_LM  A142	DCMT_LM  A150	SCMT_LM  A157	TCMT_LM  A161	VCMT_LM  A170				LM 
	CCMT_LS NEW  A142	DCMT_LS NEW  A150		TCMT_LS NEW  A161	VCMT_LS NEW  A171				NEW LS(M) 
	CCGT_LS NEW  A142	DCGT_LS NEW  A150			VCGT_LS NEW  A171				NEW LS(G) 
	CCGT_LS-P NEW  A142	DCGT_LS-P NEW  A150			VCGT_LS-P NEW  A171				NEW LS-P 
	CCMH_SV  A142	DCMT_SV  A151			VCMT_SV  A171				SV 
	CCMT_SW  A142								SW 
	CCGT_R/L-SS  A143	DCGT_R/L-SS  A151							R/L-SS 

CLASSIFICATION

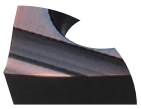
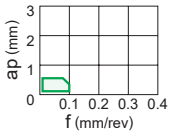
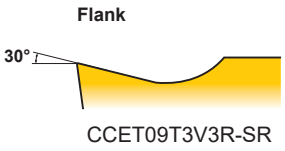
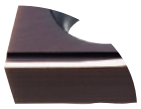
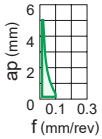
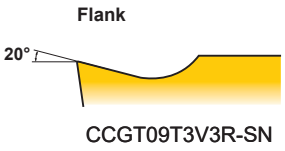
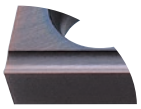
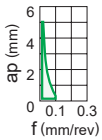
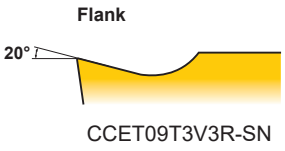
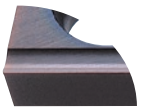
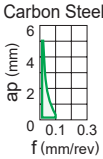
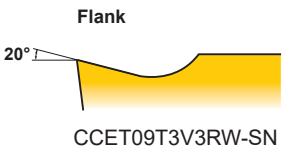
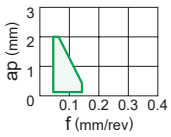
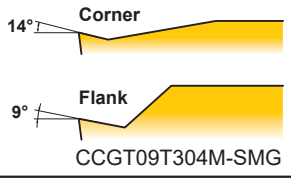
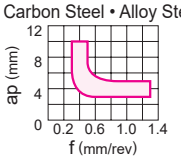
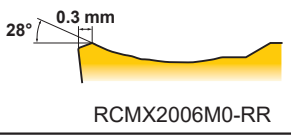
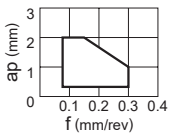
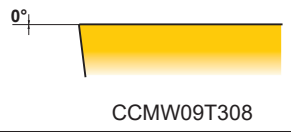
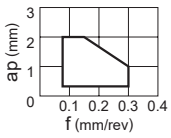
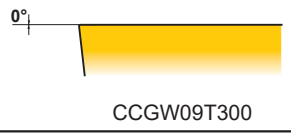
7° POSITIVE INSERTS WITH HOLE

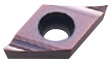
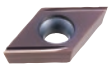
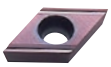
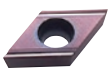
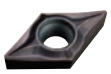
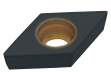
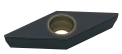
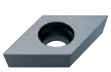
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M	**MP** 	**First recommendation for medium cutting of carbon steel, alloy steel and mild steel** Good balance of wear resistance and fracture resistance because of the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depth of cut.	Carbon Steel • Alloy Steel   CCMT09T308-MP
		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 depth of cut.	Stainless Steel   CCMT09T308-MM
		MK 	**First recommendation for medium cutting of cast iron** Optimum balance between sharpness and high edge strength for general use.	Cast Iron   CCMT09T308-MK
		NEW **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 depth of cut.	Difficult-to-Cut Materials   CCMT09T308-MS
		Standard 	**Alternative chipbreaker 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.	Carbon Steel • Alloy Steel   CCMT09T308  RCMX1204M0
		MV 	**Alternative chipbreaker 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.	Carbon Steel • Alloy Steel   CCMH060204-MV
		MW 	**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.	Carbon Steel • Alloy Steel   CCMT09T308-MW

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round	Breaker Name and Cross Section
	CCMT_MP  A143	DCMT_MP  A151	SCMT_MP  A157	TCMT_MP  A161	VCMT_MP  A171				MP 
	CCMT_MM  A143	DCMT_MM  A151	SCMT_MM  A157	TCMT_MM  A161	VCMT_MM  A171				MM 
	CCMT_MK  A143	DCMT_MK  A151	SCMT_MK  A158	TCMT_MK  A161	VCMT_MK  A171				MK 
	CCMT_MS NEW  A144	DCMT_MS NEW  A152	SCMT_MS NEW  A158	TCMT_MS NEW  A161	VCMT_MS NEW  A171				NEW MS 
	CCMT  A144	DCMT  A152	SCMT  A158	TCMT  A162	VCMT  A172	WCMT  A176		RCMT  A156	Standard
								RCMX  A156	
	CCMH_MV  A144	DCMT_MV  A152			VCMT_MV  A172				MV 
	CCMT_MW  A144								MW 

CLASSIFICATION

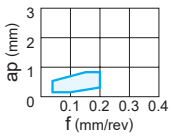
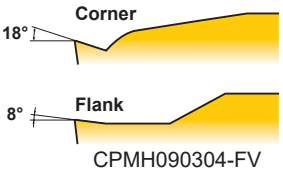
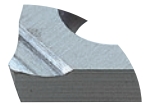
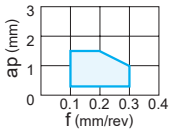
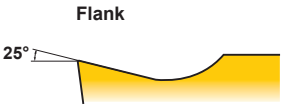
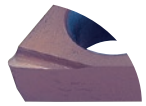
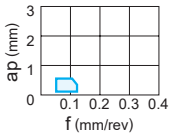
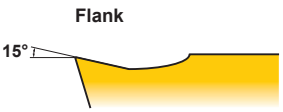
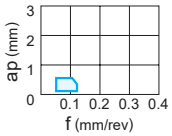
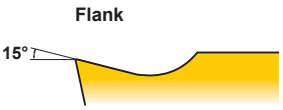
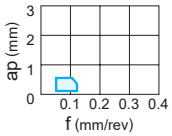
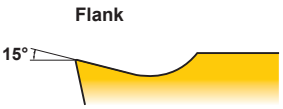
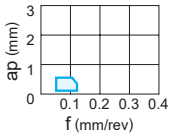
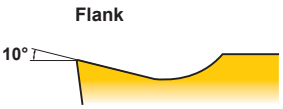
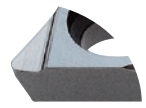
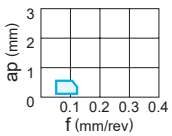
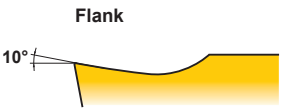
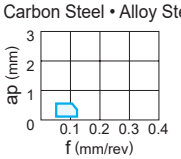
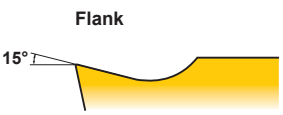
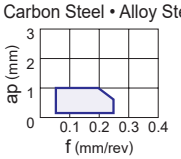
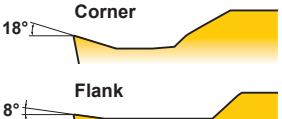
7° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	E	R/L-SR 	**Chipbreaker for medium cutting of automatic lathe machining** A wide lead chipbreaker. Insert designed for low resistance chip control.	Carbon Steel • Alloy Steel   CCET09T3V3R-SR
	G	R/L-SN 	**Chipbreaker for medium cutting of automatic lathe machining** A parallel chipbreaker. Excellent chip control at low to medium feed rates.	Carbon Steel • Alloy Steel   CCGT09T3V3R-SN
	E	R/L-SN 	**Chipbreaker for medium cutting of automatic lathe machining** A parallel chipbreaker. Excellent chip control at low to medium feed rates. Suitable for precise machining with E class tolerance.	Carbon Steel • Alloy Steel   CCET09T3V3R-SN
		R/LW-SN 	**Chipbreaker for medium cutting of automatic lathe machining** A parallel chipbreaker. Excellent chip control at low to medium feed rates. The wiper produces a good surface finish.	Carbon Steel • Alloy Steel   CCET09T3V3RW-SN
	G	SMG 	**Chipbreaker for medium cutting of automatic lathe machining** 3D moulded chipbreaker 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   CCGT09T304M-SMG
Heavy Cutting	M	RR 	**Chipbreaker for heavy cutting of carbon steel and alloy steel** A wide groove chipbreaker prevents chips from jamming at large depths of cut. Small dimples improve chip control at small depths of cut.	Carbon Steel • Alloy Steel   RCMX2006M0-RR
For Cast Iron	M	Flat Top 	**Chipbreaker for heavy cutting of cast iron** Flat top. Most effective for unstable machining due to its high edge strength.	Cast Iron   CCMW09T308
	G	Flat Top 	**Chipbreaker 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   CCGW09T300

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round	Breaker Name and Cross Section
	CCET_R/L-SR  A145	DCET_R/L-SR  A152							R/L-SR 
	CCGT_R/L-SN  A145	DCGT_R/L-SN  A153							R/L-SN(G) 
	CCET_R/L-SN  A146	DCET_R/L-SN  A153							R/L-SN(E) 
	CCET_R/LW-SN  A146	DCET_R/LW-SN  A154							R/LW-SN 
	CCGT_SMG  A146	DCGT_SMG  A154							SMG 
								RCMX_RR  A156	RR 
	CCMW  A147	DCMW  A154	SCMW  A158	TCMW  A162	VCMW  A172				Flat Top(M) 
	CCGW  A147	DCGW  A154							Flat Top(G) 

CLASSIFICATION

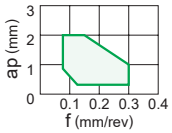
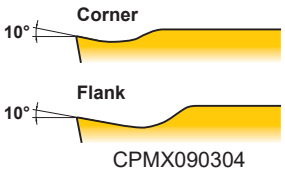
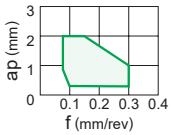
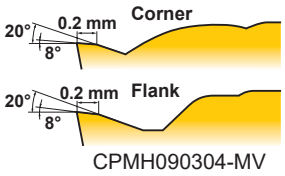
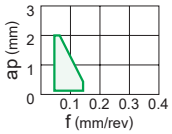
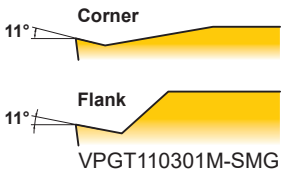
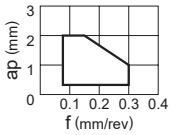
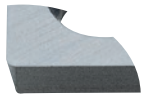
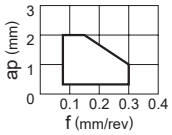
11° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M	**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   CPMH090304-FV
	G	**Standard** 	**Chipbreaker for finishing** Lead chipbreaker controls chip flow. Good chip control for low to medium feed rates.	Aluminium Alloy   CPGT090304
		R/L-FS 	**Chipbreaker for finishing carbon steel, alloy steel, stainless steel, cast iron and aluminium alloy** Small wide lead chipbreaker. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel   TPGH090204R-FS
	M	**R/L-F** 	**Chipbreaker for finishing** Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel   CPMH090304R-F
	G	**R/L-F** 	**Chipbreaker for finishing** Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel   CPGT090304R-F
		R/L 	**Chipbreaker for finishing** Lead chipbreaker controls chip flow. Good chip control for low to medium feed rates.	Carbon Steel • Alloy Steel   TPGX090204R
	M	**L** 	**Chipbreaker for finishing** Lead chipbreaker controls chip flow. Good chip control for low to medium feed rates.	Carbon Steel • Alloy Steel   TPMX090204L
	E	**SRF** 	**Chipbreaker for finishing** Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel   VPET080201R-SRF
Light Cutting	M	**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   CPMH090304-SV

Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
CPMH_FV  A148			TPMH_FV  A164				FV 
CPGT  A148							Standard 
			TPGH_R/L-FS  A164		WPGT_R/L-FS  A177		R/L-FS 
CPMH_R/L-F  A148							R/L-F(M) 
CPGT_R/L-F  A148							R/L-F(G) 
			TPGX_R/L  A165				R/L 
			TPMX_L  A165				L 
				VPET_R/L-SRF  A174			SRF 
CPMH_SV  A148			TPMH_SV  A165				SV 

CLASSIFICATION

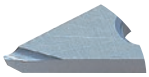
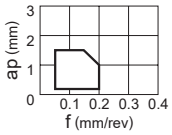
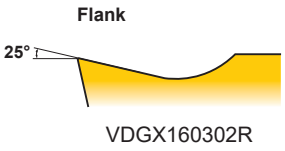
11° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M	**Standard** 	**Alternative chipbreaker for medium cutting of carbon steel, alloy steel and stainless steel** Standard, general purpose chipbreaker.	Carbon Steel • Alloy Steel   CPMX090304
	M	**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   CPMH090304-MV
	G	**SMG** 	**Chipbreaker for medium cutting of automatic lathe machining** 3D moulded chipbreaker 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   VPGT110301M-SMG
For Cast Iron	M	**Flat Top** 	**Chipbreaker for Heavy cutting of cast iron** Flat top. Most effective for unstable machining due to its high edge strength.	Cast Iron   SPMW120308
	G	**Flat Top** 	**Chipbreaker 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   SPGX120308

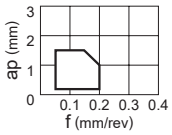
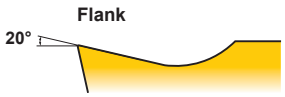
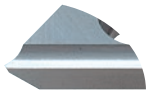
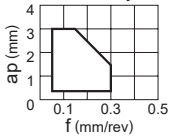
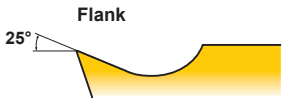
	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CPMX  A148		**SPMT**  A159	**TPMX**  A165				**Standard** 
	CPMH_MV  A148			**TPMH_MV**  A165		**WPMT_MV**  A177		**MV** 
					VPGT_SMG  A174			**SMG** 
			SPMW  A159					**Flat Top(M)** 
			SPGX  A159	**TPGX**  A166				**Flat Top(G)** 

CLASSIFICATION

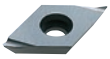
15° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Aluminium Alloy	G	R/L 	**Chipbreaker for aluminium alloy cutting** Lead chipbreaker. Sharp cutting edge gives a good surface finish.	Aluminium Alloy   VDGX160302R

20° POSITIVE INSERTS WITH HOLE

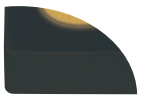
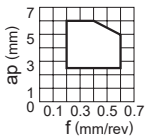
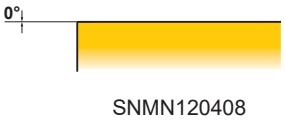
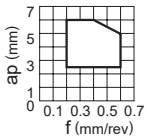
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Aluminium Alloy	G	R/L-F 	**Chipbreaker for aluminium alloy cutting** Lead chipbreaker. Sharp cutting edge gives a good surface finish.	Aluminium Alloy   DEGX150402R-F
		R/L 	**Chipbreaker for aluminium alloy cutting** A parallel chipbreaker. Sharp cutting edge gives a good surface finish. Good chip control for medium feed rates.	Aluminium Alloy   DEGX150402R

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
					VDGX_R/L  A173			R/L 

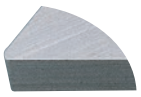
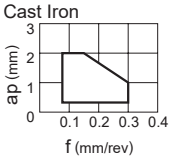
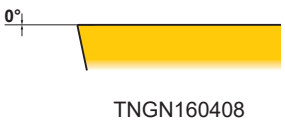
	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
		DEGX_R/L-F  A155						R/L-F 
		DEGX_R/L  A155		TEGX_R/L  A163				R/L 

CLASSIFICATION

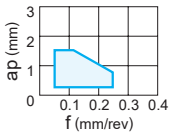
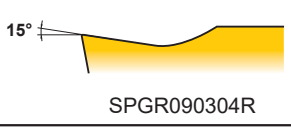
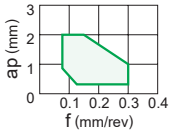
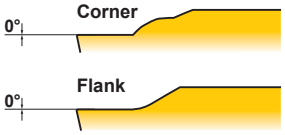
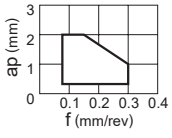
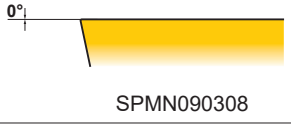
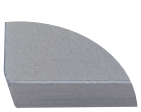
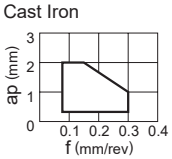
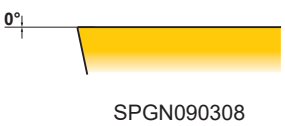
NEGATIVE INSERTS WITHOUT HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Cast Iron	M	Flat Top 	**Chipbreaker for heavy cutting of cast iron** Flat top. Most effective for unstable machining due to high edge strength and stable insert clamping.	Cast Iron   SNMN120408
	G	Flat Top 	**Chipbreaker 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   SNGN120408

7° POSITIVE INSERTS WITHOUT HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Cast Iron	G	Flat Top 	**Chipbreaker 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   TNGN160408

11° POSITIVE INSERTS WITHOUT HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	G	R/L 	**Chipbreaker for finishing** A parallel chipbreaker. Good chip control for low to medium feed rates.	Carbon Steel • Alloy Steel   SPGR090304R
Light to Medium Cutting	M	Standard 	**Chipbreaker for light to medium cutting of carbon steel, alloy steel and stainless steel** Standard, general purpose chipbreaker.	Carbon Steel • Alloy Steel   SPMR090308
For Cast Iron	M	Flat Top 	**Chipbreaker for heavy cutting of cast iron** Flat top. Most effective for unstable machining due to high edge strength and stable insert clamping.	Cast Iron   SPMN090308
	G	Flat Top 	**Chipbreaker 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   SPGN090308

SPECIAL PURPOSE INSERTS

Application	Tolerance	Tool Holder Type	Inserts
Special	G	TL Type	RTG  A179

	Rhombic 80°	Square 90°	Triangular 60°	Breaker Name and Cross Section
	CNMN  A137	SNMN  A138	TNMN  A139	Flat Top(M) 
		SNGN  A138	TNGN  A139	Flat Top(G) 

	Rhombic 80°	Square 90°	Triangular 60°	Breaker Name and Cross Section
			TCGN  A181	Flat Top 

	Rhombic 80°	Square 90°	Triangular 60°	Breaker Name and Cross Section
		SPGR_R  A180	TPGR_R/L  A182	R/L 
		SPMR  A180	TPMR  A182	Standard 
		SPMN  A180	TPMN  A182	Flat Top(M) 
		SPGN  A180	TPGN  A182	Flat Top(G) 

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
P									
Mild Steel (ASTM A36, AISI 1010)	≤180HB	●	F	1	FY	VP25N	285—450	0.09—0.23	0.20—0.80
		●	F	2	FY	NX2525	270—385	0.09—0.23	0.20—0.80
		●	F	3	FS	NX2525	270—385	0.09—0.23	0.20—0.70
		●	L	1	SY	VP25N	260—410	0.16—0.33	0.50—1.20
		●	L	2	SY	NX2525	245—350	0.16—0.33	0.50—1.20
		◐	F	1	FY	MP3025	275—425	0.09—0.23	0.20—0.80
		◐	F	2	FY	NX3035	260—370	0.09—0.23	0.20—0.80
		◐	F	3	FS	NX2525	270—385	0.09—0.23	0.20—0.70
		◐	L	1	SY	MP3025	255—385	0.16—0.33	0.50—1.20
		◐	L	2	SY	NX3035	240—340	0.16—0.33	0.50—1.20
		✣	F	1	FY	UE6020	285—465	0.09—0.23	0.20—0.80
		✣	F	2	FS	UE6020	285—465	0.09—0.23	0.20—0.70
		✣	L	1	SY	UE6020	260—425	0.16—0.33	0.50—1.20
Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB	●	F	1	FP	NX2525	210—300	0.08—0.25	0.10—1.00
		●	F	2	FH	AP25N	220—345	0.08—0.20	0.20—1.00
		●	F	3	FH	NX2525	210—300	0.08—0.20	0.20—1.00
		●	F	4	R/L-F	MP3025	215—330	0.05—0.15	0.10—0.50
		●	F	5	PK	NX2525	200—285	0.10—0.30	0.20—1.00
		●	L	1	LP	MC6015	210—360	0.10—0.40	0.30—2.00
		●	L	2	LP	UE6105	225—410	0.10—0.40	0.30—2.00
		●	L	3	SH	UE6105	225—410	0.10—0.40	0.30—2.00
		●	L	4	LP	MP3025	195—300	0.10—0.40	0.30—2.00
		●	L	5	SH	AP25N	200—315	0.10—0.40	0.30—2.00
		●	L	6	SH	NX2525	190—275	0.10—0.40	0.30—2.00
		●	L	7	SA	UE6105	225—410	0.10—0.40	0.30—2.00
		●	L	8	SA	NX2525	190—275	0.10—0.40	0.30—2.00
		●	L	9	SW	UE6105	225—410	0.10—0.50	0.30—2.50
		●	L	10	SW	MP3025	195—300	0.10—0.50	0.30—2.50
		●	L	11	SW	NX2525	190—275	0.10—0.50	0.30—2.50
		●	L	12	R/L-K	MP3025	195—300	0.08—0.20	0.30—1.20
		●	M	1	MP	MC6015	195—330	0.16—0.50	0.30—4.00
		●	M	2	MP	UE6105	205—375	0.16—0.50	0.30—4.00
		●	M	3	MP	MP3025	180—275	0.16—0.50	0.30—4.00
		●	M	4	MA	UE6105	205—375	0.20—0.50	0.30—4.00
		●	M	5	MH	UE6105	205—375	0.20—0.55	1.00—4.00
		●	M	6	Std	UE6105	205—375	0.25—0.60	1.50—5.00
		●	M	7	Std	MP3025	180—275	0.25—0.60	1.50—5.00
		●	M	8	Std	NX2525	175—250	0.25—0.60	1.50—5.00
		●	M	9	Std	UTi20T	90—130	0.25—0.60	1.50—5.00
		●	M	10	MW	UE6105	205—375	0.20—0.60	0.90—4.00
		●	M	11	R/L	MP3025	180—275	0.15—0.32	0.40—2.00
		●	R	1	RP	MC6015	185—310	0.25—0.60	1.50—6.00
		●	R	2	RP	UE6105	190—355	0.25—0.60	1.50—6.00
		●	R	3	GH	UE6105	190—355	0.25—0.60	1.50—6.00
		●	H	1	HX	MC6025	165—265	0.50—1.26	3.00—11.00
		●	H	2	HX	UE6110	165—280	0.50—1.26	3.00—11.00
		●	H	3	HV	MC6025	135—220	0.70—1.30	4.00—12.00

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
P									
Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB	●	H	4	HV	UE6110	135—230	0.70—1.30	4.00—12.00
		●	H	5	HZ	MC6025	165—265	0.40—1.20	2.00—10.00
		●	H	6	HZ	UE6110	165—280	0.40—1.20	2.00—10.00
		●	H	7	HL	MC6025	165—265	0.40—1.00	1.50—8.00
		●	H	8	HM	MC6025	165—265	0.50—1.10	2.00—10.00
		◐	F	1	FP	MP3025	215—330	0.08—0.25	0.10—1.00
		◐	F	2	FH	MP3025	215—330	0.08—0.20	0.20—1.00
		◐	F	3	FH	NX3035	200—285	0.08—0.20	0.20—1.00
		◐	F	4	FH	UE6110	230—395	0.08—0.20	0.20—1.00
		◐	L	1	LP	MC6015	210—360	0.10—0.40	0.30—2.00
		◐	L	2	SH	MC6015	210—360	0.10—0.40	0.30—2.00
		◐	L	3	SA	MC6015	210—360	0.10—0.40	0.30—2.00
		◐	L	4	LP	UE6110	210—360	0.10—0.40	0.30—2.00
		◐	L	5	SH	UE6110	210—360	0.10—0.40	0.30—2.00
		◐	L	6	SA	UE6110	210—360	0.10—0.40	0.30—2.00
		◐	L	7	LP	MP3025	195—300	0.10—0.40	0.30—2.00
		◐	L	8	SH	NX3035	185—260	0.10—0.40	0.30—2.00
		◐	L	9	SA	NX3035	185—260	0.10—0.40	0.30—2.00
		◐	L	10	SW	MC6015	210—360	0.10—0.50	0.30—2.50
		◐	L	11	SW	UE6110	210—360	0.10—0.50	0.30—2.50
		◐	L	12	SW	NX3035	185—260	0.10—0.50	0.30—2.50
		◐	M	1	MP	MC6015	195—330	0.16—0.50	0.30—4.00
		◐	M	2	MA	MC6015	195—330	0.20—0.50	0.30—4.00
		◐	M	3	MH	MC6015	195—330	0.20—0.55	1.00—4.00
		◐	M	4	Std	MC6015	195—330	0.25—0.60	1.50—5.00
		◐	M	5	MP	UE6110	195—330	0.16—0.50	0.30—4.00
		◐	M	6	MA	UE6110	195—330	0.20—0.50	0.30—4.00
		◐	M	7	MA	NX3035	170—240	0.20—0.50	0.30—4.00
		◐	M	8	MH	UE6110	195—330	0.20—0.55	1.00—4.00
		◐	M	9	Std	UE6110	195—330	0.25—0.60	1.50—5.00
		◐	M	10	Std	NX3035	170—240	0.25—0.60	1.50—5.00
		◐	M	11	MW	MC6015	195—330	0.20—0.60	0.90—4.00
		◐	M	12	MW	UE6110	195—330	0.20—0.60	0.90—4.00
		◐	R	1	RP	MC6015	185—310	0.25—0.60	1.50—6.00
		◐	R	2	RP	UE6110	185—310	0.25—0.60	1.50—6.00
		◐	R	3	GH	UE6110	185—310	0.25—0.60	1.50—6.00
		◐	H	1	HX	MC6025	165—265	0.50—1.26	3.00—11.00
		◐	H	2	HX	UE6020	155—255	0.50—1.26	3.00—11.00
		◐	H	3	HV	MC6025	135—220	0.70—1.30	4.00—12.00
		◐	H	4	HV	UE6020	125—210	0.70—1.30	4.00—12.00
		◐	H	5	HZ	MC6025	165—265	0.40—1.20	2.00—10.00
		◐	H	6	HL	MC6025	165—265	0.40—1.00	1.50—8.00
		◐	H	7	HM	MC6025	165—265	0.50—1.10	2.00—10.00
		◐	H	8	HR	MC6025	135—220	0.70—1.30	3.00—12.00
		◐	H	9	HZ	UE6110	165—280	0.40—1.20	2.00—10.00
		◐	H	10	HAS	UE6020	155—255	0.40—1.10	2.00—9.00
		✣	F	1	FP	MC6025	230—375	0.08—0.25	0.10—1.00

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
P									
Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB		**F**	2	**FP**	**MC6015**	230—395	0.08—0.25	0.10—1.00
			F	3	**FH**	**UE6110**	230—395	0.08—0.20	0.20—1.00
			F	4	**FH**	**UE6020**	220—360	0.08—0.20	0.20—1.00
			L	1	**LP**	**MC6025**	210—345	0.10—0.40	0.30—2.00
			L	2	**LP**	**MC6035**	185—260	0.10—0.40	0.30—2.00
			L	3	**SH**	**MC6025**	210—345	0.10—0.40	0.30—2.00
			L	4	**SA**	**MC6025**	210—345	0.10—0.40	0.30—2.00
			L	5	**SH**	**UE6020**	200—330	0.10—0.40	0.30—2.00
			L	6	**SA**	**UE6020**	200—330	0.10—0.40	0.30—2.00
			M	1	**MP**	**MC6025**	195—315	0.16—0.50	0.30—4.00
			M	2	**MP**	**MC6035**	170—240	0.16—0.50	0.30—4.00
			M	3	**MP**	**UE6020**	185—300	0.16—0.50	0.30—4.00
			M	4	**MA**	**MC6025**	195—315	0.20—0.50	0.30—4.00
			M	5	**MA**	**MC6035**	170—240	0.20—0.50	0.30—4.00
			M	6	**MA**	**UE6020**	185—300	0.20—0.50	0.30—4.00
			M	7	**MH**	**MC6025**	195—315	0.20—0.55	1.00—4.00
			M	8	**MH**	**MC6035**	170—240	0.20—0.55	1.00—4.00
			M	9	**MH**	**UE6020**	185—300	0.20—0.55	1.00—4.00
			M	10	**Std**	**MC6025**	195—315	0.25—0.60	1.50—5.00
			M	11	**Std**	**MC6035**	170—240	0.25—0.60	1.50—5.00
			M	12	**Std**	**UE6020**	185—300	0.25—0.60	1.50—5.00
			M	13	**MW**	**MC6025**	195—315	0.20—0.60	0.90—4.00
			M	14	**MW**	**UE6020**	185—300	0.20—0.60	0.90—4.00
			R	1	**RP**	**MC6025**	185—295	0.25—0.60	1.50—6.00
			R	2	**RP**	**MC6035**	160—225	0.25—0.60	1.50—6.00
			R	3	**GH**	**UE6020**	175—285	0.25—0.60	1.50—6.00
			H	1	**HX**	**MC6035**	140—200	0.50—1.26	3.00—11.00
			H	2	**HX**	**UH6400**	140—195	0.50—1.26	3.00—11.00
			H	3	**HV**	**MC6035**	115—165	0.70—1.30	4.00—12.00
			H	4	**HV**	**UH6400**	115—160	0.70—1.30	4.00—12.00
			H	5	**HZ**	**UE6020**	155—255	0.40—1.20	2.00—10.00
			H	6	**HZ**	**MC6035**	140—200	0.40—1.20	2.00—10.00
			H	7	**HZ**	**UH6400**	140—195	0.40—1.20	2.00—10.00
			H	8	**HL**	**MC6035**	140—200	0.40—1.00	1.50—8.00
			H	9	**HM**	**MC6035**	140—200	0.50—1.10	2.00—10.00
			H	10	**HR**	**MC6035**	115—165	0.70—1.30	3.00—12.00
			H	11	**HAS**	**UH6400**	140—195	0.40—1.10	2.00—9.00

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
M									
Austenitic Stainless Steel (AISI 304, AISI 316)	≤200HB	●	L	1	LM	MC7015	180—285	0.10—0.30	0.30—2.00
		●	L	2	SH	US735	95—185	0.10—0.40	0.30—2.00
		●	L	3	SH	NX2525	65—135	0.10—0.40	0.30—2.00
		●	L	4	SW	US7020	110—275	0.10—0.50	0.30—2.50
		●	M	1	MM	MC7015	165—260	0.15—0.45	0.70—5.00
		●	M	2	GM	MC7015	165—260	0.16—0.50	0.50—4.00
		●	M	3	MS	US7020	100—250	0.16—0.50	0.50—4.00
		●	M	4	MA	US7020	100—250	0.20—0.50	0.30—4.00
		●	M	5	MH	US7020	100—250	0.20—0.55	1.00—4.00
		●	M	6	MW	US7020	100—250	0.20—0.60	0.90—4.00
		●	R	1	RM	MC7015	155—245	0.25—0.55	1.50—6.00
		●	R	2	GH	US7020	95—235	0.25—0.60	1.50—6.00
		●	H	1	HL	US735	75—140	0.40—1.00	1.50—8.00
		●	H	2	HL	US735	75—140	0.40—1.00	1.50—8.00
		●	H	3	GH	US7020	95—235	0.25—0.60	1.50—6.00
		◐	L	1	LM	MC7025	165—220	0.10—0.30	0.30—2.00
		◐	L	2	SH	US735	95—185	0.10—0.40	0.30—2.00
		◐	M	1	MM	MC7025	150—200	0.15—0.45	0.70—5.00
		◐	M	2	GM	MC7025	150—200	0.16—0.50	0.50—4.00
		◐	M	3	MA	MC7025	150—200	0.20—0.50	0.30—4.00
		◐	M	4	MS	US735	90—170	0.16—0.50	0.50—4.00
		◐	M	5	MA	US735	90—170	0.20—0.50	0.30—4.00
		◐	R	1	RM	MC7025	140—190	0.25—0.55	1.50—6.00
		◐	R	2	GH	US735	85—160	0.25—0.60	1.50—6.00
		◐	H	1	HL	US735	75—140	0.40—1.00	1.50—8.00
		◐	H	2	HM	US735	75—140	0.50—1.10	2.00—10.00
		✣	L	1	LM	MP7035	95—155	0.10—0.30	0.30—2.00
		✣	L	2	SH	US735	95—185	0.10—0.40	0.30—2.00
		✣	M	1	MM	MP7035	90—145	0.15—0.45	0.70—5.00
		✣	M	2	GM	MP7035	90—145	0.16—0.50	0.50—4.00
		✣	M	3	MA	MP7035	90—145	0.20—0.50	0.30—4.00
		✣	M	4	MS	US735	90—170	0.16—0.50	0.50—4.00
		✣	M	5	MS	VP15TF	80—135	0.16—0.50	0.50—4.00
		✣	M	6	MS	UP20M	100—150	0.16—0.50	0.50—4.00
		✣	M	7	MS	UTi20T	80—115	0.16—0.50	0.50—4.00
		✣	M	8	MA	VP15TF	80—135	0.20—0.50	0.30—4.00
		✣	M	9	Std	VP15TF	80—135	0.25—0.60	1.50—5.00
		✣	R	1	RM	MP7035	85—135	0.25—0.55	1.50—6.00
		✣	R	2	GH	US735	85—160	0.25—0.60	1.50—6.00
		✣	H	1	HL	US735	75—140	0.40—1.00	1.50—8.00
		✣	H	2	HM	US735	75—140	0.50—1.10	2.00—10.00

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
M									
Austenitic Stainless Steel (AISI 304LN, AISI 316LN)	>200HB	●	L	1	LM	MC7015	150—240	0.10—0.30	0.30—2.00
		●	L	2	SH	US735	80—155	0.10—0.40	0.30—2.00
		●	L	3	SH	NX2525	55—115	0.10—0.40	0.30—2.00
		●	L	4	SW	US7020	90—230	0.10—0.50	0.30—2.50
		●	M	1	MM	MC7015	135—215	0.15—0.45	0.70—5.00
		●	M	2	GM	MC7015	135—215	0.16—0.50	0.50—4.00
		●	M	3	MS	US7020	80—210	0.16—0.50	0.50—4.00
		●	M	4	MA	US7020	80—210	0.20—0.50	0.30—4.00
		●	M	5	MH	US7020	80—210	0.20—0.55	1.00—4.00
		●	M	6	MW	US7020	80—210	0.20—0.60	0.90—4.00
		●	R	1	RM	MC7015	130—205	0.25—0.55	1.50—6.00
		●	R	2	GH	US7020	75—195	0.25—0.60	1.50—6.00
		●	H	1	HL	US735	60—120	0.40—1.00	1.50—8.00
		●	H	2	HM	US735	60—120	0.50—1.10	2.00—10.00
		◐	L	1	LM	MC7025	135—180	0.10—0.30	0.30—2.00
		◐	L	2	SH	US735	80—155	0.10—0.40	0.30—2.00
		◐	M	1	MM	MC7025	125—165	0.15—0.45	0.70—5.00
		◐	M	2	GM	MC7025	125—165	0.16—0.50	0.50—4.00
		◐	M	3	MA	MC7025	125—165	0.20—0.50	0.30—4.00
		◐	M	4	MS	US735	75—140	0.16—0.50	0.50—4.00
		◐	M	5	MA	US735	75—140	0.20—0.50	0.30—4.00
		◐	R	1	RM	MC7025	115—155	0.25—0.55	1.50—6.00
		◐	R	2	GH	US735	70—135	0.25—0.60	1.50—6.00
		◐	H	1	HL	US735	60—120	0.40—1.00	1.50—8.00
		◐	H	2	HM	US735	60—120	0.50—1.10	2.00—10.00
		✣	L	1	LM	MP7035	80—130	0.10—0.30	0.30—2.00
		✣	L	2	SH	US735	80—155	0.10—0.40	0.30—2.00
		✣	M	1	MM	MP7035	75—120	0.15—0.45	0.70—5.00
		✣	M	2	GM	MP7035	75—120	0.16—0.50	0.50—4.00
		✣	M	3	MA	MP7035	75—120	0.20—0.50	0.30—4.00
		✣	M	4	MS	US735	75—140	0.16—0.50	0.50—4.00
		✣	M	5	MS	VP15TF	65—110	0.16—0.50	0.50—4.00
		✣	M	6	MS	UP20M	80—125	0.16—0.50	0.50—4.00
		✣	M	7	MS	UTi20T	65—95	0.16—0.50	0.50—4.00
		✣	M	8	MA	VP15TF	65—110	0.20—0.50	0.30—4.00
		✣	M	9	Std	VP15TF	65—110	0.25—0.60	1.50—5.00
		✣	R	1	RM	MP7035	70—115	0.25—0.55	1.50—6.00
		✣	R	2	GH	US735	70—135	0.25—0.60	1.50—6.00
		✣	H	1	HL	US735	60—120	0.40—1.00	1.50—8.00
		✣	H	2	HM	US735	60—120	0.50—1.10	2.00—10.00
Two-phase Stainless Steel (AISI 329)	≤280HB	●	L	1	LM	MC7015	120—190	0.10—0.30	0.30—2.00
		●	L	2	SH	US735	65—125	0.10—0.40	0.30—2.00
		●	L	3	SH	NX2525	40—90	0.10—0.40	0.30—2.00
		●	L	4	SW	US7020	70—185	0.10—0.50	0.30—2.50
		●	M	1	MM	MC7015	110—175	0.15—0.45	0.70—5.00
		●	M	2	GM	MC7015	110—175	0.16—0.50	0.50—4.00
		●	M	3	MS	US7020	65—170	0.16—0.50	0.50—4.00

