HOW TO READ THE STANDARD OF TURNING INSERTS

●How this section page is organized

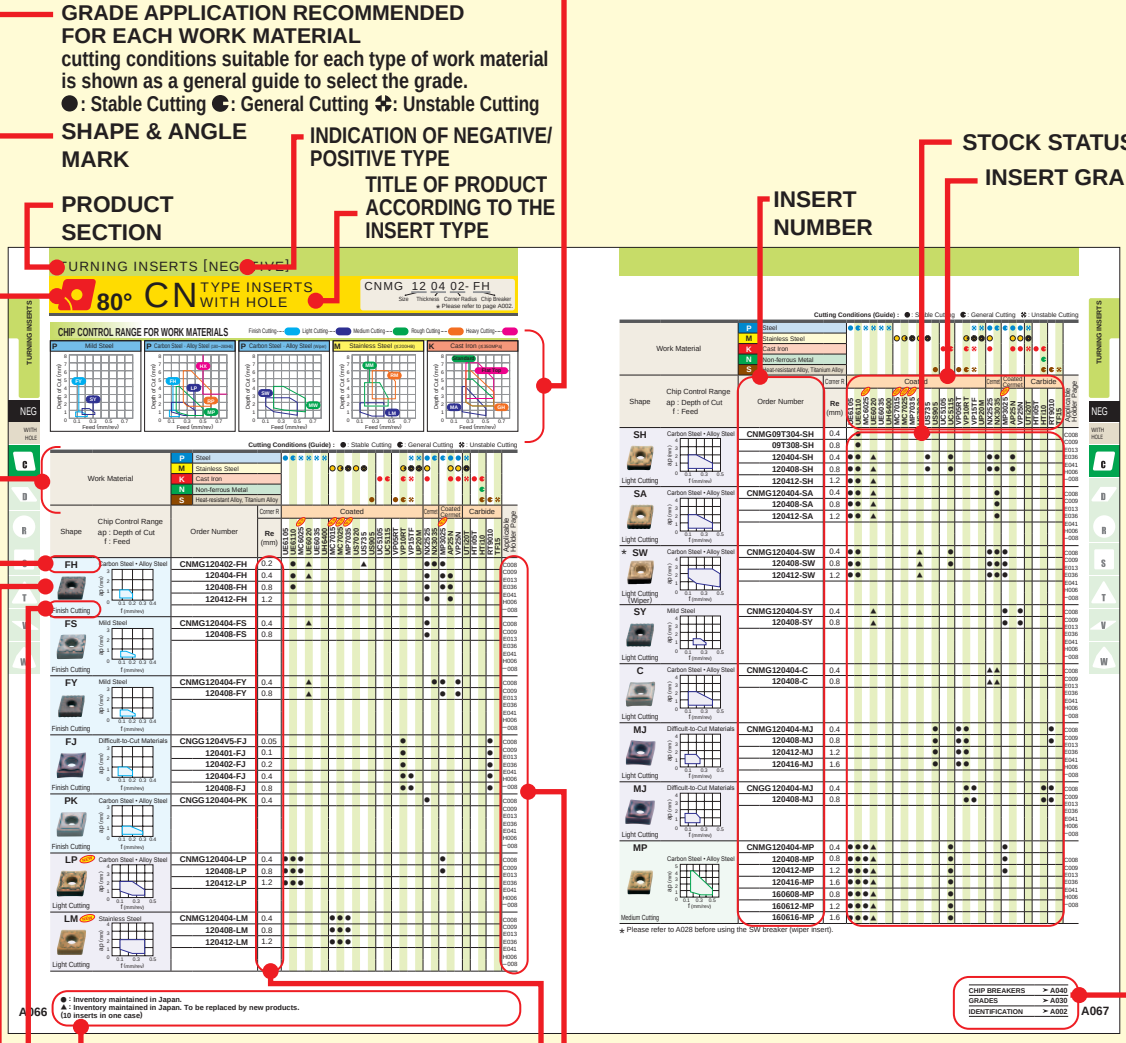
①Organized according to turning insert shape.
(Refer to the index on the next page.)
②Inserts are arranged in order of :
- Negative inserts (with hole|without hole)
- Positive inserts (with hole|without hole)

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

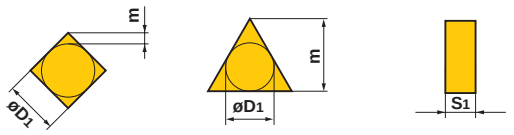
INSERT STANDARDS
INSERT GRADES

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 Tonce Class

Symbol	Tolerance of Nose Height **m** (mm)	Tolerance of Inscribed Circle **øD1** (mm)	Tolerance of Thickness **S1** (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 **øD1** (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	One 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	–	One 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 Condition

Figure	Cutting Edge	Symbol
	Sharp Cutting Edges	F
	Round Cutting Edges	E
	Chamfered Cutting Edges	T
	Chamfered and Rounded Cutting Edges	S

Mitsubishi Materials omit the honing symbol.

⑨ Cutting Direction

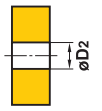
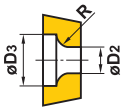
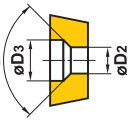
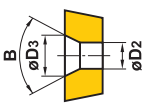
Figure	Hand	Symbol
	Right	R
	Left	L
	Neutral	N

⑩ Chip Breaker

LP	MP	RP
		
LM	**MM**	**RM**
		
MA	**Standard**	**GH**
		
FJ	**MJ**	**GJ**
		
FV	**SV**	**MV**
		
FH	**SH**	**MH**
		
HZ	**HX**	**HV**
		

(Refer to JIS-B4120-1998)

HOLE GEOMETRY

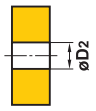
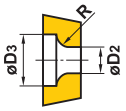
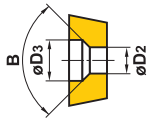
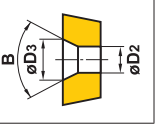
Type A	Type B	Type C	Type D
			

NEGATIVE

Insert Number		Dimensions (mm) D2	Hole Type
CNGA CNGG CNMA CNMG CNMM CNMP	0903○○	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 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 VNMG VNMM	1604○○	3.81	A
WNMA WNMG	0603○○	3.81	A
	06T3○○	3.81	A
	0604○○	3.81	A
	0804○○	5.16	A
RNMG RNMA	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) D2	D3	B (°)	Hole Type
CCET	0602○○	2.8	3.8	R	B
	09T3○○	4.4	6.0	R	B
CCGB CCMB CCGH CCMH	0602○○	2.8	3.9	R	B
CCGT	03S1○○	2.0	2.9	R	B
	04T0○○	2.4	3.5	R	B
	0602○○	2.8	3.8	R	B
	09T3○○	4.4	6.0	R	B
	1204○○	5.5	7.5	R	B
CCMT	0602○○	2.8	3.8	R	B
	0803○○	3.4	4.5	R	B
	09T3○○	4.4	6.0	R	B
	1204○○	5.5	7.5	R	B
CCGW CCMW	03S1○○	2.0	2.9	R	B
	04T0○○	2.4	3.5	R	B
	0602○○	2.8	3.8	R	B
	09T3○○	4.4	6.0	R	B
	1204○○	5.5	7.5	R	B
CPGT	0802○○	3.4	4.5	R	B
	0903○○	4.4	6.0	R	B
CPGB CPMB CPMH	0802○○	3.5	5.3	78°	D
	0903○○	4.5	6.3	78°	D
CPMX	0802○○	3.5	5.6	78°	D
	0903○○	4.6	6.6	80°	D
DCET DCGT	0702○○	2.8	3.8	R	B
	11T3○○	4.4	6.0	R	B
DCGW DCMW DCMT	0702○○	2.8	3.8	R	B
	11T3○○	4.4	6.0	R	B
	1504○○	5.5	7.5	R	B
DEGX	1504○○	5.1	7.0	85°	C
RCMX	1003M0	3.6	4.6	21°	D
	1204M0	4.2	5.4	21°	D
	1606M0	5.2	6.7	21°	D
	2006M0	6.5	8.0	21°	D
	2507M0	7.2	9.1	21°	D
	3209M0	9.5	11.7	21°	D

Type A	Type B	Type C	Type D
			

POSITIVE

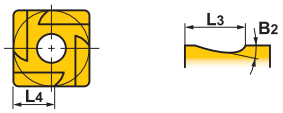
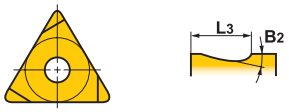
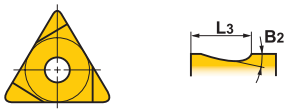
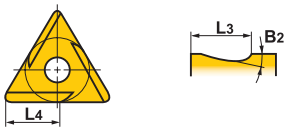
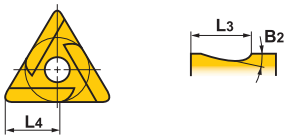
Insert Number		Dimensions (mm)			Hole Type
		D2	D3	B (°)	
RCGT RCMT	0602M0	2.8	3.8	R	B
	0803M0	3.4	4.5	R	B
	10T3M0	4.4	6.0	R	B
SCMT SCMW	09T3○○	4.4	6.0	R	B
	1204○○	5.5	7.5	R	B
SPMW	0903○○	4.6	6.0	R	B
	1203○○	5.7	7.5	R	B
SPMT	0903○○	4.4	6.0	R	B
	1203○○	5.5	7.5	R	B
SPGX	0903○○	4.5	6.4	58°	D
	1203○○	5.9	7.7	58°	D
TCGT TCMT TCGW TCMW	0601○○	2.3	3.2	R	B
	0802○○	2.3	3.0	R	B
	0902○○	2.5	3.3	R	B
	1102○○	2.8	3.8	R	B
	1303○○	3.4	4.5	R	B
	16T3○○	4.4	6.0	R	B
TEGX	1603○○	4.4	6.1	88°	D
TPGX	0802○○	2.5	3.8	88°	C
	0902○○	3.0	4.3	88°	C
	1103○○	3.5	4.8	88°	C
	1603○○	4.8	6.5	58°	D
TPMX	0802○○	2.7	3.8	88°	C
	0902○○	3.2	4.3	88°	C
	1103○○	3.7	4.8	88°	C
	1603○○	4.8	6.4	58°	D
TPGB TPMB TPGH TPMH	0802○○	2.4	4.0	78°	D
	0902○○	2.9	4.3	78°	D
	1103○○	3.4	4.8	78°	D
	1603○○	4.4	6.5	78°	D
TPGT	1603○○	4.4	6.0	R	B
TPGV	0902○○	2.8	3.8	R	B
	1103○○	3.4	4.5	R	B

Insert Number		Dimensions (mm)			Hole Type
		D2	D3	B (°)	
VBET VBGT VBMT VBGW	1103○○	2.9	3.8	R	B
	1604○○	4.4	6.0	R	B
VCGT VCMT VCGW VCMW	0802○○	2.4	3.2	R	B
	1103○○	2.8	3.8	R	B
	1604○○	4.4	6.0	R	B
	2205○○	7.5	5.5	R	B
VDGX	1603○○	4.5	6.1	88°	D
WBGT WBMT	0201○○	2.3	3.2	R	B
	L302○○	2.3	3.2	R	B
WCGT WCMT WCGW WCMW	0201○○	2.3	3.0	R	B
	L302○○	2.3	3.0	R	B
	0402○○	2.8	3.8	R	B
	06T3○○	4.4	6.0	R	B
WPGT WPMT	0402○○	2.8	3.8	R	B
	0603○○	4.4	6.0	R	B
XCMT	1503○○	2.8	3.8	R	B

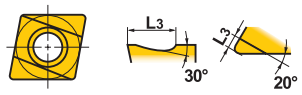
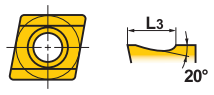
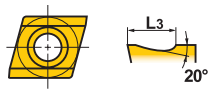
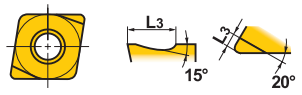
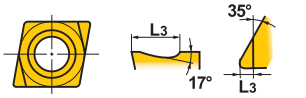
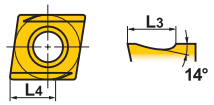
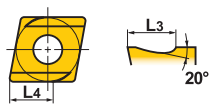
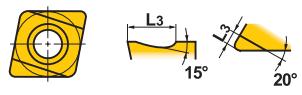
PRECISION BREAKER SYSTEM

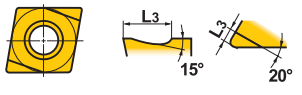
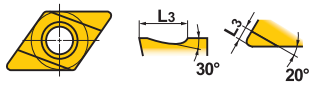
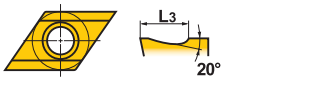
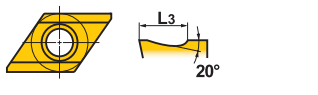
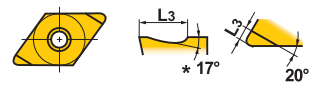
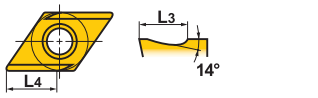
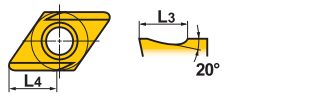
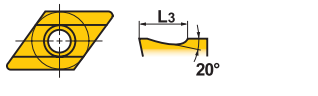
STANDARD OF INSERTS WITH HAND OF TOOL

NEGATIVE INSERTS

Geometry	Insert Number	L_3	L_4	B_2	B_7
 Right hand insert shown.	**DNGG150404R/L**	2.8	–	15	–
	150408R/L	2.8	–	15	–
 Right hand insert shown.	**SNGG090304R/L**	1.8	1.6	15	–
	090308R/L	1.8	1.6	15	–
	120404R/L	2.3	3.7	15	–
	120408R/L	2.3	3.7	15	–
 Right hand insert shown.	**TNGG160402R/L-FS**	1.3	–	15	30
	160404R/L-FS	1.3	–	15	30
	160408R/L-FS	1.3	–	15	30
 Right hand insert shown.	**TNGG160402R/L-F**	2.5	–	15	30
	160404R/L-F	2.5	–	15	30
	160408R/L-F	2.5	–	15	30
 Right hand insert shown.	**TNGG160402R/L-K**	1.5	7.1	15	–
	160404R/L-K	1.5	5.4	15	–
 Right hand insert shown.	**TNGG110302R/L**	1.3	3.2	15	–
	110304R/L	1.3	3.0	15	–
	110308R/L	1.3	2.7	15	–
	160304R/L	2.3	5.4	15	–
	160402R/L	1.3	8.7	15	–
	160404R/L	2.3	5.4	15	–
	160408R/L	2.3	5.1	15	–
	220404R/L	2.8	9.4	15	–
	220408R/L	2.8	9.1	15	–
 Right hand insert shown.	**VNGG160404R/L**	1.8	–	15	–
	160408R	1.8	–	15	–

POSITIVE INSERTS

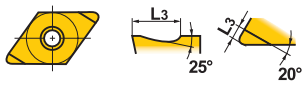
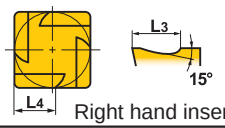
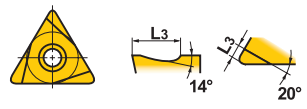
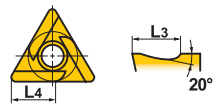
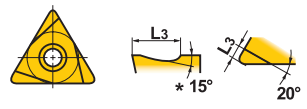
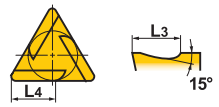
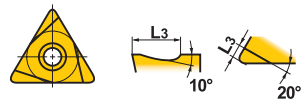
Geometry	Insert Number	L3	L4
 Right hand insert shown.	CCET0602V3R/L-SR	2.2	—
	060201R/L-SR	2.2	—
	060202R/L-SR	2.2	—
	060204R/L-SR	2.2	—
	09T3V3R/L-SR	3.2	—
	09T301R/L-SR	3.2	—
	09T302R/L-SR	3.2	—
	09T304R/L-SR	3.2	—
 Right hand insert shown.	CCET060200R/L-SN	1.0	—
	0602V3R/L-SN	1.0	—
	060201R/L-SN	1.0	—
	060202R/L-SN	1.0	—
	060204R/L-SN	1.0	—
	09T300R/L-SN	1.5	—
	09T3V3R/L-SN	1.5	—
	09T301R/L-SN	1.5	—
	09T302R/L-SN	1.5	—
	09T304R/L-SN	1.5	—
 Right hand insert shown.	CCET0602V3R/LW-SN	1.0	—
	09T3V3R/LW-SN	1.5	—
 Right hand insert shown.	CCGH060202R/L-F	1.2	—
	060204R/L-F	1.4	—
 Left hand insert shown.	CCGT03S1V3L-F	0.8	—
	03S101L-F	0.8	—
	03S102L-F	0.8	—
	03S104L-F	0.8	—
	04T0V3L-F	1.0	—
	04T001L-F	1.0	—
	04T002L-F	1.0	—
	04T004L-F	1.0	—
 Right hand insert shown.	CCGT0602V3R/L-SS	1.0	3.0
	060201R/L-SS	1.0	3.0
	060202R/L-SS	1.0	3.0
	09T3V3R/L-SS	1.0	5.0
	09T301R/L-SS	1.0	5.0
	09T302R/L-SS	1.0	5.0
 Right hand insert shown.	CCGT0602V3R-SN	1.0	3.0
	060201R/L-SN	1.0	3.0
	060202R/L-SN	1.0	3.0
	09T3V3R/L-SN	1.5	5.0
	09T301R/L-SN	1.5	5.0
	09T302R/L-SN	1.5	5.0
	09T304R/L-SN	1.5	5.0
 Right hand insert shown.	CPGT080204R/L-F	0.6	—
	090302R/L-F	0.8	—
	090304R/L-F	0.8	—

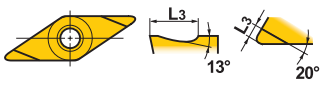
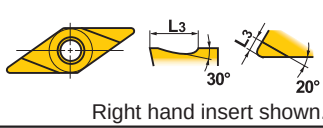
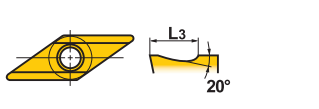
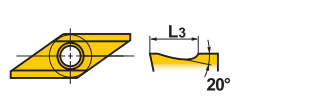
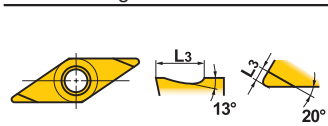
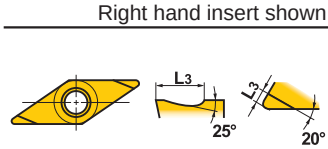
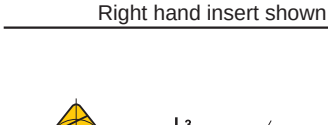
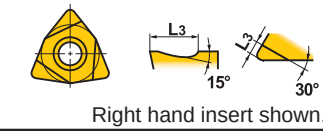
Geometry	Insert Number	L3	L4
 Right hand insert shown.	CPMH080204R/L-F	1.0	—
	090304R/L-F	1.4	—
 Right hand insert shown.	DCET0702V3R/L-SR	2.5	—
	070201R/L-SR	2.5	—
	070202R/L-SR	2.5	—
	070204R/L-SR	2.5	—
	11T3V3R/L-SR	3.7	—
	11T301R/L-SR	3.7	—
	11T302R/L-SR	3.7	—
	11T304R/L-SR	3.7	—
 Right hand insert shown.	DCET070200R/L-SN	1.0	—
	0702V3R/L-SN	1.0	—
	070201R/L-SN	1.0	—
	070202R/L-SN	1.0	—
	070204R/L-SN	1.0	—
	11T300R/L-SN	1.5	—
	11T3V3R/L-SN	1.5	—
	11T301R/L-SN	1.5	—
	11T302R/L-SN	1.5	—
	11T304R/L-SN	1.5	—
 Right hand insert shown.	DCET0702V3R/LW-SN	1.0	—
	11T3V3R/LW-SN	1.5	—
 ✱DCGT11T3○○type : 14° Right hand insert shown.	DCGT070202R/L-F	1.0	—
	070204R/L-F	1.0	—
	11T302R/L-F	1.0	—
	11T304R/L-F	1.0	—
 Right hand insert shown.	DCGT0702V3R/L-SS	1.0	3.5
	070201R/L-SS	1.0	3.5
	070202R/L-SS	1.0	3.5
	11T3V3R-SS	1.0	6.5
	11T301R-SS	1.0	6.5
	11T302R-SS	1.0	6.5
 Right hand insert shown.	DCGT0702V3R-SN	1.0	3.5
	070201R-SN	1.0	3.5
	070202R/L-SN	1.0	3.5
	11T3V3R/L-SN	1.5	6.5
	11T301R/L-SN	1.5	6.5
	11T302R/L-SN	1.5	6.5
	11T304R/L-SN	1.5	6.5
 Right hand insert shown.	DEGX150402R/L	2.8	—
	150404R/L	2.8	—

PRECISION BREAKER SYSTEM

STANDARD OF INSERTS WITH HAND OF TOOL

POSITIVE INSERTS

Geometry	Insert Number	L_3	L_4
 Right hand insert shown.	DEGX150402R/L-F	2.5	—
	150404R/L-F	2.5	—
 Right hand insert shown.	SPGR090304R	1.8	1.6
 Left hand insert shown.	TCGT0601V3L-F	1.0	—
	060101L-F	1.0	—
	060102R/L-F	1.0	—
	060104R/L-F	1.0	—
 Right hand insert shown.	TEGX160302R/L	2.0	6.0
	160304R/L	2.0	6.0
 ✱TPGH1603□□type : 14° Right hand insert shown.	TPGH080202R/L-FS	0.9	—
	080204R/L-FS	0.9	—
	090202R/L-FS	1.0	—
	090204R/L-FS	1.0	—
	110302R/L-FS	1.4	—
	110304R/L-FS	1.4	—
	160304R/L-FS	2.0	—
	160308R/L-FS	2.0	—
 Right hand insert shown.	TPGR110304R/L	1.3	3.0
	160304R/L	2.3	5.4
	160308R/L	2.3	5.1
 Right hand insert shown.	TPGX080202R/L	1.3	—
	080204R/L	1.3	—
	090202R/L	1.6	—
	090204R/L	1.6	—
	090208R/L	1.4	—
	110302L	1.8	—
	110304R/L	1.8	—
	110308R/L	1.8	—

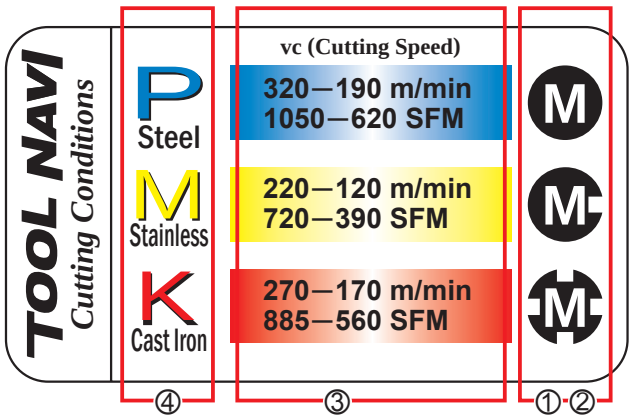
Geometry	Insert Number	L_3	L_4
 Right hand insert shown.	VBGT110302R/L-F	1.0	—
	110304R/L-F	1.0	—
	160402R/L-F	1.5	—
	160404R/L-F	1.5	—
 Right hand insert shown.	VBET1103V3R/L-SR	2.5	—
	110301R/L-SR	2.5	—
	110302R/L-SR	2.5	—
	110304R/L-SR	2.5	—
 Right hand insert shown.	VBET110300R/L-SN	1.0	—
	1103V3R/L-SN	1.0	—
	110301R/L-SN	1.0	—
	110302R/L-SN	1.0	—
	110304R/L-SN	1.0	
 Right hand insert shown.	VBET1103V3R/LW-SN	1.0	—
 Right hand insert shown.	VCGT080202R/L-F	0.8	—
	080204R/L-F	0.8	—
 Right hand insert shown.	VDGX160302R/L	2.0	—
	160304R/L	2.0	—
 Right hand insert shown.	WBGT0201V3L-F	1.0	—
	020101L-F	1.0	—
	020102L-F	1.0	—
	020104L-F	1.0	—
	L302V3L-F	1.0	—
	L30201L-F	1.0	—
	L30202R/L-F	1.0	—
	L30204R/L-F	1.0	—
 Right hand insert shown.	WCGT020102R/L	1.0	—
	020104R/L	1.0	—
	L30202L	1.0	—
	L30204L	1.0	—
 Right hand insert shown.	WPGT040204R/L-FS	1.0	—
	060304R/L-FS	1.0	—

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 Cutting conditions

● Stable cutting ◔ General cutting ✠ Unstable cutting

② Cutting areas

F : Finishing (ap≤0.5mm) **L** : Light Cutting (ap=0.5—1.5mm)
M : Medium Cutting (ap=1.5—4.0mm) **R** : Rough Cutting (ap=4.0—7.0mm)

③ Cutting speed standards

(Performance versus tool life)
Calculations based on maximum performance : Tool life is 15min.
Calculation based on maximum tool life : Tool life is 90min.

④ Work materials

P : Steel (Material reference : Carbon steel, alloy steel 180HB)
M : Stainless steel (Material reference : Austenitic stainless steel 180HB)
K : Cast iron (Material reference : Grey cast iron, ductile cast iron 180HB)

TOOL LIFE

Cutting speed affects tool life. Mitsubishi's TOOL NAVI suggests cutting speeds for 15—90 minute tool life and is based on Taylor's equation (Relationship for tool grade, cutting conditions and tool life). 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
UE6110	1.00	0.82	0.72	0.67	0.59
MC6025	1.00	0.83	0.75	0.69	0.62
UE6020	1.00	0.83	0.74	0.69	0.62
UE6035	1.00	0.88	0.82	0.78	0.73
AP25N	1.00	0.84	0.76	0.71	0.64
VP25N	1.00	0.84	0.76	0.71	0.64
MP3025	1.00	0.85	0.77	0.72	0.65

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
US7020	1.00	0.70	0.57	0.49	0.40
VP15TF	1.00	0.78	0.67	0.61	0.52
AP25N	1.00	0.76	0.65	0.57	0.49

K Grade (Cast Iron) cutting speed coefficient values.

Grade \ Tool life	15min	30min	45min	60min	90min
UC5105	1.00	0.79	0.69	0.63	0.55
UC5115	1.00	0.79	0.69	0.63	0.55
AP25N	1.00	0.87	0.80	0.75	0.69
VP25N	1.00	0.87	0.80	0.75	0.69

(ex.) Medium cutting of steel
The 1st recommendation : UE6110
Indexable inserts : CNMG120408-MA
Recommended cutting speed : vc=325m/min
(Tool life : 15min.)

↓

Tool life required by the customer : 30min.

325×0.82≒267m/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

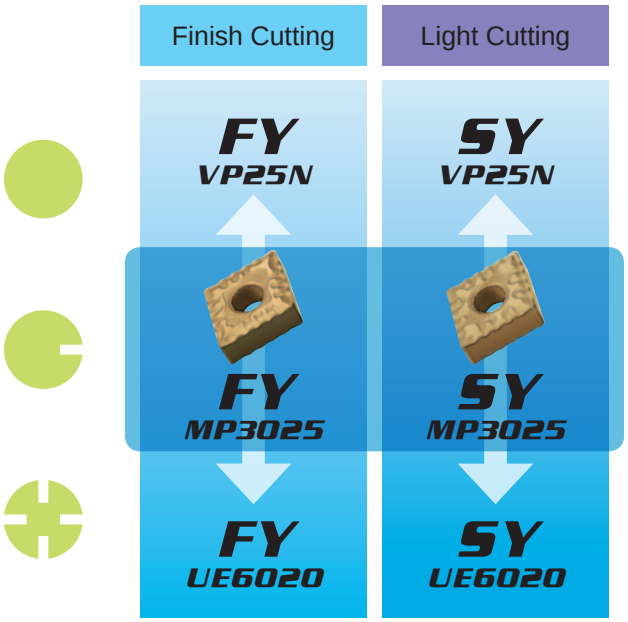
The following diagrams show for each type of work material, the optimal combination of suitable grades and chip breakers for each application area in turning.

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



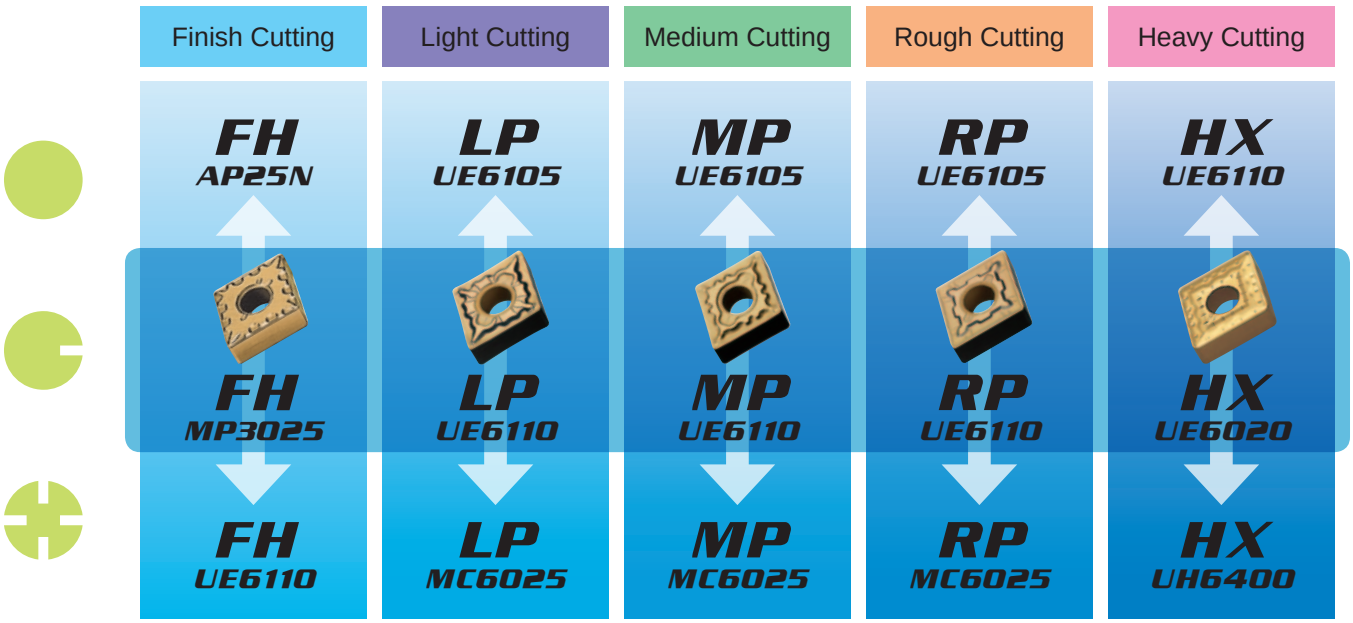
P Mild Steel

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—445	0.09—0.23	0.20—0.80
	L	SY	VP25N	260—405	0.16—0.33	0.50—1.20
General Cutting	F	FY	MP3025	275—420	0.09—0.23	0.20—0.80
	L	SY	MP3025	250—385	0.16—0.33	0.50—1.20
Unstable Cutting	F	FY	UE6020	285—460	0.09—0.23	0.20—0.80
	L	SY	UE6020	260—420	0.16—0.33	0.50—1.20

Stable Cutting	F Finish Cutting
General Cutting	L Light Cutting
Unstable Cutting	M Medium Cutting
	R Rough Cutting
	H Heavy Cutting



P Carbon Steel • Alloy Steel

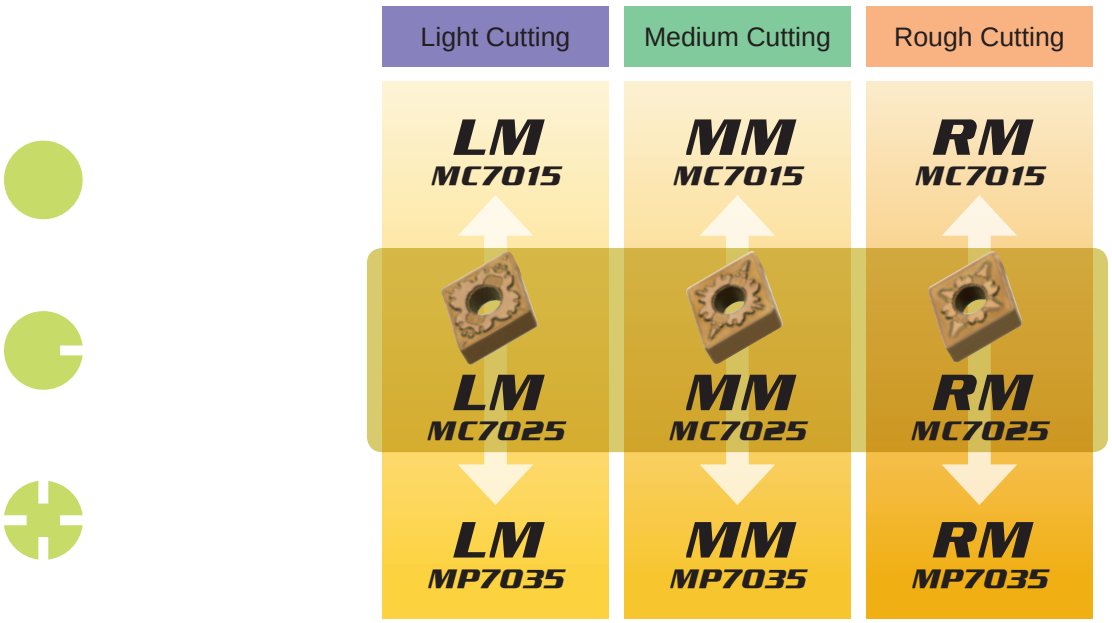
NEGATIVE INSERTS

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	FH	AP25N	215—340	0.08—0.20	0.20—1.00
	L	LP	UE6105	220—405	0.10—0.40	0.30—2.00
	M	MP	UE6105	200—370	0.16—0.50	0.30—4.00
	R	RP	UE6105	190—350	0.25—0.60	1.50—6.00
	H	HX	UE6110	160—275	0.50—1.26	3.00—11.00
General Cutting	F	FH	MP3025	210—325	0.08—0.20	0.20—1.00
	L	LP	UE6110	210—355	0.10—0.40	0.30—2.00
	M	MP	UE6110	190—325	0.16—0.50	0.30—4.00
	R	RP	UE6110	180—310	0.25—0.60	1.50—6.00
	H	HX	UE6020	155—250	0.50—1.26	3.00—11.00
Unstable Cutting	F	FH	UE6110	230—390	0.08—0.20	0.20—1.00
	L	LP	MC6025	210—340	0.10—0.40	0.30—2.00
	M	MP	MC6025	190—310	0.16—0.50	0.30—4.00
	R	RP	MC6025	180—295	0.25—0.60	1.50—6.00
	H	HX	UH6400	135—195	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



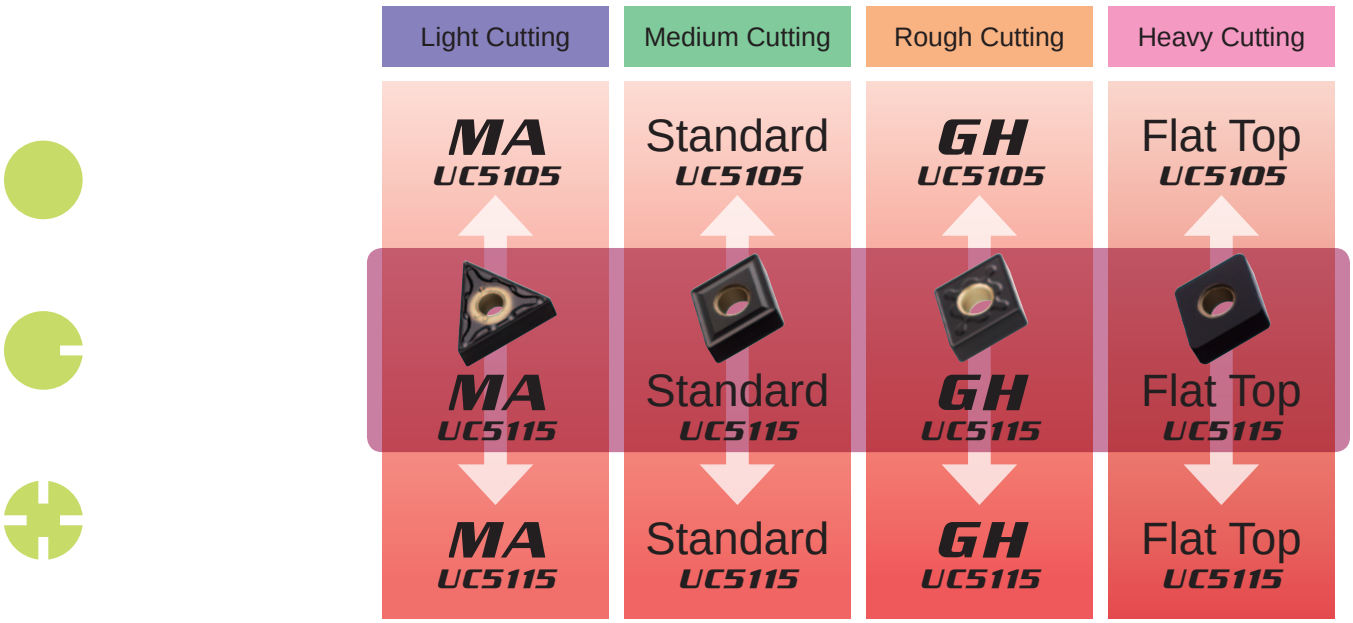
M Stainless Steel (≤200HB)

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	160–255	0.15–0.45	0.70–5.00
	R	RM	MC7015	155–245	0.25–0.55	1.50–6.00
General Cutting	L	LM	MC7025	160–215	0.10–0.30	0.30–2.00
	M	MM	MC7025	145–195	0.15–0.45	0.70–5.00
	R	RM	MC7025	140–185	0.25–0.55	1.50–6.00
Unstable Cutting	L	LM	MP7035	95–155	0.10–0.30	0.30–2.00
	M	MM	MP7035	85–140	0.15–0.45	0.70–5.00
	R	RM	MP7035	85–135	0.25–0.55	1.50–6.00

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



K Cast Iron • Ductile Cast Iron

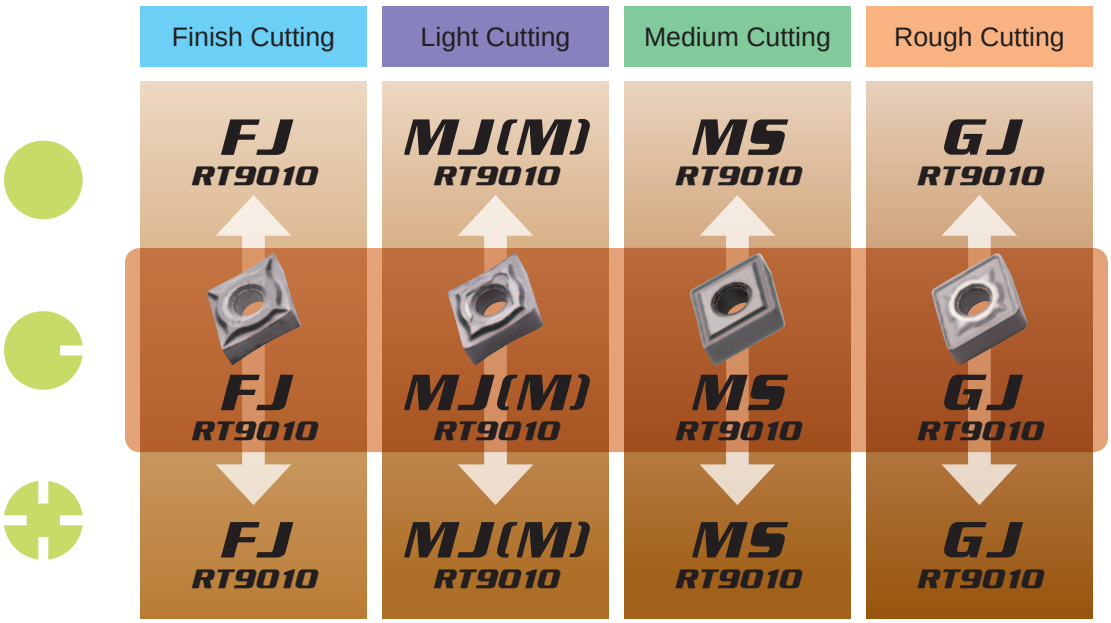
NEGATIVE INSERTS

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	MA	UC5105	170–315	0.20–0.50	0.30–4.00
	M	Standard	UC5105	170–315	0.25–0.60	1.50–5.00
	R	GH	UC5105	165–300	0.25–0.60	1.50–6.00
	H	Flat Top	UC5105	165–300	0.20–0.60	2.50–6.00
General Cutting	L	MA	UC5115	165–305	0.20–0.50	0.30–4.00
	M	Standard	UC5115	165–305	0.25–0.60	1.50–5.00
	R	GH	UC5115	160–290	0.25–0.60	1.50–6.00
	H	Flat Top	UC5115	160–290	0.20–0.60	2.50–6.00
Unstable Cutting	L	MA	UC5115	165–305	0.20–0.50	0.30–4.00
	M	Standard	UC5115	165–305	0.25–0.60	1.50–5.00
	R	GH	UC5115	160–290	0.25–0.60	1.50–6.00
	H	Flat Top	UC5115	160–290	0.20–0.60	2.50–6.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

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



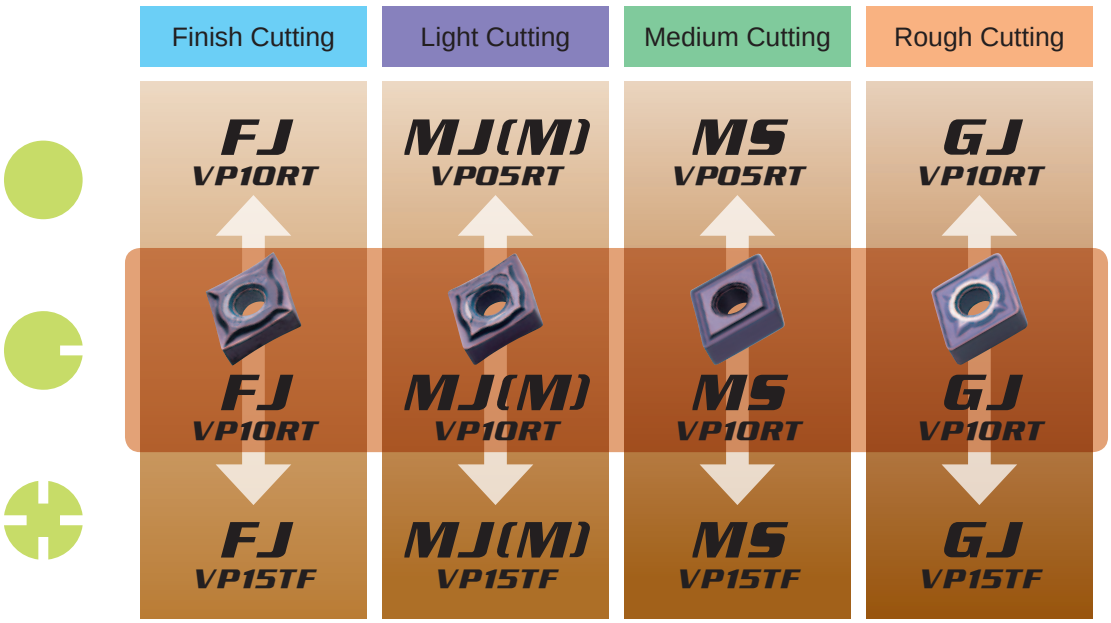
S Titanium Alloy

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	FJ	RT9010	45—95	0.07—0.20	0.10—1.00
	L	MJ(M)	RT9010	40—80	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
General Cutting	F	FJ	RT9010	45—95	0.07—0.20	0.10—1.00
	L	MJ(M)	RT9010	40—80	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
Unstable Cutting	F	FJ	RT9010	45—95	0.07—0.20	0.10—1.00
	L	MJ(M)	RT9010	40—80	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



