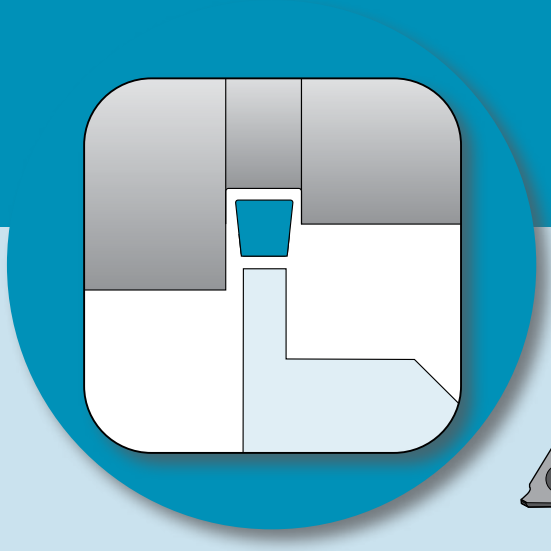
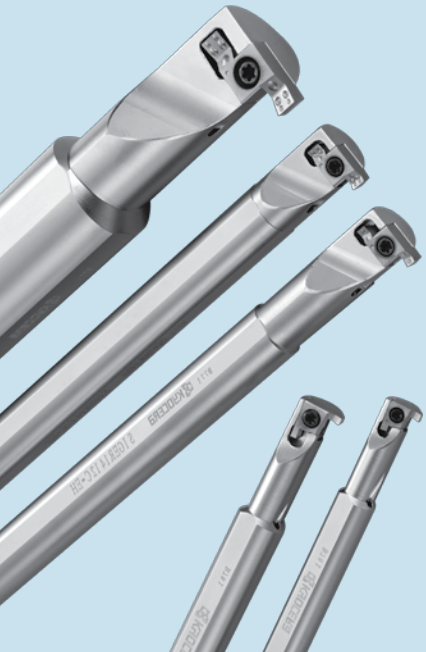


Grooving

G1~G96

G

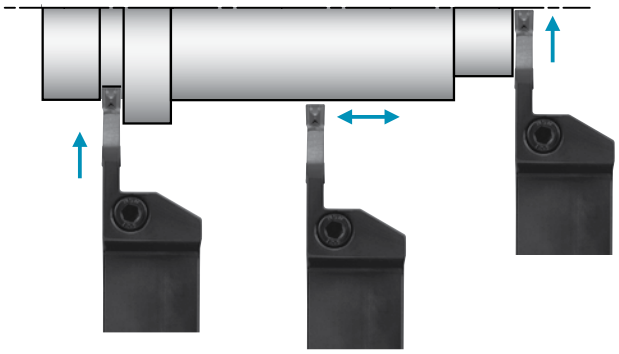


Summary of KGD Type Grooving NEW

External Grooving (G22~G31)

• Integral Type

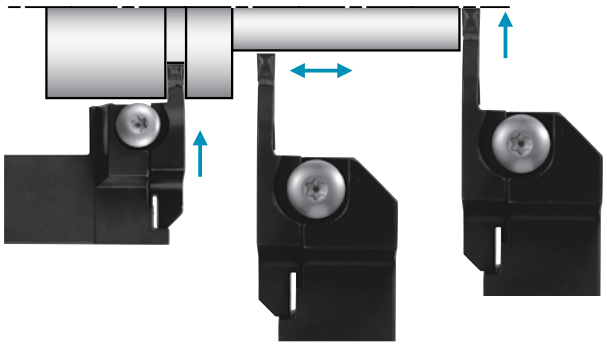
Type	KGD
Width (mm)	2.0~8.0
Grooving Depth (mm)	6~30
Ref. Page	G26



• Separate Type

Type	* KGDS-S
Width (mm)	3.0
Grooving Depth (mm)	10
Ref. Page	G27

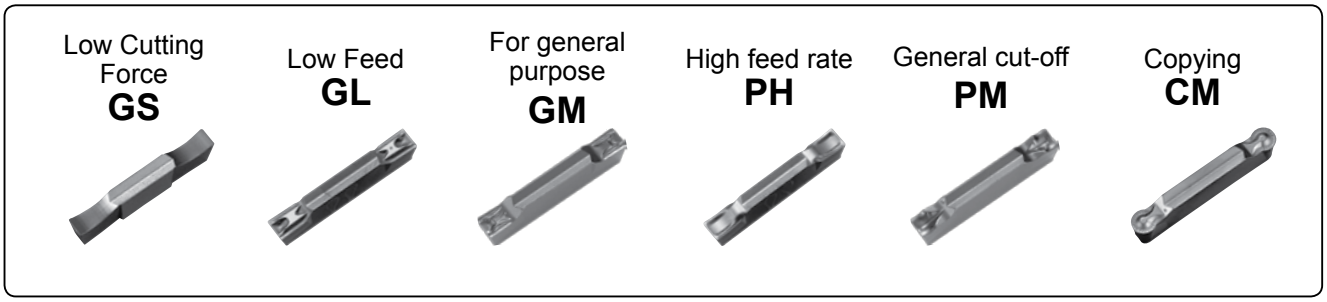
* The separate type toolholders can accept all the inserts if their hand is matching.



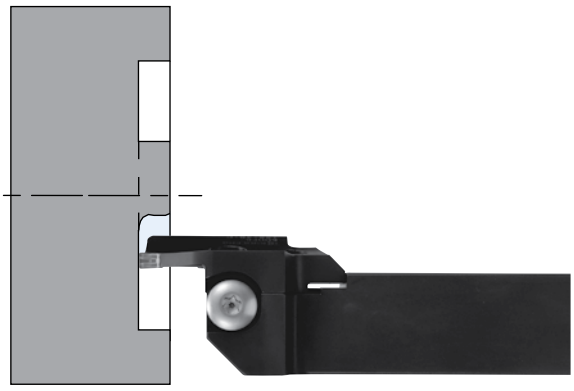
• Separate Type

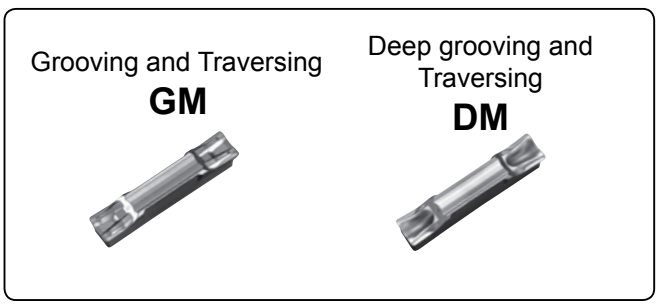
Type	* KGD-S
Width (mm)	2.0~5.0
Grooving Depth (mm)	10~25
Ref. Page	G27

* The separate type toolholders can accept all the inserts if their hand is matching.



Face Grooving ø25~ (G68~G75)





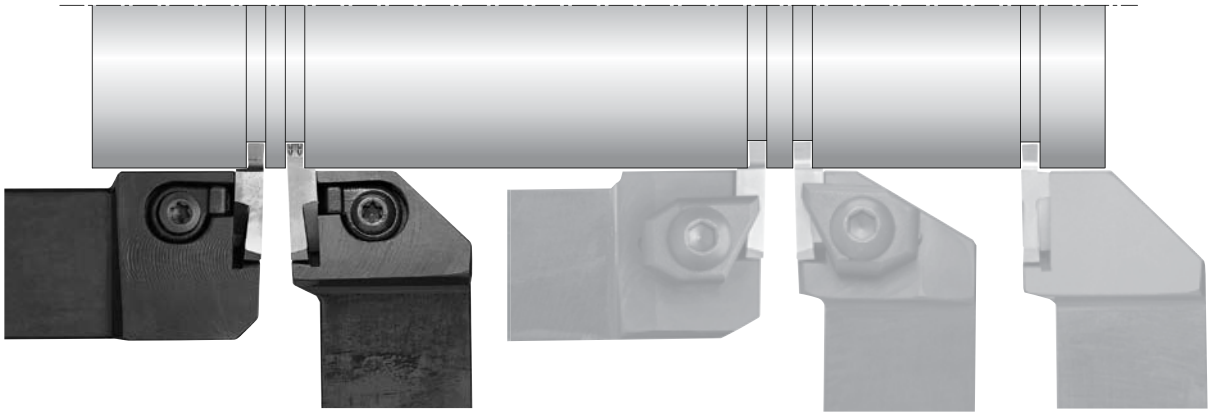
Type	* KGDF
Min. Face Groove Dia.	ø25
Width (mm)	3.0~6.0
Grooving Depth (mm)	13~32
Ref. Page	G70

* The separate type toolholders can accept all the inserts if their hand is matching.

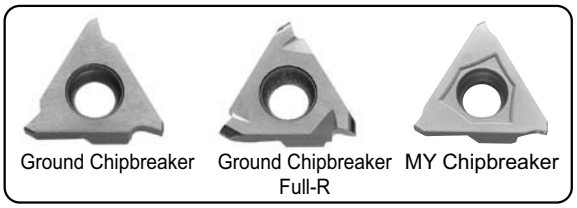
Summary of External Grooving

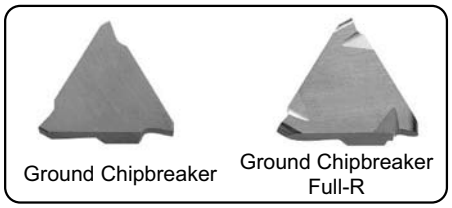
External Grooving (G10~G21)

Shallow Grooving (Grooving Depth: ~5mm)



Type	KGBAS	KGBA	KGBS	KGB	KTG
Width (mm)	0.33~4.8	0.33~4.8	0.5~4.8	0.5~4.8	0.75~4.5
Grooving Depth (mm)	0.8~5.0	0.8~5.0	1.0~5.0	1.0~5.0	2.0~5.0
Ref. Page	G13	G13	G15	G15	G18



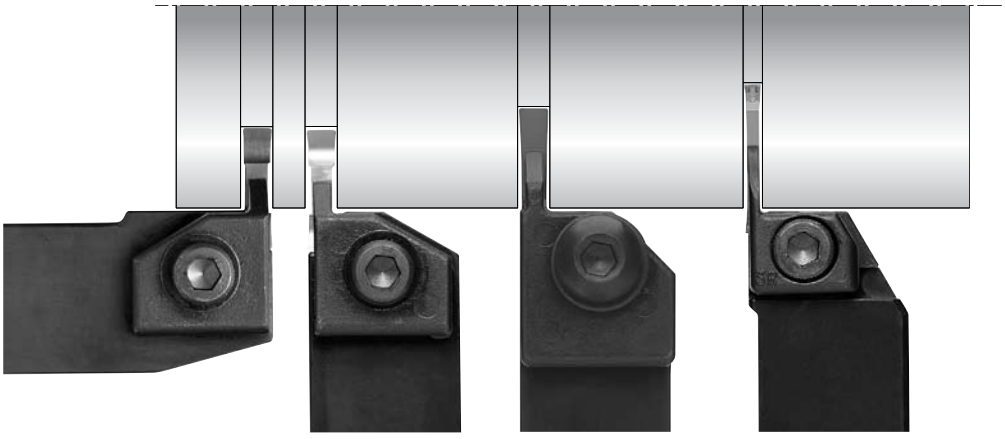


Edge Shape	General (Square)	Full-R (Round)	MY Chipbreaker
			

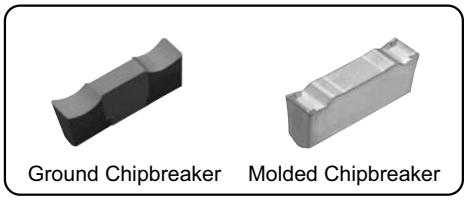
* These shallow groove types of the previous system will be switched to the system on the left.

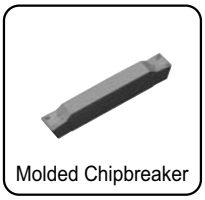
KGBS → KGBAS
KGB, KTG → KGBA

Deep Grooving (Grooving Depth: ~25mm)



Type	KGHS	KGH	KN91	KGA
Width (mm)	4.0~8.0	4.0~12.0	4.0~8.0	3.0~5.0
Grooving Depth (mm)	13	13~17	15~17	20~25
Ref. Page	G20	G20	G19	G21





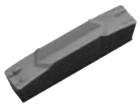
Summary of External Grooving

External Grooving & Traversing (G32~G39)

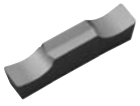
CERACUT Plunge & Turn

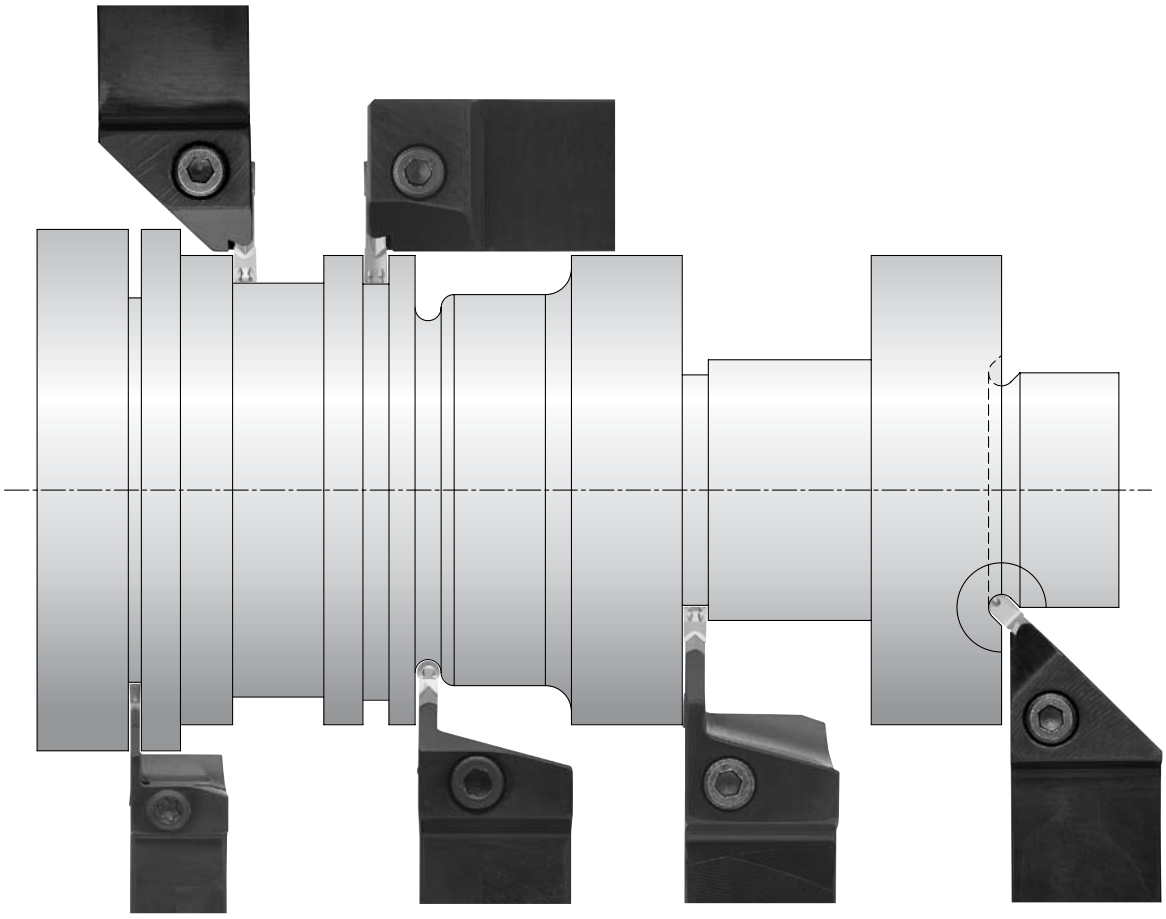
Type	KGMM
Width (mm)	3.0~5.0
Grooving Depth (mm)	4.8
Ref. Page	**G38**

KGMS
3.0~5.0
4.8
G38


Molded Chipbreaker


Molded Chipbreaker Full-R


Ground Chipbreaker

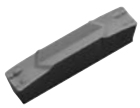


Type	KGM
Width (mm)	1.5~4.0
Grooving Depth (mm)	5~16
Ref. Page	**G36**

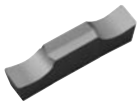
KGM
3.0~8.0
9~25
G36

KGM-T
2.0~6.0
17~30
G37

KGMU
3.0~5.0
3.5~4.5
G39


Molded Chipbreaker


Molded Chipbreaker Full-R


Ground Chipbreaker


Deep Grooving/ Cut-Off

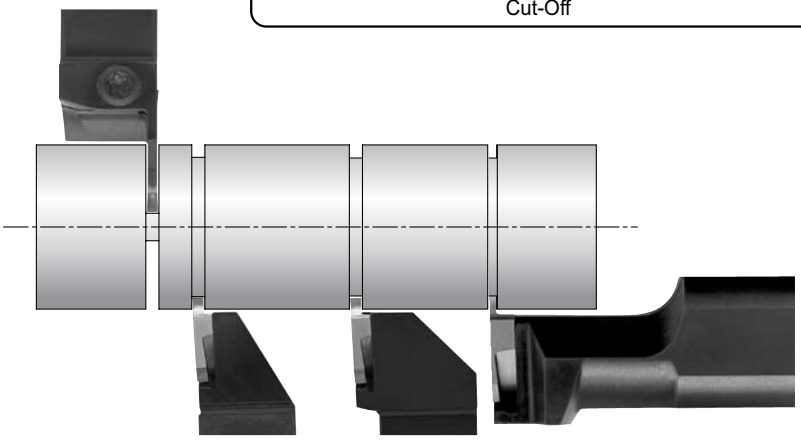

Molded Chipbreaker Full-R

External Grooving of Precision Parts (G16~G17, G36)

Small Shank

Type	KGM
Width (mm)	1.5~4.0
Grooving Depth (mm)	5~16
Ref. Page	**G36**

Molded Chipbreaker | Deep Grooving/ Cut-Off | Ground Chipbreaker

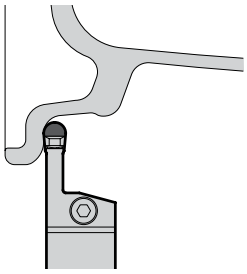


Type	KTGF-F	KTGF
Width (mm)	0.33~2.5	
Grooving Depth (mm)	0.8~2.5	
Ref. Page	**G16**	

S-KTGF
0.33~2.5
0.8~2.5
G16

Ground Chipbreaker

For Aluminum Wheel External Grooving (External / Facing / Copying) (G40)



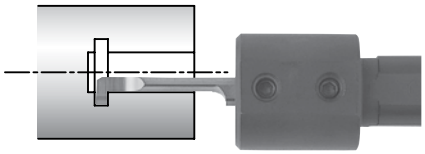
Type	KGMW
Width (mm)	6.0~8.0
Grooving Depth (mm)	25
Ref. Page	**G40**

1-Edge PCD

Summary of Internal Grooving

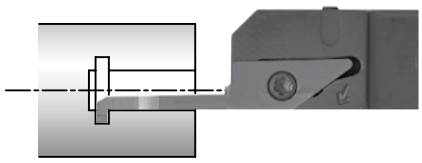
Small Dia. Internal Grooving ø4~ (G43~G45)

2-Edge Tip-Bar & System Tip-Bar



Type	HPG
Min.Bore Dia.	ø4~ø7
Width (mm)	1.0~2.0
Grooving Depth (mm)	1.0~2.0
Ref. Page	**G44**

2-Edge Tip-Bar

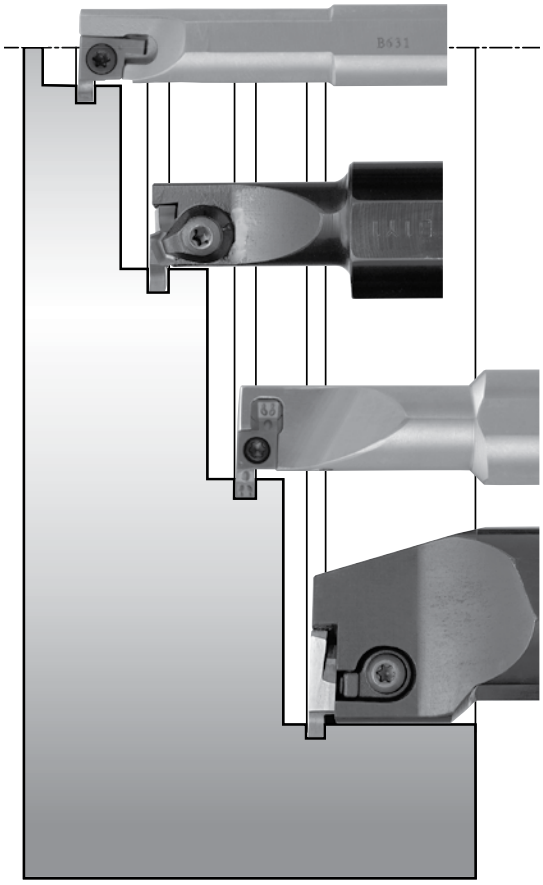


Type	VNG
Min.Bore Dia.	ø4~ø7
Width (mm)	1.0~2.0
Grooving Depth (mm)	0.8~2.0
Ref. Page	**G43**