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
M									
Two-phase Stainless Steel (AISI 329)	≤280HB	●	M	4	MA	US7020	65—170	0.20—0.50	0.30—4.00
		●	M	5	MH	US7020	65—170	0.20—0.55	1.00—4.00
		●	M	6	MW	US7020	65—170	0.20—0.60	0.90—4.00
		●	R	1	RM	MC7015	105—165	0.25—0.55	1.50—6.00
		●	R	2	GH	US7020	60—160	0.25—0.60	1.50—6.00
		●	H	1	HL	US735	50—95	0.40—1.00	1.50—8.00
		●	H	2	HM	US735	50—95	0.50—1.10	2.00—10.00
		◐	L	1	LM	MC7025	110—145	0.10—0.30	0.30—2.00
		◐	L	2	SH	US735	65—125	0.10—0.40	0.30—2.00
		◐	M	1	MM	MC7025	100—135	0.15—0.45	0.70—5.00
		◐	M	2	GM	MC7025	100—135	0.16—0.50	0.50—4.00
		◐	M	3	MA	MC7025	100—135	0.20—0.50	0.30—4.00
		◐	M	4	MS	US735	60—115	0.16—0.50	0.50—4.00
		◐	M	5	MA	US735	60—115	0.20—0.50	0.30—4.00
		◐	R	1	RM	MC7025	95—125	0.25—0.55	1.50—6.00
		◐	R	2	GH	US735	55—105	0.25—0.60	1.50—6.00
		◐	H	1	HL	US735	50—95	0.40—1.00	1.50—8.00
		◐	H	2	HM	US735	50—95	0.50—1.10	2.00—10.00
		✣	L	1	LM	MP7035	65—105	0.10—0.30	0.30—2.00
		✣	L	2	SH	US735	65—125	0.10—0.40	0.30—2.00
		✣	M	1	MM	MP7035	60—95	0.15—0.45	0.70—5.00
		✣	M	2	GM	MP7035	60—95	0.16—0.50	0.50—4.00
		✣	M	3	MA	MP7035	60—95	0.20—0.50	0.30—4.00
		✣	M	4	MS	US735	60—115	0.16—0.50	0.50—4.00
		✣	M	5	MS	VP15TF	50—90	0.16—0.50	0.50—4.00
		✣	M	6	MS	UP20M	65—100	0.16—0.50	0.50—4.00
		✣	M	7	MS	UTi20T	50—75	0.16—0.50	0.50—4.00
		✣	M	8	MA	VP15TF	50—90	0.20—0.50	0.30—4.00
		✣	M	9	Std	VP15TF	50—90	0.25—0.60	1.50—5.00
		✣	R	1	RM	MP7035	55—90	0.25—0.55	1.50—6.00
		✣	R	2	GH	US735	55—105	0.25—0.60	1.50—6.00
		✣	H	1	HL	US735	50—95	0.40—1.00	1.50—8.00
		✣	H	2	HM	US735	50—95	0.50—1.10	2.00—10.00
Ferritic and Martensitic Stainless Steel (AISI 410, AISI 430)	≤200HB	●	L	1	LM	MC7015	180—285	0.10—0.30	0.30—2.00
		●	L	2	SH	US735	95—185	0.10—0.40	0.30—2.00
		●	L	3	SH	NX2525	65—135	0.10—0.40	0.30—2.00
		●	L	4	SW	US7020	110—275	0.10—0.50	0.30—2.50
		●	M	1	MM	MC7015	165—260	0.15—0.45	0.70—5.00
		●	M	2	GM	MC7015	165—260	0.16—0.50	0.50—4.00
		●	M	3	MS	US7020	100—250	0.16—0.50	0.50—4.00
		●	M	4	MA	US7020	100—250	0.20—0.50	0.30—4.00
		●	M	5	MH	US7020	100—250	0.20—0.55	1.00—4.00
		●	M	6	MW	US7020	100—250	0.20—0.60	0.90—4.00
		●	R	1	RM	MC7015	155—245	0.25—0.55	1.50—6.00
		●	R	2	GH	US7020	95—235	0.25—0.60	1.50—6.00
		●	H	1	HL	US735	75—140	0.40—1.00	1.50—8.00
		●	H	2	HM	US735	75—140	0.50—1.10	2.00—10.00

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
M									
Ferritic and Martensitic Stainless Steel (AISI 410, AISI 430)	≤200HB	◐	L	1	LM	MC7025	165—220	0.10—0.30	0.30—2.00
		◐	L	2	SH	US735	95—185	0.10—0.40	0.30—2.00
		◐	M	1	MM	MC7025	150—200	0.15—0.45	0.70—5.00
		◐	M	2	GM	MC7025	150—200	0.16—0.50	0.50—4.00
		◐	M	3	MA	MC7025	150—200	0.20—0.50	0.30—4.00
		◐	M	4	MA	US735	90—170	0.20—0.50	0.30—4.00
		◐	M	5	MS	US735	90—170	0.16—0.50	0.50—4.00
		◐	R	1	RM	MC7025	140—190	0.25—0.55	1.50—6.00
		◐	R	2	GH	US735	85—160	0.25—0.60	1.50—6.00
		◐	H	1	HL	US735	75—140	0.40—1.00	1.50—8.00
		◐	H	2	HM	US735	75—140	0.50—1.10	2.00—10.00
		✣	L	1	LM	MP7035	95—155	0.10—0.30	0.30—2.00
		✣	L	2	SH	US735	95—185	0.10—0.40	0.30—2.00
		✣	M	1	MM	MP7035	90—145	0.15—0.45	0.70—5.00
		✣	M	2	GM	MP7035	90—145	0.16—0.50	0.50—4.00
		✣	M	3	MA	MP7035	90—145	0.20—0.50	0.30—4.00
		✣	M	4	MS	US735	90—170	0.16—0.50	0.50—4.00
		✣	M	5	MS	VP15TF	80—135	0.16—0.50	0.50—4.00
		✣	M	6	MS	UP20M	100—150	0.16—0.50	0.50—4.00
		✣	M	7	MS	UTi20T	80—115	0.16—0.50	0.50—4.00
		✣	M	8	MA	VP15TF	80—135	0.20—0.50	0.30—4.00
		✣	M	9	Std	VP15TF	80—135	0.25—0.60	1.50—5.00
		✣	R	1	RM	MP7035	85—135	0.25—0.55	1.50—6.00
		✣	R	2	GH	US735	85—160	0.25—0.60	1.50—6.00
		✣	H	1	HL	US735	75—140	0.40—1.00	1.50—8.00
		✣	H	2	HM	US735	75—140	0.50—1.10	2.00—10.00

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
M									
Ferritic and Martensitic Stainless Steel (AISI 431, AISI 420)	>200HB	●	L	1	LM	MC7015	150—240	0.10—0.30	0.30—2.00
		●	L	2	SH	US735	80—155	0.10—0.40	0.30—2.00
		●	L	3	SH	NX2525	55—115	0.10—0.40	0.30—2.00
		●	L	4	SW	US7020	90—230	0.10—0.50	0.30—2.50
		●	M	1	MM	MC7015	135—215	0.15—0.45	0.70—5.00
		●	M	2	GM	MC7015	135—215	0.16—0.50	0.50—4.00
		●	M	3	MS	US7020	80—210	0.16—0.50	0.50—4.00
		●	M	4	MA	US7020	80—210	0.20—0.50	0.30—4.00
		●	M	5	MH	US7020	80—210	0.20—0.55	1.00—4.00
		●	M	6	MW	US7020	80—210	0.20—0.60	0.90—4.00
		●	R	1	RM	MC7015	130—205	0.25—0.55	1.50—6.00
		●	R	2	GH	US7020	75—195	0.25—0.60	1.50—6.00
		●	H	1	HL	US735	60—120	0.40—1.00	1.50—8.00
		●	H	2	HM	US735	60—120	0.50—1.10	2.00—10.00
		◐	L	1	LM	MC7025	135—180	0.10—0.30	0.30—2.00
		◐	L	2	SH	US735	80—155	0.10—0.40	0.30—2.00
		◐	M	1	MM	MC7025	125—165	0.15—0.45	0.70—5.00
		◐	M	2	MA	MC7025	125—165	0.20—0.50	0.30—4.00
		◐	M	3	MA	US735	75—140	0.20—0.50	0.30—4.00
		◐	M	4	MS	US735	75—140	0.16—0.50	0.50—4.00
		◐	R	1	RM	MC7025	115—155	0.25—0.55	1.50—6.00
		◐	R	2	GH	US735	70—135	0.25—0.60	1.50—6.00
		◐	H	1	HL	US735	60—120	0.40—1.00	1.50—8.00
		◐	H	2	HM	US735	60—120	0.50—1.10	2.00—10.00
		✣	L	1	LM	MP7035	80—130	0.10—0.30	0.30—2.00
		✣	L	2	SH	US735	80—155	0.10—0.40	0.30—2.00
		✣	M	1	MM	MP7035	75—120	0.15—0.45	0.70—5.00
		✣	M	2	GM	MP7035	75—120	0.16—0.50	0.50—4.00
		✣	M	3	MA	MP7035	75—120	0.20—0.50	0.30—4.00
		✣	M	4	MS	US735	75—140	0.16—0.50	0.50—4.00
		✣	M	5	MS	VP15TF	65—110	0.16—0.50	0.50—4.00
		✣	M	6	MS	UP20M	80—125	0.16—0.50	0.50—4.00
		✣	M	7	MS	UTi20T	65—95	0.16—0.50	0.50—4.00
		✣	M	8	MA	VP15TF	65—110	0.20—0.50	0.30—4.00
		✣	M	9	Std	VP15TF	65—110	0.25—0.60	1.50—5.00
		✣	R	1	RM	MP7035	70—115	0.25—0.55	1.50—6.00
		✣	R	2	GH	US735	70—135	0.25—0.60	1.50—6.00
		✣	H	1	HL	US735	60—120	0.40—1.00	1.50—8.00
		✣	H	2	HM	US735	60—120	0.50—1.10	2.00—10.00
Hardened Stainless Steel (AISI 630, AISI 631)	<450HB	●	L	1	LM	MC7015	100—160	0.10—0.30	0.30—2.00
		●	L	2	LS(M)	MP9005	125—175	0.10—0.25	0.20—0.80
		●	L	3	SH	US735	55—100	0.10—0.40	0.30—2.00
		●	L	4	SH	NX2525	35—75	0.10—0.40	0.30—2.00
		●	L	5	SW	US7020	60—150	0.10—0.50	0.30—2.50
		●	M	1	MM	MC7015	90—145	0.15—0.45	0.70—5.00
		●	M	2	GM	MC7015	90—145	0.16—0.50	0.50—4.00
		●	M	3	MS	US7020	55—140	0.16—0.50	0.50—4.00

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
M									
Hardened Stainless Steel (AISI 630, AISI 631)	<450HB	●	M	4	MA	US7020	55—140	0.20—0.50	0.30—4.00
		●	M	5	MS	MP9005	115—160	0.16—0.50	0.50—4.00
		●	M	6	MH	US7020	55—140	0.20—0.55	1.00—4.00
		●	M	7	MW	US7020	55—140	0.20—0.60	0.90—4.00
		●	R	1	RM	MC7015	85—135	0.25—0.55	1.50—6.00
		●	R	2	GH	US7020	50—130	0.25—0.60	1.50—6.00
		●	H	1	HL	US735	40—80	0.40—1.00	1.50—8.00
		●	H	2	HM	US735	40—80	0.50—1.10	2.00—10.00
		◕	L	1	LM	MC7025	90—120	0.10—0.30	0.30—2.00
		◕	L	2	SH	US735	55—100	0.10—0.40	0.30—2.00
		◕	L	3	LS(M)	MP9015	120—165	0.10—0.25	0.20—0.80
		◕	M	1	MM	MC7025	80—110	0.15—0.45	0.70—5.00
		◕	M	2	GM	MC7025	80—110	0.16—0.50	0.50—4.00
		◕	M	3	MA	MC7025	80—110	0.20—0.50	0.30—4.00
		◕	M	4	MS	US735	50—95	0.16—0.50	0.50—4.00
		◕	M	5	MA	US735	50—95	0.20—0.50	0.30—4.00
		◕	M	6	MS	MP9015	110—150	0.16—0.50	0.50—4.00
		◕	R	1	RM	MC7025	75—105	0.25—0.55	1.50—6.00
		◕	R	2	GH	US735	45—90	0.25—0.60	1.50—6.00
		◕	R	3	RS	MP9015	100—140	0.20—0.35	1.00—4.00
		◕	H	1	HL	US735	40—80	0.40—1.00	1.50—8.00
		◕	H	2	HM	US735	40—80	0.50—1.10	2.00—10.00
		✣	L	1	LM	MP7035	55—85	0.10—0.30	0.30—2.00
		✣	L	2	SH	US735	55—100	0.10—0.40	0.30—2.00
		✣	L	3	LS(M)	MP9025	80—95	0.10—0.25	0.20—0.80
		✣	M	1	MM	MP7035	50—80	0.15—0.45	0.70—5.00
		✣	M	2	GM	MP7035	50—80	0.16—0.50	0.50—4.00
		✣	M	3	MA	MP7035	50—80	0.20—0.50	0.30—4.00
		✣	M	4	MS	US735	50—95	0.16—0.50	0.50—4.00
		✣	M	5	MS	VP15TF	40—75	0.16—0.50	0.50—4.00
		✣	M	6	MS	UP20M	55—80	0.16—0.50	0.50—4.00
		✣	M	7	MS	UTi20T	40—60	0.16—0.50	0.50—4.00
		✣	M	8	MA	VP15TF	40—75	0.20—0.50	0.30—4.00
		✣	M	9	Std	VP15TF	40—75	0.25—0.60	1.50—5.00
		✣	M	1	MS	MP9025	75—90	0.16—0.50	0.50—4.00
		✣	R	1	RM	MP7035	45—75	0.25—0.55	1.50—6.00
		✣	R	2	GH	US735	45—90	0.25—0.60	1.50—6.00
		✣	R	3	RS	MP9025	70—85	0.20—0.35	1.00—4.00
		✣	H	1	HL	US735	40—80	0.40—1.00	1.50—8.00
		✣	H	2	HM	US735	40—80	0.50—1.10	2.00—10.00

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
K									
Gray Cast Iron (FC300)	≤350MPa	●	L	1	LK	MC5005	230—365	0.10—0.40	0.30—2.00
		●	L	2	MA	MC5005	210—335	0.20—0.50	0.30—4.00
		●	L	3	MA	UC5105	170—310	0.20—0.50	0.30—4.00
		●	M	1	MK	MC5005	210—335	0.20—0.55	1.00—4.00
		●	M	2	GK	MC5005	210—335	0.25—0.60	1.50—5.00
		●	M	3	Std	UC5105	170—310	0.25—0.60	1.50—5.00
		●	M	4	Std	NX2525	155—210	0.25—0.60	1.50—5.00
		●	M	5	MW	MC5005	210—335	0.20—0.60	0.90—4.00
		●	R	1	RK	MC5005	195—315	0.25—0.60	1.50—6.00
		●	R	2	Flat	MC5005	195—315	0.20—0.60	2.50—6.00
		●	R	3	GH	UC5105	160—290	0.25—0.60	1.50—6.00
		●	R	4	Flat	UC5105	160—290	0.20—0.60	2.50—6.00
		●	R	5	Flat	HTi10	95—140	0.20—0.60	2.50—6.00
		●	R	6	Flat	HTi05T	105—185	0.20—0.60	2.50—6.00
		●	H	1	Flat	MC5005	195—315	0.20—0.60	2.50—6.00
		●	H	2	Flat	UC5105	160—290	0.20—0.60	2.50—6.00
		◐	L	1	LK	MC5015	205—335	0.10—0.40	0.30—2.00
		◐	L	2	MA	MC5015	190—305	0.20—0.50	0.30—4.00
		◐	L	3	MA	UC5115	165—300	0.20—0.50	0.30—4.00
		◐	L	4	SW	MC5015	205—335	0.10—0.50	0.30—2.50
		◐	L	5	SW	UC5115	180—330	0.10—0.50	0.30—2.50
		◐	M	1	MK	MC5015	190—305	0.20—0.55	1.00—4.00
		◐	M	2	GK	MC5015	190—305	0.25—0.60	1.50—5.00
		◐	M	3	Std	UC5115	165—300	0.25—0.60	1.50—5.00
		◐	M	4	Std	HTi10	105—150	0.25—0.60	1.50—5.00
		◐	M	5	MH	UC5115	165—300	0.20—0.55	1.00—4.00
		◐	M	6	MP	UC5115	165—300	0.16—0.50	0.30—4.00
		◐	M	7	MW	MC5015	190—305	0.20—0.60	0.90—4.00
		◐	M	8	MW	UC5115	165—300	0.20—0.60	0.90—4.00
		◐	R	1	RK	MC5015	180—285	0.25—0.60	1.50—6.00
		◐	R	2	Flat	MC5015	180—285	0.20—0.60	2.50—6.00
		◐	R	3	GH	UC5115	155—285	0.25—0.60	1.50—6.00
		◐	R	4	Flat	UC5115	155—285	0.20—0.60	2.50—6.00
		◐	H	1	Flat	MC5015	180—285	0.20—0.60	2.50—6.00
		◐	H	2	Flat	UC5115	155—285	0.20—0.60	2.50—6.00
		✣	L	1	LK	MC5015	205—335	0.10—0.40	0.30—2.00
		✣	L	2	MA	MC5015	190—305	0.20—0.50	0.30—4.00
		✣	L	3	MA	UC5115	165—300	0.20—0.50	0.30—4.00
		✣	M	1	MK	MC5015	190—305	0.20—0.55	1.00—4.00
		✣	M	2	GK	MC5015	190—305	0.25—0.60	1.50—5.00
		✣	M	3	Std	UC5115	165—300	0.25—0.60	1.50—5.00
		✣	M	4	Std	UTi20T	85—120	0.25—0.60	1.50—5.00
		✣	R	1	RK	MC5015	180—285	0.25—0.60	1.50—6.00
		✣	R	2	Flat	MC5015	180—285	0.20—0.60	2.50—6.00
		✣	R	3	GH	UC5115	155—285	0.25—0.60	1.50—6.00
		✣	R	4	Flat	UC5115	155—285	0.20—0.60	2.50—6.00
		✣	R	5	Flat	UTi20T	80—110	0.20—0.60	2.50—6.00
		✣	H	1	Flat	MC5015	180—285	0.20—0.60	2.50—6.00
		✣	H	2	Flat	UC5115	155—285	0.20—0.60	2.50—6.00

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
K									
Ductile Cast Iron (FCD450)	≤450MPa	●	L	1	LK	MC5005	215—350	0.10—0.40	0.30—2.00
		●	L	2	MA	MC5005	195—315	0.20—0.50	0.30—4.00
		●	L	3	MA	UC5105	160—290	0.20—0.50	0.30—4.00
		●	M	1	MK	MC5005	195—315	0.20—0.55	1.00—4.00
		●	M	2	GK	MC5005	195—315	0.25—0.60	1.50—5.00
		●	M	3	Std	UC5105	160—290	0.25—0.60	1.50—5.00
		●	M	4	Std	NX2525	145—195	0.25—0.60	1.50—5.00
		●	R	1	RK	MC5005	185—300	0.25—0.60	1.50—6.00
		●	R	2	Flat	MC5005	185—300	0.20—0.60	2.50—6.00
		●	R	3	GH	UC5105	150—275	0.25—0.60	1.50—6.00
		●	R	4	Flat	UC5105	150—275	0.20—0.60	2.50—6.00
		●	R	5	Flat	HTi10	90—135	0.20—0.60	2.50—6.00
		●	R	6	Flat	HTi05T	100—175	0.20—0.60	2.50—6.00
		●	H	1	Flat	MC5005	185—300	0.20—0.60	2.50—6.00
		●	H	2	Flat	UC5105	150—275	0.20—0.60	2.50—6.00
		◐	L	1	LK	MC5015	195—315	0.10—0.40	0.30—2.00
		◐	L	2	MA	MC5015	180—285	0.20—0.50	0.30—4.00
		◐	L	3	MA	UC5115	155—285	0.20—0.50	0.30—4.00
		◐	L	4	SW	MC5015	195—315	0.10—0.50	0.30—2.50
		◐	L	5	SW	UC5115	170—310	0.10—0.50	0.30—2.50
		◐	M	1	MK	MC5015	180—285	0.20—0.55	1.00—4.00
		◐	M	2	GK	MC5015	180—285	0.25—0.60	1.50—5.00
		◐	M	3	Std	UC5115	155—285	0.25—0.60	1.50—5.00
		◐	M	4	Std	HTi10	95—140	0.25—0.60	1.50—5.00
		◐	M	5	MP	UC5115	155—285	0.16—0.50	0.30—4.00
		◐	R	1	RK	MC5015	170—275	0.25—0.60	1.50—6.00
		◐	R	2	Flat	MC5015	170—275	0.20—0.60	2.50—6.00
		◐	R	3	GH	UC5115	145—270	0.25—0.60	1.50—6.00
		◐	R	4	Flat	UC5115	145—270	0.20—0.60	2.50—6.00
		◐	H	1	Flat	MC5015	170—275	0.20—0.60	2.50—6.00
		◐	H	2	Flat	UC5115	145—270	0.20—0.60	2.50—6.00
		✣	L	1	LK	MC5015	195—315	0.10—0.40	0.30—2.00
		✣	L	2	MA	MC5015	180—285	0.20—0.50	0.30—4.00
		✣	L	3	MA	UC5115	155—285	0.20—0.50	0.30—4.00
		✣	M	1	MK	MC5015	180—285	0.20—0.55	1.00—4.00
		✣	M	2	GK	MC5015	180—285	0.25—0.60	1.50—5.00
		✣	M	3	Std	UC5115	155—285	0.25—0.60	1.50—5.00
		✣	M	4	Std	UTi20T	80—110	0.25—0.60	1.50—5.00
		✣	R	1	RK	MC5015	170—275	0.25—0.60	1.50—6.00
		✣	R	2	Flat	MC5015	170—275	0.20—0.60	2.50—6.00
		✣	R	3	GH	UC5115	145—270	0.25—0.60	1.50—6.00
		✣	R	4	Flat	UC5115	145—270	0.20—0.60	2.50—6.00
		✣	R	5	Flat	UTi20T	75—105	0.20—0.60	2.50—6.00
		✣	H	1	Flat	MC5015	170—275	0.20—0.60	2.50—6.00
		✣	H	2	Flat	UC5115	145—270	0.20—0.60	2.50—6.00

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
K									
Ductile Cast Iron (FCD700)	≤800MPa	●	L	1	LK	MC5005	195—310	0.10—0.40	0.30—2.00
		●	L	2	MA	MC5005	175—280	0.20—0.50	0.30—4.00
		●	L	3	MA	UC5105	140—260	0.20—0.50	0.30—4.00
		●	M	1	MK	MC5005	175—280	0.20—0.55	1.00—4.00
		●	M	2	GK	MC5005	175—280	0.25—0.60	1.50—5.00
		●	M	3	Std	UC5105	140—260	0.25—0.60	1.50—5.00
		●	M	4	Std	NX2525	130—175	0.25—0.60	1.50—5.00
		●	R	1	RK	MC5005	165—270	0.25—0.60	1.50—6.00
		●	R	2	Flat	MC5005	165—270	0.20—0.60	2.50—6.00
		●	R	3	GH	UC5105	135—250	0.25—0.60	1.50—6.00
		●	R	4	Flat	UC5105	135—250	0.20—0.60	2.50—6.00
		●	R	5	Flat	HTi10	80—120	0.20—0.60	2.50—6.00
		●	R	6	Flat	HTi05T	90—155	0.20—0.60	2.50—6.00
		●	H	1	Flat	MC5005	165—270	0.20—0.60	2.50—6.00
		●	H	2	Flat	UC5105	135—250	0.20—0.60	2.50—6.00
		◐	L	1	LK	MC5015	175—285	0.10—0.40	0.30—2.00
		◐	L	2	MA	MC5015	160—255	0.20—0.50	0.30—4.00
		◐	L	3	MA	UC5115	140—255	0.20—0.50	0.30—4.00
		◐	L	4	SW	MC5015	175—285	0.10—0.50	0.30—2.50
		◐	L	5	SW	UC5115	150—280	0.10—0.50	0.30—2.50
		◐	M	1	MK	MC5015	160—255	0.20—0.55	1.00—4.00
		◐	M	2	GK	MC5015	160—255	0.25—0.60	1.50—5.00
		◐	M	3	Std	UC5115	140—255	0.25—0.60	1.50—5.00
		◐	M	4	Std	HTi10	85—125	0.25—0.60	1.50—5.00
		◐	M	5	MP	UC5115	140—255	0.16—0.50	0.30—4.00
		◐	R	1	RK	MC5015	150—245	0.25—0.60	1.50—6.00
		◐	R	2	Flat	MC5015	150—245	0.20—0.60	2.50—6.00
		◐	R	3	GH	UC5115	130—240	0.25—0.60	1.50—6.00
		◐	R	4	Flat	UC5115	130—240	0.20—0.60	2.50—6.00
		◐	H	1	Flat	MC5015	150—245	0.20—0.60	2.50—6.00
		◐	H	2	Flat	UC5115	130—240	0.20—0.60	2.50—6.00
		✣	L	1	LK	MC5015	175—285	0.10—0.40	0.30—2.00
		✣	L	2	MA	MC5015	160—255	0.20—0.50	0.30—4.00
		✣	L	3	MA	UC5115	140—255	0.20—0.50	0.30—4.00
		✣	M	1	MK	MC5015	160—255	0.20—0.55	1.00—4.00
		✣	M	2	GK	MC5015	160—255	0.25—0.60	1.50—5.00
		✣	M	3	Std	UC5115	140—255	0.25—0.60	1.50—5.00
		✣	M	4	Std	UTi20T	70—100	0.25—0.60	1.50—5.00
		✣	R	1	RK	MC5015	150—245	0.25—0.60	1.50—6.00
		✣	R	2	Flat	MC5015	150—245	0.20—0.60	2.50—6.00
		✣	R	3	GH	UC5115	130—240	0.25—0.60	1.50—6.00
		✣	R	4	Flat	UC5115	130—240	0.20—0.60	2.50—6.00
		✣	R	5	Flat	UTi20T	65—95	0.20—0.60	2.50—6.00
		✣	H	1	Flat	MC5015	150—245	0.20—0.60	2.50—6.00
		✣	H	2	Flat	UC5115	130—240	0.20—0.60	2.50—6.00

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
S									
Titanium Alloy (Ti-6Al-4V)	–	●	F	1	LS(M)	MT9015	40—85	0.10—0.25	0.20—0.80
		●	F	2	FJ	RT9010	45—95	0.07—0.20	0.10—1.00
		●	L	1	LS(M)	MT9015	40—85	0.10—0.25	0.20—0.80
		●	L	2	MJ(M)	RT9010	40—85	0.07—0.25	0.40—1.50
		●	M	1	MS	MT9015	40—80	0.10—0.25	0.50—4.00
		●	M	2	MS	RT9010	40—80	0.10—0.25	0.50—4.00
		●	R	1	RS	MT9015	35—75	0.20—0.35	1.00—4.00
		●	R	2	GJ	RT9010	35—75	0.16—0.35	1.00—3.00
		◐	F	1	LS(M)	MT9015	40—85	0.10—0.25	0.20—0.80
		◐	F	2	FJ	RT9010	45—95	0.07—0.20	0.10—1.00
		◐	L	1	LS(M)	MT9015	40—85	0.10—0.25	0.20—0.80
		◐	L	2	MJ(M)	RT9010	40—85	0.07—0.25	0.40—1.50
		◐	L	3	MJ(G)	RT9010	40—85	0.07—0.25	0.40—1.50
		◐	M	1	MS	MT9015	40—80	0.10—0.25	0.50—4.00
		◐	M	2	MS	RT9010	40—80	0.10—0.25	0.50—4.00
		◐	R	1	RS	MT9015	35—75	0.20—0.35	1.00—4.00
		◐	R	2	GJ	RT9010	35—75	0.16—0.35	1.00—3.00
		✣	F	1	FJ	RT9010	45—95	0.07—0.20	0.10—1.00
		✣	L	1	MJ(M)	RT9010	40—85	0.07—0.25	0.40—1.50
		✣	L	2	MJ(G)	RT9010	40—85	0.07—0.25	0.40—1.50
		✣	M	1	MS	RT9010	40—80	0.10—0.25	0.50—4.00
		✣	R	1	GJ	RT9010	35—75	0.16—0.35	1.00—3.00

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
S									
Heat Resistant Alloy (Inconel718)	–	●	F	1	LS(M)	MP9005	30—110	0.10—0.25	0.20—0.80
		●	F	2	FJ	VP10RT	30—60	0.07—0.20	0.10—1.00
		●	L	1	LS(M)	MP9005	30—110	0.10—0.25	0.20—0.80
		●	L	2	MJ(M)	MP9005	30—110	0.07—0.25	0.40—1.50
		●	L	3	MJ(M)	VP05RT	30—65	0.07—0.25	0.40—1.50
		●	L	4	MJ(M)	US905	55—110	0.07—0.25	0.40—1.50
		●	L	5	MJ(G)	VP10RT	25—55	0.07—0.25	0.40—1.50
		●	M	1	MS	MP9005	30—100	0.10—0.25	0.50—4.00
		●	M	2	MS	VP05RT	30—60	0.10—0.25	0.50—4.00
		●	M	3	MS	US905	50—100	0.10—0.25	0.50—4.00
		●	R	1	RS	MP9015	20—75	0.20—0.35	1.00—4.00
		●	R	2	GJ	VP10RT	20—45	0.16—0.35	1.00—3.00
		●	R	3	GJ	US905	45—95	0.16—0.35	1.00—3.00
		◐	F	1	LS(M)	MP9015	25—85	0.10—0.25	0.20—0.80
		◐	F	2	FJ	VP10RT	30—60	0.07—0.20	0.10—1.00
		◐	L	1	LS(M)	MP9015	25—85	0.10—0.25	0.20—0.80
		◐	L	2	MJ(M)	MP9015	25—85	0.07—0.25	0.40—1.50
		◐	L	3	MJ(M)	VP10RT	25—55	0.07—0.25	0.40—1.50
		◐	M	1	MS	MP9015	25—80	0.10—0.25	0.50—4.00
		◐	M	2	MA	MP9015	25—80	0.10—0.30	0.50—3.00
		◐	M	3	MS	VP10RT	25—50	0.10—0.25	0.50—4.00
		◐	R	1	RS	MP9015	20—75	0.20—0.35	1.00—4.00
		◐	R	2	GJ	VP10RT	20—45	0.16—0.35	1.00—3.00
		✣	F	1	FJ	VP15TF	20—40	0.07—0.20	0.10—1.00
		✣	L	1	LS(M)	MP9025	20—30	0.10—0.25	0.20—0.80
		✣	L	2	MJ(G)	VP15TF	20—35	0.07—0.25	0.40—1.50
		✣	M	1	MS	MP9025	20—30	0.10—0.25	0.50—4.00
		✣	M	2	MA	MP9025	20—30	0.10—0.30	0.50—3.00
		✣	M	3	MS	VP15TF	20—35	0.10—0.25	0.50—4.00
		✣	R	1	RS	MP9025	15—25	0.20—0.35	1.00—4.00
		✣	R	2	GJ	VP15TF	15—30	0.16—0.35	1.00—3.00

RECOMMENDED CUTTING CONDITIONS

7° POSITIVE INSERT TYPE

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
P									
Mild Steel (ASTM A36, AISI 1010)	≤180HB	●	F	1	FP	NX2525	225—320	0.04—0.20	0.20—0.90
		●	F	2	FV	NX2525	225—320	0.04—0.20	0.20—0.90
		●	F	3	R/L-F	MP3025	230—355	0.05—0.12	0.10—0.50
		●	L	1	LP	NX2525	225—320	0.06—0.25	0.20—1.00
		●	L	2	Std	UE6110	210—355	0.08—0.30	0.30—2.00
		●	L	3	MV	MP3025	190—295	0.08—0.30	0.30—2.00
		●	L	4	Std	MP3025	190—295	0.08—0.30	0.30—2.00
		●	M	1	MP	NX2525	185—270	0.08—0.30	0.30—2.00
		◐	F	1	FP	MC6015	250—425	0.04—0.20	0.20—0.90
		◐	F	2	FP	UE6110	250—425	0.04—0.20	0.20—0.90
		◐	F	3	FP	MP3025	230—355	0.04—0.20	0.20—0.90
		◐	F	4	FV	MP3025	230—355	0.04—0.20	0.20—0.90
		◐	F	5	FV	NX3035	220—310	0.04—0.20	0.20—0.90
		◐	L	1	LP	MC6015	250—425	0.06—0.25	0.20—1.00
		◐	L	2	LP	UE6110	250—425	0.06—0.25	0.20—1.00
		◐	L	3	LP	MP3025	230—355	0.06—0.25	0.20—1.00
		◐	L	4	Std	UE6110	210—355	0.08—0.30	0.30—2.00
		◐	L	5	SW	MC6015	250—425	0.06—0.24	0.20—1.50
		◐	L	6	SW	MP3025	230—355	0.06—0.24	0.20—1.50
		◐	M	1	MP	MC6015	210—355	0.08—0.30	0.30—2.00
		◐	M	2	MP	UE6110	210—355	0.08—0.30	0.30—2.00
		◐	M	3	MP	MP3025	190—295	0.08—0.30	0.30—2.00
		◐	M	4	MW	MC6015	210—355	0.10—0.35	0.80—2.50
		✣	F	1	FP	MC6025	250—405	0.04—0.20	0.20—0.90
		✣	F	2	FV	UE6020	235—385	0.04—0.20	0.20—0.90
		✣	L	1	LP	MC6025	250—405	0.06—0.25	0.20—1.00
		✣	L	2	SV	MC6025	250—405	0.06—0.25	0.20—1.00
		✣	L	3	Std	UE6020	195—320	0.08—0.30	0.30—2.00
		✣	L	4	SW	MC6025	250—405	0.06—0.24	0.20—1.50
		✣	M	1	MP	MC6025	210—340	0.08—0.30	0.30—2.00
		✣	M	2	MW	MC6025	210—340	0.10—0.35	0.80—2.50
Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB	●	F	1	FP	NX2525	165—240	0.04—0.20	0.20—0.90
		●	F	2	FV	NX2525	165—240	0.04—0.20	0.20—0.90
		●	F	3	R/L-F	MP3025	170—260	0.05—0.12	0.10—0.50
		●	L	1	LP	NX2525	165—240	0.06—0.25	0.20—1.00
		●	L	2	Std	UE6110	155—260	0.08—0.30	0.30—2.00
		●	L	3	MV	MP3025	140—220	0.08—0.30	0.30—2.00
		●	L	4	Std	MP3025	140—220	0.08—0.30	0.30—2.00
		●	L	5	SV	MP3025	170—260	0.06—0.25	0.20—1.00
		●	L	6	SW	MP3025	170—260	0.06—0.24	0.20—1.50
		●	M	1	MP	NX2525	140—200	0.08—0.30	0.30—2.00
		●	M	2	MW	MP3025	140—220	0.10—0.35	0.80—2.50
		◐	F	1	FP	MC6015	185—315	0.04—0.20	0.20—0.90
		◐	F	2	FP	UE6110	185—315	0.04—0.20	0.20—0.90
		◐	F	3	FP	MP3025	170—260	0.04—0.20	0.20—0.90
		◐	F	4	FV	MP3025	170—260	0.04—0.20	0.20—0.90
		◐	F	5	FV	NX3035	160—230	0.04—0.20	0.20—0.90

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
P									
Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB		**L**	1	**LP**	**MC6015**	185—315	0.06—0.25	0.20—1.00
			L	2	**LP**	**UE6110**	185—315	0.06—0.25	0.20—1.00
			L	3	**LP**	**MP3025**	170—260	0.06—0.25	0.20—1.00
			L	4	**Std**	**UE6110**	155—260	0.08—0.30	0.30—2.00
			L	5	**SW**	**MC6015**	185—315	0.06—0.24	0.20—1.50
			L	6	**SW**	**MP3025**	170—260	0.06—0.24	0.20—1.50
			M	1	**MP**	**MC6015**	155—260	0.08—0.30	0.30—2.00
			M	2	**MP**	**UE6110**	155—260	0.08—0.30	0.30—2.00
			M	3	**MP**	**MP3025**	140—220	0.08—0.30	0.30—2.00
			M	4	**MW**	**MC6015**	155—260	0.10—0.35	0.80—2.50
			F	1	**FP**	**MC6025**	185—300	0.04—0.20	0.20—0.90
			F	2	**FV**	**UE6020**	175—285	0.04—0.20	0.20—0.90
			L	1	**LP**	**MC6025**	185—300	0.06—0.25	0.20—1.00
			L	2	**SV**	**MC6025**	185—300	0.06—0.25	0.20—1.00
			L	3	**Std**	**UE6020**	145—240	0.08—0.30	0.30—2.00
			L	4	**SW**	**MC6025**	185—300	0.06—0.24	0.20—1.50
			M	1	**MP**	**MC6025**	155—250	0.08—0.30	0.30—2.00
			M	2	**MW**	**MC6025**	155—250	0.10—0.35	0.80—2.50
Carbon Steel • Alloy Steel (AISI 4340)	280 | 350HB		**M**	1	**MP**	**NX2525**	95—140	0.08—0.30	0.30—2.00
			M	1	**MP**	**MC6015**	110—185	0.08—0.30	0.30—2.00
			M	2	**MP**	**UE6110**	110—185	0.08—0.30	0.30—2.00
			M	3	**MP**	**MP3025**	100—155	0.08—0.30	0.30—2.00
			M	1	**MP**	**MC6025**	110—175	0.08—0.30	0.30—2.00

RECOMMENDED CUTTING CONDITIONS

7° POSITIVE INSERT TYPE

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
M									
Austenitic Stainless Steel (AISI 304, AISI 316)	≤200HB	●	F	1	FM	VP15TF	75—125	0.04—0.20	0.20—0.90
		●	F	2	Std	US735	70—135	0.08—0.30	0.30—2.00
		●	L	1	LM	MC7025	140—190	0.06—0.25	0.20—1.00
		●	L	2	Std	US735	70—135	0.08—0.30	0.30—2.00
		●	M	1	MM	MC7025	120—160	0.08—0.30	0.30—2.00
		◐	F	1	FM	VP15TF	75—125	0.04—0.20	0.20—0.90
		◐	F	2	Std	US735	70—135	0.08—0.30	0.30—2.00
		◐	L	1	LM	MC7025	140—190	0.06—0.25	0.20—1.00
		◐	L	2	Std	US735	70—135	0.08—0.30	0.30—2.00
		◐	M	1	MM	MC7025	120—160	0.08—0.30	0.30—2.00
		✣	F	1	FM	VP15TF	75—125	0.04—0.20	0.20—0.90
		✣	F	2	Std	US735	70—135	0.08—0.30	0.30—2.00
		✣	L	1	LM	MP7035	85—135	0.06—0.25	0.20—1.00
		✣	L	2	LM	VP15TF	75—125	0.06—0.25	0.20—1.00
		✣	L	3	Std	US735	70—135	0.08—0.30	0.30—2.00
		✣	M	1	MM	MP7035	70—115	0.08—0.30	0.30—2.00
		✣	M	2	MM	VP15TF	60—105	0.08—0.30	0.30—2.00
Austenitic Stainless Steel (AISI 304LN, AISI 316LN)	>200HB	●	F	1	FM	VP15TF	60—105	0.04—0.20	0.20—0.90
		●	F	2	Std	US735	60—110	0.08—0.30	0.30—2.00
		●	L	1	LM	MC7025	120—160	0.06—0.25	0.20—1.00
		●	L	2	Std	US735	60—110	0.08—0.30	0.30—2.00
		●	M	1	MM	MC7025	100—130	0.08—0.30	0.30—2.00
		◐	F	1	FM	VP15TF	60—105	0.04—0.20	0.20—0.90
		◐	F	2	Std	US735	60—110	0.08—0.30	0.30—2.00
		◐	L	1	LM	MC7025	120—160	0.06—0.25	0.20—1.00
		◐	L	2	Std	US735	60—110	0.08—0.30	0.30—2.00
		◐	M	1	MM	MC7025	100—130	0.08—0.30	0.30—2.00
		✣	F	1	FM	VP15TF	60—105	0.04—0.20	0.20—0.90
		✣	F	2	Std	US735	60—110	0.08—0.30	0.30—2.00
		✣	L	1	LM	MP7035	70—115	0.06—0.25	0.20—1.00
		✣	L	2	LM	VP15TF	60—105	0.06—0.25	0.20—1.00
		✣	L	3	Std	US735	60—110	0.08—0.30	0.30—2.00
		✣	M	1	MM	MP7035	60—95	0.08—0.30	0.30—2.00
		✣	M	2	MM	VP15TF	50—90	0.08—0.30	0.30—2.00
Two-phase Stainless Steel (AISI 329)	≤280HB	●	F	1	FM	VP15TF	50—85	0.04—0.20	0.20—0.90
		●	F	2	Std	US735	45—90	0.08—0.30	0.30—2.00
		●	L	1	LM	MC7025	95—130	0.06—0.25	0.20—1.00
		●	L	2	Std	US735	45—90	0.08—0.30	0.30—2.00
		●	M	1	MM	MC7025	80—105	0.08—0.30	0.30—2.00
		◐	F	1	FM	VP15TF	50—85	0.04—0.20	0.20—0.90
		◐	F	2	Std	US735	45—90	0.08—0.30	0.30—2.00
		◐	L	1	LM	MC7025	95—130	0.06—0.25	0.20—1.00
		◐	L	2	Std	US735	45—90	0.08—0.30	0.30—2.00
		◐	M	1	MM	MC7025	80—105	0.08—0.30	0.30—2.00
		✣	F	1	FM	VP15TF	50—85	0.04—0.20	0.20—0.90
		✣	F	2	Std	US735	45—90	0.08—0.30	0.30—2.00
		✣	L	1	LM	MP7035	55—90	0.06—0.25	0.20—1.00