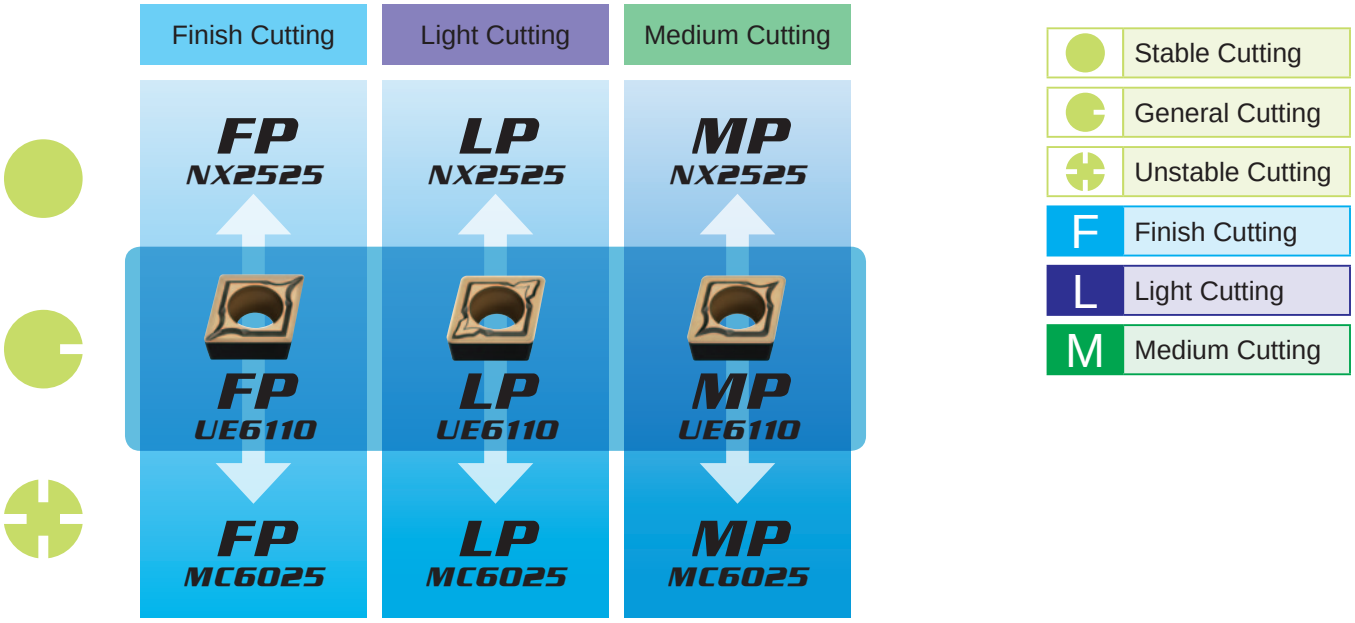
S Ni, Co-Based Alloy

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	FJ	VP10RT	30–60	0.07–0.20	0.10–1.00
	L	MJ(M)	VP05RT	30–60	0.07–0.25	0.40–1.50
	M	MS	VP05RT	30–60	0.10–0.25	0.50–4.00
	R	GJ	VP10RT	20–45	0.16–0.35	1.00–3.00
General Cutting	F	FJ	VP10RT	30–60	0.07–0.20	0.10–1.00
	L	MJ(M)	VP10RT	25–50	0.07–0.25	0.40–1.50
	M	MS	VP10RT	25–50	0.10–0.25	0.50–4.00
	R	GJ	VP10RT	20–45	0.16–0.35	1.00–3.00
Unstable Cutting	F	FJ	VP15TF	20–40	0.07–0.20	0.10–1.00
	L	MJ(M)	VP15TF	20–35	0.07–0.25	0.40–1.50
	M	MS	VP15TF	20–35	0.10–0.25	0.50–4.00
	R	GJ	VP15TF	15–30	0.16–0.35	1.00–3.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

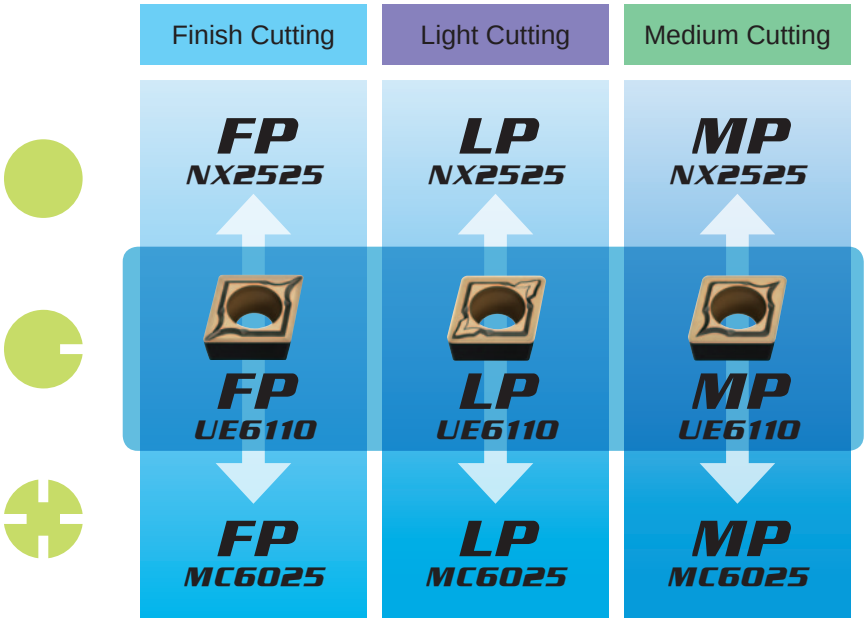


P Mild Steel

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—265	0.08—0.30	0.30—2.00
General Cutting	F	FP	UE6110	250—425	0.04—0.20	0.20—0.90
	L	LP	UE6110	250—425	0.06—0.25	0.20—1.00
	M	MP	UE6110	205—350	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	205—335	0.08—0.30	0.30—2.00



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

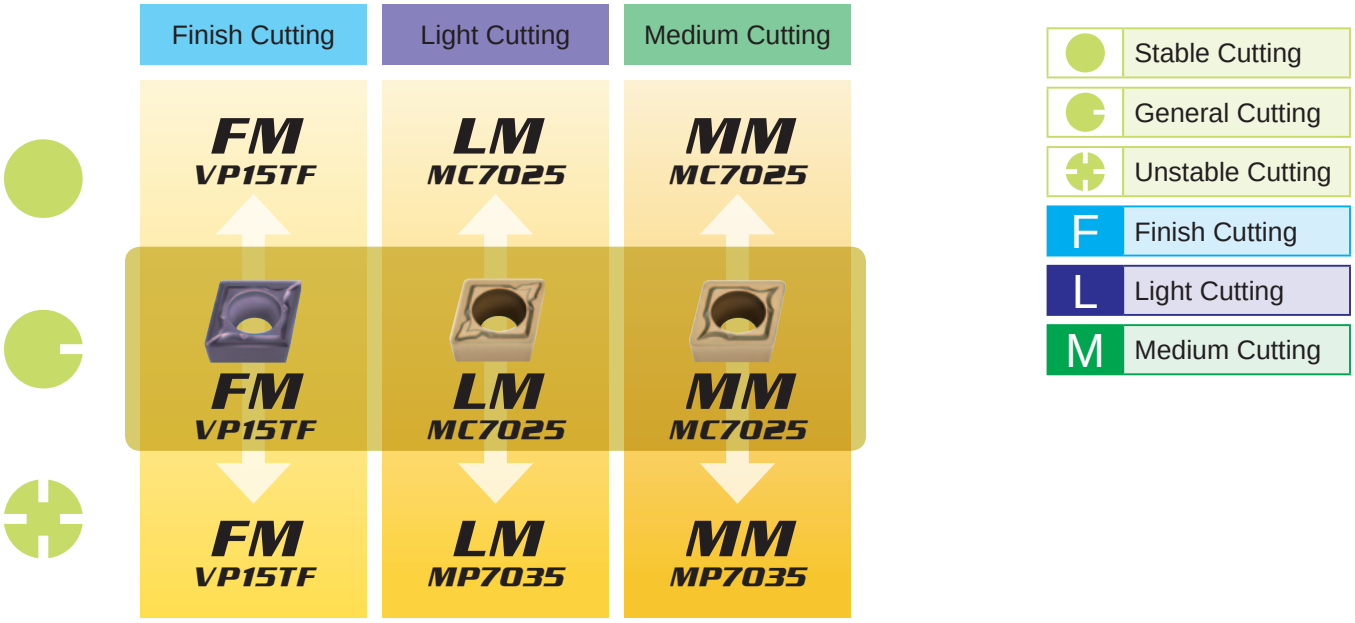
P Carbon Steel • Alloy Steel

7°POSITIVE INSERTS WITH HOLE

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	FP	NX2525	165—235	0.04—0.20	0.20—0.90
	L	LP	NX2525	165—235	0.06—0.25	0.20—1.00
	M	MP	NX2525	135—195	0.08—0.30	0.30—2.00
General Cutting	F	FP	UE6110	185—310	0.04—0.20	0.20—0.90
	L	LP	UE6110	185—310	0.06—0.25	0.20—1.00
	M	MP	UE6110	150—260	0.08—0.30	0.30—2.00
Unstable Cutting	F	FP	MC6025	185—295	0.04—0.20	0.20—0.90
	L	LP	MC6025	185—295	0.06—0.25	0.20—1.00
	M	MP	MC6025	150—245	0.08—0.30	0.30—2.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

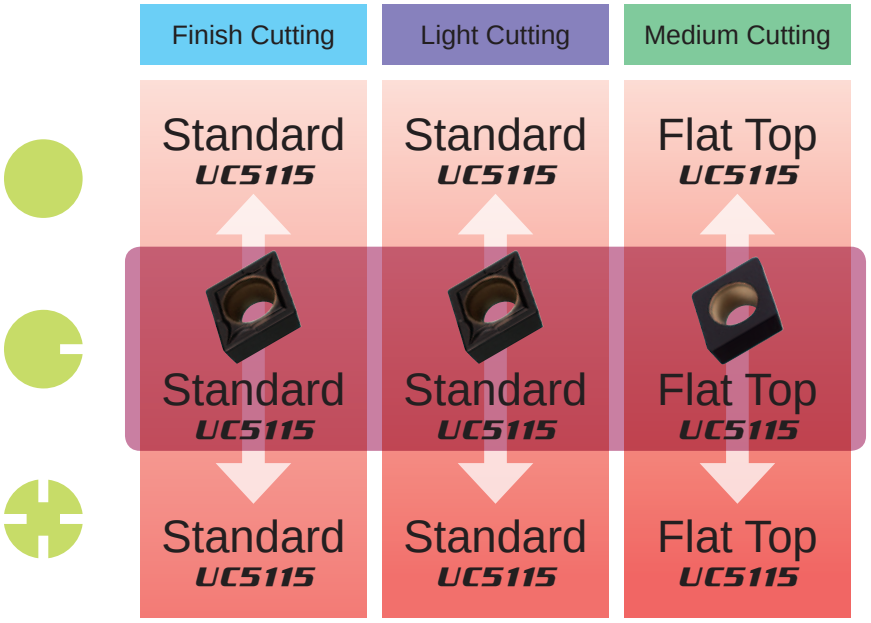


M Stainless Steel

7°POSITIVE INSERTS WITH HOLE

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	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	115—155	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	115—155	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

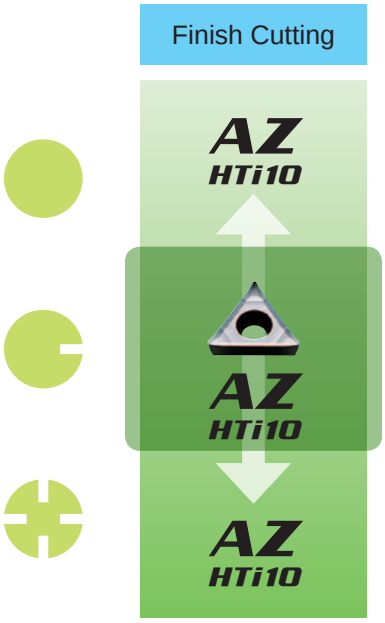
K Cast Iron • Ductile Cast Iron

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	Standard	UC5115	130—245	0.08—0.30	0.30—2.00
	L	Standard	UC5115	130—245	0.08—0.30	0.30—2.00
	M	Flat Top	UC5115	130—245	0.08—0.30	0.30—2.00
General Cutting	F	Standard	UC5115	130—245	0.08—0.30	0.30—2.00
	L	Standard	UC5115	130—245	0.08—0.30	0.30—2.00
	M	Flat Top	UC5115	130—245	0.08—0.30	0.30—2.00
Unstable Cutting	F	Standard	UC5115	130—245	0.08—0.30	0.30—2.00
	L	Standard	UC5115	130—245	0.08—0.30	0.30—2.00
	M	Flat Top	UC5115	130—245	0.08—0.30	0.30—2.00

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING



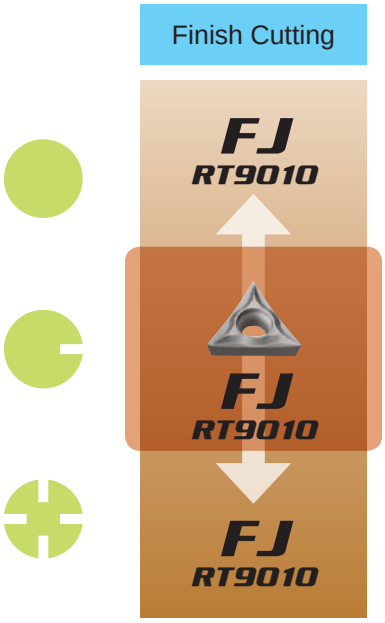
	Stable Cutting
	General Cutting
	Unstable Cutting
F	Finish Cutting

N Aluminium Alloy

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

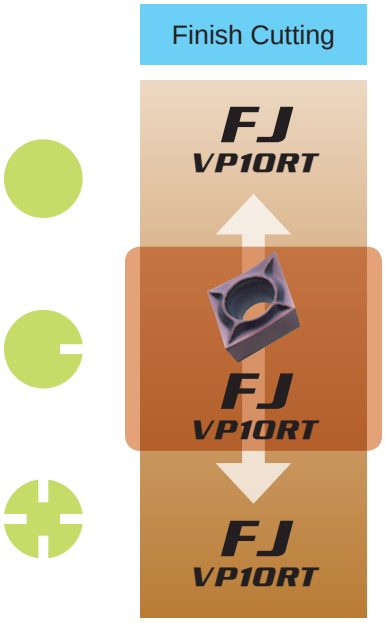
S Titanium Alloy

7°POSITIVE INSERTS WITH HOLE

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	FJ	RT9010	35—75	0.04—0.12	0.20—1.40
◔ General Cutting	F	FJ	RT9010	35—75	0.04—0.12	0.20—1.40
✣ Unstable Cutting	F	FJ	RT9010	35—75	0.04—0.12	0.20—1.40

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING



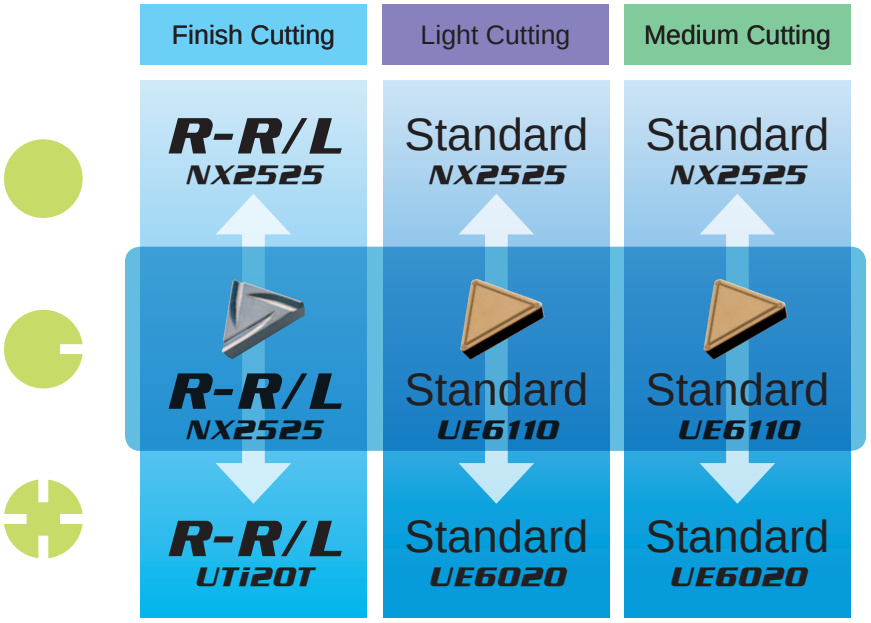
Stable Cutting
General Cutting
Unstable Cutting
F Finish Cutting

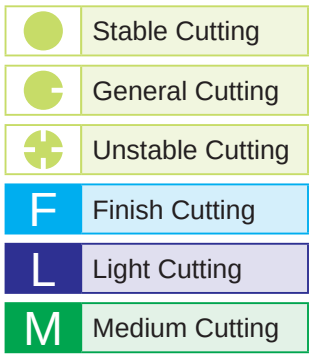
S Ni, Co-Based Alloy

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	FJ	VP10RT	20—45	0.04—0.12	0.20—1.40
General Cutting	F	FJ	VP10RT	20—45	0.04—0.12	0.20—1.40
Unstable Cutting	F	FJ	VP10RT	20—45	0.04—0.12	0.20—1.40





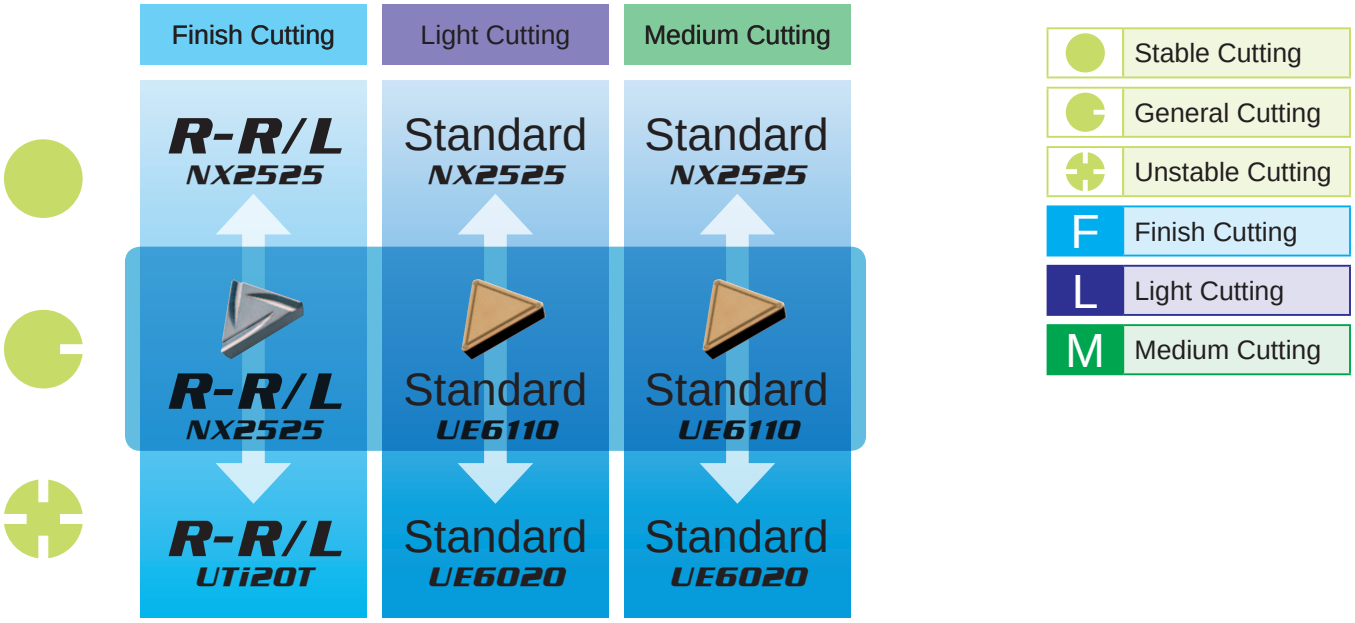
P Mild Steel

11°POSITIVE INSERTS WITHOUT HOLE

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	R-R/L	NX2525	225—320	0.05—0.12	0.20—0.60
	L	Standard	NX2525	185—265	0.08—0.30	0.30—2.00
	M	Standard	NX2525	185—265	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	205—350	0.08—0.30	0.30—2.00
	M	Standard	UE6110	205—350	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

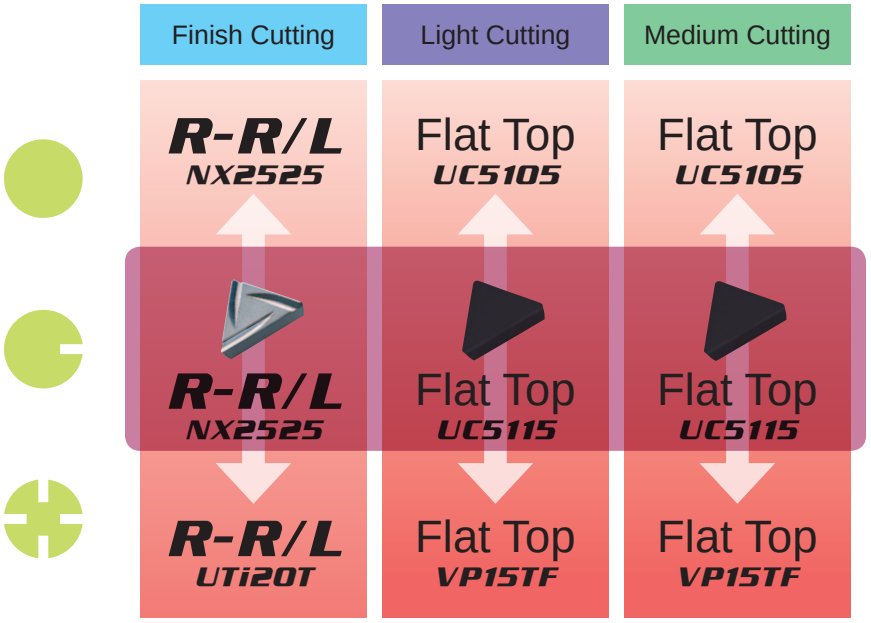


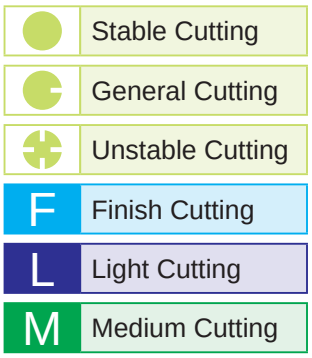
P Carbon Steel • Alloy Steel

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—235	0.05—0.12	0.20—0.60
	L	Standard	NX2525	135—195	0.08—0.30	0.30—2.00
	M	Standard	NX2525	135—195	0.08—0.30	0.30—2.00
General Cutting	F	R-R/L	NX2525	165—235	0.05—0.12	0.20—0.60
	L	Standard	UE6110	150—260	0.08—0.30	0.30—2.00
	M	Standard	UE6110	150—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—235	0.08—0.30	0.30—2.00
	M	Standard	UE6020	145—235	0.08—0.30	0.30—2.00





K Cast Iron • Ductile Cast Iron

11°POSITIVE INSERTS WITHOUT HOLE

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

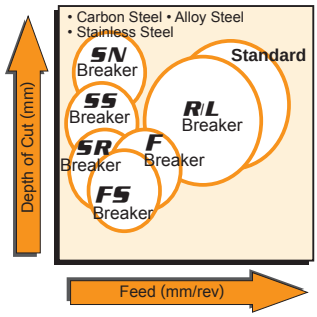
	Cutting Area	Chip Breaker	1st Recommendation Grade	vc (m/min)	f (mm/rev)	ap (mm)
Stable Cutting	F	R-R/L	NX2525	150—205	0.05—0.12	0.20—0.60
	L	Flat Top	UC5105	135—250	0.08—0.30	0.30—2.00
	M	Flat Top	UC5105	135—250	0.08—0.30	0.30—2.00
General Cutting	F	R-R/L	NX2525	150—205	0.05—0.12	0.20—0.60
	L	Flat Top	UC5115	130—245	0.08—0.30	0.30—2.00
	M	Flat Top	UC5115	130—245	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

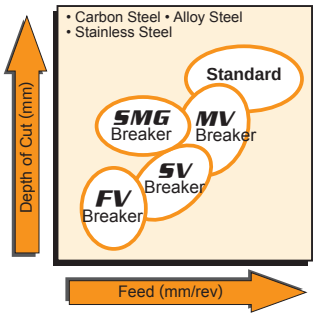
ANGULAR AND PARALLEL CHIP BREAKER

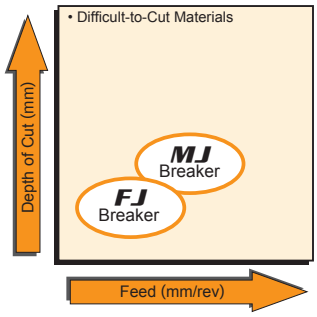
3-D CHIP BREAKER

CHIP CONTROL RANGE



CHIP CONTROL RANGE

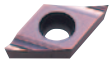
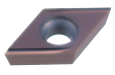
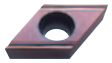
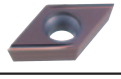




FEATURES OF CHIP BREAKER

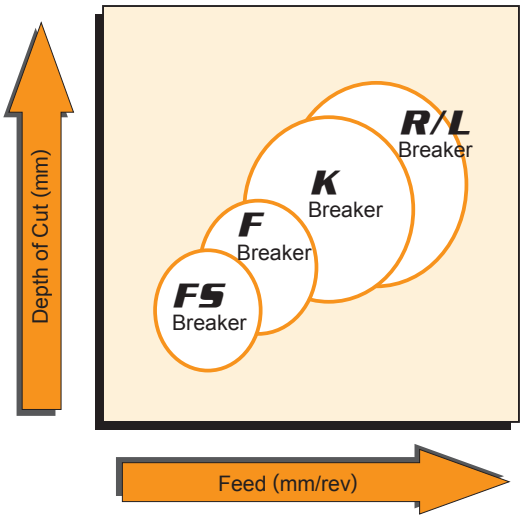
Breaker	Features	CCGH/CCGT Type	CCMH/CCMT CPMH/CPMT Type	DCMT Type	DCGT Type	TCGT/TCMT Type	TPMH Type	VBGT/VBMT Type	VCMT Type	WBMT/WCGT Type
SMG (G class)	● For medium cutting. ● 3D moulded chipbreaker provides good chip control. ● G class insert gives sharp cutting action, allowing high precision machining.		—	—		—	—	—	—	—
FV (M class)	● Sharp cutting edge and low resistance design achieves excellent cutting performance. ● Suitable for low depths of cut and low feed rates.	—			—			—		—
SV (M class)	● For light cutting. ● A peninsular dot ensures chip control at depths of cut under 1mm.	—			—	—		—	—	—
MV (M class)	● A positive insert and the large rake angle achieve sharp cutting edge performance. ● The double breakers and round-shaped dots in the rake face achieve a wide range of chip discharge.	—			—	—				
Standard (M class)	● For medium cutting. ● Balance of edge strength and sharpness due to a combination of a flat land and large rake angle.	—			—		—	—		—
FJ	● The curved edge allows smooth chip discharge. ● The large rake angle highly suitable for finishing difficult-to-cut materials.		—	—			—		—	
MJ	● The curved edge allows smooth chip discharge. ● Large rake angle highly suitable for finish-light cutting difficult-to-cut materials.		—	—			—		—	

Breaker	Features	CCGH/CCGT Type	CPGT Type	DCGT Type	TPGH Type	TPGV/TPGT 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.	—		—	—	—	—	—	—	—	

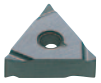
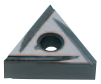
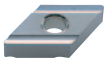
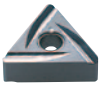
Breaker	Features	**CCET** Type	**CCGT** Type	**DCET** Type	**DCGT** Type	**VBET** Type
SR	● The wide lead breaker for medium cutting is suitable for automatic lathe machining. ● The insert design for low resistance controls chip flow.		—		—	
SS	● The parallel breaker for light cutting is suitable for 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.					

ANGULAR AND PARALLEL CHIP BREAKERS (NEGATIVE INSERTS)

CHIP CONTROL RANGE



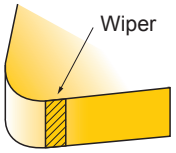
FEATURES OF CHIP BREAKER

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.				

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.

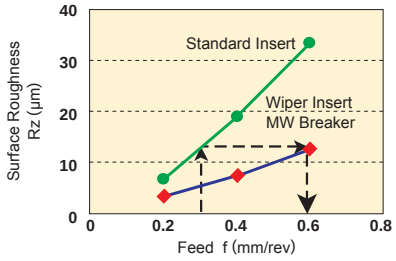
●Improving Efficiency
High feed rates not only shortened machining times but also make it possible to combine roughing and finishing operations.

●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)

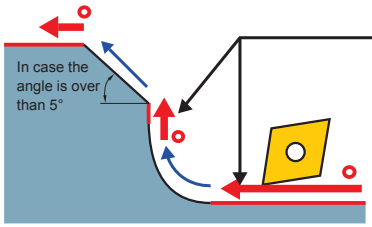
- Reducing cycle times
- Increased productivity
- Avoiding Line-Stoppage

<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.



$Rz(W)=Rz\times0.5$

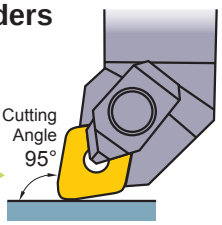
Rz(W) = Finished surface roughness when using a wiper insert.
Rz : Finished surface roughness from conventional conditions. (When using a standard insert)

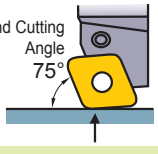
Effective uses of a wiper insert
Non effective uses of a wiper insert

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.)

Non restriction →

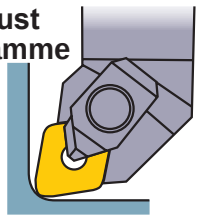




The CNMG type can be used as a wiper at the 100°corner.

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

Not necessary to adjust →

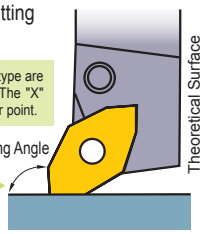


Special attention is necessary when using the DNMX • TNMX types due to the special top face geometry

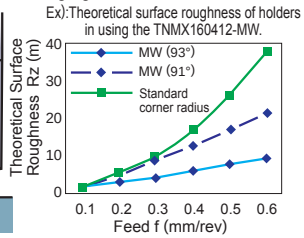
■Restriction for Holders
Use a holder with end cutting angle 93° for improving wiper efficiency. A holder with end cutting angle 91° can improve wiper efficiency (see the following figure), however, there is no wiper efficiency with other end cutting angles (60°, 90°, 107°etc.).

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.

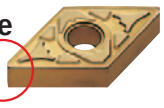
93° (Specified) →



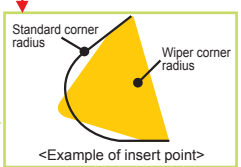
Ex):Theoretical surface roughness of holders in using the TNMX160412-MW.



■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 necessary →



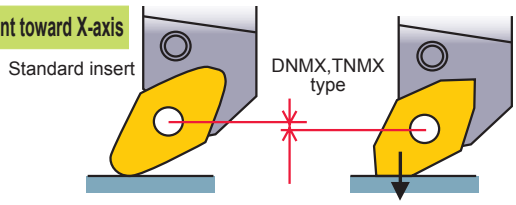
<Example of insert point>

Adjustment of machining programmes for DNMX • TNMX types

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

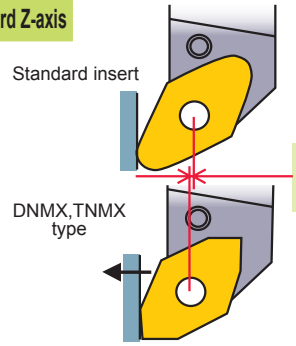
Adjusting the differential between a standard insert and Z-axis / X-axis.

Adjustment toward X-axis



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

Adjustment toward Z-axis

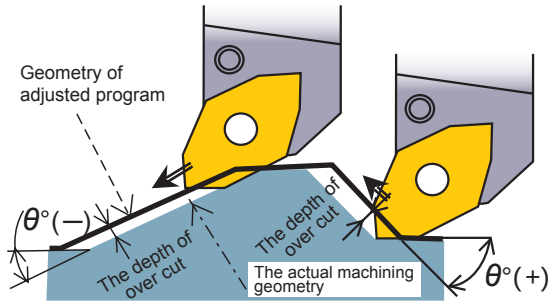


(Not closed to Corner R)
0.01mm

A) Adjusting a Taper ⁎Necessary to maintain a correct taper.

Adjust the relief angle toward the normal line.

Note) 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)

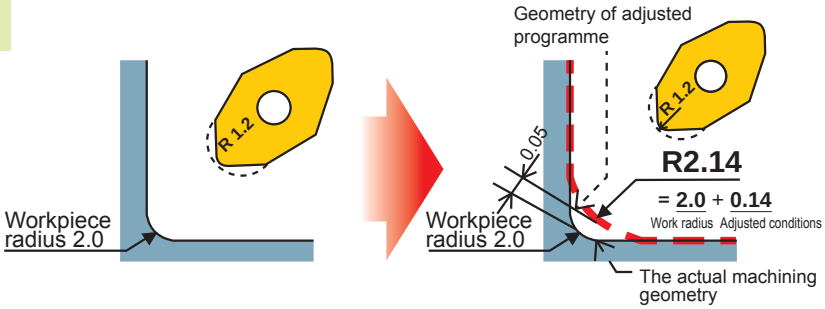
B) Adjusting a Corner R ⁎Necessary to maintain a correct corner radius.

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

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

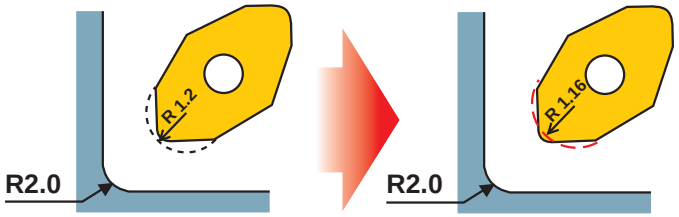
In correcting corner radius:
It is not necessary to adjust the machining programme, however, machining errors can occur within max. ±0.03mm due to correcting by an approximate number.

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)

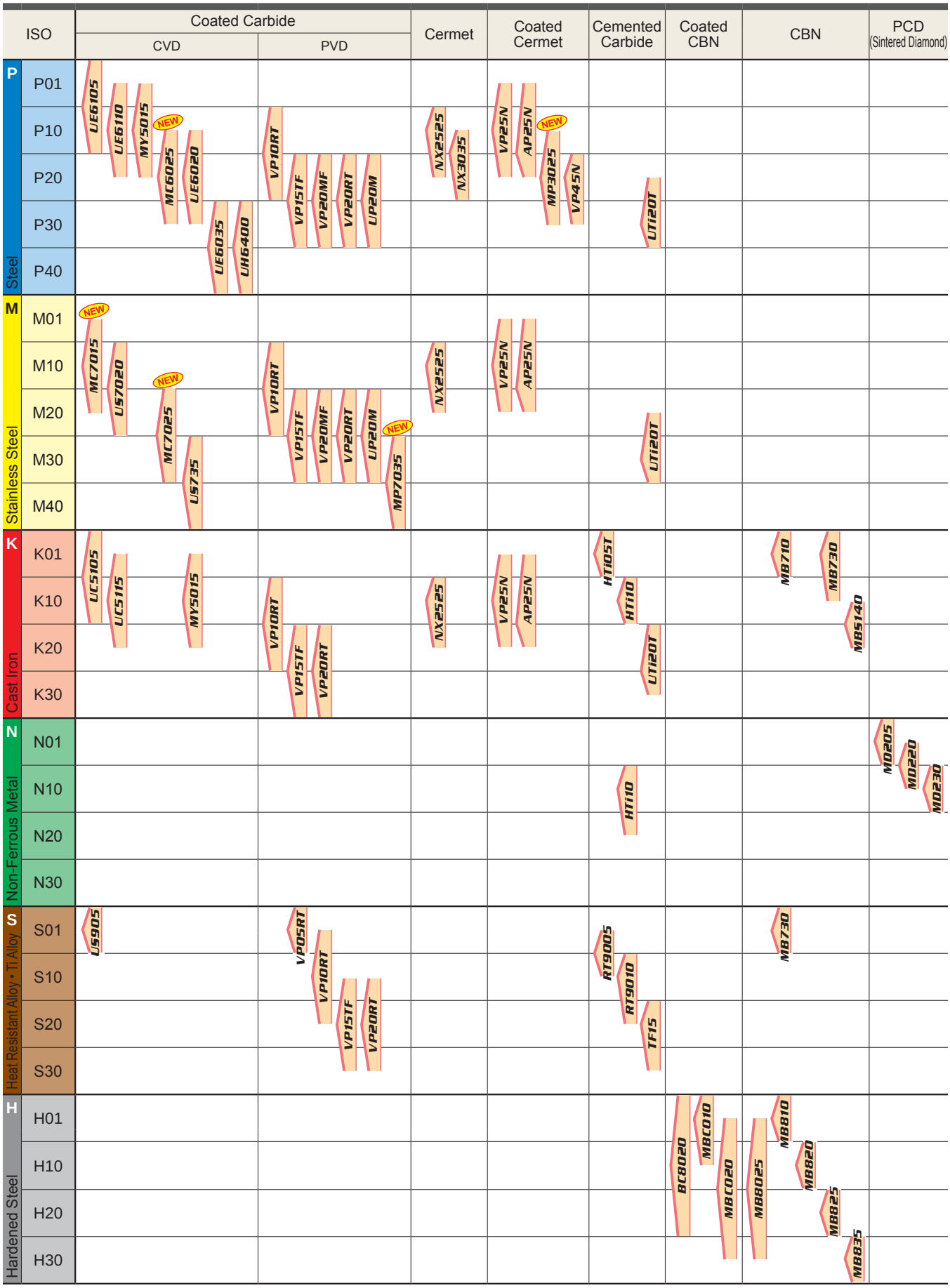
Ex):In the case of machining a corner with a radius R 2.0 when using an insert with a corner radius R 1.2.