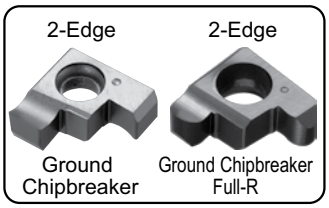
System Tip-bars

Internal Grooving ø8~ (G46~G56)

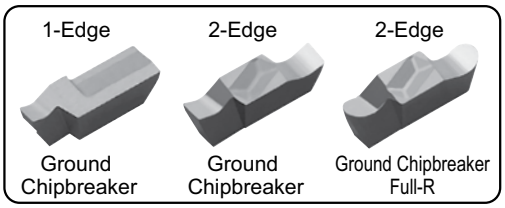
Shallow Grooving



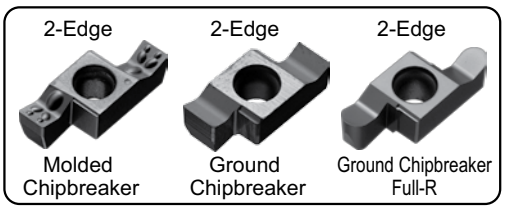
Type	SIGE
Min.Bore Dia.	ø8~ø12
Width (mm)	1.0~3.0
Grooving Depth (mm)	1.5~2.2
Ref. Page	**G48**



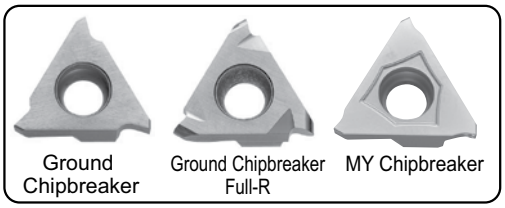
Type	GIV
Min.Bore Dia.	ø12~ø40
Width (mm)	1.0~5.0
Grooving Depth (mm)	1.7~6.3
Ref. Page	**G52**



Type	SIGE
Min.Bore Dia.	ø14~ø40
Width (mm)	1.0~5.0
Grooving Depth (mm)	2.5~6.5
Ref. Page	**G48**



Type	KIGBA
Min.Bore Dia.	ø35~ø40
Width (mm)	0.33~4.8
Grooving Depth (mm)	0.8~2.8
Ref. Page	**G55**

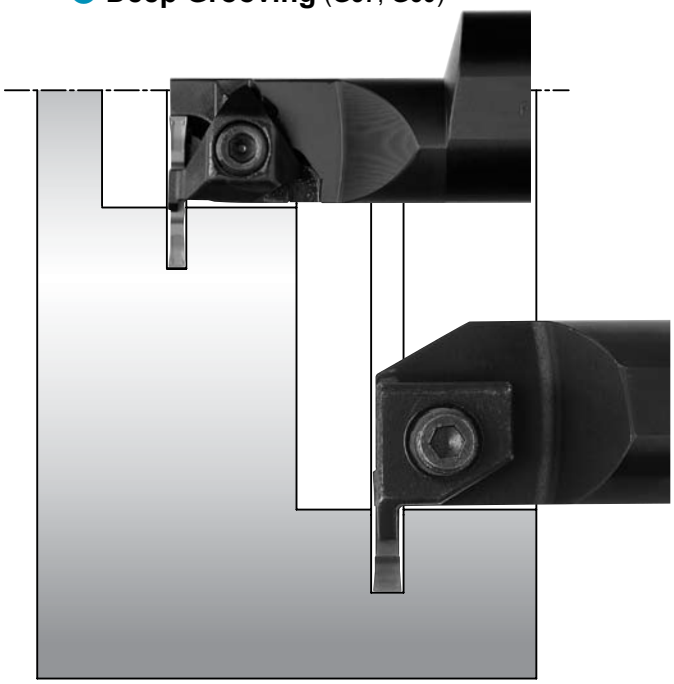


Type	KITG
Min.Bore Dia.	ø35~ø45
Width (mm)	0.75~4.5
Grooving Depth (mm)	2.0~2.5
Ref. Page	**G56**

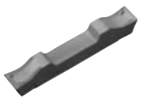
Ground Chipbreaker

* KITG will be switched to KIGBA.

Deep Grooving (G57, G60)



Type	KGIA
Min.Bore Dia.	ø32~ø66
Width (mm)	3.0~5.0
Grooving Depth (mm)	10~15
Ref. Page	**G60**



Molded Chipbreaker

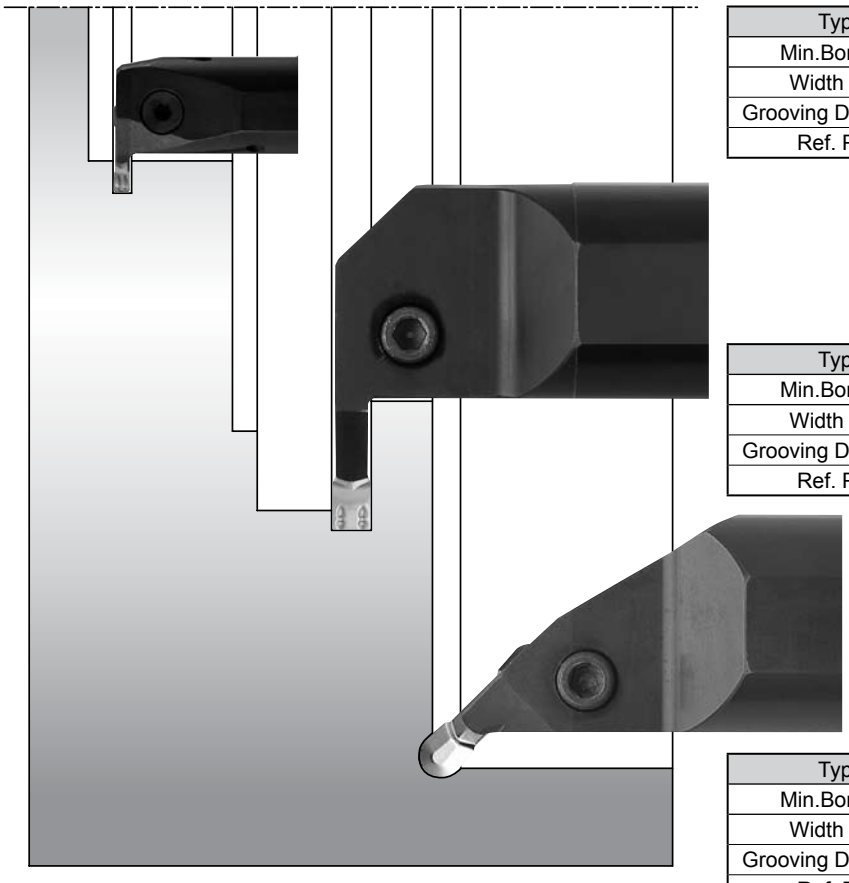
Type	KIGH
Min.Bore Dia.	ø45~ø65
Width (mm)	4.0~8.0
Grooving Depth (mm)	12
Ref. Page	**G57**

Ground Chipbreaker

Molded Chipbreaker

Internal Grooving & Traversing ø20~ (G58, G59)

CERACUT Plunge & Turn

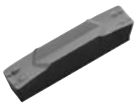


Type	KIGM-V
Min.Bore Dia.	ø20~ø40
Width (mm)	3.0~5.0
Grooving Depth (mm)	5.5~11.0
Ref. Page	**G58**

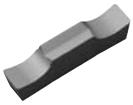
Molded Chipbreaker

Molded Chipbreaker
Full-R

Type	KIGM-8
Min.Bore Dia.	ø65
Width (mm)	8.0
Grooving Depth (mm)	20
Ref. Page	**G59**



Molded Chipbreaker



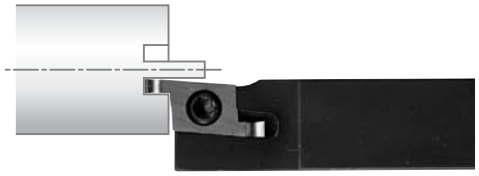
Ground Chipbreaker

Type	KIGMU-8
Min.Bore Dia.	ø65
Width (mm)	8.0
Grooving Depth (mm)	2.2
Ref. Page	**G59**

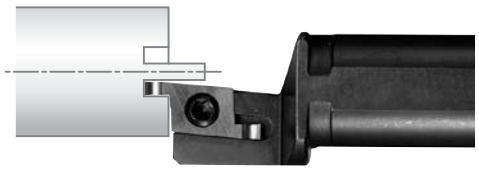
Ground Chipbreaker
Full-R

Summary of Face Grooving

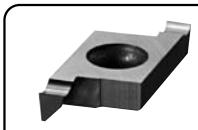
Micro Dia. Face Grooving ø6~



Type	STW
Min. Face Groove Dia.	ø6
Width (mm)	0.5~2.0
Grooving Depth (mm)	1.0~3.0
Ref. Page	**G66**



Type	S..-STW
Min. Face Groove Dia.	ø6
Width (mm)	0.5~2.0
Grooving Depth (mm)	1.0~3.0
Ref. Page	**G66**

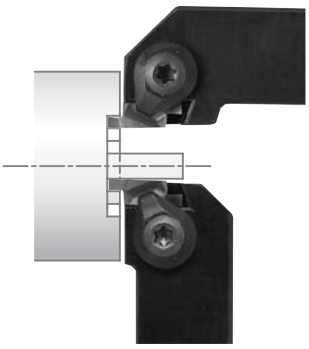


Twin Bar for Lay-down type

Type	STWS
Min. Face Groove Dia.	ø6
Width (mm)	0.5~2.0
Grooving Depth (mm)	1.0~3.0
Ref. Page	**G67**

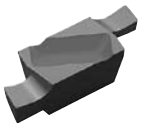
Twin Bar for Stand up type

Small Dia. Face Grooving ø8~



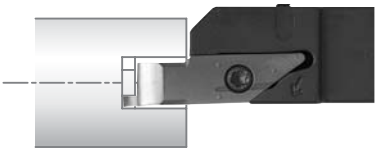
Type	GFVS-AA
Min. Face Groove Dia.	ø8
Width (mm)	1.0~3.0
Grooving Depth (mm)	2.2
Ref. Page	**G76**

Type	GFVT-AA
Min. Face Groove Dia.	ø8
Width (mm)	1.0~3.0
Grooving Depth (mm)	2.2
Ref. Page	**G76**



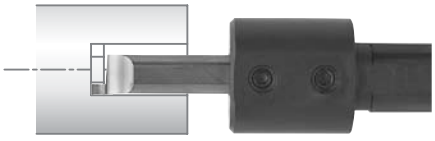
Ground Chipbreaker

Small Dia. Face Grooving ø8~



Type	VNFG
Min. Face Groove Dia.	ø8
Width (mm)	1.0~3.0
Grooving Depth (mm)	2.0~3.0
Ref. Page	**G64**

System Tip-bars

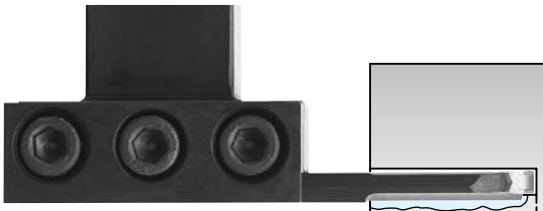


Type	HPFG
Min. Face Groove Dia.	ø8
Width (mm)	1.0~3.0
Grooving Depth (mm)	2.0~3.0
Ref. Page	**G65**

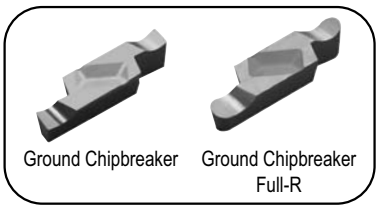
2-Edge Tip-Bar

General Purpose Face Grooving ø20~


Molded Chipbreaker

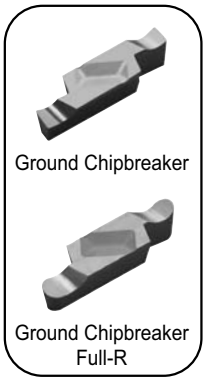


Type	KFTB
Min. Face Groove Dia.	ø65~ø250
Width (mm)	4.0~5.0
Grooving Depth (mm)	25~38
Ref. Page	**G87**


Ground Chipbreaker　Ground Chipbreaker Full-R

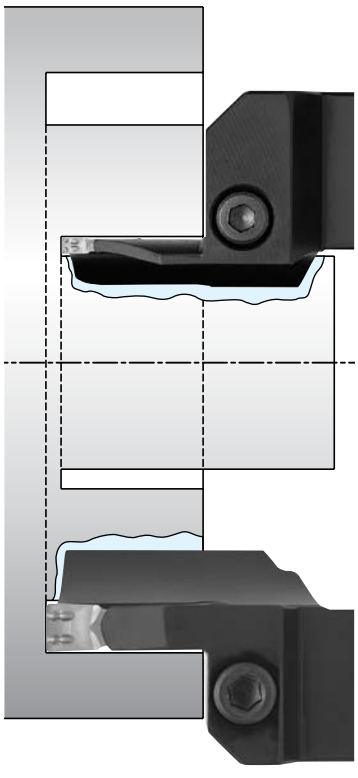
Type	GFV
Min. Face Groove Dia.	ø20~ø150
Width (mm)	2.0~6.0
Grooving Depth (mm)	2.2~8.1
Ref. Page	**G78**

Type	GFVS
Min. Face Groove Dia.	ø35~ø150
Width (mm)	2.5~6.0
Grooving Depth (mm)	4.6~8.1
Ref. Page	**G80**


Ground Chipbreaker　Ground Chipbreaker Full-R

Type	GFVT
Min. Face Groove Dia.	ø35~ø150
Width (mm)	2.5~6.0
Grooving Depth (mm)	4.6~8.1
Ref. Page	**G80**

Face Grooving & Traversing ø25~
(CERACUT Plunge & Turn)



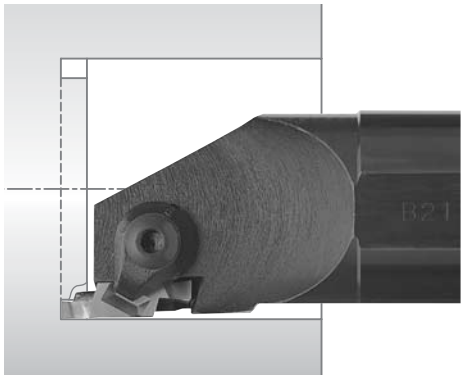
Type	KFMS
Min. Face Groove Dia.	ø25~ø235
Width (mm)	3.0~6.0
Grooving Depth (mm)	13~32
Ref. Page	**G84**


Molded Chipbreaker

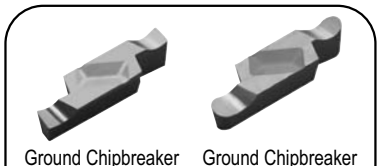
Type	KFMS-8
Min. Face Groove Dia.	ø54~ø155
Width (mm)	8.0
Grooving Depth (mm)	25
Ref. Page	**G86**


Molded Chipbreaker　Ground Chipbreaker　Ground Chipbreaker Full-R

Face Grooving ø35~



Type	GIFV
Min. Face Groove Dia.	ø35~ø50
Width (mm)	2.0~6.0
Grooving Depth (mm)	2.2~8.1
Ref. Page	**G88**


Ground Chipbreaker　Ground Chipbreaker Full-R

Applicable Inserts

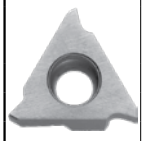
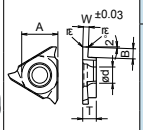
(mm)

Description	A	T	ød
GBA32_	9.525	3.18	4.4
GBA43_	12.70	4.76	5.5
GBA43R/L480	12.70	5.00	5.5

		TC40	TN6020	TN90	PR1215		PR1115	PR905	PR930	PR630	KW10
P	Carbon steel / Alloy steel				●		◔		◔		
M	Stainless Steel				●		●		◔		
K	Cast Iron							●			◔
N	Non-ferrous Metals										●
S	Titanium Alloy										●
H	Hard materials (~40HRC)				●		○		○		
	Hard materials (40HRC~)										

NEW

Classification of usage
●: Continuous-Light Interruption / 1st Choice
◔: Continuous-Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

Shape (Handed Insert shows R-hand.)	Description	(Old Description)	W	B	rε	TC40	TN6020	TN90	PR1215		PR1115	PR905	PR930	PR630	KW10	Applicable Toolholders	Ref. Page for Toolholder
 	GBA32R/L 033-005	-	0.33	0.8	0.05						●	●				KGBAR/L...16 KGBASR/L...16	G13 G15 G55 (Internal)
	050-005 *	GBA32R/L 050 *	0.50	1.0				●					●	□	●		
	050-005 *	-	0.50	1.2					●		●	●					
	075-005	GBA32R/L 075	0.75					●	●		●	●	●	□	●		
	095-005	095	0.95					●	●		●	●	●	□	●		
	100-005	100	1.00					●	●		●	●	●	□	●		
	110-005	110	1.10	2.0							●	●					
	120-005	120	1.20						●		●	●					
	125-020	125	1.25		0.2			●	●		●	●	●	□	●		
	130-020	130	1.30						●		●	●					
	140-020	140	1.40	2.5					●		●	●					
	145-020	145	1.45	2.0				●					●	□	●		
	145-020	-	1.45	2.5					●		●	●					
	150-020	GBA32R/L 150	1.50	2.0				●					●	□	●		
	150-020	-	1.50						●		●	●					
	160-020	GBA32R/L 160	1.60	2.5					●		●	●					
	170-020	170	1.70						●		●	●					
	175-020	GBA32R/L 175	1.75	2.0				●					●	□	●		
	175-020	-	1.75						●		●	●					
	200-020	GBA32R/L 200	2.00					●	●		●	●	●	□	●		
	225-020	225	2.25	2.5					●		●	●					
	250-020	250	2.50					●	●		●	●	●	□	●		
	300-020	300	3.00						●		●	●					
	GBA43R/L 125-010	-	1.25	2.0	0.1				●		●					KGBAR/L...22-15 KGBASR/L...22-15 KGBAR/L...22-25T5 KGBASR/L...22-25T5 KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	125-020	GBA43R/L 125	1.25		0.2	●		●	●		●	●	●	□	●		
	140-020	140	1.40	3.5					●		●	●					
	145-020	145	1.45	2.0		●		●					●	□	●		
	145-020	-	1.45		0.2				●		●	●					
	150-010	-	1.50		0.1				●		●						
	150-020	GBA43R/L 150	1.50		0.2	●		●	●		●	●	●	□	●		
	170-020	170	1.70						●		●	●					
	175-020	175	1.75			●		●	●		●	●	●	□	●		
	185-020	185	1.85	3.5		●		●	●		●	●	●	□	●		
	195-020	195	1.95								●	●					
	200-010	-	2.00		0.1				●		●						
	200-020	GBA43R/L 200	2.00		0.2	●		●	●		●	●	●	□	●		
	225-020	225	2.25						●		●	●					
	230-020	230	2.30			●		●	●		●	●	●	□	●		
	250-010	-	2.50	5.0	0.1				●		●						
	250-030	GBA43R/L 250	2.50	4.0	0.3	●		●					●	□	●		
	250-030	-	2.50	5.0					●		●	●					
	265-030	GBA43R/L 265	2.65	4.0		●		●					●	□	●		
	265-030	-	2.65	5.0					●		●	●					

• Dimension B shows available grooving depth.

* The edge width tolerance of GBA32R/L050 (with mark) is different ($0.50^{+0.05}_{-0}$)

• See **G55** for KIGBA

Recommended Cutting Conditions G89

Inserts are sold in 10 piece boxes.