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
M									
Two-phase Stainless Steel (AISI 329)	≤280HB		L	2	LM	VP15TF	50—85	0.06—0.25	0.20—1.00
			L	3	Std	US735	45—90	0.08—0.30	0.30—2.00
			M	1	MM	MP7035	45—75	0.08—0.30	0.30—2.00
			M	2	MM	VP15TF	40—70	0.08—0.30	0.30—2.00
Ferritic and Martensitic Stainless Steel (AISI 410, AISI 430)	≤200HB		F	1	FM	VP15TF	75—125	0.04—0.20	0.20—0.90
			F	2	Std	US735	70—135	0.08—0.30	0.30—2.00
			L	1	LM	MC7025	140—190	0.06—0.25	0.20—1.00
			L	2	Std	US735	70—135	0.08—0.30	0.30—2.00
			M	1	MM	MC7025	120—160	0.08—0.30	0.30—2.00
			F	1	FM	VP15TF	75—125	0.04—0.20	0.20—0.90
			F	2	Std	US735	70—135	0.08—0.30	0.30—2.00
			L	1	LM	MC7025	140—190	0.06—0.25	0.20—1.00
			L	2	Std	US735	70—135	0.08—0.30	0.30—2.00
			M	1	MM	MC7025	120—160	0.08—0.30	0.30—2.00
			F	1	FM	VP15TF	75—125	0.04—0.20	0.20—0.90
			F	2	Std	US735	70—135	0.08—0.30	0.30—2.00
			L	1	LM	MP7035	85—135	0.06—0.25	0.20—1.00
			L	2	LM	VP15TF	75—125	0.06—0.25	0.20—1.00
			L	3	Std	US735	70—135	0.08—0.30	0.30—2.00
			M	1	MM	MP7035	70—115	0.08—0.30	0.30—2.00
			M	2	MM	VP15TF	60—105	0.08—0.30	0.30—2.00
Ferritic and Martensitic Stainless Steel (AISI 431, AISI 420)	>200HB		F	1	FM	VP15TF	60—105	0.04—0.20	0.20—0.90
			F	2	Std	US735	60—110	0.08—0.30	0.30—2.00
			L	1	LM	MC7025	120—160	0.06—0.25	0.20—1.00
			L	2	Std	US735	60—110	0.08—0.30	0.30—2.00
			M	1	MM	MC7025	100—130	0.08—0.30	0.30—2.00
			F	1	FM	VP15TF	60—105	0.04—0.20	0.20—0.90
			F	2	Std	US735	60—110	0.08—0.30	0.30—2.00
			L	1	LM	MC7025	120—160	0.06—0.25	0.20—1.00
			L	2	Std	US735	60—110	0.08—0.30	0.30—2.00
			M	1	MM	MC7025	100—130	0.08—0.30	0.30—2.00
			F	1	FM	VP15TF	60—105	0.04—0.20	0.20—0.90
			F	2	Std	US735	60—110	0.08—0.30	0.30—2.00
			L	1	LM	MP7035	70—115	0.06—0.25	0.20—1.00
			L	2	LM	VP15TF	60—105	0.06—0.25	0.20—1.00
			L	3	Std	US735	60—110	0.08—0.30	0.30—2.00
			M	1	MM	MP7035	60—95	0.08—0.30	0.30—2.00
			M	2	MM	VP15TF	50—90	0.08—0.30	0.30—2.00
Hardened Stainless Steel (AISI 630, AISI 631)	<450HB		F	1	FM	VP15TF	40—70	0.04—0.20	0.20—0.90
			F	2	Std	US735	40—75	0.08—0.30	0.30—2.00
			L	1	LM	MC7025	80—105	0.06—0.25	0.20—1.00
			L	2	LS(M)	MP9015	105—140	0.06—0.20	0.20—1.00
			L	3	Std	US735	40—75	0.08—0.30	0.30—2.00
			M	1	MM	MC7025	65—85	0.08—0.30	0.30—2.00
			M	2	MS	MP9015	85—120	0.08—0.25	0.30—2.00
			F	1	FM	VP15TF	40—70	0.04—0.20	0.20—0.90
			F	2	Std	US735	40—75	0.08—0.30	0.30—2.00

RECOMMENDED CUTTING CONDITIONS

7° POSITIVE INSERT TYPE

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
M									
Hardened Stainless Steel (AISI 630, AISI 631)	<450HB	◐	**L**	1	**LM**	**MC7025**	80—105	0.06—0.25	0.20—1.00
		◐	**L**	2	**LS(M)**	**MP9015**	105—140	0.06—0.20	0.20—1.00
		◐	**L**	3	**Std**	**US735**	40—75	0.08—0.30	0.30—2.00
		◐	**M**	1	**MM**	**MC7025**	65—85	0.08—0.30	0.30—2.00
		◐	**M**	2	**MS**	**MP9015**	85—120	0.08—0.25	0.30—2.00
		✣	**F**	1	**FM**	**VP15TF**	40—70	0.04—0.20	0.20—0.90
		✣	**F**	2	**Std**	**US735**	40—75	0.08—0.30	0.30—2.00
		✣	**L**	1	**LM**	**MP7035**	45—75	0.06—0.25	0.20—1.00
		✣	**L**	2	**LM**	**VP15TF**	40—70	0.06—0.25	0.20—1.00
		✣	**L**	3	**Std**	**US735**	40—75	0.08—0.30	0.30—2.00
		✣	**M**	1	**MM**	**MP7035**	40—60	0.08—0.30	0.30—2.00
		✣	**M**	2	**MM**	**VP15TF**	35—60	0.08—0.30	0.30—2.00

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
K									
Gray Cast Iron (FC300)	≤350MPa	●	F	1	MK	MC5005	165—265	0.08—0.30	0.30—2.00
		●	L	1	MK	MC5005	165—265	0.08—0.30	0.30—2.00
		●	M	1	Flat	MC5005	165—265	0.08—0.30	0.30—2.00
		◐	F	1	MK	MC5015	150—240	0.08—0.30	0.30—2.00
		◐	F	2	Std	UC5115	130—240	0.08—0.30	0.30—2.00
		◐	L	1	MK	MC5015	150—240	0.08—0.30	0.30—2.00
		◐	L	2	Std	UC5115	130—240	0.08—0.30	0.30—2.00
		◐	M	1	Flat	MC5015	150—240	0.08—0.30	0.30—2.00
		◐	M	2	Flat	UC5115	130—240	0.08—0.30	0.30—2.00
		✣	F	1	MK	MC5015	150—240	0.08—0.30	0.30—2.00
		✣	F	2	Std	UC5115	130—240	0.08—0.30	0.30—2.00
		✣	L	1	MK	MC5015	150—240	0.08—0.30	0.30—2.00
		✣	L	2	Std	UC5115	130—240	0.08—0.30	0.30—2.00
		✣	M	1	Flat	MC5015	150—240	0.08—0.30	0.30—2.00
		✣	M	2	Flat	UC5115	130—240	0.08—0.30	0.30—2.00
Ductile Cast Iron (FCD450)	≤450MPa	●	F	1	MK	MC5005	155—250	0.08—0.30	0.30—2.00
		●	L	1	MK	MC5005	155—250	0.08—0.30	0.30—2.00
		●	M	1	Flat	MC5005	155—250	0.08—0.30	0.30—2.00
		◐	F	1	MK	MC5015	140—230	0.08—0.30	0.30—2.00
		◐	F	2	Std	UC5115	125—225	0.08—0.30	0.30—2.00
		◐	L	1	MK	MC5015	140—230	0.08—0.30	0.30—2.00
		◐	L	2	Std	UC5115	125—225	0.08—0.30	0.30—2.00
		◐	M	1	Flat	MC5015	140—230	0.08—0.30	0.30—2.00
		◐	M	2	Flat	UC5115	125—225	0.08—0.30	0.30—2.00
		✣	F	1	MK	MC5015	140—230	0.08—0.30	0.30—2.00
		✣	F	2	Std	UC5115	125—225	0.08—0.30	0.30—2.00
		✣	L	1	MK	MC5015	140—230	0.08—0.30	0.30—2.00
		✣	L	2	Std	UC5115	125—225	0.08—0.30	0.30—2.00
		✣	M	1	Flat	MC5015	140—230	0.08—0.30	0.30—2.00
		✣	M	2	Flat	UC5115	125—225	0.08—0.30	0.30—2.00
Ductile Cast Iron (FCD700)	≤800MPa	●	F	1	MK	MC5005	140—225	0.08—0.30	0.30—2.00
		●	L	1	MK	MC5005	140—225	0.08—0.30	0.30—2.00
		●	M	1	Flat	MC5005	140—225	0.08—0.30	0.30—2.00
		◐	F	1	MK	MC5015	125—205	0.08—0.30	0.30—2.00
		◐	F	2	Std	UC5115	110—200	0.08—0.30	0.30—2.00
		◐	L	1	MK	MC5015	125—205	0.08—0.30	0.30—2.00
		◐	L	2	Std	UC5115	110—200	0.08—0.30	0.30—2.00
		◐	M	1	Flat	MC5015	125—205	0.08—0.30	0.30—2.00
		◐	M	2	Flat	UC5115	110—200	0.08—0.30	0.30—2.00
		✣	F	1	MK	MC5015	125—205	0.08—0.30	0.30—2.00
		✣	F	2	Std	UC5115	110—200	0.08—0.30	0.30—2.00
		✣	L	1	MK	MC5015	125—205	0.08—0.30	0.30—2.00
		✣	L	2	Std	UC5115	110—200	0.08—0.30	0.30—2.00
		✣	M	1	Flat	MC5015	125—205	0.08—0.30	0.30—2.00
		✣	M	2	Flat	UC5115	110—200	0.08—0.30	0.30—2.00

RECOMMENDED CUTTING CONDITIONS

■ 7° POSITIVE INSERT TYPE

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
N									
Aluminium Alloy (A6061, A7075)	Si<5%	●	**F**	1	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00
		◐	**F**	1	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00
		✣	**F**	1	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00
Aluminium Alloy (AC4B)	5%≤Si≤10%	●	**F**	1	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00
		◐	**F**	1	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00
		✣	**F**	1	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00
Aluminium Alloy (ADC12, A390)	Si>10%	●	**F**	1	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00
		◐	**F**	1	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00
		✣	**F**	1	**AZ**	**HTi10**	300—700	0.10—0.40	0.20—3.00

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 (m/min)	Feed (mm/rev)	Depth of Cut (mm)
S									
Titanium Alloy (Ti-6Al-4V)	–	●	F	1	FS-P	MT9005	40—80	0.04—0.12	0.20—1.40
		●	F	2	FJ	RT9010	35—75	0.04—0.12	0.20—1.40
		●	L	1	LS-P	MT9005	40—80	0.04—0.15	0.30—3.00
		●	L	2	LS(M)	MT9005	40—80	0.06—0.20	0.20—1.00
		●	M	1	MS	MT9005	35—65	0.08—0.25	0.30—2.00
		◐	F	1	FS-P	MT9005	40—80	0.04—0.12	0.20—1.40
		◐	F	2	FJ	RT9010	35—75	0.04—0.12	0.20—1.40
		◐	L	1	LS-P	MT9005	40—80	0.04—0.15	0.30—3.00
		◐	L	2	LS(M)	MT9005	40—80	0.06—0.20	0.20—1.00
		◐	M	1	MS	MT9005	35—65	0.08—0.25	0.30—2.00
		✣	F	1	FS-P	MT9005	40—80	0.04—0.12	0.20—1.40
		✣	F	2	FJ	RT9010	35—75	0.04—0.12	0.20—1.40
		✣	L	1	LS-P	MT9005	40—80	0.04—0.15	0.30—3.00
		✣	L	2	LS(M)	MT9005	40—80	0.06—0.20	0.20—1.00
		✣	M	1	MS	MT9005	35—65	0.08—0.25	0.30—2.00
S									
Heat Resistant Alloy (Inconel718)	–	●	F	1	FS	MP9005	25—95	0.04—0.12	0.20—1.40
		●	F	2	FJ	VP10RT	20—45	0.04—0.12	0.20—1.40
		●	L	1	LS(G)	MP9005	25—95	0.04—0.15	0.30—3.00
		●	L	2	LS(M)	MP9005	25—95	0.06—0.20	0.20—1.00
		●	M	1	MS	MP9005	20—80	0.08—0.25	0.30—2.00
		◐	F	1	FS	MP9015	20—75	0.04—0.12	0.20—1.40
		◐	F	2	FJ	VP10RT	20—45	0.04—0.12	0.20—1.40
		◐	L	1	LS(G)	MP9015	20—75	0.04—0.15	0.30—3.00
		◐	L	2	LS(M)	MP9015	20—75	0.06—0.20	0.20—1.00
		◐	M	1	MS	MP9015	20—60	0.08—0.25	0.30—2.00
		✣	F	1	FS	MP9015	20—75	0.04—0.12	0.20—1.40
		✣	F	2	FJ	VP10RT	20—45	0.04—0.12	0.20—1.40
		✣	L	1	LS(G)	MP9015	20—75	0.04—0.15	0.30—3.00
		✣	L	2	LS(M)	MP9015	20—75	0.06—0.20	0.20—1.00
		✣	M	1	MS	MP9015	20—60	0.08—0.25	0.30—2.00

RECOMMENDED CUTTING CONDITIONS

11° POSITIVE INSERT TYPE

Breker : **Std** : Standard **Flat** : Flat Top

Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
P									
Mild Steel (ASTM A36, AISI 1010)	≤180HB	●	F	1	R-R/L	NX2525	225—320	0.05—0.12	0.20—0.60
		●	L	1	R-Std	NX2525	185—270	0.08—0.30	0.30—2.00
		●	M	1	R-Std	NX2525	185—270	0.08—0.30	0.30—2.00
		◐	F	1	R-R/L	NX2525	225—320	0.05—0.12	0.20—0.60
		◐	L	1	R-Std	UE6110	210—355	0.08—0.30	0.30—2.00
		◐	L	2	R-Std	MP3025	190—295	0.08—0.30	0.30—2.00
		◐	L	3	R-Std	NX3035	180—255	0.08—0.30	0.30—2.00
		◐	M	1	R-Std	UE6110	210—355	0.08—0.30	0.30—2.00
		◐	M	2	R-Std	MP3025	190—295	0.08—0.30	0.30—2.00
		◐	M	3	R-Std	NX3035	180—255	0.08—0.30	0.30—2.00
		✣	F	1	R-R/L	UTi20T	115—165	0.05—0.12	0.20—0.60
		✣	L	1	R-Std	UE6020	195—320	0.08—0.30	0.30—2.00
		✣	L	2	N-Flat	UE6020	195—320	0.08—0.30	0.30—2.00
		✣	L	3	N-Flat	UP20M	105—160	0.08—0.30	0.30—2.00
		✣	M	1	R-Std	UE6020	195—320	0.08—0.30	0.30—2.00
		✣	M	2	N-Flat	UE6020	195—320	0.08—0.30	0.30—2.00
		✣	M	3	N-Flat	UP20M	105—160	0.08—0.30	0.30—2.00
Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB	●	F	1	R-R/L	NX2525	165—240	0.05—0.12	0.20—0.60
		●	L	1	R-Std	NX2525	140—200	0.08—0.30	0.30—2.00
		●	M	1	R-Std	NX2525	140—200	0.08—0.30	0.30—2.00
		◐	F	1	R-R/L	NX2525	165—240	0.05—0.12	0.20—0.60
		◐	L	1	R-Std	UE6110	155—260	0.08—0.30	0.30—2.00
		◐	L	2	R-Std	MP3025	140—220	0.08—0.30	0.30—2.00
		◐	L	3	R-Std	NX3035	135—190	0.08—0.30	0.30—2.00
		◐	M	1	R-Std	UE6110	155—260	0.08—0.30	0.30—2.00
		◐	M	2	R-Std	MP3025	140—220	0.08—0.30	0.30—2.00
		◐	M	3	R-Std	NX3035	135—190	0.08—0.30	0.30—2.00
		✣	F	1	R-R/L	UTi20T	85—120	0.05—0.12	0.20—0.60
		✣	L	1	R-Std	UE6020	145—240	0.08—0.30	0.30—2.00
		✣	L	2	N-Flat	UE6020	145—240	0.08—0.30	0.30—2.00
		✣	L	3	N-Flat	UP20M	80—120	0.08—0.30	0.30—2.00
		✣	M	1	R-Std	UE6020	145—240	0.08—0.30	0.30—2.00
		✣	M	2	N-Flat	UE6020	145—240	0.08—0.30	0.30—2.00
		✣	M	3	N-Flat	UP20M	80—120	0.08—0.30	0.30—2.00

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

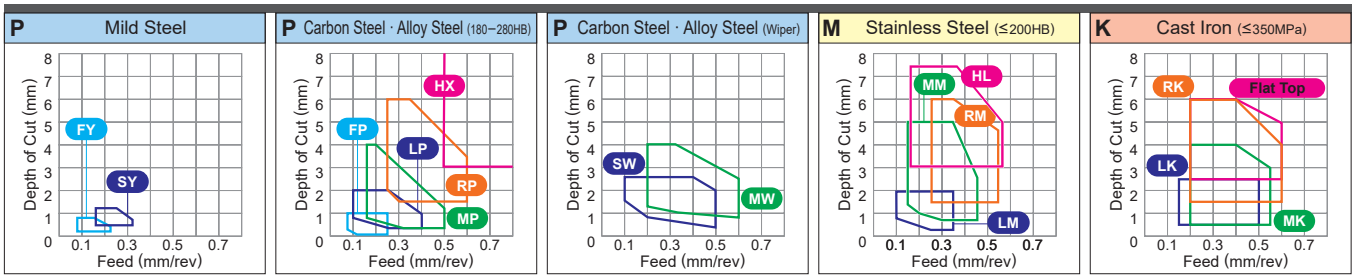
Work Material	Hardness	Cutting Mode		Priority	Breaker	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
K									
Gray Cast Iron (FC300)	≤350MPa	●	F	1	R-R/L	NX2525	145—200	0.05—0.12	0.20—0.60
		●	L	1	N-Flat	UC5105	135—245	0.08—0.30	0.30—2.00
		●	L	2	N-Flat	NX2525	120—165	0.08—0.30	0.30—2.00
		●	L	3	R-Std	NX2525	120—165	0.08—0.30	0.30—2.00
		●	M	1	N-Flat	UC5105	135—245	0.08—0.30	0.30—2.00
		●	M	2	N-Flat	NX2525	120—165	0.08—0.30	0.30—2.00
		●	M	3	R-Std	NX2525	120—165	0.08—0.30	0.30—2.00
		◐	F	1	R-R/L	NX2525	145—200	0.05—0.12	0.20—0.60
		◐	F	2	R-R/L	HTi10	100—140	0.05—0.12	0.20—0.60
		◐	L	1	N-Flat	UC5115	130—240	0.08—0.30	0.30—2.00
		◐	L	2	N-Flat	UE6110	125—200	0.08—0.30	0.30—2.00
		◐	M	1	N-Flat	UC5115	130—240	0.08—0.30	0.30—2.00
		◐	M	2	N-Flat	UE6110	125—200	0.08—0.30	0.30—2.00
		✣	F	1	R-R/L	UTi20T	80—115	0.05—0.12	0.20—0.60
		✣	L	1	N-Flat	VP15TF	115—160	0.08—0.30	0.30—2.00
		✣	M	1	N-Flat	VP15TF	115—160	0.08—0.30	0.30—2.00
Ductile Cast Iron (FCD450)	≤450MPa	●	F	1	R-R/L	NX2525	140—190	0.05—0.12	0.20—0.60
		●	L	1	N-Flat	UC5105	125—235	0.08—0.30	0.30—2.00
		●	L	2	N-Flat	NX2525	115—155	0.08—0.30	0.30—2.00
		●	L	3	R-Std	NX2525	115—155	0.08—0.30	0.30—2.00
		●	M	1	N-Flat	UC5105	125—235	0.08—0.30	0.30—2.00
		●	M	2	N-Flat	NX2525	115—155	0.08—0.30	0.30—2.00
		●	M	3	R-Std	NX2525	115—155	0.08—0.30	0.30—2.00
		◐	F	1	R-R/L	NX2525	140—190	0.05—0.12	0.20—0.60
		◐	F	2	R-R/L	HTi10	95—135	0.05—0.12	0.20—0.60
		◐	L	1	N-Flat	UC5115	125—225	0.08—0.30	0.30—2.00
		◐	L	2	N-Flat	UE6110	120—190	0.08—0.30	0.30—2.00
		◐	M	1	N-Flat	UC5115	125—225	0.08—0.30	0.30—2.00
		◐	M	2	N-Flat	UE6110	120—190	0.08—0.30	0.30—2.00
		✣	F	1	R-R/L	UTi20T	75—105	0.05—0.12	0.20—0.60
		✣	L	1	N-Flat	VP15TF	110—150	0.08—0.30	0.30—2.00
		✣	M	1	N-Flat	VP15TF	110—150	0.08—0.30	0.30—2.00
Ductile Cast Iron (FCD700)	≤800MPa	●	F	1	R-R/L	NX2525	125—170	0.05—0.12	0.20—0.60
		●	L	1	N-Flat	UC5105	115—210	0.08—0.30	0.30—2.00
		●	L	2	N-Flat	NX2525	105—140	0.08—0.30	0.30—2.00
		●	L	3	R-Std	NX2525	105—140	0.08—0.30	0.30—2.00
		●	M	1	N-Flat	UC5105	115—210	0.08—0.30	0.30—2.00
		●	M	2	N-Flat	NX2525	105—140	0.08—0.30	0.30—2.00
		●	M	3	R-Std	NX2525	105—140	0.08—0.30	0.30—2.00
		◐	F	1	R-R/L	NX2525	125—170	0.05—0.12	0.20—0.60
		◐	F	2	R-R/L	HTi10	85—120	0.05—0.12	0.20—0.60
		◐	L	1	N-Flat	UC5115	110—200	0.08—0.30	0.30—2.00
		◐	L	2	N-Flat	UE6110	105—170	0.08—0.30	0.30—2.00
		◐	M	1	N-Flat	UC5115	110—200	0.08—0.30	0.30—2.00
		◐	M	2	N-Flat	UE6110	105—170	0.08—0.30	0.30—2.00
		✣	F	1	R-R/L	UTi20T	65—95	0.05—0.12	0.20—0.60
		✣	L	1	N-Flat	VP15TF	95—135	0.08—0.30	0.30—2.00
		✣	M	1	N-Flat	VP15TF	95—135	0.08—0.30	0.30—2.00

80° CN TYPE INSERTS WITH HOLE

CNMG 12 04 02- 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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
FP	**CNMG120402-FP**	0.2				●	●																					●		●									C008 C009 E013 E036 E041 H006 −008
	CNMG120404-FP	0.4				●	●																					●		●									
	CNMG120408-FP	0.8				●	●																					●		●									
	NEW **CNMG120412-FP**	1.2				●	●																					●		●									
Finish Cutting																																							
FH	**CNMG120402-FH**	0.2		●	▲																							●	●	●									C008 C009 E013 E036 E041 H006 −008
	CNMG120404-FH	0.4		●	▲																							●		●	●								
	CNMG120408-FH	0.8		●																								●		●	●								
	CNMG120412-FH	1.2																										●			●								
Finish Cutting																																							
FS	**CNMG120404-FS**	0.4			▲																							●											C008 C009 E013 E036 E041 H006 −008
	CNMG120408-FS	0.8																										●											
Finish Cutting																																							
FY	**CNMG120404-FY**	0.4			▲																							●	●	●		●							C008 C009 E013 E036 E041 H006 −008
	CNMG120408-FY	0.8			▲																							●		●		●							
Finish Cutting																																							
FJ	**CNGG1204V5-FJ**	0.05																							●												●		C008 C009 E013 E036 E041 H006 −008
	CNGG120401-FJ	0.1																							●												●		
	CNGG120402-FJ	0.2																							●												●		
	CNGG120404-FJ	0.4																							●	●											●		
	CNGG120408-FJ	0.8																							●	●											●		
Finish Cutting																																							
PK	**CNGG120404-PK**	0.4																										●											C008 C009 E013 E036 E041 H006 −008
Finish Cutting																																							
LP	**CNMG120404-LP**	0.4		●	●		●	●	●																					●									C008 C009 E013 E036 E041 H006 −008
	CNMG120408-LP	0.8		●	●		●	●	●																					●									
	CNMG120412-LP	1.2		●	●		●	●	●																														
Light Cutting																																							

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																							Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
LM  Light Cutting	CNMG120404-LM	0.4									●	●	●																								C008 C009 E013 E036 E041 H006 −008
	CNMG120408-LM	0.8									●	●	●																								
	CNMG120412-LM	1.2									●	●	●																								
LK  Light Cutting	CNMG120404-LK	0.4															●	●																			C008 C009 E013 E036 E041 H006 −008
	CNMG120408-LK	0.8															●	●			●																
	CNMG120412-LK	1.2															●	●			●																
LS  Light Cutting	NEW CNMG090304-LS	0.4																				●	●													●	C008 C009 E013 E036 E041 H006 −008
	NEW CNMG090308-LS	0.8																				●	●													●	
	NEW CNMG120402-LS	0.2																				●	●													●	
	CNMG120404-LS	0.4																				●	●	●												●	
	CNMG120408-LS	0.8																				●	●	●												●	
SH  Light Cutting	CNMG09T304-SH	0.4		●											●																					C008 C009 E013 E036 E041 H006 −008
	CNMG09T308-SH	0.8		●																																
	CNMG120404-SH	0.4	●	●	▲	●	●								●				●										●	●		●					
	CNMG120408-SH	0.8	●	●	▲	●	●								●				●										●	●		●					
	CNMG120412-SH	1.2	●	●	▲	●	●																														
SA  Light Cutting	CNMG120404-SA	0.4	●	●	▲	●	●																						●	●							C008 C009 E013 E036 E041 H006 −008
	CNMG120408-SA	0.8	●	●	▲	●	●																						●	●							
	CNMG120412-SA	1.2	●	●	▲	●	●																							●							
* **SW**  Light Cutting (Wiper)	CNMG120404-SW	0.4	●	●		●							▲				●	●		●									●	●	●							C008 C009 E013 E036 E041 H006 −008
	CNMG120408-SW	0.8	●	●		●							▲				●	●		●									●	●	●						
	CNMG120412-SW	1.2	●	●		●							▲																●	●	●						
SY  Light Cutting	CNMG120404-SY	0.4			▲																								●		●	●					C008 C009 E013 E036 E041 H006 −008
	CNMG120408-SY	0.8			▲																								●		●	●					
C  Light Cutting	CNMG120404-C	0.4																											▲	▲							C008 C009 E013 E036 E041 H006 −008
	CNMG120408-C	0.8																											▲	▲							
MJ  Light Cutting	CNMG120404-MJ	0.4													●							●	●		●	●									●	C008 C009 E013 E036 E041 H006 −008
	CNMG120408-MJ	0.8													●							●	●		●	●									●	
	CNMG120412-MJ	1.2													●							●	●		●	●										
	CNMG120416-MJ	1.6													●							●	●		●	●										

* Please refer to A028 before using the SW breaker (wiper insert).

● = NEW

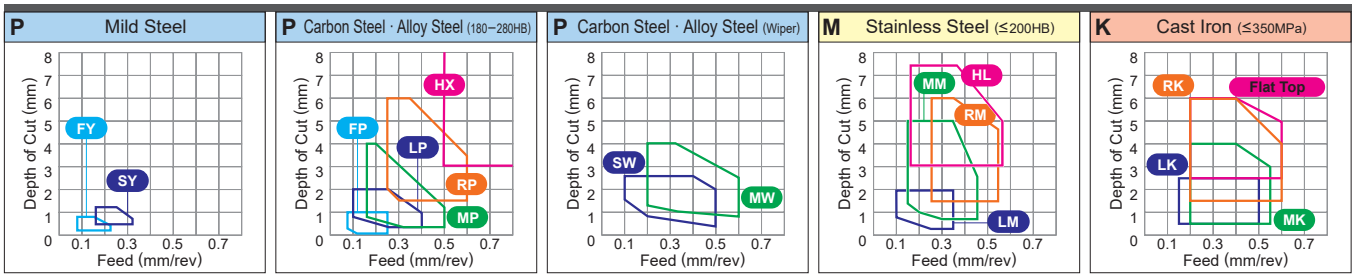
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° CN TYPE INSERTS WITH HOLE

CNGG 12 04 04- MJ
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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																					Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
MJ	**CNGG120404-MJ**	0.4																							●	●								●	●		C008
	CNGG120408-MJ	0.8																							●	●								●	●		C009 E013 E036 E041 H006 −008
Light Cutting																																					
MP	**CNMG120404-MP**	0.4	●	●	▲	●	●	●											●												●							C008 C009 E013 E036 E041 H006 −008
	CNMG120408-MP	0.8	●	●	▲	●	●	●											●												●							
	CNMG120412-MP	1.2	●	●	▲	●	●	●											●												●							
	CNMG120416-MP	1.6	●	●	▲	●	●	●											●																			
	CNMG160608-MP	0.8	●	●	▲		●												●																			
	CNMG160612-MP	1.2	●	●	▲		●												●																			
Medium Cutting	**CNMG160616-MP**	1.6	●	●	▲		●												●																			
MM	**CNMG120408-MM**	0.8									●	●	●																									C008 C009 E013 E036 E041 H006 −008
	CNMG120412-MM	1.2									●	●	●																									
	CNMG120416-MM	1.6									●	●	●																									
	CNMG160608-MM	0.8									●	●	●																									
	CNMG160612-MM	1.2									●	●	●																									
	CNMG160616-MM	1.6									●	●	●																									
	CNMG190608-MM	0.8									●	●	●																									
	CNMG190612-MM	1.2									●	●	●																									
Medium Cutting	**CNMG190616-MM**	1.6									●	●	●																									
MK	**CNMG120404-MK**	0.4															●	●																			C008 C009 E013 E036 E041 H006 −008
	CNMG120408-MK	0.8															●	●																			
	CNMG120412-MK	1.2															●	●																			
	CNMG120416-MK	1.6															●	●																			
	CNMG160608-MK	0.8															●	●																			
	CNMG160612-MK	1.2															●	●																			
	CNMG160616-MK	1.6															●	●																			
	CNMG190612-MK	1.2															●	●																			
Medium Cutting	**CNMG190616-MK**	1.6															●	●																			
* **MS**	NEW **CNMG090304-MS**	0.4																				●	●														C008 C009 E013 E036 E041 H006 −008
	NEW **CNMG090308-MS**	0.8																				●	●														
	CNMG120404-MS	0.4																				●	●	●												●	
	CNMG120408-MS	0.8																				●	●	●												●	
Medium Cutting	**CNMG120412-MS**	1.2																				●	●	●												●	

* Newly designed breakers : MP9005, MP9015, MP9025, MT9015

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated																					Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	MP9025 NEW	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
* MS	CNMG160612-MS	1.2																				●	●													●	C008
	CNMG160616-MS	1.6																				●	●													●	C009
																																					E013 E036 E041 H006 −008
Medium Cutting																																					
MS	CNMG090304-MS	0.4												●																							C008 C009 E013 E036 E041 H006 −008
	CNMG090308-MS	0.8		●										●																						
	CNMG09T304-MS	0.4												●																				●		
	CNMG09T308-MS	0.8		●										●																						
	CNMG120404-MS	0.4		● ▲									▲	●	●										●	●	●	●							●	●	
	CNMG120408-MS	0.8		● ▲									▲	●	●										●	●	●	●						●	●	●	
	CNMG120412-MS	1.2		●									▲	●	●										●	●	●									●	
	CNMG160608-MS	0.8												●																						
	CNMG160612-MS	1.2												●																						
	CNMG190612-MS	1.2												●																						
Medium Cutting	CNMG190616-MS	1.6												●																						
GK	CNMG120404-GK	0.4															●	●																			C008 C009 E013 E036 E041 H006 −008
	CNMG120408-GK	0.8															●	●			●															
	CNMG120412-GK	1.2															●	●			●															
Medium Cutting																																					
GM	CNMG120404-GM	0.4									●	●	●																							C008 C009 E013 E036 E041 H006 −008
	CNMG120408-GM	0.8									●	●	●																						
	CNMG120412-GM	1.2									●	●	●																						
Medium Cutting																																					
MA	CNMG120404-MA	0.4	●	●	▲	●	●				●	●	▲	●			●	●	●	●			●	●			●		●								C008 C009 E013 E036 E041 H006 −008
	CNMG120408-MA	0.8	●	●	▲	●	●	●			●	●	▲	●			●	●	●	●	●		●	●			●		●							
	CNMG120412-MA	1.2	●	●	▲	●	●	●			●	●	▲	●			●	●	●	●	●		●	●			●		●							
	CNMG120416-MA	1.6	●	●	▲								▲	●						●			●													
	CNMG160608-MA	0.8	●	●	▲	●	●	●						●						●																
	CNMG160612-MA	1.2	●	●	▲	●	●	●						▲	●					●																
	CNMG160616-MA	1.6	●	●		●	●	●						●						●																
	CNMG190612-MA	1.2	●	●	▲	●	●	●						▲	●				●	●																
Medium Cutting	CNMG190616-MA	1.6		●	▲	●	●	●							●					●																
MH	CNMG120404-MH	0.4	●	●	▲									▲																						C008 C009 E013 E036 E041 H006 −008
	CNMG120408-MH	0.8	●	●	▲	●	●	●						▲						●																
	CNMG120412-MH	1.2	●	●	▲	●	●	●						▲						●																
	CNMG120416-MH	1.6	●	●	▲															●																
	CNMG160608-MH	0.8	●	●																●																
	CNMG160612-MH	1.2	●	●	▲	●	●	●						▲						●																
	CNMG160616-MH	1.6	●	●																●																
	CNMG190612-MH	1.2	●	●	▲	●	●	●						▲						●																
Medium Cutting	CNMG190616-MH	1.6	●	●	▲																																

* Newly designed breakers : MP9005, MP9015, MP9025, MT9015

● = NEW

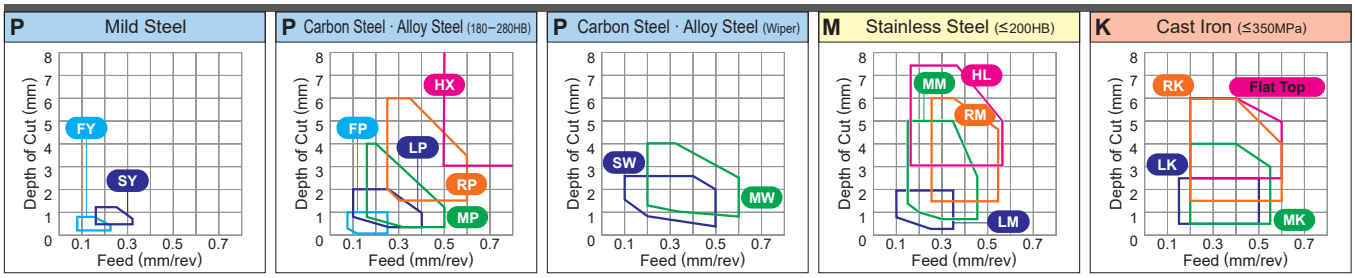
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° CN TYPE INSERTS WITH HOLE

CNMG 09 03 08
Size / Thickness / Corner Radius
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ····· Rough Cutting ····· Heavy Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115 NEW	MH515	MP9005	MP9015	MP9025 NEW	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
Standard	**CNMG090308**	0.8	●																																			
	CNMG09T304	0.4	●			●	●																					●										
	CNMG09T308	0.8	●			●	●																					●										
	CNMG120404	0.4	●	●	▲	●	●												●	●								●	●	●			●		●			
	CNMG120408	0.8	●	●	▲	●	●	●											●	●							●	●		●			●		●			C008 C009 E013 E036 E041 H006 −008
	CNMG120412	1.2	●	●	▲	●	●	●											●	●							●	●										
	CNMG120416	1.6	●	●		●	●												●	●																		
	CNMG160608	0.8	●	●	▲	●	●	●																														
	CNMG160612	1.2	●	●	▲	●	●	●											●	●																		
	CNMG160616	1.6	●	●		●	●	●											●	●																		
	CNMG190608	0.8	●	●	▲	●	●	●																														
	CNMG190612	1.2	●	●	▲	●	●	●											●	●																		
Medium Cutting	**CNMG190616**	1.6	●	●	▲	●	●	●												●																		
*** MW**	**CNMG120408-MW**	0.8	●	●	▲	●	●						▲				●	●	●	●																		C008 C009 E013 E036 E041 H006 −008
Medium Cutting (Wiper)	**CNMG120412-MW**	1.2	●	●	▲	●	●						▲				●	●	●	●																		
RP	**CNMG120408-RP**	0.8	●	●		●	●	●																														
	CNMG120412-RP	1.2	●	●		●	●	●																														C008 C009 E013 E036 E041 H006 −008
	CNMG120416-RP	1.6	●	●		●	●	●																														
	CNMG160612-RP	1.2	●	●		●	●	●																														
	CNMG160616-RP	1.6	●	●		●	●	●																														
	CNMG190612-RP	1.2	●	●		●	●	●																														
Rough Cutting	**CNMG190616-RP**	1.6	●	●		●	●	●																														
RM	**CNMG120408-RM**	0.8									●	●	●																									C008 C009 E013 E036 E041 H006 −008
	CNMG120412-RM	1.2									●	●	●																									
	CNMG120416-RM	1.6									●	●	●																									
	CNMG160612-RM	1.2									●	●	●																									
	CNMG160616-RM	1.6									●	●	●																									
	CNMG190612-RM	1.2									●	●	●																									
Rough Cutting	**CNMG190616-RM**	1.6									●	●	●																									

* Please refer to A028 before using the MW breaker (wiper insert).