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

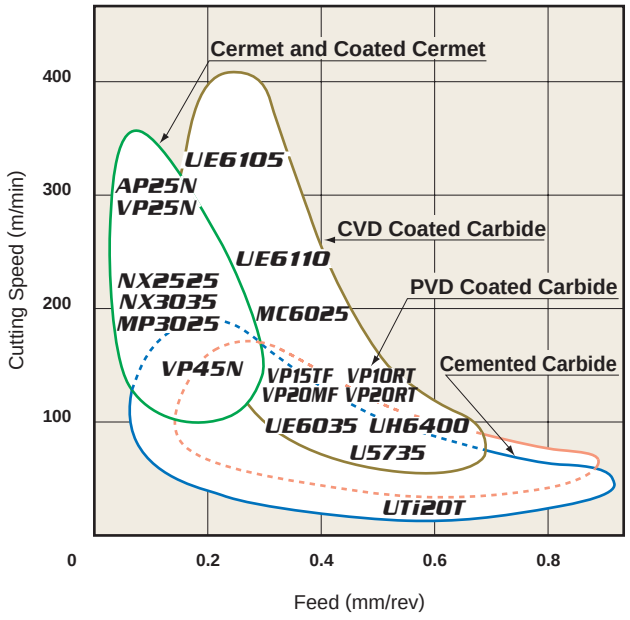
GRADES FOR TURNING

●INDEXABLE INSERT GRADES FOR TURNING

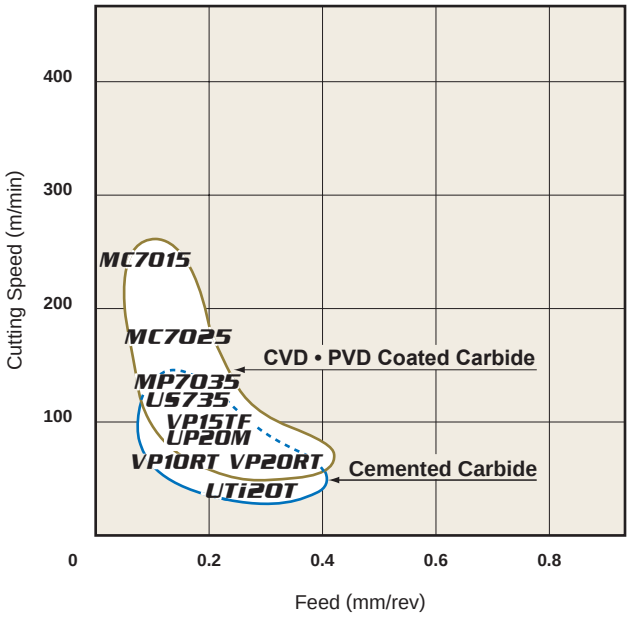


TURNING APPLICATION RANGE

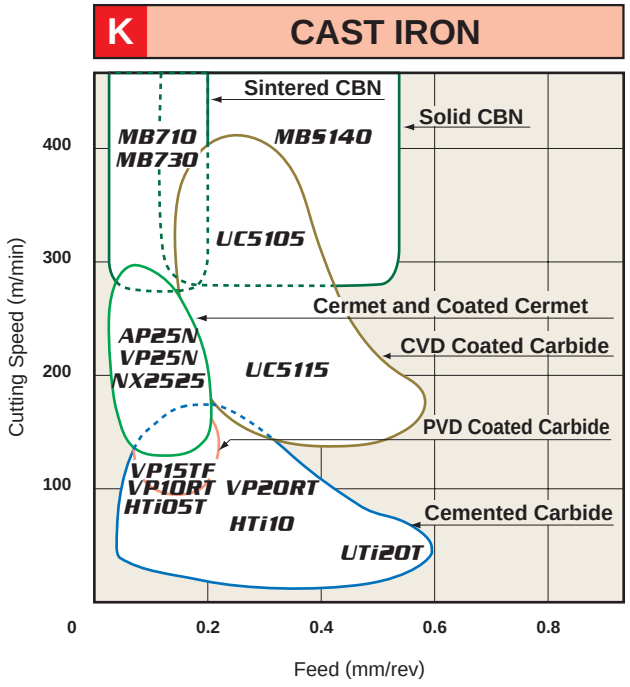
P STEEL



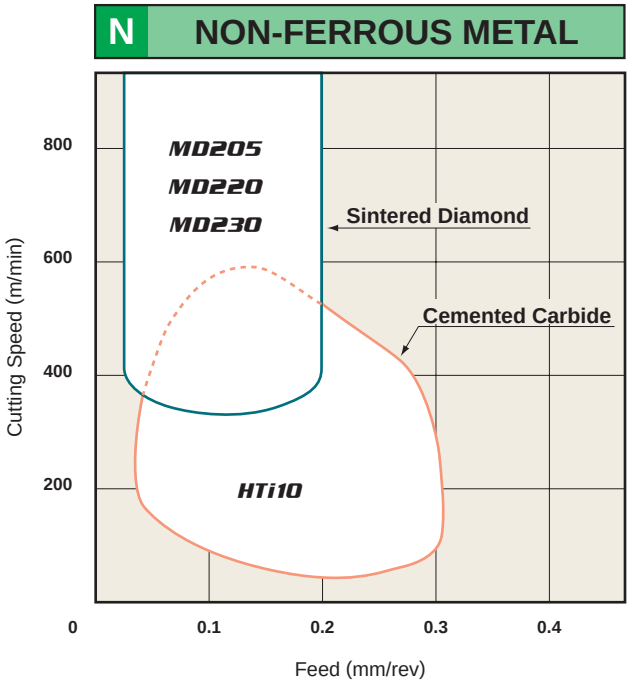
M STAINLESS STEEL



K CAST IRON



N NON-FERROUS METAL



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)	ISO	Application Range
P	Steel	Continuous Cutting	**UE6105**	300 (200 — 400)	P01	UE6105
			UE6110	250 (150 — 400)	P10	UE6110
			MC6025	200 (100 — 280)	P20	MY5015, NEW MC6025, UE6020
		Interrupted Cutting			P30	UE6035, UH6400
			UE6035	150 (80 — 200)	P40	
M	Stainless Steel	Continuous Cutting	**MC7015**	200 (160 — 250)	M01	NEW MC7015
			MC7025	150 (120 — 200)	M10	US7020
		Continuous and Interrupted Cutting			M20	NEW MC7025
			US735	100 (80 — 120)	M30	US735
					M40	
K	Cast Iron Ductile Cast Iron	Continuous Cutting	**UC5105**	300 (200 — 400)	K01	UC5105
					K10	UC5115, MY5015
		Interrupted Cutting	**UC5115**	250 (150 — 300)	K20	
					K30	
S	Heat Resistant Alloy	Continuous and Interrupted Cutting	**US905**	80 (50 — 100)	S01	US905

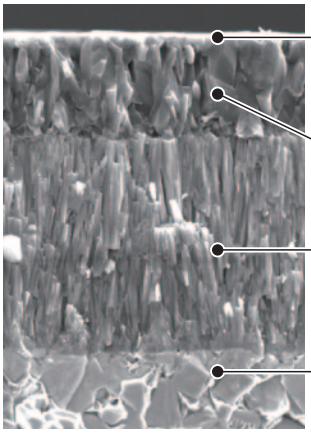
High reliability for a wide range of steel machining.

NEW

MC6025

MC6025 combines stability of the cutting edge and wear resistance by a combination of new special substrate with significantly improved edge toughness and CVD coating with high wear resistance.

Black Super Smooth Coating



Smooth coating surface

Prevents abnormal damage, welding and chipping

Flat Al_2O_3

Excellent heat resistance

Microscopic TiCN

High wear resistance

Newly developed

Special carbide substrate

Prevents crack development
Stable tool life

GRADE CHARACTERISTICS

Grade	Substrate			Coating Layer	
	Hardness (HRA)	T.R.S (GPa)	Surface	Composition	Thickness
UC5105	92.2	2.0	—	TiCN-Al_2O_3	Thick
UC5115	91.0	2.2	—	TiCN-Al_2O_3	Thick
UE6105	90.8	1.8	Tough	Accumulated TiCN-Al_2O_3-Ti Compound	Thick
UE6110	90.3	2.0	Tough	Accumulated TiCN-Al_2O_3-Ti Compound	Thick
UE6020	90.0	2.2	Tough	Accumulated TiCN-Al_2O_3-Ti Compound	Thick
MC6025	90.2	2.2	Tough	Accumulated TiCN-Al_2O_3-Ti Compound	Thick
UE6035	89.5	2.3	Tough	TiCN-Al_2O_3-TiN	Thick
UH6400	89.5	2.3	Tough	Accumulated TiCN-Al_2O_3-Ti Compound	Thick
MC7015	90.7	2.0	Tough	TiCN-Al_2O_3-TiN	Thin
US7020	90.5	2.0	Tough	TiCN-Al_2O_3-TiN	Thin
MC7025	89.4	2.4	—	TiCN-Al_2O_3-TiN	Thin
US735	89.0	2.6	—	Ti Compound	Thin
US905	92.2	2.0	—	TiCN-Al_2O_3-TiN	Thin
MY5015	91.2	2.4	—	TiCN-Al_2O_3-TiN	Thin

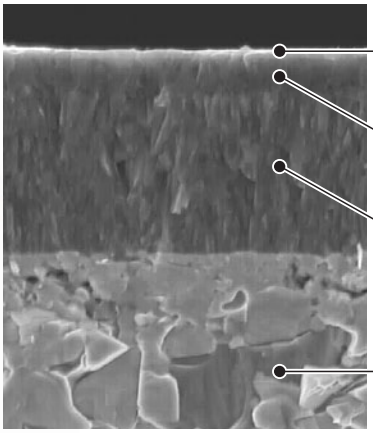
∗ 1GPa=102kg/mm^2

Excellent machining efficiency in general-purpose machining and high speed machining of stainless steel.

NEW

MC7015/MC7025

MC7015/MC7025 achieves stable high efficiency machining for stainless steel from general-purpose to high speed range by a combination of new special substrate with excellent plastic deformation resistance and tough CVD coating.



Smooth cutting edge
Prevents welding

Thin layer, Nano-texture Al_2O_3
Controls abnormal damage

Tough, Nano-texture TiCN
High wear resistance

Newly developed

Special carbide substrate
Plastic deformation resistance
Chipping resistance

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

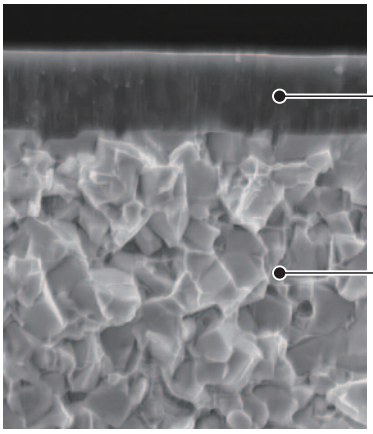
	Work Material	Coating Name	Recommended Grade	Recommended CuttingSpeed (m/min)	ISO	Application Range
P	Steel	VP Coating	VP10RT	120 (100 — 150)	P01	VP10RT
			VP15TF	120 (100 — 150)	P10	VP15TF
			VP20MF	120 (100 — 150)	P20	VP20MF
			VP20RT	120 (100 — 150)	P30	VP20RT
		UP Coating	UP20M	120 (100 — 150)	P40	UP20M
M	Stainless Steel	VP Coating	VP10RT	120 (100 — 150)	M01	
			VP15TF	120 (100 — 150)	M10	VP10RT
			VP20MF	120 (100 — 150)	M20	VP15TF, VP20MF, VP20RT, UP20M
			VP20RT	120 (100 — 150)	M30	NEW MP7035
			MP7035	120 (100 — 150)		
		UP Coating	UP20M	120 (100 — 150)	M40	
K	Cast Iron	VP Coating	VP10RT	120 (100 — 150)	K01	
			VP15TF	120 (100 — 150)	K10	VP10RT
			VP20RT	120 (100 — 150)	K20	VP15TF, VP20RT
					K30	
S	Heat Resistant Alloy	VP Coating	VP05RT	50 (20 — 70)	S01	VP05RT
			VP10RT	40 (20 — 50)	S10	VP10RT
			VP20RT	40 (20 — 50)	S20	VP15TF, VP20RT
			VP15TF	40 (20 — 50)	S30	

High reliability in unstable machining of stainless steel.

NEW

MP7035

MP7035 covers a wide range of unstable machining of stainless steel by a combination of (Al,Ti)N coating with excellent heat resistance and special substrate with excellent chipping resistance and notching resistance.



(Al, Ti)N coating

Prevents welding

Special carbide substrate

Improved fracture resistance
Thermal shock resistance

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)	P01	NX2525
					P10	NX2525
		Interrupted Cutting	**NX3035**	200 (190 — 260)	P10	NX3035
					P20	NX3035
K	Cast Iron Ductile Cast Iron	Finishing	**NX2525**	180 (150 — 210)	K01	NX2525
					K10	NX2525

GRADE CHARACTERISTICS

Grade	Substrate			
	Hardness (HRA)	T.R.S (GPa)	Thermal Conductivity (W/m • K) *	Thermal Expansion ($\times 10^{-6}$/K)
NX2525	92.2	2.0	33	7.8
NX3035	91.5	2.1	35	7.8

* 1GPa=102kg/mm^2, 1W/m•K=2.39$\times 10^{-3}$cal/cm•sec•℃

COATED CERMET

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

SELECTION STANDARD

●TURNING

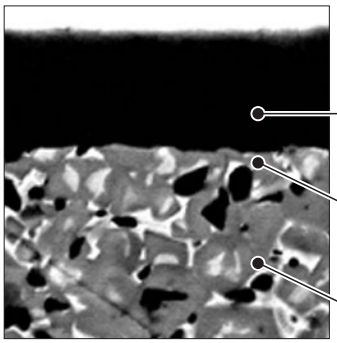
Work Material		Cutting Mode	Recommended Grade	Recommended CuttingSpeed (m/min)	ISO	Application Range
P	Steel	Continuous Cutting	**VP25N** **AP25N**	240 (190 — 290)	P01 P10	VP25N, NEW MP3025, VP45N, AP25N
		Interrupted Cutting	**MP3025**	230 (180 — 280)	P20 P30	
K	Cast Iron Ductile Cast Iron	Finishing	**VP25N** **AP25N**	160 (110 — 230)	K01 K10 K20	VP25N, AP25N

Effective for production of small parts.

NEW

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)	P10	
				P20	UTi20T
				P30	
M	Stainless Steel	**UTi20T**	100 (60 — 130)	M10	
				M20	UTi20T
				M30	
K	Cast Iron	**HTi05T**	120 (80 — 150)	K01	HTi05T
		HTi10	100 (50 — 150)	K10	HTi10
				K20	UTi20T
		UTi20T	100 (50 — 150)	K30	
N	Non-Ferrous Metal	**HTi10**	600 (400 — 800)	N01	
				N10	HTi10
				N20	
				N30	
S	Heat-resistant Alloy Ti Alloy	**RT9005**	70 (50 — 100)	S01	RT9005
		RT9010	60 (40 — 80)	S10	RT9010
				S20	
		TF15	50 (40 — 70)	S30	TF15

MAIN COMPONENT AND APPLICATION

P series for steel cutting, K series for cast iron cutting and M series for general cutting.

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)	Thermal Conductivity (W/m•K)★	Thermal Expansion (x10^{-6}/K)	Young's Modulus (GPa)★	T.R.S(GPa)★
P M	**UTi20T**	90.5	38	5.5	520	2.0
K N	**HTi05T**	92.5	79	4.5	600	1.5
	HTi10	92.0	79	4.6	630	2.0
S	**RT9005**	92.2	79	4.5	600	2.0
	RT9010	92.0	79	4.6	630	2.2
	TF15	91.5	71	5.3	580	2.5

★ 1GPa=102kg/mm^2, 1W/m•K=2.39×10^{-3}cal/cm•sec•℃

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** **MF07** **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

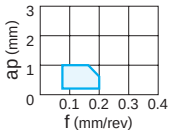
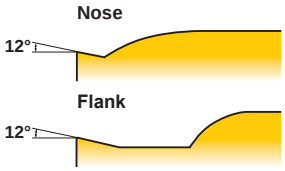
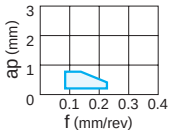
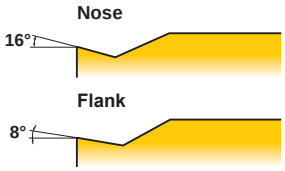
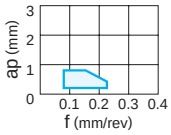
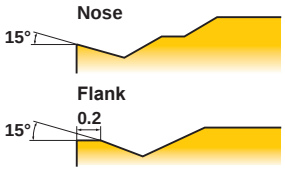
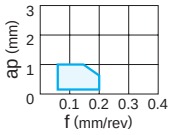
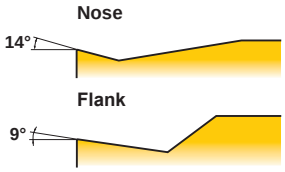
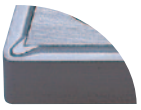
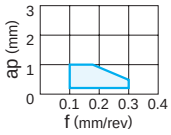
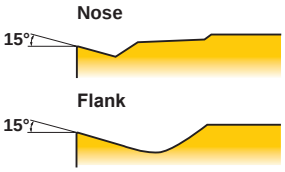
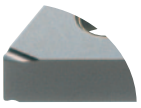
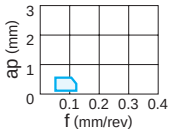
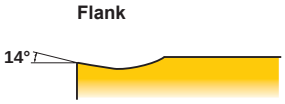
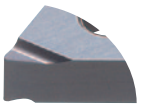
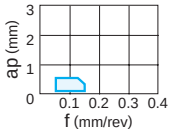
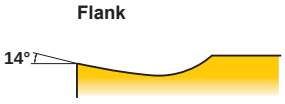
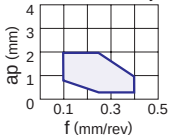
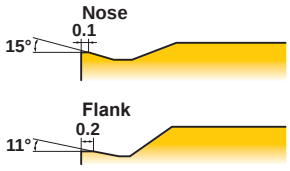
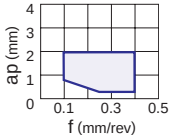
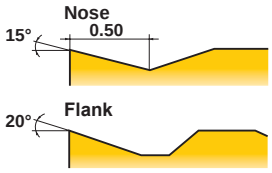
Grade	Grade Characteristics ⁂			ISO	Wear Resistance	Fracture Resistance	Corrosion Resistance
	Specific Gravity	Hardness (HRA)	T.R.S (Gpa)⁎				
HTi10	**14.9**	92.0	3.2	K10	◎	○	○
TF15	**14.5**	91.0	4.0	K20	◎	○	◎
SF10	**14.9**	92.7	3.8	K01	◎	○	◎
MF07	**14.7**	93.2	3.9	K01	◎	○	◎
MF10	**14.6**	93.0	4.0	K01	◎	○	◎
MF20	**14.2**	92.0	4.4	K10	○	◎	◎
MF30	**13.7**	90.7	4.3	K20	○	◎	◎

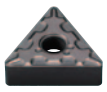
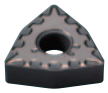
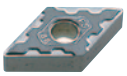
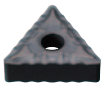
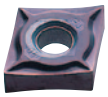
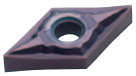
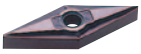
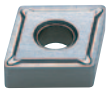
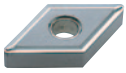
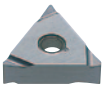
⁎ 1GPa=102kg/mm^2
⁂ After HIP

Memo

CLASSIFICATION

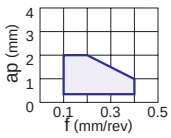
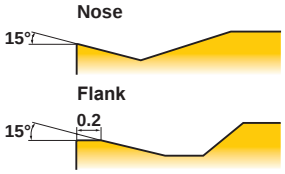
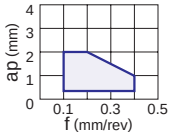
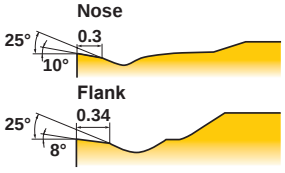
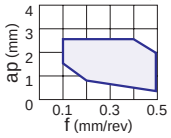
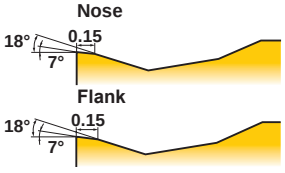
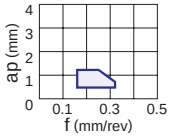
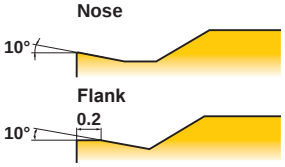
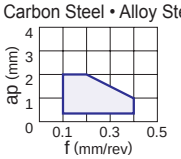
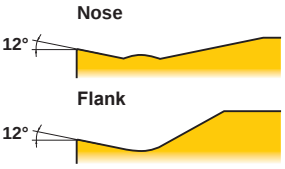
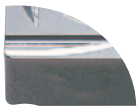
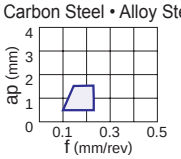
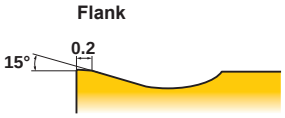
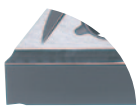
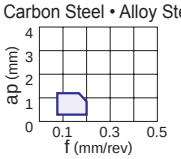
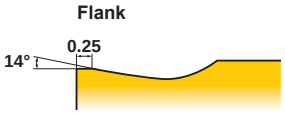
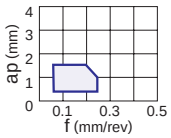
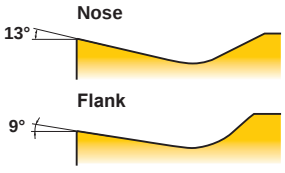
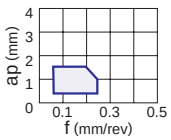
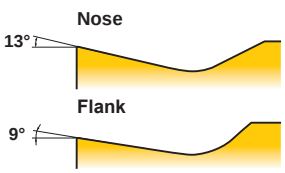
NEGATIVE INSERTS WITH HOLE

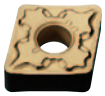
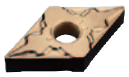
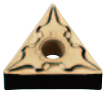
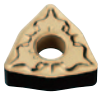
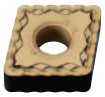
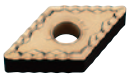
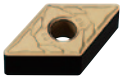
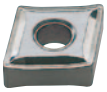
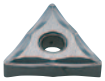
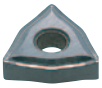
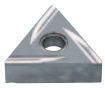
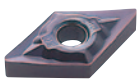
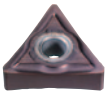
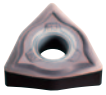
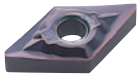
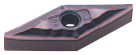
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M	FH 	**First recommendation for finishing carbon steel, alloy steel and stainless steel** Double sided chipbreaker. Stable chip control even at small depth of cut.	Carbon Steel • Alloy Steel  
		FS 	**Alternative chipbreaker for finishing mild steel** Double sided chipbreaker. Stable chip control even at small depth of cut. Sharp edge gives best performance.	Mild Steel  
		FY 	**First recommendation for finishing mild steel** Double sided chipbreaker. Effectively controls adhesive chips. Suitable for mild steel finishing.	Mild Steel  
	G	FJ 	**First recommendation for finishing difficult-to-cut materials** Double sided chipbreaker. 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  
		PK 	**Alternative chipbreaker for finishing carbon steel and alloy steel** Double sided chipbreaker. 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  
		R/L-FS 	**Precise finishing** Double sided chipbreaker. A narrow lead chipbreaker for good chip control. The sharp edge produces a good surface finish.	Carbon Steel • Alloy Steel  
		R/L-F 	**Finishing** Double sided chipbreaker. Lead chipbreaker controls chip flow. The sharp edge produces a good surface finish.	Carbon Steel • Alloy Steel  
Light Cutting	M	NEW LP 	**First recommendation for light cutting of carbon steel and alloy steel** Double sided chipbreaker. Stable chip control at light cutting range. The curved edge allows smooth chip discharge.	Carbon Steel • Alloy Steel  
		NEW LM 	**First recommendation for light cutting of stainless steel** M class double sided chip breaker. Stable chip control at light cutting range. Breaker with high rake angle provides excellent burr control.	Stainless Steel  

Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
CNMG_FH  A066	DNMG_FH  A071	SNMG_FH  A077	TNMG_FH  A082	VNMG_FH  A088	WNMG_FH  A091		FH 
CNMG_FS  A066	DNMG_FS  A071	SNMG_FS  A077	TNMG_FS  A082	VNMG_FS  A088	WNMG_FS  A091		FS 
CNMG_FY  A066	DNMG_FY  A071		TNMG_FY  A082		WNMG_FY  A091		FY 
CNGG_FJ  A066	DNGG_FJ  A071			VNGG_FJ  A088			FJ 
CNGG_PK  A066	DNGG_PK  A071		TNGG_PK  A082				PK 
			TNGG_R/L-FS  A082				R/L-FS 
			TNGG_R/L-F  A082	VNGG_R/L-F  A088			R/L-F 
CNMG_LP  A066	DNMG_LP  A071	SNMG_LP  A077	TNMG_LP  A082	VNMG_LP  A088	WNMG_LP  A091		LP 
CNMG_LM  A066	DNMG_LM  A072	SNMG_LM  A077	TNMG_LM  A083	VNMG_LM  A088	WNMG_LM  A091		LM 

CLASSIFICATION

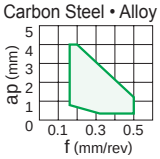
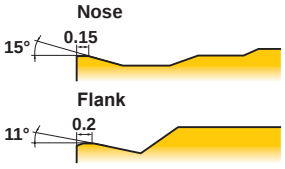
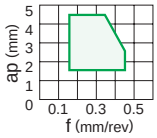
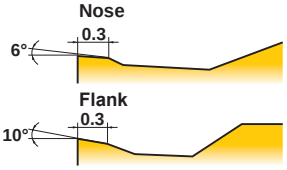
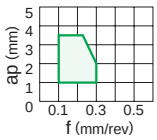
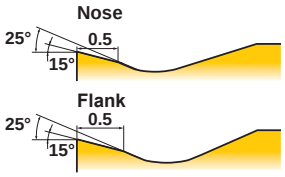
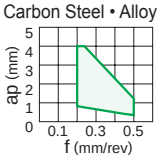
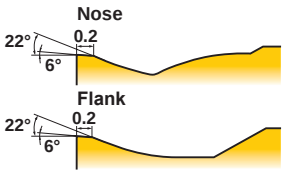
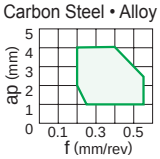
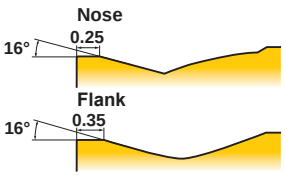
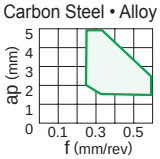
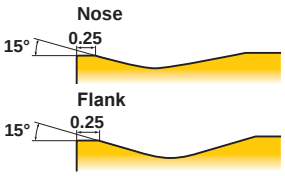
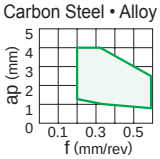
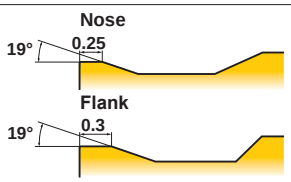
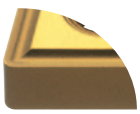
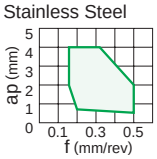
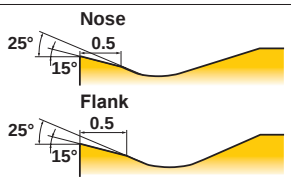
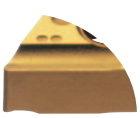
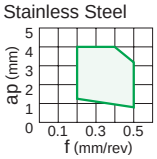
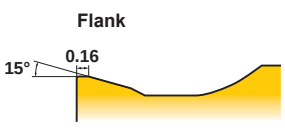
NEGATIVE INSERTS WITH HOLE

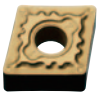
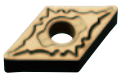
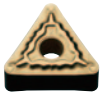
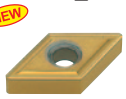
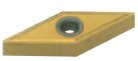
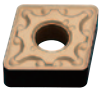
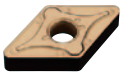
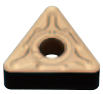
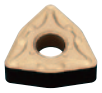
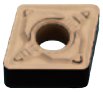
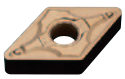
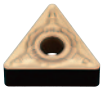
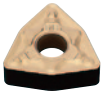
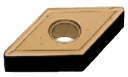
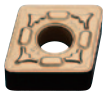
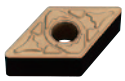
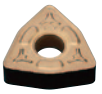
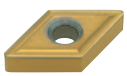
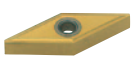
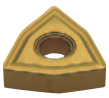
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Light Cutting	M	**SH** 	**Alternative chipbreaker for light cutting of carbon steel and alloy steel** Double sided chipbreaker. Can be used at low depth of cuts and high feed rates. The curved edge allows smooth chip discharge. Recommended for workpieces in the 160—250HB range.	Carbon Steel • Alloy Steel  
		SA 	**Alternative chipbreaker for light cutting of carbon steel and alloy steel** Double sided chipbreaker. 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  
		SW 	**Wiper insert for light cutting of carbon steel and alloy steel** Double sided chipbreaker. The wiper allows up to two times higher feed. Wiper design for increased productivity and improved surface finish.	Carbon Steel • Alloy Steel  
		SY 	**First recommendation for light cutting of mild steel** Double sided chipbreaker. Effectively controls adhesive chips. Suitable for mild steel light cutting.	Mild Steel  
		C 	**Alternative chipbreaker for light cutting of carbon steel and alloy steel** Double sided chipbreaker. Suitable for light cutting. The curved edge allows smooth chip discharge.	Carbon Steel • Alloy Steel  
		R/L-1G 	**Alternative chipbreaker for light cutting of carbon steel and alloy steel** Double sided chipbreaker. Parallel chipbreaker controls chip flow. Suitable for finish-light cutting. Precision chipbreaker.	Carbon Steel • Alloy Steel  
	G	**R/L-K** 	**Light cutting** Double sided chipbreaker. Parallel chipbreaker. Excellent chip control at low to medium feed rates.	Carbon Steel • Alloy Steel  
	M	**MJ** 	**First recommendation for light cutting of difficult-to-cut materials** Double sided chipbreaker. 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  
	G	**MJ** 	**First recommendation 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  

Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
CNMG_SH  A067	DNMG_SH  A072	SNMG_SH  A077	TNMG_SH  A083	VNMG_SH  A088	WNMG_SH  A091		SH 
CNMG_SA  A067	DNMG_SA  A072	SNMG_SA  A077	TNMG_SA  A083		WNMG_SA  A092		SA 
CNMG_SW  A067	DNMX_SW  A072		TNMX_SW  A083		WNMG_SW  A092		SW 
CNMG_SY  A067	DNMG_SY  A072	SNMG_SY  A077	TNMG_SY  A083		WNMG_SY  A092		SY 
CNMG_C  A067	DNMG_C  A073	SNMG_C  A078	TNMG_C  A083		WNMG_C  A092		C 
		SNMG_R/L-1G  A078	TNMG_R/L-1G  A083				R/L-1G 
			TNGG_R/L-K  A083				R/L-K 
CNMG_MJ  A067	DNMG_MJ  A073		TNMG_MJ  A083	VNMG_MJ  A089	WNMG_MJ  A092		MJ(M) 
CNGG_MJ  A067	DNGM_MJ  A073			VNGM_MJ  A089			MJ(G) 

CLASSIFICATION

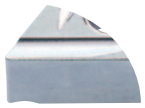
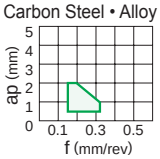
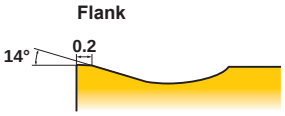
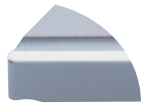
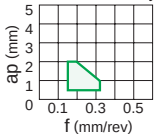
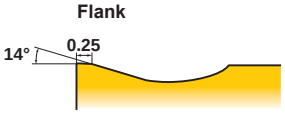
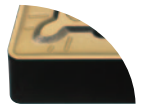
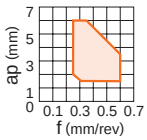
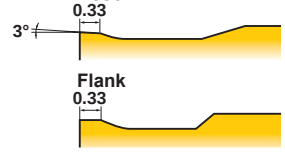
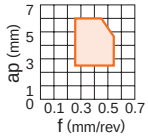
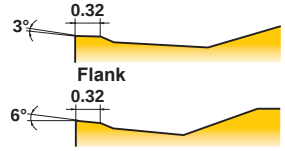
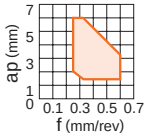
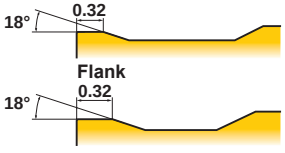
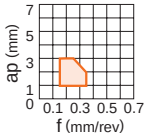
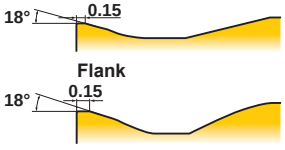
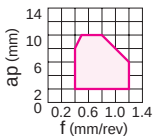
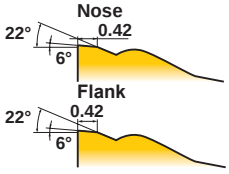
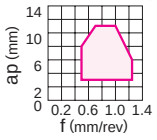
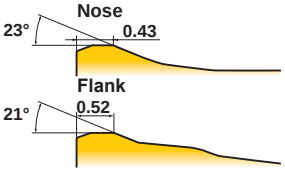
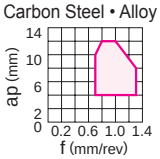
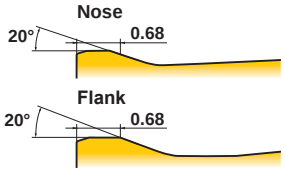
NEGATIVE INSERTS WITH HOLE

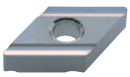
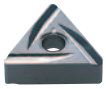
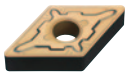
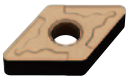
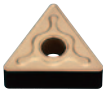
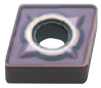
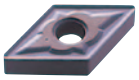
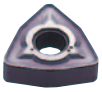
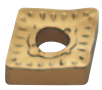
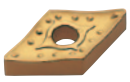
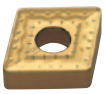
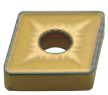
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M	**MP** 	**First recommendation for medium cutting of carbon steel and alloy steel** Double sided chipbreaker. Suitable for medium to light cutting. Breaker geometry appropriate for copying and back turning. Cutting edge geometry for an optimum balance of sharpness and fracture resistance.	Carbon Steel • Alloy Steel  
		NEW **MM** 	**First recommendation for medium cutting of stainless steel** M class double sided chip breaker. Optimized land geometry by simulation analysis technology controls the plastic deformation of the corner and achieves the long tool life.	Stainless Steel  
		NEW **GM** 	**Alternative chip breaker for light to medium cutting of stainless steel** M class double sided chip breaker. Alternative chip breaker of main chip breaker LM and MM. Excellent notch wear resistance for light to medium cutting.	Stainless Steel  
		MA 	**First recommendation for medium cutting of carbon steel and alloy steel** **Alternative chipbreaker for finishing and light cutting of cast iron** Double sided chipbreaker. Positive land provides sharp cutting action.	Carbon Steel • Alloy Steel  
		MH 	**First recommendation for rough cutting of mild steel** **Alternative chipbreaker for medium cutting of carbon steel and alloy steel** Double sided chipbreaker. Flat land offers high edge strength.	Carbon Steel • Alloy Steel  
		Standard 	**First recommendation for medium cutting of cast iron** **Alternative chipbreaker for medium cutting of carbon steel and alloy steel** Double sided chipbreaker. Flat land offers high edge strength.	Carbon Steel • Alloy Steel  
		MW 	**Wiper insert for medium cutting carbon steel and alloy steel** Double sided chipbreaker. The wiper allows up to two times higher feed. A wide chip pocket prevents chip jamming.	Carbon Steel • Alloy Steel  
		MS 	**First recommendation for medium cutting of stainless steel, mild steel and difficult-to-cut materials** Double sided chipbreaker. The sharp edge gives best performance.	Stainless Steel  
		R/L-ES 	**Alternative chipbreaker for medium cutting of stainless steel** Double sided chipbreaker. Good balance of edge strength and sharpness. Right- or left-hand breaker for unidirectional chip control.	Stainless Steel  

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CNMG_MP  A067	DNMG_MP  A073	SNMG_MP  A078	TNMG_MP  A084	VNMG_MP  A089	WNMG_MP  A092		MP 
	CNMG_MM NEW  A068	DNMG_MM NEW  A073	SNMG_MM NEW  A078	TNMG_MM NEW  A084	VNMG_MM NEW  A089	WNMG_MM NEW  A093		MM NEW 
	CNMG_GM NEW  A068	DNMG_GM NEW  A073	SNMG_GM NEW  A078	TNMG_GM NEW  A084	VNMG_GM NEW  A089	WNMG_GM NEW  A093		GM NEW 
	CNMG_MA  A068	DNMG_MA  A073	SNMG_MA  A079	TNMG_MA  A084	VNMG_MA  A089	WNMG_MA  A093		MA 
	CNMG_MH  A068	DNMG_MH  A074	SNMG_MH  A079	TNMG_MH  A084	VNMG_MH  A089	WNMG_MH  A093		MH 
	CNMG  A068	DNMG  A074	SNMG  A079	TNMG  A085	VNMG  A089	WNMG  A093	RNMG  A076	Standard 
	CNMG_MW  A069	DNMX_MW  A074		TNMX_MW  A085		WNMG_MW  A093		MW 
	CNMG_MS  A069	DNMG_MS  A074	SNMG_MS  A079	TNMG_MS  A085	VNMG_MS  A089	WNMG_MS  A093		MS 
				TNMG_R/L-ES  A085				R/L-ES 

CLASSIFICATION

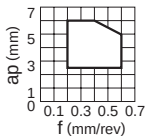
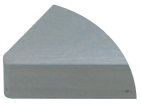
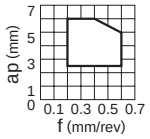
NEGATIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M	**R/L-2G** 	**Alternative chipbreaker for medium cutting of carbon steel and alloy steel** Double sided chipbreaker. Parallel chipbreaker controls chip flow. Suitable for light to medium cutting.	Carbon Steel • Alloy Steel  
	G	**R/L** 	**Medium cutting** Double sided chipbreaker. Parallel chipbreaker. Good chip control for medium feed rates.	Carbon Steel • Alloy Steel  
Rough Cutting	M	NEW **RP** 	**First recommendation for rough cutting of carbon steel and alloy steel** Double sided chip breaker. 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  
		NEW **RM** 	**First recommendation for rough cutting of stainless steel** M class double sided chip breaker. Excellent fracture resistance at interrupted cutting due to the optimum land angle and honing geometry.	Stainless Steel  
		GH 	**For rough cutting of carbon steel, alloy steel and stainless steel** Double sided chipbreaker. For interrupted cuts and removing scale. A combination of wide land and a large chip pocket allows high feed rates.	Carbon Steel • Alloy Steel  
		GJ 	**First recommendation for rough cutting of difficult-to-cut materials** Double sided chipbreaker. Excellent balance of edge sharpness and strength. Edge geometry with high face wear resistance.	Difficult-to-Cut Materials  
Heavy Cutting	M	**HZ** 	**First recommendation for heavy cutting of mild steel and stainless steel** Single sided chipbreaker. Covers the lower end of the heavy cutting region. Low cutting resistance due to positive land and curved edge. Teardrop dots improve chip control without increasing cutting resistance.	Mild Steel  
		HX 	**First recommendation for heavy cutting of carbon steel and alloy steel** Single sided chipbreaker. 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  
		HV 	**Alternative chipbreaker for heavy cutting of carbon steel and alloy steel** Single sided chipbreaker. 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  

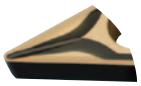
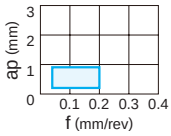
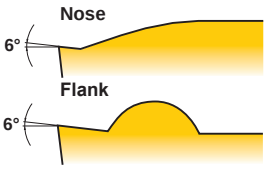
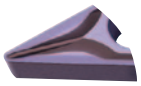
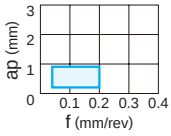
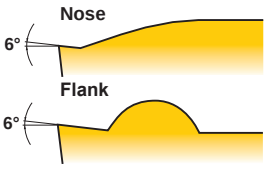
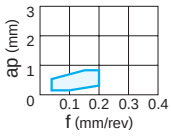
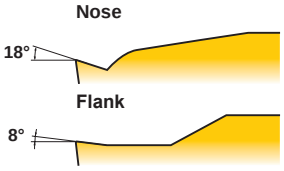
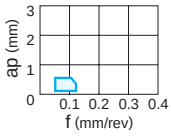
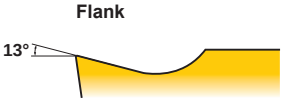
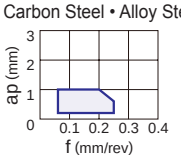
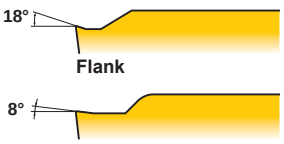
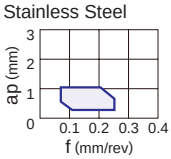
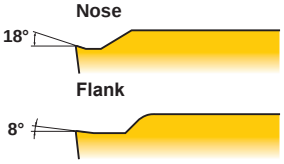
	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
				TNMG_R/L-2G  A085				R/L-2G 
		DNGG_R/L  A074	SNGG_R/L  A079	TNGG_R/L  A086	VNGG_R/L  A090			R/L 
	CNMG_RP NEW  A069	DNMG_RP NEW  A075	SNMG_RP NEW  A079	TNMG_RP NEW  A086		WNMG_RP NEW  A094		NEW RP 
	CNMG_RM NEW  A069	DNMG_RM NEW  A075	SNMG_RM NEW  A080	TNMG_RM NEW  A086		WNMG_RM NEW  A094		NEW RM 
	CNMG_GH  A069	DNMG_GH  A075	SNMG_GH  A080	TNMG_GH  A086		WNMG_GH  A094		GH 
	CNMG_GJ  A070	DNMG_GJ  A075				WNMG_GJ  A094		GJ 
	CNMM_HZ  A070	DNMM_HZ  A075	SNMM_HZ  A080	TNMM_HZ  A087				HZ 
	CNMM_HX  A070		SNMM_HX  A080					HX 
	CNMM_HV  A070		SNMM_HV  A080					HV 

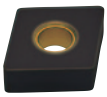
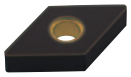
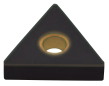
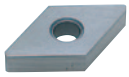
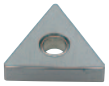
CLASSIFICATION

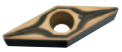
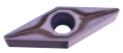
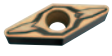
NEGATIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Cast Iron	M	Flat Top 	**First recommendation for rough cutting of cast iron** Double sided flat insert. Most effective for unstable machining due to its high edge strength.	Cast Iron  
	G	Flat Top 	**For cast iron** Double sided flat insert. 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  

5° POSITIVE INSERTS WITH HOLE

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

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CNMA  A070	DNMA  A075	SNMA  A081	TNMA  A087		WNMA  A094		Flat Top(M) 
		DNGA  A075	SNGA  A081	TNGA  A087	VNGA  A090			Flat Top(G) 

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
					VBMT_FP NEW  A119			NEW FP 
					VBMT_FM NEW  A119			NEW FM 
					VBMT_FV  A119			FV 
					VBGT_R/L-F  A119	WBGT_R/L-F  A126		R/L-F 
					VBMT_LP NEW  A119			NEW LP 
					VBMT_LM NEW  A119			NEW LM 

CLASSIFICATION

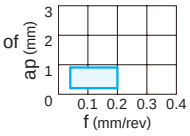
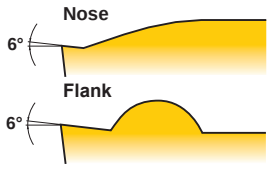
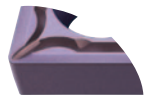
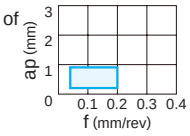
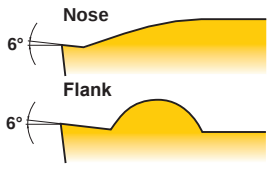
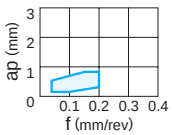
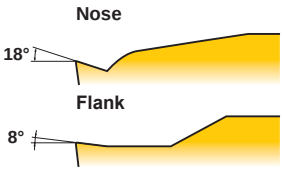
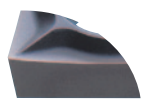
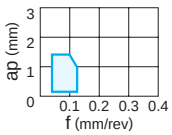
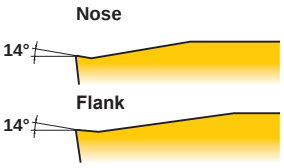
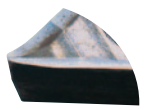
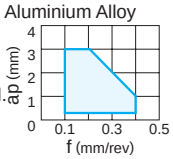
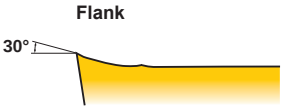
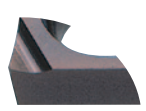
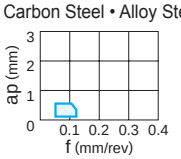
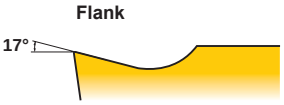
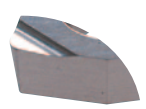
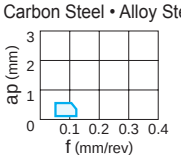
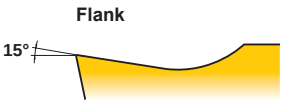
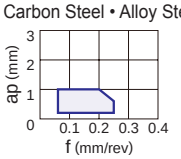
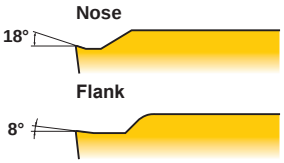
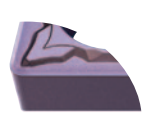
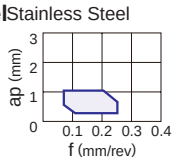
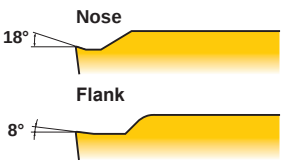
5° POSITIVE INSERTS WITH HOLE