●: Std. Item
□: Deleted from the next catalogue

Applicable Inserts

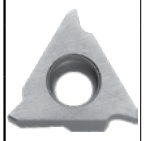
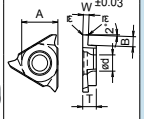
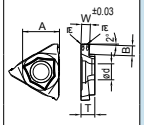
(mm)

Description	A	T	ød
GBA32_	9.525	3.18	4.4
GBA43_	12.70	4.76	5.5
GBA43R/L480	12.70	5.00	5.5

		TC40	TN6020	TN90	PR1215		PR1115	PR905	PR930	PR630	KW10
P	Carbon steel / Alloy steel				●		◔		◔		
M	Stainless Steel				●		●		◔		
K	Cast Iron							●			◔
N	Non-ferrous Metals										●
S	Titanium Alloy										●
H	Hard materials (~40HRC)				●		○		○		
	Hard materials (40HRC~)										

NEW

Classification of usage
●: Continuous-Light Interruption / 1st Choice
◔: Continuous-Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

Shape (Handed Insert shows R-hand.)	Description	(Old Description)	W	B	rε	TC40	TN6020	TN90	PR1215		PR1115	PR905	PR930	PR630	KW10	Applicable Toolholders	Ref. Page for Toolholder
 	GBA43R/L 280-030	GBA43R/L 280	2.80	4.0	0.3	●		●					●	□	●	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	G13 G15 G55 (Internal)
	280-030	-	2.80	5.0					●		●	●				KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	300-010	-	3.00	5.0	0.1				●		●						
	300-030	GBA43R/L 300	3.00	4.0	0.3	●		●					●	□	●	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	300-030	-	3.00	5.0					●		●	●				KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	325-030	GBA43R/L 325	3.25	5.0							R	R				KGBAR/L...22-25 KGBASR/L...22-25	
	330-030	330	3.30	4.0		●		●					●	□	●	KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	330-030	-	3.30	5.0					●		●	●				KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	350-010	-	3.50	5.0	0.1				●		●					KGBAR/L...22-35 KGBASR/L...22-35	
	350-030	GBA43R/L 350	3.50		0.3	●		●	●		●	●	●	□	●		
	400-010	-	4.00		0.1				●		●						
	400-040	GBA43R/L 400	4.00		0.4	●		●	●		●	●	●	□	●		
	430-040	430	4.30			●		R	●		●	●	●	□	●		
	450-040	450	4.50			●		R	●		●	●	●	□	●		
	480-040	480	4.80			●		R	●		●	●	●	□	●		
Molded Chipbreaker MY Chipbreaker  	GBA43R/L 175-020MY	GBA43R/L 175MY	1.75	3.5	0.2		●		●		●		●			KGBAR/L...22-15 KGBASR/L...22-15	G13 G15 G55 (Internal)
	185-020MY	185MY	1.85				●		●		●		●				
	200-020MY	200MY	2.00				●		●		●		●				
	230-020MY	230MY	2.30				●		●		●		●				
	250-030MY	GBA43R/L 250MY	2.50	4.0	0.3		●						●			KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	250-030MY	-	2.50	5.0					●		●					KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	265-030MY	GBA43R/L 265MY	2.65	4.0			●						●			KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	265-030MY	-	2.65	5.0					●		●					KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	300-030MY	GBA43R/L 300MY	3.00	4.0			●						●			KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	300-030MY	-	3.00	5.0					●		●					KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	330-030MY	GBA43R/L 330MY	3.30	4.0			R						R			KGBAR...22-25 KGBASL...22-25 KGBAR...22-25T5 KGBASL...22-25T5	
	330-030MY	-	3.30	5.0					●		●					KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	350-030MY	GBA43R/L 350MY	3.50	5.0			●		●		●		●			KGBAR/L...22-35 KGBASR/L...22-35	
	400-040MY	400MY	4.00		0.4		●		●		●		●				

• Dimension B shows available grooving depth.
• See **G55** for KIGBA

Recommended Cutting Conditions ➡ G89

●: Std. Item
R : R-hand Only
□ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes.

Applicable Inserts

(mm)

Description	A	T	ød
GBA32_	9.525	3.18	4.4
GBA43_	12.70	4.76	5.5
GBA43R/L480	12.70	5.00	5.5

		TC40	TN6020	TN90	PR1215		PR1115	PR905	PR930	PR630	KW10
P	Carbon steel / Alloy steel				●		◔		◔		
M	Stainless Steel				●		●		◔		
K	Cast Iron							●			●
N	Non-ferrous Metals										●
S	Titanium Alloy										●
H	Hard materials (~40HRC)				●		○		○		
	Hard materials (40HRC~)										

Classification of usage
●: Continuous-Light Interruption / 1st Choice
◔: Continuous-Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

Shape (Handed Insert shows R-hand.)	Description	(Old Description)	W	B	rε	Applicable Toolholders	Ref. Page for Toolholder
Full-R / Full-R (Round)	GBA32R/L 200-100R	-	2.00	2.5	1.00	KGBAR...16 KGBASL...16	G13 G15 G55 (Internal)
	GBA32R/L 300-150R	-	3.00	2.5	1.50	KGBAR...16 KGBASL...16	
	GBA43R/L 100-050R	GBA43R/L 050R	1.00	2.0	0.50	KGBAR/L...22-15 KGBASR/L...22-15	
	GBA43R/L 150-075R	GBA43R/L 075R	1.50	3.5	0.75	KGBAR/L...22-15 KGBASR/L...22-15	
	GBA43R/L 200-100R	GBA43R/L 100R	2.00	3.5	1.00	KGBAR/L...22-15 KGBASR/L...22-15	
	GBA43R/L 250-125R	GBA43R/L 125R	2.50	4.0	1.25	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	GBA43R/L 300-150R	GBA43R/L 150R	3.00	4.0	1.50	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	GBA43R/L 400-200R	GBA43R/L 200R	4.00	5.0	2.00	KGBAR/L...22-35 KGBASR/L...22-35	

• Dimension B shows available grooving depth.
• See **G55** for KIGBA

Recommended Cutting Conditions ➡ G89

Applicable Inserts

(mm)

Description	A	T	ød
GBA32_	9.525	3.18	4.4
GBA43_	12.70	4.76	5.5
GBA43R/L480	12.70	5.00	5.5

		KBN510	KBN525	KPD001	KPD010
P	Carbon steel / Alloy steel				
M	Stainless Steel				
K	Cast Iron				
N	Non-ferrous Metals			●	
S	Titanium Alloy			●	
H	Hard materials (~40HRC)				
	Hard materials (40HRC~)	○	●		

Classification of usage
●: Continuous-Light Interruption / 1st Choice
◔: Continuous-Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

Shape (Handed Insert shows R-hand.)	Description	(Old Description)	W	B	rε	Applicable Toolholders	Ref. Page for Toolholder
1-Edge (GBA32 S=1.7, GBA43 S=1.9)	GBA32R/L 125-010	GBA32R/L 125	1.25	2.0	0.1	KGBAR...16 KGBASL...16	G13 G15 G55 (Internal)
	GBA32R/L 150-010	GBA32R/L 150	1.50	2.0	0.1	KGBAR...16 KGBASL...16	
	GBA43R/L 125-010	GBA43R/L 125	1.25	2.0	0.1	KGBAR/L...22-15 KGBASR/L...22-15	
	GBA43R/L 125-020	GBA43R/L 125	1.25	2.0	0.2	KGBAR/L...22-15 KGBASR/L...22-15	
	GBA43R/L 150-010	GBA43R/L 150	1.50	3.5	0.1	KGBAR/L...22-15 KGBASR/L...22-15	
	GBA43R/L 150-020	GBA43R/L 150	1.50	3.5	0.2	KGBAR/L...22-15 KGBASR/L...22-15	
	GBA43R/L 200-010	GBA43R/L 200	2.00	3.5	0.1	KGBAR/L...22-15 KGBASR/L...22-15	
	GBA43R/L 200-020	GBA43R/L 200	2.00	3.5	0.2	KGBAR/L...22-15 KGBASR/L...22-15	
	GBA43R/L 250-010	GBA43R/L 250	2.50	4.0	0.1	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	GBA43R/L 250-020	GBA43R/L 250	2.50	4.0	0.2	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	GBA43R/L 300-010	GBA43R/L 300	3.00	4.0	0.1	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	GBA43R/L 300-020	GBA43R/L 300	3.00	4.0	0.2	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	

• Dimension B shows available grooving depth.
• See **G55** for KIGBA

Recommended Cutting Conditions ➡ G89

NEW

MEGACOAT

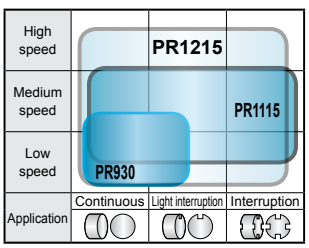
PR1215

Advantages

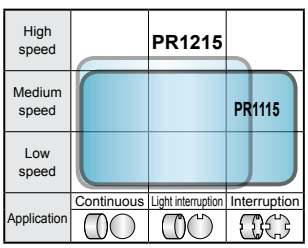
- **High reliability and long tool life grooving by micro-grain carbide substrate and MEGACOAT technology**
- **Machining cost reduction at high speed cutting by MEGACOAT with high hardness and oxidation resistance**
- **Suitable for shallow grooving of steel and stainless steel**

Material Application Map

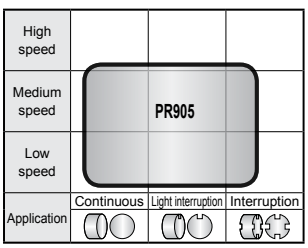
● Steel



● Stainless Steel



● Cast Iron



Inserts are sold in 10 piece boxes.

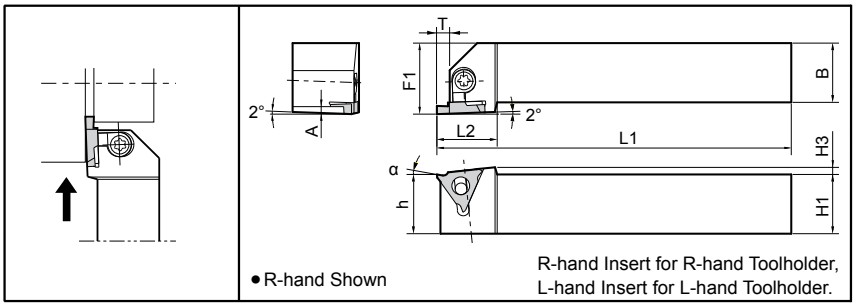
CBN & PCD Inserts are sold in 1 piece boxes.

●: Std. Item
R : R-hand Only
□: Deleted from the next catalogue

External Shallow Grooving Toolholders

KGBA

GBA applicable for **KGBA** / **KGBAS** toolholders is also usable for **KGB** / **KGBS** toolholders.



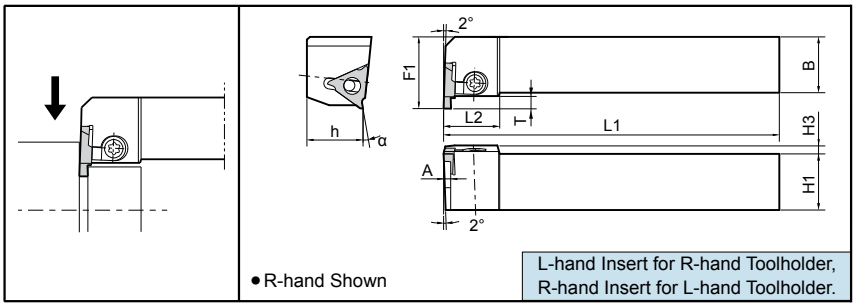
● R-hand Shown

R-hand Insert for R-hand Toolholder,
L-hand Insert for L-hand Toolholder.

● The following is a table for application compatibility.

KGBA ⬅	(KGB)
KGBA$^{R}_{L}$... -16	KGB$^{R}_{L}$...-16
KGBA$^{R}_{L}$...22-15	KGB$^{R}_{L}$...22-15
KGBA$^{R}_{L}$...22-25	KGB$^{R}_{L}$...22-25
KGBA$^{R}_{L}$...22-35	KGB$^{R}_{L}$...22-35
KGBA$^{R}_{L}$...22-25T5	KGB$^{R}_{L}$...22-25 (Available grooving depth has a limit)

KGBAS



● R-hand Shown

L-hand Insert for R-hand Toolholder,
R-hand Insert for L-hand Toolholder.

● The following is a table for application compatibility.

KGBAS ⬅	(KGBS)
KGBAS$^{R}_{L}$...-16	KGBS$^{R}_{L}$...-16
KGBAS$^{R}_{L}$...22-15	KGBS$^{R}_{L}$...22-15
KGBAS$^{R}_{L}$...22-25	KGBS$^{R}_{L}$...22-25
KGBAS$^{R}_{L}$...22-35	KGBS$^{R}_{L}$...22-35
KGBAS$^{R}_{L}$...22-25T5	KGBS$^{R}_{L}$...22-25 (Available grooving depth has a limit)

Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H3	B	L1	L2	F1	A	T	Spare Parts: Clamp Set	Spare Parts: Wrench	Applicable Inserts ➔ G10~G12
KGBA$^{R}_{L}$	1616H-16	●	●	16	4.0	16	100	24	20	-	2.5	LGBA-16$^{R}_{L}$S	FT-15	GBA32$^{R}_{L}$ type
	2020K-16	●	●	20		20	125		25					
	2525M-16	●	●	25		25	150		30					
	2020K22-15	●	●	20	4.0	20	125	25.5	25	1.0	4.0	LGBA-22$^{R}_{L}$S		GBA43$^{R}_{L}$ type
	2525M22-15	●	●	25		25	150		30					
	2020K22-25	●	●	20	4.0	20	125	25.5	25	2.0	4.5			
	2525M22-25	●	●	25		25	150		30					
	2020K22-25T5	●	●	20	4.0	20	125	25.5	25	2.0	5.5			
	2525M22-25T5	●	●	25		25	150		30					
	2020K22-35	●	●	20	4.0	20	125	25.5	25	3.0				
	2525M22-35	●	●	25		25	150		30					
	2020H22-15*	●		20	4.0	20	100	25.5	25	1.0	4.0			
	2020H22-25*	●								2.0	4.5			
	2020H22-35*	●								3.0	5.5			
KGBAS$^{R}_{L}$	2020K-16	●	●	20	4.0	20	125	25	25	-	2.5	LGBA-16$^{L}_{R}$S	FT-15	GBA32$^{L}_{R}$ type
	2525M-16	●	●	25	4.5	25	150		30					
	2020K22-15	●	●	20	4.5	20	125	25	27	1.0	4.0	LGBA-22$^{L}_{R}$S		GBA43$^{L}_{R}$ type
	2525M22-15	●	●	25	5.0	25	150		32					
	2020K22-25	●	●	20	4.5	20	125	25	27	2.0	4.5			
	2525M22-25	●	●	25	5.0	25	150		32					
	2020K22-25T5	●	●	20	4.5	20	125	25	27	2.0	5.5			
	2525M22-25T5	●	●	25	5.0	25	150		32					
	2020K22-35	●	●	20	4.5	20	125	25	27	3.0				
	2525M22-35	●	●	25	5.0	25	150		32					

• Dimension T shows the distance from the Toolholder to the cutting edge. Dimension B shows available grooving depth.

* mark indicates short shank type.

• Clamp Set : KGBA$^{R}_{L}$...LGBA-○RS for R-hand Toolholder, and LGBA-○LS for L-hand Toolholder.
KGBAS$^{R}_{L}$...LGBA-○LS for R-hand Toolholder, and LGBA-○RS for L-hand Toolholder.

Rake Angle (α) after Installment of GBA

GBA32$^{R}_{L}$○○○-○○○		GBA43$^{R}_{L}$○○○-○○○		GBA43$^{R}_{L}$○○○-○○○ R(Full-R)		
α	Insert Grades	α	Insert Grades	α	Insert Grades	Full-R Description
10°	TN90,PR630,PR930 PR1115,PR1215,PR905 KPD001,KPD010	0°	KBN510, KBN525	10°	TN90,PR630,PR930 PR1115,PR1215,PR905	050R~150R
		10°	TC40N,TN90,PR630,PR930 PR1115,PR1215,PR905 KPD001, KPD010	14°	TN90,PR630,PR930 PR1115,PR1215,PR905	200R
20°	KW10	20°	KW10		KW10	050R~200R

Rake Angle (α) after Installment of GBA-MY

α	Description
15°	GBA43$^{R}_{L}$175MY ~ GBA43$^{R}_{L}$350MY
14°	GBA43$^{R}_{L}$400MY

α indicates the rake angle at the center of the edge width, after installing insert.

External Grooving Toolholders **KGBA** Short Shank types are available

For NC lathe and HSK tooling, KGBAR2020K-○○ (Overall length 125mm) short shank type KGBAR2020H22-○○ (Overall length 100mm) is available. No longer required for the users to cut the shank portion.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Grooving Inserts

[GB insert changes to GBA (G10-G12).]

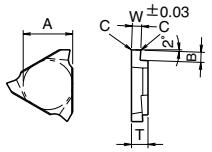
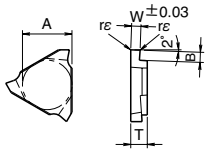
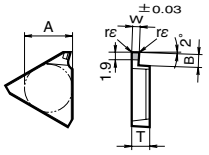
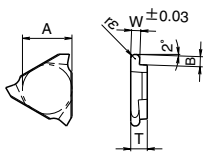
Applicable Inserts

(mm)

Description	A	T
GB32_	9.525	3.18
GB43_	12.70	4.76
GB43R/L480	12.70	5.00

P	Carbon Steel / Alloy Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metals	
S	Titanium Alloy	
H	Hard materials (under 40HRC)	
	Hard materials (over 40HRC)	

Classification of usage
●: Continuous-Light Interruption / 1st Choice
◔: Continuous-Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

Insert (Right-hand Shown)	Description	Dimension (mm) W	B	C or rε	Cermet TC40	Cermet TC60	PVD Coated Carbide PR630	PVD Coated Carbide PR930	Carbide KW10	Diamond KPD001	Diamond KPD010	Applicable Toolholder	Ref. Page for Toolholder
General (Square) (Corner is C shape) GB32 type  (Corner is C shape)	GB32R/L 050 *	0.50	1.0	C0.05		□	□					KGBR/L ···16 KGBSR/L ···16	G15
	075	0.75	2.0	C0.10		□	□						
	095	0.95				□	□						
	100	1.00				□	□						
	125	1.25				□	□						
	145	1.45				□	□						
	150	1.50				□	□						
	200	2.00	2.5			□	□						
	250	2.50				□	□						
General (Square) (Corner is R shape) GB43 type   GB insert changes to GBA in order. When replacing with GBA Insert, be careful for the Corner-R(rε) specification.	GB43R/L 125	1.25	2.0	0.1				□				KGBR/L ···22-15 KGBSR/L ···22-15	
	125			0.2	□	□	□						
	145	1.45	2.0	0.2	□	□	□						
	150	1.50	3.5	0.1				□					
	150			0.2	□	□	□						
	175	1.75		0.2	□	□	□						
	185	1.85		0.2	□	□	□						
	200	2.00		0.1				□					
	200			0.2	□	□	□						
	230	2.30		0.2	□	□	□						
	250	2.50	4.0	0.1				□				KGBR/L ···22-25 KGBSR/L ···22-25	
	250			0.3	□	□	□						
	265	2.65		0.3	□	□	□						
	280	2.80		0.3	□	□	□						
	300	3.00		0.1				□					
	300			0.3	□	□	□						
	330	3.30		0.3	□	□	□						
	350	3.50	5.0	0.1				□				KGBR/L ···22-35 KGBSR/L ···22-35	
	350			0.3	□	□	□						
	400	4.00		0.1				□					
	400			0.4	□	□	□						
	430	4.30		0.4	□	□	□						
	450	4.50		0.4	□	□	□						
	480	4.80		0.4	□	□	□						
1-Edge  	GB43R/L 125	1.25	2.0	0.1							□	KGBR/L ···22-15 KGBSR/L ···22-15	
	150	1.50	3.5								□		
	200	2.00									□		
	250	2.50	4.0								□	KGBR/L ···22-25 KGBSR/L ···22-25	
	300	3.00									□		
Full-R  	GB43R/L 050R	1.00	2.0	0.50		□	□					KGBR/L ···22-15 KGBSR/L ···22-15	
	075R	1.50	3.5	0.75		□	□						
	100R	2.00		1.00		□	□						
	125R	2.50	4.0	1.25		□	□					KGBR/L ···22-25 KGBSR/L ···22-25	
	150R	3.00		1.50		□	□						
	200R	4.00	5.0	2.00		□	□					KGBR/L ···22-35 KGBSR/L ···22-35	

• Dimension B shows available grooving depth.

The edge width tolerance of GB32R/L050 is different.$0.50^{+0.05}_{-0}$ (*)

For recommended cutting conditions, see page ◉ G89

* Material selection standard when changing to GBA.

GB Insert ➡	GBA Insert
TC40	TC40
TC60	TN90
PR630	PR1215/PR1115
PR930	PR1215/PR1115
KPD010	KPD001 (KPD010)

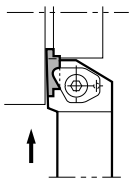
* Check the cornner-R(rε) of the insert when changing.

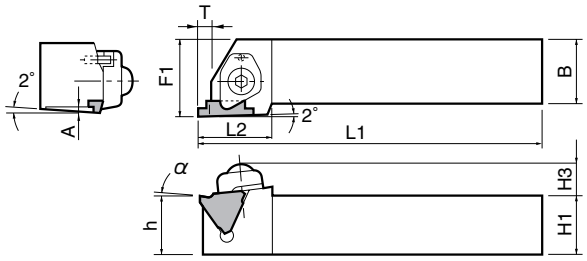
□ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes.