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																					Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
RK	**CNMG120408-RK**	0.8															●	●			●																	
	CNMG120412-RK	1.2															●	●			●																	
	CNMG120416-RK	1.6															●	●																				C008 C009 E013 E036 E041 H006 −008
	CNMG160608-RK	0.8															●	●																				
	CNMG160612-RK	1.2															●	●																				
	CNMG160616-RK	1.6															●	●																				
	CNMG190612-RK	1.2															●	●																				
Rough Cutting	**CNMG190616-RK**	1.6															●	●																				
RS	**CNMG120408-RS**	0.8																					●	●													●	
	CNMG120412-RS	1.2																					●	●													●	
	CNMG120416-RS	1.6																					●	●													●	C008 C009 E013 E036 E041 H006 −008
	CNMG160612-RS	1.2																					●														●	
	CNMG160616-RS	1.6																					●														●	
	CNMG190612-RS	1.2																					●														●	
Rough Cutting	**CNMG190616-RS**	1.6																					●														●	
GH	**CNMG120408-GH**	0.8	●	●	▲									▲	●				●	●																	
	CNMG120412-GH	1.2	●	●	▲									▲	●				●	●																	
	CNMG120416-GH	1.6	●	●															●	●																		C008 C009 E013 E036 E041 H006 −008
	CNMG160612-GH	1.2	●	●	▲									▲	●				●	●																	
	CNMG160616-GH	1.6	●	●															●	●																		
	CNMG190612-GH	1.2	●	●	▲										●				●	●																		
Rough Cutting	**CNMG190616-GH**	1.6	●	●	▲									▲	●				●	●																		
GJ	**CNMG120408-GJ**	0.8														●										●	●									●	
	CNMG120412-GJ	1.2														●										●	●									●	
	CNMG120416-GJ	1.6														●										●	●									●	C008 C009 E013 E036 E041 H006 −008
	CNMG160612-GJ	1.2														●										●										●	
	CNMG190612-GJ	1.2														●										●										●	
Rough Cutting	**CNMG190616-GJ**	1.6														●										●										●	
HX	**CNMM120408-HX**	0.8					●	●																														
	CNMM120412-HX	1.2					●	●																														
	CNMM160612-HX	1.2					●	●																														C008 C009 E013 E036 E041 H006 −008
	CNMM160616-HX	1.6					●	●																														
	CNMM190612-HX	1.2		●	▲		●	●	●																													
	CNMM190616-HX	1.6		●	▲		●	●	●																													
	CNMM190624-HX	2.4		●	▲		●	●	●																													
Heavy Cutting	**CNMM250924-HX**	2.4		●	▲		●	●	●																													
HL	**CNMM120408-HL**	0.8					●	●							●																							
	CNMM120412-HL	1.2					●	●							●																							
	CNMM120416-HL	1.6						●																														C008 C009 E013 E036 E041 H006 −008
	CNMM160612-HL	1.2					●	●							●																							
	CNMM160616-HL	1.6					●	●							●																							
	CNMM190612-HL	1.2					●	●							●																							
	CNMM190616-HL	1.6					●	●							●																							
Heavy Cutting	**CNMM190624-HL**	2.4					●	●							●																							

● = NEW

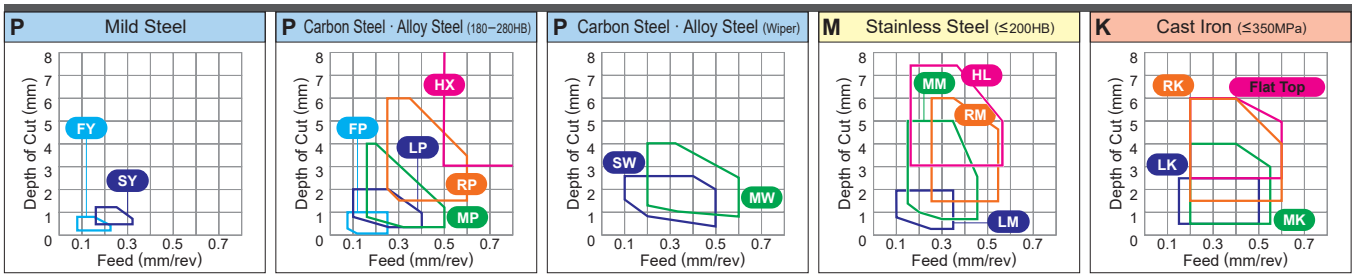
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° CN TYPE INSERTS WITH HOLE

CNMM 25 09 24- HR
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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	MP9025 (NEW)	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
HR  Heavy Cutting	**CNMM250924-HR**	2.4					●	●																															–
HV  Heavy Cutting	**CNMM190616-HV**	1.6		●	▲		●	●	●																														C008 C009
	CNMM190624-HV	2.4		●	▲		●	●	●																														
	CNMM250924-HV	2.4		●	▲		●	●	●																														
HZ  Heavy Cutting	**CNMM120408-HZ**	0.8		●	▲		●	●																														C008 C009 E013 E036 E041 H006 –008
	CNMM120412-HZ	1.2		●	▲		●	●																														
	CNMM120416-HZ	1.6						●																														
	CNMM160612-HZ	1.2		●	▲																																	
	CNMM160616-HZ	1.6		●	▲																																	
	CNMM190612-HZ	1.2		●	▲					●																													
	CNMM190616-HZ	1.6		●	▲					●																													
HM  Heavy Cutting	**CNMM160612-HM**	1.2					●	●							●																								C008 C009 E013 E036 E041 H006 –008
	CNMM160616-HM	1.6					●	●							●																								
	CNMM190612-HM	1.2					●	●							●																								
	CNMM190616-HM	1.6					●	●							●																								
	CNMM190624-HM	2.4					●	●							●																								
	CNMM250924-HM	2.4					●	●																														
Flat Top 	**CNMA120404**	0.4															●	●	●	●															●	●				C008 C009 E013 E036 E041 H006 –008
	CNMA120408	0.8															●	●	●	●	●														●	●				
	CNMA120412	1.2															●	●	●	●	●																		
	CNMA120416	1.6															●	●	●	●																			
	CNMA160612	1.2															●	●	●	●																			
	CNMA160616	1.6															●	●	●	●																			
	CNMA190612	1.2															●	●	●	●																			
	CNMA190616	1.6															●	●	●	●																			
	CNMA190624	2.4															●	●																					

● = NEW

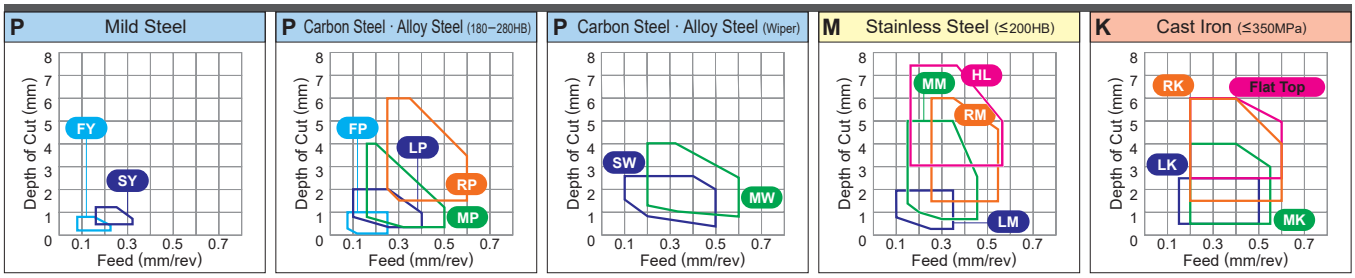
● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

55° DN TYPE INSERTS WITH HOLE

DNMG 15 04 02- 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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	MP9025 (NEW)	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
FP	**DNMG150402-FP**	0.2				●	●																					●		●									C010 C011 E013 E036 –041 H009 –011
	DNMG150404-FP	0.4				●	●																					●		●									
	DNMG150408-FP	0.8				●	●																					●		●									
	NEW **DNMG150412-FP**	1.2				●	●																					●		●									
	DNMG150602-FP	0.2				●	●																					●		●									
	DNMG150604-FP	0.4				●	●																					●		●									
	DNMG150608-FP	0.8				●	●																					●		●									
Finish Cutting	NEW **DNMG150612-FP**	1.2				●	●																					●		●									
FH	**DNMG150402-FH**	0.2		●	▲																							●	●	●									C010 C011 E013 E036 –041 H009 –011
	DNMG150404-FH	0.4		●																								●	●	●	●								
	DNMG150408-FH	0.8		●																								●		●	●								
	DNMG150602-FH	0.2		●	▲																							●	●	●									
	DNMG150604-FH	0.4		●	▲																									●									
Finish Cutting	**DNMG150608-FH**	0.8		●	▲																									●									
FS	**DNMG150404-FS**	0.4																										●											C010 C011 E013 E036 –041 H009 –011
	DNMG150408-FS	0.8			▲																							●											
Finish Cutting																																							
FY	**DNMG150404-FY**	0.4			▲																							●	●	●		●							C010 C011 E013 E036 –041 H009 –011
	DNMG150408-FY	0.8			▲																							●		●		●							
	DNMG150604-FY	0.4																												●									
Finish Cutting	**DNMG150608-FY**	0.8			▲																									●									
FJ	**DNGG150404-FJ**	0.4																								●	●										●		C010 C011 E013 E036 –041 H009 –011
	DNGG150408-FJ	0.8																								●	●										●		
Finish Cutting																																							
PK	**DNGG150404-PK**	0.4																										●											C010 C011 E013 E036 –041 H009 –011
Finish Cutting																																							

● = NEW

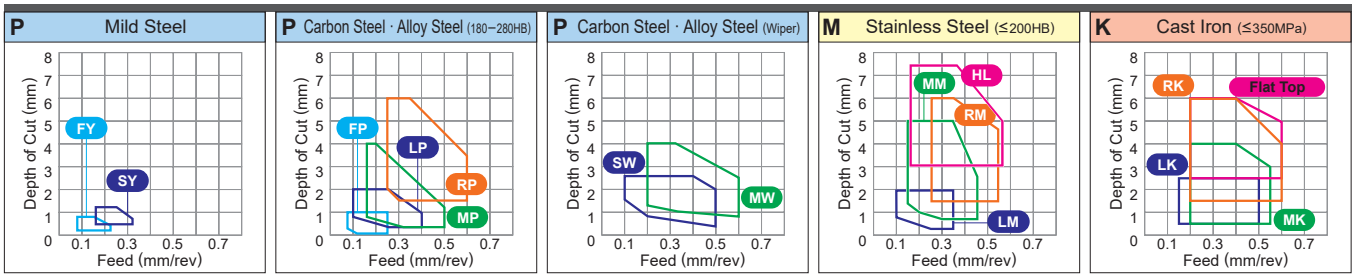
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

55° DN TYPE INSERTS WITH HOLE

DNMG 11 04 04- LP
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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
LP	**DNMG110404-LP**	0.4	●	●		●	●	●																						●									C010 C011 E013 E036 –041 H009 –011
	DNMG110408-LP	0.8	●	●		●	●	●																						●									
	DNMG150404-LP	0.4	●	●		●	●	●																						●									
	DNMG150408-LP	0.8	●	●		●	●	●																						●									
	DNMG150412-LP	1.2	●	●		●	●	●																						●									
	DNMG150604-LP	0.4	●	●		●	●	●																						●									
	DNMG150608-LP	0.8	●	●		●	●	●																						●									
Light Cutting	**DNMG150612-LP**	1.2	●	●		●	●	●																															
LM	**DNMG110404-LM**	0.4									●	●	●																										
	DNMG110408-LM	0.8									●	●	●																										
	DNMG150404-LM	0.4									●	●	●																										
	DNMG150408-LM	0.8									●	●	●																										
	DNMG150412-LM	1.2									●	●	●																										
	DNMG150604-LM	0.4									●	●	●																										
	DNMG150608-LM	0.8									●	●	●																										
Light Cutting	**DNMG150612-LM**	1.2									●	●	●																										
LK	**DNMG110408-LK**	0.8															●	●																					
	DNMG150404-LK	0.4															●	●			●																		
	DNMG150408-LK	0.8															●	●																					
	DNMG150412-LK	1.2															●	●																					
	DNMG150604-LK	0.4															●	●																					
	DNMG150608-LK	0.8															●	●																					
Light Cutting	**DNMG150612-LK**	1.2															●	●																					
LS	NEW **DNMG150402-LS**	0.2																				●	●	●														●	C010 C011 E013 E036 –041 H009 –011
	DNMG150404-LS	0.4																				●	●	●														●	
	DNMG150408-LS	0.8																				●	●	●														●	
	DNMG150604-LS	0.4																				●	●	●														●	
Light Cutting	**DNMG150608-LS**	0.8																				●	●	●														●	
SH	**DNMG110404-SH**	0.4	●	●											●																								
	DNMG110408-SH	0.8	●	●											●																								
	DNMG150404-SH	0.4	●	●	▲	●	●								●				●										●	●		●							
	DNMG150408-SH	0.8	●	●	▲	●	●								●				●										●	●		●							
	DNMG150412-SH	1.2	●	●	▲	●	●								●				●										●			●							
	DNMG150604-SH	0.4	●	●																																			
	DNMG150608-SH	0.8	●	●															●																				
Light Cutting	**DNMG150612-SH**	1.2	●	●															●																				

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																							Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	MP9025 NEW	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
SA	**DNMG150404-SA**	0.4	●	●	▲	●	●																					●	●									
	DNMG150408-SA	0.8	●	●	▲	●	●																					●	●									C010 C011
	DNMG150412-SA	1.2	●	●	▲	●	●																						●									E013 E036
	DNMG150604-SA	0.4	●	●	▲																								●									−041 H009
	DNMG150608-SA	0.8	●	●	▲																								●									−011
Light Cutting	**DNMG150612-SA**	1.2	●	●	▲																								●									
* **SW**	**DNMX110404-SW**	0.4	●			●																																
	DNMX110408-SW	0.8	●			●																																
	DNMX150404-SW	0.4	●	●		●							▲																●	●	●								C010 E013
	DNMX150408-SW	0.8	●	●		●							▲																●	●	●								E036 E038
	DNMX150412-SW	1.2	●	●		●							▲																●	●									E040 H009
	DNMX150604-SW	0.4	●	●		●							▲																●	●	●								H011
	DNMX150608-SW	0.8	●	●		●							▲																●	●	●								
Light Cutting (Wiper)	**DNMX150612-SW**	1.2	●	●		●							▲																●	●									
SY	**DNMG150404-SY**	0.4			▲																								●	●	●								C010
	DNMG150408-SY	0.8			▲																								●		●	●							C011 E013
	DNMG150604-SY	0.4																													●								E036 −041
	DNMG150608-SY	0.8			▲																										●								H009 −011
Light Cutting																																						
C	**DNMG150404-C**	0.4																											▲	▲									C010
	DNMG150408-C	0.8																											▲	▲									C011 E013
	DNMG150604-C	0.4																											▲	▲									E036 −041
	DNMG150608-C	0.8																											▲	▲									H009 −011
Light Cutting																																						
MJ	**DNMG150404-MJ**	0.4													●							●	●		●	●											●	
	DNMG150408-MJ	0.8													●							●	●		●	●											●	
	DNMG150412-MJ	1.2													●							●	●		●	●													C010 C011
	DNMG150416-MJ	1.6													●							●	●		●	●													E013 E036
	DNMG150604-MJ	0.4													●							●	●		●	●													−041 H009
	DNMG150608-MJ	0.8													●							●	●		●	●													−011
	DNMG150612-MJ	1.2													●							●	●		●	●													
Light Cutting	**DNMG150616-MJ**	1.6													●							●	●		●	●													
MJ	**DNGM150404-MJ**	0.4																								●	●									●	●		C010
	DNGM150408-MJ	0.8																								●	●									●	●		C011 E013
Light Cutting																																							E036 −041 H009 −011
MP	**DNMG150404-MP**	0.4	●	●	▲	●	●	●												●											●								C010
	DNMG150408-MP	0.8	●	●	▲	●	●	●												●											●								C011 E013
	DNMG150412-MP	1.2	●	●	▲	●	●	●												●											●								E036 −041
	DNMG150416-MP	1.6	●	●	▲	●	●	●												●																			H009 −011
	DNMG150604-MP	0.4	●	●	▲	●	●	●												●											●								
	DNMG150608-MP	0.8	●	●	▲	●	●	●												●											●								
	DNMG150612-MP	1.2	●	●	▲	●	●	●												●											●								
Medium Cutting	**DNMG150616-MP**	1.6	●	●	▲	●	●	●												●																			

* Please refer to A028 before using the SW breaker (wiper insert).

● = NEW

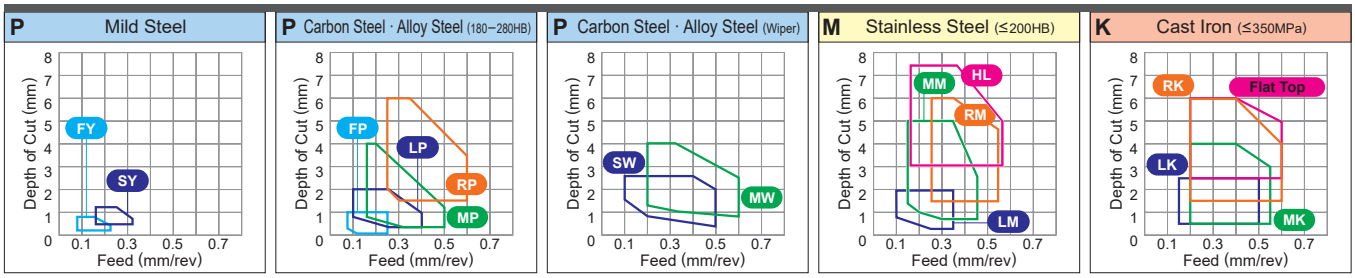
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

55° DN TYPE INSERTS WITH HOLE

DNMG 15 04 08- MM
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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

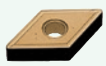
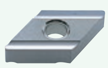
Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
MM	**DNMG150408-MM**	0.8									●	●	●																										C010 C011 E013 E036 –041 H009 –011
	DNMG150412-MM	1.2									●	●	●																										
	DNMG150608-MM	0.8									●	●	●																										
	DNMG150612-MM	1.2									●	●	●																										
Medium Cutting																																						
MK	**DNMG110408-MK**	0.8															●	●																				
	DNMG150404-MK	0.4															●	●																				C010 C011 E013 E036 –041 H009 –011
	DNMG150408-MK	0.8															●	●																				
	DNMG150412-MK	1.2															●	●																				
	DNMG150604-MK	0.4															●	●																				
	DNMG150608-MK	0.8															●	●																				
Medium Cutting	**DNMG150612-MK**	1.2															●	●																				
* **MS**	**DNMG150404-MS**	0.4																				●	●	●														●
	DNMG150408-MS	0.8																				●	●	●														●
	DNMG150412-MS	1.2																				●	●	●														●
	DNMG150604-MS	0.4																				●	●	●														●
	DNMG150608-MS	0.8																				●	●	●														●
Medium Cutting	**DNMG150612-MS**	1.2																				●	●	●														●
MS	**DNMG110408-MS**	0.8		●											●																							
	DNMG150404-MS	0.4		●	▲									▲	●	●										●	●	●											C010 C011 E013 E036 –041 H009 –011
	DNMG150408-MS	0.8		●										▲	●	●										●	●	●	●								●		
	DNMG150412-MS	1.2		●											●	●										●	●												
	DNMG150604-MS	0.4		●										▲	●	●										●	●		●										
	DNMG150608-MS	0.8		●										▲	●	●										●	●												
Medium Cutting	**DNMG150612-MS**	1.2		●												●										●	●												
GK	**DNMG150404-GK**	0.4															●	●			●																	
	DNMG150408-GK	0.8															●	●																				C010 C011 E013 E036 –041 H009 –011
	DNMG150412-GK	1.2															●	●																				
	DNMG150604-GK	0.4															●	●																				
	DNMG150608-GK	0.8															●	●																				
Medium Cutting	**DNMG150612-GK**	1.2															●	●																				

* Newly designed breakers : MP9005, MP9015, MP9025, MT9015

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◐ : General Cutting ✤ : Unstable Cutting

Shape	Order Number	RE (mm)	UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905
Work Material	P	Steel	●	◐	✤	◐	✤	✤	✤	●						
	M	Stainless Steel									●	◐	✤	●	✤	
	K	Cast Iron														
	N	Non-ferrous Metal														
	S	Heat-resistant Alloy, Titanium Alloy														●
			Coated													
GM	DNMG150404-GM	0.4									●	●	●			
	DNMG150408-GM	0.8									●	●	●			
	DNMG150412-GM	1.2									●	●	●			
	DNMG150604-GM	0.4									●	●	●			
	DNMG150608-GM	0.8									●	●	●			
Medium Cutting	DNMG150612-GM	1.2									●	●	●			
MA	DNMG110404-MA	0.4	●	●		●	●									
	DNMG110408-MA	0.8	●	●		●	●									
	DNMG110412-MA	1.2	●	●		●	●									
	DNMG150404-MA	0.4	●	●	▲	●	●					●	●	▲	●	
	DNMG150408-MA	0.8	●	●	▲	●	●	●				●	●	▲	●	
	DNMG150412-MA	1.2	●	●	▲	●	●	●				●	●		●	
	DNMG150604-MA	0.4	●	●	▲	●	●					●	●	▲	●	
	DNMG150608-MA	0.8	●	●	▲	●	●	●				●	●	▲	●	
	DNMG150612-MA	1.2	●	●	▲	●	●	●				●	●	▲	●	
Medium Cutting	DNMG150616-MA	1.6		●												
MH	DNMG150404-MH	0.4	●	●	▲											
	DNMG150408-MH	0.8	●	●	▲	●	●	●						▲		
	DNMG150412-MH	1.2	●	●	▲	●	●	●						▲		
	DNMG150604-MH	0.4	●	●												
	DNMG150608-MH	0.8	●	●	▲	●	●	●						▲		
Medium Cutting	DNMG150612-MH	1.2	●	●	▲	●	●	●								
Standard	DNMG110408	0.8		●												
	DNMG150404	0.4	●	●	▲	●	●									
	DNMG150408	0.8	●	●	▲	●	●	●								
	DNMG150412	1.2	●	●	▲	●	●	●								
	DNMG150416	1.6		●		●	●	●								
	DNMG150604	0.4	●	●	▲	●	●									
	DNMG150608	0.8	●	●	▲	●	●	●								
	DNMG150612	1.2	●	●	▲	●	●	●								
Medium Cutting	DNMG150616	1.6		●		●	●	●								
* MW	DNMX150408-MW	0.8	●	●		●										
	DNMX150412-MW	1.2	●	●		●										
	DNMX150608-MW	0.8	●	●		●								▲		
Medium Cutting (Wiper)	DNMX150612-MW	1.2	●	●		●										
R/L	DNGG150404R	0.4														
	DNGG150404L	0.4														
	DNGG150408R	0.8														
	DNGG150408L	0.8														
	DNGG150604R	0.4														
	DNGG150604L	0.4														
	DNGG150608R	0.8														
Medium Cutting	DNGG150608L	0.8														

Order Number	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	MP9025 (NEW)	VP05RT	VP10RT	VP15TF	UP20M
P Steel											✤	✤
M Stainless Steel										◐	✤	✤
K Cast Iron	●	◐	●	◐	◐					◐	✤	
N Non-ferrous Metal												
S Heat-resistant Alloy, Titanium Alloy						●	◐	✤	●	◐	✤	
	Coated											
DNMG150404-GM												
DNMG150408-GM												
DNMG150412-GM												
DNMG150604-GM												
DNMG150608-GM												
DNMG150612-GM												
DNMG110404-MA												
DNMG110408-MA												
DNMG110412-MA												
DNMG150404-MA	●	●	●	●			●				●	
DNMG150408-MA	●	●	●	●			●	● (NEW)			●	
DNMG150412-MA	●	●		●			●	● (NEW)			●	
DNMG150604-MA	●	●					●				●	
DNMG150608-MA	●	●	●	●			●	● (NEW)			●	
DNMG150612-MA	●	●	●	●			●	● (NEW)			●	
DNMG150616-MA												
DNMG150404-MH												
DNMG150408-MH				●								
DNMG150412-MH				●								
DNMG150604-MH				●								
DNMG150608-MH				●								
DNMG150612-MH				●								
DNMG110408					● (NEW)							
DNMG150404			●	●								
DNMG150408			●	●							●	
DNMG150412			●	●							●	
DNMG150416												
DNMG150604			●	●								
DNMG150608			●	●							●	
DNMG150612			●	●							●	
DNMG150616												
DNMX150408-MW	●	●	●	●								
DNMX150412-MW	●	●	●	●								
DNMX150608-MW	●	●	●	●								
DNMX150612-MW	●	●										
DNGG150404R												
DNGG150404L												
DNGG150408R												
DNGG150408L												
DNGG150604R												
DNGG150604L												
DNGG150608R												
DNGG150608L												

Order Number	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
P Steel	●	◐	◐	●	●	✤					
M Stainless Steel	●			●	●	✤					
K Cast Iron	●			●	●	✤	●	◐			
N Non-ferrous Metal								◐			
S Heat-resistant Alloy, Titanium Alloy								◐	◐	◐	
	Cermet		Coated Cermet			Carbide					
DNMG150404-GM											C010 C011 E013 E036 —041 H009 —011
DNMG150408-GM											
DNMG150412-GM											
DNMG150604-GM											
DNMG150608-GM											
DNMG150612-GM											
DNMG110404-MA											C010 C011 E013 E036 —041 H009 —011
DNMG110408-MA											
DNMG110412-MA											
DNMG150404-MA		●									
DNMG150408-MA		●									
DNMG150412-MA		●									
DNMG150604-MA		●									
DNMG150608-MA		●									
DNMG150612-MA		●									
DNMG150616-MA											
DNMG150404-MH											C010 C011 E013 E036 —041 H009 —011
DNMG150408-MH											
DNMG150412-MH											
DNMG150604-MH											
DNMG150608-MH											
DNMG150612-MH											
DNMG110408											C010 C011 E013 E036 —041 H009 —011
DNMG150404	●	●	●					●			
DNMG150408	●	●	●					●			
DNMG150412	●										
DNMG150416											
DNMG150604	●		●								
DNMG150608	●		●								
DNMG150612											
DNMG150616											
DNMX150408-MW											C010 E013 E036 E038 E040 H009 H011
DNMX150412-MW											
DNMX150608-MW											
DNMX150612-MW											
DNGG150404R	●	●				●		●			C010 C011 E013 E036 —041 H009 —011
DNGG150404L	●	●				●		●			
DNGG150408R	●	●				●					
DNGG150408L	●	●									
DNGG150604R		●				●					
DNGG150604L		●									
DNGG150608R		●									
DNGG150608L		●									

* Please refer to A028 before using the MW breaker (wiper insert).

● (highlighted) = NEW

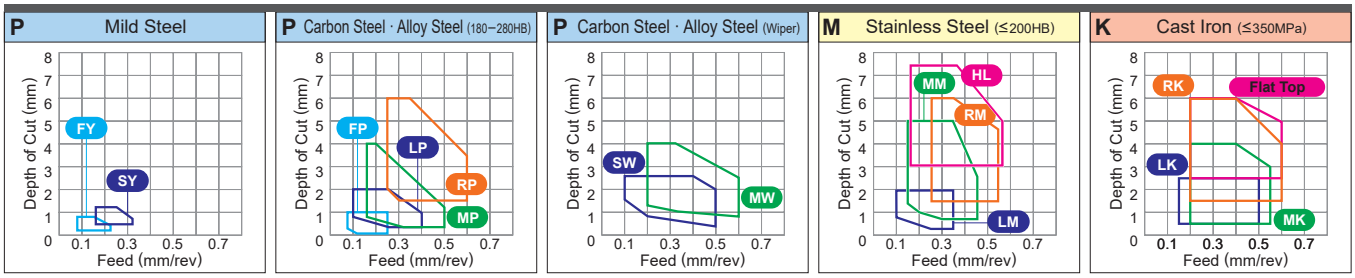
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

55° DN TYPE INSERTS WITH HOLE

DNMG 15 04 08- RP
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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

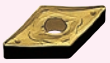
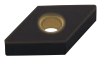
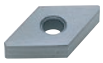
Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	MP9025 (NEW)	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
RP	DNMG150408-RP	0.8	●	●		●	●	●																															C010 C011 E013 E036 –041 H009 –011
	DNMG150412-RP	1.2	●	●		●	●	●																															
	DNMG150416-RP	1.6	●	●		●	●	●																															
	DNMG150608-RP	0.8	●	●		●	●	●																															
	DNMG150612-RP	1.2	●	●		●	●	●																															
Rough Cutting	DNMG150616-RP	1.6	●	●		●	●	●																															
RM	DNMG150408-RM	0.8									●	●	●																										C010 C011 E013 E036 –041 H009 –011
	DNMG150412-RM	1.2									●	●	●																										
	DNMG150416-RM	1.6									●	●	●																										
	DNMG150608-RM	0.8									●	●	●																										
	DNMG150612-RM	1.2									●	●	●																										
Rough Cutting	DNMG150616-RM	1.6									●	●	●																										
RK	DNMG150408-RK	0.8															●	●																					C010 C011 E013 E036 –041 H009 –011
	DNMG150412-RK	1.2															●	●																					
	DNMG150608-RK	0.8															●	●																					
	DNMG150612-RK	1.2															●	●																					
Rough Cutting																																							
RS	DNMG150408-RS	0.8																					●	●														●	C010 C011 E013 E036 –041 H009 –011
	DNMG150412-RS	1.2																					●	●														●	
	DNMG150416-RS	1.6																					●															●	
	DNMG150608-RS	0.8																					●	●														●	
	DNMG150612-RS	1.2																					●	●														●	
Rough Cutting	DNMG150616-RS	1.6																					●															●	
GH	DNMG150408-GH	0.8	●	●	▲										●			●	●																				C010 C011 E013 E036 –041 H009 –011
	DNMG150412-GH	1.2	●	●	▲									▲	●			●	●																				
	DNMG150608-GH	0.8	●	●	▲										●			●	●																				
	DNMG150612-GH	1.2	●	●	▲										●			●	●																				
Rough Cutting																																							
GJ	DNMG150408-GJ	0.8														●										●	●										●	C010 C011 E013 E036 –041 H009 –011
	DNMG150412-GJ	1.2														●										●	●										●	
	DNMG150416-GJ	1.6														●										●	●										●	
	DNMG150608-GJ	0.8														●										●												
	DNMG150612-GJ	1.2														●										●												
Rough Cutting	DNMG150616-GJ	1.6														●										●												

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																							Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	MC5105	UC5115	MH515 NEW	MP9005	MP9015	MP9025 NEW	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
HL	**DNMM150408-HL**	0.8					●	●							●																						C010 C011 E013 E036 −041 H009 −011
	**DNMM150412-HL**	1.2					●	●							●																						
	DNMM150608-HL	0.8					●	●							●																						
	DNMM150612-HL	1.2					●	●							●																						
Heavy Cutting																																				
HZ	**DNMM150408-HZ**	0.8		●▲			●	●																													C010 C011 E013 E036 −041 H009 −011
	**DNMM150412-HZ**	1.2		●▲			●	●																												
	DNMM150608-HZ	0.8		●▲			●	●																												
	DNMM150612-HZ	1.2		●▲			●	●																												
Heavy Cutting																																				
Flat Top	**DNMA150404**	0.4															●	●	●	●															●		C010 C011 E013 E036 −041 H009 −011
	**DNMA150408**	0.8															●	●	●	●									●						●	●	
	DNMA150412	1.2															●	●	●	●																	
	DNMA150604	0.4															●	●																			
	DNMA150608	0.8															●	●	●	●																	
	DNMA150612	1.2															●	●	●	●																	
Flat Top	**DNGA150404**	0.4																																	●		C010 C011 E013 E036 −041 H009 −011
	**DNGA150408**	0.8																																	●	●	

● = NEW

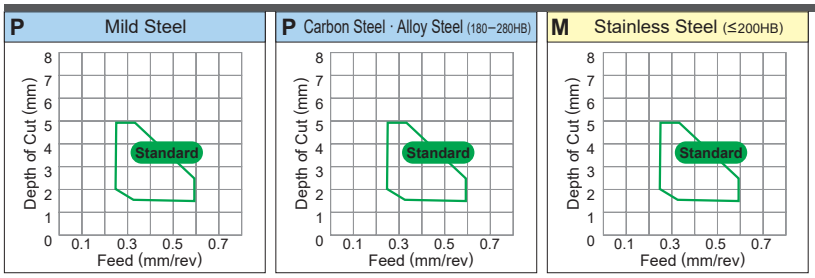
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

RN TYPE INSERTS WITH HOLE

RNMG 12 04 00
Size Thickness Corner Radius
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	IC (mm)	Coated																						Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
Standard	**RNMG120400**	12.7	●	▲	●	●																															–
Medium Cutting																																					

● = NEW

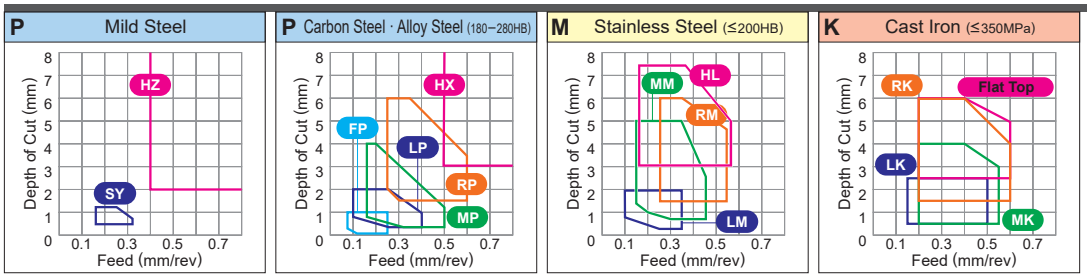
● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

90° SN TYPE INSERTS WITH HOLE

SNMG 12 04 04- 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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
FP	**SNMG120404-FP**	0.4				●	●																					●		●									C012 –015 E014 E035
	SNMG120408-FP	0.8				●	●																					●		●									
	NEW **SNMG120412-FP**	1.2				●	●																					●		●									
Finish Cutting																																							
FH	**SNMG090304-FH**	0.4																										●											C012 –015 E014 E035
	SNMG090308-FH	0.8																										●											
	SNMG120404-FH	0.4		●																								●		●									
	SNMG120408-FH	0.8		●																										●									
Finish Cutting																																							
FS	**SNMG120408-FS**	0.8																										●											C012 –015 E014 E035
Finish Cutting																																							
LP	**SNMG120404-LP**	0.4	●	●		●	●	●																						●									C012 –015 E014 E035
	SNMG120408-LP	0.8	●	●		●	●	●																						●									
	SNMG120412-LP	1.2	●	●		●	●	●																															
Light Cutting																																							
LM	**SNMG120404-LM**	0.4									●	●	●																										C012 –015 E014 E035
	SNMG120408-LM	0.8									●	●	●																										
Light Cutting																																							
LK	**SNMG120408-LK**	0.8															●	●																					C012 –015 E014 E035
	SNMG120412-LK	1.2															●	●																					
Light Cutting																																							
SH	**SNMG120404-SH**	0.4		●																●																			C012 –015 E014 E035
	SNMG120408-SH	0.8		●	● ▲															●								●										
	SNMG120412-SH	1.2		●	▲															●																			
Light Cutting																																							

● = NEW

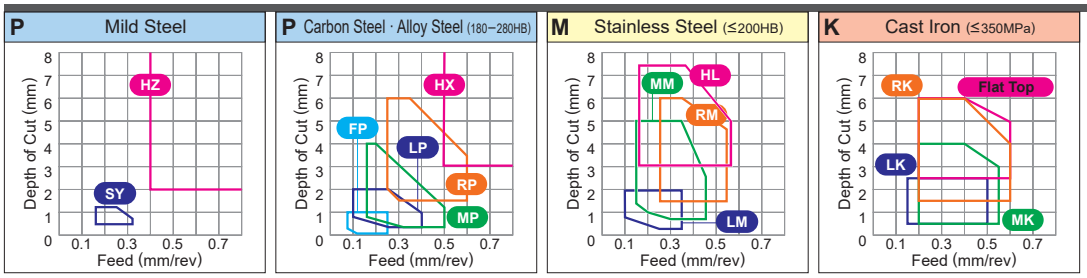
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

90° SN TYPE INSERTS WITH HOLE

SNMG 12 04 04- SA
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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
SA	**SNMG120404-SA**	0.4		●																									●										
	SNMG120408-SA	0.8	●	●	▲																								●										C012 –015 E014 E035
	SNMG120412-SA	1.2		●	▲																								●										
Light Cutting																																							
SY	**SNMG120408-SY**	0.8			▲																										●								C012 –015 E014 E035
Light Cutting																																						
C	**SNMG090304-C**	0.4																											▲										
	SNMG090308-C	0.8																											▲										C012 –015 E014 E035
	SNMG120408-C	0.8																											▲	▲									
	SNMG120416-C	1.6																											▲										
Light Cutting																																						
R/L-1G	**SNMG120404L-1G**	0.4																											●										
	SNMG120404R-1G	0.4																											●										C012 –015 E014 E035
	SNMG120408R-1G	0.8																											●										
Light Cutting																																						
MP	**SNMG120404-MP**	0.4	●	●	▲	●	●	●											●											●									
	SNMG120408-MP	0.8	●	●	▲	●	●	●											●											●									C012 –015 E014 E035
	SNMG120412-MP	1.2	●	●	▲	●	●	●											●											●									
Medium Cutting																																						
MM	**SNMG120408-MM**	0.8									●	●	●																										
	SNMG120412-MM	1.2									●	●	●																										
	SNMG120416-MM	1.6									●	●	●																										C012 –015 E014 E035
	SNMG150608-MM	0.8									●	●	●																										
	SNMG150612-MM	1.2									●	●	●																										
	SNMG150616-MM	1.6									●	●	●																										
	SNMG190612-MM	1.2									●	●	●																										
Medium Cutting	**SNMG190616-MM**	1.6									●	●	●																										

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																					Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	MP9025 NEW	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
MK	SNMG120408-MK	0.8															●	●																			
	SNMG120412-MK	1.2															●	●																			
	SNMG120416-MK	1.6															●	●																			C012
	SNMG150612-MK	1.2															●	●																			–015
	SNMG150616-MK	1.6															●	●																			E014
	SNMG190612-MK	1.2															●	●																			E035
Medium Cutting	SNMG190616-MK	1.6															●	●																			
* **MS**	SNMG120404-MS	0.4																				●	●													●	
	SNMG120408-MS	0.8																				●	●	●												●	C012
	SNMG120412-MS	1.2																				●	●	●												●	–015
	SNMG150612-MS	1.2																				●	●													●	E014
	SNMG150616-MS	1.6																				●	●													●	E035
Medium Cutting	NEW SNMG190612-MS	1.2																				●	●														
MS	SNMG090304-MS	0.4													●																						
	SNMG090308-MS	0.8													●																						
	SNMG120404-MS	0.4		●										▲	●																						C012
	SNMG120408-MS	0.8		●	▲									▲	●	●									●	●	●	●						●		●	–015
	SNMG120412-MS	1.2		●										▲	●	●									●	●	●										E014
	SNMG120416-MS	1.6													●																						E035
Medium Cutting	SNMG190616-MS	1.6													●																						
GK	SNMG120404-GK	0.4															●	●			●																
	SNMG120408-GK	0.8															●	●																			C012
	SNMG120412-GK	1.2															●	●			●																–015
Medium Cutting																																					E014 E035
GM	SNMG120404-GM	0.4									●	●	●																								
	SNMG120408-GM	0.8									●	●	●																								C012
	SNMG120412-GM	1.2									●	●	●																								–015
Medium Cutting																																					E014 E035
MA	SNMG120404-MA	0.4	●	●	▲	●	●				●	●		●			●	●		●			●				●		●								
	SNMG120408-MA	0.8	●	●	▲	●	●	●			●	●	▲	●			●	●	●	●			●				●		●								
	SNMG120412-MA	1.2	●	●	▲	●	●	●			●	●	▲	●			●	●	●	●			●				●		●								
	SNMG120416-MA	1.6																		●			●														C012
	SNMG150608-MA	0.8	●	●	▲										●																						–015
	SNMG150612-MA	1.2	●	●	▲	●	●	●							●					●																	E014
	SNMG150616-MA	1.6		●		●	●	●																													E035
	SNMG190612-MA	1.2	●	●	▲	●	●	●												●																	
Medium Cutting	SNMG190616-MA	1.6	●	●	▲	●	●	●							●																						
MH	SNMG120408-MH	0.8	●	●	▲	●	●	●						▲						●																	
	SNMG120412-MH	1.2	●	●	▲	●	●	●						▲						●																	C012
	SNMG190612-MH	1.2	●	●	▲															●																	–015
	SNMG190616-MH	1.6	●	●	▲																																E014
Medium Cutting																																					E035