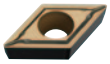
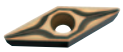
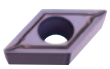
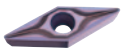
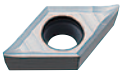
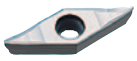
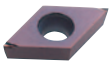
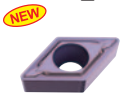
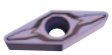
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Light Cutting	M	SV	**Light cutting of carbon steel, alloy steel, mild steel and stainless steel** Large rake angle provides sharp cutting action. A peninsular dot ensures chip control at depths of cut under 1mm.	Carbon Steel • Alloy Steel ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4 Nose 18° Flank 8°
Medium Cutting	M	NEW MP	**First recommendation for medium cutting of carbon steel and alloy 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 ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4 Nose 0.1 18° Flank 0.1 18°
		NEW 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 ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4 Nose 0.1 18° Flank 0.1 18°
		Standard	**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 ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4 Nose 0.1 18° Flank 0.1 18°
		MV	**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 ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4 Nose 0.1 18° 10° Flank 0.1 18° 10°
		R/L-MV	**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 ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4 Nose 0.16 20° 8° Flank 0.16 20° 8°
	E	R/L-SR	**Medium cutting of automatic lathe machining** A wide lead chipbreaker. Insert designed for low resistance chip control.	Carbon Steel • Alloy Steel ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4 Flank 30°
		R/L-SN	**Medium cutting of automatic lathe machining** A parallel chipbreaker. Excellent chip control for low to medium feed rates.	Carbon Steel • Alloy Steel ap (mm) 0 2 4 6 / f (mm/rev) 0.1 0.3 Flank 20°
		R/LW-SN	**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 ap (mm) 0 2 4 6 / f (mm/rev) 0.1 0.3 Flank 20°

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
					VBMT_SV  A120			SV 
					VBMT_MP NEW  A120			NEW MP 
					VBMT_MM NEW  A120			NEW MM 
					VBMT  A120			Standard 
					VBMT_MV  A120			MV 
						WBMT_R/L-MV  A126		R/L-MV 
					VBET_R/L-SR  A120			R/L-SR 
					VBET_R/L-SN  A121			R/L-SN 
					VBET_R/LW-SN  A121			R/LW-SN 

CLASSIFICATION

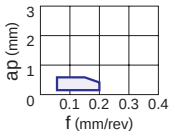
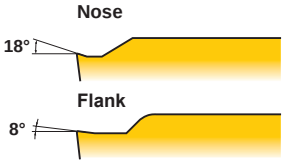
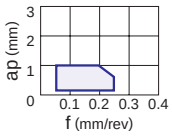
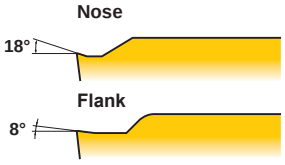
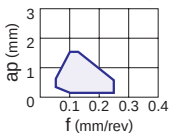
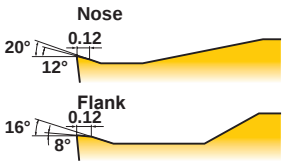
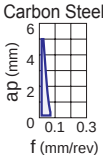
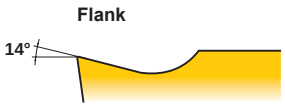
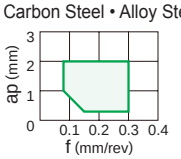
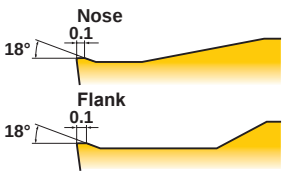
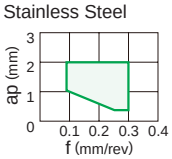
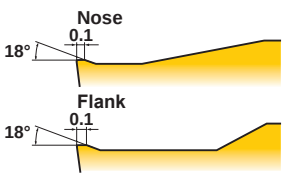
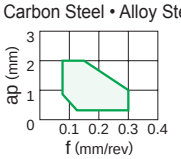
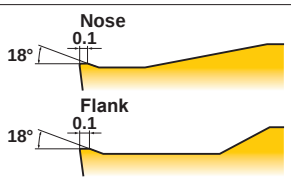
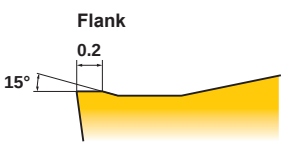
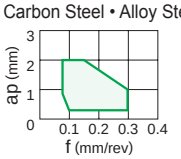
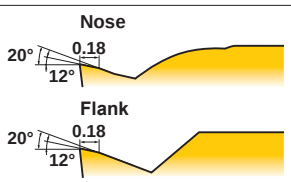
7° POSITIVE INSERTS WITH HOLE

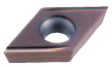
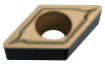
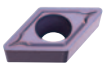
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M	NEW FP 	**First recommendation for finishing carbon steel and alloy steel** Breaker protrusion at the corner tip controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	Carbon Steel • Alloy Steel  
		NEW 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  
		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  
	G	FJ 	**First recommendation 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  
		AZ 	**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  
		R/L-F 	**Finishing** Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel  
		R/L 	**Finishing** Lead chipbreaker. Excellent chip control at low feed rates.	Carbon Steel • Alloy Steel  
Light Cutting	M	NEW 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  
		NEW 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  

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round	Breaker Name and Cross Section
	CCMT_FP NEW  A097	DCMT_FP NEW  A103	SCMT_FP NEW  A110	TCMT_FP NEW  A113	VCMT_FP NEW  A122				FP 
	CCMT_FM NEW  A097	DCMT_FM NEW  A103	SCMT_FM NEW  A110	TCMT_FM NEW  A113	VCMT_FM NEW  A122				FM 
	CCMT_FV  A097	DCMT_FV  A103	SCMT_FV  A110	TCMT_FV  A113	VCMT_FV  A122				FV 
	CCGT_FJ  A097								FJ 
	CCGT_AZ  A097	DCGT_AZ  A103		TCGT_AZ  A113	VCGT_AZ  A122			RCGT_AZ  A109	AZ 
	CCGT_L-F CCGH_R/L-F  A098	DCGT_R/L-F  A103		TCGT_R/L-F  A113	VCGT_R/L-F  A122				R/L-F 
						WCGT_R/L  A127			R/L 
	CCMT_LP NEW  A098	DCMT_LP NEW  A103	SCMT_LP NEW  A110	TCMT_LP NEW  A113	VCMT_LP NEW  A122				LP 
	CCMT_LM NEW  A098	DCMT_LM NEW  A104	SCMT_LM NEW  A110	TCMT_LM NEW  A114	VCMT_LM NEW  A122				LM 

CLASSIFICATION

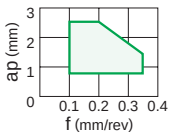
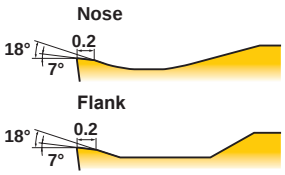
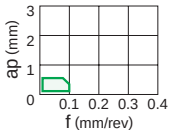
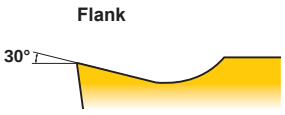
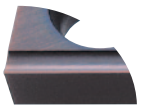
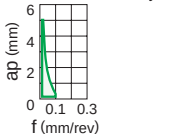
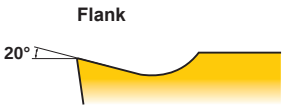
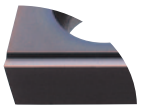
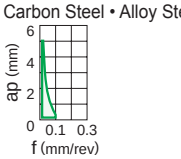
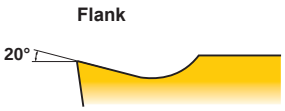
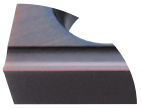
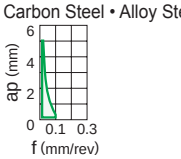
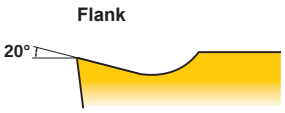
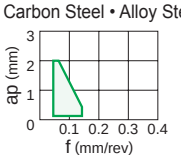
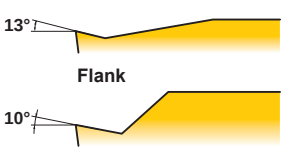
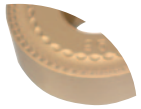
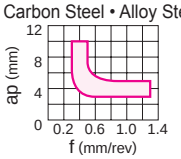
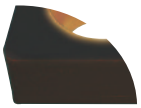
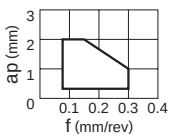
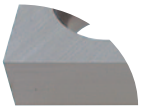
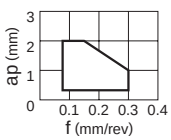
7° POSITIVE INSERTS WITH HOLE

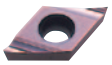
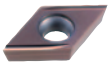
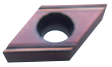
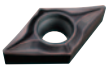
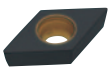
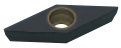
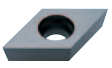
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Light Cutting	M	**SVX** 	**Light cutting of carbon steel and alloy steel** Chip control is improved by having a chip breaker geometry suitable for copying.	Carbon Steel • Alloy Steel  
		SV 	**Alternative chipbreaker for light 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  
		SW 	**Wiper insert for light cutting of carbon steel, alloy steel, mild steel and stainless steel** The wiper allows up to two times higher feed. Positive land improves sharpness.	Carbon Steel • Alloy Steel  
	G	**R/L-SS** 	**Light cutting of automatic lathe machining** A parallel chipbreaker. Excellent chip control at low feed rates.	Carbon Steel • Alloy Steel  
Medium Cutting	M	NEW **MP** 	**First recommendation for medium cutting of carbon steel and alloy 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  
		NEW **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  
		Standard 	**First recommendation 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   
		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  

Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round	Breaker Name and Cross Section
						XCMT_SVX  A129		SVX 
CCMH_SV  A098	DCMT_SV  A104			VCMT_SV  A123				SV 
CCMT_SW  A098								SW 
CCGT_R/L-SS  A099	DCGT_R/L-SS  A104							R/L-SS 
CCMT_MP NEW  A099	DCMT_MP NEW  A104	SCMT_MP NEW  A110	TCMT_MP NEW  A114	VCMT_MP NEW  A123				MP NEW 
CCMT_MM NEW  A099	DCMT_MM NEW  A104	SCMT_MM NEW  A110	TCMT_MM NEW  A114	VCMT_MM NEW  A123				MM NEW 
CCMT  A099	DCMT  A105	SCMT  A111	TCMT  A114	VCMT  A123	WCMT  A127		RCMT  A109	Standard
							RCMX  A109	
CCMH_MV  A099	DCMT_MV  A105			VCMT_MV  A123				MV 

CLASSIFICATION

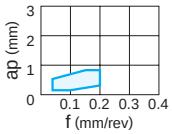
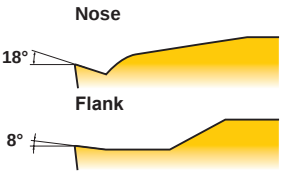
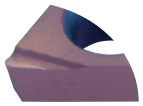
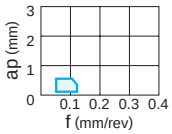
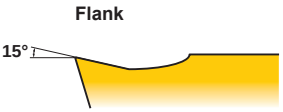
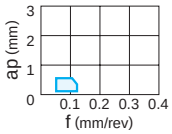
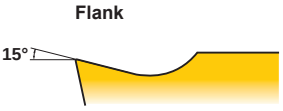
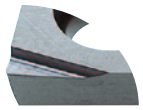
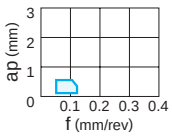
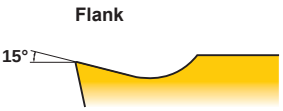
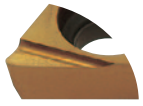
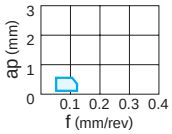
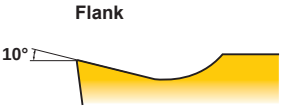
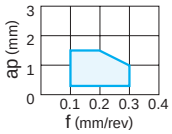
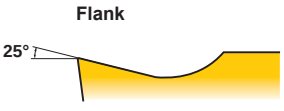
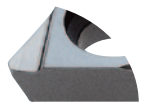
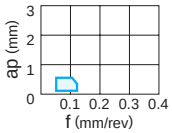
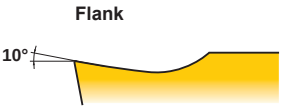
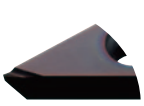
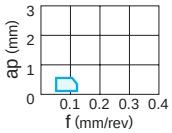
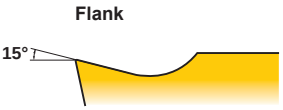
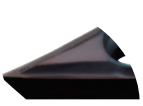
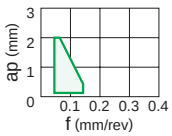
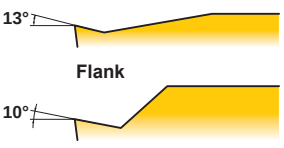
7° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M	**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  
Medium Cutting	E	**R/L-SR** 	**Medium cutting of automatic lathe machining** A wide lead chipbreaker. Insert designed for low resistance chip control.	Carbon Steel • Alloy Steel  
Medium Cutting	E	**R/L-SN** 	**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  
Medium Cutting	G	**R/L-SN** 	**Medium cutting of automatic lathe machining** A parallel chipbreaker. Excellent chip control at low to medium feed rates.	Carbon Steel • Alloy Steel  
Medium Cutting	E	**R/LW-SN** 	**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  
Medium Cutting	G	**SMG** 	**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  
Heavy Cutting	M	**RR** 	**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  
For Cast Iron	M	**Flat Top** 	**Heavy cutting of cast iron** Flat top. Most effective for unstable machining due to its high edge strength.	Cast Iron  
For Cast Iron	G	**Flat Top** 	**For cast iron** Flat top. Most effective for unstable machining due to its high edge strength. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	Cast Iron  

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CCMT_MW  A100							MW 
	CCET_R/L-SR  A100	DCET_R/L-SR  A105						R/L-SR 
	CCET_R/L-SN  A100	DCET_R/L-SN  A105						R/L-SN(E) 
	CCGT_R/L-SN  A101	DCGT_R/L-SN  A106						R/L-SN(G) 
	CCET_R/LW-SN  A101	DCET_R/LW-SN  A106						R/LW-SN 
	CCGT_SMG  A101	DCGT_SMG  A106						SMG 
							RCMX_RR  A109	RR 
	CCMW  A101	DCMW  A106	SCMW  A111	TCMW  A114	VCMW  A123			Flat Top(M) 
	CCGW  A101	DCGW  A107						Flat Top(G) 

CLASSIFICATION

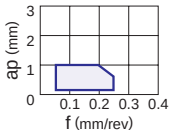
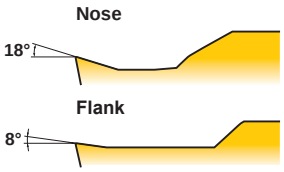
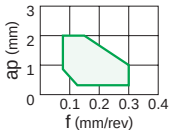
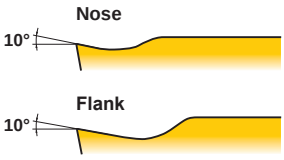
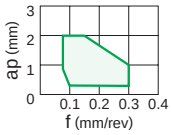
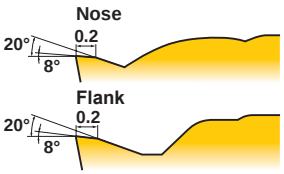
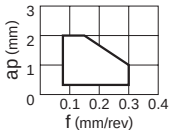
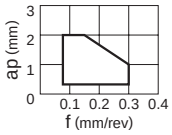
11° POSITIVE INSERTS WITH HOLE

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  
	G	**R/L-FS** 	**Alternative 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  
	M	**R/L-F** 	**Finishing** Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel  
	G	**R/L-F** 	**Finishing** Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel  
		R/L 	**Finishing** Lead chipbreaker controls chip flow. Good chip control for low to medium feed rates.	Carbon Steel • Alloy Steel  
		Standard 	**Finishing** Lead chipbreaker controls chip flow. Good chip control for low to medium feed rates.	Aluminium Alloy  
	M	**L** 	**Finishing** Lead chipbreaker controls chip flow. Good chip control for low to medium feed rates.	Carbon Steel • Alloy Steel  
	E	**SRF** 	**Finishing** Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel  
	G	**SMG** 	**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  

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CPMH_FV  A102			TPMH_FV  A116				FV 
				TPGH_R/L-FS  A116		WPGT_R/L-FS  A128		R/L-FS 
	CPMH_R/L-F  A102							R/L-F(M) 
	CPGT_R/L-F  A102							R/L-F(G) 
				TPGX_R/L  A117				R/L 
	CPGT  A102							Standard 
				TPMX_L  A117				L 
					VPET_SRF  A125			SRF 
					VPGT_SMG  A125			SMG 

CLASSIFICATION

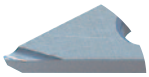
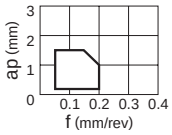
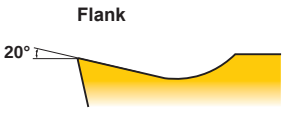
11° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
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  
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  
		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  
For Cast Iron	M	**Flat Top** 	**Heavy cutting of cast iron** Flat top. Most effective for unstable machining due to its high edge strength.	Cast Iron  
	G	**Flat Top** 	**For cast iron** Flat top. Most effective for unstable machining due to its high edge strength. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	Cast Iron  

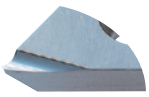
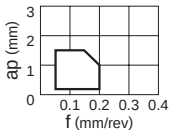
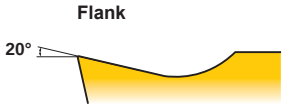
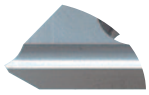
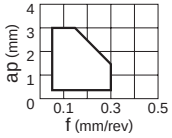
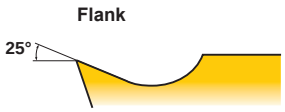
	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
	CPMH_SV  A102			TPMH_SV  A117				SV 
	CPMX  A102		SPMT  A112	TPMX  A117				Standard 
	CPMH_MV  A102			TPMH_MV  A117		WPMT_MV  A128		MV 
			SPMW  A112					Flat Top(M) 
			SPGX  A112	TPGX  A118				Flat Top(G) 

CLASSIFICATION

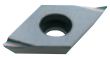
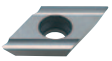
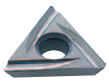
15° POSITIVE INSERTS WITH HOLE

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

20° POSITIVE INSERTS WITH HOLE

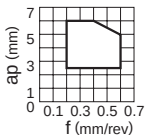
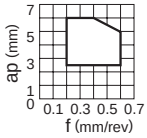
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Aluminium Alloy	G	R/L-F 	**For aluminium alloy cutting** Lead chipbreaker. Sharp cutting edge gives a good surface finish.	Aluminium Alloy  
		R/L 	**For aluminium alloy cutting** A parallel chipbreaker. Sharp cutting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

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
					VDGX_R/L  A124			R/L 

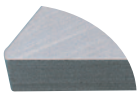
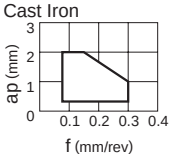
	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Round	Breaker Name and Cross Section
		DEGX_R/L-F  A108						R/L-F 
		DEGX_R/L  A108		TEGX_R/L  A115				R/L 

CLASSIFICATION

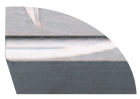
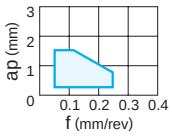
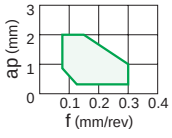
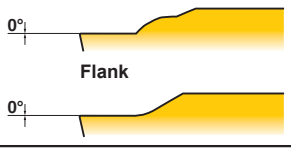
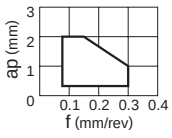
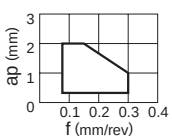
NEGATIVE INSERTS WITHOUT HOLE

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

7° POSITIVE INSERTS WITHOUT HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Cast Iron	G	Flat Top 	**For cast iron** Double sided flat insert. 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  

11° POSITIVE INSERTS WITHOUT HOLE

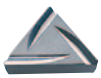
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	G	R/L 	**Finishing** A parallel chipbreaker. Good chip control for low to medium feed rates.	Carbon Steel • Alloy Steel  
Light to Medium Cutting	M	Standard 	**Light to medium cutting of carbon steel, alloy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

SPECIAL PURPOSE INSERTS

Application	Tolerance	Tool Holder Type	Inserts
Special	G	TL Type	RTG  A130

	Square 90°	Triangular 60°	Breaker Name and Cross Section
	SNMN  A095	TNMN  A096	Flat Top(M) 
	SNGN  A095	TNGN  A096	Flat Top(G) 

	Square 90°	Triangular 60°	Breaker Name and Cross Section
		TCGN  A132	Flat Top 

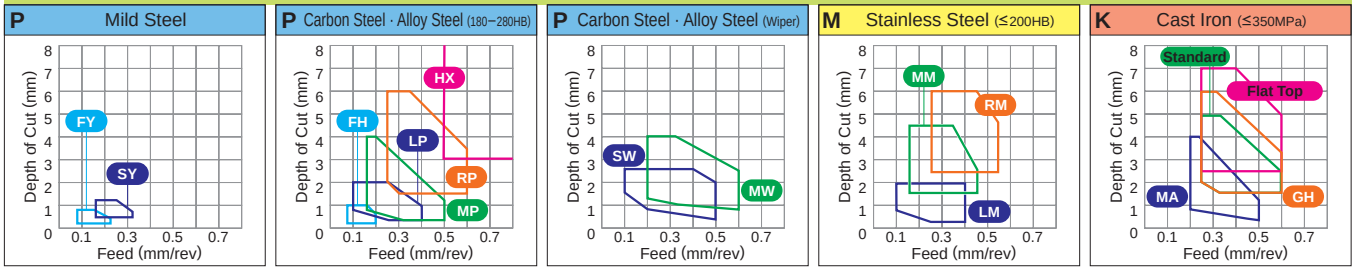
	Square 90°	Triangular 60°	Breaker Name and Cross Section
	SPGR_R  A131	TPGR_R/L  A133	R/L 
	SPMR  A131	TPMR  A133	Standard 
	SPMN  A131	TPMN  A133	Flat Top(M) 
	SPGN  A131	TPGN  A133	Flat Top(G) 

80° CN TYPE INSERTS WITH HOLE

CNMG 12 04 02- FH
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

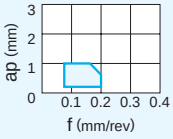
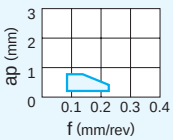
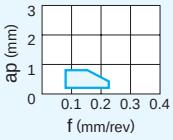
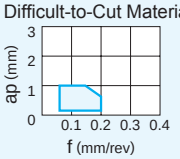
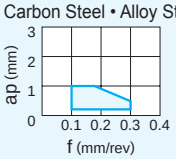
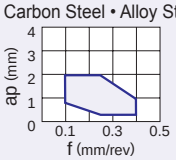
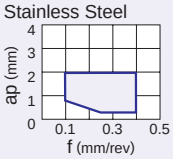
CHIP CONTROL RANGE FOR WORK MATERIALS

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



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

Work Material			Coated																Cermet		Coated Cermet			Carbide					Applicable Holder Page
	P	Steel	●	◕	✣	✣	✣	✣										✣	✣	●	◕	◕	●	●	✣					
	M	Stainless Steel							●	◕	✣	●	✣					◕	✣	✣	●			●	●	✣					
	K	Cast Iron												●	◕			◕	✣		●		◕	●	●	✣	●	◕			
	N	Non-ferrous Metal																									◕			
	S	Heat-resistant Alloy, Titanium Alloy									●					●	◕	✣				◕	◕	✣						

Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	UE6105	UE6110	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
FH	Carbon Steel • Alloy Steel	**CNMG120402-FH**	0.2		●		▲							▲								●	●	●							C008
		**120404-FH**	0.4		●		▲															●		●	●						C009
		120408-FH	0.8		●																	●		●	●						E013
		120412-FH	1.2																			●			●						E036
Finish Cutting																															E041
																															H006
																															—008
FS	Mild Steel	**CNMG120404-FS**	0.4				▲															●									C008
		**120408-FS**	0.8																			●									C009
																															E013
																															E036
Finish Cutting																															E041
																															H006
																															—008
FY	Mild Steel	**CNMG120404-FY**	0.4				▲																●	●		●						C008
		**120408-FY**	0.8				▲																	●		●						C009
																															E013
																															E036
Finish Cutting																															E041
																															H006
																															—008
FJ	Difficult-to-Cut Materials	**CNGG1204V5-FJ**	0.05																●											●	C008
		**120401-FJ**	0.1																●											●	C009
		120402-FJ	0.2																●											●	E013
		120404-FJ	0.4																●	●										●	E036
Finish Cutting		**120408-FJ**	0.8																●	●										●	E041
																															H006
																															—008
PK	Carbon Steel • Alloy Steel	**CNGG120404-PK**	0.4																			●									C008
																															C009
																															E013
																															E036
Finish Cutting																															E041
																															H006
																															—008
LP NEW	Carbon Steel • Alloy Steel	**CNMG120404-LP**	0.4	●	●	●																		●							C008
		**120408-LP**	0.8	●	●	●																		●							C009
		120412-LP	1.2	●	●	●																									E013
																															E036
Light Cutting																															E041
																															H006
																															—008
LM NEW	Stainless Steel	**CNMG120404-LM**	0.4							●	●	●																			C008
		**120408-LM**	0.8							●	●	●																			C009
		120412-LM	1.2							●	●	●																			E013
																															E036
Light Cutting																															E041
																															H006
																															—008

● : 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			Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated														Cermet		Coated Cermet			Carbide				Applicable Holder Page
							UE6105	UE6110	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
P	Steel		SH	Carbon Steel • Alloy Steel	CNMG09T304-SH	0.4	●									●																	C008
M	Stainless Steel		Light Cutting	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5	09T308-SH	0.8	●																										C009 E013
K	Cast Iron				120404-SH	0.4	●	●		▲						●			●						●	●		●					C036 E041
N	Non-ferrous Metal				120408-SH	0.8	●	●		▲						●			●						●	●		●					H006
S	Heat-resistant Alloy, Titanium Alloy				120412-SH	1.2	●	●		▲																							—008
			SA	Carbon Steel • Alloy Steel	CNMG120404-SA	0.4	●	●		▲															●								C008
			Light Cutting	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5	120408-SA	0.8	●	●		▲															●								C009 E013
					120412-SA	1.2	●	●		▲															●								C036 E041
																																	H006 —008
			* SW	Carbon Steel • Alloy Steel	CNMG120404-SW	0.4	●	●								▲			●						●	●	●						C008
			Light Cutting (Wiper)	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5	120408-SW	0.8	●	●								▲			●						●	●	●						C009 E013
					120412-SW	1.2	●	●								▲									●	●	●						C036 E041
																																	H006 —008
			SY	Mild Steel	CNMG120404-SY	0.4				▲																	●	●					C008
			Light Cutting	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5	120408-SY	0.8				▲																	●	●					C009 E013
																																	C036 E041 H006 —008
			C	Carbon Steel • Alloy Steel	CNMG120404-C	0.4																			▲	▲							C008
			Light Cutting	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5	120408-C	0.8																			▲	▲							C009 E013
																																	C036 E041 H006 —008
			MJ	Difficult-to-Cut Materials	CNMG120404-MJ	0.4											●			●	●										●	C008
			Light Cutting	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5	120408-MJ	0.8											●			●	●										●	C009 E013
					120412-MJ	1.2											●			●	●											C036 E041
					120416-MJ	1.6											●			●	●											H006 —008
			MJ	Difficult-to-Cut Materials	CNGG120404-MJ	0.4															●	●									●	●	C008
			Light Cutting	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5	120408-MJ	0.8															●	●									●	●	C009 E013
																																	C036 E041 H006 —008
			MP	Carbon Steel • Alloy Steel	CNMG120404-MP	0.4	●	●	●	▲									●							●							C008
			Medium Cutting	ap (mm) 0 1 2 3 4 5 / f (mm/rev) 0.1 0.3 0.5	120408-MP	0.8	●	●	●	▲									●							●							C009 E013
					120412-MP	1.2	●	●	●	▲									●							●							C036 E041
					120416-MP	1.6	●	●	●	▲									●														H006 —008
					160608-MP	0.8	●	●	●	▲									●														
					160612-MP	1.2	●	●	●	▲									●														
					160616-MP	1.6	●	●	●	▲									●														

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

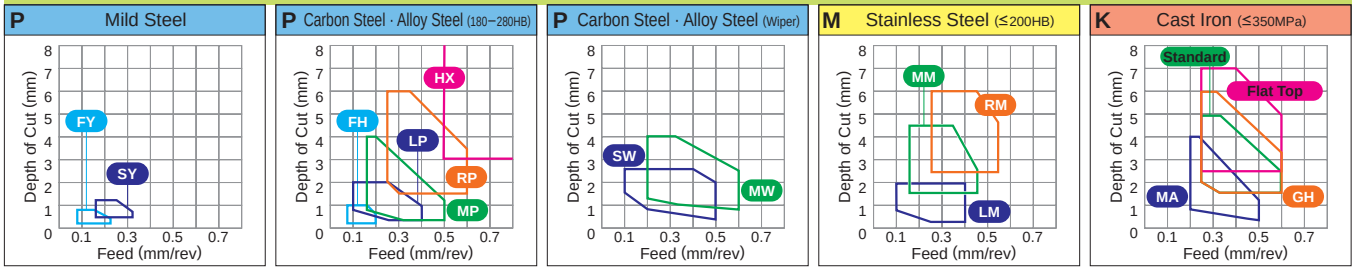
CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° CN TYPE INSERTS WITH HOLE

CNMG 12 04 08- MM
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

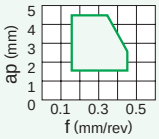
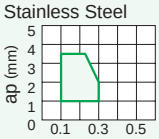
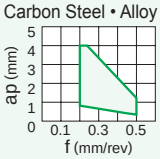
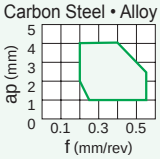
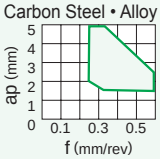
CHIP CONTROL RANGE FOR WORK MATERIALS

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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
MM (NEW)	Stainless Steel	**CNMG120408-MM**	0.8							●	●	●																				C008 C009 E013 E036 E041 H006 –008
		**120412-MM**	1.2							●	●	●																				
		120416-MM	1.6							●	●	●																				
		160608-MM	0.8							●	●	●																				
		160612-MM	1.2							●	●	●																				
		160616-MM	1.6							●	●	●																				
		190608-MM	0.8							●	●	●																				
		190612-MM	1.2							●	●	●																				
Medium Cutting		**190616-MM**	1.6							●	●	●																				
GM (NEW)	Stainless Steel	**CNMG120404-GM**	0.4							●	●	●																				C008 C009 E013 E036 E041 H006 –008
		**120408-GM**	0.8							●	●	●																				
		120412-GM	1.2							●	●	●																				
Medium Cutting																																
MA	Carbon Steel • Alloy Steel	**CNMG120404-MA**	0.4	●	●	●	▲			●	●	▲	●			●	●			●		●										C008 C009 E013 E036 E041 H006 –008
		**120408-MA**	0.8	●	●	●	▲	●		●	●	▲	●			●	●			●		●										
		120412-MA	1.2	●	●	●	▲	●		●	●	▲	●			●	●			●		●										
		120416-MA	1.6	●	●		▲					▲	●			●																
		160608-MA	0.8	●	●		▲	●					●			●																
		160612-MA	1.2	●	●		▲	●				▲	●			●																
		160616-MA	1.6	●	●								●			●																
		190612-MA	1.2	●	●		▲	●				▲	●			●	●															
Medium Cutting		**190616-MA**	1.6		●		▲						●			●																
MH	Carbon Steel • Alloy Steel	**CNMG120404-MH**	0.4	●	●		▲	●					▲																			C008 C009 E013 E036 E041 H006 –008
		**120408-MH**	0.8	●	●		▲	●					▲			●																
		120412-MH	1.2	●	●		▲	●					▲			●																
		120416-MH	1.6	●	●		▲									●																
		160608-MH	0.8	●	●											●																
		160612-MH	1.2	●	●		▲						▲			●																
		160616-MH	1.6	●	●											●																
		190612-MH	1.2	●	●		▲	●					▲			●																
Medium Cutting		**190616-MH**	1.6	●	●		▲																									
Standard	Carbon Steel • Alloy Steel	**CNMG090308**	0.8		●																											C008 C009 E013 E036 E041 H006 –008
		**09T304**	0.4		●																	●										
		09T308	0.8		●																	●										
		120404	0.4	●	●	●	▲	●								●	●					●	●	●			●		●			
		120408	0.8	●	●	●	▲	●								●	●			●		●		●			●		●			
Medium Cutting																																

● : 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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3335	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
Standard	Carbon Steel • Alloy Steel	CNMG120412	1.2	●	●	●	▲	●								●	●			●		●										C008 C009 E013 E036 E041 H006 —008
		120416	1.6	●	●											●	●															
		160608	0.8	●	●	●	▲																									
		160612	1.2	●	●	●	▲									●	●															
		160616	1.6	●	●	●										●	●															
		190608	0.8	●	●	●	▲	●																								
		190612	1.2	●	●	●	▲	●								●	●															
		190616	1.6	●	●	●	▲	●									●															
Medium Cutting																																
* **MW**	Carbon Steel • Alloy Steel	CNMG120408-MW	0.8	●	●	●	▲						●			●	●															
		120412-MW	1.2	●	●	●	▲						●			●	●															
Medium Cutting (Wiper)																																
MS	Difficult-to-Cut Materials	CNMG090304-MS	0.4											●																		
		090308-MS	0.8		●									●																		
		09T304-MS	0.4											●														●				
		09T308-MS	0.8		●									●																		
		120404-MS	0.4		●		▲						▲	●	●			●	●	●	●									●	●	
		120408-MS	0.8		●		▲						▲	●	●			●	●	●	●						●			●	●	
		120412-MS	1.2		●								▲	●	●			●	●	●										●		
		160608-MS	0.8											●																		
		160612-MS	1.2											●																		
		190612-MS	1.2											●																		
		190616-MS	1.6											●																		
Medium Cutting																																
RP (NEW)	Carbon Steel • Alloy Steel	CNMG120408-RP	0.8	●	●	●																										
		120412-RP	1.2	●	●	●																										
		120416-RP	1.6	●	●	●																										
		160612-RP	1.2	●	●	●																										
		160616-RP	1.6	●	●	●																										
		190612-RP	1.2	●	●	●																										
		190616-RP	1.6	●	●	●																										
Rough Cutting																																
RM (NEW)	Stainless Steel	CNMG120408-RM	0.8							●	●	●																				
		120412-RM	1.2							●	●	●																				
		120416-RM	1.6							●	●	●																				
		160612-RM	1.2							●	●	●																				
		160616-RM	1.6							●	●	●																				
		190612-RM	1.2							●	●	●																				
		190616-RM	1.6							●	●	●																				
Rough Cutting																																
GH	Cast Iron	CNMG120408-GH	0.8	●	●		▲						▲	●		●	●															
		120412-GH	1.2	●	●		▲						▲	●		●	●															
		120416-GH	1.6	●	●											●	●															
		160612-GH	1.2	●	●		▲						▲	●		●	●															
		160616-GH	1.6	●	●											●	●															
		190612-GH	1.2	●	●		▲							●		●	●															
		190616-GH	1.6	●	●		▲						▲	●		●	●															
Rough Cutting																																

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

CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

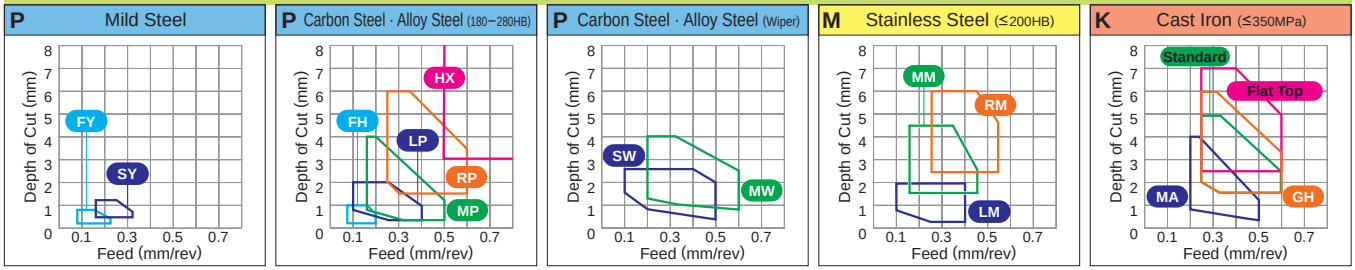
TURNING INSERTS [NEGATIVE]

80° CN TYPE INSERTS WITH HOLE

CNMG 12 04 08- GJ
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

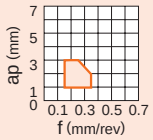
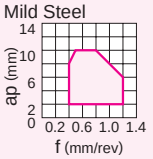
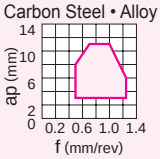
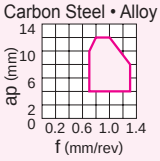
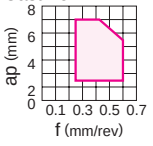
CHIP CONTROL RANGE FOR WORK MATERIALS

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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
GJ  Rough Cutting	Difficult-to-Cut Materials 	CNMG120408-GJ	0.8												●				●	●											●		C008 C009 E013 E036 E041 H006 —008
		120412-GJ	1.2												●				●	●											●		
		120416-GJ	1.6												●				●	●											●		
		160612-GJ	1.2												●				●												●		
		190612-GJ	1.2												●				●												●		
		190616-GJ	1.6												●				●												●		
HZ  Heavy Cutting	Mild Steel 	CNMM120408-HZ	0.8		●	▲																										C008 C009 E013 E036 E041 H006 —008
		120412-HZ	1.2		●	▲																										
		160612-HZ	1.2		●	▲																										
		160616-HZ	1.6		●	▲																										
		190612-HZ	1.2		●	▲			●																							
		190616-HZ	1.6		●	▲			●																							
HX  Heavy Cutting	Carbon Steel • Alloy Steel 	CNMM190612-HX	1.2		●	▲			●																							C008 C009
		190616-HX	1.6		●	▲			●																							
		190624-HX	2.4		●	▲			●																							
		250924-HX	2.4		●	▲			●																							
HV  Heavy Cutting	Carbon Steel • Alloy Steel 	CNMM190616-HV	1.6		●	▲			●																							C008 C009
		190624-HV	2.4		●	▲			●																							
		250924-HV	2.4		●	▲			●																							
Flat Top 	Cast Iron 	CNMA120404	0.4													●	●											●	●			C008 C009 E013 E036 E041 H006 —008
		120408	0.8													●	●											●	●			
		120412	1.2													●	●															
		120416	1.6													●	●															
		160612	1.2													●	●															
		160616	1.6													●	●															
		190612	1.2													●	●															
		190616	1.6													●	●															

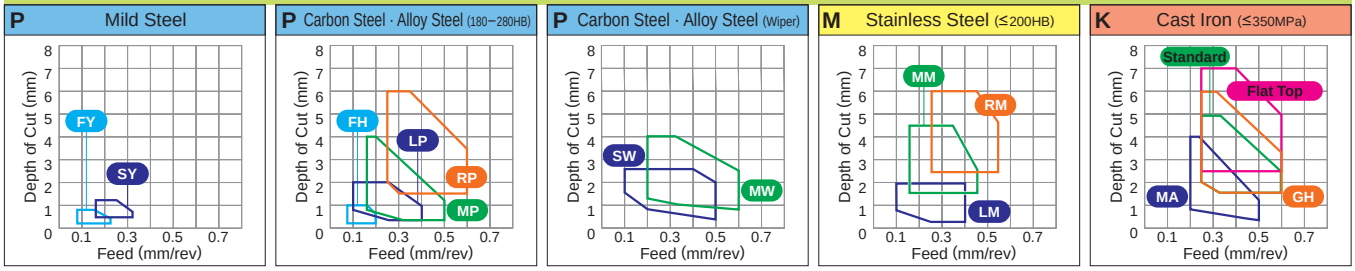
● : Inventory maintained in Japan.
▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

55° DN TYPE INSERTS WITH HOLE

DNMG 15 04 02- FH
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			Corner R	Coated																Cermet		Coated Cermet			Carbide					Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
P	Steel			●	◔	✣	✣	✣	✣											✣	✣	●	◔	◔	●	●	✣					
M	Stainless Steel									○	◔	✣	○	✣					◔	✣	✣	○			○	○	✣					
K	Cast Iron															●	◔		◔	✣		●			●	●	✣	●	◔			
N	Non-ferrous Metal																												◔			
S	Heat-resistant Alloy, Titanium Alloy													●				●	◔	✣									◔	◔	✣	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number																														
FH	Carbon Steel • Alloy Steel	**DNMG150402-FH**	0.2	●			▲						▲									●	●	●								C010 C011 E013 E036 –038 E040 E041 H009 –011
		150404-FH	0.4	●									▲									●	●	●	●							
		150408-FH	0.8	●																		●		●	●							
		150602-FH	0.2	●			▲						▲									●	●	●								
		150604-FH	0.4	●			▲																	●								
		150608-FH	0.8	●			▲																	●								
FS	Mild Steel	**DNMG150404-FS**	0.4																			●										C010 C011 E013 E036 –038 E040 E041 H009 –011
		150408-FS	0.8				▲															●										
FY	Mild Steel	**DNMG150404-FY**	0.4				▲															●		●		●						C010 C011 E013 E036 –038 E040 E041 H009 –011
		150408-FY	0.8				▲																	●		●						
		150604-FY	0.4																					●								
		150608-FY	0.8				▲																	●								
FJ	Difficult-to-Cut Materials	**DNGG150404-FJ**	0.4																●	●										●		C010 C011 E013 E036 –038 E040 E041 H009 –011
		150408-FJ	0.8																●	●										●		
PK	Carbon Steel • Alloy Steel	**DNGG150404-PK**	0.4																			●										C010 C011 E013 E036 –038 E040 E041 H009 –011
LP (NEW)	Carbon Steel • Alloy Steel	**DNMG110404-LP**	0.4	●	●	●																		●								C010 C011 E013 E036 –038 E040 E041 H009 –011
		110408-LP	0.8	●	●	●																		●								
		150404-LP	0.4	●	●	●																		●								
		150408-LP	0.8	●	●	●																		●								
		150412-LP	1.2	●	●	●																		●								
		150604-LP	0.4	●	●	●																		●								
		150608-LP	0.8	●	●	●																		●								
		150612-LP	1.2	●	●	●																										

Light Cutting

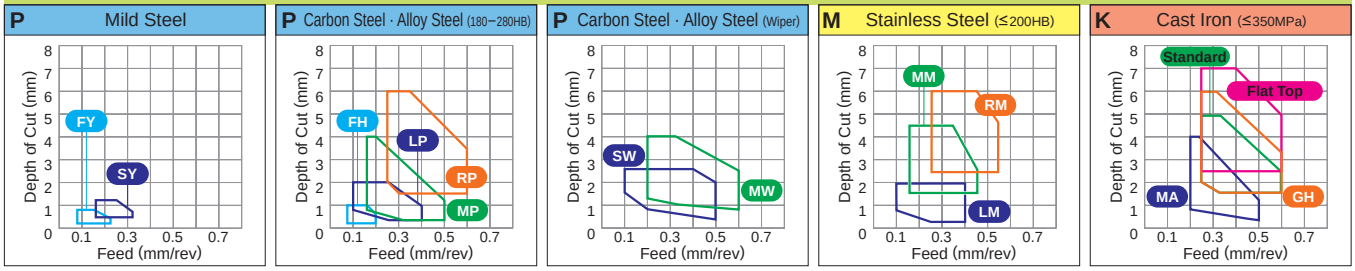
CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

55° DN TYPE INSERTS WITH HOLE

DNMG 11 04 04- LM
Size Thickness Corner Radius Chip Breaker
* Please refer to page A002.