CBN & PCD Inserts are sold in 1 piece boxes.

KGB (Changes to KGBA ➡ G13)

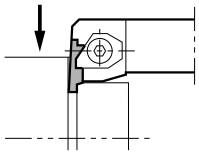


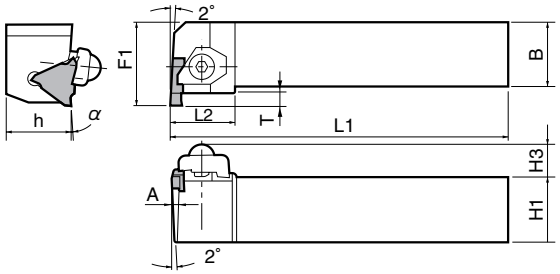


● Right-hand shown

R-hand insert for R-hand toolholder, L-hand insert for L-hand toolholder.

KGBS (Changes to KGBAS ➡ G13)





● Right-hand shown

L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder.

Toolholder Dimensions

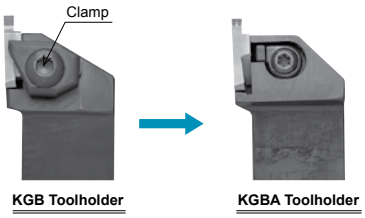
Description		Std. R	Std. L	Dimension (mm) H1=h	H3	B	L1	L2	F1	A	T	Spare Parts: Clamp	Clamp Bolt	Spring	Wrench	Applicable Inserts ➡ G10~G12 ➡ G14
KGB$^{R}_{L}$	2020K-16	○	○	20	11	20	125	24	25	-	2.5	CGB$^{R}_{L}$	BH6X25	SP-6	LW-4	GB32$^{R}_{L}$ GBA32$^{R}_{L}$
	2525M-16	○	○	25		25	150		30							
	2020K22-15	○	○	20	11.5	20	125	25.5	25	1.0	4.0					GB43$^{R}_{L}$ GBA43$^{R}_{L}$
	2525M22-15	○	○	25		25	150		30							
	2020K22-25	○	○	20	11.5	20	125	25.5	25	2.0	4.5					
	2525M22-25	○	○	25		25	150		30							
	2020K22-35	○	○	20	11.5	20	125	25.5	25	3.0	5.5					
	2525M22-35	○	○	25		25	150		30							
KGBS$^{R}_{L}$	2020K-16	○	○	20	11	20	125	25	25	-	2.5	CGB$^{R}_{L}$	BH6X25	SP-6	LW-4	GB32$^{L}_{R}$ GBA32$^{L}_{R}$
	2525M-16	○	○	25		25	150		30							
	2020K22-15	○	○	20	11.5	20	125	25	27	1.0	4.0					GB43$^{L}_{R}$ GBA43$^{L}_{R}$
	2525M22-15	○	○	25		25	150		32							
	2020K22-25	○	○	20	11.5	20	125	25	27	2.0	4.5					
	2525M22-25	○	○	25		25	150		32							
	2020K22-35	○	○	20	11.5	20	125	25	27	3.0	5.5					
	2525M22-35	○	○	25		25	150		32							

• Dimension T shows the distance from the Toolholder to the cutting edge. Dimension B shows available grooving depth.

Clamp: KGB$^{R}_{L}$ ... CGBR for Right-hand Toolholder, and CGBL for Left-hand Toolholder.
KGBS$^{R}_{L}$ ... CGBR for Right-hand Toolholder, and CGBL for Left-hand Toolholder.

Rake Angle (α) after Installment of GBA

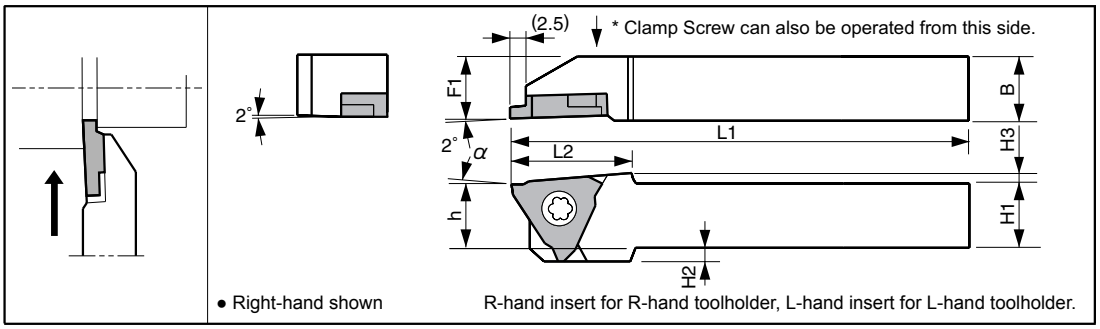
GB32$^{R}_{L}$ ○○○		GB43$^{R}_{L}$ ○○○		GBA43$^{R}_{L}$ ○○○ R (Full-R)	
α	Insert Grades	α	Insert Grades	α	Insert Grades
5°	TC60 PR630	5°	TC40 TC60 PR630 PR930	5°	TC60 PR630 } 050R~150R
20°	KW10	10°	KPD010	14°	TC60 PR630 } 200R KW10…050R~200R
		20°	KW10		



* KGB / KGBS toolholder changes to KGBA / KGBAS. Better Chip flow.
* For applicable insert, GB insert changes to GBA. GBA insert has various types of material available for user's cutting condition requirements.

● : Std. Item ○ : Check Availability

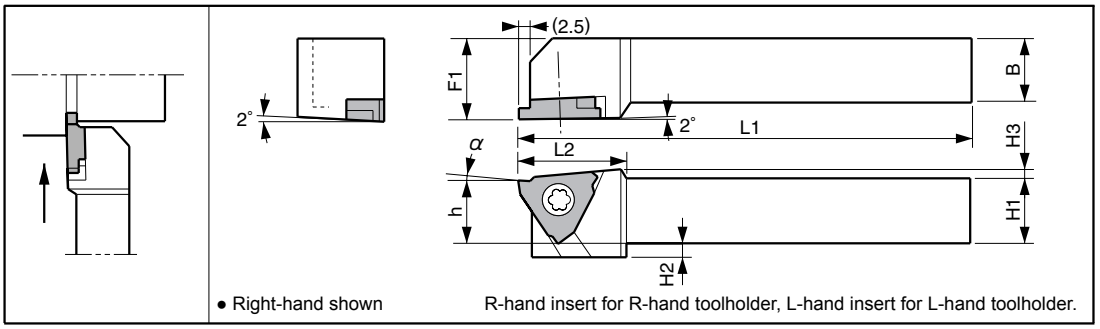
KTGF-F (Without Offset)



● Right-hand shown

R-hand insert for R-hand toolholder, L-hand insert for L-hand toolholder.

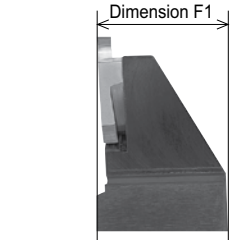
KTGF (With Offset)



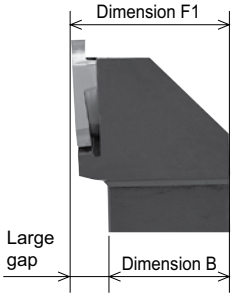
● Right-hand shown

R-hand insert for R-hand toolholder, L-hand insert for L-hand toolholder.

● Usage difference between KTGF-F and KTGF toolholders.
It is necessary to use "Without Offset Type" in operating the automatic lathe.



Without Offset Type (KTGF-F)



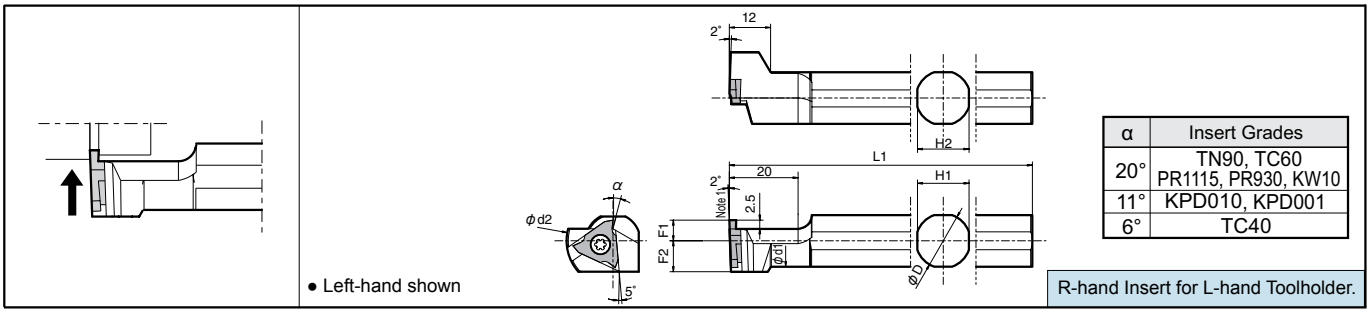
With Offset Type (KTGF)

● Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F1	Spare Parts Clamp Screw	Spare Parts Wrench	Remarks
KTGF R/L	1010JX-16F	●	●	10	2	2.5	10	120	18.5	10	SB-4070TRW	FT-8	
	1212JX-16F	●	●	12	-		12			12			
	1616JX-16F	●	●	16			16			16			
KTGF R/L	1212F-16F	●	●	12	-	2.5	12	85	18.5	12	SB-4070TRW	FT-8	
KTGF R/L	1010F-16	●	●	10	4	2.5	10	80	18.5	12	SB-4070TRS	FT-10	
	1212H-16	●	●	12	2		12	100		16			
	1616H-16	●	●	16	-		16	100		20			
	2020K-16	●	●	20			20	125	20	25			
	2525M-16	●	●	25			25	150		32			

α	Insert Grades
20°	TN90, TC60 PR1115, PR930, KW10
11°	KPD010, KPD001
6°	TC40

S-KTGF (Sleeve Holder)



● Left-hand shown

R-hand Insert for L-hand Toolholder.

α	Insert Grades
20°	TN90, TC60 PR1115, PR930, KW10
11°	KPD010, KPD001
6°	TC40

Note 1. Dimension B shows available grooving depth.

● Toolholder Dimensions

Description	Std.	Dimension (mm) øD	L1	F1	F2	ød1	ød2	H1=H2	Spare Parts Clamp Screw	Spare Parts Wrench
S12F-KTGFL16	●	12.0	80	6	9.0	11.0	27	11	SB-4070TRS	FT-10
S14H-KTGFL16	●	14.0	100			13.0		13		
S15F-KTGFL16	●	15.875	85			14.6		15		
S16F-KTGFL16	●	16.0								
S19G-KTGFL16	●	19.05	90		10.5	17.6		17		
S19K-KTGFL16	●		120							
S20G-KTGFL16	●	20.0	90		11.0	18.6		18		
S20K-KTGFL16	●		120							
S25.0H-KTGFL16	●	25.0	100	10	14.0	23.6	32	23		
S25K-KTGFL16	●	25.4	120							

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Applicable Inserts

(mm)

Description	A	T	ød
TGF32_	9.525	3.18	4.5
TGF32R/L325	9.525	3.40	4.5
TGF32R/L315-SRC	9.525	3.40	4.5

P	Carbon Steel / Alloy Steel						◔	●				
M	Stainless Steel						◔	●				
K	Cast Iron								●			
N	Non-ferrous Metals								●	●		
S	Titanium Alloy								●	●		
H	Hard materials (under 40HRC)						○	●				
	Hard materials (over 40HRC)											

Classification of usage
- ● : Continuous-Light Interruption / 1st Choice
- ◔ : Continuous-Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

Insert (R-hand shown)		Description	Dimension (mm) W	B	C or rε	Cermet TN60	TN90	TC40	TC60	PVD Coated Carbide PR630	PR930	PR1115	Carbide KW10	PCD KPD001	KPD010	Applicable Toolholder	Ref. Page for Toolholder
General (Square) (Corner is C shape) TGF32R/L ○○○	TGF32R/L○○○-S type Edge Width Tolerance W:+0.12 +0.06	TGF32R/L033	0.33	0.8	C0.05											KTGFR/L…16F KTGFR/L…16 S…KTGFL16	G16
		050	0.50	1.2													
		060	0.60														
		075	0.75	2.0	C0.1												
		080	0.80														
		090	0.90														
		095	0.95														
		100	1.00														
		120	1.20														
		125	1.25														
		130	1.30														
		140	1.40														
		145	1.45														
		150	1.50														
		170	1.70														
		175	1.75														
		185	1.85	2.5													
		190	1.90														
		200	2.00														
		225	2.25														
		250	2.50														
		275	2.75	3.0	0.2												
		300	3.00														
		325	3.25														
General (Square) (Corner is R shape) TGF32R/L ○○○-○○○		TGF32R/L033-005	0.33	0.8	0.05						R	R	R				
		050-005	0.50	1.2				R			●	●	R				
		075-010	0.75	2.0	0.1			R			●	●	R				
		095-010	0.95					R			●	●	R				
		100-010	1.00					R			●	●	R				
		NEW 120-010	1.20									●					
		125-010	1.25					R			●	●	R				
		NEW 140-010	1.40									●					
		145-010	1.45					R			●	●	R				
		150-010	1.50					R			●	●	R				
		175-010	1.75					R			●	●	R				
		200-010	2.00	2.5				R			●	●	R				
		250-010	2.50					R			●	●	R				
	TGF32R/L○○○-SRG type Edge Width Tolerance W:+0 -0.05 For Circlip Grooves (DIN 471 / 472)	TGF32R/LS090-S	0.90	2.0	C0.05												
		110-S	1.10														
		130-S	1.30														
		160-S	1.60														
		185-S	1.85	2.5													
		TGF32R/LS080-SRG	0.87	2.0	rε max 0.03												
		090-SRG	0.97														
		100-SRG	1.07														
		110-SRG	1.24														
		130-SRG	1.44														
		160-SRG	1.74														
		185-SRG	1.99	2.5													
		215-SRG	2.29														
		265-SRG	2.79	3.0													
		315-SRG	3.29														
1-Edge	125~150 S=1.7 200 S=1.9	TGF32R/L125	1.25	2.0	C0.1												
		150	1.50														
		200	2.00	2.5													
		TGF32R/L125-010	1.25	2.0	0.1									R			
		150-010	1.50											R			
		200-010	2.00	2.5										R			

• Dimension B shows available grooving depth.

For recommended cutting conditions, see page G90

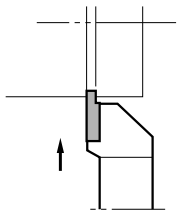
Inserts are sold in 10 piece boxes.

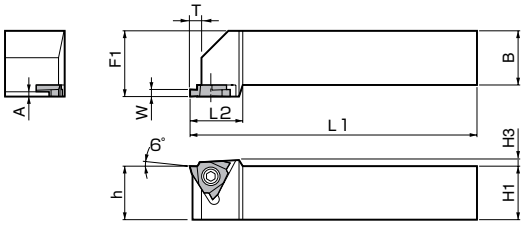
CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item ○ : Check Availability
R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)
□ : Deleted from the next catalogue

External Shallow Grooving Toolholders [TG Insert]

KTG (Changes to KGBA ➡ G13)





• Right-hand shown

R-hand insert for R-hand toolholder, L-hand insert for L-hand toolholder.

Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H3	B	L1	L2	F1	A	T			Spare Parts: Clamp Screw		Wrench		
KTG R/L	2020K-16	●	●	20	3.0	20	125	20	25	-	2.5			SB-4TR	-	FT-15	-	
	2525M-16	●	●	25		25	150		30									
	2020K22-15	●	●	20	3.0	20	125	25	25	1.0	4.0			-	GS-50	-	LW-3	
	2525M22-15	●	●	25		25	150		30									
	2020K22-25	●	●	20	3.0	20	125	25	25	2.0	4.5							
	2525M22-25	●	●	25		25	150		30									
	2020K22-35	●	●	20	3.0	20	125	25	25	3.0	5.5							
	2525M22-35	●	●	25		25	150		30									

• Dimension T shows the distance from the Toolholder to the cutting edge. Dimension B shows available grooving depth.

* GBA Insert cannot be installed to this toolholder.

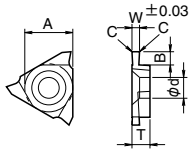
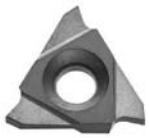
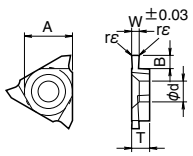
Applicable Inserts

(TG insert changes to GBA ➡ G10~➡ G12)

(mm)

Description	A	T	ød
TG32_	9.525	3.18	4.5
TG43_	12.70	4.76	5.5

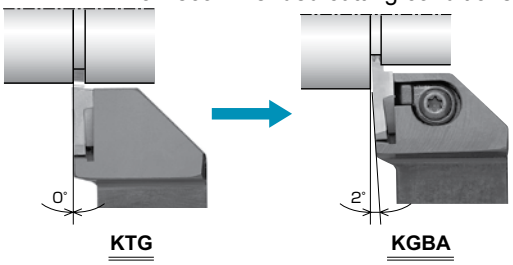
P	Carbon Steel / Alloy Steel					Classification of usage
M	Stainless Steel					◕: Continuous-Light Interruption / 1st Choice
K	Cast Iron					◔: Continuous-Light Interruption / 2nd Choice
N	Non-ferrous Metals					●: Continuous / 1st Choice
S	Titanium Alloy					○: Continuous / 2nd Choice
H	Hard materials (under 40HRC)					
	Hard materials (over 40HRC)					

Insert (R-hand shown)		Description		Dimension (mm) W	B	C or rε	Cermet TN60	TN90	TC40	TC60	Applicable Toolholder	Ref. Page for Toolholder
General (Square) (Corner is C shape) TG32 type	 (Corner is C shape)	TG32 R/L	075	0.75	2.0	C0.1	●				KTG R/L...16	G18
			095	0.95			●					
			125	1.25			●					
			145	1.45			●					
			150	1.50			●					
			175	1.75			●					
			200	2.00			●					
 General (Square) (Corner is R shape) TG43 type		TG43 R/L	150	1.50	3.5	0.2	●				KTG R/L...22-15	G18
			175	1.75			●					
			200	2.00			●					
			230	2.30			●					
			250	2.50	4.0	0.3	●				KTG R/L...22-25	
			265	2.65			●					
			280	2.80			●					
			300	3.00			●					
			330	3.30			●					
			350	3.50	5.0		●				KTG R/L...22-35	
			400	4.00		0.4	●					
			430	4.30			●					
			450	4.50			●					

• Dimension B shows available grooving depth.

For recommended cutting conditions, see page ➡ G90

* KTG will be switched to KGBA.
  Machining against the wall is available.
* For applicable insert, TG insert changes to GBA.
  Change Insert Grade TN60 for TN90.
  GBA insert has various types of material available for user's cutting condition requirements.
* Check the cornner-R(rε) of the insert when changing.

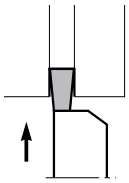


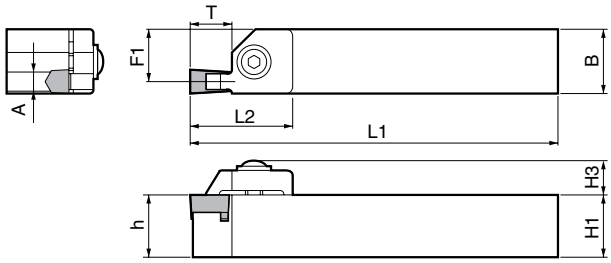
● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

External Shallow Grooving Toolholders [Ceramic TG Insert]

KN91





• Right-hand shown

Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H3	B	L1	L2	F1	A	T			Spare Parts Clamp	Clamp Bolt	Washer	Spring	Wrench
KN91R/L	44-4	●	●	25	16	25	150	40	22.5	3.4	15			CE-111 / 121	BH8X30	W-8	SP-8	LW-5
	44-5	●	●					42	22.5	4.4	17							
	44-7	●						42	21	6.4	17			CE-131 / 141				

• Dimension T shows available grooving depth.

Clamp: KN91R/L 44-4 / 5 ... CE-111 for Right-hand Toolholder, and CE-121 for Left-hand Toolholder.
KN91R/L 44-7 ... CE-131 for Right-hand Toolholder, and CE-141 for Left-hand Toolholder.