* Newly designed breakers : MP9005, MP9015, MP9025, MT9015

● = NEW

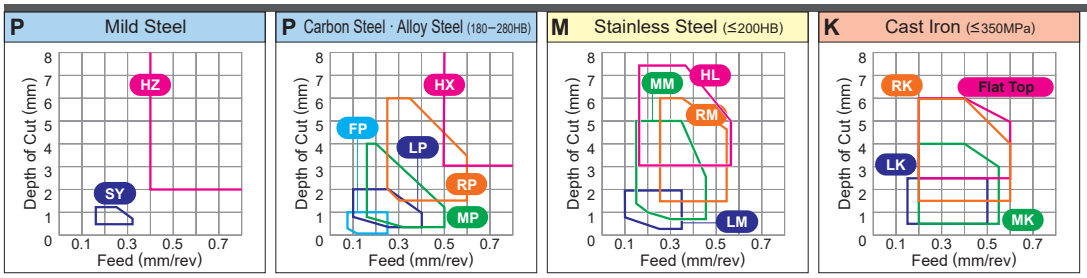
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

90° SN TYPE INSERTS WITH HOLE

SNMG 09 03 04
Size / Thickness / Corner Radius
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ····· Rough Cutting ····· Heavy Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																							Cermet		Coated Cermet		Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	MP9025 NEW	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
Standard	SNMG090304	0.4	●	●	▲	●	●												●	●									●	●	●			●					
	SNMG090308	0.8	●	●	▲	●	●												●	●									●	●	●			●	●	●			
	SNMG120404	0.4	●	●	▲	●	●												●	●									●		●			●		●			
	SNMG120408	0.8	●	●	▲	●	●	●											●	●							●		●	●	●			●	●	●			
	SNMG120412	1.2	●	●	▲	●	●	●											●	●										●				●	●				C012
	SNMG120416	1.6		●	▲	●	●	●											●	●										●				●					–015
	SNMG120420	2.0			▲	●	●	●																															E014
	SNMG150612	1.2	●	●	▲	●	●	●											●	●																			E035
	SNMG150616	1.6				●	●	●																															
	SNMG190612	1.2	●	●	▲	●	●	●											●	●														●					
Medium Cutting	SNMG190616	1.6	●	●	▲	●	●	●												●														●					
R/L	SNGG090304R	0.4																											●	●				●		●			
	SNGG090304L	0.4																											●	●				●					
	SNGG090308R	0.8																											●	●									C012
	SNGG090308L	0.8																											●	●									–015
	SNGG120404R	0.4																											●	●	●			●					E014
	SNGG120404L	0.4																											●	●	●			●					E035
	SNGG120408R	0.8																											●	●	●								
Medium Cutting	SNGG120408L	0.8																											●	●	●			●		●			
RP	SNMG120408-RP	0.8	●	●		●	●	●																															
	SNMG120412-RP	1.2	●	●		●	●	●																															
	SNMG120416-RP	1.6	●	●		●	●	●																															C012
	SNMG150612-RP	1.2	●	●		●	●	●																															–015
	SNMG150616-RP	1.6	●	●		●	●	●																															E014
	SNMG190612-RP	1.2	●	●		●	●	●																															E035
Rough Cutting	SNMG190616-RP	1.6	●	●		●	●	●																															
RM	SNMG120408-RM	0.8									●	●	●																										
	SNMG120412-RM	1.2									●	●	●																										
	SNMG120416-RM	1.6									●	●	●																										C012
	SNMG150612-RM	1.2									●	●	●																										–015
	SNMG150616-RM	1.6									●	●	●																										E014
	SNMG190612-RM	1.2									●	●	●																										E035
Rough Cutting	SNMG190616-RM	1.6									●	●	●																										

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																					Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	VP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
RK	**SNMG120408-RK**	0.8															●	●																				
	SNMG120412-RK	1.2															●	●																				
	SNMG120416-RK	1.6															●	●																				C012
	SNMG150612-RK	1.2															●	●																				–015
	SNMG150616-RK	1.6															●	●																				E014
	SNMG190612-RK	1.2															●	●																				E035
Rough Cutting	**SNMG190616-RK**	1.6															●	●																				
RS	**SNMG120408-RS**	0.8																					●	●													●	
	SNMG120412-RS	1.2																					●	●													●	C012
	SNMG120416-RS	1.6																					●														●	–015
	SNMG150616-RS	1.6																					●														●	E014
	NEW **SNMG190612-RS**	1.2																					●															E035
Rough Cutting	**SNMG190616-RS**	1.6																					●														●	
GH	**SNMG120408-GH**	0.8	●	●	▲									▲	●				●	●																		
	SNMG120412-GH	1.2	●	●	▲									▲	●				●	●																		
	SNMG120416-GH	1.6	●	●											●																							C012
	SNMG150612-GH	1.2	●	●																																		–015
	SNMG150616-GH	1.6		●																																		E014
	SNMG190612-GH	1.2	●	●											●																							E035
Rough Cutting	**SNMG190616-GH**	1.6	●	●										▲	●																							
HX	**SNMM120408-HX**	0.8					●	●																														
	SNMM120412-HX	1.2					●	●																														
	SNMM150612-HX	1.2					●	●																														C012
	SNMM190612-HX	1.2		●	▲		●	●	●																													–015
	SNMM190616-HX	1.6		●	▲		●	●	●																													E014
	SNMM190624-HX	2.4		●	▲		●	●	●																													E035
	SNMM250724-HX	2.4		●	▲		●	●	●																													
Heavy Cutting	**SNMM250924-HX**	2.4		●	▲		●	●	●																													
HL	**SNMM120408-HL**	0.8					●	●							●																							
	SNMM120412-HL	1.2					●	●							●																							C012
	SNMM150612-HL	1.2					●	●							●																							–015
	SNMM190612-HL	1.2					●	●							●																							E014
	SNMM190616-HL	1.6					●	●							●																							E035
Heavy Cutting	**SNMM190624-HL**	2.4					●	●							●																							
HR	**SNMM250724-HR**	2.4					●	●																														
	SNMM250924-HR	2.4					●	●																														–
Heavy Cutting																																				
HV	**SNMM190616-HV**	1.6		●	▲		●	●	●																													
	SNMM190624-HV	2.4		●	▲		●	●	●																													C012
	SNMM250724-HV	2.4		●	▲		●	●	●																													–014
	SNMM250924-HV	2.4		●	▲		●	●	●																													
Heavy Cutting																																				

● = NEW

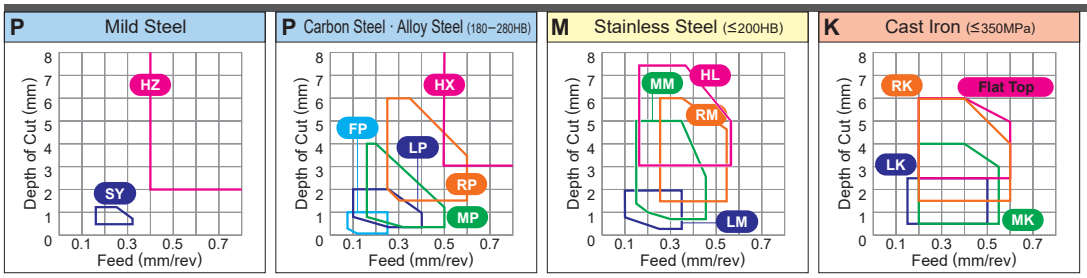
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

90° SN TYPE INSERTS WITH HOLE

SNMM 12 04 08- HZ
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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
HZ	SNMM120408-HZ	0.8	●	▲			●	●																															
	SNMM120412-HZ	1.2	●	▲			●	●																															C012 –015 E014 E035
	SNMM150612-HZ	1.2	●	▲																																			
	SNMM190612-HZ	1.2	●	▲					●																														
Heavy Cutting	SNMM190616-HZ	1.6	●	▲					●																														
HM	SNMM150612-HM	1.2					●	●							●																								
	SNMM190612-HM	1.2					●	●							●																								
	SNMM190616-HM	1.6					●	●							●																								C012 –014
	SNMM190624-HM	2.4					●	●							●																								
	SNMM250724-HM	2.4					●	●																															
Heavy Cutting	SNMM250924-HM	2.4					●	●																															
Flat Top	SNMA090304	0.4																																		●			
	SNMA090308	0.8															●	●	●	●																●			
	SNMA120408	0.8															●	●	●	●															●	●	●		
	SNMA120412	1.2															●	●	●	●																●			C012 –015 E014 E035
	SNMA120416	1.6															●	●	●	●																			
	SNMA150612	1.2															●	●																					
	SNMA150616	1.6															●	●																					
	SNMA190612	1.2															●	●	●	●																			
	SNMA190616	1.6															●	●	●	●																			
Flat Top	SNGA090304	0.4																											●										
	SNGA120404	0.4																																			●		C012 –015 E014 E035
	SNGA120408	0.8																											●							●	●		

● = NEW

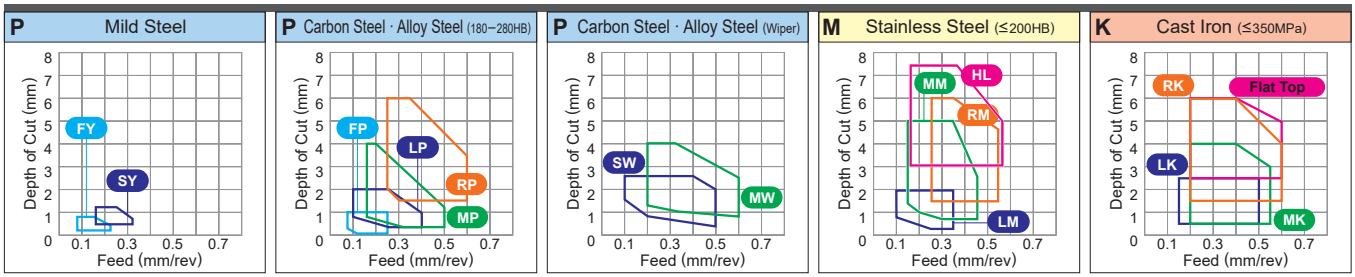
● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

60° TN TYPE INSERTS WITH HOLE

TNMG 16 04 02- 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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	MP9025 (NEW)	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
FP	**TNMG160402-FP**	0.2				●	●																					●		●									C016
	TNMG160404-FP	0.4				●	●																					●		●									C017
	TNMG160408-FP	0.8				●	●																					●		●									E014
	NEW **TNMG160412-FP**	1.2				●	●																					●		●									E035
Finish Cutting																																							E040
FH	**TNMG110304-FH**	0.4																										●											C016
	TNMG160402-FH	0.2		●	▲																							●	●	●									C017
	TNMG160404-FH	0.4		●																								●	●	●	●								E014
	TNMG160408-FH	0.8		●	▲																							●	●	●	●								E035
Finish Cutting																																							E040
FS	**TNMG160404-FS**	0.4			▲																							●											C016
	TNMG160408-FS	0.8			▲																							●											C017
Finish Cutting																																							E014 E035 E040
FY	**TNMG160404-FY**	0.4			▲																							●	●	●		●							C016
	TNMG160408-FY	0.8			▲																							●		●		●							C017
Finish Cutting																																							E014 E035 E040
PK	**TNGG160404-PK**	0.4																										●											C016
	TNGG160408-PK	0.8																										●											C017
Finish Cutting																																							E014 E035 E040
R/L-FS	**TNGG160402R-FS**	0.2								●																		●											C016
	TNGG160402L-FS	0.2								●																		●											C017
	TNGG160404R-FS	0.4								●																		●											E014
	TNGG160404L-FS	0.4								●																		●											E035
	NEW **TNGG160408R-FS**	0.8								●																													E040
Finish Cutting	NEW **TNGG160408L-FS**	0.8								●																													

● = NEW

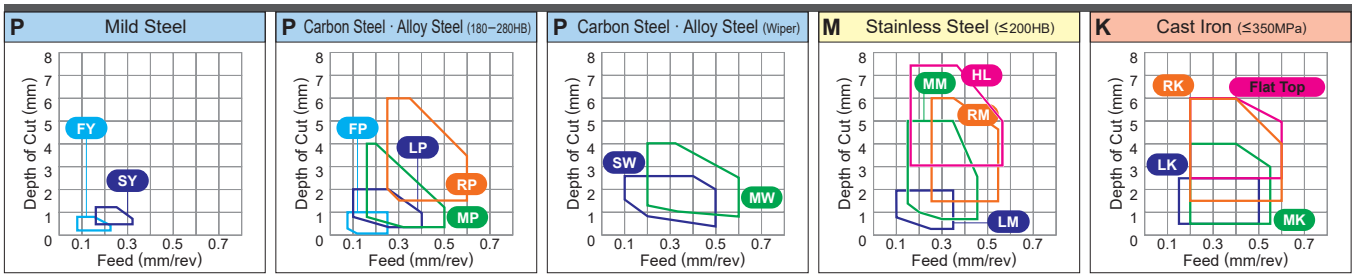
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

60° TN TYPE INSERTS WITH HOLE

TNGG 16 04 02 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 ····· Rough Cutting ····· Heavy Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

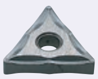
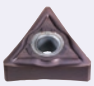
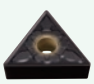
Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
R/L-F	TNGG160402R-F	0.2																								●		● ●		●									
	TNGG160402L-F	0.2																								●		● ●		●									C016
	TNGG160404R-F	0.4																								●		● ●		●									C017
	TNGG160404L-F	0.4																								●		● ●		●									E014
	TNGG160408R-F	0.8																								●		● ●		●									E035
Finish Cutting	TNGG160408L-F	0.8																								●		● ●		●									E040
LP	TNMG160404-LP	0.4	●	●		●	●	●																						●								
	TNMG160408-LP	0.8	●	●		●	●	●																						●								C016
	TNMG160412-LP	1.2	●	●		●	●	●																						●								C017
	TNMG220408-LP	0.8	●	●		●	●	●																						●								E014
Light Cutting	TNMG220412-LP	1.2	●	●		●	●	●																						●								E035
LM	TNMG160404-LM	0.4									●	●	●																										E040
	TNMG160408-LM	0.8									●	●	●																										C016
	TNMG160412-LM	1.2									●	●	●																										C017
Light Cutting																																							E014
LK	TNMG160404-LK	0.4															●	●																					E035
	TNMG160408-LK	0.8															●	●																					E040
	TNMG160412-LK	1.2															●	●																					C016
Light Cutting																																							C017
LS	NEW TNMG160402-LS	0.2																				●	●	●														●	E014
	TNMG160404-LS	0.4																				●	●	●														●	E035
	TNMG160408-LS	0.8																				●	●	●														●	E040
Light Cutting																																							C016
SH	TNMG160404-SH	0.4	●	●	▲	●	●								●				●										●	●		●							C017
	TNMG160408-SH	0.8	●	●	▲	●	●								●				●										●	●		●							E014
	TNMG220408-SH	0.8	●	●											●																								E035
Light Cutting																																							E040
SA	TNMG160404-SA	0.4	●	●	▲	●	●																						●	●									C016
	TNMG160408-SA	0.8	●	●	▲	●	●																						●	●									C017
	TNMG160412-SA	1.2	●	●	▲																									●									E014
	TNMG220408-SA	0.8	●	●	▲																																		E035
Light Cutting	TNMG220412-SA	1.2		●																																			E040

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◐ : General Cutting ✤ : Unstable Cutting

Shape	Order Number	RE (mm)	UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	MP9025 (NEW)	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
Work Material	P	Steel	●	◐	✤	◐	✤	✤	✤	●																	✤	✤	●	◐	◐	●	●	✤					
	M	Stainless Steel									●	◐	✤	●	✤											◐	✤	✤	●			●	●	✤					
	K	Cast Iron															●	◐	●	◐	◐					◐	✤		●			●	●	✤	●	◐			
	N	Non-ferrous Metal																																		◐			
	S	Heat-resistant Alloy, Titanium Alloy														●						●	◐	✤	●	◐	✤									◐	◐	◐	
			Coated																								Cermet		Coated Cermet			Carbide					
* SW 	TNMX160404-SW	0.4	●	●		●								▲															●	●	●								C017
Light Cutting (Wiper)	TNMX160408-SW	0.8	●	●		●								▲															●	●	●								
SY 	TNMG160404-SY	0.4			▲																								●	●	●		●						C016, C017, E014, E035, E040
Light Cutting	TNMG160408-SY	0.8			▲																								●		●		●						
C 	TNMG160404-C	0.4																											▲	▲									C016, C017, E014, E035, E040
	TNMG160408-C	0.8																											▲	▲									
	TNMG220404-C	0.4																											▲	▲									
Light Cutting	TNMG220408-C	0.8																												▲									
MJ 	TNMG160404-MJ	0.4														●						●	●		●	●											●		C016, C017, E014, E035, E040
	TNMG160408-MJ	0.8														●						●	●		●	●											●		
Light Cutting	TNMG160412-MJ	1.2														●						●	●		●	●													
R/L-1G 	TNMG160404R-1G	0.4																											●										C016, C017, E014, E035, E040
	TNMG160404L-1G	0.4																											●										
	TNMG220404R-1G	0.4																											●										
Light Cutting	TNMG220404L-1G	0.4																											●										
R/L-K 	TNGG160402R-K	0.2																											●	●	●								C016, C017, E014, E035, E040
	TNGG160402L-K	0.2																											●	●	●								
	TNGG160404R-K	0.4																											●	●	●								
	TNGG160404L-K	0.4																												●	●								
	TNGG160408R-K	0.8																													●								
Light Cutting	TNGG160408L-K	0.8																													●								
MP 	TNMG160404-MP	0.4	●	●	▲	●	●	●												●											●								C016, C017, E014, E035, E040
	TNMG160408-MP	0.8	●	●	▲	●	●	●												●											●								
	TNMG160412-MP	1.2	●	●	▲	●	●	●												●											●								
	TNMG220408-MP	0.8	●	●	▲	●	●	●												●																			
Medium Cutting	TNMG220412-MP	1.2	●	●	▲	●	●	●												●																			
MM 	TNMG160408-MM	0.8									●	●	●																										C016, C017, E014, E035, E040
	TNMG160412-MM	1.2									●	●	●																										
	TNMG220408-MM	0.8									●	●	●																										
	TNMG220412-MM	1.2									●	●	●																										
Medium Cutting	TNMG220416-MM	1.6									●	●	●																										
MK 	TNMG160404-MK	0.4															●	●																					C016, C017, E014, E035, E040
	TNMG160408-MK	0.8															●	●																					
	TNMG160412-MK	1.2															●	●																					
	TNMG220408-MK	0.8															●	●																					
	TNMG220412-MK	1.2															●	●																					
Medium Cutting	TNMG220416-MK	1.6															●	●																					

* Please refer to A028 before using the SW breaker (wiper insert).

● = NEW

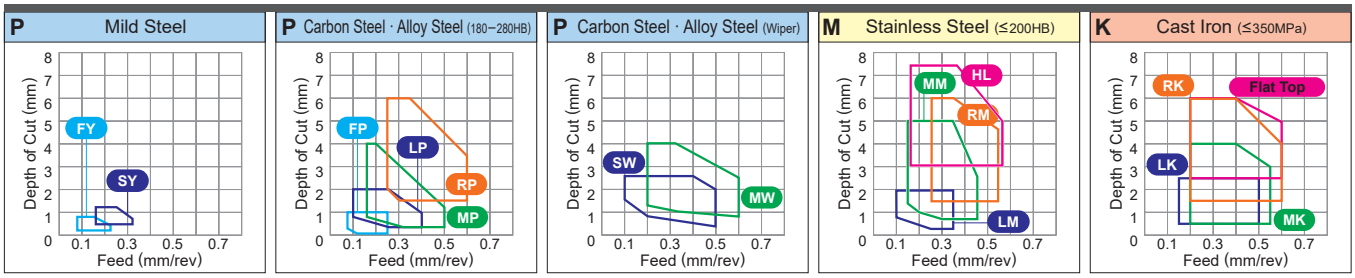
CHIP BREAKERS ➤ A042 GRADES ➤ A030 IDENTIFICATION ➤ A002

60° TN TYPE INSERTS WITH HOLE

TNMG 16 04 04-MS
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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
* MS	TNMG160404-MS	0.4																				●	●															●	C016
	TNMG160408-MS	0.8																				●	●	●														●	C017
	TNMG160412-MS	1.2																				●	●	●														●	E014
	TNMG220408-MS	0.8																				●	●															●	E035
Medium Cutting	TNMG220412-MS	1.2																				●	●															●	E040
MS	TNMG160404-MS	0.4		●										▲	●	●									●	●	●								●				
	TNMG160408-MS	0.8		●	▲									▲	●	●									●	●	●	●	●							●			
	TNMG160412-MS	1.2		●											●	●									●	●													
	TNMG220408-MS	0.8		●										▲	●	●									●	●	●	●											
Medium Cutting	TNMG220412-MS	1.2													●																								
GK	TNMG160404-GK	0.4															●	●																					
	TNMG160408-GK	0.8															●	●																					
	TNMG160412-GK	1.2															●	●			●																		
	TNMG220408-GK	0.8															●	●																					
Medium Cutting	TNMG220412-GK	1.2															●	●																					
GM	TNMG160404-GM	0.4									●	●	●																										
	TNMG160408-GM	0.8									●	●	●																										
	TNMG160412-GM	1.2									●	●	●																										
	TNMG220408-GM	0.8									●	●	●																										
Medium Cutting	TNMG220412-GM	1.2									●	●	●																										
MA	TNMG160404-MA	0.4	●	●	▲	●	●				●	●	▲	●			●	●	●	●			●	●			●		●										
	TNMG160408-MA	0.8	●	●	▲	●	●	●			●	●	▲	●			●	●	●	●			●	●			●		●										
	TNMG160412-MA	1.2	●	●	▲	●	●	●			●	●	▲	●			●	●		●			●				●		●										
	TNMG160416-MA	1.6																		●																			
	TNMG220408-MA	0.8	●	●	▲	●	●	●			●	●	▲	●			●	●	●	●			●				●												
	TNMG220412-MA	1.2	●	●	▲	●	●	●			●	●	▲	●			●	●		●			●				●												
	TNMG220416-MA	1.6																		●			●															
	TNMG270608-MA	0.8	●	●	▲																																		
	TNMG270612-MA	1.2	●	●	▲										●																								
	NEW TNMG270616-MA	1.6																					●															
Medium Cutting	NEW TNMG330924-MA	2.4																					●															
MH	TNMG160404-MH	0.4	●	●	▲									▲						●																			
	TNMG160408-MH	0.8	●	●	▲	●	●	●						▲						●																			
	TNMG160412-MH	1.2	●	●	▲	●	●	●												●																			
	TNMG220408-MH	0.8	●	●	▲	●	●	●						▲						●																			
Medium Cutting	TNMG220412-MH	1.2	●	●	▲	●	●	●												●																			

* Newly designed breakers : MP9005, MP9015, MP9025, MT9015

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																							Cermet		Coated Cermet			Carbide				Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	MP9025 NEW	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
Standard	**TNMG110304**	0.4		●	▲	●	●																										●		●			
	TNMG110308	0.8		●	▲	●	●																														
	TNMG160304	0.4		●		●	●																										●				
	TNMG160308	0.8		●	▲	●	●																										●				
	TNMG160404	0.4	●	●	▲	●	●												●	●							●		●		●		●	●	●		
	TNMG160408	0.8	●	●	▲	●	●	●											●	●							●		●		●		●	●	●		
	TNMG160412	1.2	●	●	▲	●	●	●											●	●									●									C016
	TNMG160416	1.6		●		●	●	●												●									●									C017
	TNMG220404	0.4	●	●	▲	●	●	●																						●				●				E014
	TNMG220408	0.8	●	●	▲	●	●	●												●									●	●				●				E035
	TNMG220412	1.2	●	●	▲	●	●	●												●																		E040
	TNMG220416	1.6		●	▲	●	●	●																														
	TNMG270608	0.8		●		●	●	●																														
	TNMG270612	1.2		●	▲	●	●	●																										●				
	TNMG270616	1.6		●	▲																																
Medium Cutting	**TNMG330924**	2.4																															●				
*** MW**	**TNMX160408-MW**	0.8	●	●		●								▲			●	●		●																	
	TNMX160412-MW	1.2	●	●		●								▲			●	●	●	●																		
Medium Cutting (Wiper)																																					C017
R/L-ES	**TNMG160404R-ES**	0.4												▲	●																						
	TNMG160404L-ES	0.4												▲	●																						C016
	TNMG160408R-ES	0.8												▲	●																						C017
	TNMG160408L-ES	0.8												▲	●																						E014
	TNMG220408R-ES	0.8													●																						E035
Medium Cutting	**TNMG220408L-ES**	0.8													●																						E040
R/L-2G	**TNMG160404R-2G**	0.4																											●								
	TNMG160404L-2G	0.4																											●								C016
	TNMG160408R-2G	0.8																											●								C017
	TNMG160408L-2G	0.8																											●								E014
Medium Cutting																																					E035
																																					E040
R/L	**TNGG110302R**	0.2																												●							
	TNGG110302L	0.2																											●	●							
	TNGG110304R	0.4																											●	●							
	TNGG110304L	0.4																											●	●							
	TNGG110308R	0.8																												●							C016
	TNGG110308L	0.8																											●	●							C017
	TNGG160304R	0.4																											●	●							E014
	TNGG160304L	0.4																											●	●				●			E035
	TNGG160402R	0.2																											●	●	●						E040
	TNGG160402L	0.2																											●	●	●						
	TNGG160404R	0.4																											●	●	●			●	●	●	
Medium Cutting	**TNGG160404L**	0.4																											●	●	●			●		●	

* Please refer to A028 before using the MW breaker (wiper insert).

● = NEW

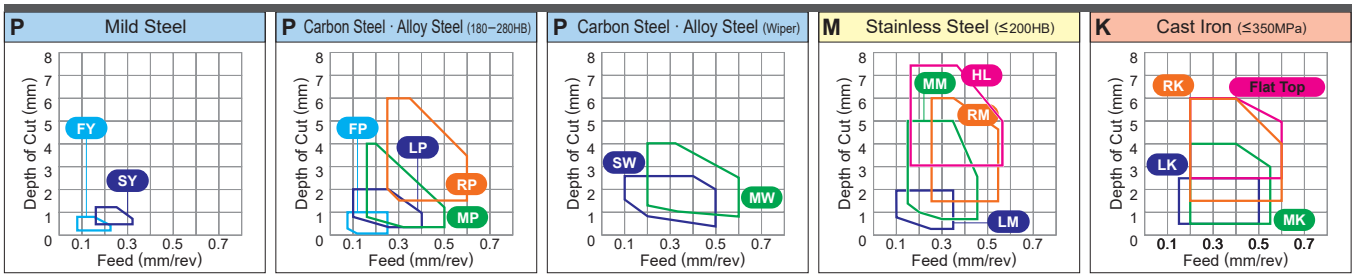
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

60° TN TYPE INSERTS WITH HOLE

TNGG 16 04 08 R
Size Thickness Corner Radius R/L
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ····· Rough Cutting ····· Heavy Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	MP9025 (NEW)	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
R/L	TNGG160408R	0.8																										●	●	●			●	●	●			
	TNGG160408L	0.8																										●	●	●			●	●	●			C016
	TNGG220404R	0.4																										●	●				●					C017
	TNGG220404L	0.4																										●	●				●					E014
	TNGG220408R	0.8																										●	●				●					E035
Medium Cutting	TNGG220408L	0.8																										●	●				●					E040
RP	TNMG160408-RP	0.8	●	●		●	●	●																														
	TNMG160412-RP	1.2	●	●		●	●	●																														C016
	TNMG220408-RP	0.8	●	●		●	●	●																														C017
	TNMG220412-RP	1.2	●	●		●	●	●																														E014
	TNMG220416-RP	1.6	●	●		●	●	●																														E035
Rough Cutting	TNMG270612-RP	1.2	●	●		●	●	●																														E040
	TNMG270616-RP	1.6	●	●		●	●	●																														
RM	TNMG160408-RM	0.8									●	●	●																									
	TNMG160412-RM	1.2									●	●	●																									C016
	TNMG220408-RM	0.8									●	●	●																									C017
	TNMG220412-RM	1.2									●	●	●																									E014
Rough Cutting	TNMG220416-RM	1.6									●	●	●																									E035
																																						E040
RK	TNMG160408-RK	0.8															●	●																				
	TNMG160412-RK	1.2															●	●																				C016
	TNMG160416-RK	1.6															●	●																				C017
	TNMG220408-RK	0.8															●	●																				E014
	TNMG220412-RK	1.2															●	●																				E035
Rough Cutting	TNMG220416-RK	1.6															●	●																				E040
RS	TNMG160408-RS	0.8																					●	●													●	
	TNMG160412-RS	1.2																					●	●													●	C016
	TNMG220408-RS	0.8																					●														●	C017
	TNMG220412-RS	1.2																					●														●	E014
Rough Cutting																																						E035
																																						E040
GH	TNMG160408-GH	0.8	●	●	▲									▲	●				●	●																		
	TNMG160412-GH	1.2	●	●																●																		C016
	TNMG220408-GH	0.8	●	●	▲										●					●																		C017
	TNMG220412-GH	1.2	●	●	▲										●				●	●																		E014
	TNMG220416-GH	1.6	●	●																																		E035
	TNMG270612-GH	1.2	●	●	▲										●																							E040
Rough Cutting	TNMG270616-GH	1.6	●	●																																		

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated																				Cermet		Coated Cermet			Carbide				Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	MP9025 NEW	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
HL	**TNMM160408-HL**	0.8					●	●							●																						C016
	TNMM160412-HL	1.2					●	●							●																						C017
	TNMM220408-HL	0.8					●	●							●																						E014
	TNMM220412-HL	1.2					●	●							●																						E035
Heavy Cutting	**TNMM220416-HL**	1.6					●	●							●																						E040
HZ	**TNMM160408-HZ**	0.8		●	▲		●	●																													C016
	TNMM160412-HZ	1.2					●	●																													C017
	TNMM220408-HZ	0.8		●	▲																																E014
	TNMM220412-HZ	1.2		●	▲																																E035
Heavy Cutting	**TNMM220416-HZ**	1.6		●	▲																																E040
Flat Top	**TNMA160404**	0.4															●	●	●	●															●	●			C016
	TNMA160408	0.8															●	●	●	●														●	●	●			C017
	TNMA160412	1.2															●	●	●	●																			E014
	TNMA160416	1.6															●	●		●																			E035
	TNMA160420	2.0															●	●																					E040
	TNMA220404	0.4																																		●			
	TNMA220408	0.8															●	●	●	●									●					●		●			
	TNMA220412	1.2															●	●	●	●																			
	TNMA220416	1.6															●	●	●	●														●					
Flat Top	**TNGA110304**	0.4																																		●			
	TNGA110308	0.8																											●							●			C016
	TNGA160402	0.2																											●							●			C017
	TNGA160404	0.4																																●	●	●			E014
	TNGA160408	0.8																																	●	●			E035
	TNGA220404	0.4																																●					E040
	TNGA220408	0.8																																	●			

● = NEW

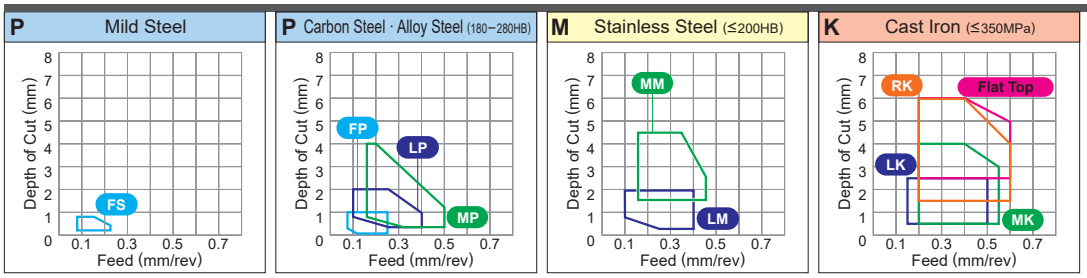
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

35° VN TYPE INSERTS WITH HOLE

VNMG 16 04 02- 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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
FP	**VNMG160402-FP**	0.2				●	●																					●		●									C018 –020 E015 E042
	VNMG160404-FP	0.4				●	●																					●		●									
	VNMG160408-FP	0.8				●	●																					●		●									
Finish Cutting	NEW **VNMG160412-FP**	1.2				●	●																					●		●									
FH	**VNMG160402-FH**	0.2		●	▲																							●	●	●									C018 –020 E015 E042
	VNMG160404-FH	0.4		●	▲																							●		●	●								
Finish Cutting	**VNMG160408-FH**	0.8		●	▲																							●	●	●	●								
FS	**VNMG160404-FS**	0.4			▲																							●											C018 –020 E015 E042
	VNMG160408-FS	0.8			▲																							●											
Finish Cutting																																							
FJ	**VNGG1604V5-FJ**	0.05																								●											●		C018 –020 E015 E042
	VNGG160401-FJ	0.1																								●											●		
Finish Cutting	**VNGG160402-FJ**	0.2																								●											●		
R/L-F	**VNGG160402R-F**	0.2																									●		● ●										C018 –020 E015 E042
	VNGG160402L-F	0.2																									●		● ●										
	VNGG160404R-F	0.4																									●		● ●										
Finish Cutting	**VNGG160404L-F**	0.4																									●		● ●										
LP	**VNMG160404-LP**	0.4	●	●		●	●	●																							●								C018 –020 E015 E042
	VNMG160408-LP	0.8	●	●		●	●	●																							●								
Light Cutting																																							
LM	**VNMG160404-LM**	0.4									●	●	●																										C018 –020 E015 E042
	VNMG160408-LM	0.8									●	●	●																										
Light Cutting																																							

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																					Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
LK	**VNMG160404-LK**	0.4															●	●																				C018 –020 E015 E042
	VNMG160408-LK	0.8															●	●																				
Light Cutting																																						
LS	NEW **VNMG160402-LS**	0.2																				●	●	●													●	C018 –020 E015 E042
	VNMG160404-LS	0.4																				●	●	●													●	
	VNMG160408-LS	0.8																				●	●	●													●	
Light Cutting																																						
SH	**VNMG160404-SH**	0.4	●	●	▲	●	●																						●	●		●						C018 –020 E015 E042
	VNMG160408-SH	0.8	●	●	▲	●	●																						●	●		●						
Light Cutting																																						
SA	**VNMG160404-SA**	0.4				●	●																						●									C018 –020 E015 E042
	VNMG160408-SA	0.8				●	●																						●									
Light Cutting																																						
MJ	**VNMG160404-MJ**	0.4													●								●	●	●	●										●		C018 –020 E015 E042
	VNMG160408-MJ	0.8													●								●	●	●	●										●		
	VNMG160412-MJ	1.2													●								●	●	●	●												
Light Cutting																																						
MJ	**VNGM160404-MJ**	0.4																								●										●		C018 –020 E015 E042
	VNGM160408-MJ	0.8																								●										●		
Light Cutting																																						
MP	**VNMG160404-MP**	0.4	●	●	▲	●	●	●												●											●							C018 –020 E015 E042
	VNMG160408-MP	0.8	●	●	▲	●	●	●												●											●							
	VNMG160412-MP	1.2	●	●	▲	●	●	●												●																		
Medium Cutting																																						
MM	**VNMG160408-MM**	0.8									●	●	●																									C018 –020 E015 E042
Medium Cutting																																						
MK	**VNMG160404-MK**	0.4															●	●																				C018 –020 E015 E042
	VNMG160408-MK	0.8															●	●			●																	
	VNMG160412-MK	1.2															●	●																				
Medium Cutting																																						

● = NEW

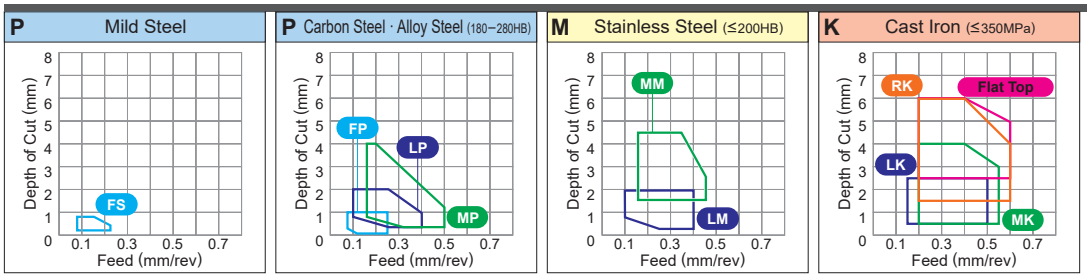
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

35° VN TYPE INSERTS WITH HOLE

VNMG 16 04 04- MS
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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
* MS	VNMG160404-MS	0.4																				●	●	●														●	
	VNMG160408-MS	0.8																				●	●	●														●	C018 –020 E015 E042
Medium Cutting																																							
MS	VNMG160404-MS	0.4		●										▲	●	●										●	●		●										
	VNMG160408-MS	0.8		●										▲	●	●										●	●			●								●	C018 –020 E015 E042
Medium Cutting																																							
GK	VNMG160404-GK	0.4															●	●																					
	VNMG160408-GK	0.8															●	●																					C018 –020 E015 E042
	VNMG160412-GK	1.2															●	●																					
Medium Cutting																																							
GM	VNMG160404-GM	0.4									●	●	●																										
	VNMG160408-GM	0.8									●	●	●																										C018 –020 E015 E042
Medium Cutting																																							
MA	VNMG160404-MA	0.4	●	●	▲	●	●				●	●	▲	●			●	●	●	●							●												
	VNMG160408-MA	0.8	●	●	▲	●	●	●			●	●	▲	●			●	●	●	●							●												C018 –020 E015 E042
Medium Cutting																																							
MH	VNMG160404-MH	0.4	●	●	▲															●																			
	VNMG160408-MH	0.8	●	●	▲	●	●	●						▲						●																			C018 –020 E015 E042
Medium Cutting																																							
Standard	VNMG160404	0.4	●	●	▲	●	●												●	●							●		●	●		●		●				
	VNMG160408	0.8	●	●	▲	●	●	●											●	●							●		●	●		●		●				C018 –020 E015 E042
	VNMG160412	1.2	●	●		●	●	●											●	●									●									
Medium Cutting																																							

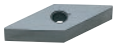
* Newly designed breakers : MP9005, MP9015, MP9025, MT9015

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																					Cermet		Coated Cermet			Carbide				Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
R/L	**VNGG160404R**	0.4																											●	●				●		●			
	**VNGG160404L**	0.4																											●	●				●					C018 –020 E015 E042
Medium Cutting																																							
Flat Top	**VNMA160404**	0.4															●	●																						
	**VNMA160408**	0.8															●	●																						C018 –020 E015 E042
	VNMA160412	1.2															●	●																						
Flat Top	**VNGA160404**	0.4																																	●	●			
	**VNGA160408**	0.8																																	●	●			C018 –020 E015 E042

● = NEW

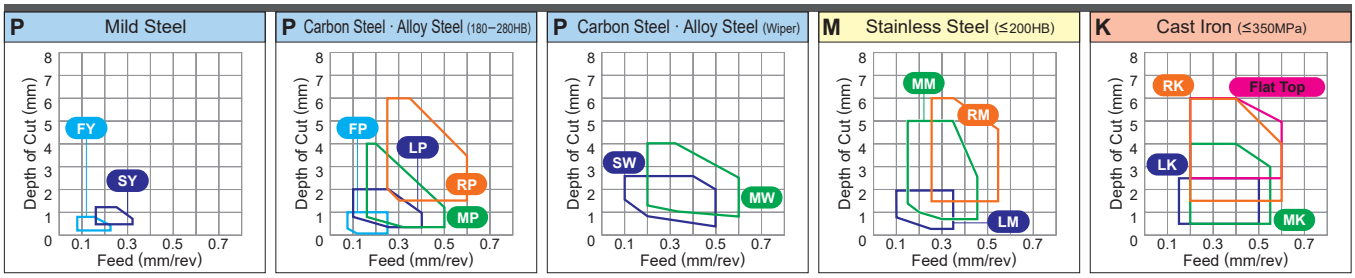
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° WN TYPE INSERTS WITH HOLE

WNMG 08 04 02- 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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
FP	**WNMG080402-FP**	0.2				●	●																					●		●									
	WNMG080404-FP	0.4				●	●																					●		●									C021 E015 E039
	WNMG080408-FP	0.8				●	●																					●		●									
	NEW **WNMG080412-FP**	1.2				●	●																					●		●									
Finish Cutting																																							
FH	**WNMG080404-FH**	0.4		●																								●		●									
	WNMG080408-FH	0.8		●																								●		●	●								C021 E015 E039
Finish Cutting																																							
FS	**WNMG080404-FS**	0.4			▲																							●										
	WNMG080408-FS	0.8			▲																							●										C021 E015 E039
Finish Cutting																																							
FY	**WNMG080404-FY**	0.4																										●		●									
	WNMG080408-FY	0.8			▲																							●		●		●							C021 E015 E039
Finish Cutting																																							
LP	**WNMG060404-LP**	0.4	●	●		●	●	●																						●									
	WNMG060408-LP	0.8	●	●		●	●	●																						●									
	WNMG06T304-LP	0.4	●	●		●	●	●																						●									C021 E015 E037 E039
	WNMG06T308-LP	0.8	●	●		●	●	●																						●									
	WNMG080404-LP	0.4	●	●		●	●	●																						●									
	WNMG080408-LP	0.8	●	●		●	●	●																						●									
Light Cutting	**WNMG080412-LP**	1.2	●	●		●	●	●																															
LM	**WNMG060404-LM**	0.4									●	●	●																										
	WNMG060408-LM	0.8									●	●	●																										C021 E015 E039
	WNMG080404-LM	0.4									●	●	●																										
	WNMG080408-LM	0.8									●	●	●																										
Light Cutting																																							

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																					Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
LK	**WNMG080404-LK**	0.4															●	●																				
	WNMG080408-LK	0.8															●	●			●																	C021
	WNMG080412-LK	1.2															●	●			●																	C021 E015
Light Cutting																																						E039
LS	NEW **WNMG080402-LS**	0.2																				●	●														●	
	WNMG080404-LS	0.4																				●	●	●													●	C021
	WNMG080408-LS	0.8																				●	●	●													●	C021 E015
Light Cutting																																						E039
SH	**WNMG06T304-SH**	0.4	●	●											●																							
	WNMG06T308-SH	0.8	●	●											●																							C021
	WNMG060404-SH	0.4	●	●											●																							C021 E015
	WNMG060408-SH	0.8	●	●											●																							C021 E015 E037
	WNMG080404-SH	0.4	●	●		●	●								●					●									●								C021 E015 E037 E039
	WNMG080408-SH	0.8	●	●	▲	●	●								●					●									●								C021 E015 E037 E039
Light Cutting	**WNMG080412-SH**	1.2	●	●	▲	●	●								●					●																	C021 E015 E037 E039
SA	**WNMG080404-SA**	0.4	●	●	▲	●	●																						●	●								C021 E015 E039
	WNMG080408-SA	0.8	●	●	▲	●	●																						●	●								C021 E015 E039
Light Cutting	**WNMG080412-SA**	1.2	●	●	▲	●	●																							●								C021 E015 E039
* **SW**	**WNMG060404-SW**	0.4	●	●		●							▲																●		●							C021 E015 E039
	WNMG060408-SW	0.8	●	●		●							▲																●		●							C021 E015 E039
	WNMG080404-SW	0.4	●	●		●							▲				●	●		●									●	●	●							C021 E015 E039
	WNMG080408-SW	0.8	●	●		●							▲				●	●		●									●	●	●							C021 E015 E039
Light Cutting (Wiper)	**WNMG080412-SW**	1.2	●	●		●							▲																●	●	●							C021 E015 E039
SY	**WNMG080404-SY**	0.4																											●		●							C021 E015 E039
	WNMG080408-SY	0.8			▲																								●	●	●	●						C021 E015 E039
Light Cutting																																						
C	**WNMG080404-C**	0.4																											▲	▲								C021 E015 E039
	WNMG080408-C	0.8																											▲									C021 E015 E039
Light Cutting																																						
MJ	**WNMG080408-MJ**	0.8													●							●	●		●	●												C021 E015 E039
	WNMG080412-MJ	1.2													●							●	●		●	●												C021 E015 E039
	WNMG080416-MJ	1.6													●							●	●		●	●												C021 E015 E039
Light Cutting																																						

* Please refer to A028 before using the SW breaker (wiper insert).