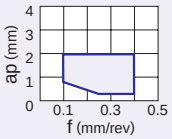
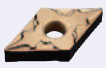
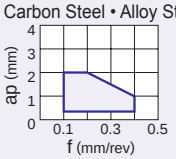
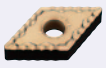
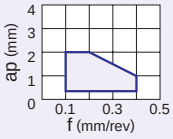
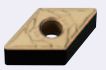
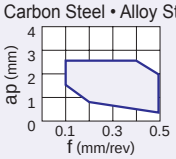
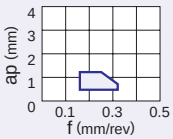
CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting ····· Light Cutting ····· Medium Cutting ····· 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 / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
LM (NEW)  Stainless Steel  Light Cutting	DNMG110404-LM	0.4							●	●	●																				C010 C011 E013 E036 –038 E040 E041 H009 –011
	110408-LM	0.8							●	●	●																				
	150404-LM	0.4							●	●	●																				
	150408-LM	0.8							●	●	●																				
	150412-LM	1.2							●	●	●																				
	150604-LM	0.4							●	●	●																				
	150608-LM	0.8							●	●	●																				
	150612-LM	1.2							●	●	●																				
SH  Carbon Steel • Alloy Steel  Light Cutting	DNMG110404-SH	0.4	●	●									●			●					●	●		●							C010 C011 E013 E036 –038 E040 E041 H009 –011
	110408-SH	0.8	●	●									●																		
	150404-SH	0.4	●	●		▲							●			●					●	●		●							
	150408-SH	0.8	●	●		▲							●			●					●	●		●							
	150412-SH	1.2	●	●		▲							●			●					●			●							
	150604-SH	0.4	●	●																											
	150608-SH	0.8	●	●												●															
	150612-SH	1.2	●	●												●															
SA  Carbon Steel • Alloy Steel  Light Cutting	DNMG150404-SA	0.4	●	●		▲															●										C010 C011 E013 E036 –038 E040 E041 H009 –011
	150408-SA	0.8	●	●		▲															●										
	150412-SA	1.2	●	●		▲															●										
	150604-SA	0.4	●	●		▲															●										
	150608-SA	0.8	●	●		▲															●										
	150612-SA	1.2	●	●		▲															●										
* **SW**  Carbon Steel • Alloy Steel  Light Cutting (Wiper)	DNMX110404-SW	0.4	●																												C010 E013 E036 E038 E040 H009 H011
	110408-SW	0.8	●																												
	150404-SW	0.4	●	●								▲									●	●		●							
	150408-SW	0.8	●	●								▲									●	●		●							
	150412-SW	1.2	●	●								▲									●	●									
	150604-SW	0.4	●	●								▲									●	●		●							
	150608-SW	0.8	●	●								▲									●	●		●							
	150612-SW	1.2	●	●								▲									●	●									
SY  Mild Steel  Light Cutting	DNMG150404-SY	0.4				▲															●	●									C010 C011 E013 E036 –038 E040 E041 H009 –011
	150408-SY	0.8				▲																		●	●						
	150604-SY	0.4																						●							
	150608-SY	0.8				▲																		●							

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

● : 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			Corner R	Coated																Cermet		Coated Cermet			Carbide				Applicable Holder Page
				UE6105	UE6110	MC6025	UE6020	UE6035	UH6400	MC7015	MC7025	MP7035	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
P	Steel	Shape / Chip Control Range ap : Depth of Cut f : Feed	Re (mm)																											
M	Stainless Steel																													
K	Cast Iron																													
N	Non-ferrous Metal																													
S	Heat-resistant Alloy, Titanium Alloy																													
C	Carbon Steel • Alloy Steel	Order Number																												
Light Cutting		DNMG150404-C	0.4																			▲	▲								C010 C011 E013 E036 –038 E040 E041 H009 –011
		150408-C	0.8																			▲	▲							
		150604-C	0.4																			▲	▲							
		150608-C	0.8																			▲	▲							
MJ	Difficult-to-Cut Materials	DNMG150404-MJ	0.4												●			●	●										●	
Light Cutting		150408-MJ	0.8												●			●	●										●	
		150412-MJ	1.2												●			●	●											C010 C011 E013 E036 –038 E040 E041 H009 –011
		150416-MJ	1.6												●			●	●											
		150604-MJ	0.4												●			●	●											
		150608-MJ	0.8												●			●	●											
		150612-MJ	1.2												●			●	●											
		150616-MJ	1.6												●			●	●											
MJ	Difficult-to-Cut Materials	DNGM150404-MJ	0.4																●	●									●	●	
Light Cutting		150408-MJ	0.8																●	●									●	●	C010 C011 E013 E036 –038 E040 E041 H009 –011
MP	Carbon Steel • Alloy Steel	DNMG150404-MP	0.4	●	●	●	▲										●							●							
Medium Cutting		150408-MP	0.8	●	●	●	▲										●							●							
		150412-MP	1.2	●	●	●	▲										●							●							C010 C011 E013 E036 –038 E040 E041 H009 –011
		150416-MP	1.6	●	●	●	▲										●														
		150604-MP	0.4	●	●	●	▲										●							●							
		150608-MP	0.8	●	●	●	▲										●							●							
		150612-MP	1.2	●	●	●	▲										●							●							
		150616-MP	1.6	●	●	●	▲										●														
MM NEW	Stainless Steel	DNMG150408-MM	0.8							●	●	●																			
Medium Cutting		150412-MM	1.2							●	●	●																			C010 C011 E013 E036 –038 E040 E041 H009 –011
		150608-MM	0.8							●	●	●																			
		150612-MM	1.2							●	●	●																			
GM NEW	Stainless Steel	DNMG150404-GM	0.4							●	●	●																			
Medium Cutting		150408-GM	0.8							●	●	●																			C010 C011 E013 E036 –038 E040 E041 H009 –011
		150412-GM	1.2							●	●	●																			
		150604-GM	0.4							●	●	●																			
		150608-GM	0.8							●	●	●																			
		150612-GM	1.2							●	●	●																			
MA	Carbon Steel • Alloy Steel	DNMG110404-MA	0.4	●	●																										
Medium Cutting		110408-MA	0.8	●	●																										
		110412-MA	1.2	●	●																										
		150404-MA	0.4	●	●	●	▲				●	●	▲	●		●	●			●		●									C010 C011 E013 E036 –038 E040 E041 H009 –011
		150408-MA	0.8	●	●	●	▲	●			●	●	▲	●		●	●			●		●									
		150412-MA	1.2	●	●	●	▲	●			●	●		●		●				●		●									
		150604-MA	0.4	●	●	●	▲				●	●	▲	●						●		●									
		150608-MA	0.8	●	●	●	▲	●			●	●	▲	●		●	●			●		●									
		150612-MA	1.2	●	●	●	▲				●	●	▲	●		●	●			●		●									
		150616-MA	1.6		●																										

CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

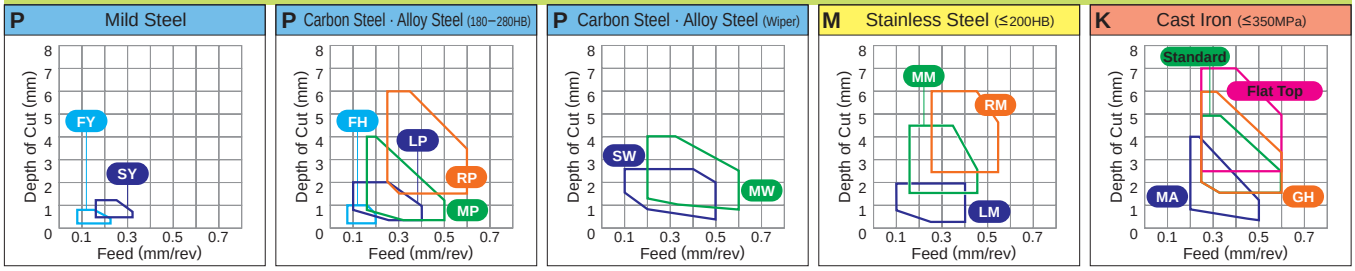
TURNING INSERTS [NEGATIVE]

55° DN TYPE INSERTS WITH HOLE

DNMG 15 04 04- MH
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			Corner R	Coated																Cermet		Coated Cermet		Carbide					Applicable Holder Page
				UE6105	UE6110	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Re (mm)																											
MH	Carbon Steel • Alloy Steel	DNMG150404-MH	0.4	●	●		▲																							C010 C011 E013 E036 –038 E040 E041 H009 –011
		150408-MH	0.8	●	●		▲	●					▲			●														
		150412-MH	1.2	●	●		▲						▲			●														
		150604-MH	0.4	●	●											●														
		150608-MH	0.8	●	●		▲						▲			●														
		150612-MH	1.2	●	●		▲									●														
Medium Cutting																														
Standard	Carbon Steel • Alloy Steel	DNMG110408	0.8		●																									
		150404	0.4	●	●	●	▲									●	●					●	●	●				●		
		150408	0.8	●	●	●	▲									●	●			●		●	●	●				●		C010 C011 E013 E036 –038 E040 E041 H009 –011
		150412	1.2	●	●	●	▲									●	●			●		●								
		150416	1.6		●																									
		150604	0.4	●	●		▲									●	●					●		●						
		150608	0.8	●	●	●	▲									●	●			●		●		●						
		150612	1.2	●	●	●	▲									●	●			●										
Medium Cutting		150616	1.6		●																									
★ MW	Carbon Steel • Alloy Steel	DNMX150408-MW	0.8	●	●											●	●													C010 E036 E038 E040 H009 H011
		150412-MW	1.2	●	●											●	●													
		150608-MW	0.8	●	●								▲			●	●													
		150612-MW	1.2	●	●																									
Medium Cutting (Wiper)																														
MS	Difficult-to-Cut Materials	DNMG110408-MS	0.8		●									●																
		150404-MS	0.4		●		▲						▲	●	●			●	●	●										C010 C011 E013 E036 –038 E040 E041 H009 –011
		150408-MS	0.8		●								▲	●	●			●	●	●	●								●	
		150412-MS	1.2		●									●	●			●	●											
		150604-MS	0.4		●								▲	●	●			●	●		●									
		150608-MS	0.8		●								▲	●	●			●	●											
Medium Cutting		150612-MS	1.2		●										●			●	●											
R/L	Carbon Steel • Alloy Steel	DNGG150404R	0.4																			●	●				●		●	
		150404L	0.4																			●	●				●		●	
		150408R	0.8																			●	●				●			C010 C011 E013 E036 –038 E040 E041 H009 –011
		150408L	0.8																			●	●							
		150604R	0.4																			●					●			
		150604L	0.4																			●								
		150608R	0.8																			●								
Medium Cutting		150608L	0.8																			●								

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

● : 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			Shape / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 NEW	MC6025 NEW	UE6020	UE6035	UH6400	MC7015 NEW	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 NEW	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
	P	Steel				●	◕	✣	✣	✣	✣	○	◕	✣	○	✣		●	◕		◕	✣	✣	●	◕		○	○	●	✣					
	M	Stainless Steel															●			◕	✣	✣	✣	○			○	○	✣					
	K	Cast Iron																●	◕		◕	✣		●			●	●	✣	●	◕			
	N	Non-ferrous Metal																												◕			
	S	Heat-resistant Alloy, Titanium Alloy														●			◕	◕	✣								◕	◕	✣		
RP NEW		Carbon Steel • Alloy Steel	ap (mm) 7 5 3 1 0 / 0.1 0.3 0.5 0.7 / f (mm/rev)	DNMG150408-RP	0.8	●	●	●																										C010 C011 E013 E036 –038 E040 E041 H009 –011
				150412-RP	1.2	●	●	●																									
				150416-RP	1.6	●	●	●																									
				150608-RP	0.8	●	●	●																									
				150612-RP	1.2	●	●	●																									
		Rough Cutting		150616-RP	1.6	●	●	●																									
RM NEW		Stainless Steel	ap (mm) 7 5 3 1 0 / 0.1 0.3 0.5 0.7 / f (mm/rev)	DNMG150408-RM	0.8							●	●	●																			C010 C011 E013 E036 –038 E040 E041 H009 –011
				150412-RM	1.2							●	●	●																			
				150416-RM	1.6							●	●	●																			
				150608-RM	0.8							●	●	●																			
				150612-RM	1.2							●	●	●																			
		Rough Cutting		150616-RM	1.6							●	●	●																			
GH		Cast Iron	ap (mm) 7 5 3 1 0 / 0.1 0.3 0.5 0.7 / f (mm/rev)	DNMG150408-GH	0.8	●	●	▲								●		●	●															C010 C011 E013 E036 –038 E040 E041 H009 –011
				150412-GH	1.2	●	●	▲							▲	●		●	●														
				150608-GH	0.8	●	●	▲								●		●	●														
				150612-GH	1.2	●	●	▲								●		●	●														
		Rough Cutting																															
GJ		Difficult-to-Cut Materials	ap (mm) 7 5 3 1 0 / 0.1 0.3 0.5 0.7 / f (mm/rev)	DNMG150408-GJ	0.8											●				●	●											●	C010 C011 E013 E036 –038 E040 E041 H009 –011
				150412-GJ	1.2											●				●	●										●	
				150416-GJ	1.6											●				●	●										●	
				150608-GJ	0.8											●				●												
				150612-GJ	1.2											●				●												
		Rough Cutting		150616-GJ	1.6											●				●												
HZ		Mild Steel	ap (mm) 14 10 6 2 0 / 0.2 0.6 1.0 1.4 / f (mm/rev)	DNMM150408-HZ	0.8		●	▲																									C010 C011 E013 E036 –038 E040 E041 H009 –011
				150412-HZ	1.2		●	▲																									
				150608-HZ	0.8		●	▲																									
				150612-HZ	1.2		●	▲																									
		Heavy Cutting																															
Flat Top		Cast Iron	ap (mm) 8 6 4 2 0 / 0.1 0.3 0.5 0.7 / f (mm/rev)	DNMA 150404	0.4													●	●											●		C010 C011 E013 E036 –038 E040 E041 H009 –011
				150408	0.8													●	●				●						●	●		
				150412	1.2													●	●													
				150608	0.8													●	●													
				150612	1.2													●	●													
Flat Top		Cast Iron	ap (mm) 8 6 4 2 0 / 0.1 0.3 0.5 0.7 / f (mm/rev)	DNGA 150404	0.4																									●		C010 C011 E013 E036 –038 E040 E041 H009 –011
				150408	0.8																								●	●		

CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

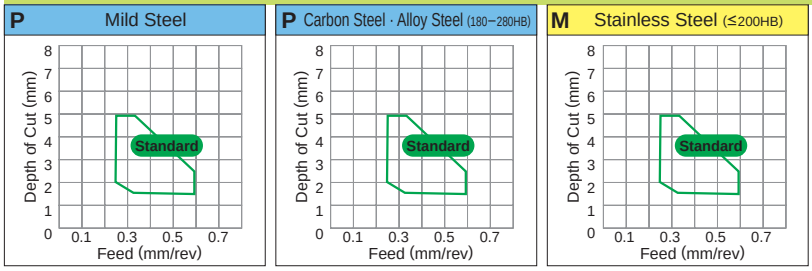
TURNING INSERTS [NEGATIVE]

RN TYPE INSERTS WITH HOLE

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

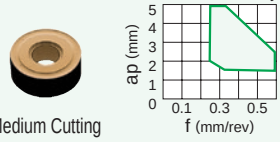
CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····



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

Work Material			Corner R	Coated															Cermet		Coated Cermet		Carbide					Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025	UE6020	UE6035	UH6400	MC7015	MC7025	MP7035	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
	P	Steel		●	◕	✣	✣	✣	✣	●	◕	✣	●	✣		●	◕		◕	✣	✣	●	◕	◕	●	●	✣					
	M	Stainless Steel		●	◕	✣				●	◕	✣	●	✣					◕	✣	✣	●			●	●	✣					
	K	Cast Iron														●	◕		◕	✣		●			●	●	✣	●	◕			
	N	Non-ferrous Metal																										◕			
	S	Heat-resistant Alloy, Titanium Alloy													●			●	◕	✣									◕	◕	✣	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number																													
Standard Medium Cutting	Carbon Steel • Alloy Steel	**RNMG120400**	—		●		▲																								—



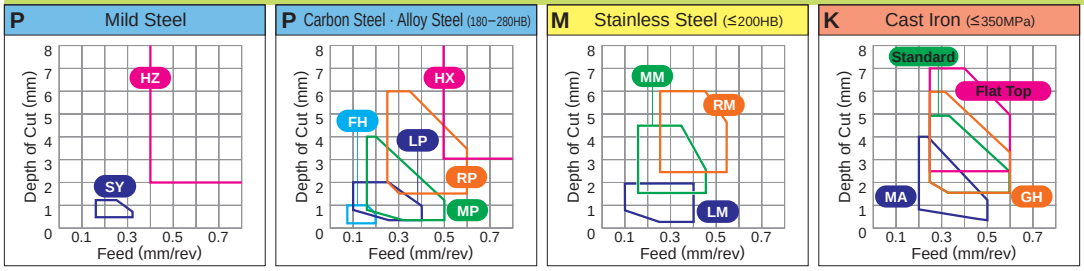
● : Inventory maintained in Japan.
▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

90° SN TYPE INSERTS WITH HOLE

SNMG 09 03 04- FH
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			Corner R	Coated																Cermet		Coated Cermet			Carbide						Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
P	Steel			●	◔	✣	✣	✣	✣											✣	✣	●	◔	◔	●	●	✣					
M	Stainless Steel									○	◔	✣	○	✣					◔	✣	✣	○			○	○	✣					
K	Cast Iron															●	◔		◔	✣		●			●	●	✣	●	◔			
N	Non-ferrous Metal																												◔			
S	Heat-resistant Alloy, Titanium Alloy														●			◔	◔	✣										◔	◔	✣
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number																														
FH	Carbon Steel • Alloy Steel	**SNMG090304-FH**	0.4																			●										
		090308-FH	0.8																			●										C012 –015 E014 E035
		120404-FH	0.4		●																	●		●								
		120408-FH	0.8		●																			●								
Finish Cutting																																
FS	Mild Steel	**SNMG120408-FS**	0.8																			●										C012 –015 E014 E035
Finish Cutting																																
LP (NEW)	Carbon Steel • Alloy Steel	**SNMG120404-LP**	0.4	●	●	●																		●								
		120408-LP	0.8	●	●	●																		●								C012 –015 E014 E035
		120412-LP	1.2	●	●	●																										
Light Cutting																																
LM (NEW)	Stainless Steel	**SNMG120404-LM**	0.4							●	●	●																				
		120408-LM	0.8							●	●	●																				C012 –015 E014 E035
Light Cutting																																
SH	Carbon Steel • Alloy Steel	**SNMG120404-SH**	0.4		●												●															
		120408-SH	0.8		●	●	▲										●					●										C012 –015 E014 E035
		120412-SH	1.2		●	▲											●															
Light Cutting																																
SA	Carbon Steel • Alloy Steel	**SNMG120404-SA**	0.4		●																	●										
		120408-SA	0.8		●	●	▲															●										C012 –015 E014 E035
		120412-SA	1.2		●	▲																●										
Light Cutting																																
SY	Mild Steel	**SNMG120408-SY**	0.8				▲																	●								C012 –015 E014 E035
Light Cutting																																

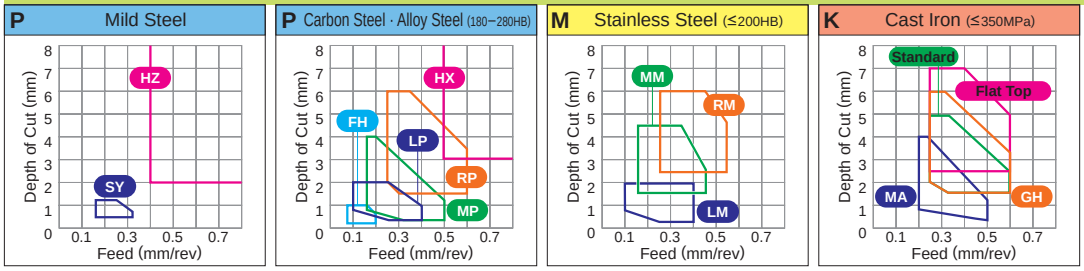
CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

90° SN TYPE INSERTS WITH HOLE

SNMG 09 03 04- C
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

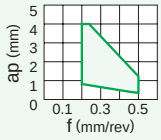
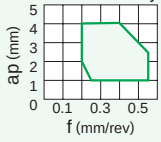
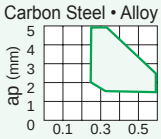
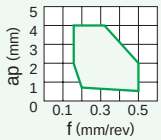
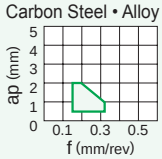
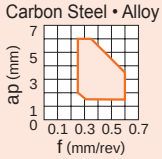
Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	

Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
C	Carbon Steel • Alloy Steel	SNMG090304-C	0.4																			▲										
		090308-C	0.8																			▲										C012
		120408-C	0.8																			▲▲										—015
		120416-C	0.8																			▲										E014
Light Cutting			1.6																													E035
R/L-1G	Carbon Steel • Alloy Steel	SNMG120404R-1G	0.4																			●										
		120404L-1G	0.4																			●										C012
		120408R-1G	0.8																			●										—015
Light Cutting																																E014
																																E035
MP	Carbon Steel • Alloy Steel	SNMG120404-MP	0.4	●		●	●		▲							●								●								
		120408-MP	0.8	●		●	●		▲							●								●								C012
		120412-MP	1.2	●		●	●		▲							●								●								—015
Medium Cutting																																E014
																																E035
MM (NEW)	Stainless Steel	SNMG120408-MM	0.8							●	●	●																				
		120412-MM	1.2							●	●	●																				C012
		120416-MM	1.6							●	●	●																				—015
		150608-MM	0.8							●	●	●																				E014
		150612-MM	1.2							●	●	●																				E035
		150616-MM	1.6							●	●	●																				
		190612-MM	1.2							●	●	●																				
Medium Cutting		190616-MM	1.6							●	●	●																				
GM (NEW)	Stainless Steel	SNMG120404-GM	0.4							●	●	●																				
		120408-GM	0.8							●	●	●																				C012
		120412-GM	1.2							●	●	●																				—015
Medium Cutting																																E014
																																E035

● : 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 / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
MA	SNMG120404-MA	0.4	●	●	●	▲				●	●		●			●			●			●									
Carbon Steel • Alloy Steel	120408-MA	0.8	●	●	●	▲	●			●	●	▲	●		●	●			●			●									
	120412-MA	1.2	●	●	●	▲				●	●	▲	●		●	●			●			●									
	120416-MA	1.6														●															C012
	150608-MA	0.8	●	●		▲	●						●																		—015
	150612-MA	1.2	●	●		▲	●						●			●															E014
	150616-MA	1.6		●																											E035
	190612-MA	1.2	●	●		▲										●															
Medium Cutting	190616-MA	1.6	●	●		▲	●						●																		
MH	SNMG120408-MH	0.8	●	●		▲						▲				●															C012
Carbon Steel • Alloy Steel	120412-MH	1.2	●	●		▲						▲				●															—015
	190612-MH	1.2	●	●		▲										●															E014
	190616-MH	1.6	●	●		▲																									E035
Medium Cutting																															
Standard	SNMG090304	0.4	●	●	●	▲															●	●	●			●					
Carbon Steel • Alloy Steel	090308	0.8	●	●	●	▲															●	●	●			●	●	●			
	120404	0.4	●	●	●	▲															●		●			●		●			
	120408	0.8	●	●	●	▲	●								●	●			●		●	●	●			●	●	●			C012
	120412	1.2	●	●	●	▲									●	●						●				●	●				—015
	120416	1.6		●	●	▲									●	●						●				●					E014
	120420	2.0			●	▲																									E035
	150612	1.2	●	●	●	▲	●								●	●															
	190612	1.2	●	●	●	▲	●								●	●										●					
Medium Cutting	190616	1.6	●	●	●	▲	●								●											●					
MS	SNMG090304-MS	0.4											●																		
Difficult-to-Cut Materials	090308-MS	0.8											●																		
	120404-MS	0.4		●								▲	●																		C012
	120408-MS	0.8		●		▲						▲	●	●				●	●	●						●			●		—015
	120412-MS	1.2		●								▲	●	●				●	●	●											E014
	120416-MS	1.6											●																		E035
Medium Cutting	190616-MS	1.6											●																		
R/L	SNGG090304R	0.4																			●	●				●		●			
Carbon Steel • Alloy Steel	090304L	0.4																			●	●				●					
	090308R	0.8																			●	●									
	090308L	0.8																			●	●									C012
	120404R	0.4																			●	●	●			●					—015
	120404L	0.4																			●	●	●			●					E014
	120408R	0.8																			●	●	●								E035
Medium Cutting	120408L	0.8																			●	●	●			●		●			
RP (NEW)	SNMG120408-RP	0.8	●	●	●																										
Carbon Steel • Alloy Steel	120412-RP	1.2	●	●	●																										
	120416-RP	1.6	●	●	●																										C012
	150612-RP	1.2	●	●	●																										—015
	150616-RP	1.6	●	●	●																										E014
	190612-RP	1.2	●	●	●																										E035
Rough Cutting	190616-RP	1.6	●	●	●																										

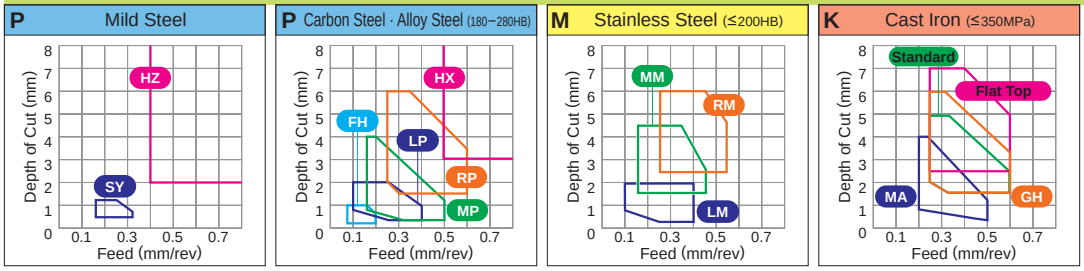
CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

90° SN TYPE INSERTS WITH HOLE

SNMG 12 04 08- RM
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

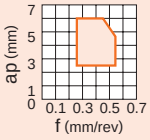
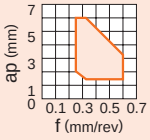
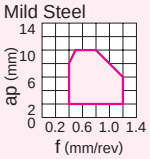
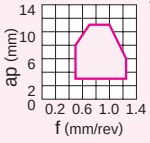
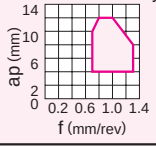
CHIP CONTROL RANGE FOR WORK MATERIALS

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



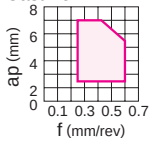
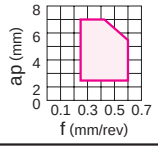
Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

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

Shape / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
RM (NEW)	SNMG120408-RM	0.8							●	●	●																				
Stainless Steel	120412-RM	1.2							●	●	●																				
	120416-RM	1.6							●	●	●																				C012
	150612-RM	1.2							●	●	●																				–015
	150616-RM	1.6							●	●	●																				E014
	190612-RM	1.2							●	●	●																				E035
Rough Cutting	190616-RM	1.6							●	●	●																				
GH	SNMG120408-GH	0.8	●	●		▲						▲	●		●	●															
Cast Iron	120412-GH	1.2	●	●		▲						▲	●		●	●															
	120416-GH	1.6	●	●									●																		C012
	150612-GH	1.2	●	●																											–015
	150616-GH	1.6		●																											E014
	190612-GH	1.2	●	●									●																		E035
Rough Cutting	190616-GH	1.6	●	●								▲	●																		
HZ	SNMM120408-HZ	0.8		●	▲																										
Mild Steel	120412-HZ	1.2		●	▲																										C012
	150612-HZ	1.2		●	▲																										–015
	190612-HZ	1.2		●	▲			●																							E014
	190616-HZ	1.6		●	▲			●																							E035
Heavy Cutting																															
HX	SNMM190612-HX	1.2		●	▲			●																							
Carbon Steel • Alloy Steel	190616-HX	1.6		●	▲			●																							
	190624-HX	2.4		●	▲			●																							C012
	250724-HX	2.4		●	▲			●																							–014
	250924-HX	2.4		●	▲			●																							
Heavy Cutting																															
HV	SNMM190616-HV	1.6		●	▲			●																							
Carbon Steel • Alloy Steel	190624-HV	2.4		●	▲			●																							
	250724-HV	2.4		●	▲			●																							C012
	250924-HV	2.4		●	▲			●																							–014
Heavy Cutting																															

● : 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			Shape / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035 (NEW)	Coated Cermet: MP3025	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
	P	Steel				●	◕	✣	✣	✣	✣											✣	✣			●	◕	◕	●	●	✣				
	M	Stainless Steel										●	◕	✣	●	✣				◕	✣	✣	✣	●	◕		●	●	✣						
	K	Cast Iron																●	◕		◕	✣		●			●	●	✣	●	◕			
	N	Non-ferrous Metal																													◕			
	S	Heat-resistant Alloy, Titanium Alloy														●				●	◕	✣									◕	◕	✣	
Flat Top			 Cast Iron 	**SNMA090304**	0.4													●													●			C012 –015 E014 E035
				090308	0.8													●	●											●				
				120408	0.8													●	●										●	●	●			
				120412	1.2													●	●											●				
				120416	1.6													●	●															
				190612	1.2													●	●															
				190616	1.6													●	●															
Flat Top			 Cast Iron 	**SNGA090304**	0.4																				●											
				120404	0.4																										●				
				120408	0.8																			●						●	●			

CHIP BREAKERS	➤ A040
GRADES	➤ A030
IDENTIFICATION	➤ A002

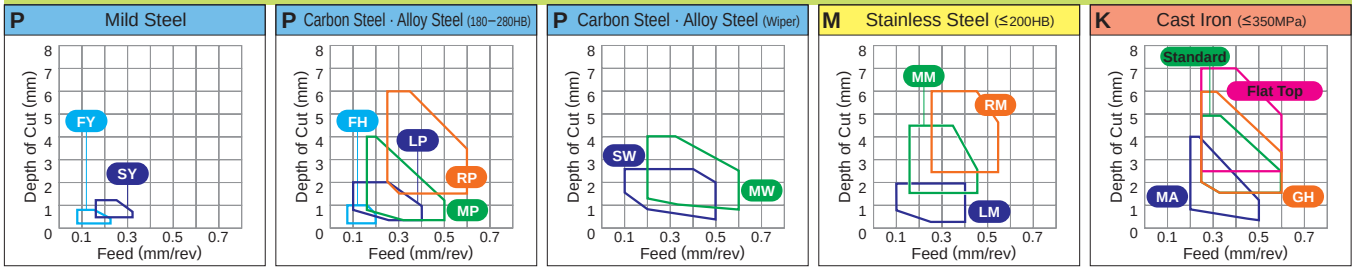
TURNING INSERTS [NEGATIVE]

60° TN TYPE INSERTS WITH HOLE

TNMG 11 03 04- FH
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			Corner R	Coated																Cermet		Coated Cermet			Carbide						Applicable Holder Page
				UE6105	UE6110	MC6025	UE6020	UE6035	UH6400	MC7015	MC7025	MP7035	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Re (mm)																												
FH	Carbon Steel • Alloy Steel	TNMG110304-FH	0.4																			●										C016
		160402-FH	0.2		●		▲							▲								●	●		●							C017
		160404-FH	0.4		●									▲								●	●		●	●						E014
		160408-FH	0.8		●		▲															●	●		●	●						E035
Finish Cutting	ap (mm) 0 1 2 3 / 0.1 0.2 0.3 0.4 f (mm/rev)																															E040
FS	Mild Steel	TNMG160404-FS	0.4				▲															●										C016
		160408-FS	0.8				▲															●										C017
Finish Cutting	ap (mm) 0 1 2 3 / 0.1 0.2 0.3 0.4 f (mm/rev)																															E014 E035 E040
FY	Mild Steel	TNMG160404-FY	0.4				▲																●	●		●						C016
		160408-FY	0.8				▲																	●		●						C017
Finish Cutting	ap (mm) 0 1 2 3 / 0.1 0.2 0.3 0.4 f (mm/rev)																															E014 E035 E040
PK	Carbon Steel • Alloy Steel	TNGG160404-PK	0.4																			●										C016
		160408-PK	0.8																			●										C017
Finish Cutting	ap (mm) 0 1 2 3 / 0.1 0.2 0.3 0.4 f (mm/rev)																															E014 E035 E040
R/L-FS	Carbon Steel • Alloy Steel	TNGG160402R-FS	0.2																			●										C016
		160402L-FS	0.2																			●										C017
		160404R-FS	0.4																			●										E014
		160404L-FS	0.4																			●										E035
Finish Cutting	ap (mm) 0 1 2 3 / 0.1 0.2 0.3 0.4 f (mm/rev)																															E040
R/L-F	Carbon Steel • Alloy Steel	TNGG160402R-F	0.2																●			●	●	●								
		160402L-F	0.2																●			●	●	●								C016
		160404R-F	0.4																●			●	●	●								C017
		160404L-F	0.4																●			●	●	●								E014
		160408R-F	0.8																●			●	●	●								E035
Finish Cutting	ap (mm) 0 1 2 3 / 0.1 0.2 0.3 0.4 f (mm/rev)	160408L-F	0.8																●			●	●	●								E040
LP NEW	Carbon Steel • Alloy Steel	TNMG160404-LP	0.4	●	●	●																		●								
		160408-LP	0.8	●	●	●																		●								C016
		160412-LP	1.2	●	●	●																		●								C017
		220408-LP	0.8	●	●	●																		●								E014
Light Cutting	ap (mm) 0 1 2 3 4 / 0.1 0.3 0.5 f (mm/rev)	220412-LP	1.2	●	●	●																										E035 E040

● : 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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
LM (NEW)	Stainless Steel	**TNMG160404-LM**	0.4							●	●	●																				C016
		160408-LM	0.8							●	●	●																				C017
		160412-LM	1.2							●	●	●																				E014
																																E035
																																E040
Light Cutting																																
SH	Carbon Steel • Alloy Steel	**TNMG160404-SH**	0.4	●	●		▲							●		●						●	●		●							C016
		160408-SH	0.8	●	●		▲							●		●						●	●		●							C017
		220408-SH	0.8	●	●									●																		E014
																																E035
																																E040
Light Cutting																																
SA	Carbon Steel • Alloy Steel	**TNMG160404-SA**	0.4	●	●		▲															●										C016
		160408-SA	0.8	●	●		▲															●										C017
		160412-SA	1.2	●	●		▲															●										E014
		220408-SA	0.8	●	●		▲																									E035
		220412-SA	1.2		●																											E040
Light Cutting																																
* **SW**	Carbon Steel • Alloy Steel	**TNMX 160404-SW**	0.4	●	●								▲									●	●	●								–
		160408-SW	0.8	●	●								▲									●	●	●								
Light Cutting (Wiper)																																
SY	Mild Steel	**TNMG160404-SY**	0.4				▲															●	●		●							C016
		160408-SY	0.8				▲																●		●							C017
																																E014
																																E035
																																E040
Light Cutting																																
C	Carbon Steel • Alloy Steel	**TNMG160404-C**	0.4																			▲	▲									C016
		160408-C	0.8																			▲	▲									C017
		220404-C	0.4																			▲	▲									E014
		220408-C	0.8																				▲									E035
																																E040
Light Cutting																																
R/L-1G	Carbon Steel • Alloy Steel	**TNMG160404R-1G**	0.4																			●										C016
		160404L-1G	0.4																			●										C017
		220404R-1G	0.4																			●										E014
		220404L-1G	0.4																			●										E035
																																E040
Light Cutting																																
R/L-K	Carbon Steel • Alloy Steel	**TNGG160402R-K**	0.2																			●	●	●								
		160402L-K	0.2																			●	●	●								C016
		160404R-K	0.4																			●	●	●								C017
		160404L-K	0.4																				●	●								E014
		160408R-K	0.8																					●								E035
		160408L-K	0.8																					●								E040
Light Cutting																																
MJ	Difficult-to-Cut Materials	**TNMG160404-MJ**	0.4												●			●	●												●	C016
		160408-MJ	0.8												●			●	●												●	C017
		160412-MJ	1.2												●			●	●													E014
																																E035
																																E040
Light Cutting																																

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

CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

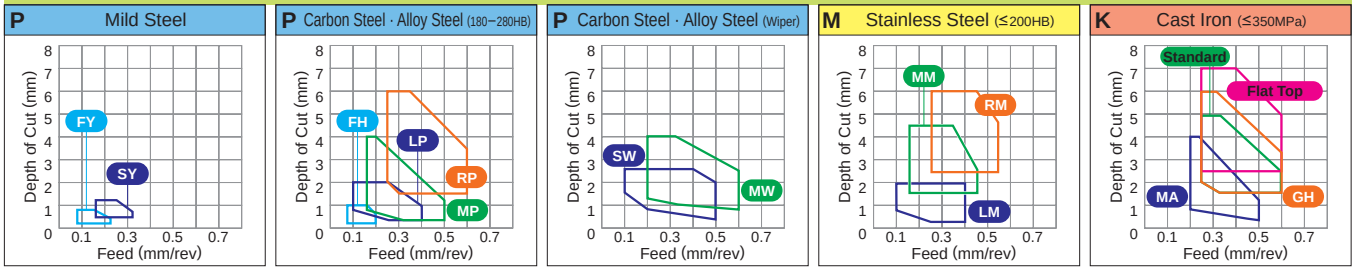
TURNING INSERTS [NEGATIVE]

60° TN TYPE INSERTS WITH HOLE

TNMG 16 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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
MP	Carbon Steel • Alloy Steel Medium Cutting	TNMG 160404-MP	0.4	●	●	●	▲									●								●								C016
		160408-MP	0.8	●	●	●	▲									●								●								C017
		160412-MP	1.2	●	●	●	▲									●								●								E014
		220408-MP	0.8	●	●	●	▲									●																E035
		220412-MP	1.2	●	●	●	▲									●																E040
MM (NEW)	Stainless Steel Medium Cutting	TNMG 160408-MM	0.8							●	●	●																				C016
		160412-MM	1.2							●	●	●																				C017
		220408-MM	0.8							●	●	●																				E014
		220412-MM	1.2							●	●	●																				E035
		220416-MM	1.6							●	●	●																				E040
GM (NEW)	Stainless Steel Medium Cutting	TNMG 160404-GM	0.4							●	●	●																				C016
		160408-GM	0.8							●	●	●																				C017
		160412-GM	1.2							●	●	●																				E014
		220408-GM	0.8							●	●	●																				E035
		220412-GM	1.2							●	●	●																				E040
MA	Carbon Steel • Alloy Steel Medium Cutting	TNMG 160404-MA	0.4	●	●	●	▲				●	●	▲	●		●	●			●		●										C016
		160408-MA	0.8	●	●	●	▲	●			●	●	▲	●		●	●			●		●										C017
		160412-MA	1.2	●	●	●	▲				●	●	▲	●			●			●		●										C016
		160416-MA	1.6														●															C017
		220408-MA	0.8	●	●	●	▲	●			●	●	▲	●		●	●			●												E014
		220412-MA	1.2	●	●	●	▲	●			●	●	▲	●			●			●												E035
		220416-MA	1.6														●															E040
		270608-MA	0.8	●	●		▲	●																								
		270612-MA	1.2	●	●		▲								●																	
MH	Carbon Steel • Alloy Steel Medium Cutting	TNMG 160404-MH	0.4	●	●		▲						▲			●																C016
		160408-MH	0.8	●	●		▲	●					▲			●																C017
		160412-MH	1.2	●	●		▲	●								●																C014
		220408-MH	0.8	●	●		▲	●					▲			●																E035
		220412-MH	1.2	●	●		▲	●								●																E040