Applicable Inserts

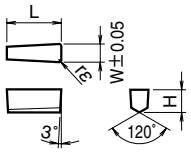
(mm)

Description	L	H
GS91-4	12	5.0
GS91-5~GS91-8	15	7.5

P	Carbon Steel / Alloy Steel		
M	Stainless Steel		
K	Cast Iron	●	
N	Non-ferrous Metals		
S	Titanium Alloy		
H	Hard materials (under 40HRC)		
	Hard materials (over 40HRC)	○	

Classification of usage

◕: Continuous-Light Interruption / 1st Choice
◔: Continuous-Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

Insert		Description		Dimension (mm) W	rε	Ceramic A65	PVD Ceramic A66N	Applicable Toolholder	Ref. Page for Toolholder
		GS	91-4	4.0	0.5			KN91R/L...4	G19
			91-5	5.0		●		KN91R/L...5	
			91-6	6.0	0.8				
			91-7	7.0				KN91R/L...7	
			91-8	8.0		●			

Recommended Cutting Conditions

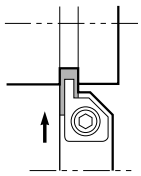
Workpiece Material	Recommended Insert Grade (Cutting Speed m/min) Ceramic A65	f (mm/rev) GS91-4 GS91-5 GS91-6	GS91-7 GS91-8
Cast Iron (FC / FCD, etc.)	★ 150~300	0.03~0.07	0.04~0.08
Hard Materials	★ 40~80	0.02~0.05	0.04~0.07

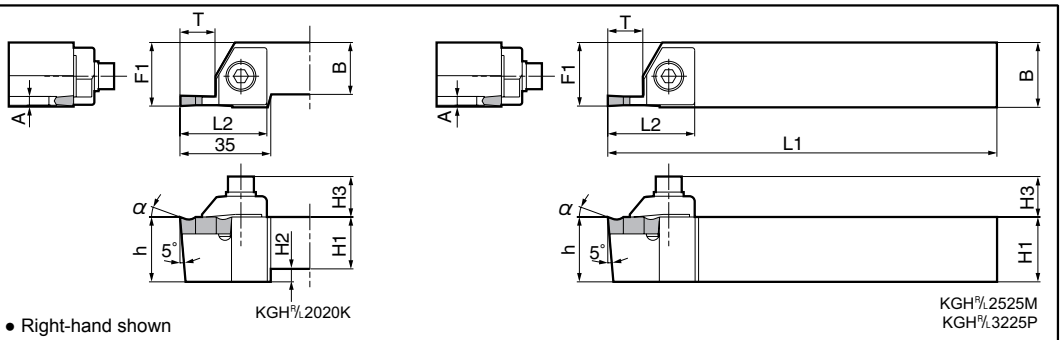
★ : 1st Recommendation

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

KGH



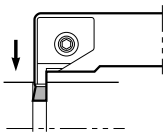


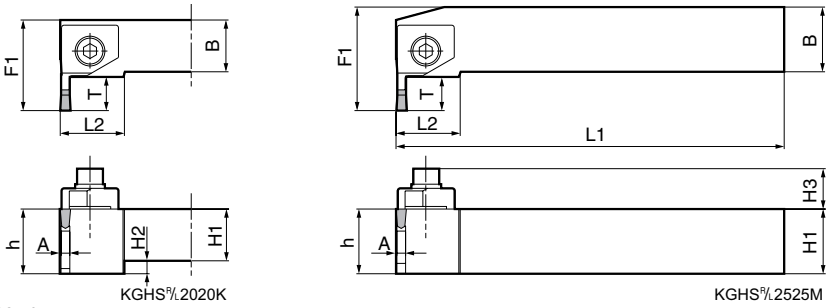
• Right-hand shown

KGH R/L 2020K

KGH R/L 2525M
KGH R/L 3225P

KGHS





• Right-hand shown

KGHS R/L 2020K

KGHS R/L 2525M

Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F1	A	T	Spare Parts: Clamp	Clamp Bolt	Washer	Spring	Wrench
KGH R/L	2020K-4	●	●	20	5	15.6	20	125	33.5	24.5-24.8	3.4	13	CGH-1 R/L	HH6X25	W-6	SP-6	LW-5
	2525M-4	●	●	25	-		25	150		24.5-24.8							
	2020K-5	●	●	20	5	15.6	20	125	33.5	25.0-25.8	4.2	13	CGH-1 R/L				
	2525M-5	●	●	25	-		25	150		25.0-25.8							
	3225P-5	●	●	32	-		25	170		25.0-25.8							
	2020K-7	●	●	20	5	15.6	20	125	33.5	24.5-25.0	5.8	13	CGH-2 R/L				
	2525M-7	●	●	25	-		25	150		24.5-25.0							
	2525M-10	●	●	25	-	16.1	25	150	41	25.5-26.5	9.0	17	CGH-3 R/L				
	3225P-10	●		32	-		25	170		25.5-26.5							
KGHS R/L	2020K-4	●	●	20	5	15.6	20	125	25	35	3.4	13	CGH-1 L/R	HH6X25	W-6	SP-6	LW-5
	2525M-4	●	●	25	-		25	150		40							
	2020K-5	●	●	20	5	15.6	20	125	25	35	4.2	13	CGH-1 L/R				
	2525M-5	●	●	25	-		25	150		40							
	2525M-7	□	□	25	-	15.6	25	150	25	40	5.8	13	CGH-2 L/R				

• Dimension T shows available grooving depth.

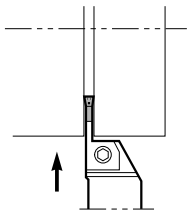
• Dimension F1 of KGH R/L Toolholder depends on the insert's edge width.
• Clamp: KGH R/L ... CGH- ○ R for Right-hand Toolholder, and CGH- ○ L for Left-hand Toolholder.
KGHS R/L ... CGH- ○ L for Right-hand Toolholder, and CGH- ○ R for Left-hand Toolholder.

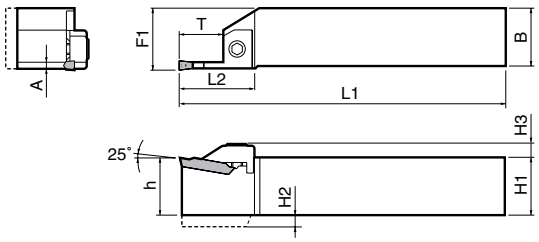
Rake Angle (α) after Installment of GH / GHU insert

GH ○○○○ - ○○		GHU ○○○○	
α	Insert Grades	α	Insert Grades
0°	A65, A66N	10°	TN60 CR9025
10°	TC40		
20°	TN90, TC60 PR630, PR930 KW10		

● : Std. Item ○ : Check Availability
R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)
□ : Deleted from the next catalogue

KGA





• Right-hand shown

Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F1	A	T	Spare Parts: Clamp	Clamp Bolt	Spring	Wrench
KGA R/L	2020K-3	●	●	20	5	6	20	125	37	21.5	2.3	20	CGA-3 R/L	HH6X20	SP-6	LW-5
	2525M-3	●	●	25	-		25	150		26.5						
	2020K-4	●		20	5	6	20	125	37	21.5	3.3	20	CGA-4 R/L			
	2525M-4	●	●	25	-		25	150		26.5						
	2020K-5	●		20	5	6	20	125	42	21.5	4.3	25	CGA-5 R/L			
	2525M-5	●	●	25	-		25	150		26.5						
KGA R/L	2020K-3S			20	5	6	20	125	34	21.5	2.3	16	CGA-3 R/L	HH6X20	SP-6	LW-5
	2525M-3S			25	-		25	150		26.5						
	2020K-4S			20	5	6	20	125	34	21.5	3.3	16	CGA-4 R/L			
	2525M-4S			25	-		25	150		26.5						

• Dimension T shows available grooving depth.
• Clamp: CGA-○R for Right-hand Toolholder, and CGA-○L for Left-hand Toolholder.

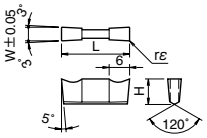
Applicable Inserts

(mm)

Description	L	H
GH4020-○○ ~GH8020-○○	20	7.5
GH10025-05~GH12025-05	25	
GHU ○○○○	20	
GA30, GA40	25	5.0
GA50	30	

P	Carbon Steel / Alloy Steel	◕
M	Stainless Steel	◕
K	Cast Iron	◕ ○ ●
N	Non-ferrous Metals	◕
S	Titanium Alloy	◕
H	Hard materials (under 40HRC)	●
	Hard materials (over 40HRC)	○ ●

Classification of usage
◕: Continuous-Light Interruption / 1st Choice
◔: Continuous-Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

Insert		Description		Dimension (mm) W	rε	Cermet TN60	Cermet TN90	Cermet TC40	Cermet TC60	CVD Coated Carbide CR9025	PVD Coated Carbide PR630	PVD Coated Carbide PR930	Carbide KW10	Ceramic A65	Ceramic A66N	Ceramic PT600M	Applicable Toolholder	Ref. Page for Toolholder
Ground Chipbreaker		GH	4020-02	4.0	0.2		●	●				●	●				KGH R/L...4	G20
			4020-05		0.5		●	●				●	●	●	●	●	KGHS R/L...4	
			4520-02	4.5	0.2			●										
			4520-05		0.5			●										
			5020-02	5.0	0.2		●	●				●	●					
			5020-05		0.5		●	●				●	●	●	●	●		
			5520-02	5.5	0.2			●										
			5520-05		0.5			●									KGH R/L...5	
			6020-02	6.0	0.2		●	●				●	●				KGHS R/L...5	
			6020-05		0.5		●	●				●	●	●		●		
			6520-02	6.5	0.2			●										
			6520-05		0.5			●										
Ceramic			7020-02	7.0	0.2		●	●				●	●					
			7020-05		0.5		●	●				●	●	●		●		
			7520-02	7.5	0.2			●									KGH R/L...7	
			7520-05		0.5			●									KGHS R/L...7	
			8020-02	8.0	0.2		●	●				●	●					
			8020-05		0.5		●	●				●	●					
			10025-05	10.0	0.5							●	●				KGH R/L...10	
			12025-05	12.0	0.5							●	●					
Molded Chipbreaker		GHU	4020	4.0	0.25	●				●							KGH R/L...4 KGHS R/L...4	G20
			5020	5.0	0.30	●				●							KGH R/L...5 KGHS R/L...5	
			6020	6.0	0.30	●				●								
		GA	30	3.0	0.20	●				●							KGA R/L...3	G21
			40	4.0	0.25	●				●							KGA R/L...4	
			50	5.0	0.30	●				●							KGA R/L...5	

Ceramic insert is above shape.

For recommended cutting conditions, see page ➔ G90~G91

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

Features

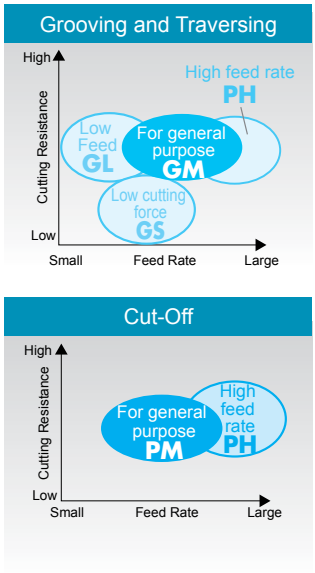
1 Various insert lineup

Smooth chip control
➡ Newly-introduced chipbreakers designed to cover a variety of workpiece materials.

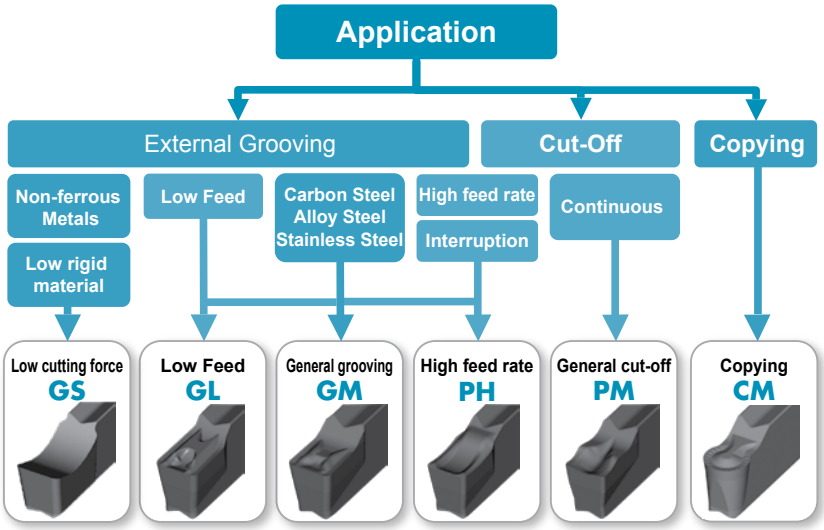
High precision edge preparation
➡ High precision molding technology with tolerance ±0.03 mm (Edge width 2, 3, 4 mm types)

Highly-reputed MEGACOAT technology
➡ Long tool life and high efficiency machining achieved by superior oxidation resistance and wear resistance.

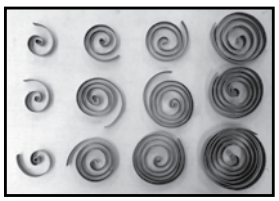
Application Map



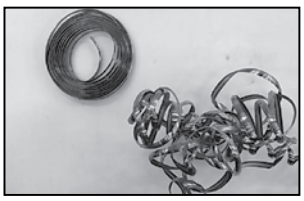
Chipbreaker Selection



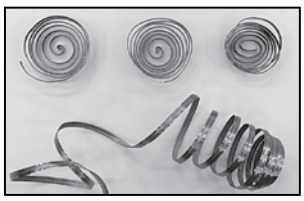
Comparison of Chip Control (SCM415 Vc=150m/min, f=0.15mm/rev)



GM Chipbreaker



Competitor A

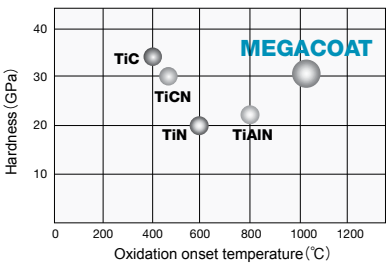


Competitor B

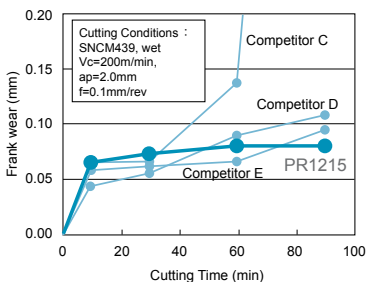
Smooth chip control

Less chip biting troubles

Features of MEGACOAT



Wear Resistance Comparison



PR1225:
1st choice for cut-off, grooving and traversing

PR1215:
With superior wear resistance, recommended for grooving and cut-off under the stable conditions as well as machining of cast iron.

2 Toolholder

●Integral type and separate type (toolholder + blade) are available.

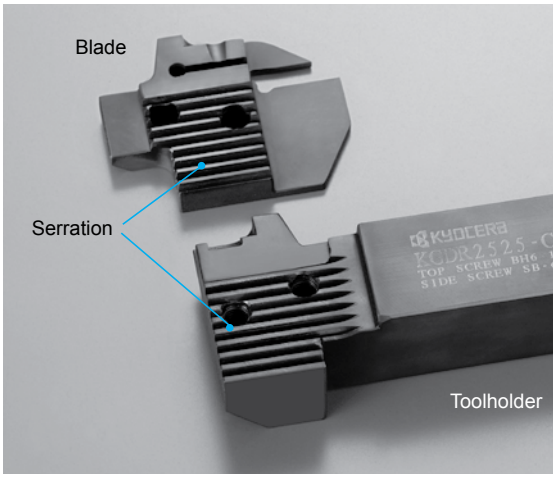
Integral Type

Separate type

● High rigidity separate type toolholder

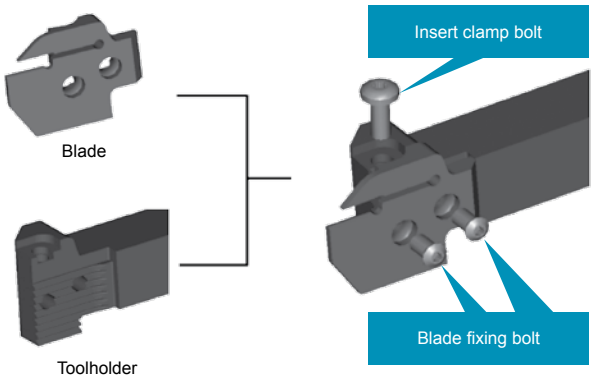
➡ Adaptable to wide applications by changing blades

Dealing with various edge width and cutting depth by changing the blade and toolholder combination.
Even if the blade is broken, you only need to replace the broken part.



■ Structure of toolholder unit (Toolholder + Blade)

●KGD-S(0° separate type)

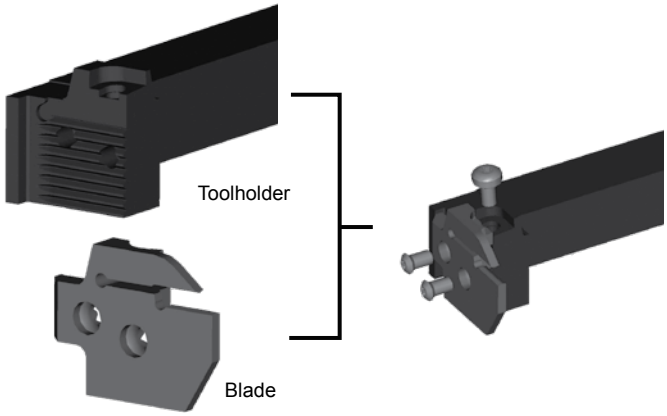


※Note for the toolholder and blade combination of 0° separate type

Toolholder(**KGD**R/L ○○-**C**)
+
Blade(**KGD**R/L-○**T**○○-**C**)

⇒R-hand Blade for R-hand Toolholder,
L-hand Blade for L-hand Toolholder.

●KGDS-S(90° separate type)



※Note for the toolholder and blade combination of 90° separate type

Toolholder(**KGDS**R/L ○○-**C**)
+
Blade(**KGD**L/R-○**T**○○-**C**)

⇒L-hand Blade for R-hand Toolholder,
R-hand Blade for L-hand Toolholder.

GDM / GDMS / GDG

Classification of usage						
◕ : Continuous-Light Interruption / 1st Choice ◔ : Continuous-Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice	P	Carbon steel / Alloy steel	●	◕	◔	
	M	Stainless Steel		◕	◔	
	K	Cast Iron			◕	
	N	Non-ferrous Metals				◕
	S	Titanium Alloy				◕
	H	Hard Materials (~ 40HRC)				
		Hard Materials (40HRC ~)				

Shape (Handed insert shows R-hand.)		Description		Dimension (mm) W	W tolerance	rε	M	L	H	Angle (°) θ	Cermet TN90	MEGACOAT PR1225	MEGACOAT PR1215	Carbide GW15	Ref. Page for Toolholder
Grooving and Traversing	For general purpose 2-Edge	GDM	2420N-020GM	2.4	±0.03	0.2	1.95	20	4.3	-	●	●	●		G26 G27 G28
			3020N-020GM	3.0		0.2	2.3				●	●	●		
			3020N-040GM			0.4					●	●	●		
			4020N-020GM	4.0		0.2	3.3				●	●	●		
			4020N-040GM			0.4					●	●	●		
			4020N-080GM			0.8					●	●	●		
			5020N-040GM	5.0	±0.04	0.4	4.2				●	●	●		
			5020N-080GM			0.8					●	●	●		
			6020N-040GM	6.0		0.4	5.2				●	●	●		
			6020N-080GM			0.8					●	●	●		
			8030N-080GM	8.0	±0.05	0.8	6.0	30	5.5			●	●		
	For general purpose 1-Edge	GDMS	2220N-020GM	2.2	±0.03	0.2	1.75	20	4.3	-	●	●	●		
			3020N-040GM	3.0		0.4	2.3				●	●	●		
			4020N-040GM	4.0		0.4	3.3				●	●	●		
			5020N-080GM	5.0	±0.04	0.8	4.2				●	●	●		
			6020N-080GM	6.0		0.8	5.2				●	●	●		
	Low Feed 2-Edge	GDM	2420N-020GL	2.4	±0.03	0.2	1.95	20	4.3	-	●	●	●		
			3020N-020GL	3.0		0.2	2.3				●	●	●		
			3020N-040GL			0.4					●	●	●		
			4020N-020GL	4.0		0.2	3.3				●	●	●		
			4020N-040GL			0.4					●	●	●		
			5020N-040GL	5.0	±0.04	0.4	4.2				●	●	●		
			6020N-040GL	6.0		0.4	5.2				●	●	●		
Grooving	Low cutting force 2-Edge	GDG	2520N-020GS	2.5	±0.02	0.2	2.0	20	4.3	-	●	●	●	●	
			3020N-020GS	3.0			2.3				●	●	●	●	
			3520N-020GS	3.5			2.8				●	●	●	●	
			4020N-040GS	4.0		0.4	3.3				●	●	●	●	
			5020N-040GS	5.0			4.2				●	●	●	●	
			6020N-040GS	6.0			5.2				●	●	●	●	
			8030N-040GS	8.0			6.0	30	5.5		●	●	●	●	
Full-R / Copying	2-Edge	GDM	3020N-150R-CM	3.0	±0.03	1.5	2.3	20	4.3	-	●	●	●		
			4020N-200R-CM	4.0		2.0	3.3				●	●	●		
			5020N-250R-CM	5.0	±0.04	2.5	4.2				●	●	●		
			6020N-300R-CM	6.0		3.0	5.2				●	●	●		
Grooving and Cut-Off	High feed rate 2-Edge	GDM	2020N-020PH	2.0	±0.03	0.2	1.5	20	4.3	-		●	●		
			3020N-030PH	3.0		0.3	2.3					●	●		
			4020N-030PH	4.0		0.3	3.3					●	●		
	High feed rate 1-Edge	GDMS	2020N-020PH	2.0	±0.03	0.2	1.5	20		-		●	●		
			3020N-030PH	3.0		0.3	2.3					●	●		
			4020N-030PH	4.0		0.3	3.3					●	●		

Recommended Cutting Conditions ➡ G29

◆Note for the holder and insert combination of KGD type (new) and KGM type (conventional)

●Insert setting angle for grooving toolholders

KGD···0°	Conventional tools KGM···5°
0°	5°

New Insert **GDM** → New Toolholder **KGD**

Conventional Insert **GMM** → Conventional Toolholder KGM

Installing conventional inserts to the new toolholder is not recommended.