● = NEW

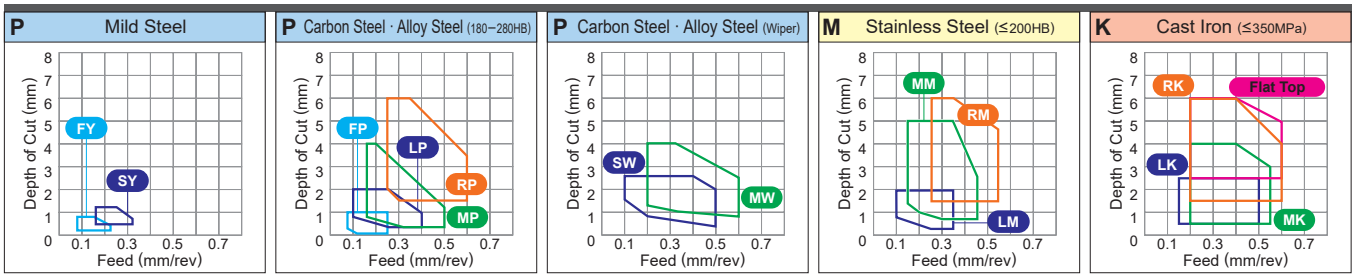
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° WN TYPE INSERTS WITH HOLE

WNMG 06 04 04- 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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
MP	**WNMG060404-MP**	0.4	●	●	▲	●	●	●												●																			
	WNMG060408-MP	0.8	●	●	▲	●	●	●												●																			
	WNMG060412-MP	1.2	●	●	▲	●	●	●												●																			
	WNMG06T304-MP	0.4	●	●	▲	●	●	●												●																			
	WNMG06T308-MP	0.8	●	●	▲	●	●	●												●																			
	WNMG06T312-MP	1.2	●	●	▲	●	●	●												●																			
	WNMG080404-MP	0.4	●	●	▲	●	●	●												●												●							
	WNMG080408-MP	0.8	●	●	▲	●	●	●												●												●							
	WNMG080412-MP	1.2	●	●	▲	●	●	●												●												●							
Medium Cutting	**WNMG080416-MP**	1.6	●	●	▲	●	●	●												●																			
MM	**WNMG060408-MM**	0.8									●	●	●																										C021 E015 E039
	WNMG060412-MM	1.2									●	●	●																										
	WNMG080408-MM	0.8									●	●	●																										
	WNMG080412-MM	1.2									●	●	●																										
Medium Cutting																																						
MK	**WNMG080404-MK**	0.4															●	●																				C021 E015 E039
	WNMG080408-MK	0.8															●	●																				
	WNMG080412-MK	1.2															●	●																				
	WNMG080416-MK	1.6															●	●																				
Medium Cutting																																						
* **MS**	**WNMG080404-MS**	0.4																				●	●	●														●	C021 E015 E039
	WNMG080408-MS	0.8																				●	●	●														●	
	WNMG080412-MS	1.2																				●	●	●														●	
Medium Cutting																																						
MS	**WNMG060404-MS**	0.4		●									▲	●																									C021 E015 E037 E039
	WNMG060408-MS	0.8		●									▲	●																								
	WNMG06T304-MS	0.4		●									▲	●																								
	WNMG06T308-MS	0.8		●									▲	●																								
	WNMG080404-MS	0.4		●	▲								▲	●																								
	WNMG080408-MS	0.8		●	▲								▲	●	●										●	●	●										●	
Medium Cutting	**WNMG080412-MS**	1.2		●											●	●									●	●												

* Newly designed breakers : MP9005, MP9015, MP9025, MT9015

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																							Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	MP9025 NEW	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
GK	**WNMG060404-GK**	0.4															●	●																				
	WNMG060408-GK	0.8															●	●																				C021
	WNMG080404-GK	0.4															●	●																				E015
	WNMG080408-GK	0.8															●	●			●																	E039
Medium Cutting	**WNMG080412-GK**	1.2															●	●			●																	
GM	**WNMG060404-GM**	0.4									●	●	●																									
	WNMG060408-GM	0.8									●	●	●																									C021
	WNMG080404-GM	0.4									●	●	●																									E015
	WNMG080408-GM	0.8									●	●	●																									E039
Medium Cutting	**WNMG080412-GM**	1.2									●	●	●																									
MA	**WNMG06T304-MA**	0.4	●	●											●																							
	WNMG06T308-MA	0.8	●	●											●																							
	WNMG06T312-MA	1.2	●	●											●																							
	WNMG060404-MA	0.4	●	●		●	●								●																							
	WNMG060408-MA	0.8	●	●		●	●					●	●		●		●	●									●										C021
	WNMG060412-MA	1.2	●	●		●	●					●	●		●		●	●									●										E015 E037
	WNMG080404-MA	0.4	●	●	▲	●	●					●	●	▲	●		●	●		●		●				●		●									E039
	WNMG080408-MA	0.8	●	●	▲	●	●	●				●	●	▲	●		●	●	●	●		●				●		●									
	WNMG080412-MA	1.2	●	●	▲	●	●	●				●	●	▲	●		●	●	●	●		●				●		●									
	WNMG080416-MA	1.6	●	●																●		●															
Medium Cutting	**WNMG100612-MA**	1.2			▲																																
MH	**WNMG080404-MH**	0.4	●	●	▲																																
	WNMG080408-MH	0.8	●	●	▲	●	●	●						▲						●																	C021
	WNMG080412-MH	1.2	●	●	▲	●	●	●												●																	E015
Medium Cutting																																					E039
Standard	**WNMG080404**	0.4	●	●	▲	●	●												●	●									●		●						
	WNMG080408	0.8	●	●	▲	●	●	●											●	●							●		●		●			●			C021
	WNMG080412	1.2	●	●	▲	●	●	●											●	●							●							●			E015
	WNMG080416	1.6																		●																	E039
Medium Cutting																																					
* **MW**	**WNMG060408-MW**	0.8	●	●	▲	●	●										●	●	●	●																	
	WNMG060412-MW	1.2	●	●		●	●										●	●	●	●																	C021
	WNMG080408-MW	0.8	●	●	▲	●	●							▲			●	●	●	●																	E015
	WNMG080412-MW	1.2	●	●		●	●							▲			●	●	●	●																	E039
Medium Cutting (Wiper)																																					
RP	**WNMG080408-RP**	0.8	●	●		●	●	●																													
	WNMG080412-RP	1.2	●	●		●	●	●																													C021
Rough Cutting																																					E015 E039
RM	**WNMG060408-RM**	0.8									●	●	●																								
	WNMG060412-RM	1.2									●	●	●																								C021
	WNMG080408-RM	0.8									●	●	●																								E015
	WNMG080412-RM	1.2									●	●	●																								E039
Rough Cutting																																					

* Please refer to A028 before using the MW breaker (wiper insert).

● = NEW

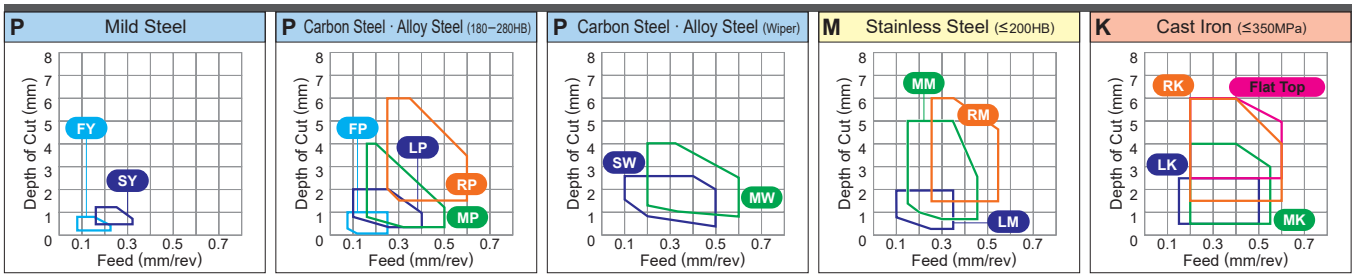
CHIP BREAKERS ➤ A042
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° WN TYPE INSERTS WITH HOLE

WNMG 08 04 08- RK
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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
RK	**WNMG080408-RK**	0.8															●	●																				
	WNMG080412-RK	1.2															●	●			●																	C021
	WNMG080416-RK	1.6															●	●			●																	C021 E015
Rough Cutting																																						C021 E015 E039
RS	**WNMG080408-RS**	0.8																				●	●														●	
	WNMG080412-RS	1.2																				●	●														●	C021
	WNMG080416-RS	1.6																				●															●	C021 E015
	WNMG100612-RS	1.2																				●															●	C021 E015 E039
Rough Cutting																																						C021 E015 E039
GH	**WNMG080408-GH**	0.8	●	●	▲								▲	●				●	●																			
	WNMG080412-GH	1.2	●	●	▲									●				●	●																			C021 E015 E039
Rough Cutting																																						C021 E015 E039
GJ	**WNMG080408-GJ**	0.8														●									●											●	
	WNMG080412-GJ	1.2														●									●											●	C021
	WNMG080416-GJ	1.6														●									●											●	C021 E015
	WNMG100612-GJ	1.2																							●											●	C021 E015 E039
Rough Cutting																																						C021 E015 E039
Flat Top	**WNMA060408**	0.8															●	●																				
	WNMA060412	1.2															●	●																				
	WNMA080404	0.4															●	●	●	●																●		C021
	WNMA080408	0.8															●	●	●	●																●		C021 E015
	WNMA080412	1.2															●	●	●	●																		C021 E015 E039
	WNMA080416	1.6															●	●		●																		C021 E015 E039

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

CHIP BREAKERS ➤ A042

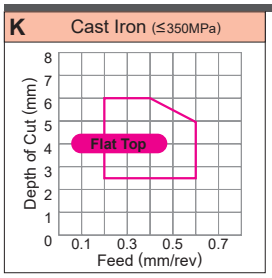
80° CN TYPE INSERTS WITHOUT HOLE

CNMN 12 04 08
Size Thickness Corner Radius
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Heavy Cutting·····

K Cast Iron (≤350MPa)



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																						Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	MT9015	
Flat Top 	**CNMN120408**	0.8															●	●																				–
	CNMN120412	1.2															●	●																				
	CNMN120416	1.6															●	●																				

● = NEW

CHIP BREAKERS ➤ A074
GRADES ➤ A030
IDENTIFICATION ➤ A002

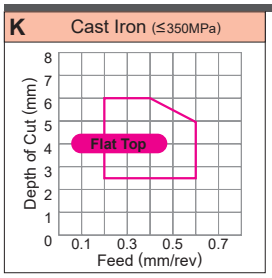
90° SN TYPE INSERTS WITHOUT HOLE

SNMN 12 04 08
Size Thickness Corner Radius
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Heavy Cutting·····

K Cast Iron (≤350MPa)



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
Flat Top	SNMN120408	0.8															●	●	●	●									●					●		●			–
	SNMN120412	1.2															●	●	●	●									●					●					
	SNMN120416	1.6															●	●	●	●																			
	SNMN190412	1.2																																●					
Flat Top	SNGN090308	0.8																																		●			–
	SNGN120404	0.4																																●		●			
	SNGN120408	0.8																																●					

● = NEW

● : Inventory maintained in Japan.
(10 inserts in one case)

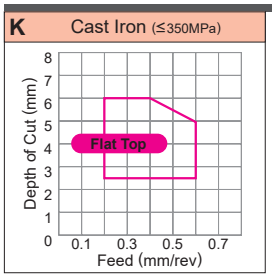
CHIP BREAKERS ➤ A074
GRADES ➤ A030
IDENTIFICATION ➤ A002

TNMN 16 03 08
Size Thickness Corner Radius
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Heavy Cutting·····

K Cast Iron (≤350MPa)



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	NEW MP9025	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9015	Applicable Holder Page
Flat Top	TNMN160308	0.8																										●											–
	TNMN160408	0.8															●	●	●	●								●											
	TNMN160412	1.2															●	●	●	●																			
	TNMN160416	1.6															●	●	●	●																			
	TNMN160420	2.0																		●																			
	TNMN220408	0.8																										●										
	TNMN220412	1.2																																●				
Flat Top	TNGN110304	0.4																																		●			–
	TNGN110308	0.8																																		●			
	TNGN160404	0.4																																		●			
	TNGN160408	0.8																																		●			

● = NEW

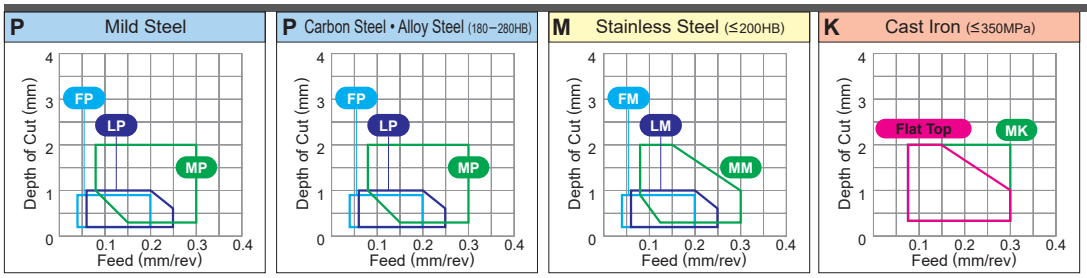
CHIP BREAKERS ➤ A074
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° CC TYPE INSERTS WITH HOLE

CCMT 06 02 02- FP
Size Thickness Corner Radius Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting····· Light Cutting····· Medium Cutting·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	Applicable Holder Page
FP	**CCMT060202-FP**	0.2	●			●	●																			●		●										C022
	CCMT060204-FP	0.4	●			●	●																			●		●										D008
	CCMT09T302-FP	0.2	●			●	●																			●		●										E006
	CCMT09T304-FP	0.4	●			●	●																			●		●										E030
Finish Cutting	**CCMT09T308-FP**	0.8	●			●	●																			●		●										E034
FM	**CCMT060202-FM**	0.2																						●														C022
	CCMT060204-FM	0.4																						●														D008
	CCMT09T302-FM	0.2																						●														E006
	CCMT09T304-FM	0.4																						●														E030
Finish Cutting	**CCMT09T308-FM**	0.8																						●														E034
FS NEW	**CCGT060201M-FS**	0.08																		●	●																	C022
	CCGT060202M-FS	0.18																		●	●																	D008
	CCGT09T301M-FS	0.08																		●	●																	E006
	CCGT09T302M-FS	0.18																		●	●																	E030
Finish Cutting	**CCGT09T304M-FS**	0.38																		●	●																	E034
FS-P NEW	**CCGT060201M-FS-P**	0.08																																		●		C022
	CCGT060202M-FS-P	0.18																																		●		D008
	CCGT09T301M-FS-P	0.08																																		●		E006
	CCGT09T302M-FS-P	0.18																																		●		E030
Finish Cutting	**CCGT09T304M-FS-P**	0.38																																		●		E034
FV	**CCMT060202-FV**	0.2			▲																			●		●		●		●								C022
	CCMT060204-FV	0.4			▲																			●		●		●		●								D008
	CCMT09T302-FV	0.2			▲																					●				●								E006
	CCMT09T304-FV	0.4			▲																					●		●		●								E030
Finish Cutting	**CCMT09T308-FV**	0.8			▲																					●		●		●								E034
FJ	**CCGT0602V5-FJ**	0.05																					●															C022
	CCGT060201-FJ	0.1																					●													●		D008
	CCGT060202-FJ	0.2																					●													●		E006
	CCGT09T3V5-FJ	0.05																					●															E030
	CCGT09T301-FJ	0.1																					●													●		E034
	CCGT09T302-FJ	0.2																					●													●		
Finish Cutting	**CCGT09T304-FJ**	0.4																					●													●		

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																	Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
AZ	CCGT060202-AZ	0.2																													●					
	CCGT060204-AZ	0.4																													●					
	CCGT09T302-AZ	0.2																													●					C022
	CCGT09T304-AZ	0.4																													●					D008
	CCGT09T308-AZ	0.8																													●					E006
	CCGT120402-AZ	0.2																													●					E030
	CCGT120404-AZ	0.4																													●					E034
Medium Cutting – Finish Cutting	CCGT120408-AZ	0.8																													●					
R/L-F	* CCGT03S1V3L-F	0.03																					●		●											
	* CCGT03S101L-F	0.1																					●		●											
	* CCGT03S102L-F	0.2																					●		●		●									
	* CCGT03S104L-F	0.4																					●		●		●									E016
	* CCGT04T0V3L-F	0.03																					●		●											
	* CCGT04T001L-F	0.1																					●		●											
	* CCGT04T002L-F	0.2																					●		●		●									
	* CCGT04T004L-F	0.4																					●		●		●									
	NEW * CCGT03S101MR-F	0.08							●																											
	NEW * CCGT03S101ML-F	0.08							●																											
	NEW * CCGT03S102MR-F	0.18							●																											
	NEW * CCGT03S102ML-F	0.18							●																											
	NEW * CCGT03S104MR-F	0.38							●																											
	NEW * CCGT03S104ML-F	0.38							●																											
	NEW * CCGT04T001MR-F	0.08							●																											E016
	NEW * CCGT04T001ML-F	0.08							●																											
	NEW * CCGT04T002MR-F	0.18							●																											
	NEW * CCGT04T002ML-F	0.18							●																											
	NEW * CCGT04T004MR-F	0.38							●																											
Finish Cutting	NEW * CCGT04T004ML-F	0.38							●																											
R/L-F	CCGH060202R-F	0.2																					●		●		●						●			C022
	CCGH060202L-F	0.2																					●		●		●						●			D008
	CCGH060204R-F	0.4																					●		●		●						●			E006
	CCGH060204L-F	0.4																					●		●		●						●			E030
																																				E034
	NEW CCGH060202MR-F	0.18							●																											C022
	NEW CCGH060202ML-F	0.18							●																											D008
	NEW CCGH060204MR-F	0.38							●																											E006
	NEW CCGH060204ML-F	0.38							●																											E030
Finish Cutting																																				E034
LP	CCMT060204-LP	0.4		●		●	●																			●		●								C022
	CCMT060208-LP	0.8		●		●	●																			●		●								D008
	CCMT09T304-LP	0.4		●		●	●																			●		●								E006
	CCMT09T308-LP	0.8		●		●	●																			●		●								E030
Light Cutting																																				E034

* Diameter of inscribed circle is special. (For SCLC type)

● = NEW

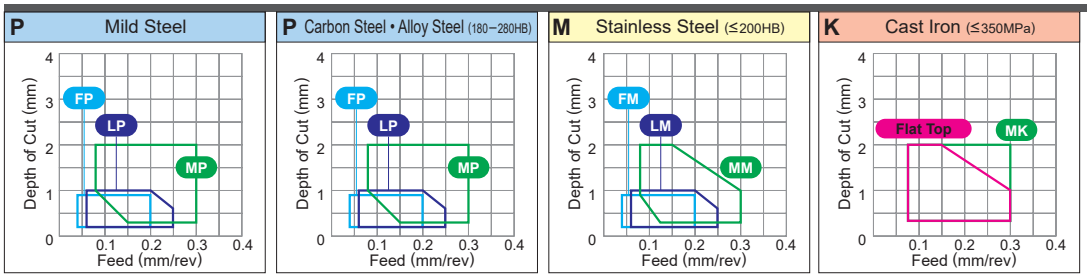
CHIP BREAKERS ➤ A060
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° CC TYPE INSERTS WITH HOLE

CCMT 06 02 04- LM
Size / Thickness / Corner Radius / Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT110	RT9010	MT9005	TF15	Applicable Holder Page
LM  Light Cutting	CCMT060204-LM	0.4								●	●												●															C022
	CCMT060208-LM	0.8								●	●												●															D008
	CCMT09T304-LM	0.4								●	●												●															E006
	CCMT09T308-LM	0.8								●	●												●															E030
																																						E034
LS NEW  Light Cutting	CCMT060202-LS	0.2																		●	●															●		C022
	CCMT060204-LS	0.4																		●	●															●		D008
	CCMT09T302-LS	0.2																		●	●															●		E006
	CCMT09T304-LS	0.4																		●	●															●		E030
	CCMT09T308-LS	0.8																		●	●															●		E034
LS NEW  Light Cutting	CCGT060201M-LS	0.08																		●	●																	C022
	CCGT060202M-LS	0.18																		●	●																	D008
	CCGT09T301M-LS	0.08																		●	●																	E006
	CCGT09T302M-LS	0.18																		●	●																	E030
	CCGT09T304M-LS	0.38																		●	●																	E034
LS-P NEW  Light Cutting	CCGT060201M-LS-P	0.08							●																											●		C022
	CCGT060202M-LS-P	0.18							●																											●		D008
	CCGT09T301M-LS-P	0.08							●																											●		E006
	CCGT09T302M-LS-P	0.18							●																											●		E030
	CCGT09T304M-LS-P	0.38							●																											●		E034
SV  Light Cutting	CCMH060202-SV	0.2			▲		●				▲	●												●		●	●			●							C022
	CCMH060204-SV	0.4			▲		●				▲	●												●		●	●			●							D008
																																						E006
																																						E030
																																						E034
* **SW**  Light Cutting (Wiper)	CCMT060202-SW	0.2		●	▲	●	●				▲														●		●		●								C022
	CCMT060204-SW	0.4		●	▲	●	●				▲							●							●		●		●								D008
	CCMT09T302-SW	0.2		●	▲	●	●				▲							●							●		●		●								E006
	CCMT09T304-SW	0.4		●	▲	●	●				▲							●							●		●		●								E030
																																						E034

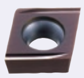
* Please refer to A028 before using the SW breaker (wiper insert).

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◐ : General Cutting ✤ : Unstable Cutting

Work Material			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15
	P	Steel	●	◐	✤	◐	✤	✤	●															✤	✤	●	◐	◐	●	●	◐	✤					●
	M	Stainless Steel								◐	✤	●	✤										◐	✤	✤	●			●	●		✤					
	K	Cast Iron													●	◐	●	◐	◐				◐	✤		●			●	●		✤	●	◐			●
	N	Non-ferrous Metal																																◐			●
	S	Heat-resistant Alloy, Titanium Alloy											●							●	◐	●	◐	✤										◐	◐	●	

Shape	Order Number	RE (mm)	Coated																							Cermet		Coated Cermet				Carbide						Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
R/L-SS	CCGT0602V3R-SS	0.03																						●														C022 D008 E006 E030 E034
	CCGT0602V3L-SS	0.03																						●														
	CCGT060201R-SS	0.1																						●														
	CCGT060201L-SS	0.1																						●														
	CCGT060202R-SS	0.2																						●														
	CCGT060202L-SS	0.2																						●														
	CCGT09T3V3R-SS	0.03																						●														
	CCGT09T3V3L-SS	0.03																						●														
	CCGT09T301R-SS	0.1																						●														
	CCGT09T301L-SS	0.1																						●														
	CCGT09T302R-SS	0.2																						●														
	CCGT09T302L-SS	0.2																						●														
	CCGT060201MR-SS	0.08							●																													C022 D008 E006 E030 E034
	NEW CCGT060201ML-SS	0.08							●																													
	CCGT060202MR-SS	0.18							●																													
	NEW CCGT060202ML-SS	0.18							●																													
	CCGT09T301MR-SS	0.08							●																													
	NEW CCGT09T301ML-SS	0.08							●																													
	CCGT09T302MR-SS	0.18							●																													
	NEW CCGT09T302ML-SS	0.18							●																													
	CCGT09T304MR-SS	0.38							●																													
Light Cutting	NEW CCGT09T304ML-SS	0.38							●																													
MP	CCMT060204-MP	0.4		●		●	●																			●		●										C022 D008 E006 E030 E034
	CCMT060208-MP	0.8		●		●	●																			●		●										
	CCMT09T304-MP	0.4		●		●	●																			●		●										
	CCMT09T308-MP	0.8		●		●	●																			●		●										
	CCMT120404-MP	0.4		●		●	●																			●		●										
	CCMT120408-MP	0.8		●		●	●																			●		●										
Medium Cutting	CCMT120412-MP	1.2		●		●	●																			●		●										
MM	CCMT060204-MM	0.4								●	●													●														C022 D008 E006 E030 E034
	CCMT060208-MM	0.8								●	●													●														
	CCMT09T304-MM	0.4								●	●													●														
	CCMT09T308-MM	0.8								●	●													●														
	CCMT120404-MM	0.4								●	●													●														
	CCMT120408-MM	0.8								●	●													●														
Medium Cutting	CCMT120412-MM	1.2								●	●													●														
MK	CCMT060204-MK	0.4													●	●																						C022 D008 E006 E030 E034
	CCMT060208-MK	0.8													●	●																						
	CCMT09T304-MK	0.4													●	●																						
	CCMT09T308-MK	0.8													●	●																						
	CCMT120404-MK	0.4													●	●																						
	CCMT120408-MK	0.8													●	●																						
Medium Cutting	CCMT120412-MK	1.2													●	●																						

● = NEW

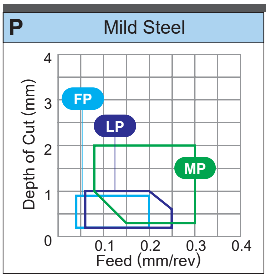
CHIP BREAKERS ➤ A060
GRADES ➤ A030
IDENTIFICATION ➤ A002

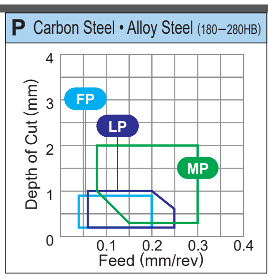
80° CC TYPE INSERTS WITH HOLE

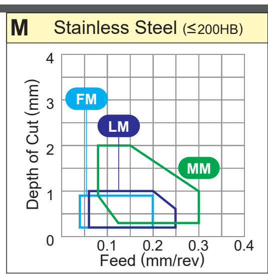
CCMT 06 02 02- MS
Size Thickness Corner Radius Chip Breaker
∗ Please refer to page A002.

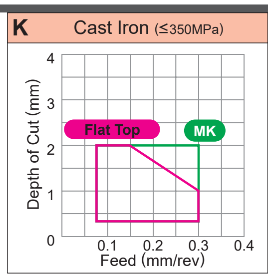
CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting····· Light Cutting····· Medium Cutting·····









Cutting Conditions (Guide) : ● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Shape	Order Number	RE (mm)	UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	Applicable Holder Page
			Coated																						Cermet		Coated Cermet				Carbide						
Work Material	P	Steel	●	◐	✣	◐	✣	✣	●															✣	✣	●	◐	◐	●	●	◐	✣					●	
	M	Stainless Steel								◐	✣	●	✣										◐	✣	✣	●			●	●		✣						
	K	Cast Iron													●	◐	●	◐	◐				◐	✣		●			●	●		✣	●	◐			●	
	N	Non-ferrous Metal																																◐			●	
	S	Heat-resistant Alloy, Titanium Alloy												●						●	◐	●	◐	✣										◐	◐	●		
MS NEW	CCMT060202-MS	0.2																		●	●															●		C022 D008 E006 E030 E034
	CCMT060204-MS	0.4																		●	●															●		
	CCMT060208-MS	0.8																		●	●															●		
	CCMT09T302-MS	0.2																		●	●																	
	CCMT09T304-MS	0.4																		●	●															●		
	CCMT09T308-MS	0.8																		●	●															●		
	CCMT120404-MS	0.4																		●	●															●		
	CCMT120408-MS	0.8																		●	●															●		
Medium Cutting	CCMT120412-MS	1.2																		●	●															●		
Standard	CCMT060202	0.2		●	▲								●													●	●	●	●			●						C022 D008 E006 E030 E034
	CCMT060204	0.4	●	●	▲								●					●						●		●	●	●	●			●						
	CCMT060208	0.8		●	▲								●					●						●		●						●						
	CCMT080302	0.2		●																																		
	CCMT080304	0.4		●									●													●	●	●	●			●						
	CCMT080308	0.8		●									●																			●						
	CCMT09T302	0.2		●	▲								●													●	●	●	●									
	CCMT09T304	0.4	●	●	▲								●					●						●		●	●	●	●			●						
	CCMT09T308	0.8	●	●	▲								●					●						●		●	●	●	●			●						
	CCMT120404	0.4	●	●	▲								●					●						●		●	●	●	●			●						
	CCMT120408	0.8	●	●	▲								●					●						●		●	●	●				●						
Medium Cutting	CCMT120412	1.2		●	▲								●					●									●											
MV	CCMH060202-MV	0.2			▲		●					▲	●											●		●	●	●	●		●							C022 D008 E006 E030 E034
Medium Cutting	CCMH060204-MV	0.4			▲		●					▲	●			●								●		●	●	●	●		●							
* MW	CCMT060204-MW	0.4			▲	●	●					▲														●		●		●								C022 D008 E006 E030 E034
	CCMT060208-MW	0.8		●	▲	●	●					▲														●		●		●								
	CCMT09T304-MW	0.4		●	▲	●	●					▲														●		●		●								
	CCMT09T308-MW	0.8		●	▲	●	●					▲														●		●		●								
	CCMT120404-MW	0.4		●	▲	●	●					▲						●								●				●								
Medium Cutting (Wiper)	CCMT120408-MW	0.8		●	▲	●	●					▲						●								●				●								




∗ Please refer to A028 before using the MW breaker (wiper insert).

● (yellow) = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																		Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
R/L-SR	CCET0602V3R-SR	0.03																					●		●							●					
	CCET0602V3L-SR	0.03																					●		●							●					
	CCET060201R-SR	0.1																					●		●							●					
	CCET060201L-SR	0.1																					●		●							●					
	CCET060202R-SR	0.2																					●		●							●					
	CCET060202L-SR	0.2																					●		●							●					
	CCET060204R-SR	0.4																					●		●							●					C022
	CCET060204L-SR	0.4																					●		●							●					D008
	CCET09T3V3R-SR	0.03																					●		●							●					E006
	CCET09T3V3L-SR	0.03																					●		●							●					E030
	CCET09T301R-SR	0.1																					●		●							●					E034
	CCET09T301L-SR	0.1																					●		●							●					
	CCET09T302R-SR	0.2																					●		●							●					
	CCET09T302L-SR	0.2																					●		●							●					
	CCET09T304R-SR	0.4																					●		●							●					
Medium Cutting	CCET09T304L-SR	0.4																					●		●							●					
R/L-SN	CCGT0602V3R-SN	0.03																					●														
	CCGT060201R-SN	0.1																					●														
	CCGT060201L-SN	0.1																					●														
	CCGT060202R-SN	0.2																					●														
	CCGT060202L-SN	0.2																					●														
	CCGT09T3V3R-SN	0.03																					●														C022
	CCGT09T3V3L-SN	0.03																					●														D008
	CCGT09T301R-SN	0.1																					●														E006
	CCGT09T301L-SN	0.1																					●														E030
	CCGT09T302R-SN	0.2																					●														E034
	CCGT09T302L-SN	0.2																					●														
	CCGT09T304R-SN	0.4																					●														
	CCGT09T304L-SN	0.4																					●														
	CCGT060201MR-SN	0.08							●																												
	NEW CCGT060201ML-SN	0.08							●																												
	CCGT060202MR-SN	0.18							●																												
	NEW CCGT060202ML-SN	0.18							●																												C022
	CCGT09T301MR-SN	0.08							●																												D008
	NEW CCGT09T301ML-SN	0.08							●																												E006
	CCGT09T302MR-SN	0.18							●																												E030
	NEW CCGT09T302ML-SN	0.18							●																												E034
	CCGT09T304MR-SN	0.38							●																												
Medium Cutting	NEW CCGT09T304ML-SN	0.38							●																												

● = NEW

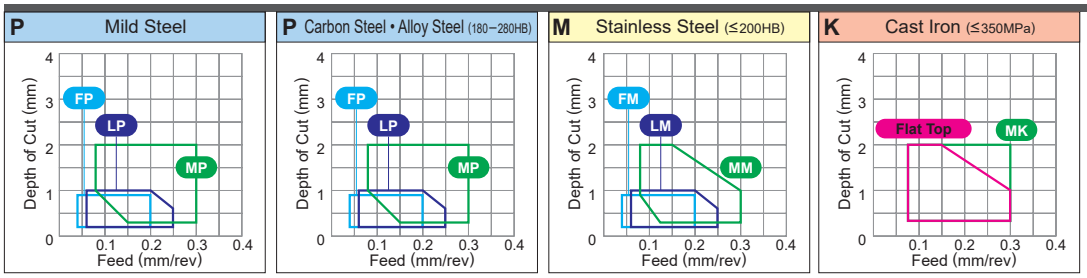
CHIP BREAKERS ➤ A060
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° CC TYPE INSERTS WITH HOLE

CCET 06 02 00 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·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																		Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	
R/L-SN	CCET060200R-SN	0																					●		●	●						●					
	CCET060200L-SN	0																					●		●	●						●					
	CCET0602V3R-SN	0.03																					●		●	●						●					
	CCET0602V3L-SN	0.03																					●		●	●						●					
	CCET060201R-SN	0.1																					●		●	●						●					
	CCET060201L-SN	0.1																					●		●	●						●					
	CCET060202R-SN	0.2																					●		●	●						●					
	CCET060202L-SN	0.2																					●		●	●						●					
	CCET060204R-SN	0.4																					●		●	●						●					C022
	CCET060204L-SN	0.4																					●		●	●						●					D008
	CCET09T300R-SN	0																					●		●	●						●					E006
	CCET09T300L-SN	0																					●		●	●						●					E030
	CCET09T3V3R-SN	0.03																					●		●	●						●					E034
	CCET09T3V3L-SN	0.03																					●		●	●						●					
	CCET09T301R-SN	0.1																					●		●	●						●					
	CCET09T301L-SN	0.1																					●		●	●						●					
	CCET09T302R-SN	0.2																					●		●	●						●					
	CCET09T302L-SN	0.2																					●		●	●						●					
	CCET09T304R-SN	0.4																					●		●	●						●					
Medium Cutting	CCET09T304L-SN	0.4																					●		●	●						●					
R/LW-SN *	CCET0602V3RW-SN	0.03																					●														C022
	CCET0602V3LW-SN	0.03																					●														D008
	CCET09T3V3RW-SN	0.03																					●														E006
	CCET09T3V3LW-SN	0.03																					●														E030
Medium Cutting (Wiper)																																					E034
SMG	CCGT060201M-SMG	0.08							●																												
	CCGT060202M-SMG	0.18							●															●													C022
	CCGT060204M-SMG	0.38							●															●													D008
	CCGT09T301M-SMG	0.08							●																												E006
	CCGT09T302M-SMG	0.18							●																												E030
Medium Cutting	CCGT09T304M-SMG	0.38							●																												E034

* Please refer to A028 before using the R/LW-SN breaker (wiper insert).