● : Inventory maintained in Japan. □ : Non stock, produced to order only.
▲ : 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			Coated															Cermet		Coated Cermet			Carbide					Applicable Holder Page
				UE6110	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
P	Steel		●	◕	✣	✣	✣	✣										✣	✣	●	◕	◕	●	●	✣					
M	Stainless Steel								◕	◕	✣	◕	✣				◕	✣	✣	◕				◕	●	✣					
K	Cast Iron														●	◕		◕	✣		●			●	●	✣	●	◕			
N	Non-ferrous Metal																										◕			
S	Heat-resistant Alloy, Titanium Alloy													●			●	◕	✣								◕	◕	✣	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)																											
Flat Top	Carbon Steel • Alloy Steel	TNMG 110304	0.4	●	●	▲									●					●	●	●				●		●		C016
		110308	0.8	●	●	▲																								C017
		160304	0.4	●																						●				E014
		160308	0.8	●	●	▲																				●				E035
		160404	0.4	●	●	●	▲								●	●			●		●	●	●			●	●	●		E040
		160408	0.8	●	●	●	▲	●							●	●			●		●	●	●			●	●	●		
		160412	1.2	●	●	●	▲								●	●					●									
		160416	1.6		●											●					●									
		220404	0.4	●	●	●	▲															●				●				
		220408	0.8	●	●	●	▲	●								●					●	●				●				
		220412	1.2	●	●	●	▲									●														
		220416	1.6		●	●	▲																							
		270608	0.8		●																									
		270612	1.2		●		▲																			●				
		270616	1.6		●		▲																							
Medium Cutting		330924	2.4																							●				
* **MW**	Carbon Steel • Alloy Steel	TNMX 160408-MW	0.8	●	●							▲				●														–
Medium Cutting (Wiper)		160412-MW	1.2	●	●							▲			●	●														
MS	Difficult-to-Cut Materials	TNMG 160404-MS	0.4		●							▲	●	●			●	●	●							●				C016
Medium Cutting		160408-MS	0.8		●	▲						▲	●	●			●	●	●	●		●						●		C017
		160412-MS	1.2		●								●	●			●	●												E014
		220408-MS	0.8		●							▲	●	●			●	●	●	●										E035
		220412-MS	1.2										●																	E040
R/L-ES	Stainless Steel	TNMG 160404R-ES	0.4									▲	●																	
Medium Cutting		160404L-ES	0.4									▲	●																	C016
		160408R-ES	0.8									▲	●																	C017
		160408L-ES	0.8									▲	●																	E014
		220408R-ES	0.8										●																	E035
		220408L-ES	0.8										●																	E040
R/L-2G	Carbon Steel • Alloy Steel	TNMG 160404R-2G	0.4																		●									
Medium Cutting		160404L-2G	0.4																		●									C016
		160408R-2G	0.8																		●									C017
		160408L-2G	0.8																		●									E014
																														E035
																														E040

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

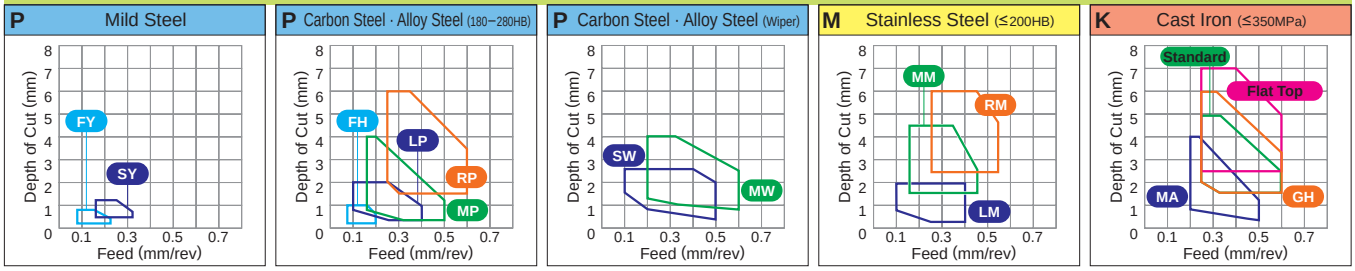
CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

60° TN TYPE INSERTS WITH HOLE

TNGG 11 03 02 R
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 / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
R/L	TNGG110302R	0.2																			●										
	110302L	0.2																			●	●									
	110304R	0.4																			●	●									
	110304L	0.4																			●	●									
	110308R	0.8																			●										
	110308L	0.8																			●	●									
	160304R	0.4																			●	●				●					
	160304L	0.4																			●	●									C016
	160402R	0.2																			●	●		●		●		●			C017
	160402L	0.2																			●	●		●							E014
	160404R	0.4																			●	●		●		●	●	●			E035
	160404L	0.4																			●	●		●		●		●			E040
	160408R	0.8																			●	●		●		●	●	●			
	160408L	0.8																			●	●		●		●	●	●			
	220404R	0.4																			●	●				●					
	220404L	0.4																			●	●				●					
	220408R	0.8																			●	●				●					
	220408L	0.8																			●	●				●					
RP (NEW)	TNMG160408-RP	0.8	●	●	●																										
	160412-RP	1.2	●	●	●																										C016
	220408-RP	0.8	●	●	●																										C017
	220412-RP	1.2	●	●	●																										E014
	220416-RP	1.6	●	●	●																										E035
	270612-RP	1.2	●	●	●																										E040
	270616-RP	1.6	●	●	●																										
RM (NEW)	TNMG160408-RM	0.8							●	●	●																				
	160412-RM	1.2							●	●	●																				C016
	220408-RM	0.8							●	●	●																				C017
	220412-RM	1.2							●	●	●																				E014
	220416-RM	1.6							●	●	●																				E035
																															E040
GH	TNMG160408-GH	0.8	●	●		▲							▲	●		●	●														
	160412-GH	1.2	●	●												●															C016
	220408-GH	0.8	●	●		▲								●		●															C017
	220412-GH	1.2	●	●		▲								●		●	●														E014
	220416-GH	1.6	●	●																											E035
	270612-GH	1.2	●	●		▲								●																	E040
	270616-GH	1.6	●	●																											

Medium Cutting

Rough Cutting

Rough Cutting

Rough Cutting

● : 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			Shape / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
	P	Steel				●	◕	✣	✣	✣	✣											✣	✣												
	M	Stainless Steel										○	◕	✣	○	✣					◕	✣	✣	○			○	○	✣						
	K	Cast Iron																●	◕		◕	✣		●		●	●	●	✣	●	◕			
	N	Non-ferrous Metal																													◕			
	S	Heat-resistant Alloy, Titanium Alloy														●				●	◕	✣									◕	◕	✣	
HZ			Mild Steel; Heavy Cutting; ap (mm) 0 2 6 10 14; f (mm/rev) 0.2 0.6 1.0 1.4	**TNMM160408-HZ**	0.8	●		▲																										C016
				220408-HZ	0.8	●		▲																										C017
				220412-HZ	1.2	●		▲																										E014
				220416-HZ	1.6	●		▲																										E035
																																	E040
Standard			Cast Iron; ap (mm) 0 2 4 6 8; f (mm/rev) 0.1 0.3 0.5 0.7	**TNMA 160404**	0.4												●	●												●	●			
				160408	0.8												●	●											●	●	●			
				160412	1.2												●	●																C016
				160416	1.6													●																C017
				220404	0.4																									●				E014
				220408	0.8												●	●					●						●		●			E035
				220412	1.2												●	●																E040
				220416	1.6												●	●											●					
Standard			Cast Iron; ap (mm) 0 2 4 6 8; f (mm/rev) 0.1 0.3 0.5 0.7	**TNGA 110304**	0.4																										●			
				110308	0.8																			●						●			
				160402	0.2																			●						●			C016
				160404	0.4																								●	●	●			C017
				160408	0.8																									●	●			E014
				220404	0.4																								●					E035
				220408	0.8																									●				E040

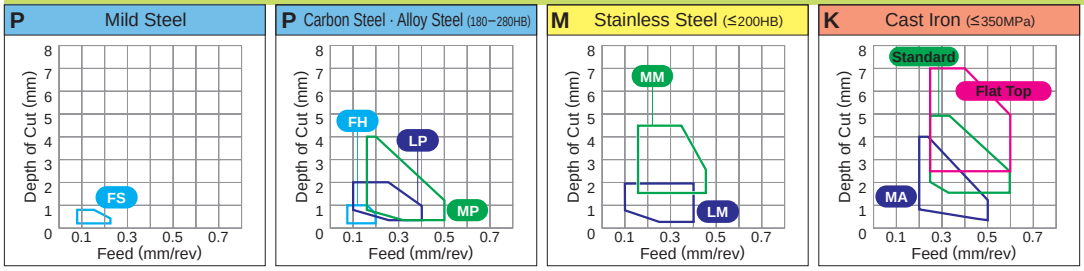
CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

35° VN TYPE INSERTS WITH HOLE

VNMG 16 04 02- FH
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			Corner R	Coated																Cermet		Coated Cermet			Carbide					Applicable Holder Page
				UE6105	UE6110 NEW	MC6025 NEW	UE6020	UE6035	UH6400	MC7015 NEW	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Re (mm)																											
FH	Carbon Steel • Alloy Steel	**VNMG160402-FH**	0.2		●		▲															●●		●							C018 –020 E015 E042
		160404-FH	0.4		●		▲															●		●●							
		160408-FH	0.8		●		▲															●●		●●							
Finish Cutting																															
FS	Mild Steel	**VNMG160404-FS**	0.4				▲															●									C018 –020 E015 E042
		160408-FS	0.8				▲															●									
Finish Cutting																															
FJ	Difficult-to-Cut Materials	**VNGG1604V5-FJ**	0.05																●										●		
		160401-FJ	0.1																●										●		C018 –020 E015 E042
		160402-FJ	0.2																●										●		
Finish Cutting																															
R/L-F	Carbon Steel • Alloy Steel	**VNGG160402R-F**	0.2																	●		●●		●							
		160402L-F	0.2																	●		●●		●							C018 –020 E015 E042
		160404R-F	0.4																	●		●●		●							
		160404L-F	0.4																	●		●●		●							
Finish Cutting																															
LP NEW	Carbon Steel • Alloy Steel	**VNMG160404-LP**	0.4	●	●	●																		●							
		160408-LP	0.8	●	●	●																		●							C018 –020 E015 E042
Light Cutting																															
LM NEW	Stainless Steel	**VNMG160404-LM**	0.4							●	●	●																			
		160408-LM	0.8							●	●	●																			C018 –020 E015 E042
Light Cutting																															
SH	Carbon Steel • Alloy Steel	**VNMG160404-SH**	0.4	●	●		▲															●●			●						
		160408-SH	0.8	●	●		▲															●●			●						C018 –020 E015 E042
Light Cutting																															

● : 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			Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated														Cermet		Coated Cermet			Carbide					Applicable Holder Page
							UE6105	UE6110 NEW	MC6025 NEW	UE6020	UE6035	UH6400	MC7015 NEW	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
P	Steel		MJ	Difficult-to-Cut Materials	VNMG160404-MJ	0.4											●			●	●										●		
M	Stainless Steel				160408-MJ	0.8											●			●	●										●		C018
K	Cast Iron		Light Cutting		160412-MJ	1.2											●			●	●												–020
N	Non-ferrous Metal																															E015
S	Heat-resistant Alloy, Titanium Alloy																															E042
			MJ	Difficult-to-Cut Materials	VNGM160404-MJ	0.4															●										●		
					160408-MJ	0.8															●										●		C018
			Light Cutting																													–020
																																E015
																																E042
			MP	Carbon Steel • Alloy Steel	VNMG160404-MP	0.4	●	●	●	▲									●							●							
					160408-MP	0.8	●	●	●	▲									●							●							C018
			Medium Cutting		160412-MP	1.2	●	●	●	▲									●														–020
																																E015
																																E042
			MM NEW	Stainless Steel	VNMG160408-MM	0.8							●	●	●																		
																																C018
			Medium Cutting																													–020
																																E015
																																E042
			GM NEW	Stainless Steel	VNMG160404-GM	0.4							●	●	●																		
					160408-GM	0.8							●	●	●																		C018
			Medium Cutting																													–020
																																E015
																																E042
			MA	Carbon Steel • Alloy Steel	VNMG160404-MA	0.4	●	●	●	▲				●	●	▲	●		●	●		●												
					160408-MA	0.8	●	●	●	▲	●			●	●	▲	●		●	●		●												C018
			Medium Cutting																													–020
																																E015
																																E042
			MH	Carbon Steel • Alloy Steel	VNMG160404-MH	0.4	●	●		▲									●														
					160408-MH	0.8	●	●		▲						▲			●														C018
			Medium Cutting																													–020
																																E015
																																E042
			Standard	Carbon Steel • Alloy Steel	VNMG160404	0.4	●	●	●	▲									●	●		●		●	●	●		●		●			
					160408	0.8	●	●	●	▲									●	●		●		●	●	●		●		●			C018
			Medium Cutting		160412	1.2	●	●											●	●				●									–020
																																E015
																																E042
			MS	Difficult-to-Cut Materials	VNMG160404-MS	0.4		●								▲	●	●			●	●		●									
					160408-MS	0.8		●								▲	●	●			●	●			●							●		C018
			Medium Cutting																													–020
																																E015
																																E042

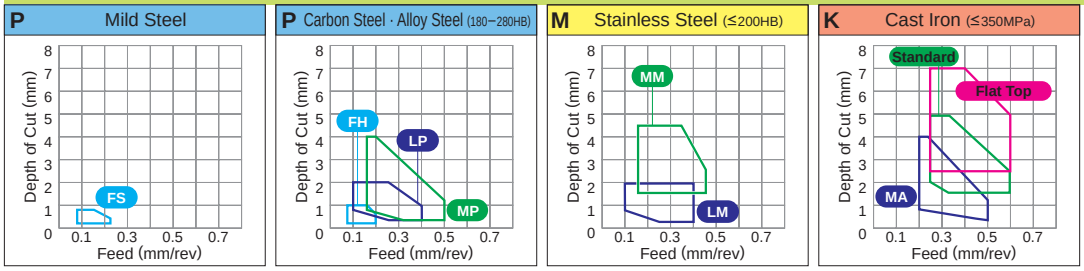
CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

35° VN TYPE INSERTS WITH HOLE

VNGG 16 04 04 R
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			Corner R	Coated																Cermet		Coated Cermet		Carbide				Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025	UE6020	UE6035	UH6400	MC7015	MC7025	MP7035	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
	P	Steel		●	◕	✣	✣	✣	✣	●	◕	✣	●	✣		●	◕		◕	✣	✣	●	◕		◕	●	●	✣		●	◕	✣	
	M	Stainless Steel		●	◕	✣	●	✣	✣	●	◕	✣	●	✣				◕	✣	✣	✣	●			●	●	✣					
	K	Cast Iron													●	●		●	◕	✣		●	◕		◕	●	✣	●	◕			
	N	Non-ferrous Metal																											◕			
	S	Heat-resistant Alloy, Titanium Alloy													●			◕	◕	✣										◕	✣	
R/L	Carbon Steel • Alloy Steel	**VNGG160404R**	0.4																			●	●				●		●			
		160404L	0.4																			●	●				●					C018 –020 E015 E042
Medium Cutting																																
Flat Top	Cast Iron	**VNGA160404**	0.4																									●	●			
		160408	0.8																									●	●			C018 –020 E015 E042

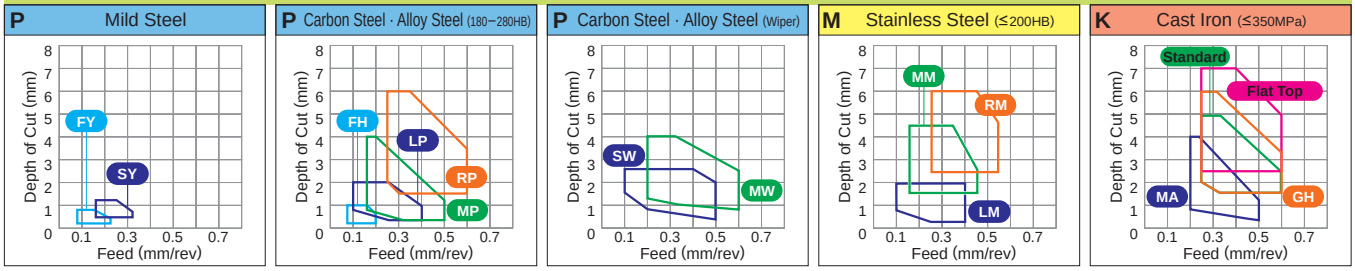
● : Inventory maintained in Japan.
▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

80° WN TYPE INSERTS WITH HOLE

WNMG 08 04 04- FH
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			Corner R	Coated																Cermet		Coated Cermet			Carbide					Applicable Holder Page
			Re (mm)	UE6105	UE6110 NEW	MC6025 NEW	UE6020	UE6035	UH6400	MC7015 NEW	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
P	Steel			●	◔	✣	✣	✣	✣											✣	✣	●	◔		◔	●	●	✣				
M	Stainless Steel									●	◔	✣	●	✣					◔	✣	✣	●			●	●	✣					
K	Cast Iron															●	◔		◔	✣		●			●	●	✣	●	◔			
N	Non-ferrous Metal																												◔			
S	Heat-resistant Alloy, Titanium Alloy													●				●	◔	✣									◔	◔	✣	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number																														
FH	Carbon Steel • Alloy Steel	**WNMG080404-FH**	0.4		●									▲								●		●								C021 E015 E039
		080408-FH	0.8		●									▲								●		●	●							
Finish Cutting	ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4																															
FS	Mild Steel	**WNMG080404-FS**	0.4				▲															●										C021 E015 E039
		080408-FS	0.8				▲															●										
Finish Cutting	ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4																															
FY	Mild Steel	**WNMG080404-FY**	0.4																					●								C021 E015 E039
		080408-FY	0.8				▲																	●	●							
Finish Cutting	ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4																															
LP NEW	Carbon Steel • Alloy Steel	**WNMG060404-LP**	0.4	●	●	●																		●								C021 E015 E039
		060408-LP	0.8	●	●	●																		●								
		06T304-LP	0.4	●	●	●																		●								
		06T308-LP	0.8	●	●	●																		●								
		080404-LP	0.4	●	●	●																		●								
		080408-LP	0.8	●	●	●																		●								
		080412-LP	1.2	●	●	●																										
Light Cutting	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5																															
LM NEW	Stainless Steel	**WNMG060404-LM**	0.4							●	●	●																				C021 E015 E039
		060408-LM	0.8							●	●	●																				
		080404-LM	0.4							●	●	●																				
		080408-LM	0.8							●	●	●																				
Light Cutting	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5																															
SH	Carbon Steel • Alloy Steel	**WNMG06T304-SH**	0.4	●	●									●																		C021 E015 E037 E039
		06T308-SH	0.8	●	●									●																		
		060404-SH	0.4	●	●									●																		
		060408-SH	0.8	●	●									●																		
		080404-SH	0.4	●	●									●		●						●										
		080408-SH	0.8	●	●		▲							●		●						●										
		080412-SH	1.2	●	●		▲							●		●																
Light Cutting	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5																															

CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

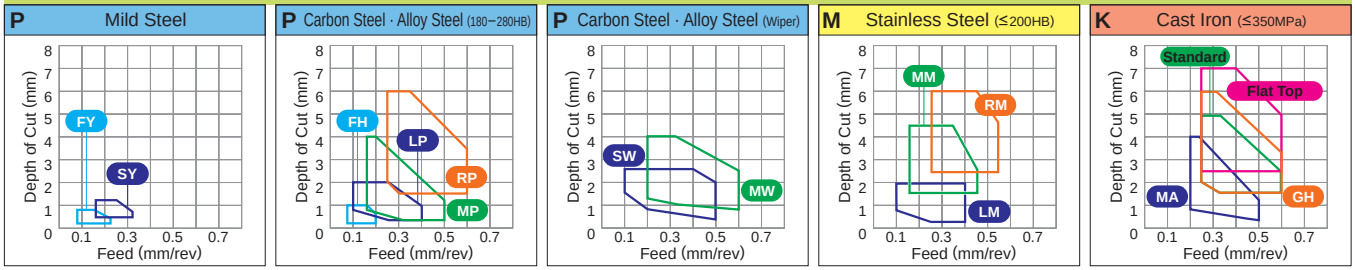
TURNING INSERTS [NEGATIVE]

80° WN TYPE INSERTS WITH HOLE

WNMG 08 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·····



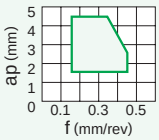
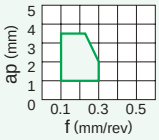
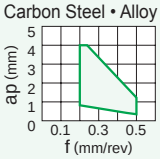
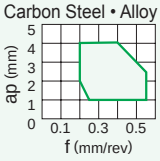
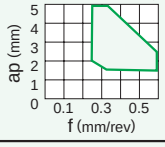
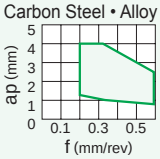
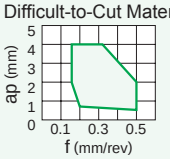
Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material			Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
	P	Steel																																	
	M	Stainless Steel																																	
	K	Cast Iron																																	
	N	Non-ferrous Metal																																	
	S	Heat-resistant Alloy, Titanium Alloy																																	
			SA	Carbon Steel • Alloy Steel	**WNMG080404-SA**	0.4	●	●		▲																●									C021 E015 E039
					080408-SA	0.8	●	●		▲																●									
					080412-SA	1.2	●	●		▲																●									
				Light Cutting																															
			⁎ **SW**	Carbon Steel • Alloy Steel	**WNMG060404-SW**	0.4	●	●								▲										●		●							
					060408-SW	0.8	●	●								▲										●		●							C021 E015 E039
					080404-SW	0.4	●	●								▲			●						●	●	●							
					080408-SW	0.8	●	●								▲			●						●	●	●							
				Light Cutting (Wiper)	**080412-SW**	1.2	●	●								▲									●	●	●							
			SY	Mild Steel	**WNMG080404-SY**	0.4																					●								
					080408-SY	0.8				▲																●	●		●						C021 E015 E039
				Light Cutting																															
			C	Carbon Steel • Alloy Steel	**WNMG080404-C**	0.4																				▲	▲								
					080408-C	0.8																				▲									C021 E015 E039
				Light Cutting																															
			MJ	Difficult-to-Cut Materials	**WNMG080408-MJ**	0.8											●				●														
					080412-MJ	1.2											●				●														C021 E015 E039
				Light Cutting	**080416-MJ**	1.6											●				●														
			MP	Carbon Steel • Alloy Steel	**WNMG06T304-MP**	0.4	●	●	●	▲									●																	
					06T308-MP	0.8	●	●	●	▲									●																	
					06T312-MP	1.2	●	●	●	▲									●																	
					060404-MP	0.4	●	●	●	▲									●																	C021 E015 E037 E039
					060408-MP	0.8	●	●	●	▲									●																	
					060412-MP	1.2	●	●	●	▲									●																	
					080404-MP	0.4	●	●	●	▲									●								●									
					080408-MP	0.8	●	●	●	▲									●								●									
					080412-MP	1.2	●	●	●	▲									●								●									
				Medium Cutting	**080416-MP**	1.6	●	●	●	▲									●																	

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

● : 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		Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
P	Steel					●	◕	✣	✣	✣	✣										✣	✣		●	◕		●	●	✣					
M	Stainless Steel											◕	◕	✣	◕	✣					◕	✣	◕	◕			◕	◕	✣					
K	Cast Iron																	●	◕		◕	✣		●			●	●	✣	●	◕			
N	Non-ferrous Metal																														◕			
S	Heat-resistant Alloy, Titanium Alloy															●				●	◕	✣								◕	◕	✣		
MM NEW	Stainless Steel			**WNMG 060408-MM**	0.8							●	●	●																				C021 E015 E039
				060412-MM	1.2							●	●	●																				
				080408-MM	0.8							●	●	●																				
				080412-MM	1.2							●	●	●																				
Medium Cutting																																		
GM NEW	Stainless Steel			**WNMG 060404-GM**	0.4							●	●	●																				C021 E015 E039
				060408-GM	0.8							●	●	●																				
				080404-GM	0.4							●	●	●																				
				080408-GM	0.8							●	●	●																				
				080412-GM	1.2							●	●	●																				
Medium Cutting																																		
MA	Carbon Steel • Alloy Steel			**WNMG 06T304-MA**	0.4	●	●									●																		
				06T308-MA	0.8	●	●									●																		
				06T312-MA	1.2	●	●									●																		
				060404-MA	0.4	●	●									●																		
				060408-MA	0.8	●	●	●					●	●		●						●												C021 E015 E037 E039
				060412-MA	1.2	●	●	●					●	●		●						●												
				080404-MA	0.4	●	●	●	▲				●	●	▲	●		●				●		●										
				080408-MA	0.8	●	●	●	▲	●			●	●	▲	●		●	●			●		●										
				080412-MA	1.2	●	●	●	▲	●			●	●	▲	●		●	●			●		●										
				080416-MA	1.6	●	●											●																
				100612-MA	1.2				▲	●																								
Medium Cutting																																		
MH	Carbon Steel • Alloy Steel			**WNMG 080404-MH**	0.4	●	●		▲																										
				080408-MH	0.8	●	●		▲	●						▲		●																C021 E015 E039
				080412-MH	1.2	●	●		▲	●								●																
Medium Cutting																																		
Standard	Carbon Steel • Alloy Steel			**WNMG 080404**	0.4	●	●	●	▲									●	●					●		●								
				080408	0.8	●	●	●	▲									●	●			●		●		●			●					C021 E015 E039
				080412	1.2	●	●	●	▲									●	●			●							●					
				080416	1.6													●																
Medium Cutting																																		
* **MW**	Carbon Steel • Alloy Steel			**WNMG 060408-MW**	0.8	●	●	●	▲									●	●																
				060412-MW	1.2	●	●											●	●															C021 E015 E039
				080408-MW	0.8	●	●	●	▲							▲		●	●															
				080412-MW	1.2	●	●									▲		●	●															
Medium Cutting (Wiper)																																		
MS	Difficult-to-Cut Materials			**WNMG 06T304-MS**	0.4		●								▲	●																		
				06T308-MS	0.8		●								▲	●																		
				060404-MS	0.4		●								▲	●																		C021 E015 E037 E039
				060408-MS	0.8		●								▲	●																		
				080404-MS	0.4		●		▲						▲	●																		
				080408-MS	0.8		●		▲						▲	●	●			●	●	●											●	
				080412-MS	1.2		●									●	●			●	●													
Medium Cutting																																		

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

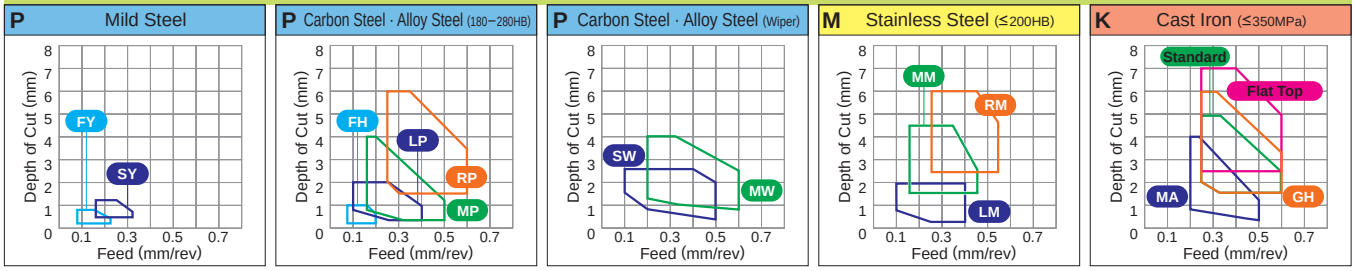
CHIP BREAKERS ➤ A040
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° WN TYPE INSERTS WITH HOLE

WNMG 08 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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	Carbide: UTi20T	HTi05T	HTi10	RT9010	TF15	Applicable Holder Page
RP (NEW)	Carbon Steel • Alloy Steel	WNMG 080408-RP	0.8	●	●	●																										
		080412-RP	1.2	●	●	●																										C021 E015 E039
Rough Cutting																																
RM (NEW)	Stainless Steel	WNMG 060408-RM	0.8							●	●	●																				
		060412-RM	1.2							●	●	●																				C021 E015 E039
		080408-RM	0.8							●	●	●																				
Rough Cutting		080412-RM	1.2							●	●	●																				
GH	Cast Iron	WNMG 080408-GH	0.8	●	●		▲						▲	●		●	●															
		080412-GH	1.2	●	●		▲							●		●	●															C021 E015 E039
Rough Cutting																																
GJ	Difficult-to-Cut Materials	WNMG 080408-GJ	0.8												●				●												●	
		080412-GJ	1.2												●				●												●	C021 E015 E039
		080416-GJ	1.6												●				●												●	
Rough Cutting		100612-GJ	1.2																●												●	
Flat Top	Cast Iron	WNMA 080404	0.4													●	●													●		
		080408	0.8													●	●													●		C021 E015 E039
		080412	1.2													●	●															
Rough Cutting		080416	1.6														●															

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

CHIP BREAKERS ➤ A040

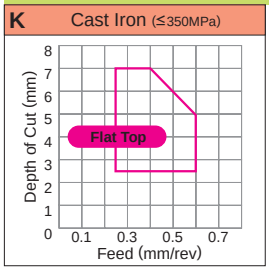
90° SN TYPE INSERTS WITH HOLE

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

CHIP CONTROL RANGE FOR WORK MATERIALS

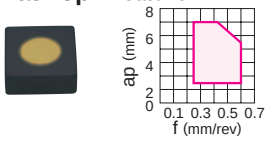
Heavy Cutting·····

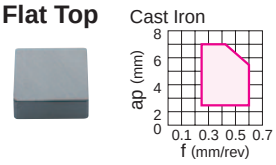
K Cast Iron (≤350MPa)



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

Work Material			Corner R	Coated																Cermet		Coated Cermet		Carbide					Applicable Holder Page
				UE6105	UE6110	MC6025 (NEW)	UE6020	UE6035	UH6400	MC7015 (NEW)	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035 (NEW)	MP3025 (NEW)	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
	P	Steel	Re (mm)																											
	M	Stainless Steel																												
	K	Cast Iron																												
	N	Non-ferrous Metal																												
	S	Heat-resistant Alloy, Titanium Alloy																												
Flat Top Cast Iron		SNMN 120408	0.8													●	●					●					●		●		–
		120412	1.2													●	●					●					●				
		120416	1.6													●	●														
		190412	1.2																								●				
Flat Top Cast Iron		SNGN 090308	0.8																										●		–
		120404	0.4																								●		●		
		120408	0.8																								●				





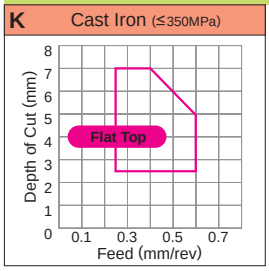
CHIP BREAKERS ➤ A064
GRADES ➤ A030
IDENTIFICATION ➤ A002

60° TN TYPE INSERTS WITHOUT HOLE

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

CHIP CONTROL RANGE FOR WORK MATERIALS

Heavy Cutting·····



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

Work Material			Corner R	Coated																Cermet		Coated Cermet		Carbide					Applicable Holder Page
				UE6105	UE6110	MC6025 NEW	UE6020	UE6035	UH6400	MC7015 NEW	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	UTi20T	HTi05T	HTi10	RT9010	TF15	
	P	Steel		●	◕	✣	✣	✣	✣											✣	✣	●	◕		◕	●	●	✣				
	M	Stainless Steel								◕	✣	✣	●	◕	✣				◕	✣	✣	●			●	●	✣					
	K	Cast Iron														●	◕		◕	✣		●				●	●	✣	●	◕		
	N	Non-ferrous Metal																											◕		
	S	Heat-resistant Alloy, Titanium Alloy													●			●	◕	✣									◕	◕	✣
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Re (mm)																												
Flat Top	Cast Iron	**TNMN 160308**	0.8																		●										—
		160408	0.8													●	●				●										
		160412	1.2													●	●														
		160416	1.6													●	●														
		160420	2.0														●														
		220408	0.8																		●										
		220412	1.2																							●					
Flat Top	Cast Iron	**TNGN 110304**	0.4																									●			—
		110308	0.8																									●			
		160404	0.4																									●			
		160408	0.8																									●			

● : Inventory maintained in Japan. ○ : To be released in Autumn 2013
▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

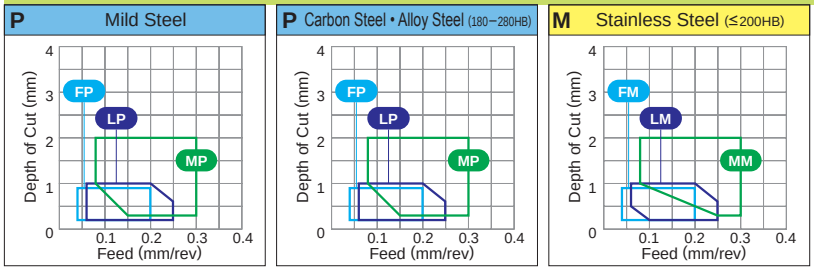
CHIP BREAKERS ➤ A064

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			Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
P	Steel		●	◔	✣	✣	✣									✣	✣	●	◔	◔	●	●	●	◔	✣					
M	Stainless Steel		◔	✣	●	✣									◔	✣	✣	●			●	●		✣					
K	Cast Iron							●	◔						◔	✣		●			●	●	✣	●	◔				
N	Non-ferrous Metal																								◔				
S	Heat-resistant Alloy, Titanium Alloy									●			●	◔	✣	✣									◔	◔			
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	UE6105	UE6110 NEW	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
FP NEW	Mild Steel	CCMT060202-FP	0.2	●	●															○		○							
		060204-FP	0.4	●	●															○		○							C022 D008 E030 E034
		09T302-FP	0.2	●	●															○		○							
		09T304-FP	0.4	●	●															○		○							
		09T308-FP	0.8	●	●															○		○							
FM NEW	Stainless Steel	CCMT060202-FM	0.2														●												
		060204-FM	0.4														●												C022 D008 E030 E034
		09T302-FM	0.2														●												
		09T304-FM	0.4														●												
		09T308-FM	0.8														●												
FV	Carbon Steel • Alloy Steel	CCMT060202-FV	0.2				▲										●			●	●		●	●					
		060204-FV	0.4				▲										●			●	●		●	●					C022 D008 E030 E034
		09T302-FV	0.2				▲													●	●			●					
		09T304-FV	0.4				▲													●	●		●	●					
		09T308-FV	0.8				▲													●	●		●	●					
FJ	Difficult-to-Cut Materials	CCGT0602V5-FJ	0.05													●													
		060201-FJ	0.1													●													
		060202-FJ	0.2													●													C022 D008 E030 E034
		09T3V5-FJ	0.05													●													
		09T301-FJ	0.1													●												●	
		09T302-FJ	0.2													●												●	
		09T304-FJ	0.4													●												●	
AZ	Aluminium Alloy	CCGT060202-AZ	0.2																								●		
		060204-AZ	0.4																								●		
		09T302-AZ	0.2																								●		C022 D008 E030 E034
		09T304-AZ	0.4																								●		
		09T308-AZ	0.8																								●		
		120402-AZ	0.2																								●		
		120404-AZ	0.4																								●		
		120408-AZ	0.8																								●		

CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° CC TYPE INSERTS WITH HOLE

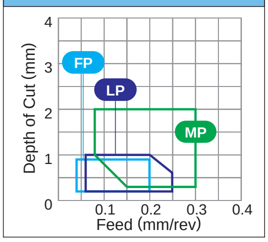
CCGT 03 S1 V3 L-F
Size / Thickness / Corner Radius / Chip Breaker
⁎ Please refer to page A002.

TURNING INSERTS
POSI 7°
WITH HOLE
C D R S T V W X

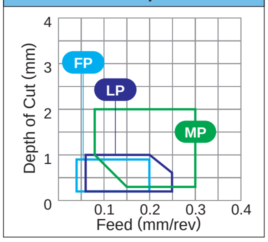
CHIP CONTROL RANGE FOR WORK MATERIALS

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

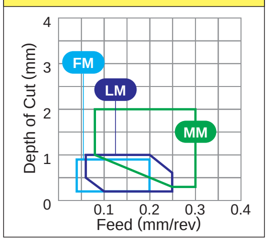
P Mild Steel



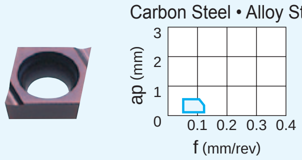
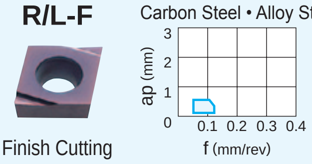
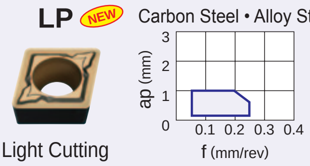
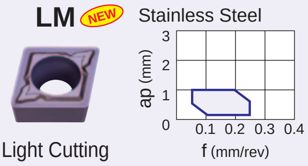
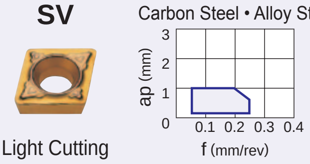
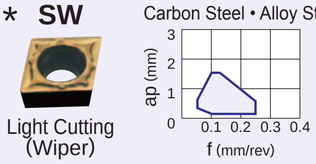
P Carbon Steel • Alloy Steel (180−280HB)



M Stainless Steel (≤200HB)



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

Work Material			UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035		MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	Applicable Holder Page
P	Steel		●	◐	✚	✚	✚										✚	✚	●	◐		◐	●	●	◐	✚				
M	Stainless Steel							◐	✚	●	✚					◐	✚	✚	●				●	●		✚				
K	Cast Iron												●	◐		◐	✚		●				●	●		✚	●	◐		
N	Non-ferrous Metal																											◐		
S	Heat-resistant Alloy, Titanium Alloy										●			●	◐	✚											◐	◐	
Shape / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Corner R: Re (mm)	Coated	Coated	Coated	Coated	Coated	Coated	Coated	Coated	Coated	Coated	Coated	Coated	Coated	Coated	Coated	Coated	Cermet	Cermet	Cermet	Coated Cermet	Coated Cermet	Coated Cermet	Coated Cermet	Carbide	Carbide	Carbide	Carbide	
L-F Carbon Steel • Alloy Steel  Finish Cutting	⁎1 CCGT 03S1V3L-F	0.03															●		●											E016
	⁎1 03S101L-F	0.1															●		●											
	⁎1 03S102L-F	0.2															●		●			●								
	⁎1 03S104L-F	0.4															●		●			●								
	⁎1 04T0V3L-F	0.03															●		●											
	⁎1 04T001L-F	0.1															●		●											
	⁎1 04T002L-F	0.2															●		●			●								
	⁎1 04T004L-F	0.4															●		●			●								
R/L-F Carbon Steel • Alloy Steel  Finish Cutting	CCGH 060202R-F	0.2															●		●				●					●		E006
	060202L-F	0.2															●		●				●					●		
	060204R-F	0.4															●		●				●					●		
	060204L-F	0.4															●		●				●					●		
LP (NEW) Carbon Steel • Alloy Steel  Light Cutting	CCMT 060204-LP	0.4		●	●														○			○								C022 D008 E030 E034
	060208-LP	0.8		●	●														○			○								
	09T304-LP	0.4		●	●														○			○								
	09T308-LP	0.8		●	●														○			○								
LM (NEW) Stainless Steel  Light Cutting	CCMT 060204-LM	0.4						●	○								●													C022 D008 E030 E034
	060208-LM	0.8						●	○								●													
	09T304-LM	0.4						●	○								●													
	09T308-LM	0.8						●	○								●													
SV Carbon Steel • Alloy Steel  Light Cutting	CCMH 060202-SV	0.2				▲				▲	●						●		●	●		●			●					E006
	060204-SV	0.4				▲				▲	●						●		●	●		●			●					
⁎ **SW** Carbon Steel • Alloy Steel  Light Cutting (Wiper)	CCMT 060202-SW	0.2		●		▲				▲									●			●		●						C022 D008 E030 E034
	060204-SW	0.4		●		▲				▲				●					●			●		●						
	09T302-SW	0.2		●		▲				▲				●					●			●		●						
	09T304-SW	0.4		●		▲				▲				●					●			●		●						

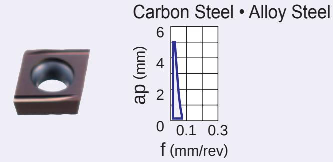
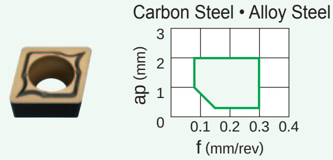
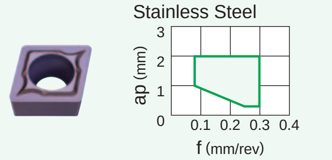
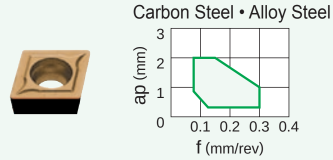
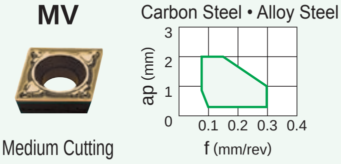
⁎1 Diameter of inscribed circle is special. (For SCLC type)
⁎2 Please refer to A028 before using the SW breaker (wiper insert).

● : Inventory maintained in Japan. ○ : To be released in Autumn 2013
▲ : 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	MC6025	UE6020	UH6400	MC7025	MP7035	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010
P Steel	●	◐	✲	✲	✲										✲	✲	●	◐	◐	●	●	◐	✲			
M Stainless Steel						◐	✲	●	✲					◐	✲	✲	●			●	●		✲			
K Cast Iron											●	◐		◐	✲		●			●	●		✲	●	◐	
N Non-ferrous Metal																									◐	
S Heat-resistant Alloy, Titanium Alloy										●			●	◐	✲										◐	◐

Coated: UE6105 – UP20M; Cermet: NX2525, NX3035; Coated Cermet: MP3025 (NEW), AP25N, VP25N, VP45N; Carbide: UTi20T, HTi05T, HTi10, RT9010. NEW: MC6025, MC7025, MP7035.