● : Std. Item

GDM / GDMS

Classification of usage						
● : Continuous-Light Interruption / 1st Choice ◔ : Continuous-Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice	P	Carbon steel / Alloy steel		●	◔	
	M	Stainless Steel		●	◔	
	K	Cast Iron			●	
	N	Non-ferrous Metals				
	S	Titanium Alloy				
	H	Hard Materials (～ 40HRC)				
		Hard Materials (40HRC ～)				

Shape (Handed insert shows R-hand.)		Description		Dimension (mm) W	W tolerance	rε	M	L	H	Angle (°) θ	Cermet TN90	MEGACOAT PR1225	MEGACOAT PR1215	Carbide GW15	Ref. Page for Toolholder
Cut-Off	2-Edge	GDM	2020N-020PM	2.0	±0.03	0.2	1.5	20	4.3	-		●	●		G26 G27 G28
			2520N-020PM	2.5		0.2	1.95					●	●		
			3020N-025PM	3.0		0.25	2.3					●	●		
			4020N-030PM	4.0		0.3	3.3					●	●		
	2-Edge	GDM	2020R-020PM-6D	2.0	±0.03	0.2	1.5	20		6°		●	●		
			2520R-020PM-6D	2.5		0.2	1.95					●	●		
			3020R-025PM-6D	3.0		0.25	2.3					●	●		
	1-Edge	GDMS	2020N-020PM	2.0	±0.03	0.2	1.5	20		-		●	●		
			3020N-025PM	3.0		0.25	2.3					●	●		
			4020N-030PM	4.0		0.3	3.3					●	●		
	1-Edge	GDMS	2020R-020PM-6D	2.0	±0.03	0.2	1.5	20		6°		●	●		
			3020R-025PM-6D	3.0		0.25	2.3					●	●		
			4020R-030PM-6D	4.0		0.3	3.3					●	●		

Note) 1. Using the PM chipbreaker (for cut-off) for grooving cannot create a flat bottom (See the right figure).

Groove bottom created by PM chipbreaker

Recommended Cutting Conditions ➔ G29

Indication of Description

①Series	②Tolerance Symbol	③No. of corners	④Width	⑤Insert Length	⑥Hand of Tool	⑦Corner-R(rε)	⑧Chipbreaker symbol	⑨Lead Angle
GD	M : Class M G : Class G	Without Indication : 2-Edge S : 1-Edge	20 : 2mm 30 : 3mm 40 : 4mm	20 : 20mm 30 : 30mm	R : R-hand L : L-hand N : Neutral	0.20 : 0.2mm 0.40 : 0.4mm 150R : 1.5mm(Full-R)	GM : Grooving and Traversing GL : Low Feed CM : Copying	6D : 6°

Example: GDMS30 20 N – 025 GM – 6D

Setting the inserts

1. Make air blow or other measures to completely eliminate chips from the insert mounting part (see Fig. 1).
2. Set the insert to the holder and push until it contacts with the holder's surface for fixing the insert's back end (see Fig. 2 and 3).
3. Keeping the insert fit to the surface, tighten the insert clamp bolt at an appropriate torque.
4. Make sure that there is no gap between the insert and the holder's surface for fixing the insert's back end and that the insert is set straight (see Fig. 2 and 3).

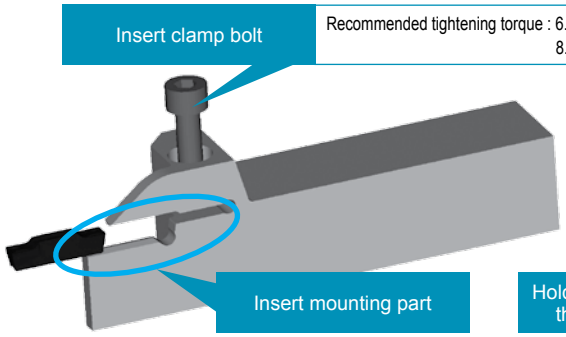


Fig. 1

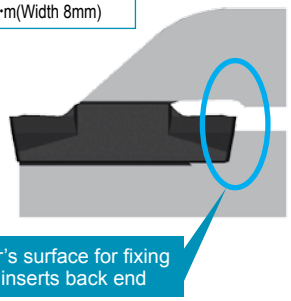


Fig. 2

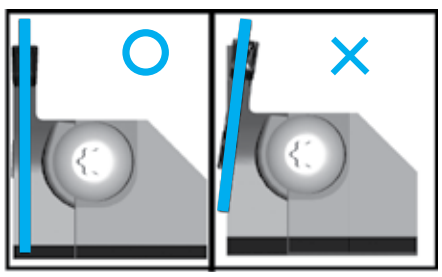
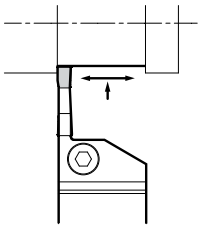
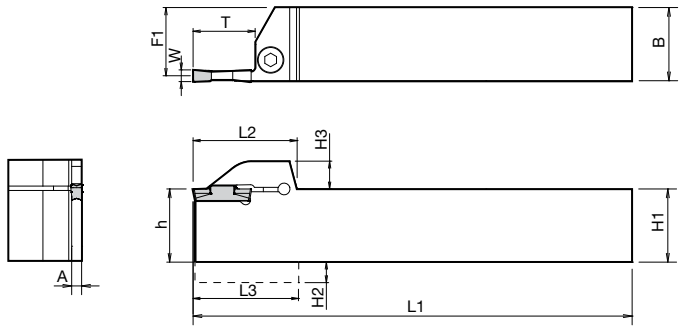


Fig. 3

● : Std. Item

KGD (Integral Type)





•R-hand Shown

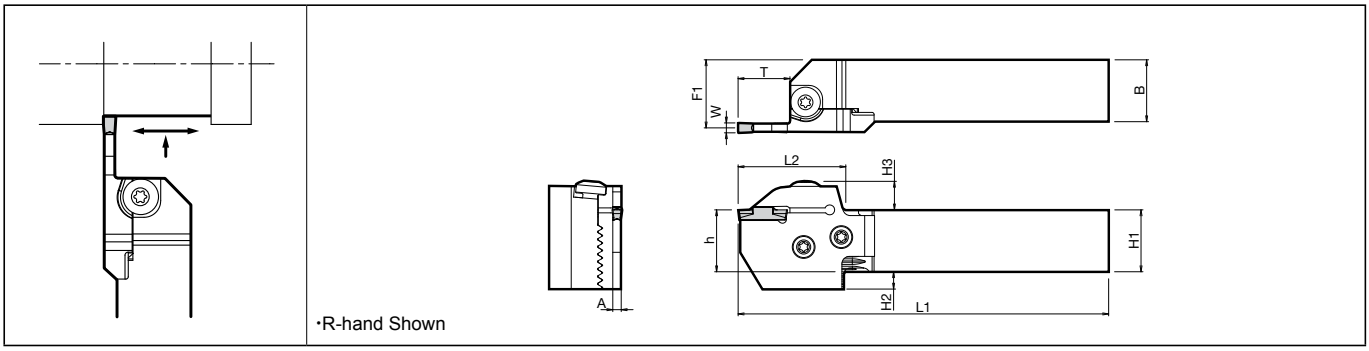
Toolholder Dimensions

Width (mm)	Max. depth of cut (mm)	Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	L3	F1	A	T	Width W (mm) MIN	Width W (mm) MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench
2	6	KGD R/L	1616H-2T06	●	●	16	4.0	9.5	16	100	27.7	28.0	15.2	1.7	6	2.0	3.0	HH5X16	LW-4
			2020K-2T06	●	●	20	-		20	125	28.0	-	19.2						
			2525M-2T06	●	●	25			25	150	28.0		24.2					HH5X25	
	10	KGD R/L	1616H-2T10	●	●	16	4.0		16	100	30.2	30.5	15.2		10			HH5X16	
			2020K-2T10	●	●	20	-		20	125	30.5	-	19.2						
			2525M-2T10	●	●	25			25	150	30.5		24.2					HH5X25	
	17	KGD R/L	1616H-2T17	●	●	16	4.0		16	100	31.2	31.5	15.2		17			HH5X16	
			2012K-2T17	●	●	20	-		12	125	32.5	-	11.2						
			2020K-2T17	●	●				20	125			19.2						
			2525M-2T17	●	●	25			25	150			24.2					HH5X25	
3	6	KGD R/L	1616H-3T06	●	●	16	4.0		16	100	27.7	28.0	14.8	2.4	6	3.0	4.0	HH5X16	LW-4
			2020K-3T06	●	●	20	-		20	125	28.0	-	18.8						
			2525M-3T06	●	●	25			25	150	28.0		23.8					HH5X25	
	10	KGD R/L	1616H-3T10	●	●	16	4.0		16	100	30.2	30.5	14.8		10			HH5X16	
			2020K-3T10	●	●	20	-		20	125	30.5	-	18.8						
			2525M-3T10	●	●	25			25	150			23.8					HH5X25	
	20	KGD R/L	1616H-3T20	●	●	16	4.0		16	100	34.2	34.5	14.8		20			HH5X16	
			2012K-3T20	●	●	20	-		12	125	34.5	-	10.8						
			2020K-3T20	●	●				20	125			18.8						
			2525M-3T20	●	●	25			25	150	35.5		23.8					HH5X25	
4	10	KGD R/L	2020K-4T10	●	●	20	-		20	125	30.5	-	18.3	3.4	10	4.0	5.0	HH5X16	LW-4
			2525M-4T10	●	●	25			25	150			23.3					HH5X25	
	20	KGD R/L	2020K-4T20	●	●	20			20	125	34.5		18.3		20			HH5X16	
			2525M-4T20	●	●	25			25	150	35.5		23.3					HH5X25	
	25	KGD R/L	2525M-4T25	●	●	25			25	150	40.5		23.3		25				
5	10	KGD R/L	2020K-5T10	●	●	20	-		20	125	30.5	-	17.8	4.4	10	5.0	6.0	HH5X16	LW-4
			2525M-5T10	●	●	25			25	150			22.8					HH5X25	
	17	KGD R/L	2020K-5T17	●	●	20			20	125	37.5		17.8		17				
			2525M-5T17	●	●	25			25	150			22.8						
	25	KGD R/L	2525M-5T25	●	●	25			25	150	40.5		22.8		25				
6	15	KGD R/L	2525M-6T15	●	●	25	-		25	150	32.5	-	22.4	5.3	15	6.0	6.0	HH5X25	LW-4
	30	KGD R/L	2525M-6T30	●	●	25			25	150	45.5		22.4		30				
8	25	KGD R/L	2525M-8T25	●	●	25	7.0		25	150	43.3	44.2	22.0	6.0	25	8.0	8.0	HH6X25	LW-5
			3232P-8T25	●	●	32	-		32	170		-	29.0						

Note) 1. Dimension T: Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum depth of groove made by the 2-edge insert will be 18 mm.)

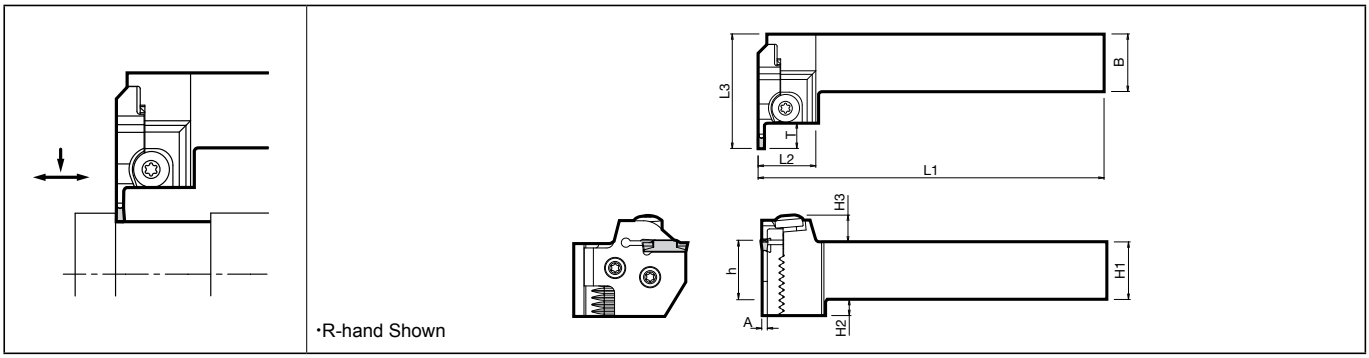
● : Std. Item
○ : Check Availability

KGD-S (0° separate type)



·R-hand Shown

KGDS-S (90° separate type)



·R-hand Shown

Toolholder Dimensions (Toolholder+Blade)

Shank Angle	Width(mm)	Max. depth of cut (mm)	Unit Description (Standard Stock Description)	Std. R	Std. L	Toolholder Description G28	Blade Description G28	Dimension (mm) H1=h	H2	H3	B	L1	L2	L3	F1	A	T	Width W(mm) MIN	MAX
0°	2	17	KGD$^{R/L}$ 2020X-2T17S	●	●	KGD$^{R/L}$2020-C	KGD$^{R/L}$-2T17-C	20	12	11.6	20	122	39.9	-	23.4	1.7	17	2.0	3.0
			2525X-2T17S	●	●	KGD$^{R/L}$2525-C		25	7		25	147			28.4				
	3	10	KGD$^{R/L}$ 2020X-3T10S	●	●	KGD$^{R/L}$2020-C	KGD$^{R/L}$-3T10-C	20	12		20	115	32.9		23.0	2.4	10	3.0	4.0
			2525X-3T10S	●	●	KGD$^{R/L}$2525-C		25	7		25	140			28.0				
			3232X-3T10S	●	●	KGD$^{R/L}$3232-C		32	-		32	160			33.0				
		20	KGD$^{R/L}$ 2020X-3T20S	●	●	KGD$^{R/L}$2020-C	KGD$^{R/L}$-3T20-C	20	12		20	125	42.9		23.0		20		
			2525X-3T20S	●	●	KGD$^{R/L}$2525-C		25	7		25	150			28.0				
			3232X-3T20S	●	●	KGD$^{R/L}$3232-C		32	-		32	170			33.0				
	4	10	KGD$^{R/L}$ 2020X-4T10S	●	●	KGD$^{R/L}$2020-C	KGD$^{R/L}$-4T10-C	20	12		20	115	32.9		22.5	3.4	10	4.0	5.0
			2525X-4T10S	●	●	KGD$^{R/L}$2525-C		25	7		25	140			27.5				
			3232X-4T10S	●	●	KGD$^{R/L}$3232-C		32	-		32	160			32.5				
		20	KGD$^{R/L}$ 2020X-4T20S	●	●	KGD$^{R/L}$2020-C	KGD$^{R/L}$-4T20-C	20	12		20	125	42.9	-	22.5		20		
			2525X-4T20S	●	●	KGD$^{R/L}$2525-C		25	7		25	150			27.5				
			3232X-4T20S	●	●	KGD$^{R/L}$3232-C		32	-		32	170			32.5				
		25	KGD$^{R/L}$ 2020X-4T25S	●	●	KGD$^{R/L}$2020-C	KGD$^{R/L}$-4T25-C	20	12		20	130	47.9		22.5		25		
			2525X-4T25S	●	●	KGD$^{R/L}$2525-C		25	7		25	155			27.5				
			3232X-4T25S	●	●	KGD$^{R/L}$3232-C		32	-		32	175			32.5				
	5	10	KGD$^{R/L}$ 2020X-5T10S	●	●	KGD$^{R/L}$2020-C	KGD$^{R/L}$-5T10-C	20	12		20	115	32.9		22.0	4.4	10	5.0	6.0
			2525X-5T10S	●	●	KGD$^{R/L}$2525-C		25	7		25	140			27.0				
			3232X-5T10S	●	●	KGD$^{R/L}$3232-C		32	-		32	160			32.0				
		25	KGD$^{R/L}$ 2020X-5T25S	●	●	KGD$^{R/L}$2020-C	KGD$^{R/L}$-5T25-C	20	12		20	130	47.9		22.0		25		
			2525X-5T25S	●	●	KGD$^{R/L}$2525-C		25	7		25	155			27.0				
			3232X-5T25S	●	●	KGD$^{R/L}$3232-C		32	-		32	175			32.0				
90°	3	10	KGDS$^{R/L}$ 2020X-3T10S	●	●	KGDS$^{R/L}$2020-C	KGD$^{L/R}$-3T10-C	20	12		20	125	25.1	49.7	-	2.4	10	3.0	4.0
			2525X-3T10S	●	●	KGDS$^{R/L}$2525-C		25	7		25	150							

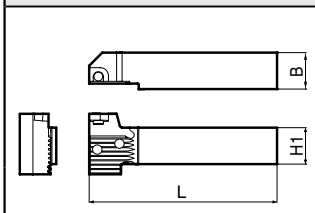
Note) 1. When using the toolholder in normal mounting position, the lower jaw of toolholder may interfere with the tool presetter.
2. The toolholder and blade Description are printed on the toolholder body. (Unit description is not printed.)
KGD-S: R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder.
KGDS-S: L-hand Blade for R-hand Toolholder, R-hand Blade for L-hand Toolholder.
Combination of the optional toolholder (KGD..-C) and blade (KGD..T..-C) (both separately sold) can make up the corresponding assembly part.
Make sure of the "hand of toolholder" and "hand of blade".
3. Dimension T: Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum depth of groove made by the 2-corner insert will be 18 mm.)

●: Std. Item

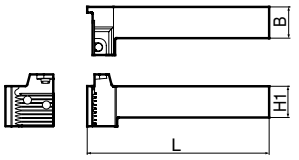
Toolholders for Grooving and Cut-off NEW

Toolholder

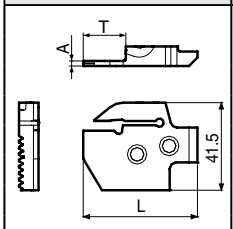
KGD-S (0° separate type)

Shape of 0° type (R-hand Shown)	Description		Std. R	Std. L	Dimension L	Dimension B	Dimension H1
	KGDR/L	2020-C	●	●	104	20	20
		2525-C	●	●	129	25	25
		3232-C	●	●	149	32	32

KGDS-S (90° separate type)

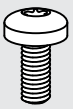
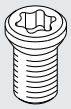
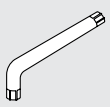
Shape of 90° type (R-hand Shown)	Description		Std. R	Std. L	Dimension L	Dimension B	Dimension H1
	KGDSR/L	2020-C	●	●	122	20	20
		2525-C	●	●	147	25	25

Blade

Shape of Blade (R-hand Shown)	Blade Description		Std. R	Std. L	Dimension L	Dimension T	Dimension A
	KGDR/L	-2T17-C	●	●	51.2	17.2	1.7
		-3T10-C	●	●	44.2	10.2	2.4
		-3T20-C	●	●	53.2	20.2	
		-4T10-C	●	●	44.2	10.2	3.4
		-4T20-C	●	●	54.2	20.2	
		-4T25-C	●	●	59.2	25.2	
		-5T10-C	●	●	44.2	10.2	4.4
		-5T25-C	●	●	59.2	25.2	

Spare Parts (Common with separate types)

* The parts are included in the toolholder.

Unit Description	Spare Parts: Clamp Bolt (for Insert Clamp)	Spare Parts: Fixing bolt (for blade)	Spare Parts: Wrench
			
KGDR/L·····S	BH6X10TR	SB-60120TR	LTW-25

Setting the blade (Separate type toolholder)

1. Make air blow or other measures to completely eliminate chips and dusts from the serration part (see Fig. 4).
2. Mate and fit the serrations of the blade and toolholder, and also fit the blade end to the toolholder.
3. Tighten the blade fixing screws at an appropriate torque (Recommended tightening torque: 8N·m).You can tighten them in any order.
4. Set the insert after setting the blade.