● = NEW

● : Inventory maintained in Japan.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated																		Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
Flat Top	**CCMW060202**	0.2																														●					
	CCMW060204	0.4													●	●	●	●														●		●			
	CCMW060208	0.8													●	●																					C022
	CCMW09T304	0.4													●	●	●	●																●				D008
	CCMW09T308	0.8													●	●	●	●														●		●				E006
	CCMW09T312	1.2													●	●																					E030
	CCMW120404	0.4													●	●	●	●																●				E034
	CCMW120408	0.8													●	●	●	●																●				
	CCMW120412	1.2													●	●		●																				
Flat Top	**CCGW060200**	0																								●											C022
	CCGW0602V5	0.05																								●											D008
	CCGW09T300	0																								●											E006
	CCGW09T3V5	0.05																								●											E030
																																					E034

● = NEW

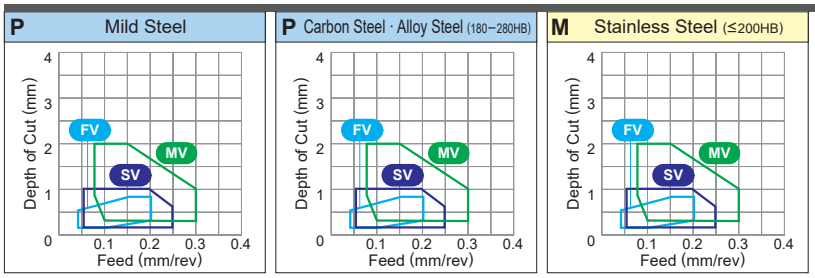
CHIP BREAKERS ➤ A060
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° CP TYPE INSERTS WITH HOLE

CPMH 08 02 02- FV
Size Thickness Corner Radius Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting····· Light Cutting····· Medium Cutting·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																			Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	
FV	CPMH080202-FV	0.2		▲																			●		●	●										
	CPMH080204-FV	0.4		▲																			●		●	●										
	CPMH090302-FV	0.2		▲																			●		●	●										E006
	CPMH090304-FV	0.4		▲																			●		●	●										
Finish Cutting	CPMH090308-FV	0.8		▲																			●		●	●										
Standard	CPGT080202	0.2																															●			
	CPGT080204	0.4																															●			
	CPGT090302	0.2																															●			—
	CPGT090304	0.4																															●			
Finish Cutting																																				
R/L-F	CPMH080204R-F	0.4																					●		●								●			
	CPMH080204L-F	0.4																					●		●								●			
	CPMH090304R-F	0.4																					●		●								●			E006
	CPMH090304L-F	0.4																					●		●			●					●			
Finish Cutting																																				
R/L-F	CPGT080204R-F	0.4																							●											
	CPGT080204L-F	0.4																							●											
	CPGT090302R-F	0.2																							●											—
	CPGT090302L-F	0.2																							●											
	CPGT090304R-F	0.4																							●											
	CPGT090304L-F	0.4																							●											
Finish Cutting																																				
SV	CPMH080202-SV	0.2			▲	●					▲	●												●		●	●			●						
	CPMH080204-SV	0.4			▲	●					▲	●												●		●	●			●						
	CPMH090302-SV	0.2			▲	●					▲	●												●		●	●			●						E006
	CPMH090304-SV	0.4			▲	●					▲	●												●		●	●			●						
Light Cutting	CPMH090308-SV	0.8			▲	●					▲	●												●		●	●			●						
Standard	CPMX080204	0.4		●																				●												
	CPMX080208	0.8		●																				●												
	CPMX090304	0.4		●																				●		●					●					—
	CPMX090308	0.8		●	▲																			●							●				
Medium Cutting																																				
MV	CPMH080204-MV	0.4			▲	●					▲	●				●								●		●	●	●								
	CPMH080208-MV	0.8			▲	●					▲	●				●								●		●	●	●								
	CPMH090304-MV	0.4			▲	●					▲	●				●								●		●	●	●								E006
	CPMH090308-MV	0.8			▲	●					▲	●				●								●		●	●	●								
Medium Cutting																																				

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

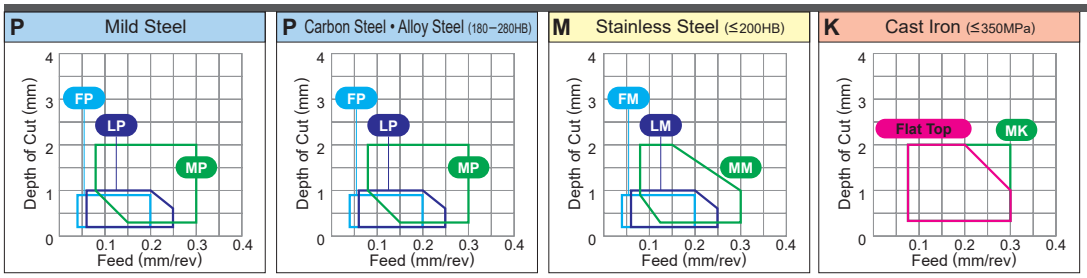
CHIP BREAKERS ➤ A068

55° DC TYPE INSERTS WITH HOLE

DCMT 07 02 02- FP
Size Thickness Corner Radius Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																		Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT110	RT9010	MT9005	TF15	
FP	**DCMT070202-FP**	0.2	●		●	●																		●		●										C023
	DCMT070204-FP	0.4	●		●	●																		●		●										D009
	DCMT11T302-FP	0.2	●		●	●																		●		●										D026
	DCMT11T304-FP	0.4	●		●	●																		●		●										E008
Finish Cutting	**DCMT11T308-FP**	0.8	●		●	●																		●		●										E009 E029 E031
FM	**DCMT070202-FM**	0.2																					●														C023
	DCMT070204-FM	0.4																					●														D009
	DCMT11T302-FM	0.2																					●														D026
	DCMT11T304-FM	0.4																					●														E008
Finish Cutting	**DCMT11T308-FM**	0.8																					●														E009 E029 E031
FS NEW	**DCGT070201M-FS**	0.08																		●	●																C023
	DCGT070202M-FS	0.18																		●	●																D009
	DCGT11T301M-FS	0.08																		●	●																D026
	DCGT11T302M-FS	0.18																		●	●																E008
Finish Cutting																																					E009 E029 E031
FS-P NEW	**DCGT070201M-FS-P**	0.08																																	●		C023
	DCGT070202M-FS-P	0.18																																	●		D009
	DCGT11T301M-FS-P	0.08																																	●		D026
	DCGT11T302M-FS-P	0.18																																	●		E008
Finish Cutting																																					E009 E029 E031
FV	**DCMT070202-FV**	0.2		● ▲																			●		● ●		●									C023
	DCMT070204-FV	0.4		● ▲																			●		● ●		●									D009
	DCMT070208-FV	0.8		▲																			●		● ●											D026
	DCMT11T302-FV	0.2		▲																			●		● ●											E008
	DCMT11T304-FV	0.4		● ▲																			●		● ●		●									E009
Finish Cutting	**DCMT11T308-FV**	0.8		● ▲																			●		● ●		●									E029 E031
AZ	**DCGT070202-AZ**	0.2																															●			C023
	DCGT070204-AZ	0.4																															●			D009
	DCGT11T302-AZ	0.2																															●			D026
	DCGT11T304-AZ	0.4																															●			E008
Medium Cutting – Finish Cutting	**DCGT11T308-AZ**	0.8																															●			E009 E029 E031

● = NEW

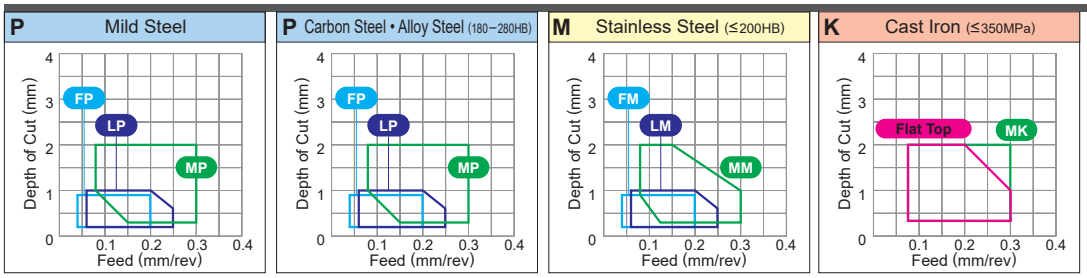
CHIP BREAKERS ➤ A060
GRADES ➤ A030
IDENTIFICATION ➤ A002

55° DC TYPE INSERTS WITH HOLE

DCGT 07 02 02 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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	
R/L-F	**DCGT070202R-F**	0.2																					●	●								●				
	DCGT070202L-F	0.2																					●	●				●				●				
	DCGT070204R-F	0.4																					●	●								●				
	DCGT070204L-F	0.4																					●	●				●				●				
	DCGT11T302R-F	0.2																					●	●								●				
	DCGT11T302L-F	0.2																					●	●				●				●				
	DCGT11T304R-F	0.4																					●	●								●				
Finish Cutting	**DCGT11T304L-F**	0.4																					●	●				●				●				
LP	**DCMT070204-LP**	0.4		●		●	●																	●												
	DCMT070208-LP	0.8		●		●	●																	●												
	DCMT11T304-LP	0.4		●		●	●																	●												
Light Cutting	**DCMT11T308-LP**	0.8		●		●	●																	●												
LM	**DCMT070204-LM**	0.4								●	●													●												
	DCMT070208-LM	0.8								●	●													●												
	DCMT11T304-LM	0.4								●	●													●												
Light Cutting	**DCMT11T308-LM**	0.8								●	●													●												
LS NEW	**DCMT070202-LS**	0.2																		●	●														●	
	DCMT070204-LS	0.4																		●	●														●	
	DCMT11T302-LS	0.2																		●	●														●	
	DCMT11T304-LS	0.4																		●	●														●	
Light Cutting	**DCMT11T308-LS**	0.8																		●	●														●	
LS NEW	**DCGT070201M-LS**	0.08																		●	●															
	DCGT070202M-LS	0.18																		●	●															
	DCGT070204M-LS	0.38																		●	●															
	DCGT11T301M-LS	0.08																		●	●															
	DCGT11T302M-LS	0.18																		●	●															
Light Cutting	**DCGT11T304M-LS**	0.38																		●	●															
LS-P NEW	**DCGT070201M-LS-P**	0.08							●																										●	
	DCGT070202M-LS-P	0.18							●																										●	
	DCGT070204M-LS-P	0.38							●																										●	
	DCGT11T301M-LS-P	0.08							●																										●	
	DCGT11T302M-LS-P	0.18							●																										●	
Light Cutting	**DCGT11T304M-LS-P**	0.38							●																										●	

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																Cermet		Coated Cermet				Carbide						Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
SV	**DCMT070202-SV**	0.2		▲							▲	●											●		●				●							C023 D009 D026 E008 E009 E029 E031
	DCMT070204-SV	0.4	●	▲							▲	●											●		●				●							
	DCMT070208-SV	0.8	●	▲							▲	●											●		●				●							
	DCMT11T302-SV	0.2	●	▲							▲	●											●		●				●							
	DCMT11T304-SV	0.4	●	▲							▲	●											●		●				●							
Light Cutting	**DCMT11T308-SV**	0.8	●	▲							▲	●											●		●				●							
R/L-SS	**DCGT0702V3R-SS**	0.03																					●													C023 D009 D026 E008 E009 E029 E031
	DCGT0702V3L-SS	0.03																					●													
	DCGT070201R-SS	0.1																					●													
	DCGT070201L-SS	0.1																					●													
	DCGT070202R-SS	0.2																					●													
	DCGT070202L-SS	0.2																					●													
	DCGT11T3V3R-SS	0.03																					●													
	DCGT11T301R-SS	0.1																					●													
	DCGT11T302R-SS	0.2																					●													
	DCGT070201MR-SS	0.08							●																											C023 D009 D026 E008 E009 E029 E031
	NEW **DCGT070201ML-SS**	0.08							●																											
	DCGT070202MR-SS	0.18							●																											
	NEW **DCGT070202ML-SS**	0.18							●																											
	DCGT11T301MR-SS	0.08							●																											
	NEW **DCGT11T301ML-SS**	0.08							●																											
	DCGT11T302MR-SS	0.18							●																											
	NEW **DCGT11T302ML-SS**	0.18							●																											
	DCGT11T304MR-SS	0.38							●																											
Light Cutting	NEW **DCGT11T304ML-SS**	0.38							●																											
MP	**DCMT070204-MP**	0.4		●		●	●																			◕		◕								C023 D009 D026 E008 E009 E029 E031
	DCMT070208-MP	0.8		●		●	●																			◕		◕								
	DCMT11T304-MP	0.4		●		●	●																			◕		◕								
	DCMT11T308-MP	0.8		●		●	●																			◕		◕								
	DCMT150404-MP	0.4		●		●	●																			◕		◕								
Medium Cutting	**DCMT150408-MP**	0.8		●		●	●																			◕		◕								
MM	**DCMT070204-MM**	0.4								●	●													●													C023 D009 D026 E008 E009 E029 E031
	DCMT070208-MM	0.8								●	●													●													
	DCMT11T304-MM	0.4								●	●													●													
	DCMT11T308-MM	0.8								●	●													●													
	DCMT150404-MM	0.4								●	●													●													
Medium Cutting	**DCMT150408-MM**	0.8								●	●													●													
MK	**DCMT070204-MK**	0.4													●	●																					C023 D009 D026 E008 E009 E029 E031
	DCMT070208-MK	0.8													●	●																					
	DCMT11T304-MK	0.4													●	●																					
	DCMT11T308-MK	0.8													●	●																					
	DCMT150404-MK	0.4													●	●																					
Medium Cutting	**DCMT150408-MK**	0.8													●	●																					

● = NEW

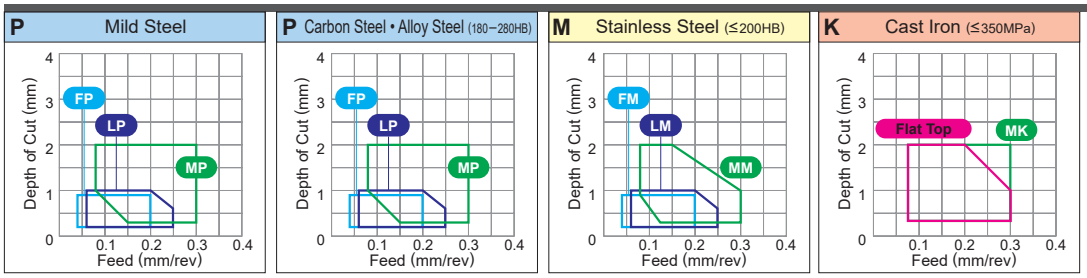
CHIP BREAKERS ➤ A060
GRADES ➤ A030
IDENTIFICATION ➤ A002

55° DC TYPE INSERTS WITH HOLE

DCMT 07 02 04- MS
Size / Thickness / Corner Radius / Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting····· Light Cutting····· Medium Cutting·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
MS NEW	DCMT070204-MS	0.4																		●	●															●		C023
	DCMT070208-MS	0.8																		●	●															●		D009
	DCMT11T304-MS	0.4																		●	●															●		D026
	DCMT11T308-MS	0.8																		●	●															●		E008
Medium Cutting	DCMT11T312-MS	1.2																		●	●															●		E009 E029 E031
Standard	DCMT070202	0.2		●	▲								●													●	●	●	●			●						
	DCMT070204	0.4	●	●	▲								●				●							●		●	●	●	●			●						
	DCMT070208	0.8		●									●				●									●	●	●	●									
	DCMT11T302	0.2		●	▲								●													●	●	●	●			●						
	DCMT11T304	0.4	●	●	▲								●				●							●		●	●	●	●			●						
	DCMT11T308	0.8	●	●	▲								●				●							●		●	●	●	●			●						
	DCMT11T312	1.2		●																																		
	DCMT150404	0.4		●	▲								●				●									●	●	●	●			●						
	DCMT150408	0.8		●	▲								●				●									●	●	●				●						
Medium Cutting	DCMT150412	1.2		●																																		
MV	DCMT070202-MV	0.2		●	▲		●					▲	●											●		●	●	●	●		●							
	DCMT070204-MV	0.4		●	▲		●					▲	●			●								●		●	●	●	●		●							
	DCMT070208-MV	0.8		●	▲		●					▲	●			●								●		●	●	●	●		●							
	DCMT11T302-MV	0.2		●	▲		●					▲	●											●		●	●	●	●		●							
	DCMT11T304-MV	0.4		●	▲		●					▲	●			●								●		●	●	●	●		●							
Medium Cutting	DCMT11T308-MV	0.8		●	▲		●					▲	●			●								●		●	●	●	●		●							
R/L-SR	DCET0702V3R-SR	0.03																						●		●							●					
	DCET0702V3L-SR	0.03																						●		●							●					
	DCET070201R-SR	0.1																						●		●							●					
	DCET070201L-SR	0.1																						●		●							●					
	DCET070202R-SR	0.2																						●		●							●					
	DCET070202L-SR	0.2																						●		●							●					
	DCET070204R-SR	0.4																						●		●							●					
	DCET070204L-SR	0.4																						●		●							●					
	DCET11T3V3R-SR	0.03																						●		●							●					
Medium Cutting	DCET11T3V3L-SR	0.03																						●		●							●					

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																	Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
R/L-SR	DCET11T301R-SR	0.1																					●		●							●				C023 D009 D026 E008 E009 E029 E031
	DCET11T301L-SR	0.1																					●		●							●				
	DCET11T302R-SR	0.2																					●		●							●				
	DCET11T302L-SR	0.2																					●		●							●				
	DCET11T304R-SR	0.4																					●		●							●				
Medium Cutting	DCET11T304L-SR	0.4																					●		●							●				
R/L-SN	DCGT0702V3R-SN	0.03																					●													C023 D009 D026 E008 E009 E029 E031
	DCGT070201R-SN	0.1																					●													
	DCGT070202R-SN	0.2																					●													
	DCGT070202L-SN	0.2																					●													
	DCGT11T3V3R-SN	0.03																					●													
	DCGT11T3V3L-SN	0.03																					●													
	DCGT11T301R-SN	0.1																					●													
	DCGT11T301L-SN	0.1																					●													
	DCGT11T302R-SN	0.2																					●													
	DCGT11T302L-SN	0.2																					●													
	DCGT11T304R-SN	0.4																					●													
	DCGT11T304L-SN	0.4																					●													
	DCGT070201MR-SN	0.08							●																											C023 D009 D026 E008 E009 E029 E031
	NEW DCGT070201ML-SN	0.08							●																											
	DCGT070202MR-SN	0.18							●																											
	NEW DCGT070202ML-SN	0.18							●																											
	DCGT11T301MR-SN	0.08							●																											
	NEW DCGT11T301ML-SN	0.08							●																											
	DCGT11T302MR-SN	0.18							●																											
	NEW DCGT11T302ML-SN	0.18							●																											
	DCGT11T304MR-SN	0.38							●																											
Medium Cutting	NEW DCGT11T304ML-SN	0.38							●																											
R/L-SN	DCET0702V3R-SN	0.03																						●		●							●				C023 D009 D026 E008 E009 E029 E031
	DCET0702V3L-SN	0.03																						●		●							●				
	DCET070200R-SN	0																						●		●							●				
	DCET070200L-SN	0																						●		●							●				
	DCET070201R-SN	0.1																						●		●							●				
	DCET070201L-SN	0.1																						●		●							●				
	DCET070202R-SN	0.2																						●		●							●				
	DCET070202L-SN	0.2																						●		●							●				
	DCET070204R-SN	0.4																						●		●							●				
	DCET070204L-SN	0.4																						●		●							●				
	DCET11T3V3R-SN	0.03																						●		●							●				
	DCET11T3V3L-SN	0.03																						●		●							●				
	DCET11T300R-SN	0																						●		●							●				
	DCET11T300L-SN	0																						●		●							●				
	DCET11T301R-SN	0.1																						●		●							●				
Medium Cutting	DCET11T301L-SN	0.1																						●		●							●				

● = NEW

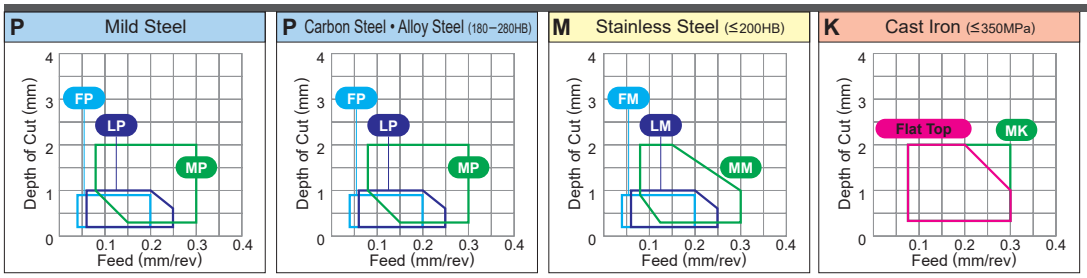
CHIP BREAKERS ➤ A060
GRADES ➤ A030
IDENTIFICATION ➤ A002

55° DC TYPE INSERTS WITH HOLE

DCET 11 T3 02 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·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	Applicable Holder Page
R/L-SN	**DCET11T302R-SN**	0.2																						●		●							●					C023
	DCET11T302L-SN	0.2																						●		●							●					D009
	DCET11T304R-SN	0.4																						●		●							●					D026
	DCET11T304L-SN	0.4																						●		●							●					E008
Medium Cutting																																						E009 E029 E031
R/LW-SN *	**DCET0702V3RW-SN**	0.03																						●														C023
	DCET0702V3LW-SN	0.03																						●														D009
	DCET11T3V3RW-SN	0.03																						●														D026
	DCET11T3V3LW-SN	0.03																						●														E008
Medium Cutting (Wiper)																																						E009 E029 E031
SMG	**DCGT070201M-SMG**	0.08							●																													C023
	DCGT070202M-SMG	0.18							●															●														D009
	DCGT070204M-SMG	0.38							●															●														D026
	DCGT11T301M-SMG	0.08							●																													E008
	DCGT11T302M-SMG	0.18							●															●														E009
	DCGT11T304M-SMG	0.38							●															●														E029
Medium Cutting																																						E031
Flat Top	**DCMW070204**	0.4													●	●	●	●																				C023
	DCMW11T304	0.4													●	●	●	●															●					D009
	DCMW11T308	0.8													●	●	●	●																				D026
	DCMW150404	0.4																																				E008
	DCMW150408	0.8																																				E009
																																					E029
																																						E031
Flat Top	**DCGW070200**	0																								●												C023
	DCGW0702V5	0.05																								●												D009
	DCGW11T300	0																								●												D026
	DCGW11T3V5	0.05																								●												E008
																																						E009
																																						E029
																																						E031

* Please refer to A028 before using the R/LW-SN breaker (wiper insert).

● = NEW

● : Inventory maintained in Japan.
(10 inserts in one case)

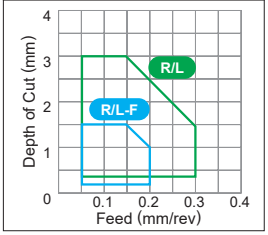
CHIP BREAKERS ➤ A060

DEGX 15 04 02 R-F
Size Thickness Corner Radius R/L Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

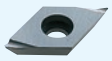
Finish Cutting ····· Medium Cutting ·····

N Aluminium Alloy



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: HTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
R/L-F  Finish Cutting (For Aluminium Alloy)	**DEGX150402R-F**	0.2																															●					C032
	DEGX150402L-F	0.2																															●					
	DEGX150404R-F	0.4																															●					
	DEGX150404L-F	0.4																															●					
R/L  Medium Cutting (For Aluminium Alloy)	**DEGX150402R**	0.2																															●					C032
	DEGX150402L	0.2																															●					
	DEGX150404R	0.4																															●					
	DEGX150404L	0.4																															●					

● = NEW

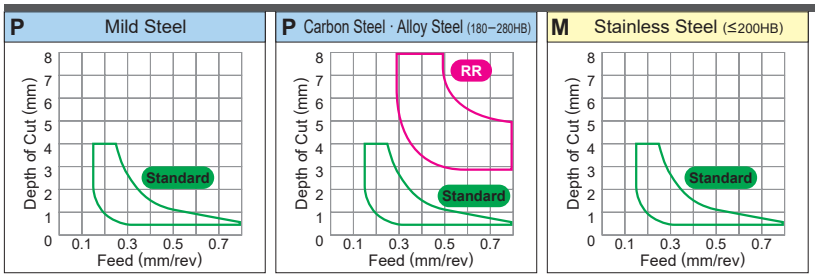
CHIP BREAKERS ➤ A072
GRADES ➤ A030
IDENTIFICATION ➤ A002

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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	IC (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
AZ  Medium Cutting – Finish Cutting	RCGT0803M0-AZ	8.0																																●					
	RCGT10T3M0-AZ	10.0																																●					C025
Standard  Medium Cutting	RCMT0602M0	6.0		●																						●	●	●				●						
	RCMT0803M0	8.0		●									●													●	●	●				●						C025
Standard  Medium Cutting	RCMX1003M0	10.0		●	▲		●						●									●				●	●	●									
	RCMX1204M0	12.0	●	●	▲		●						●	●		●		●				●	●			●	●	●									
	RCMX1606M0	16.0	●	●	▲		●	●					●	●								●	●														C024 H012
	RCMX2006M0	20.0	●	●	▲		●	●					●																								
	RCMX2507M0	25.0	●	●	▲		●																														
	RCMX3209M0	32.0	●	●	▲																																
RR  Heavy Cutting	RCMX1606M0-RR	16.0		●	▲		●	●					●																								
	RCMX2006M0-RR	20.0		●	▲		●	●					●																								
	RCMX2507M0-RR	25.0		●	▲		●	●					●																								C024
	RCMX3209M0-RR	32.0		●	▲																																

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

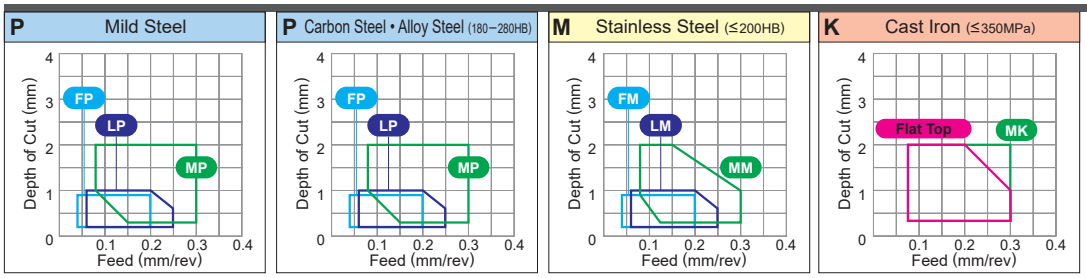
CHIP BREAKERS ➤ A060

90° SC TYPE INSERTS WITH HOLE

SCMT 09 T3 04- FP
Size · Thickness · Corner Radius · Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT110	RT9010	MT9005	TF15	Applicable Holder Page
FP	**SCMT09T304-FP**	0.4	●			●	●																			●		●											
	SCMT09T308-FP	0.8	●			●	●																			●		●											C026 E033
Finish Cutting																																							
FM	**SCMT09T304-FM**	0.4																						●															
	SCMT09T308-FM	0.8																						●															C026 E033
Finish Cutting																																							
FV	**SCMT09T304-FV**	0.4		▲																						●	●		●		●								
Finish Cutting																																						C026 E033	
LP	**SCMT09T304-LP**	0.4	●			●	●																			●		●											
	SCMT09T308-LP	0.8	●			●	●																			●		●											C026 E033
Light Cutting																																							
LM	**SCMT09T304-LM**	0.4								●	●													●															
	SCMT09T308-LM	0.8								●	●													●															C026 E033
Light Cutting																																							
MP	**SCMT09T304-MP**	0.4	●			●	●																			●		●											
	SCMT09T308-MP	0.8	●			●	●																			●		●											
	SCMT120404-MP	0.4	●			●	●																			●		●											C026 E033
	SCMT120408-MP	0.8	●			●	●																			●		●											
Medium Cutting																																							
MM	**SCMT09T304-MM**	0.4								●	●													●															
	SCMT09T308-MM	0.8								●	●													●															C026 E033
	SCMT120404-MM	0.4								●	●													●															
	SCMT120408-MM	0.8								●	●													●															
Medium Cutting																																							

● = NEW

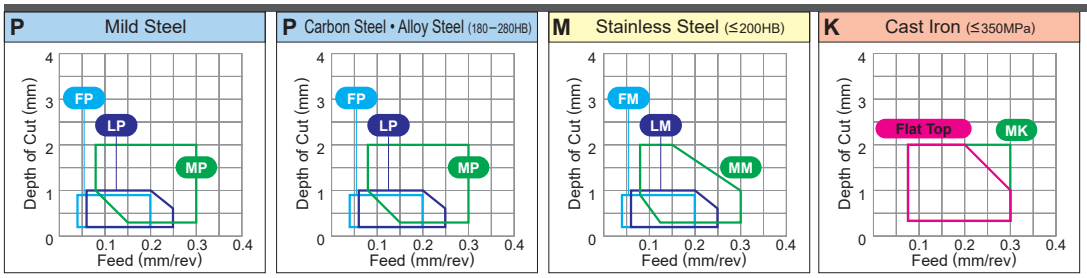
CHIP BREAKERS ➤ A060
GRADES ➤ A030
IDENTIFICATION ➤ A002

90° SC TYPE INSERTS WITH HOLE

SCMT 09 T3 04- MK
Size / Thickness / Corner Radius / Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT110	RT9010	MT9005	TF15	Applicable Holder Page
MK	**SCMT09T304-MK**	0.4													●	●																								
	SCMT09T308-MK	0.8													●	●																								
	SCMT120404-MK	0.4													●	●																								C026 E033
	SCMT120408-MK	0.8													●	●																								
Medium Cutting																																						
MS NEW	**SCMT09T304-MS**	0.4																		●	●																●		
	SCMT09T308-MS	0.8																		●	●																●		
	SCMT120404-MS	0.4																		●	●																●		C026 E033
	SCMT120408-MS	0.8																		●	●																●		
Medium Cutting	**SCMT120412-MS**	1.2																		●	●																●		
Standard	**SCMT09T304**	0.4	●	●	▲								●				●									●	●	●	●			●							
	SCMT09T308	0.8	●	●	▲								●				●									●	●	●	●			●							
	SCMT120404	0.4	●	●	▲								●				●									●	●	●											C026 E033
	SCMT120408	0.8	●	●	▲								●				●									●	●	●	●			●							
Medium Cutting	**SCMT120412**	1.2		●																																			
Flat Top	**SCMW09T304**	0.4													●	●		●														●		●					
	SCMW09T308	0.8													●	●	●	●																					
	SCMW120408	0.8													●	●	●	●																					C026 E033

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

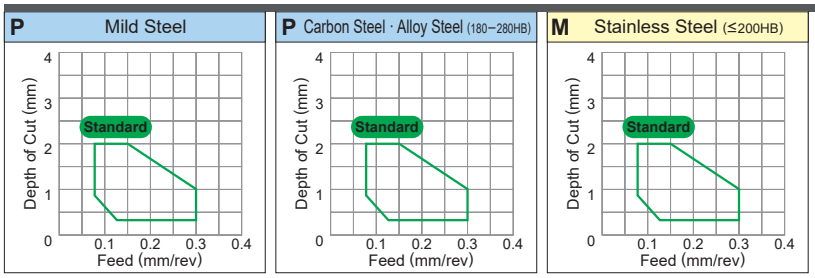
CHIP BREAKERS ➤ A060

90° SP TYPE INSERTS WITH HOLE

SPMT 09 03 04
Size Thickness Corner Radius
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····



Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
Standard	**SPMT090304**	0.4																								●													
	SPMT090308	0.8																								●													
	SPMT120308	0.8																								●							●						—
Medium Cutting																																							
Flat Top	**SPMW090304**	0.4																						●	●	●						●	●					—
	SPMW090308	0.8																						●	●	●						●	●					
	SPMW120304	0.4																						●	●	●						●	●					
	SPMW120308	0.8																						●	●	●						●	●					
Flat Top	**SPGX090304**	0.4																								●							●					—
	SPGX090308	0.8																								●							●					
	SPGX120304	0.4																								●							●					
	SPGX120308	0.8																								●							●					

● = NEW

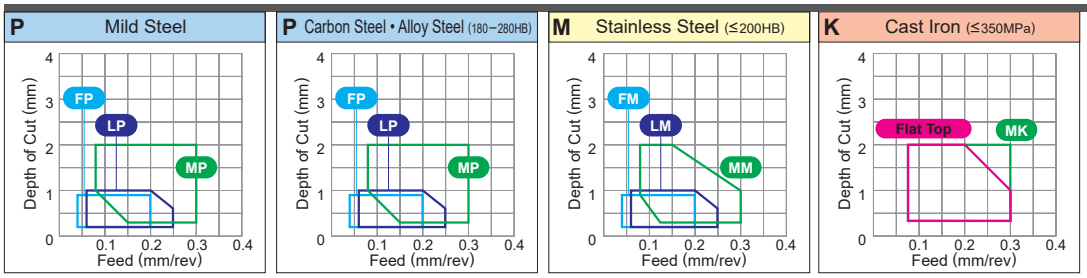
CHIP BREAKERS ➤ A068
GRADES ➤ A030
IDENTIFICATION ➤ A002

60° TC TYPE INSERTS WITH HOLE

TCMT 09 02 02- FP
Size · Thickness · Corner Radius · Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																			Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	
FP	TCMT090202-FP	0.2	●		●	●																		●		●									
	TCMT090204-FP	0.4	●		●	●																		●		●									C027 E028
	TCMT110202-FP	0.2	●		●	●																		●		●									
	TCMT110204-FP	0.4	●		●	●																		●		●									
Finish Cutting	TCMT16T304-FP	0.4	●		●	●																		●		●									
FM	TCMT090202-FM	0.2																					●												
	TCMT090204-FM	0.4																					●												C027 E028
	TCMT110202-FM	0.2																					●												
	TCMT110204-FM	0.4																					●												
Finish Cutting	TCMT16T304-FM	0.4																					●												
FV	TCMT110204-FV	0.4			▲																				● ●		●		●						C027 E028
	TCMT16T304-FV	0.4			▲																				● ●		●								
Finish Cutting																																			
AZ	TCGT110202-AZ	0.2																															●		
	TCGT110204-AZ	0.4																															●		
	TCGT110208-AZ	0.8																															●		C027 E028
	TCGT16T302-AZ	0.2																															●		
	TCGT16T304-AZ	0.4																															●		
Medium Cutting – Finish Cutting	TCGT16T308-AZ	0.8																															●		
R/L-F	TCGT0601V3L-F	0.03																						●											
	TCGT060101L-F	0.1																						●											
	TCGT060102R-F	0.2																						●									●		E017
	TCGT060102L-F	0.2																						●									●		
	TCGT060104R-F	0.4																															●		
	TCGT060104L-F	0.4																						●									●		
	NEW TCGT060101MR-F	0.08							●																										
	NEW TCGT060101ML-F	0.08							●																										
	NEW TCGT060102MR-F	0.18							●																										E017
	NEW TCGT060102ML-F	0.18							●																										
	NEW TCGT060104MR-F	0.38							●																										
Finish Cutting	NEW TCGT060104ML-F	0.38							●																										

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																	Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
LP	**TCMT090204-LP**	0.4	●		●	●																			●	●										
	TCMT090208-LP	0.8	●		●	●																			●	●										
	TCMT110204-LP	0.4	●		●	●																			●	●										C027
	TCMT110208-LP	0.8	●		●	●																			●	●										C028
	TCMT16T304-LP	0.4	●		●	●																			●	●										
Light Cutting	**TCMT16T308-LP**	0.8	●		●	●																			●	●										
LM	**TCMT090204-LM**	0.4								●	●													●												
	TCMT090208-LM	0.8								●	●													●												
	TCMT110204-LM	0.4								●	●													●												C027
	TCMT110208-LM	0.8								●	●													●												C028
	TCMT16T304-LM	0.4								●	●													●												
Light Cutting	**TCMT16T308-LM**	0.8								●	●													●												
LS NEW	**TCMT090202-LS**	0.2																		●	●														●		
	TCMT110202-LS	0.2																		●	●														●		
Light Cutting																																					C027 E028
MP	**TCMT090204-MP**	0.4	●		●	●																			●	●										
	TCMT090208-MP	0.8	●		●	●																			●	●										
	TCMT110204-MP	0.4	●		●	●																			●	●										
	TCMT110208-MP	0.8	●		●	●																			●	●										C027
	TCMT130304-MP	0.4	●		●	●																			●	●										C028
	TCMT16T304-MP	0.4	●		●	●																			●	●										
	TCMT16T308-MP	0.8	●		●	●																			●	●										
Medium Cutting	**TCMT16T312-MP**	1.2	●		●	●																			●	●										
MM	**TCMT090204-MM**	0.4								●	●													●												
	TCMT090208-MM	0.8								●	●													●												
	TCMT110204-MM	0.4								●	●													●												C027
	TCMT110208-MM	0.8								●	●													●												C028
	TCMT130304-MM	0.4								●	●													●												
	TCMT16T304-MM	0.4								●	●													●												
	TCMT16T308-MM	0.8								●	●													●												
Medium Cutting	**TCMT16T312-MM**	1.2								●	●													●												
MK	**TCMT110204-MK**	0.4													●	●																					
	TCMT110208-MK	0.8													●	●																					C027
	TCMT16T304-MK	0.4													●	●																					C028
	TCMT16T308-MK	0.8													●	●																					
Medium Cutting	**TCMT16T312-MK**	1.2													●	●																					
MS NEW	**TCMT090204-MS**	0.4																		●	●														●		
	TCMT090208-MS	0.8																		●	●														●		
	TCMT110204-MS	0.4																		●	●																C027
	TCMT110208-MS	0.8																		●	●																C028
	TCMT16T304-MS	0.4																		●	●														●		
	TCMT16T308-MS	0.8																		●	●														●		
Medium Cutting	**TCMT16T312-MS**	1.2																		●	●														●		