Shape / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Corner R Re (mm)	UE6105	UE6110	MC6025	UE6020	UH6400	MC7025	MP7035	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	Applicable Holder Page
R/L-SS Light Cutting, Carbon Steel • Alloy Steel 	CCGT 0602V3R-SS	0.03															●												C022 D008 E030 E034
	0602V3L-SS	0.03															●												
	060201R-SS	0.1															●												
	060201L-SS	0.1															●												
	060202R-SS	0.2															●												
	060202L-SS	0.2															●												
	09T3V3R-SS	0.03															●												
	09T3V3L-SS	0.03															●												
	09T301R-SS	0.1															●												
	09T301L-SS	0.1															●												
	09T302R-SS	0.2															●												
	09T302L-SS	0.2															●												
MP NEW Medium Cutting, Carbon Steel • Alloy Steel 	CCMT 060204-MP	0.4		●	●														○		○								C022 D008 E030 E034
	060208-MP	0.8		●	●														○		○								
	09T304-MP	0.4		●	●														○		○								
	09T308-MP	0.8		●	●														○		○								
	120404-MP	0.4		●	●														○		○								
	120408-MP	0.8		●	●														○		○								
	120412-MP	1.2		●	●														○		○								
MM NEW Medium Cutting, Stainless Steel 	CCMT 060204-MM	0.4						●	○								●												C022 D008 E030 E034
	060208-MM	0.8						●	○								●												
	09T304-MM	0.4						●	○								●												
	09T308-MM	0.8						●	○								●												
	120404-MM	0.4						●	○								●												
	120408-MM	0.8						●	○								●												
	120412-MM	1.2						●	○								●												
Standard Medium Cutting, Carbon Steel • Alloy Steel 	CCMT 060202	0.2		●		▲					●								●	●	●	●			●				C022 D008 E030 E034
	060204	0.4	●	●		▲					●			●			●		●	●	●	●			●				
	060208	0.8		●		▲					●			●			●		●						●				
	080302	0.2		●																									
	080304	0.4		●							●								●	●	●	●			●				
	080308	0.8		●							●														●				
	09T302	0.2		●		▲					●								●	●	●	●							
	09T304	0.4	●	●		▲					●			●			●		●	●	●	●			●				
	09T308	0.8	●	●		▲					●			●			●		●	●	●	●			●				
	120404	0.4	●	●		▲					●			●			●		●	●	●	●			●				
	120408	0.8	●	●		▲					●			●			●		●	●	●				●				
	120412	1.2		●		▲					●			●						●									
MV Medium Cutting, Carbon Steel • Alloy Steel 	CCMH060202-MV	0.2			●	▲				▲	●						●		●	●	●	●		●					E006
	060204-MV	0.4			●	▲				▲	●						●		●	●	●	●		●					

CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

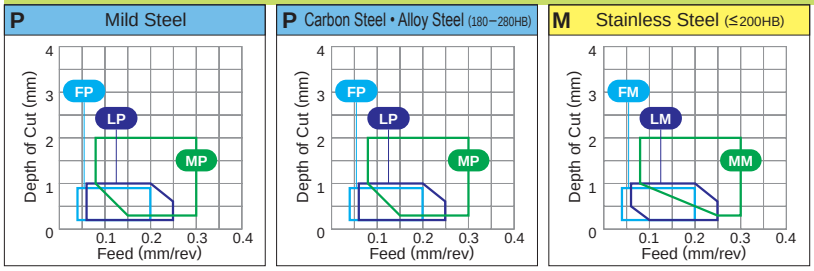
TURNING INSERTS [POSITIVE]

80° CC TYPE INSERTS WITH HOLE

CCMT 06 02 04 MW
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

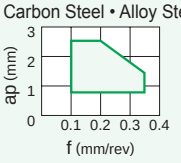
Work Material		
P	Steel	● ◔ ✣ ✣ ✣ ◔ ✣ ✣ ✣ ✣ ✣ ✣ ✣ ● ◔ ✣ ✣ ● ◔ ● ◔ ✣ ● ◔ ◔
M	Stainless Steel	◔ ✣ ✣ ✣ ✣ ○ ○ ○ ✣ ○
K	Cast Iron	● ◔ ● ◔ ✣ ✣ ● ○ ● ◔ ● ◔
N	Non-ferrous Metal	◔
S	Heat-resistant Alloy, Titanium Alloy	● ◔ ◔ ◔

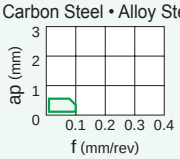
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HTi10	RT9010	Applicable Holder Page
* MW	Carbon Steel • Alloy Steel	CCMT060204-MW	0.4				▲			▲										●		●		●						
		060208-MW	0.8		●		▲			▲										●		●		●						C022
		09T304-MW	0.4		●		▲			▲										●		●		●						D008
		09T308-MW	0.8		●		▲			▲										●		●		●						E030
		120404-MW	0.4		●		▲			▲				●						●				●						E034
		120408-MW	0.8		●		▲			▲				●						●				●						
R/L-SR	Carbon Steel • Alloy Steel	CCET 0602V3R-SR	0.03															●		●								●		
		0602V3L-SR	0.03															●		●								●		
		060201R-SR	0.1															●		●								●		
		060201L-SR	0.1															●		●								●		
		060202R-SR	0.2															●		●								●		
		060202L-SR	0.2															●		●								●		
		060204R-SR	0.4															●		●								●		C022
		060204L-SR	0.4															●		●								●		D008
		09T3V3R-SR	0.03															●		●								●		E030
		09T3V3L-SR	0.03															●		●								●		E034
		09T301R-SR	0.1															●		●								●		
		09T301L-SR	0.1															●		●								●		
		09T302R-SR	0.2															●		●								●		
		09T302L-SR	0.2															●		●								●		
		09T304R-SR	0.4															●		●								●		
		09T304L-SR	0.4															●		●								●		
R/L-SN	Carbon Steel • Alloy Steel	CCET 060200R-SN	0															●		●								●		
		060200L-SN	0															●		●								●		
		0602V3R-SN	0.03															●		●								●		
		0602V3L-SN	0.03															●		●								●		
		060201R-SN	0.1															●		●								●		
		060201L-SN	0.1															●		●								●		C022
		060202R-SN	0.2															●		●								●		D008
		060202L-SN	0.2															●		●								●		E030
		060204R-SN	0.4															●		●								●		E034
		060204L-SN	0.4															●		●								●		
		09T300R-SN	0															●		●								●		
		09T300L-SN	0															●		●								●		
		09T3V3R-SN	0.03															●		●								●		

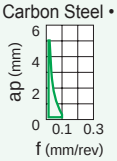
Medium Cutting (Wiper)

Medium Cutting

Medium Cutting







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

● : 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		Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated														Cermet		Coated Cermet				Carbide				Applicable Holder Page
						UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
P	Steel	R/L-SN	Carbon Steel • Alloy Steel	CCET 09T3V3L-SN	0.03														●	●								●		
M	Stainless Steel		ap (mm) 6 4 2 0 / 0.1 0.3 / f (mm/rev)	09T301R-SN	0.1														●	●								●		
K	Cast Iron			09T301L-SN	0.1														●	●								●		C022 D008 E030 E034
N	Non-ferrous Metal			09T302R-SN	0.2														●	●								●		
S	Heat-resistant Alloy, Titanium Alloy			09T302L-SN	0.2														●	●								●		
				09T304R-SN	0.4														●	●								●		
			Medium Cutting	09T304L-SN	0.4														●	●								●		
		R/L-SN	Carbon Steel • Alloy Steel	CCGT 0602V3R-SN	0.03														●											
			ap (mm) 6 4 2 0 / 0.1 0.3 / f (mm/rev)	060201R-SN	0.1														●											
				060201L-SN	0.1														●											
				060202R-SN	0.2														●											
				060202L-SN	0.2														●											
				09T3V3R-SN	0.03														●											C022 D008 E030 E034
				09T3V3L-SN	0.03														●											
				09T301R-SN	0.1														●											
				09T301L-SN	0.1														●											
				09T302R-SN	0.2														●											
				09T302L-SN	0.2														●											
				09T304R-SN	0.4														●											
			Medium Cutting	09T304L-SN	0.4														●											
		R/LW-SN *	Carbon Steel • Alloy Steel	CCET 0602V3RW-SN	0.03														●											
			ap (mm) 6 4 2 0 / 0.1 0.3 / f (mm/rev)	0602V3LW-SN	0.03														●											C022 D008 E030 E034
				09T3V3RW-SN	0.03														●											
				09T3V3LW-SN	0.03														●											
			Medium Cutting (Wiper)																											
		SMG	Carbon Steel • Alloy Steel	CCGT 060202M-SMG	0.2														●											
			ap (mm) 3 2 1 0 / 0.1 0.2 0.3 0.4 / f (mm/rev)	060204M-SMG	0.4														●											C022 D008 E030 E034
			Medium Cutting																											
		Flat Top	Cast Iron	CCMW 060202	0.2																								●	
			ap (mm) 3 2 1 0 / 0.1 0.2 0.3 0.4 / f (mm/rev)	060204	0.4											●	●											●	●	
				09T304	0.4											●	●												●	C022 D008 E030 E034
				09T308	0.8											●	●											●	●	
				120404	0.4											●	●												●	
				120408	0.8											●	●												●	
				120412	1.2												●													
		Flat Top	Cast Iron	CCGW 060200	0																	●								
			ap (mm) 3 2 1 0 / 0.1 0.2 0.3 0.4 / f (mm/rev)	0602V5	0.05																	●								C022 D008 E030 E034
				09T300	0																	●								
				09T3V5	0.05																	●								

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

CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

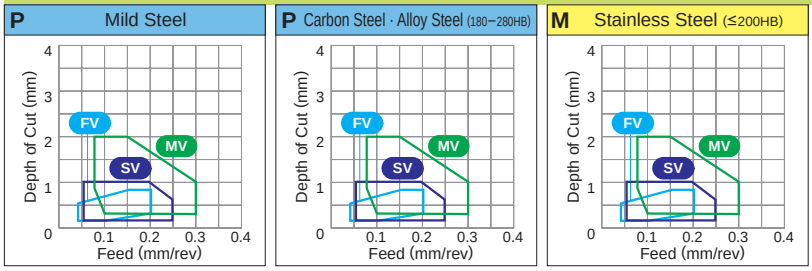
TURNING INSERTS [POSITIVE]

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			Corner R	Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
						NEW			NEW	NEW										NEW									
			Re (mm)	UE6105	UE6110	MC6025	UE6020	UH6400	MC7025	MP7035	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
P	Steel			●	◕	✣	✣	✣	◕	✣	●	◕	●			◕	✣	✣	✣	●	◕	◕	●	●	◕	✣				
M	Stainless Steel								◕	✣	●	◕				◕	✣	✣	✣	●			●	●		✣				
K	Cast Iron													●	◕	◕	✣	✣		●			●	●		✣	●	◕		
N	Non-ferrous Metal																											◕		
S	Heat-resistant Alloy, Titanium Alloy												●			◕	✣	✣											◕	
FV	Carbon Steel • Alloy Steel	CPMH080202-FV	0.2				▲										●			●	●	●								E006
Finish Cutting	ap (mm) / f (mm/rev)	080204-FV	0.4				▲										●			●	●	●								
		090302-FV	0.2				▲										●			●	●	●								
		090304-FV	0.4				▲										●			●	●	●								
		090308-FV	0.8				▲										●			●	●	●								
R/L-F	Carbon Steel • Alloy Steel	CPMH080204R-F	0.4														●			●								●		E006
Finish Cutting	ap (mm) / f (mm/rev)	080204L-F	0.4														●			●								●		
		090304R-F	0.4														●			●								●		
		090304L-F	0.4														●			●		●						●		
R/L-F	Carbon Steel • Alloy Steel	CPGT 080204R-F	0.4																●											—
Finish Cutting	ap (mm) / f (mm/rev)	080204L-F	0.4																●											
		090302R-F	0.2																●											
		090302L-F	0.2																●											
		090304R-F	0.4																●											
		090304L-F	0.4																●											
Standard	Aluminium Alloy	CPGT 080202	0.2																								●			—
Finish Cutting	ap (mm) / f (mm/rev)	080204	0.4																								●			
		090302	0.2																								●			
		090304	0.4																								●			
SV	Carbon Steel • Alloy Steel	CPMH080202-SV	0.2			●	▲			▲	●						●			●	●	●		●						E006
Light Cutting	ap (mm) / f (mm/rev)	080204-SV	0.4			●	▲			▲	●						●			●	●	●		●						
		090302-SV	0.2			●	▲			▲	●						●			●	●	●		●						
		090304-SV	0.4			●	▲			▲	●						●			●	●	●		●						
		090308-SV	0.8			●	▲			▲	●						●			●	●	●		●						
Standard	Carbon Steel • Alloy Steel	CPMX 080204	0.4		●													●												—
Medium Cutting	ap (mm) / f (mm/rev)	080208	0.8		●													●												
		090304	0.4		●													●	●							●				
		090308	0.8		●		▲											●								●				
MV	Carbon Steel • Alloy Steel	CPMH080204-MV	0.4			●	▲			▲	●						●			●	●	●	●	●						E006
Medium Cutting	ap (mm) / f (mm/rev)	080208-MV	0.8			●	▲			▲	●						●			●	●	●	●	●						
		090304-MV	0.4			●	▲			▲	●						●			●	●	●	●	●						
		090308-MV	0.8			●	▲			▲	●						●			●	●	●	●	●						

● : Inventory maintained in Japan. ○ : To be released in Autumn 2013
▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

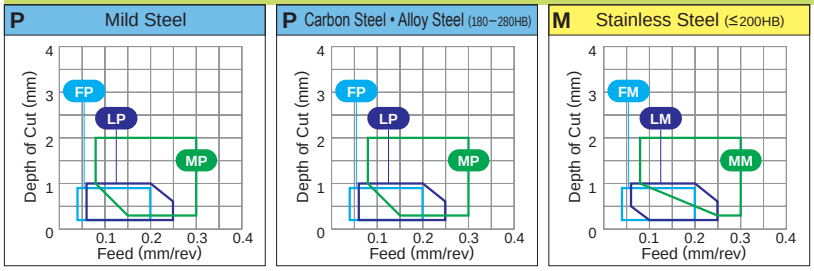
CHIP BREAKERS ➤ A058

55° DC TYPE INSERTS WITH HOLE

DCMT 07 02 02- FP
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			Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
							UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
	P	Steel					●	◔	✣	✣	✣	◔	✣	○	○	●	●	◔	◔	✣	✣	✣	●	◔	◔	●	●	◔	✣		◔	◔	
	M	Stainless Steel										◔	✣	○	✣				◔	✣	✣	✣	○			○	○						
	K	Cast Iron															●	◔	◔	✣	◔	✣	●			◔	●	●	✣	●	◔		
	N	Non-ferrous Metal																													◔		
	S	Heat-resistant Alloy, Titanium Alloy														●			◔	◔	✣										◔	◔	
FP NEW		Carbon Steel • Alloy Steel			DCMT070202-FP	0.2	●	●															○		○							C023
					070204-FP	0.4	●	●															○		○							D009
					11T302-FP	0.2	●	●															○		○							D026
					11T304-FP	0.4	●	●															○		○							E008
					11T308-FP	0.8	●	●															○		○							E009
																																	E029
																																	E031
FM NEW		Stainless Steel			DCMT070202-FM	0.2														●												C023
					070204-FM	0.4														●												D009
					11T302-FM	0.2														●												D026
					11T304-FM	0.4														●												E008
					11T308-FM	0.8														●												E009
																																	E029
																																	E031
FV		Carbon Steel • Alloy Steel			DCMT070202-FV	0.2	●	▲												●			●	●		●						C023
					070204-FV	0.4	●	▲												●			●	●		●						D009
					070208-FV	0.8		▲												●			●	●								D026
					11T302-FV	0.2		▲												●			●	●								E008
					11T304-FV	0.4	●	▲												●			●	●		●						E009
					11T308-FV	0.8	●	▲												●			●	●		●						E029
																																	E031
AZ		Aluminium Alloy			DCGT070202-AZ	0.2																									●		C023
					070204-AZ	0.4																									●		D009
					11T302-AZ	0.2																									●		D026
					11T304-AZ	0.4																									●		E008
					11T308-AZ	0.8																									●		E009
																																	E029
																																	E031
R/L-F		Carbon Steel • Alloy Steel			DCGT070202R-F	0.2														●			●								●		
					070202L-F	0.2														●			●			●					●		C023
					070204R-F	0.4														●			●								●		D009
					070204L-F	0.4														●			●			●					●		D026
					11T302R-F	0.2														●			●								●		E008
					11T302L-F	0.2														●			●			●					●		E009
					11T304R-F	0.4														●			●								●		E029
					11T304L-F	0.4														●			●			●					●		E031
LP NEW		Carbon Steel • Alloy Steel			DCMT070204-LP	0.4	●	●															○		○							C023
					070208-LP	0.8	●	●															○		○							D009
					11T304-LP	0.4	●	●															○		○							D026
					11T308-LP	0.8	●	●															○		○							E008
																																	E009
																																	E029
																																	E031

CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

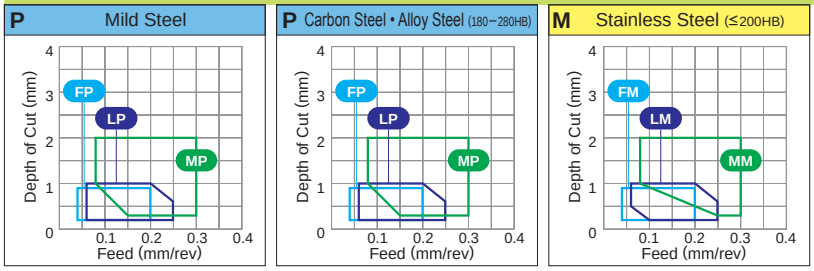
TURNING INSERTS [POSITIVE]

55° DC TYPE INSERTS WITH HOLE

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

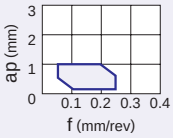
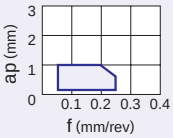
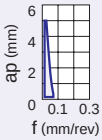
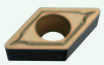
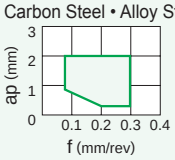
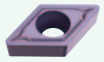
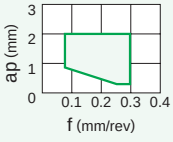
CHIP CONTROL RANGE FOR WORK MATERIALS

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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HTi10	RT9010	Applicable Holder Page
LM (NEW)	Stainless Steel	**DCMT070204-LM**	0.4						●	○								●												C023 D009 D026 E008 E009 E029 E031
		**070208-LM**	0.8						●	○								●												
		11T304-LM	0.4						●	○								●												
		11T308-LM	0.8						●	○								●												
Light Cutting																														
SV	Carbon Steel • Alloy Steel	**DCMT070202-SV**	0.2				▲			▲	●							●		●	●			●						C023 D009 D026 E008 E009 E029 E031
		**070204-SV**	0.4		●		▲			▲	●							●		●	●			●						
		070208-SV	0.8		●		▲			▲	●							●		●	●			●						
		11T302-SV	0.2		●		▲			▲	●							●		●	●			●						
		11T304-SV	0.4		●		▲			▲	●							●		●	●			●						
Light Cutting		**11T308-SV**	0.8		●		▲			▲	●							●		●	●			●						
R/L-SS	Carbon Steel • Alloy Steel	**DCGT0702V3R-SS**	0.03															●												C023 D009 D026 E008 E009 E029 E031
		**0702V3L-SS**	0.03															●												
		070201R-SS	0.1															●												
		070201L-SS	0.1															●												
		070202R-SS	0.2															●												
		070202L-SS	0.2															●												
		11T3V3R-SS	0.03															●												
		11T301R-SS	0.1															●												
Light Cutting		**11T302R-SS**	0.2															●												
MP (NEW)	Carbon Steel • Alloy Steel	**DCMT070204-MP**	0.4		●	●														○		○								C023 D009 D026 E008 E009 E029 E031
		**070208-MP**	0.8		●	●														○		○								
		11T304-MP	0.4		●	●														○		○								
		11T308-MP	0.8		●	●														○		○								
		150404-MP	0.4		●	●														○		○								
Medium Cutting		**150408-MP**	0.8		●	●														○		○								
MM (NEW)	Stainless Steel	**DCMT070204-MM**	0.4						●	○								●												C023 D009 D026 E008 E009 E029 E031
		**070208-MM**	0.8						●	○								●												
		11T304-MM	0.4						●	○								●												
		11T308-MM	0.8						●	○								●												
		150404-MM	0.4						●	○								●												
Medium Cutting		**150408-MM**	0.8						●	○								●												

● : Inventory maintained in Japan. ○ : To be released in Autumn 2013
▲ : 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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HTi10	RT9010	Applicable Holder Page
Standard	Carbon Steel • Alloy Steel ap (mm) 0 1 2 3 f (mm/rev) 0.1 0.2 0.3 0.4	DCMT070202	0.2		●	▲				●									●	●		●	●		●				C023 D009 D026 E008 E009 E029 E031
		070204	0.4	●	●	▲				●		●			●				●	●		●	●		●				
		070208	0.8		●					●		●							●	●		●	●						
		11T302	0.2		●	▲				●									●	●		●	●		●				
		11T304	0.4	●	●	▲				●		●			●				●	●		●	●		●				
		11T308	0.8	●	●	▲				●		●			●				●	●		●	●		●				
		11T312	1.2		●																								
		150404	0.4		●	▲				●		●			●					●	●		●			●				
		150408	0.8		●	▲				●		●			●					●	●		●			●				
Medium Cutting		150412	1.2		●																								
MV	Carbon Steel • Alloy Steel ap (mm) 0 1 2 3 f (mm/rev) 0.1 0.2 0.3 0.4	DCMT070202-MV	0.2		●	●	▲				▲	●							●	●		●	●		●				C023 D009 D026 E008 E009 E029 E031
		070204-MV	0.4		●	●	▲				▲	●							●	●		●	●		●				
		070208-MV	0.8		●	●	▲				▲	●							●	●		●	●		●				
		11T302-MV	0.2		●	●	▲				▲	●							●	●		●	●		●				
		11T304-MV	0.4		●	●	▲				▲	●							●	●		●	●		●				
Medium Cutting		11T308-MV	0.8		●	●	▲				▲	●							●	●		●	●		●				
R/L-SR	Carbon Steel • Alloy Steel ap (mm) 0 1 2 3 f (mm/rev) 0.1 0.2 0.3 0.4	DCET 0702V3R-SR	0.03															●		●							●		C023 D009 D026 E008 E009 E029 E031
		0702V3L-SR	0.03															●		●							●		
		070201R-SR	0.1															●		●							●		
		070201L-SR	0.1															●		●							●		
		070202R-SR	0.2															●		●							●		
		070202L-SR	0.2															●		●							●		
		070204R-SR	0.4															●		●							●		
		070204L-SR	0.4															●		●							●		
		11T3V3R-SR	0.03															●		●							●		
		11T3V3L-SR	0.03															●		●							●		
		11T301R-SR	0.1															●		●							●		
		11T301L-SR	0.1															●		●							●		
		11T302R-SR	0.2															●		●							●		
		11T302L-SR	0.2															●		●							●		
		11T304R-SR	0.4															●		●							●		
Medium Cutting		11T304L-SR	0.4															●		●							●		
R/L-SN	Carbon Steel • Alloy Steel ap (mm) 0 2 4 6 f (mm/rev) 0.1 0.3	DCET 070200R-SN	0															●		●							●		C023 D009 D026 E008 E009 E029 E031
		070200L-SN	0															●		●							●		
		0702V3R-SN	0.03															●		●							●		
		0702V3L-SN	0.03															●		●							●		
		070201R-SN	0.1															●		●							●		
		070201L-SN	0.1															●		●							●		
		070202R-SN	0.2															●		●							●		
		070202L-SN	0.2															●		●							●		
		070204R-SN	0.4															●		●							●		
		070204L-SN	0.4															●		●							●		
		11T300R-SN	0															●		●							●		
		11T300L-SN	0															●		●							●		
Medium Cutting		11T3V3R-SN	0.03															●		●							●		

CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

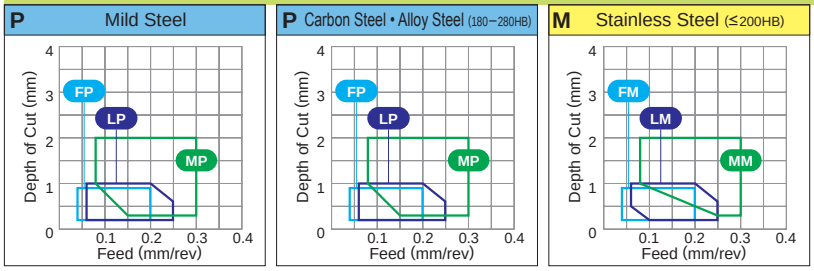
TURNING INSERTS [POSITIVE]

55° DC TYPE INSERTS WITH HOLE

DCET 11 T3 V3 L-SN
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

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



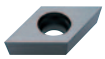
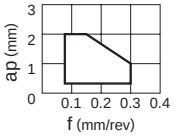
Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material			Corner R	Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
P	Steel			●	◔	✣	✣	✣									✣	✣	✣	●	◔	◔	●	●	◔	✣				
M	Stainless Steel								◔	✣	●	✣				◔	✣	✣	✣	●			●	●						
K	Cast Iron													●	◔	◔	✣	✣		●			●	●		✣	●	◔		
N	Non-ferrous Metal																											◔		
S	Heat-resistant Alloy, Titanium Alloy												●			◔	✣	✣										◔	◔	
R/L-SN	Carbon Steel • Alloy Steel Medium Cutting	DCET 11T3V3L-SN	0.03														●			●							●		C023 D009 D026 E008 E009 E029 E031
		11T301R-SN	0.1														●			●							●		
		11T301L-SN	0.1														●			●							●		
		11T302R-SN	0.2														●			●							●		
		11T302L-SN	0.2														●			●							●		
		11T304R-SN	0.4														●			●							●		
		11T304L-SN	0.4														●			●							●		
R/L-SN	Carbon Steel • Alloy Steel Medium Cutting	DCGT 0702V3R-SN	0.03														●												C023 D009 D026 E008 E009 E029 E031
		070201R-SN	0.1														●												
		070202R-SN	0.2														●												
		070202L-SN	0.2														●												
		11T3V3R-SN	0.03														●												
		11T3V3L-SN	0.03														●												
		11T301R-SN	0.1														●												
		11T301L-SN	0.1														●												
		11T302R-SN	0.2														●												
		11T302L-SN	0.2														●												
		11T304R-SN	0.4														●												
		11T304L-SN	0.4														●												
R/LW-SN *	Carbon Steel • Alloy Steel Medium Cutting (Wiper)	DCET 0702V3RW-SN	0.03														●												C023 D009 D026 E008 E009 E029 E031
		0702V3LW-SN	0.03														●												
		11T3V3RW-SN	0.03														●												
		11T3V3LW-SN	0.03														●												
SMG	Carbon Steel • Alloy Steel Medium Cutting	DCGT 070202M-SMG	0.2														●												C023 D009 D026 E008 E009 E029 E031
		070204M-SMG	0.4														●												
		11T302M-SMG	0.2														●												
		11T304M-SMG	0.4														●												
Flat Top	Cast Iron	DCMW 070204	0.4											●	●													●		C023 D009 D026 E008 E009 E029 E031
		11T304	0.4											●	●											●		●		
		11T308	0.8											●	●													●		
		150404	0.4																									●		
		150408	0.8																									●		

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

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

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

Work Material			Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated														Cermet		Coated Cermet			Carbide				Applicable Holder Page
							UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
	P	Steel					●	◔	✣	✣	✣	◔	✣	●	✣	●	●	●	◔	✣	✣	✣	●	◔	◔	●	●	◔	✣				
	M	Stainless Steel										✣	●	✣					◔	✣	✣	✣	●			●	●						
	K	Cast Iron															●	●	●	✣	✣		●			●	●		✣	●	◔		
	N	Non-ferrous Metal																													◔		
	S	Heat-resistant Alloy, Titanium Alloy													●				●	◔	✣										◔	◔	
Flat Top		Cast Iron			**DCGW070200**	0															●										C023
					0702V5	0.05															●											D009 D026
					11T300	0															●											E008 E009
					11T3V5	0.05															●											E029 E031

CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

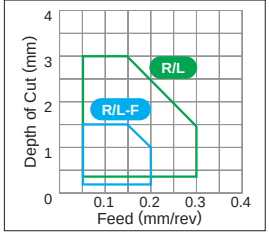
55° DE TYPE INSERTS WITH HOLE

DEGX 15 04 02 R-F
Size Thickness Corner Radius 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			Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
							UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
Work Material	P	Steel					●	◔	✣	✣	✣										✣	✣	●	◔	◔	●	●	◔	✣				
	M	Stainless Steel					◔	✣	◔	✣											✣	✣	○			○	○		✣				
	K	Cast Iron															●	◔	◔		✣	✣	●			●	●		✣	●	◔		
	N	Non-ferrous Metal																													◔		
	S	Heat-resistant Alloy, Titanium Alloy														●			◔	✣	✣	✣								◔	◔		
			R/L-F	Aluminium Alloy	**DEGX150402R-F**	0.2																									●		C032
			Finish Cutting (For Aluminium Alloy)	ap (mm) 0 1 2 3 / f (mm/rev) 0.1 0.2 0.3 0.4	**150402L-F**	0.2																									●		
					150404R-F	0.4																									●		
					150404L-F	0.4																									●		
			R/L	Aluminium Alloy	**DEGX150402R**	0.2																									●		C032
			Medium Cutting (For Aluminium Alloy)	ap (mm) 0 1 2 3 4 / f (mm/rev) 0.1 0.3 0.5	**150402L**	0.2																									●		
					150404R	0.4																									●		
					150404L	0.4																									●		

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

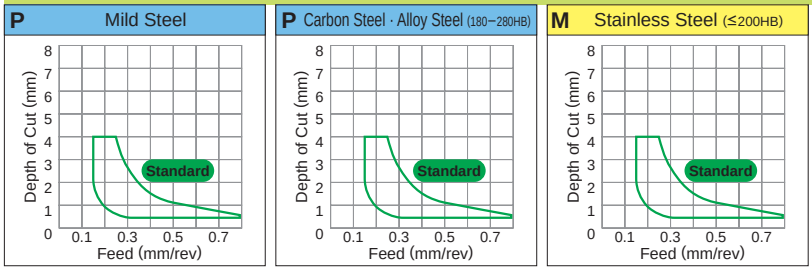
CHIP BREAKERS ➤ A062

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·····



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

Work Material			Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	Applicable Holder Page
	P	Steel																														
	M	Stainless Steel																														
	K	Cast Iron																														
	N	Non-ferrous Metal																														
	S	Heat-resistant Alloy, Titanium Alloy																														
AZ			Finish Cutting	Aluminium Alloy	**RCGT 0803M0-AZ**	—																									●		C025
					10T3M0-AZ	—																									●		
Standard			Medium Cutting	Carbon Steel • Alloy Steel	**RCMT 0602M0**	—		●															●●		●				●			C025
					0803M0	—		●							●							●●		●				●			
Standard			Medium Cutting	Carbon Steel • Alloy Steel	**RCMX 1003M0**	—		●		▲					●				●			●●		●							C024 H012
					1204M0	—	●	●		▲					●	●		●	●			●●		●							
					1606M0	—	●	●		▲	●				●	●			●	●											
					2006M0	—	●	●		▲	●				●																
					2507M0	—	●	●		▲																					
					3209M0	—	●	●		▲																					
RR			Heavy Cutting	Carbon Steel • Alloy Steel	**RCMX 1606M0-RR**	—		●		▲	●				●																—
					2006M0-RR	—		●		▲	●				●																
					2507M0-RR	—		●		▲	●				●																
					3209M0-RR	—		●		▲																					

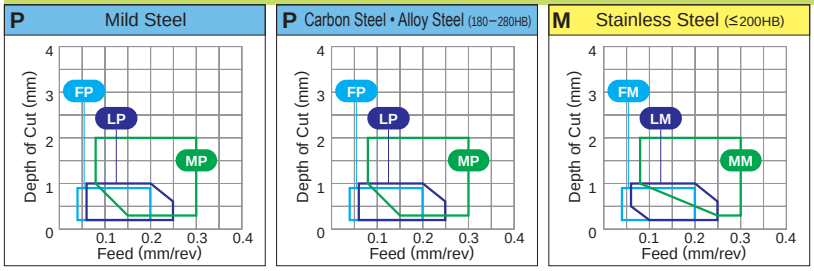
CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

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		Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
P Steel		UE6105	UE6110 NEW	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
M Stainless Steel																											
K Cast Iron																											
N Non-ferrous Metal																											
S Heat-resistant Alloy, Titanium Alloy																											
Shape / Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)																										
FP NEW Carbon Steel • Alloy Steel	**SCMT09T304-FP**	0.4	●	●														○		○								C026 E033
Finish Cutting	**09T308-FP**	0.8	●	●														○		○								
FM NEW Carbon Steel • Alloy Steel	**SCMT09T304-FM**	0.4													●													C026 E033
Finish Cutting	**09T308-FM**	0.8													●													
FV Carbon Steel • Alloy Steel	**SCMT09T304-FV**	0.4			▲													●	●		●		●					C026 E033
Finish Cutting																												
LP NEW Carbon Steel • Alloy Steel	**SCMT09T304-LP**	0.4	●	●														○		○								C026 E033
Light Cutting	**09T308-LP**	0.8	●	●														○		○								
LM NEW Stainless Steel	**SCMT09T304-LM**	0.4					●	○							●													C026 E033
Light Cutting	**09T308-LM**	0.8					●	○							●													
MP NEW Carbon Steel • Alloy Steel	**SCMT09T304-MP**	0.4	●	●														○		○								C026 E033
Medium Cutting	**09T308-MP**	0.8	●	●														○		○								
	120404-MP	0.4	●	●														○		○								
	120408-MP	0.8	●	●														○		○								
MM NEW Stainless Steel	**SCMT09T304-MM**	0.4					●	○							●													C026 E033
Medium Cutting	**09T308-MM**	0.8					●	○							●													
	120404-MM	0.4					●	○							●													
	120408-MM	0.8					●	○							●													

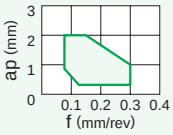
● : Inventory maintained in Japan. ○ : To be released in Autumn 2013
▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

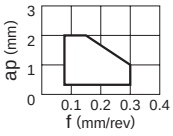
Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

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

Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated												Cermet		Coated Cermet			Carbide				Applicable Holder Page
				UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	VP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
Standard	Carbon Steel • Alloy Steel	**SCMT 09T304**	0.4	●	●		▲				●			●						●	●		●						
		09T308	0.8	●	●		▲				●			●						●	●		●					C026 E033
		120404	0.4	●	●		▲				●			●						●	●							
		120408	0.8	●	●		▲				●			●						●	●		●					
		120412	1.2		●																							
Flat Top	Cast Iron	**SCMW09T304**	0.4											●											●		●		C026 E033
		09T308	0.8											●	●														
		120408	0.8											●	●														


Medium Cutting





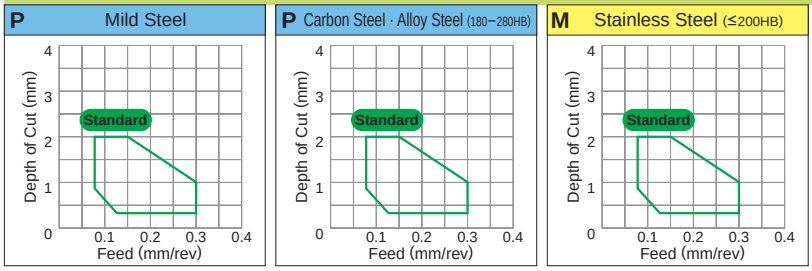
CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

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			Corner R	Coated														Cermet		Coated Cermet				Carbide				Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
	P	Steel		●	◕	✣	✣	✣	◕	✣	○	✣	●				✣	✣	✣	●	◕	◕	●	○	●	◕	✣				
	M	Stainless Steel							◕	✣	○	✣		●	◕		◕	✣	✣	○			○	○			✣				
	K	Cast Iron												●	◕		◕	✣		●			●	●		✣	●	◕		
	N	Non-ferrous Metal																										◕		
	S	Heat-resistant Alloy, Titanium Alloy											●			●	◕	✣										◕	◕	
Standard	Carbon Steel • Alloy Steel		**SPMT 090304**	0.4																●										
			090308	0.8																●										
			120308	0.8																●						●				–
Medium Cutting																														
Flat Top	Cast Iron		**SPMW 090304**	0.4														●	●	●						●		●		
			090308	0.8														●	●	●						●		●		
			120304	0.4														●	●	●						●		●		–
			120308	0.8														●	●	●						●		●		
Flat Top	Cast Iron		**SPGX 090304**	0.4																●								●		
			090308	0.8																								●		
			120304	0.4																								●		–
			120308	0.8																								●		

● : Inventory maintained in Japan. ○ : To be released in Autumn 2013
▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

CHIP BREAKERS ➤ A058

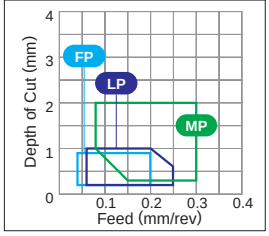
60° TC TYPE INSERTS WITH HOLE

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

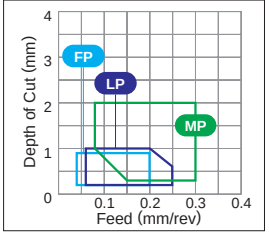
CHIP CONTROL RANGE FOR WORK MATERIALS

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

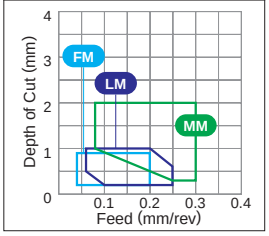
P Mild Steel



P Carbon Steel • Alloy Steel (180–280HB)



M Stainless Steel (≤200HB)



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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
				UE6105	UE6110 NEW	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
FP NEW	Carbon Steel • Alloy Steel	TCMT090202-FP	0.2	●	●													○		○									C027 E028
		090204-FP	0.4	●	●													○		○									
		110202-FP	0.2	●	●													○		○									
		110204-FP	0.4	●	●													○		○									
		16T304-FP	0.4	●	●													○		○									
FM NEW	Carbon Steel • Alloy Steel	TCMT090202-FM	0.2														●											C027 E028
		090204-FM	0.4														●											
		110202-FM	0.2														●											
		110204-FM	0.4														●											
		16T304-FM	0.4														●											
FV	Carbon Steel • Alloy Steel	TCMT110204-FV	0.4				▲											●	●		●		●						C027 E028
		16T304-FV	0.4				▲											●	●		●								
AZ	Aluminium Alloy	TCGT110202-AZ	0.2																								●		C027 E028
		110204-AZ	0.4																								●		
		110208-AZ	0.8																								●		
		16T302-AZ	0.2																								●		
		16T304-AZ	0.4																								●		
		16T308-AZ	0.8																								●		
R/L-F	Carbon Steel • Alloy Steel	TCGT0601V3L-F	0.03															●											E017
		060101L-F	0.1														●	●											
		060102R-F	0.2														●	●									●		
		060102L-F	0.2														●	●									●		
		060104R-F	0.4															●									●		
		060104L-F	0.4														●	●									●		
LP NEW	Carbon Steel • Alloy Steel	TCMT090204-LP	0.4	●	●													○		○									C027 E028
		090208-LP	0.8	●	●													○		○									
		110204-LP	0.4	●	●													○		○									
		110208-LP	0.8	●	●													○		○									
		16T304-LP	0.4	●	●													○		○									
		16T308-LP	0.8	●	●													○		○									

Light Cutting

CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

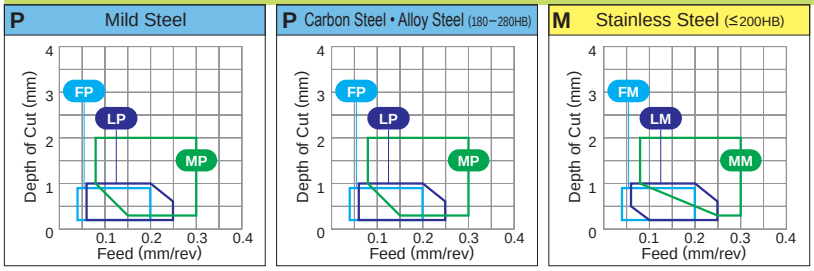
TURNING INSERTS [POSITIVE]

60° TC TYPE INSERTS WITH HOLE

TCMT 09 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			Corner R	Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
P	Steel	● ◔ ✣ ✣ ✣		●	◔	✣	✣	✣									✣	✣	✣	●	◔		◔	●	◔	●	◔	✣			
M	Stainless Steel	◔ ✣ ◔ ✣							◔	✣	◔	✣					◔	✣	✣	◔				◔	●		✣			
K	Cast Iron	● ◔												●	◔		◔	✣		●				●	●	✣	●	◔		
N	Non-ferrous Metal																											◔		
S	Heat-resistant Alloy, Titanium Alloy												●			●	◔	✣										◔	◔	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number																												
LM NEW	Stainless Steel	TCMT 090204-LM	0.4						●	○								●												C027 E028
		090208-LM	0.8						●	○								●												
		110204-LM	0.4						●	○								●												
		110208-LM	0.8						●	○								●												
		16T304-LM	0.4						●	○								●												
Light Cutting		16T308-LM	0.8						●	○								●												
MP NEW	Carbon Steel • Alloy Steel	TCMT 090204-MP	0.4		●	●														○		○								C027 E028
		090208-MP	0.8		●	●														○		○								
		110204-MP	0.4		●	●														○		○								
		110208-MP	0.8		●	●														○		○								
		130304-MP	0.4		●	●														○		○								
		16T304-MP	0.4		●	●														○		○								
		16T308-MP	0.8		●	●														○		○								
Medium Cutting		16T312-MP	1.2		●	●														○		○								
MM NEW	Stainless Steel	TCMT 090204-MM	0.4						●	○								●												C027 E028
		090208-MM	0.8						●	○								●												
		110204-MM	0.4						●	○								●												
		110208-MM	0.8						●	○								●												
		130304-MM	0.4						●	○								●												
		16T304-MM	0.4						●	○								●												
		16T308-MM	0.8						●	○								●												
Medium Cutting		16T312-MM	1.2						●	○								●												
Standard	Carbon Steel • Alloy Steel	TCMT 080204	0.4																●		●				●				C027 E028
		090204	0.4		●	▲						●							●	●	●	●			●					
		110202	0.2		●	▲						●						●	●	●	●	●								
		110204	0.4	●	●	▲						●		●				●	●	●	●	●			●					
		110208	0.8	●	●													●			●									
		130302	0.2																●		●	●								
		130304	0.4		●							●							●		●									
		16T304	0.4	●	●	▲						●		●				●	●	●	●	●			●					
Medium Cutting		16T308	0.8	●	●	▲						●		●				●	●	●	●	●			●					
		16T312	1.2		●																									
Flat Top	Cast Iron	TCMW 110204	0.4											●	●													●		C027 E028
		130304	0.4																									●		
		16T304	0.4											●	●													●		
		16T308	0.8											●	●													●		

● : Inventory maintained in Japan. ○ : To be released in Autumn 2013
▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

CHIP BREAKERS ➤ A052

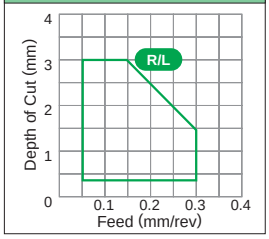
60° TE TYPE INSERTS WITH HOLE

TEGX 16 03 02 R
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

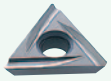
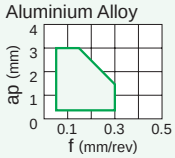
CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····

N Aluminium Alloy



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

Work Material			Corner R	Coated														Cermet		Coated Cermet				Carbide				Applicable Holder Page
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Re (mm)	UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
	P Steel			●	◔	✣	✣	✣	◔	✣	●	✣					◔	✣	✣	●	◔	◔	●	●	◔	✣				
	M Stainless Steel								◔	✣	●	✣					◔	✣	✣	○			○	○		✣				
	K Cast Iron													●	◔		◔	✣		●			●	●		✣	●	◔		
	N Non-ferrous Metal																											◔		
	S Heat-resistant Alloy, Titanium Alloy												●			●	◔	✣										◔	◔	
R/L  Medium Cutting (For Aluminium Alloy)	Aluminium Alloy 	**TEGX160302R**	0.2																								●		C033 E043
		160302L	0.2																								●		
		160304R	0.4																								●		
		160304L	0.4																								●		

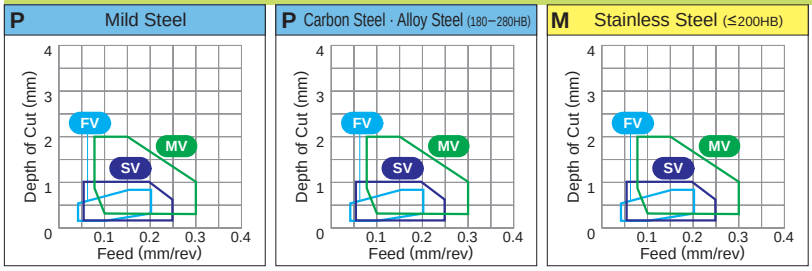
CHIP BREAKERS ➤ A062
GRADES ➤ A030
IDENTIFICATION ➤ A002