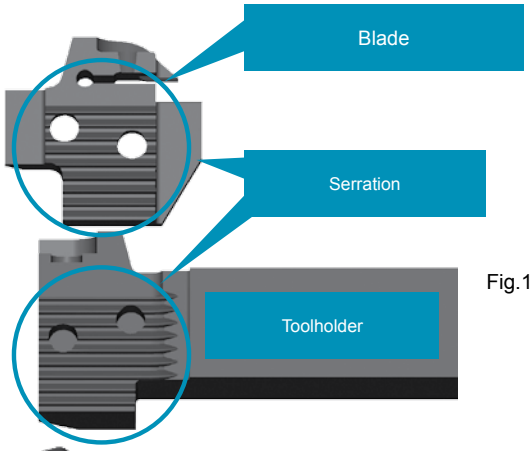


Fig.1

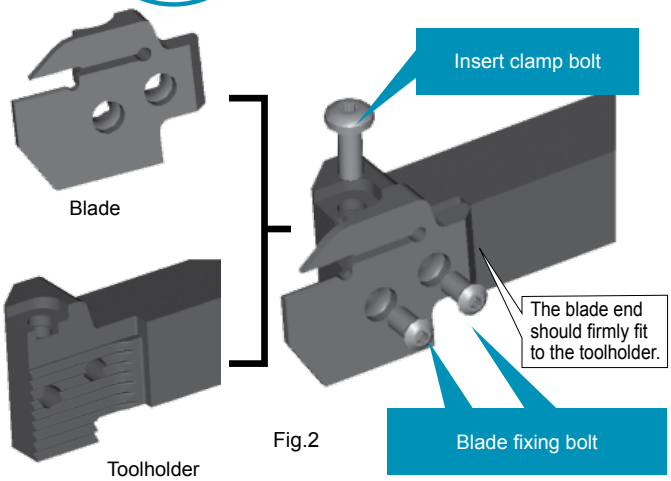
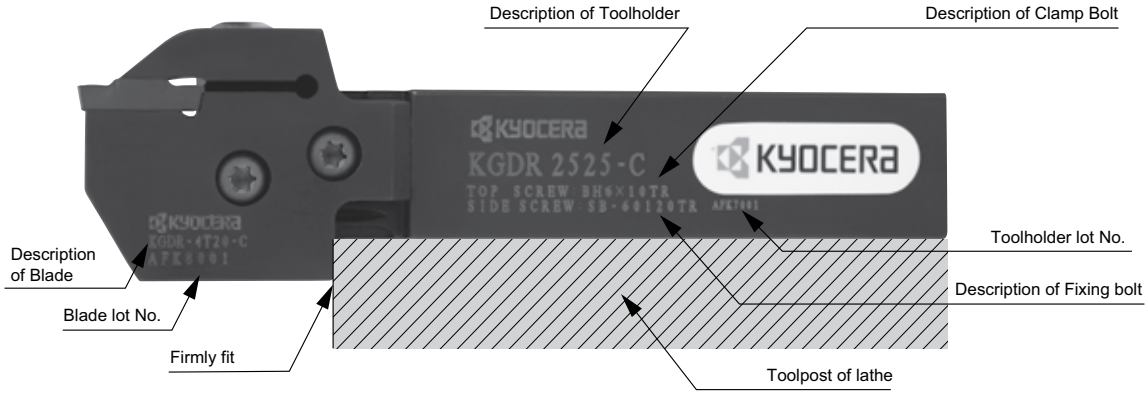


Fig.2

Separate type Toolholder Identification System and Their Setting to Lathe

- Firmly fit the lower jaw to the tool post of the lathe.



● : Std. Item

Recommended Cutting Conditions

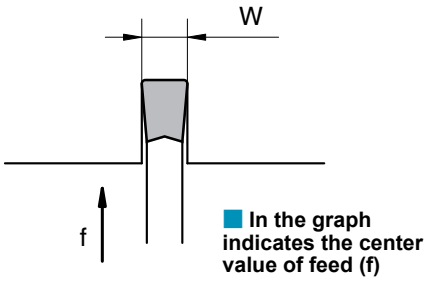
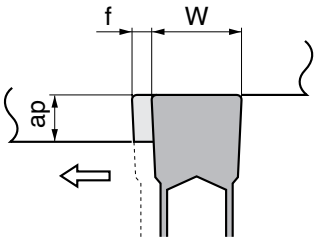
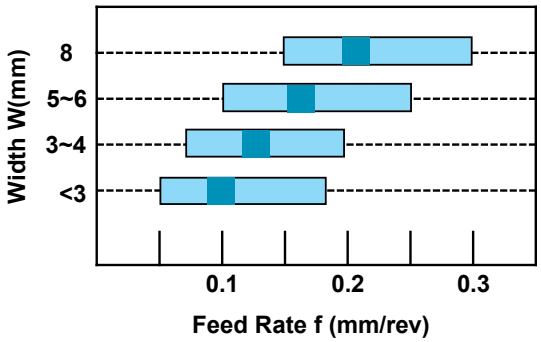
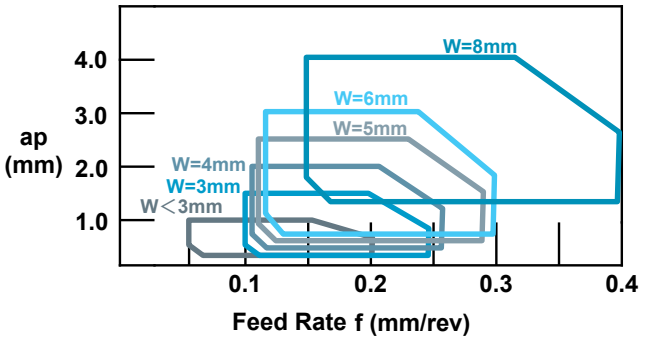
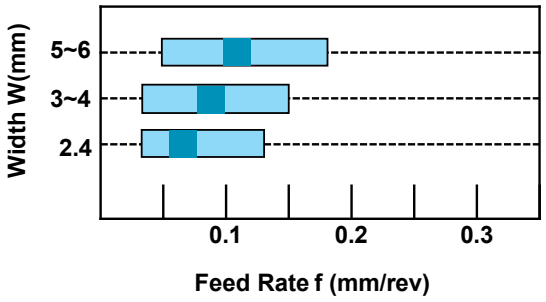
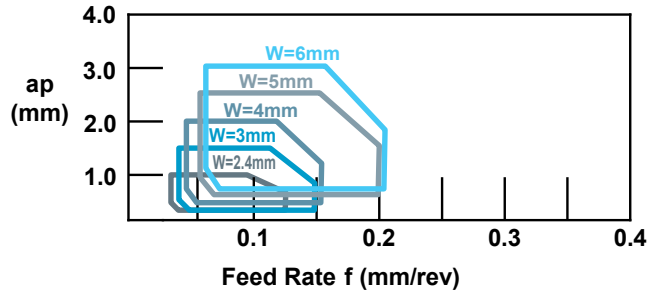
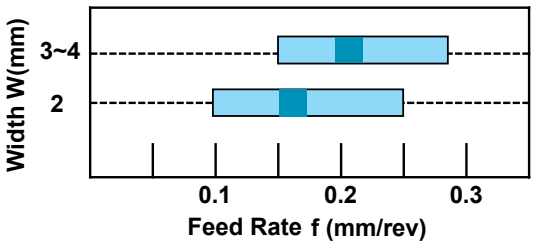
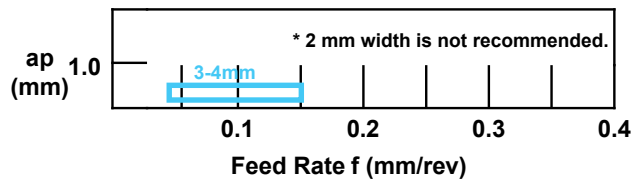
◆ Recommended Cutting Conditions (Vc)

Workpiece Material	Chipbreaker	Recommended Insert Grade (Vc :m/min)				Remarks
		Cermet	MEGACOAT		Carbide	
		TN90	PR1225	PR1215	GW15	
Carbon Steel (SxxC etc.)	GM GL CM PH GS PM	☆ 100~220	★ 80 ~ 200	☆ 100 ~ 200	-	Coolant
Alloy Steel (SCM etc.)		☆ 80 ~ 200	★ 70 ~ 180	☆ 80 ~ 180	-	
Stainless Steel (SUS304 etc.)		☆ 70 ~ 180	★ 60 ~ 150	☆ 60 ~ 150	-	
Cast Iron (FC/FCD etc.)		-	-	★ 100 ~ 200	-	
Aluminum	GS	-	-	-	★ 200 ~ 500	
Brass		-	-	-	★ 100 ~ 200	

◆ Recommended Cutting Conditions (Feed Rate / ap)

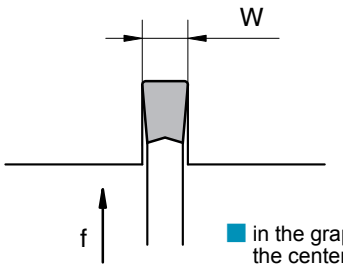
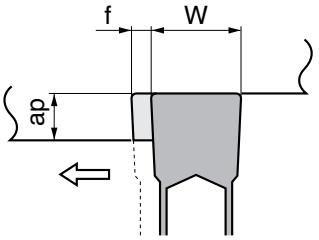
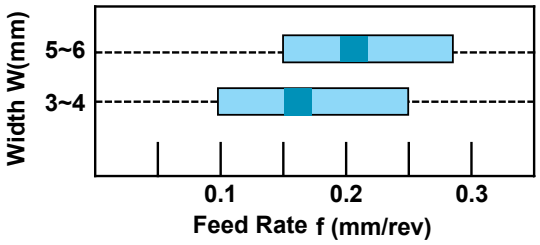
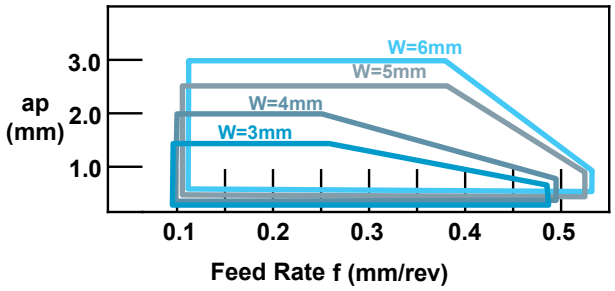
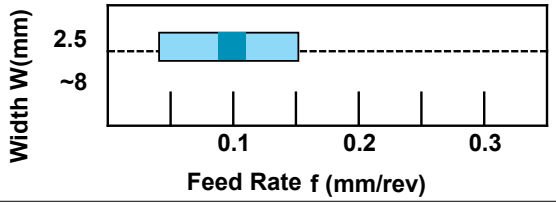
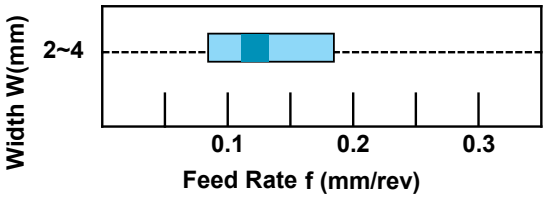
★ : 1st Recommendation ☆ : 2nd Recommendation

(Workpiece Material : S50C)

Chipbreaker	Grooving	Traversing
		
GM (For general purpose)		
GL (Low Feed)		
PH (High feed rate)		

1) The above values are based on the condition that the dimension T of toolholder is 17 mm or less.
2) If the toolholder is not for the 8 mm width insert and its dimension T is over 17 mm, set the values for traversing to less than 90% of those above.

Recommended Cutting Conditions

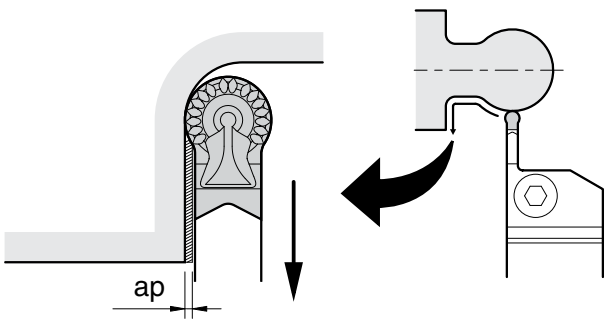
Chipbreaker	Grooving	Traversing
	 ■ in the graph indicates the center value of feed (f)	
CM (Copying)		
GS (Low cutting force)		* Keep cutting (ap) less than the corner-R (rε).
PM (Cut-Off)		—

1) The above values are based on the condition that the dimension T of toolholder is 17 mm or less.
2) If the toolholder is not for the 8 mm width insert and its dimension T is over 17 mm, set the values for traversing to less than 90% of those above.

◆ CM Chipbreakers [Cutting amount (ap) in back copying]

● Estimated maximum cutting amount (ap) in back copying

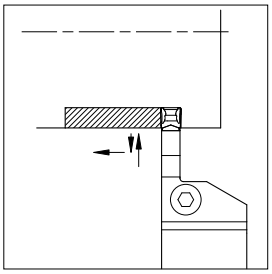
Description		Max ap (ap : mm)				
		Toolholder part No.				
		KGD···-2T···	KGD···-3T···	KGD···-4T···	KGD···-5T···	KGD···-6T···
GDM	3020N-150R-CM	0.24	0.20	-	-	-
	4020N-200R-CM	-	0.24	0.20	-	-
	5020N-250R-CM	-	-	0.30	0.20	-
	6020N-300R-CM	-	-	-	0.30	0.25



Guide for External Machining

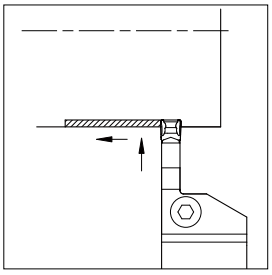
Point (Ⅰ) (Traversing after Grooving)

1) Grooving Depth Over 0.5mm: At roughing (Refer to Fig. 1)
Before traversing, pull the tool back about 0.1mm after grooving, instead of traversing subsequent to grooving.
(Failure to pull the tool back before traverse cutting will result in an unbalanced load applied on only one side of the cutting edge.)



Before traversing, pull the tool back about 0.1mm after grooving, instead of traversing subsequent to grooving. (Grooving Depth Over 0.5mm: At roughing)
Fig.1

2) Grooving Depth under 0.5mm: At finishing (Refer to Fig. 2)
Traversing subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.
(Dwell-motion is not necessary.)



Traversing subsequent to grooving (Grooving Depth under 0.5mm: At finishing)
Fig.2

Point (Ⅱ)

1) When widening the groove width (Refer to Fig. 3)
Apply the "Step Turning".
2) Then perform finishing.
(For better chip control, over 0.5 mm ap is recommended.)

Note) If machining is made toward the center but the center is not pressed, lower the feed rate.

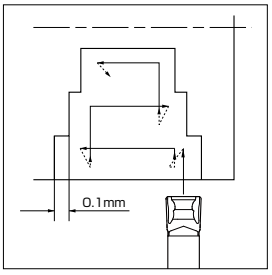
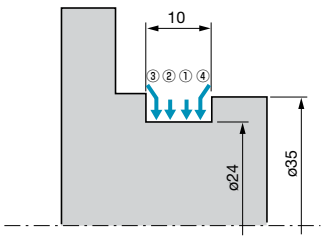


Fig.3

Case Studies

17Cr3 (SCr420H) (Grooving)

- Gear
- Vc=113~164 m/min
- f=0.06 mm/rev
- Wet
- GDM4020N-040GM (PR1225)
- KGDL2525X-3T10S



GM Chipbreaker (PR1225)	1500 pcs/C
Competitor K (PVD Coated Carbide)	250 pcs/C

x6 longer life

Result

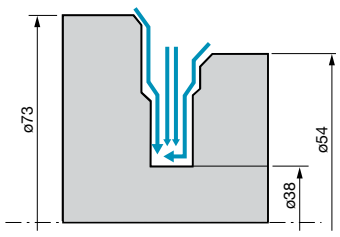
- KGD type grooving toolholder + GM chipbreaker (PR1225) showed 6 times longer tool life than that of Competitor K.
- Good chip control without burned chips.

Competitor K　　GM Chipbreaker

(Evaluation by the user)

20CrMo5 (SCM420) (Grooving Traversing)

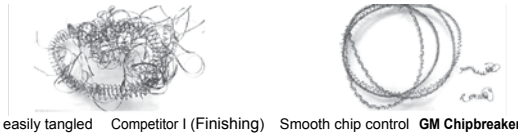
- Gear
- Vc=170m/min
- f=0.15 mm/rev (Roughing)
  0.10 mm/rev (Finishing)
- ap=0.2mm (Finishing)
- Wet
- GDM4020N-040GM (PR1215)
- KGDR2525X-4T20S



GM Chipbreaker (PR1215)	250 pcs/C
Competitor L (Raughing: PVD Coated Carbide) (Finishing: Cermet)	200 pcs/C

Result

- GM chipbreaker reduced occurrence rate of tangle of chips (occurrence rate 80% => 10%). The problem was persistent with Competitor L. Machining productivity is improved.



Chips easily tangled　Competitor I (Finishing)　Smooth chip control　GM Chipbreaker (Finishing)

(Evaluation by the user)

GMM / GMG

Classification of usage									
● : Continuous-Light Interruption / 1st Choice ◔ : Continuous-Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice	P	Carbon Steel / Alloy Steel			◔	●			
	M	Stainless Steel			●	◔			
	K	Cast Iron					●	◔	
	N	Non-ferrous Metals						●	
	S	Titanium Alloy						●	
	H	Hard materials (under 40HRC)			○	●			
		Hard materials (over 40HRC)							

Insert (R-hand shown)		Description	(Previous Description)	W	rε	M	L	H	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PR930	PR905	Carbide KW10	Ref. Page for Toolholder
Chip Control Oriented M Class	Shows GMM2420-02	GMM 2420-020MW	GMM 2420-02	2.4	0.2	1.9	20	4.3	●	●	●	●	●	●	G36,G37
		3020-020MW	3020-02	3.0	0.2	2.3			●	●	●	●	●	●	
		3020-040MW	3020-04		0.4				●	●	●	●	●	●	
		4020-020MW	4020-02	4.0	0.2	3.3			●	●	●	●	●	●	G36
		4020-040MW	4020-04		0.4				●	●	●	●	●	●	G37
		4020-080MW	4020-08		0.8				●	●	●	●	●	●	G38
		5020-040MW	5020-04	5.0	0.4	4.2			●	●	●	●	●	●	
		5020-080MW	5020-08		0.8				●	●	●	●	●	●	
		6020-040MW	6020-04	6.0	0.4	5.2			●	●	●	●	●	●	G36
		6020-080MW	6020-08		0.8				●	●	●	●	●	●	G37
		8030-080MW	8030-08	8.0	0.8	6.0	30	5.5		●	●	●	●	●	G36,G59
Sharp-Cutting Oriented M Class		GMM 3020-020MS	GMM 3020-02MS	3.0	0.2	2.3	20	4.3	●	●	●	●		●	G36
		3020-040MS	3020-04MS		0.4				●	●	●	●		●	G37
		4020-040MS	4020-04MS	4.0	0.4	3.3			●	●	●	●		●	G38
		5020-040MS	5020-04MS	5.0		4.2			●	●	●	●		●	
		6020-040MS	6020-04MS	6.0		5.2				●		●		●	G36,G37
Sharp-Cutting Oriented Precision Class		GMG 3020-000MS	GMG 3020-00	3.0	0.0	2.3	20	4.3		●	●	●		●	G36
		3020-020MS	3020-02		0.2				●	●	●	●		●	G37
		3020-040MS	3020-04		0.4				●	●	●	●		●	G38
		4020-020MS	4020-02	4.0	0.2	3.3			●	●	●	●		●	
		4020-040MS	4020-04		0.4				●	●	●	●		●	
		4020-080MS	4020-08		0.8				●	●	●	●		●	
		5020-040MS	5020-04	5.0	0.4	4.2	20	4.3	●	●	●	●		●	
		5020-080MS	5020-08		0.8				●	●	●	●		●	
		6020-040MS	6020-04	6.0	0.4	5.2	20	4.3		●		●		●	G36
		6020-080MS	6020-08		0.8					●		●		●	G37
Sharp-Cutting Oriented Precision Class Ground Chipbreaker		GMG 2520-030MG	GMG 2520-03MG	2.5	0.3	2.0	20	4.3	●	●	●	●	●	●	G36,G37
		3020-030MG	3020-03MG	3.0		2.3			●	●	●	●	●	●	G36
		3520-030MG	3520-03MG	3.5		2.8			●	●	●	●	●	●	G37
		4020-040MG	4020-04MG	4.0	0.4	3.3			●	●	●	●	●	●	G38
		5020-040MG	5020-04MG	5.0		4.2			●	●	●	●	●	●	
		6020-040MG	6020-04MG	6.0		5.2			●	●		●	●	●	G36,G37
		8030-050MG	8030-05MG	8.0	0.5	6.0	30	5.5	●	●		●	●	●	G36,G59
Chip Control Oriented M Class Full-R / Copying		GMM 3020-150R	GMM 3020-15R	3.0	1.5	2.3	20	4.3	●	●	●	●	●	●	G36
		4020-200R	4020-20R	4.0	2.0	3.3			●	●	●	●	●	●	G37
		5020-250R	5020-25R	5.0	2.5	4.2			●	●	●	●	●	●	G38
		6020-300R	6020-30R	6.0	3.0	5.2			●	●	●	●	●	●	G36,G37
Sharp-Cutting Oriented Precision Class Full-R / Copying		GMG 3020-150R	GMG 3020-15R	3.0	1.5	2.3	20	4.3	●	●		●		●	G36
		4020-200R	4020-20R	4.0	2.0	3.3			●	●		●		●	G37
		5020-250R	5020-25R	5.0	2.5	4.2				●		●		●	G38
		6020-300R	6020-30R	6.0	3.0	5.2				●		●		●	G36,G37
Undercutting Chip Control Oriented		GMG 3020-150RU	GMG 3020-15RU	3.0	1.5	2.3	20	4.3		●		●		●	G38
		4020-200RU	4020-20RU	4.0	2.0	3.3				●		●		●	G39
		5020-250RU	5020-25RU	5.0	2.5	4.2				●		●		●	