● = NEW

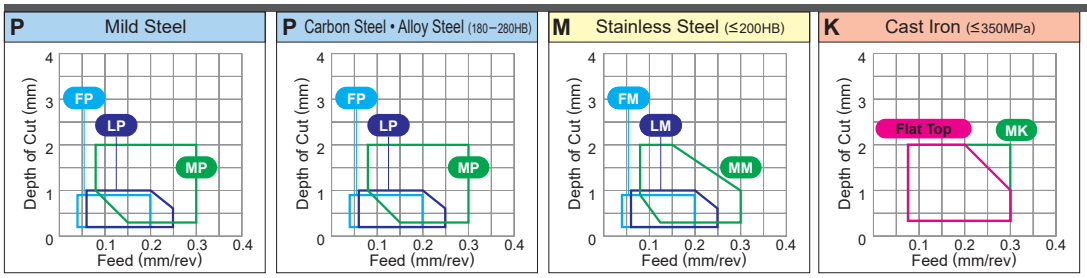
CHIP BREAKERS ➤ A060
GRADES ➤ A030
IDENTIFICATION ➤ A002

60° TC TYPE INSERTS WITH HOLE

TCMT 08 02 04
Size Thickness Corner Radius
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting····· Light Cutting····· Medium Cutting·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																		Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	
Standard	TCMT080204	0.4																							●	●				●						
	TCMT090204	0.4		● ▲									●													● ●		● ●				●						
	TCMT110202	0.2		● ▲									●											●		● ●		● ●										
	TCMT110204	0.4	●	● ▲									●					●						●		● ●		● ●				●						
	TCMT110208	0.8	●	●																				●				●										C027
	TCMT130302	0.2																										● ●										E028
	TCMT130304	0.4		●									●														●	●										
	TCMT16T304	0.4	●	● ▲									●					●						●		● ●		● ●				●						
	TCMT16T308	0.8	●	● ▲									●					●						●		● ●		● ●				●						
Medium Cutting	TCMT16T312	1.2		●																																	
Flat Top	TCMW110204	0.4													●	●	●	●															●					
	TCMW130304	0.4																															●					
	TCMW16T304	0.4													●	●	●	●															●					C027 E028
	TCMW16T308	0.8													●	●	●	●															●					
	TCMW16T312	1.2													●	●																						

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

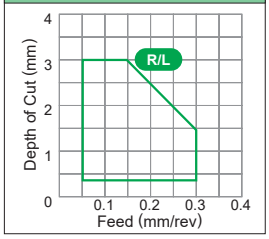
CHIP BREAKERS ➤ A060

TEGX 16 03 02 R
Size Thickness Corner Radius R/L
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····

N Aluminium Alloy



Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
R/L  Medium Cutting (For Aluminium Alloy)	TEGX160302R	0.2																															●					C033 E043
	TEGX160302L	0.2																															●					
	TEGX160304R	0.4																															●					
	TEGX160304L	0.4																															●					

● = NEW

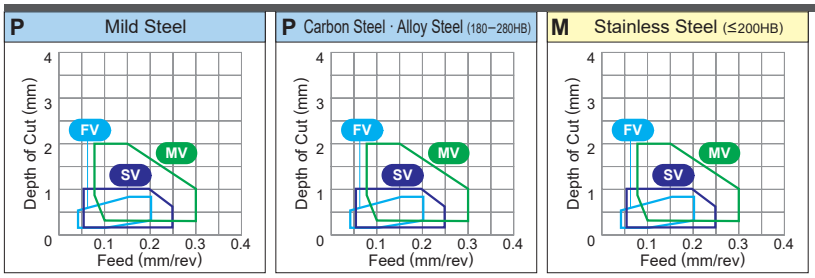
CHIP BREAKERS ➤ A072
GRADES ➤ A030
IDENTIFICATION ➤ A002

60° TP TYPE INSERTS WITH HOLE

TPMH 08 02 02- FV
Size Thickness Corner Radius Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting····· Light Cutting····· Medium Cutting·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																			Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	
FV	TPMH080202-FV	0.2			▲																		●			●	●									E007
	TPMH080204-FV	0.4			▲																		●			●	●									
	TPMH090202-FV	0.2			▲																		●			●	●									
	TPMH090204-FV	0.4			▲																		●			●	●									
	TPMH110302-FV	0.2			▲																		●			●	●									
	TPMH110304-FV	0.4			▲																		●			●	●									
	TPMH110308-FV	0.8			▲																		●			●	●									
	TPMH160302-FV	0.2			▲																		●			●	●									
	TPMH160304-FV	0.4			▲																		●			●	●									
Finish Cutting	TPMH160308-FV	0.8			▲																		●			●	●									
R/L-FS	TPGH080202R-FS	0.2																					●			●							●			E007
	TPGH080202L-FS	0.2																					●			●		●	●				●			
	TPGH080204R-FS	0.4																					●			●							●			
	TPGH080204L-FS	0.4																					●			●		●	●				●			
	TPGH090202R-FS	0.2																					●			●							●			
	TPGH090202L-FS	0.2																					●			●		●	●				●			
	TPGH090204R-FS	0.4																					●			●							●			
	TPGH090204L-FS	0.4																					●			●		●	●				●			
	TPGH110302R-FS	0.2																					●			●							●			
	TPGH110302L-FS	0.2																					●			●		●	●				●			
	TPGH110304R-FS	0.4																					●			●							●			
	TPGH110304L-FS	0.4																					●			●		●	●				●			
	TPGH160304R-FS	0.4																					●			●							●			
	TPGH160304L-FS	0.4																					●			●		●					●			
	TPGH160308R-FS	0.8																					●			●							●			
Finish Cutting	TPGH160308L-FS	0.8																					●			●		●					●			

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																		Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
R/L	**TPGX080202R**	0.2																							●											
	TPGX080202L	0.2																							●						●		●			
	TPGX080204R	0.4																							●								●			
	TPGX080204L	0.4																						●	●						●		●			
	TPGX090202R	0.2																							●											
	TPGX090202L	0.2																							●						●		●			
	TPGX090204R	0.4																							●								●			
	TPGX090204L	0.4																						●	●						●		●			E025
	TPGX090208R	0.8																							●								●			
	TPGX090208L	0.8																							●								●			
	TPGX110302L	0.2																							●						●		●			
	TPGX110304R	0.4																						●	●								●			
	TPGX110304L	0.4																						●	●						●		●			
	TPGX110308R	0.8																							●								●			
Finish Cutting	**TPGX110308L**	0.8																						●	●						●	●	●			
L	**TPMX090204L**	0.4																							●											
	TPMX110304L	0.4																							●											
Finish Cutting																																				E025
SV	**TPMH080202-SV**	0.2			▲	●				▲	●												●		●	●									
	TPMH080204-SV	0.4			▲	●				▲	●												●		●	●			●						
	TPMH090202-SV	0.2			▲	●				▲	●												●		●	●									
	TPMH090204-SV	0.4			▲	●				▲	●												●		●	●			●						
	TPMH110302-SV	0.2			▲	●				▲	●												●		●	●			●						
	TPMH110304-SV	0.4			▲	●				▲	●												●		●	●			●						
	TPMH110308-SV	0.8			▲	●				▲	●												●		●	●			●						
	TPMH160302-SV	0.2			▲	●				▲	●												●		●	●			●						
	TPMH160304-SV	0.4			▲	●				▲	●												●		●	●			●						
Light Cutting	**TPMH160308-SV**	0.8			▲	●				▲	●												●		●	●			●						E007
Standard	**TPMX110304**	0.4																							●	●	●									
	TPMX110308	0.8																							●	●	●									
Medium Cutting																																				E025
MV	**TPMH080202-MV**	0.2			▲	●				▲	●												●		●	●									
	TPMH080204-MV	0.4			▲	●				▲	●				●								●		●	●	●		●						
	TPMH090202-MV	0.2			▲	●				▲	●												●		●	●	●								
	TPMH090204-MV	0.4			▲	●				▲	●				●								●		●	●	●	●	●						
	TPMH090208-MV	0.8			▲	●									●								●			●	●								
	TPMH110302-MV	0.2			▲	●				▲	●												●		●	●	●	●	●						
	TPMH110304-MV	0.4			▲	●				▲	●				●								●		●	●	●	●	●						
	TPMH110308-MV	0.8			▲	●				▲	●				●								●		●	●	●	●	●						
	TPMH160304-MV	0.4			▲	●				▲	●				●								●		●	●	●	●	●						
Medium Cutting	**TPMH160308-MV**	0.8			▲	●				▲	●				●								●		●	●	●	●	●						E007

● = NEW

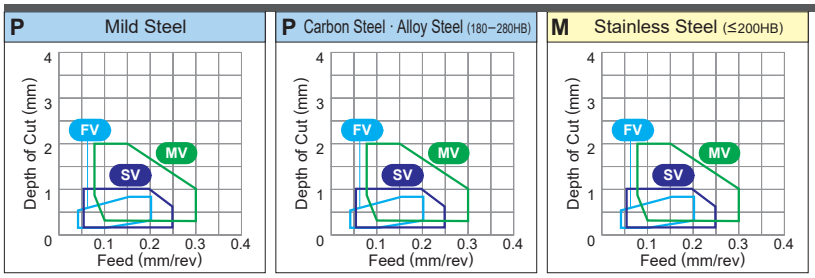
CHIP BREAKERS ➤ A068
GRADES ➤ A030
IDENTIFICATION ➤ A002

60° TP TYPE INSERTS WITH HOLE

TPGX 08 02 02
Size Thickness Corner Radius
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting····· Light Cutting····· Medium Cutting·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																			Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	
Flat Top	TPGX080202	0.2																														●				
	TPGX080204	0.4																					●	●		●						●		●			
	TPGX080208	0.8																								●						●		●			
	TPGX090202	0.2																																●			
	TPGX090204	0.4																						●		●						●		●			
	TPGX090208	0.8																						●		●						●		●			E025
	TPGX110302	0.2																																●			
	TPGX110304	0.4																						●		●						●		●			
	TPGX110308	0.8																						●		●						●		●			
	TPGX160304	0.4																								●						●		●			
	TPGX160308	0.8																														●		●			

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

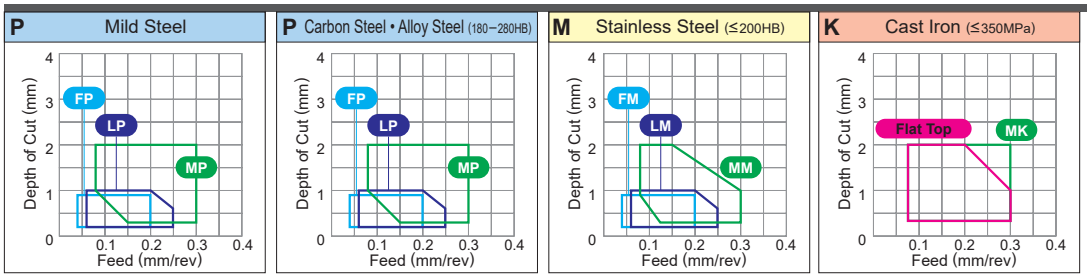
CHIP BREAKERS ➤ A068

35° VB TYPE INSERTS WITH HOLE

VBMT 11 03 02- FP
Size · Thickness · Corner Radius · Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
FP	VBMT110302-FP	0.2	●		●	●																			●	●												D010
	VBMT110304-FP	0.4	●		●	●																			●	●												D011
	VBMT110308-FP	0.8	●		●	●																			●	●												E011
	VBMT160404-FP	0.4	●		●	●																			●	●												E012
Finish Cutting	VBMT160408-FP	0.8	●		●	●																			●	●												H013
FM	VBMT110302-FM	0.2																						●														D010
	VBMT110304-FM	0.4																						●														D011
	VBMT110308-FM	0.8																						●														E011
	VBMT160404-FM	0.4																						●														E012
Finish Cutting	VBMT160408-FM	0.8																						●														H013
FV	VBMT110304-FV	0.4			▲																			●		● ●												D010
	VBMT110308-FV	0.8			▲																			●		● ●												D011
	VBMT160404-FV	0.4			▲																			●		● ●												E011
	VBMT160408-FV	0.8			▲																			●		● ●												E012
Finish Cutting																																						H013
R/L-F	VBGT110302R-F	0.2																						●		●		● ●						●				
	VBGT110302L-F	0.2																						●		●		● ●						●				
	VBGT110304R-F	0.4																						●		●			●					●				D010
	VBGT110304L-F	0.4																						●		●			●					●				D011
	VBGT160402R-F	0.2																						●		●			●					●				E011
	VBGT160402L-F	0.2																						●		●			●					●				E012
	VBGT160404R-F	0.4																						●		●			●					●				H013
Finish Cutting	VBGT160404L-F	0.4																						●		●			●					●				
LP	VBMT110304-LP	0.4	●			●	●																			●		●										D010
	VBMT110308-LP	0.8	●			●	●																			●		●										D011
	VBMT160404-LP	0.4	●			●	●																			●		●										E011
	VBMT160408-LP	0.8	●			●	●																			●		●										E012
Light Cutting																																						H013
LM	VBMT110304-LM	0.4								●	●													●														D010
	VBMT110308-LM	0.8								●	●													●														D011
	VBMT160404-LM	0.4								●	●													●														E011
	VBMT160408-LM	0.8								●	●													●														E012
Light Cutting																																						H013

● = NEW

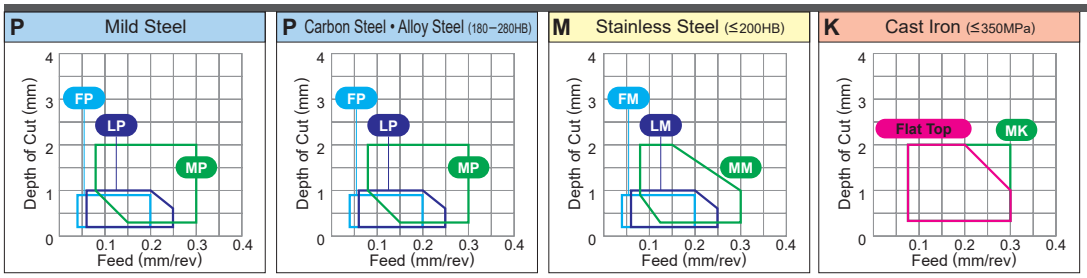
CHIP BREAKERS ➤ A054
GRADES ➤ A030
IDENTIFICATION ➤ A002

35° VB TYPE INSERTS WITH HOLE

VBMT 11 03 02- LS
Size Thickness Corner Radius Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
LS NEW	VBMT110302-LS	0.2																		●	●															●		D010
	VBMT110304-LS	0.4																		●	●															●		D011
	VBMT110308-LS	0.8																		●	●															●		E011
	VBMT160404-LS	0.4																		●	●															●		E012
Light Cutting	VBMT160408-LS	0.8																		●	●															●		H013
SV	VBMT110304-SV	0.4			▲																			●			●										D010
	VBMT110308-SV	0.8			▲																			●			●										D011
	VBMT160404-SV	0.4			▲																			●			●										E011
	VBMT160408-SV	0.8			▲																			●			●										E012
Light Cutting																																						H013
MP	VBMT160404-MP	0.4		●		●	●																			●		●										
	VBMT160408-MP	0.8		●		●	●																			●		●										E011 H013
Medium Cutting																																						
MM	VBMT160404-MM	0.4								●	●													●														
	VBMT160408-MM	0.8								●	●													●														E011 H013
Medium Cutting																																						
MK	VBMT160404-MK	0.4													●	●																						
	VBMT160408-MK	0.8													●	●																						E011 H013
Medium Cutting																																						
MS NEW	VBMT160402-MS	0.2																		●	●															●		
	VBMT160404-MS	0.4																		●	●															●		E011 H013
	VBMT160408-MS	0.8																		●	●															●		
	VBMT160412-MS	1.2																		●	●															●		
Medium Cutting																																						
Standard	VBMT160404	0.4		●																																		
	VBMT160408	0.8		●																																		E011 H013
Medium Cutting																																						

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																	Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
MV	**VBMT110304-MV**	0.4			▲		●					▲	●			●								●		●	●		●						●	D010
	VBMT110308-MV	0.8			▲		●					▲	●			●								●		●	●		●						●	D011
	VBMT160404-MV	0.4			▲		●					▲	●			●								●		●	●		●						●	E011
	VBMT160408-MV	0.8			▲		●					▲	●			●								●		●	●		●						●	E012
Medium Cutting																																					H013
R/L-SR	**VBET1103V3R-SR**	0.03																						●		●							●				
	VBET1103V3L-SR	0.03																						●		●							●				
	VBET110301R-SR	0.1																						●		●							●				D010
	VBET110301L-SR	0.1																						●		●							●				D011
	VBET110302R-SR	0.2																						●		●							●				E011
	VBET110302L-SR	0.2																						●		●							●				E012
	VBET110304R-SR	0.4																						●		●							●				
Medium Cutting	**VBET110304L-SR**	0.4																						●		●							●				
R/L-SN	**VBET1103V3R-SN**	0.03																						●		●							●				
	VBET1103V3L-SN	0.03																						●		●							●				
	VBET110300R-SN	0																						●		●							●				
	VBET110300L-SN	0																						●		●							●				D010
	VBET110301R-SN	0.1																						●		●							●				D011
	VBET110301L-SN	0.1																						●		●							●				E011
	VBET110302R-SN	0.2																						●		●							●				E012
	VBET110302L-SN	0.2																						●		●							●				
	VBET110304R-SN	0.4																						●		●							●				
Medium Cutting	**VBET110304L-SN**	0.4																						●		●							●				
R/LW-SN *	**VBET1103V3RW-SN**	0.03																						●													
	VBET1103V3LW-SN	0.03																						●													D010
Medium Cutting (Wiper)																																					D011 E011 E012
Flat Top	**VBMW160408**	0.8													●	●																					
																																					E011 H013

* Please refer to A028 before using the R/LW-SN breaker (wiper insert).

● = NEW

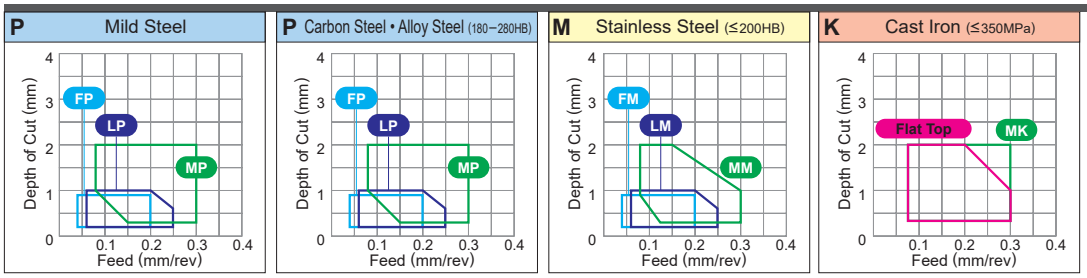
CHIP BREAKERS ➤ A054
GRADES ➤ A030
IDENTIFICATION ➤ A002

35° VC TYPE INSERTS WITH HOLE

VCMT 11 03 02- FP
Size Thickness Corner Radius Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
FP	VCMT110302-FP	0.2	●		●	●																			●	●												C028
	VCMT110304-FP	0.4	●		●	●																			●	●												C029
	VCMT160404-FP	0.4	●		●	●																			●	●												D011
	VCMT160408-FP	0.8	●		●	●																			●	●												E032
Finish Cutting																																						E033
FM	VCMT110302-FM	0.2																						●														C028
	VCMT110304-FM	0.4																						●														C029
	VCMT160404-FM	0.4																						●														D011
	VCMT160408-FM	0.8																						●														E032
Finish Cutting																																						E033
FV	VCMT080202-FV	0.2			▲		●																	●		● ●		●										C028
	VCMT080204-FV	0.4			▲		●																	●		● ●		●										C029
	VCMT160404-FV	0.4	●	▲																						● ●			●									E011
	VCMT160408-FV	0.8	●	▲																						● ●			●									E012
Finish Cutting																																						E032
																																						E033
AZ	VCGT160404-AZ	0.4																																●				
	VCGT160408-AZ	0.8																																●				C028
	VCGT160412-AZ	1.2																																●				C029
Medium Cutting – Finish Cutting																																						E032
																																						E033
R/L-F	VCGT080202R-F	0.2																						●		●			●									
	VCGT080202L-F	0.2																						●		●			●									E011
	VCGT080204R-F	0.4																						●		●			●									E012
	VCGT080204L-F	0.4																						●		●			●									
Finish Cutting																																						E032
																																						E033
LP	VCMT110304-LP	0.4	●			●	●																			●		●										C028
	VCMT110308-LP	0.8	●			●	●																			●		●										C029
	VCMT160404-LP	0.4	●			●	●																			●		●										D011
	VCMT160408-LP	0.8	●			●	●																			●		●										E032
Light Cutting																																						E033
LM	VCMT110304-LM	0.4								●	●													●														C028
	VCMT110308-LM	0.8								●	●													●														C029
	VCMT160404-LM	0.4								●	●													●														D011
	VCMT160408-LM	0.8								●	●													●														E032
Light Cutting																																						E033

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
LS NEW  Light Cutting	**VCMT110302-LS**	0.2																		●	●														●		C028
	VCMT110304-LS	0.4																		●	●														●		C029
	VCMT160404-LS	0.4																		●	●														●		D011
	VCMT160408-LS	0.8																		●	●														●		E032 E033
LS NEW  Light Cutting	**VCGT110301M-LS**	0.08																		●	●																C028 D011 E032 E033
	VCGT110302M-LS	0.18																		●	●																
	VCGT110304M-LS	0.38																		●	●																
	VCGT130301M-LS	0.08																		●	●																
	VCGT130302M-LS	0.18																		●	●																
	VCGT130304M-LS	0.38																		●	●																
LS-P NEW  Light Cutting	**VCGT110301M-LS-P**	0.08																																●		C028 D011 E032 E033
	VCGT110302M-LS-P	0.18																																●		
	VCGT110304M-LS-P	0.38																																●		
	VCGT130301M-LS-P	0.08																																●		
	VCGT130302M-LS-P	0.18																																●		
	VCGT130304M-LS-P	0.38																																●		
SV  Light Cutting	**VCMT080202-SV**	0.2			▲		●																	●			●	●								E011 E012
	VCMT080204-SV	0.4			▲		●																	●			●	●								
MP  Medium Cutting	**VCMT160404-MP**	0.4		●		●	●																			●		●								C028 C029 E032 E033
	VCMT160408-MP	0.8		●		●	●																			●		●								
	VCMT160412-MP	1.2		●		●	●																			●		●								
MM  Medium Cutting	**VCMT160404-MM**	0.4								●	●													●												C028 C029 E032 E033
	VCMT160408-MM	0.8								●	●													●												
	VCMT160412-MM	1.2								●	●													●												
MK  Medium Cutting	**VCMT160404-MK**	0.4													●	●			●																	C028 C029 E032 E033
	VCMT160408-MK	0.8													●	●																				
MS NEW  Medium Cutting	**VCMT110302-MS**	0.2																		●	●																C028 C029 D011 E032 E033
	VCMT110304-MS	0.4																		●	●														●		
	VCMT110308-MS	0.8																		●	●														●		
	VCMT160404-MS	0.4																		●	●														●		
	VCMT160408-MS	0.8																		●	●														●		

● = NEW

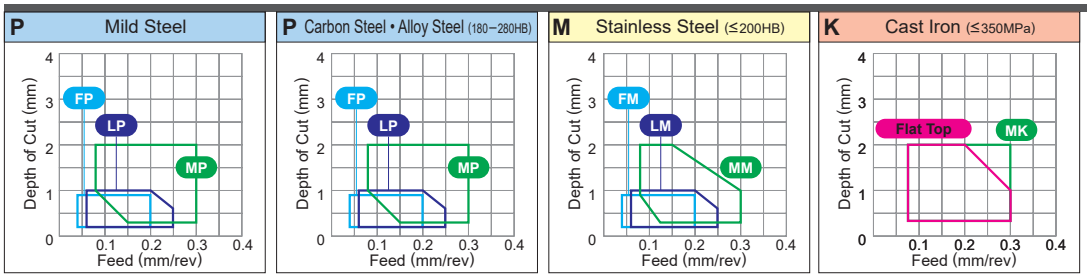
CHIP BREAKERS ➤ A060
GRADES ➤ A030
IDENTIFICATION ➤ A002

35° VC TYPE INSERTS WITH HOLE

VCMT 11 03 04
Size Thickness Corner Radius
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting····· Light Cutting····· Medium Cutting·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
Standard	**VCMT110304**	0.4		●	▲								●											●			●	●				●		●				C028
	VCMT160404	0.4	●	●	▲								●				●							●			●	●				●		●				C029
	VCMT160408	0.8	●	●	▲								●				●							●			●	●				●						D011
	VCMT160412	1.2		●	▲								●														●	●										E032
Medium Cutting																																							E033
MV	**VCMT080202-MV**	0.2			▲		●					▲	●											●			●	●		●								
	VCMT080204-MV	0.4			▲		●					▲	●			●								●			●	●		●								E011
Medium Cutting																																							E012
Flat Top	**VCMW110304**	0.4																																●					
	VCMW160404	0.4													●	●	●	●																●					C028 C029
	VCMW160408	0.8													●	●	●	●	●															●					E032 E033

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

CHIP BREAKERS ➤ A060

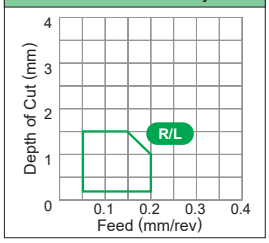
35° VD TYPE INSERTS WITH HOLE

VDGX 16 03 02 R
Size Thickness Corner Radius R/L
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····

N Aluminium Alloy



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
R/L	VDGX160302R	0.2																																●					
	VDGX160302L	0.2																																●					
	VDGX160304R	0.4																																●					C034
	VDGX160304L	0.4																																●					
Medium Cutting (For Aluminium)																																							

● = NEW

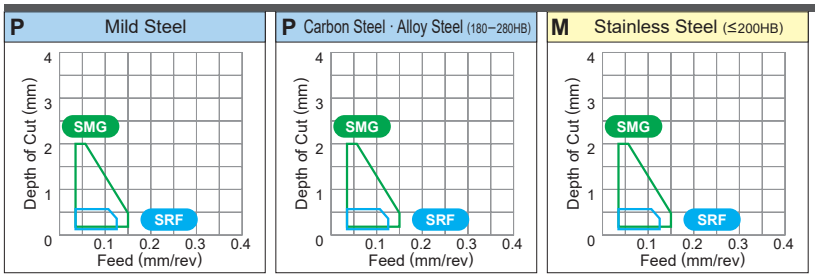
CHIP BREAKERS ➤ A072
GRADES ➤ A030
IDENTIFICATION ➤ A002

35° VP TYPE INSERTS WITH HOLE

VPGT 08 02 01 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 ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
R/L-SRF	VPET080201R-SRF	0.1																						●														
	VPET080201L-SRF	0.1																						●														
	VPET080202R-SRF	0.2																						●														
	VPET080202L-SRF	0.2																						●														
	VPET1103V3R-SRF	0.03																						●														D010
	VPET1103V3L-SRF	0.03																						●														D011
	VPET110301R-SRF	0.1																						●														
	VPET110301L-SRF	0.1																						●														
	VPET110302R-SRF	0.2																						●														
Finish Cutting	VPET110302L-SRF	0.2																						●														
SMG	VPGT080201M-SMG	0.1																						●														
	VPGT080202M-SMG	0.2																						●														
	VPGT110301M-SMG	0.1																						●														D010
	VPGT110302M-SMG	0.2																						●														D011
Medium Cutting																																						

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

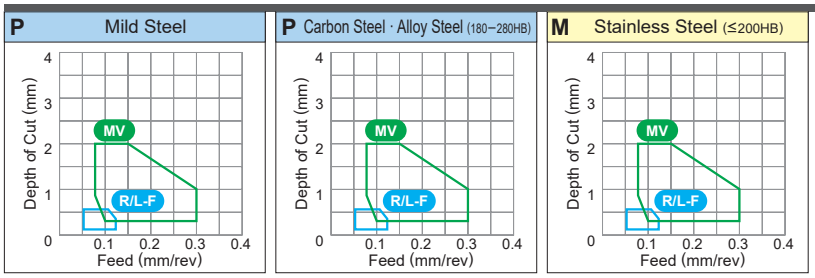
CHIP BREAKERS ➤ A068

80° WB TYPE INSERTS WITH HOLE

WBGT 02 01 V3 L-F
Size · Thickness · Corner Radius · R/L · Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Medium Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	Applicable Holder Page
R/L-F	**WBGT0201V3L-F**	0.03																						●		●													
	WBGT020101L-F	0.1																						●		●													
	WBGT020102L-F	0.2																						●		●		●											
	WBGT020104L-F	0.4																						●		●		●											
	WBGTL302V3L-F	0.03																						●		●													E010
	WBGTL30201L-F	0.1																						●		●													E016
	WBGTL30202R-F	0.2																						●		●													
	WBGTL30202L-F	0.2																						●		●		●											
	WBGTL30204R-F	0.4																						●		●													
Finish Cutting	**WBGTL30204L-F**	0.4																						●		●		●											
R/L-MV	**WBMTL30202R-MV**	0.2			▲	●				▲														●		●	●	●			●								E010
	WBMTL30202L-MV	0.2			▲	●				▲														●		●	●	●			●								E016
	WBMTL30204R-MV	0.4			▲	●				▲														●		●	●	●			●								
Medium Cutting	**WBMTL30204L-MV**	0.4			▲	●				▲														●		●	●	●			●								

● = NEW

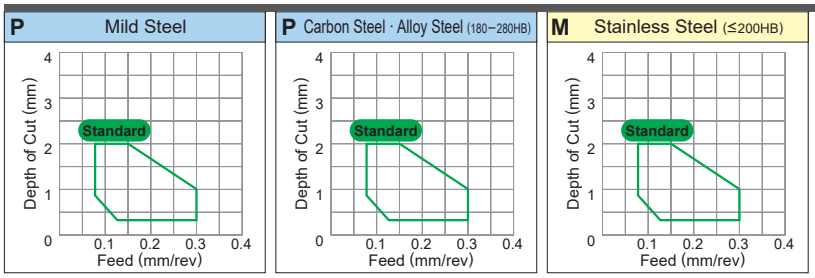
CHIP BREAKERS ➤ A054
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° WC TYPE INSERTS WITH HOLE

WCGT 02 01 02 R
Size Thickness Corner Radius R/L
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 (NEW)	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
R/L	**WCGT020102R**	0.2																								●													
	WCGT020102L	0.2																								●								●					
	WCGT020104R	0.4																								●													E027
	WCGT020104L	0.4																								●								●					
	WCGTL30202L	0.2																								●													
Finish Cutting	**WCGTL30204L**	0.4																								●													
Standard	**WCMT020102**	0.2		●	▲								●													●	●	●	●			●						
	WCMT020104	0.4		●	▲								●													●	●	●	●			●						
	WCMTL30202	0.2		●									●													●	●	●	●			●						
	WCMTL30204	0.4		●									●													●	●	●	●			●						
	WCMT040202	0.2		●	▲								●													●	●	●	●			●						E027
	WCMT040204	0.4		●	▲								●													●	●	●	●			●						
	WCMT040208	0.8			▲																																	
	WCMT06T304	0.4		●	▲								●													●	●	●	●			●						
Medium Cutting	**WCMT06T308**	0.8		●	▲								●													●	●	●	●			●						

● = NEW

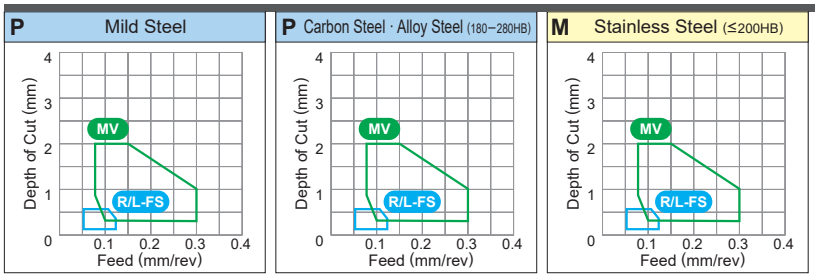
● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

CHIP BREAKERS ➤ A060

WPMT 04 02 04 R-FS
Size Thickness Corner Radius R/L Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Medium Cutting ·····



Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated: UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	Applicable Holder Page
R/L-FS  Finish Cutting	**WPGT040204R-FS**	0.4																						●		●												E010
	WPGT040204L-FS	0.4																						●		●												
	WPGT060304R-FS	0.4																						●		●												
	WPGT060304L-FS	0.4																						●		●												
MV  Medium Cutting	**WPMT040202-MV**	0.2			▲	●					▲	●												●		●	●											E010
	WPMT040204-MV	0.4			▲	●					▲	●			●									●		●	●			●								
	WPMT060304-MV	0.4			▲	●					▲	●			●									●		●	●											
	WPMT060308-MV	0.8			▲	●					▲	●			●									●		●	●			●								

● = NEW

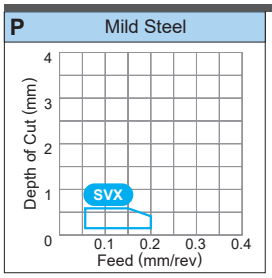
CHIP BREAKERS ➤ A068
GRADES ➤ A030
IDENTIFICATION ➤ A002

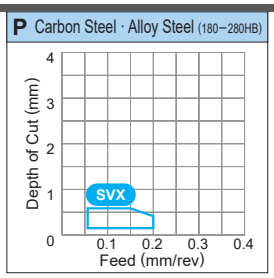
25° XC TYPE INSERTS WITH HOLE

XCMT 15 03 02- SVX
Size Thickness Corner Radius Chip Breaker
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting·····





Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated																		Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	
SVX	XCMT150302-SVX	0.2																					●													
	XCMT150304-SVX	0.4			▲																		●													
	XCMT150308-SVX	0.8			▲																		●													C030
Finish Cutting																																				

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

CHIP BREAKERS ➤ A060

RTG TYPE INSERTS WITHOUT HOLE

Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																			Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
 For Special Use (For TL Holder)	RTG05A	—																													●	●					C035
	RTG06A	—																													●	●					
	RTG07A	—																													●						
	RTG08A	—																													●	●					
	RTG10A	—																													●	●					

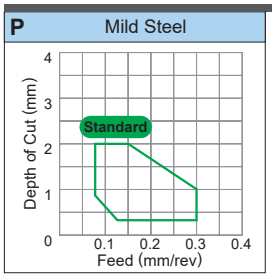
● = NEW

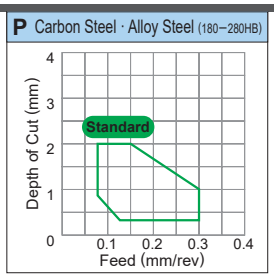
90° SP TYPE INSERTS WITHOUT HOLE

SPGR 09 03 04 R
Size Thickness Corner Radius R/L
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····





Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																			Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	MP7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	
R	SPGR090304R	0.4																													●						—
Finish Cutting																																					
Standard	SPMR090304	0.4		●▲																					●●		●										
	SPMR090308	0.8		●▲																					●●		●										
	SPMR120304	0.4		●▲																					●●		●										—
	SPMR120308	0.8		●▲																					●●		●										
Medium Cutting																																					
Flat Top	SPMN090304	0.4																							●						●	●					
	SPMN090308	0.8		●																					●						●	●					
	SPMN120304	0.4		●																				●							●	●					
	SPMN120304T	0.4																							●												
	SPMN120308	0.8		●																				●●							●	●					
	SPMN120312	1.2		●▲																				●							●	●					
	SPMN120408	0.8																													●	●					—
	SPMN120412	1.2																													●						
	SPMN150408	0.8																													●						
	SPMN150412	1.2																													●						
	SPMN190404	0.4																													●						
	SPMN190408	0.8																													●						
	SPMN190412	1.2																													●						
Flat Top	SPGN090304	0.4																							●						●		●				
	SPGN090308	0.8																															●				
	SPGN120304	0.4																							●						●		●				
	SPGN120308	0.8																						●	●						●		●				
	SPGN120312	1.2																															●				—
	SPGN120404	0.4																															●				
	SPGN120408	0.8																													●		●				
	SPGN150404	0.4																													●						
	SPGN150408	0.8																															●				

● = NEW

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

CHIP BREAKERS ➤ A074

60° TC TYPE INSERTS WITHOUT HOLE

TCGN 06 01 04
Size Thickness Corner Radius
* Please refer to page A002.

Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Order Number	RE (mm)	Coated																	Cermet		Coated Cermet			Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	NEW MH515	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	MT9005	TF15	
Flat Top	TCGN060104	0.4																														●					—
	TCGN090204	0.4																														●					

● = NEW

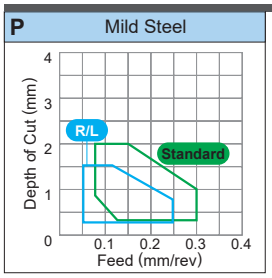
CHIP BREAKERS ➤ A074
GRADES ➤ A030
IDENTIFICATION ➤ A002

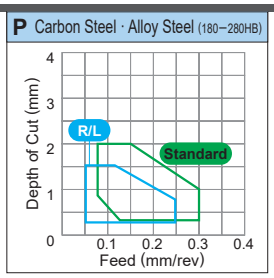
60° TP TYPE INSERTS WITHOUT HOLE

TPGR 11 03 04 R
Size Thickness Corner Radius R/L
* Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Medium Cutting ·····





Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy

Shape	Order Number	RE (mm)	Coated																	Cermet		Coated Cermet				Carbide					Applicable Holder Page
			UE6105	UE6110	UE6020	MC6015	MC6025	UH6400	MS6015	MC7025	MP7035	US7020	US735	US905	MC5005	MC5015	UC5105	UC5115	MH515 NEW	MP9005	MP9015	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	MT9005	TF15	
R/L	TPGR110304R	0.4																							●							●				
	TPGR110304L	0.4																							●						●	●				
	TPGR160304R	0.4																							●						●	●				E026
	TPGR160304L	0.4																							●						●	●				
	TPGR160308R	0.8																							●											
Finish Cutting	TPGR160308L	0.8																							●						●	●				
Standard	TPMR090202	0.2																								●		●								
	TPMR090204	0.4																							●	●		●								
	TPMR090208	0.8																										●								
	TPMR110302	0.2																							●	●		●								
	TPMR110304	0.4		●	●																				●	●		●								E026
	TPMR110308	0.8		●	●																				●	●		●								
	TPMR160304	0.4		●	●																				●	●		●								
	TPMR160308	0.8		●	●																				●	●		●								
Medium Cutting	TPMR160312	1.2		●																						●		●								
Flat Top	TPMN110304	0.4		●											●	●	●	●						●		●						●		●			
	TPMN110308	0.8		●											●	●	●	●								●						●		●			
	TPMN160304	0.4		●											●	●	●	●						●	●	●						●		●			
	TPMN160308	0.8		●											●	●	●	●						●	●	●						●	●	●			
	TPMN160312	1.2		●											●	●	●	●							●									●			E026
	TPMN160320	2.0																														●					
	TPMN220404	0.4		●																												●					
	TPMN220408	0.8		●	●																			●	●							●		●			
	TPMN220412	1.2		●																				●								●		●			
Flat Top	TPGN110302	0.2																																●			
	TPGN110304	0.4																							●						●	●	●			
	TPGN110308	0.8																						●										●			
	TPGN160302	0.2																																●			
	TPGN160304	0.4																						●	●						●	●	●			
	TPGN160308	0.8																						●	●						●	●	●				E026
	TPGN160312	1.2																																●			
	TPGN160316	1.6																																●			
	TPGN160408	0.8																														●					
	TPGN220404	0.4																						●										●			
	TPGN220408	0.8																						●										●			

● = NEW

● : Inventory maintained in Japan.
(10 inserts in one case)

CHIP BREAKERS ➤ A074
GRADES ➤ A030
IDENTIFICATION ➤ A002

Memo