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			Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HTi10	RT9010	Applicable Holder Page
	P	Steel					●	◔	✣	✣	✣	◔	✣	◔	✣	●		●	◔	✣	✣	✣	●	◔	◔	●	●	◔	✣					
	M	Stainless Steel										◔	✣	◔	✣				◔	✣	✣	✣	●			●	●						
	K	Cast Iron														●	◔		◔	✣			●			◔	●		✣	●	◔		
	N	Non-ferrous Metal																													◔	
	S	Heat-resistant Alloy, Titanium Alloy													●			●	◔	✣	✣										◔	◔
FV				Carbon Steel • Alloy Steel	TPMH080202-FV	0.2				▲										●		●	●		●							E007
					080204-FV	0.4				▲										●		●	●		●							
					090202-FV	0.2				▲										●		●	●		●							
					090204-FV	0.4				▲										●		●	●		●							
					110302-FV	0.2				▲										●		●	●		●							
					110304-FV	0.4				▲										●		●	●		●							
					110308-FV	0.8				▲										●		●	●		●							
					160302-FV	0.2				▲										●		●	●		●							
					160304-FV	0.4				▲										●		●	●		●							
			Finish Cutting		160308-FV	0.8				▲										●		●	●		●							
R/L-FS				Carbon Steel • Alloy Steel	TPGH080202R-FS	0.2														●			●									●	E007
					080202L-FS	0.2														●			●			●	●					●	
					080204R-FS	0.4														●			●									●	
					080204L-FS	0.4														●			●			●	●					●	
					090202R-FS	0.2														●			●									●	
					090202L-FS	0.2														●			●			●	●					●	
					090204R-FS	0.4														●			●									●	
					090204L-FS	0.4														●			●			●	●					●	
					110302R-FS	0.2														●			●									●	
					110302L-FS	0.2														●			●			●	●					●	
					110304R-FS	0.4														●			●									●	
					110304L-FS	0.4														●			●			●	●					●	
					160304R-FS	0.4														●			●									●	
					160304L-FS	0.4														●			●			●						●	
					160308R-FS	0.8														●			●									●	
			Finish Cutting		160308L-FS	0.8														●			●			●						●	

● : 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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HTi10	RT9010	Applicable Holder Page
R/L	Carbon Steel • Alloy Steel	TPGX 080202R	0.2																	●										E025
		080202L	0.2																	●								●		
		080204R	0.4																	●								●		
		080204L	0.4																●	●						●		●		
		090202R	0.2																	●										
		090202L	0.2																	●						●		●		
		090204R	0.4																	●								●		
		090204L	0.4																●	●						●		●		
		090208R	0.8																									●		
		090208L	0.8																	●								●		
		110302L	0.2																	●						●		●		
		110304R	0.4																●	●								●		
		110304L	0.4																●	●						●		●		
		110308R	0.8																	●								●		
Finish Cutting		110308L	0.8																●	●						●	●	●		
L	Carbon Steel • Alloy Steel	TPMX 090204L	0.4																	●										E025
		110304L	0.4																	●										
Finish Cutting																														
SV	Carbon Steel • Alloy Steel	TPMH 080202-SV	0.2		●▲					▲●							●			●●		●							E007
		080204-SV	0.4		●▲					▲●							●			●●		●			●				
		090202-SV	0.2		●▲					▲●							●			●●		●							
		090204-SV	0.4		●▲					▲●							●			●●		●			●				
		110302-SV	0.2		●▲					▲●							●			●●		●			●				
		110304-SV	0.4		●▲					▲●							●			●●		●			●				
		110308-SV	0.8		●▲					▲●							●			●●		●			●				
		160302-SV	0.2		●▲					▲●							●			●●		●			●				
		160304-SV	0.4		●▲					▲●							●			●●		●			●				
Light Cutting		160308-SV	0.8		●▲					▲●							●			●●		●			●				
Standard	Carbon Steel • Alloy Steel	TPMX 110304	0.4																	●●		●								E025
		110308	0.8																	●●		●								
Medium Cutting																														
MV	Carbon Steel • Alloy Steel	TPMH 080202-MV	0.2		●▲					▲●							●			●●		●							E007
		080204-MV	0.4		●▲					▲●							●			●●		●●		●					
		090202-MV	0.2		●▲					▲●							●			●●		●							
		090204-MV	0.4		●▲					▲●							●			●●		●●		●					
		090208-MV	0.8		●▲												●			●		●							
		110302-MV	0.2		●▲					▲●							●			●●		●●		●					
		110304-MV	0.4		●▲					▲●							●			●●		●●		●					
		110308-MV	0.8		●▲					▲●							●			●●		●●		●					
		160304-MV	0.4		●▲					▲●							●			●●		●●		●					
Medium Cutting		160308-MV	0.8		●▲					▲●							●			●●		●●		●					

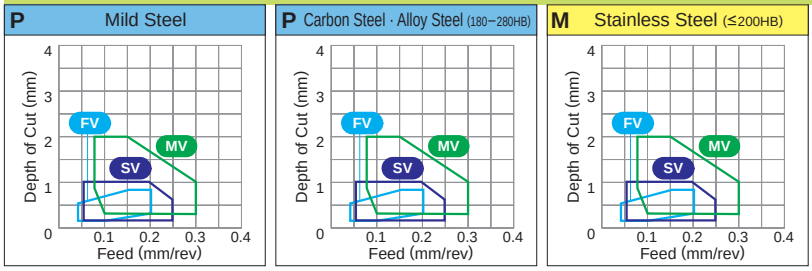
CHIP BREAKERS ➤ A058
GRADES ➤ A030
IDENTIFICATION ➤ A002

60° TP TYPE INSERTS WITH HOLE

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

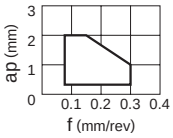
CHIP CONTROL RANGE FOR WORK MATERIALS

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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated														Cermet		Coated Cermet				Carbide				Applicable Holder Page
				UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
Flat Top	 Cast Iron 	**TPGX080202**	0.2																●								●		E025
		080204	0.4														●	●	●						●		●		
		080208	0.8																●						●		●		
		090202	0.2																●								●		
		090204	0.4															●	●						●		●		
		090208	0.8															●	●						●		●		
		110302	0.2																								●		
		110304	0.4														●	●	●						●	●	●		
		110308	0.8															●	●						●	●	●		
		160304	0.4																●						●		●		
		160308	0.8																						●		●		

● : Inventory maintained in Japan. ○ : To be released in Autumn 2013
▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

CHIP BREAKERS ➤ A058

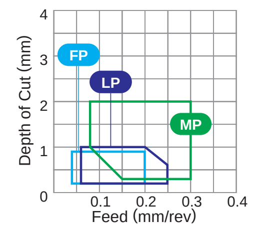
35° VB TYPE INSERTS WITH HOLE

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

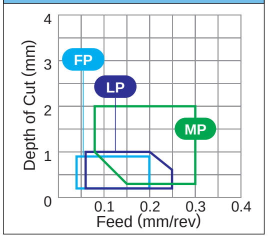
CHIP CONTROL RANGE FOR WORK MATERIALS

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

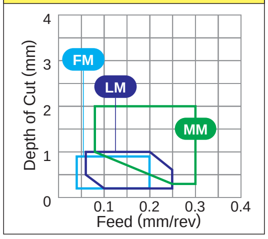
P Mild Steel



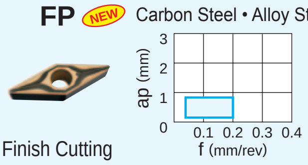
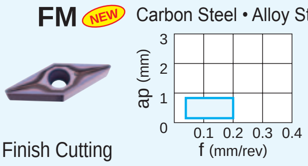
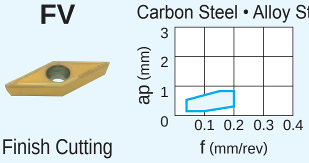
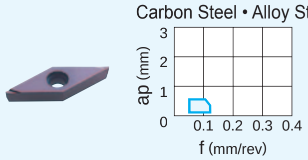
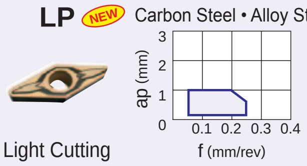
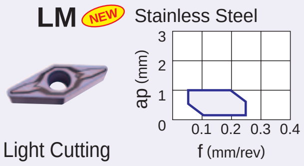
P Carbon Steel • Alloy Steel (180–280HB)



M Stainless Steel (≤200HB)



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

Shape / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Re (mm)	UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	Applicable Holder Page
Work Material	P Steel		●	◐	✢	✢	✢										✢	✢	●	◐	◐	●	●	◐	✢				
	M Stainless Steel							◐	✢	●	✢					◐	✢	✢	●			●	●		✢				
	K Cast Iron												●	◐		◐	✢		●			●	●		✢	●	◐		
	N Non-ferrous Metal																										◐		
	S Heat-resistant Alloy, Titanium Alloy										●			●	◐	✢										◐	◐	
		Corner R	Coated																Cermet		Coated Cermet				Carbide				
FP (NEW) Carbon Steel • Alloy Steel  Finish Cutting	VBMT110302-FP	0.2		●	●														○		○								D010 D011 E011 E012 H013
	110304-FP	0.4		●	●														○		○								
	110308-FP	0.8		●	●														○		○								
	160404-FP	0.4		●	●														○		○								
	160408-FP	0.8		●	●														○		○								
FM (NEW) Carbon Steel • Alloy Steel  Finish Cutting	VBMT110302-FM	0.2															●												D010 D011 E011 E012 H013
	110304-FM	0.4															●												
	110308-FM	0.8															●												
	160404-FM	0.4															●												
	160408-FM	0.8															●												
FV Carbon Steel • Alloy Steel  Finish Cutting	VBMT110304-FV	0.4				▲											●		●	●									D010 D011 E011 E012 H013
	110308-FV	0.8				▲											●		●	●									
	160404-FV	0.4				▲											●		●	●									
	160408-FV	0.8				▲											●		●	●									
R/L-F Carbon Steel • Alloy Steel  Finish Cutting	VBGT110302R-F	0.2															●		●		●	●					●		D010 D011 E011 E012 H013
	110302L-F	0.2															●		●		●	●					●		
	110304R-F	0.4															●		●			●					●		
	110304L-F	0.4															●		●			●					●		
	160402R-F	0.2															●		●			●					●		
	160402L-F	0.2															●		●			●					●		
	160404R-F	0.4															●		●			●					●		
	160404L-F	0.4															●		●			●					●		
LP (NEW) Carbon Steel • Alloy Steel  Light Cutting	VBMT110304-LP	0.4		●	●														○		○								D010 D011 E011 E012 H013
	110308-LP	0.8		●	●														○		○								
	160404-LP	0.4		●	●														○		○								
	160408-LP	0.8		●	●														○		○								
LM (NEW) Stainless Steel  Light Cutting	VBMT110304-LM	0.4						●	○								●												D010 D011 E011 E012 H013
	110308-LM	0.8						●	○								●												
	160404-LM	0.4						●	○								●												
	160408-LM	0.8						●	○								●												

CHIP BREAKERS ➤ A048
GRADES ➤ A030
IDENTIFICATION ➤ A002

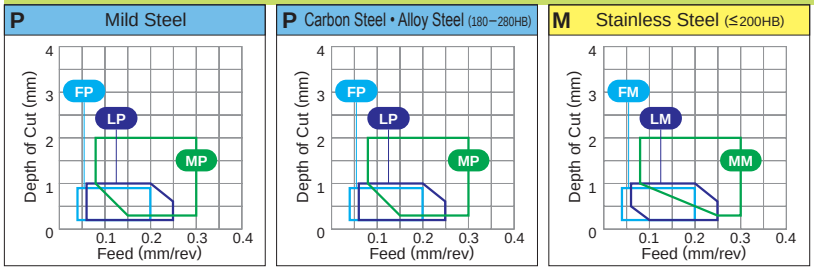
TURNING INSERTS [POSITIVE]

35° VB TYPE INSERTS WITH HOLE

VBMT 11 03 04 - SV
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	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110 (NEW)	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	Applicable Holder Page
SV	Carbon Steel • Alloy Steel	VBMT110304-SV	0.4				▲										●			●										D010
		110308-SV	0.8				▲										●			●										D011
		160404-SV	0.4				▲										●			●										E011
		160408-SV	0.8				▲										●			●										E012
Light Cutting																														H013
MP (NEW)	Carbon Steel • Alloy Steel	VBMT160404-MP	0.4	●	●															○		○								D010
		160408-MP	0.8	●	●															○		○								D011
Medium Cutting																														E011 E012 H013
MM (NEW)	Stainless Steel	VBMT160404-MM	0.4						●	○								●												D010
		160408-MM	0.8						●	○								●												D011
Medium Cutting																														E011 E012 H013
Standard	Carbon Steel • Alloy Steel	VBMT160404	0.4	●																										E011 H013
		160408	0.8	●																										
Medium Cutting																														
MV	Carbon Steel • Alloy Steel	VBMT110304-MV	0.4			●	▲			▲	●							●		●	●	●	●		●					D010
		110308-MV	0.8			●	▲			▲	●							●		●	●	●	●		●					D011
		160404-MV	0.4			●	▲			▲	●							●		●	●	●	●		●					E011
		160408-MV	0.8			●	▲			▲	●							●		●	●	●	●		●					E012
Medium Cutting																														H013
R/L-SR	Carbon Steel • Alloy Steel	VBET 1103V3R-SR	0.03															●		●								●		D010
		1103V3L-SR	0.03															●		●								●		D011
		110301R-SR	0.1															●		●								●		E011
		110301L-SR	0.1															●		●								●		E012
		110302R-SR	0.2															●		●								●		
		110302L-SR	0.2															●		●								●		
		110304R-SR	0.4															●		●								●		
Medium Cutting		110304L-SR	0.4															●		●								●		

● : Inventory maintained in Japan. ○ : To be released in Autumn 2013
▲ : 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			Corner R	Coated														Cermet		Coated Cermet				Carbide				Applicable Holder Page
Shape / Chip Control Range ap : Depth of Cut f : Feed		Order Number	Re (mm)	UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
P	Steel			●	◕	✣	✣	✣	◕	✣	●	✣					◕	✣	✣	●	◕	◕	●	●	●	◕	✣			
M	Stainless Steel																◕	✣	✣	●			●	●		✣				
K	Cast Iron													●	◕		◕	✣		●			●	●		✣	●	◕		
N	Non-ferrous Metal																											◕		
S	Heat-resistant Alloy, Titanium Alloy												●			◕	◕	✣										◕	◕	
R/L-SN	Carbon Steel • Alloy Steel ap (mm) 6 4 2 0 0.1 0.3 f (mm/rev) Medium Cutting	VBET110300R-SN	0															●		●								●		D010 D011 E011 E012
		110300L-SN	0															●		●								●		
		1103V3R-SN	0.03															●		●								●		
		1103V3L-SN	0.03															●		●								●		
		110301R-SN	0.1															●		●								●		
		110301L-SN	0.1															●		●								●		
		110302R-SN	0.2															●		●								●		
		110302L-SN	0.2															●		●								●		
		110304R-SN	0.4															●		●								●		
		110304L-SN	0.4															●		●								●		
R/LW-SN *	Carbon Steel • Alloy Steel ap (mm) 6 4 2 0 0.1 0.3 f (mm/rev) Medium Cutting (Wiper)	VBET1103V3RW-SN	0.03															●												D010 D011 E011 E012
		1103V3LW-SN	0.03															●												

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

CHIP BREAKERS ➤ A048
GRADES ➤ A030
IDENTIFICATION ➤ A002

TURNING INSERTS
POSI 7°
WITH HOLE
C D R S T V W X

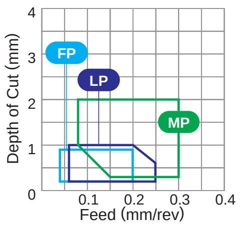
35° VC TYPE INSERTS WITH HOLE

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

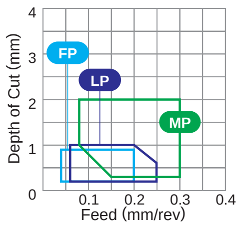
CHIP CONTROL RANGE FOR WORK MATERIALS

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

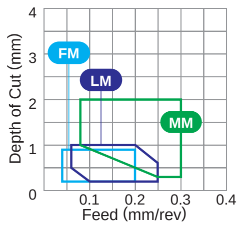
P Mild Steel



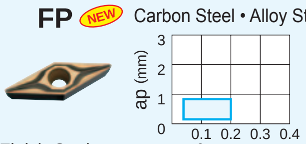
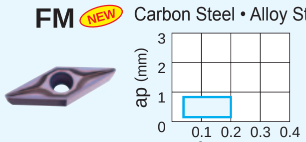
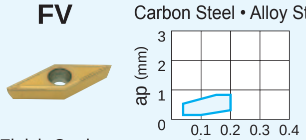
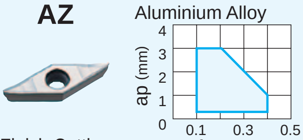
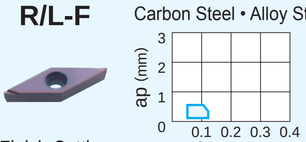
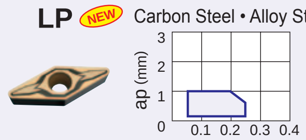
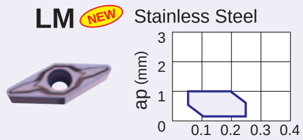
P Carbon Steel • Alloy Steel (180−280HB)



M Stainless Steel (≤200HB)



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

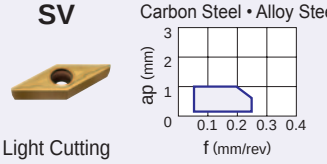
Shape / Chip Control Range (ap : Depth of Cut, f : Feed)	Order Number	Re (mm)	UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	Applicable Holder Page
		Corner R	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									●			●	◐	✢										◐	◐	
FP NEW Carbon Steel • Alloy Steel  Finish Cutting	VCMT110302-FP	0.2		●	●														○		○								C028 C029 E011 E012 E032 E033
	110304-FP	0.4		●	●														○		○								
	160404-FP	0.4		●	●														○		○								
	160408-FP	0.8		●	●														○		○								
FM NEW Carbon Steel • Alloy Steel  Finish Cutting	VCMT110302-FM	0.2															●												C028 C029 E011 E012 E032 E033
	110304-FM	0.4															●												
	160404-FM	0.4															●												
	160408-FM	0.8															●												
FV Carbon Steel • Alloy Steel  Finish Cutting	VCMT080202-FV	0.2				▲											●		●	●	●								C028 C029 E011 E012 E032 E033
	080204-FV	0.4				▲											●		●	●	●								
	160404-FV	0.4		●		▲													●	●		●							
	160408-FV	0.8		●		▲													●	●		●							
AZ Aluminium Alloy  Finish Cutting	VCGT160404-AZ	0.4																									●		C028 C029 E032 E033
	160408-AZ	0.8																									●		
	160412-AZ	1.2																									●		
R/L-F Carbon Steel • Alloy Steel  Finish Cutting	VCGT080202R-F	0.2															●		●			●					●		E011 E012
	080202L-F	0.2															●		●			●					●		
	080204R-F	0.4															●		●			●					●		
	080204L-F	0.4															●		●			●					●		
LP NEW Carbon Steel • Alloy Steel  Light Cutting	VCMT110304-LP	0.4		●	●														○		○								C028 C029 E011 E012 E032 E033
	110308-LP	0.8		●	●														○		○								
	160404-LP	0.4		●	●														○		○								
	160408-LP	0.8		●	●														○		○								
LM NEW Stainless Steel  Light Cutting	VCMT110304-LM	0.4						●	○								●												C028 C029 E011 E012 E032 E033
	110308-LM	0.8						●	○								●												
	160404-LM	0.4						●	○								●												
	160408-LM	0.8						●	○								●												

● : Inventory maintained in Japan. ○ : To be released in Autumn 2013
▲ : 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			Corner R	Coated														Cermet		Coated Cermet				Carbide				Applicable Holder Page
		Order Number	Re (mm)	UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
P	Steel			●	◔	✣	✣	✣	◔	✣	●	◔	●			✣	✣	✣	✣	●	◔	◔	●	●	◔	✣				
M	Stainless Steel								✣	✣	●	✣				◔	✣	✣	✣	○			○	○		✣				
K	Cast Iron													●	◔	◔	✣	✣		●			●	●		✣	●	◔		
N	Non-ferrous Metal																											◔		
S	Heat-resistant Alloy, Titanium Alloy												●			●	◔	✣										◔	◔	
SV Light Cutting	Carbon Steel • Alloy Steel	VCMT 080202-SV	0.2				▲											●			●	●							E011 E012
		080204-SV	0.4				▲											●			●	●							
MP NEW Medium Cutting	Carbon Steel • Alloy Steel	VCMT 160404-MP	0.4		●	●														○		○							E011 E012
		160408-MP	0.8		●	●														○		○							
		160412-MP	1.2		●	●														○		○							
MM NEW Medium Cutting	Stainless Steel	VCMT 160404-MM	0.4						●	○								●											E011 E012
		160408-MM	0.8						●	○								●											
		160412-MM	1.2						●	○								●											
Standard Medium Cutting	Carbon Steel • Alloy Steel	VCMT 110304	0.4		●		▲				●							●		●	●	●	●			●		●	C028 C029 E032 E033
		160404	0.4	●	●		▲				●			●				●		●	●	●	●			●		●	
		160408	0.8	●	●		▲				●			●				●		●	●	●	●			●			
		160412	1.2		●		▲				●									●	●								
MV Medium Cutting	Carbon Steel • Alloy Steel	VCMT 080202-MV	0.2			●	▲				▲	●						●		●	●	●	●	●					E011 E012
		080204-MV	0.4			●	▲				▲	●						●		●	●	●	●	●					
Flat Top	Cast Iron	VCMW110304	0.4																									●	
		160404	0.4											●	●													●	C028 C029 E032 E033
		160408	0.8											●	●													●	

Chip Control Range
ap : Depth of Cut
f : Feed



CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

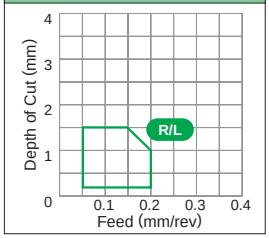
35° VD TYPE INSERTS WITH HOLE

VDGX 16 03 02 R
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

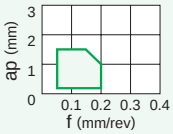
CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····

N Aluminium Alloy



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

Work Material			Corner R	Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
	P	Steel		●	◔	✣	✣	✣	◔	✣	●	✣	●				✣	✣	✣	●	◔	◔	●	●	◔	✣				
	M	Stainless Steel							◔	✣	●	✣		●	◔		◔	✣	✣	○			○	○		✣				
	K	Cast Iron												●	◔		◔	✣		●			●	●		✣	●	◔		
	N	Non-ferrous Metal																										◔		
	S	Heat-resistant Alloy, Titanium Alloy											●			◔	◔	✣										◔	◔	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number																												
R/L	Aluminium Alloy	**VDGX160302R**	0.2																									●		C034
		**160302L**	0.2																									●		
		160304R	0.4																									●		
Medium Cutting (For Aluminium)		**160304L**	0.4																									●		

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

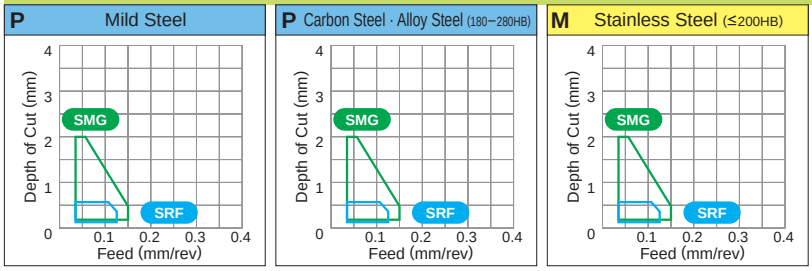
CHIP BREAKERS ➤ A062

35° VP TYPE INSERTS WITH HOLE

VPET 08 02 01 R-SRF
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

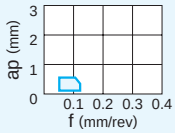
Finish Cutting ····· Medium Cutting ·····



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

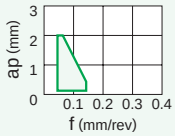
Work Material			Corner R	Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
P	Steel			●	◔	✣	✣	✣	◔	✣	◔	✣					✣	✣	✣	●	◔		◔	●	●	◔	✣				
M	Stainless Steel								◔	✣	◔	✣					◔	✣	✣	◔				◔	●	●					
K	Cast Iron													●	◔		◔	✣		●				●	●		✣	●	◔		
N	Non-ferrous Metal																												◔		
S	Heat-resistant Alloy, Titanium Alloy												●			●	◔	✣											◔	●	
R/L-SRF	Chip Control Range ap : Depth of Cut f : Feed	Order Number																												Applicable Holder Page
		VPET 080201R-SRF	0.1															●												D010 D011
		080201L-SRF	0.1															●												
		080202R-SRF	0.2															●												
		080202L-SRF	0.2															●												
		1103V3R-SRF	0.03															●												
		1103V3L-SRF	0.03															●												
		110301R-SRF	0.1															●												
		110301L-SRF	0.1															●												
		110302R-SRF	0.2															●												
		110302L-SRF	0.2															●												
SMG		VPGT080201M-SMG	0.1															●												D010 D011
		080202M-SMG	0.2															●												
		110301M-SMG	0.1															●												
		110302M-SMG	0.2															●												

Carbon Steel • Alloy Steel



Finish Cutting

Carbon Steel • Alloy Steel



Medium Cutting

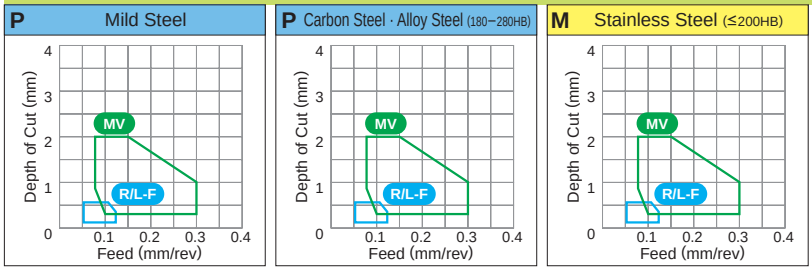
CHIP BREAKERS ➤ A058
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° WB TYPE INSERTS WITH HOLE

WBGT 02 01 V3 L-F
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

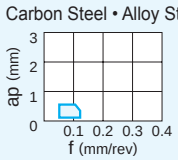
Finish Cutting ····· Medium Cutting ·····

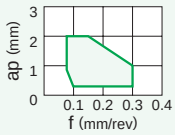


Cutting Conditions (Guide) : ● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

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

Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
				UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
R/L-F	Carbon Steel • Alloy Steel	WBGT 0201V3L-F	0.03														●	●											
		020101L-F	0.1														●	●											
		020102L-F	0.2														●	●		●									
		020104L-F	0.4														●	●		●									
		L302V3L-F	0.03														●	●											E010 E016
		L30201L-F	0.1														●	●											
		L30202R-F	0.2														●	●											
		L30202L-F	0.2														●	●		●									
		L30204R-F	0.4														●	●											
Finish Cutting		L30204L-F	0.4														●	●		●									
R/L-MV	Carbon Steel • Alloy Steel	WBMT L30202R-MV	0.2		●	▲				▲							●	●	●	●			●						
		L30202L-MV	0.2		●	▲				▲							●	●	●	●			●						
		L30204R-MV	0.4		●	▲				▲							●	●	●	●			●						E010 E016
Medium Cutting		L30204L-MV	0.4		●	▲				▲							●	●	●	●			●						





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

CHIP BREAKERS ➤ A048

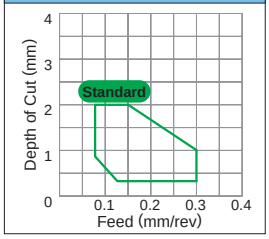
80° WC TYPE INSERTS WITH HOLE

WCGT 02 01 02 R
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

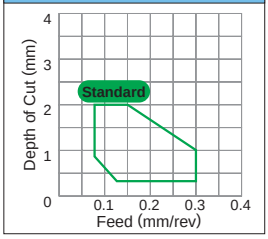
CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····

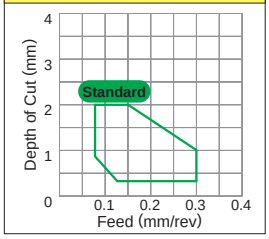
P Mild Steel



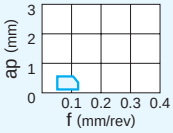
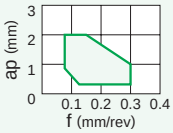
P Carbon Steel · Alloy Steel (180–280HB)



M Stainless Steel (≤200HB)



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

Work Material			Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated: UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	Cermet: NX2525	NX3035	Coated Cermet: MP3025 (NEW)	AP25N	VP25N	VP45N	Carbide: UTi20T	HTi05T	HT10	RT9010	Applicable Holder Page
	P	Steel					●	◔	✣	✣	✣			✣	◔	✣				✣	✣	✣	●	◔	◔	●	●	◔	✣					
	M	Stainless Steel										◔	✣	●	✣				◔	✣	✣	✣	●	○		○	○		✣					
	K	Cast Iron														●	◔		◔	✣			●			●	●		✣	●	◔			
	N	Non-ferrous Metal																													◔		
	S	Heat-resistant Alloy, Titanium Alloy													●				●	◔	✣										◔	◔	
R/L			 Finish Cutting	Carbon Steel • Alloy Steel 	**WCGT 020102R**	0.2																		●										E027
					020102L	0.2																		●								●	
					020104R	0.4																		●									
					020104L	0.4																		●								●	
					L30202L	0.2																		●									
					L30204L	0.4																		●									
Standard			 Medium Cutting	Carbon Steel • Alloy Steel 	**WCMT 020102**	0.2	●		▲					●										●	●		●				●			E027
					020104	0.4	●		▲					●										●	●		●				●			
					L30202	0.2	●							●										●	●		●				●			
					L30204	0.4	●							●										●	●		●				●			
					040202	0.2	●		▲					●										●	●		●				●			
					040204	0.4	●		▲					●										●	●		●				●			
					040208	0.8			▲																									
					06T304	0.4	●		▲					●										●	●		●				●			
					06T308	0.8	●		▲					●										●	●		●				●			

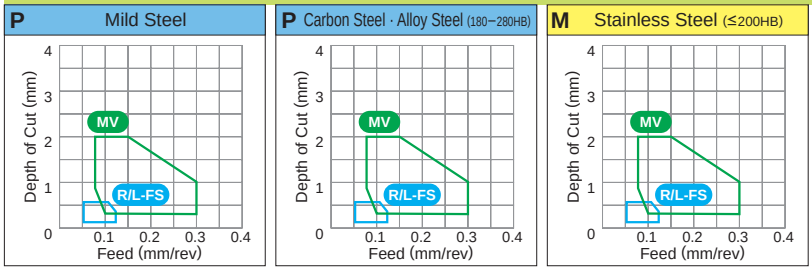
CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

80° WP TYPE INSERTS WITH HOLE

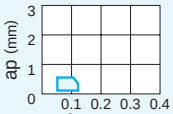
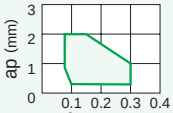
WPGT 04 02 04 R-FS
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

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



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

Work Material			Corner R	Coated														Cermet		Coated Cermet				Carbide					Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
	P	Steel		●	◕	✣	✣	✣	◕	✣	●	✣	●				✣	✣	✣	●	◕	◕	●	●	◕	✣				
	M	Stainless Steel							◕	✣	●	✣					◕	✣	✣	●			●	●		✣				
	K	Cast Iron												●	◕		◕	✣		●			●	●		✣	●	◕		
	N	Non-ferrous Metal																										◕		
	S	Heat-resistant Alloy, Titanium Alloy											●			●	◕	✣								✣			◕	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number																												
R/L-FS  Finish Cutting	Carbon Steel • Alloy Steel 	**WPGT040204R-FS**	0.4															●		●										E010
		040204L-FS	0.4															●		●										
		060304R-FS	0.4															●		●										
		060304L-FS	0.4															●		●										
MV  Medium Cutting	Carbon Steel • Alloy Steel 	**WPMT040202-MV**	0.2			●	▲				▲	●						●		●	●									E010
		040204-MV	0.4			●	▲				▲	●						●		●	●				●					
		060304-MV	0.4			●	▲				▲	●						●		●	●									
		060308-MV	0.8			●	▲				▲	●						●		●	●				●					

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

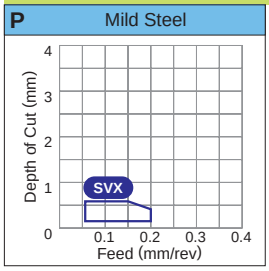
CHIP BREAKERS ➤ A058

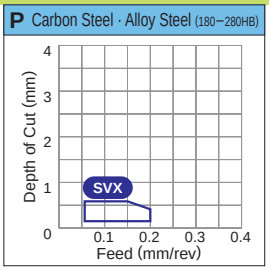
25° XC TYPE INSERTS WITH HOLE

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

CHIP CONTROL RANGE FOR WORK MATERIALS

Light Cutting·····

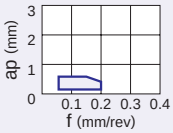




Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Work Material			Corner R	Coated														Cermet		Coated Cermet				Carbide				Applicable Holder Page
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Re (mm)	UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
P	Steel			●	◔	✣	✣	✣	◔	✣	○	✣	●	●	◔	◔	✣	✣	✣	●	◔	◔	●	●	◔	✣			◔	
M	Stainless Steel								✣	○	✣					✣	✣	✣	○			○	○							
K	Cast Iron												●	◔	✣	✣			●			●	●	◔	✣	●	◔			
N	Non-ferrous Metal																											◔		
S	Heat-resistant Alloy, Titanium Alloy											●				◔	◔	✣										◔	◔	
SVX	Carbon Steel • Alloy Steel	**XCMT150302-SVX**	0.2															●												C030
		150304-SVX	0.4				▲											●												
		150308-SVX	0.8				▲											●												

Light Cutting



CHIP BREAKERS ➤ A052
GRADES ➤ A030
IDENTIFICATION ➤ A002

RTG TYPE INSERTS WITHOUT HOLE

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

Work Material			Coated														Cermet		Coated Cermet				Carbide				Applicable Holder Page
	P	Steel	●	◔	✣	✣	✣		◔	✣	●	✣				✣	✣	●	◔		◔	●	●	◔	✣				
	M	Stainless Steel							◔	✣	●	✣				✣	✣	✣	●			●	●						
	K	Cast Iron											●	◔		◔	✣		●			●	●		✣	●	◔		
	N	Non-ferrous Metal																									◔		
	S	Heat-resistant Alloy, Titanium Alloy									●				●	◔	✣										◔	◔	

Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
 For Special Use (For TL Holder)		RTG 05A	—																							●		●		C035
		06A	—																							●		●		
		07A	—																							●				
		08A	—																							●		●		
		10A	—																							●		●		

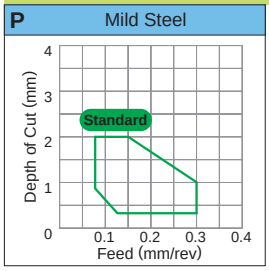
● : Inventory maintained in Japan.
▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

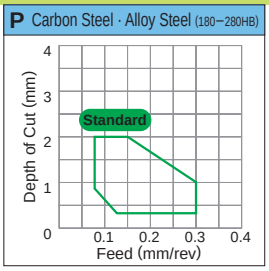
90° SP TYPE INSERTS WITHOUT HOLE

SPGR 09 03 04 R
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting·····





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

Work Material			Corner R	Coated															Cermet		Coated Cermet				Carbide				Applicable Holder Page
			Re (mm)	UE6105	UE6110	MC6025 (NEW)	UE6020	UH6400	MC7025 (NEW)	MP7035 (NEW)	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 (NEW)	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
P	Steel			●	◔	✣	✣	✣	◔	✣	✣	◔	✣				✣	✣	✣	●	◔	◔	●	●	◔	✣				
M	Stainless Steel								◔	✣	✣	◔	✣				◔	✣	✣	◔				◔	●	✣				
K	Cast Iron													●	◔		◔	✣		●				●	●	✣	●	◔		
N	Non-ferrous Metal																											◔		
S	Heat-resistant Alloy, Titanium Alloy											●				●	◔	✣											◔	
Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number																												
R	Carbon Steel • Alloy Steel	**SPGR 090304R**	0.4																							●				–
Finish Cutting																														
Standard	Carbon Steel • Alloy Steel	**SPMR 090304**	0.4		●		▲													●	●	●								–
		090308	0.8		●		▲													●	●	●								
Light to Medium Cutting		**120304**	0.4		●		▲													●	●	●								
		120308	0.8		●		▲													●	●	●								
Flat Top		**SPMN 090304**	0.4																	●						●		●		–
		090308	0.8		●															●						●		●		
		120304	0.4		●													●								●		●		
		120308	0.8		●													●	●							●		●		
		120312	1.2		●		▲											●								●		●		
		120408	0.8																							●		●		
		120412	1.2																							●				
		150408	0.8																							●				
		150412	1.2																							●				
		190404	0.4																							●				
		190408	0.8																							●				
		190412	1.2																							●				
Flat Top		**SPGN 090304**	0.4																	●						●		●		–
		090308	0.8																									●		
		120304	0.4																	●						●		●		
		120308	0.8																●	●						●		●		
		120312	1.2																									●		
		120404	0.4																									●		
		120408	0.8																							●		●		
		150404	0.4																							●				
		150408	0.8																									●		

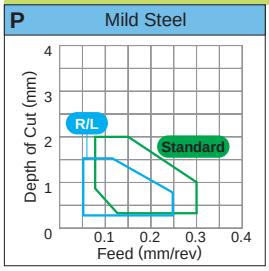
CHIP BREAKERS ➤ A064
GRADES ➤ A030
IDENTIFICATION ➤ A002

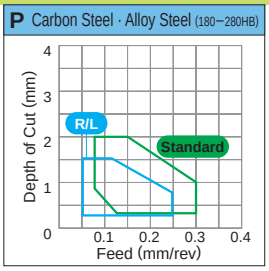
60° TC TYPE INSERTS WITHOUT HOLE

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

CHIP CONTROL RANGE FOR WORK MATERIALS

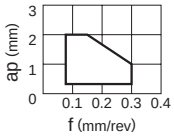
Finish Cutting····· Medium Cutting·····





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

Work Material			Shape	Chip Control Range ap : Depth of Cut f : Feed	Order Number	Corner R Re (mm)	Coated													Cermet		Coated Cermet				Carbide				Applicable Holder Page
							UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HTi10	RT9010	
P	Steel		Flat Top	Cast Iron	TCGN 060104	0.4																							●		—
M	Stainless Steel				090204	0.4																							●		
K	Cast Iron																														
N	Non-ferrous Metal																														
S	Heat-resistant Alloy, Titanium Alloy																														



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

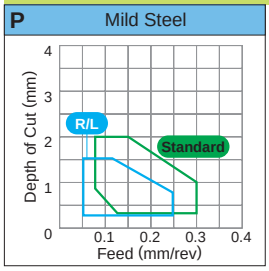
CHIP BREAKERS ➤ A064

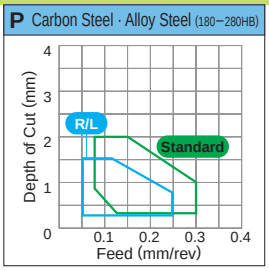
60° TP TYPE INSERTS WITHOUT HOLE

TPGR 11 03 04 R
Size Thickness Corner Radius Chip Breaker
★ Please refer to page A002.

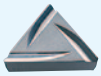
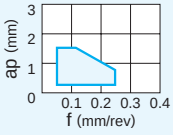
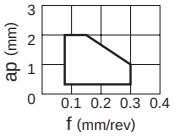
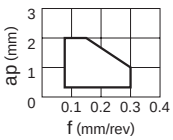
CHIP CONTROL RANGE FOR WORK MATERIALS

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





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

Work Material			Coated														Cermet		Coated Cermet				Carbide				Applicable Holder Page
	P	Steel	●	◔	✣	✣	✣		◔	✣	◔	✣				✣	✣	●	◔	◔	●	◔	✣	✣					
	M	Stainless Steel						◔	✣	◔	✣				◔	✣	✣	○			○	○	✣					
	K	Cast Iron										●	◔		◔	✣		●			◔	●		✣	●	◔		
	N	Non-ferrous Metal																								◔		
	S	Heat-resistant Alloy, Titanium Alloy									●				●	◔	✣									◔	◔	
Shape / Chip Control Range ap : Depth of Cut f : Feed		Order Number	Corner R Re (mm)	UE6105	UE6110	MC6025 NEW	UE6020	UH6400	MC7025 NEW	MP7035 NEW	US7020	US735	US905	UC5105	UC5115	VP05RT	VP10RT	VP15TF	UP20M	NX2525	NX3035	MP3025 NEW	AP25N	VP25N	VP45N	UTi20T	HTi05T	HT10	RT9010	
R/L		TPGR110304R	0.4																●								●	
		110304L	0.4																●							●	●	
		160304R	0.4																●							●	●	
		160304L	0.4																●							●	●	E026
		160308R	0.8																●									
Carbon Steel • Alloy Steel		160308L	0.8																●							●	●	
		TPMR090202	0.2																	●		●						
		090204	0.4																●	●		●						
		090208	0.8																			●						
		110302	0.2																●	●		●						
		110304	0.4		●		●												●	●		●						E026
		110308	0.8		●		●												●	●		●						
		160304	0.4		●		●												●	●		●						
		160308	0.8		●		●												●	●		●						
Light to Medium Cutting		160312	1.2		●															●								
Flat Top		TPMN110304	0.4		●									●	●			●	●							●	●	
		110308	0.8		●									●	●				●							●	●	
		160304	0.4		●									●	●			●	●							●	●	
		160308	0.8		●									●	●			●	●							●	●	●
Cast Iron		160312	1.2		●									●	●			●									●	E026
		160320	2.0																							●		
		220404	0.4		●																					●		
		220408	0.8		●		●											●	●							●	●	
		220412	1.2		●													●								●	●	
Flat Top		TPGN110302	0.2																								●	
		110304	0.4																●							●	●	
		110308	0.8															●									●	
		160302	0.2																								●	
		160304	0.4															●	●							●	●	
		160308	0.8															●	●							●	●	E026
Cast Iron		160312	1.2																								●	
		160316	1.6																								●	
		160408	0.8																							●		
		220404	0.4															●									●	
		220408	0.8															●									●	

CHIP BREAKERS ➤ A064
GRADES ➤ A030
IDENTIFICATION ➤ A002