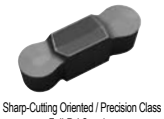
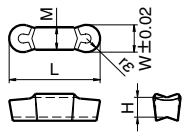
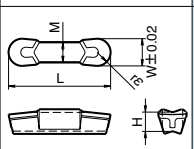
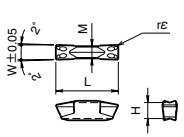
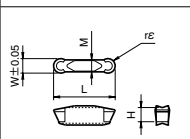
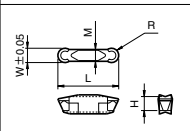
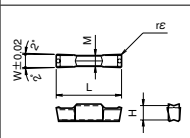
For recommended cutting conditions, see page ➡ G93

Inserts are sold in 10 piece boxes.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

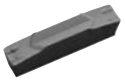
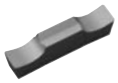
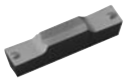
GMM / GMGA / FGG

Classification of usage							
◕: Continuous-Light Interruption / 1st Choice ◔: Continuous-Light Interruption / 2nd Choice ●: Continuous / 1st Choice ○: Continuous / 2nd Choice	P	Carbon Steel / Alloy Steel			◔	◕	
	M	Stainless Steel			◕	◔	
	K	Cast Iron					◕
	N	Non-ferrous Metals					◕
	S	Titanium Alloy					◕
	H	Hard materials (under 40HRC)			○	●	
		Hard materials (over 40HRC)					

Insert (R-hand shown)		Description	(Previous Description)	Dimension (mm) W	rε	M	L	H	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PVD Coated Carbide PR930	Carbide KW10	Ref. Page for Toolholder
 Sharp-Cutting Oriented / Precision Class Full-R / Copying		**GMGA 6020-300R**	**GMGA 6020-30R**	6.0	3.0	4.3	20	4.3					●	**G37**
 Sharp-Cutting Oriented / Precision Class Full-R / Copying		**GMGA 8030-400R**	**GMGA 8030-40R**	8.0	4.0	6.0	30	5.5					●	**G37 G39**
 Chip Control Oriented M Class		**GMM 3014-04**	-	3.0	0.4	2.3	14	4.3	●	●	●	●	●	
 Chip Control Oriented / M Class Full-R / Copying		**GMM 3014-15R**	-	3.0	1.5	2.3	14	4.3	●	●		●	●	**G38**
 Undercutting Chip Control Oriented		**GMM 3014-15RU**	-	3.0	1.5	2.3	14	4.3		□		●	□	
 Face Grooving Chip Control Oriented Precision Class		**FGG R/L 3020-02** **4020-04** **5020-04**	-	3.0 4.0 5.0	0.2 0.4 0.4	2.3 3.3 4.2	20	4.3	● ●	● ●		● ●	● ●	**G38**

For recommended cutting conditions, see page ➡ **G91~G93**

Multi-Function Tool CERACUT Plunge & Turn Chipbreakers

Series	Shape	Features
GMM-MW		Excellent chip evacuation at Grooving, Traversing, Cut-Off.
GMG-MG		Low cutting force with ground chipbreaker.
GMG-MS GMM-MS		Grooving / Traversing / Cut-Off operations are minimum cutting force at Positive Edge.
GMM-MT		Small corner-R(rε) and minimize the core which remains in the center of the face.
GMM-TK		Large corner-R(rε) and stable performance at cut off.
GMM-NB		Flat rake face and non-chipbreaker. It works well for brass.

◆ Edge Preparation

Edge Preparation	Chamfer + R-honed Corner-R(rε) = 0.05	Chamfer + R-honed Sharp Corner
		
MT Chipbreaker.	**CR9025 / PR915**	**PR930 / KW10**
Edge Preparation	Chamfer + R-honed Corner-R(rε) = 0.2-0.3	Sharp Edge Corner-R(rε) = 0.2-0.3
		
TK Chipbreaker	**CR9025 / PR915**	**PR930 / KW10**
Edge Preparation	R Honing Corner-R(rε) = 0.05	Sharp Edge Sharp Corner
		
Without Chipbreaker (-NB)	**CR9025**	**PR930 / KW10**

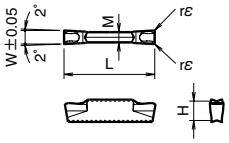
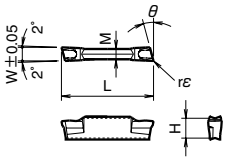
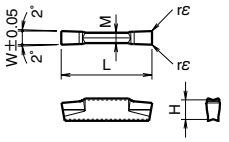
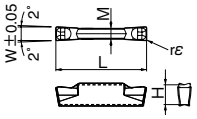
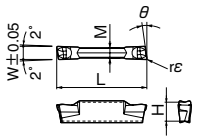
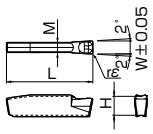
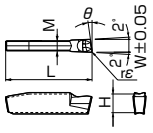
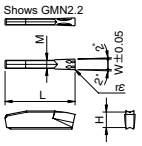
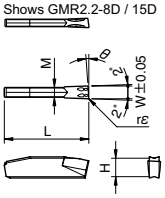
• Sharp Edge Spec. can reduce cutting resistance 40% less than that of chamfer edge.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)
□ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes.

GMM / GMN

Classification of usage								
● : Continuous-Light Interruption / 1st Choice	P	Steel			↻	●		
↻ : Continuous-Light Interruption / 2nd Choice	M	Stainless Steel			●	↻		
● : Continuous / 1st Choice	K	Cast Iron					●	
○ : Continuous / 2nd Choice	N	Non-ferrous Metals					●	
	S	Titanium Alloy					●	
	H	Hard materials (under 40HRC)			○	●		
		Hard materials (over 40HRC)						

Insert (R-hand shown)	Description	Dimension (mm) W	rε	M	L	H	Angle (°) θ	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PVD Coated Carbide PR930	Carbide KW10	Ref. Page for Toolholder
 Deep Grooving / Cut-Off Sharp-Cutting Oriented		GMM 1520-MT	1.5	0.0 0.05	1.2	20	4.3	-			●	●	●	G36 G37 G38
		2020-MT	2.0	0.0 0.05	1.5					●		●	●	
		2520-MT	2.5	0.0 0.05	1.9				●	●				
		3020-MT	3.0	0.0 0.05	2.3				●	●	●	●	●	
 Cut-Off Sharp-Cutting Oriented / With lead angle		GMM 1520R/L-MT-15D	1.5	0.0 0.05	1.2	20	4.3	15°			●	●	●	
		2020R/L-MT-15D	2.0	0.0 0.05	1.5			15°		R				
		2520R/L-MT-15D	2.5	0.0 0.05	1.9			15°	●	R	●	●	●	
		3020R/L-MT-15D	3.0	0.0 0.05	2.3			15°			●			
 Deep Grooving / Cut-Off Sharp-Cutting Oriented Without Chipbreaker		GMM 1520-NB	1.5	0.0 0.05	1.2	20	4.3	-			●	●	●	
		2020-NB	2.0	0.0 0.05	1.5				●		●	●	●	
		2520-NB	2.5	0.0 0.05	1.9				●		●	●	●	
		3020-NB	3.0	0.0 0.05	2.3				●		●	●	●	
 Deep Grooving / Cut-Off Stability-Oriented		GMM 2020-TK 2520-TK 3020-TK	2.0 2.5 3.0	0.20 0.20 0.25	1.5 1.9 2.3	20	4.3	-	● ●	● ●	● ●	● ●	● ●	
 Cut-Off Stability-Oriented / With lead angle		GMM 2020R/L-TK-8D 2520R/L-TK-8D 3020R/L-TK-8D	2.0 2.5 3.0	0.20 0.20 0.25	1.5 1.9 2.3	20	4.3	8°	R R	R R R	R R R	R R R		
 Cut-Off / Stability-oriented 1-Edge		GMN 2-TK 3-TK 4-TK	2.0 3.0 4.0	0.20 0.25 0.30	1.8 2.3 3.3	20	4.3	-	● ●	● ● ●	● ● ●	● ● ●	● ● ●	
 Cut-Off / Stability-oriented 1-Edge / With lead angle		GMR/L 2-TK-8D 3-TK-8D 4-TK-8D	2.0 3.0 4.0	0.20 0.25 0.30	1.8 2.3 3.3	20	4.3	8°	R R	R R R	R R R	R R R		
 Deep Grooving / Cut-Off 1-Edge	 Shows GMN2.2	GMN 2.2 3 4 5 6	2.2 3.0 4.0 5.0 6.0	0.17 0.20 0.25 0.8 0.8	1.8 2.3 3.3 4.2 5.2	20	4.3	-	● ● ● □ □	● ● ● ● ●		● ● ● ● ●	● ● ● ● ●	
 Cut-Off / Sharp-Cutting 1-Edge / With lead angle	 Shows GMR2.2-8D / 15D	GMR/L 2.2-8D 2.2-15D 3-4D 3-15D 4-4D	2.2 2.2 3.0 3.0 4.0	0.17 0.00 0.20 0.20 0.25	1.8 1.8 2.3 2.3 3.3	20	4.3	8° 15° 4° 15° 4°	R R R	● ● ● ● ●		● ● ● R	● ● ●	

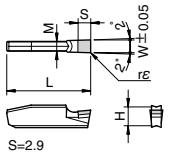
For recommended cutting conditions, see page ➡ G93

Inserts are sold in 10 piece boxes.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)
□ : Deleted from the next catalogue

GMN

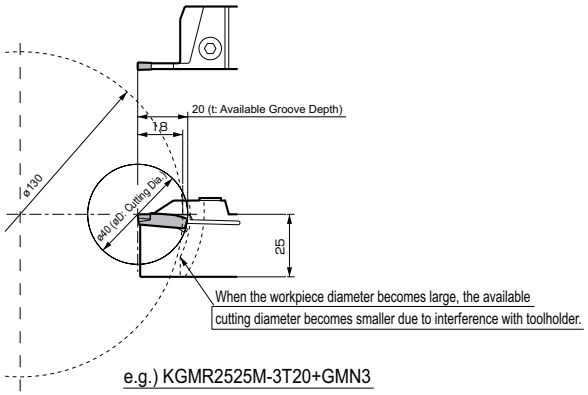
Classification of usage							Ref. Page for Toolholder
● : Continuous-Light Interruption / 1st Choice (●) : Continuous-Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice	P	Carbon Steel / Alloy Steel					
	M	Stainless Steel					
	K	Cast Iron					
	N	Non-ferrous Metals			●		
	S	Titanium Alloy			●		
	H	Hard materials (under 40HRC)					
		Hard materials (over 40HRC)		○	●		

Insert		Description	Dimension (mm)					Angle (°)	CBN			PCD		Ref. Page for Toolholder
			W	rε	M	L	H	θ	KBN10B	KBN510	KBN525	KPD001	KPD010	
 Deep Grooving 1-Edge	 S=2.9	GMN 2	2.0	0.2	1.8	20	4.3	-	●	●	●	●	●	G37 G38
				0.4										
		3	3.0	0.2	2.3							●	●	
				0.4					●	●	●			
		4	4.0	0.2	3.3							●	●	
				0.4					●	●	●			
		5	5.0	0.2	4.2							●	●	
				0.4					●	●	●			
		6	6.0	0.2	5.2								●	
				0.4					●	●	●			

For recommended cutting conditions, see page ➡ G91

Available cutting diameter of KGM (For automatic lathe) / KGM-T type

・There is a limit to available grooving depth depending on the workpiece diameter.



e.g.) KGMR2525M-3T20+GMN3

KGM Available Cutting Diameter Table

Toolholder		øD (Cutting Dia.)																
KGMR/L	0810K-1.5-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	∞
	1010○-1.5…	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
	1212○-1.5…	-	-	-	-	25	26	28	32	36	40	60	100					
	0810K-2-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	
	1010○-2…	-	-	-	-	-	-	-	20	25	32	40	60					
	1212○-2…	-	-	-	-	25	26	28	50	∞	∞	∞	∞					
	1616○-2…	32	40	50	60	80	100	∞	∞									
	1010○-2.5…	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
	1212○-2.5…	-	-	-	-	25	26	28	32	36	40	60	100					
	1616○-2.5…	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞					
	1616○-3…	32	40	50	60	80	100											
Available Grooving Depth t (mm)		16	15	14	13	12.5	12	11	10	9	8	7	6	5	4	3	2	1

KGM-T Available Cutting Diameter Table (GMN, GMR/L When using 1-edge insert)

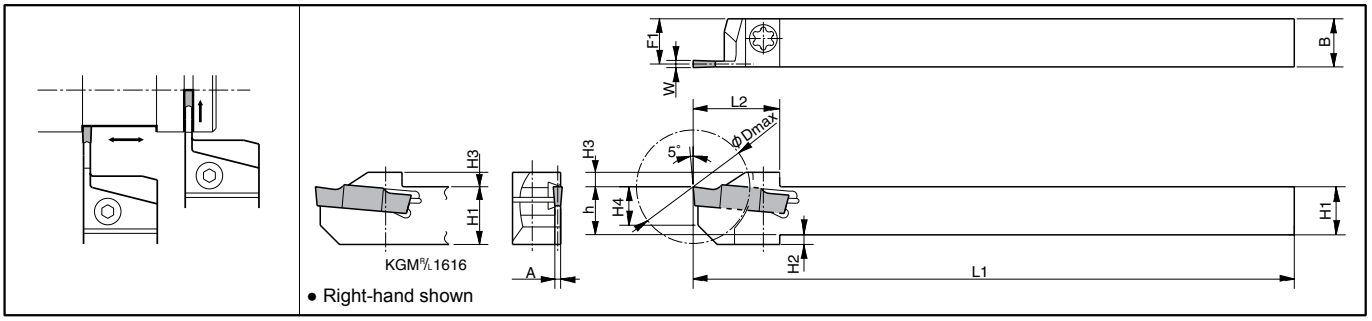
Toolholder		øD (Cutting Dia.)												
KGMR/L	2012K-2T17 2020K-2T17 2525M-2T17	-	-	-	-	-	-	-	-	66	80	130	260	∞
	1616H-3T20	-	-	-	-	-	40	54	70	100	180	∞	∞	
	2012K-3T20 2020K-3T20 2525M-3T20 2020K-4T20 2525M-4T20	-	-	-	-	-	40	90	130	240	∞			
	2525M-4T25 2525M-5T25	-	-	50	140	240	∞	∞	∞	∞				
	3232P-5T25	-	-	50	280	600								
	2525M-6T30	100	300	∞	∞	∞								
Available Grooving Depth t (mm)		30	27	25	23	22	20	19	18	17	16	15	14	Under 13

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

CBN & PCD Inserts are sold in 1 piece boxes.

KGM (For automatic lathe)

Width: 1.5~4.0mm

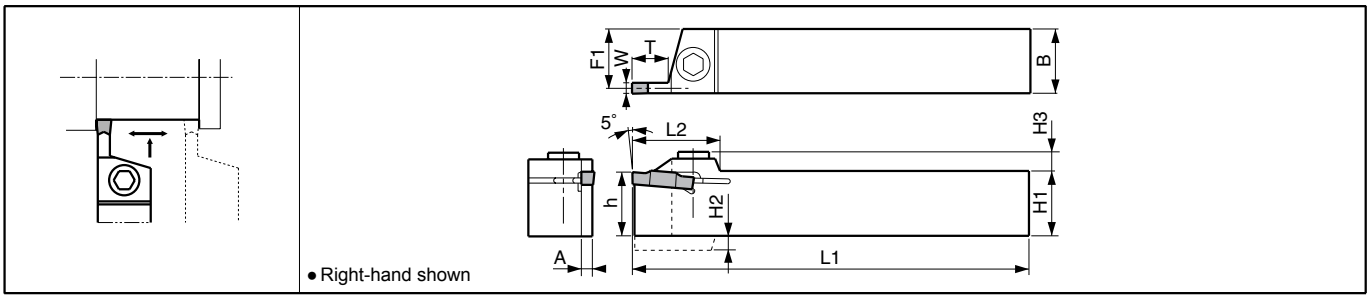


Toolholder Dimensions

Description		Std. R	Std. L	Cutting Dia. øDmax	Dimension (mm) H1=h	H2	H3	H4	B	L1	L2	F1	A	Width W (mm) MIN.	Width W (mm) MAX.	Spare Parts Screw	Spare Parts Wrench
KGMR/L	1010JX-1.5	●	●	20	10	2	3	8	10	120	18	9.4	1.2	1.5	2.0	SE-40120TR	LTW-15S
	1212JX-1.5	●	●	25	12		4	10	12		20.5	11.4					
KGMR/L	1010JX-2	●	●	20	10	2	3	8	10	120	18	9.15	1.7	2.0	3.0	SE-40120TR	LTW-15S
	1212JX-2	●	●	25	12		4	10	12		19	11.15					
	1616JX-2	●	●	32	16	-		9	16		24.5	15.15				SE-50125TR	LTW-20
KGMR/L	1010JX-2.5	●	●	20	10	2	3	8	10	120	18	9	2.0	2.4	3.0	SE-40120TR	LTW-15S
	1212JX-2.5	●	●	25	12		4	10	12		20.5	11					
	1616JX-2.5	●	●	32	16	-		9	16		25.5	15				SE-50125TR	LTW-20
KGMR/L	1616JX-3	●	●	32	16	-	4	9	16	120	25.5	14.8	2.4	3.0	4.0	SE-50125TR	LTW-20
KGMR/L	1212F-1.5-85	●		25	12	2	4	10	12	85	19	11.4	1.2	1.5	2.0	SE-40120TR	LTW-15S
KGMR/L	1212F-2-85	●	●	25	12	2	4	10	12	85	19	11.15	1.7	2.0	3.0	SE-40120TR	LTW-15S
KGMR/L	1212F-2.5-85	●	●	25	12	2	4	10	12	85	19	11	2.0	2.4	3.0	SE-40120TR	LTW-15S

KGM

Width: 3.0~8.0mm



Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F1	A	T		Width W (mm) MIN.	Width W (mm) MAX.	Spare Parts Screw		Spare Parts Wrench	
KGMR/L	1212H-3	●	●	12	4	6	12	100	27	10.8	2.4	9		3.0	3.0	SB-5TR	-	LTW-20	-
	1616H-3	●	●	16		7	16			14.8				3.0	4.0	-	HH5X16	-	LW-4
	2020K-3	●	●	20	-	7	20	125		18.8									
	2525M-3	●	●	25			25	150		23.8							HH5X25		
	2020K-4	●	●	20	-	7	20	125	27	18.3	3.4	10		4.0	5.0	-	HH5X16	-	LW-4
	2525M-4	●	●	25			25	150		23.3							HH5X25		
	2020K-5	●	●	20	-	7	20	125	27	17.8	4.4	10		5.0	6.0	-	HH5X16	-	LW-4
	2525M-5	●	●	25			25	150		22.8							HH5X25		
	3232P-5	●	●	32			32	170		29.8									
	2525M-8	●	●	25	7.5	10.5	25	150	40	22.0	6.0	25		8.0	8.0	-	HH6X25	-	LW-5
	3232P-8	●	●	32	-		32	170		29.0									

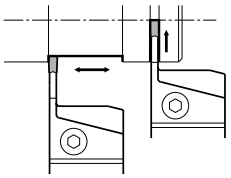
• Dimension T shows available grooving depth.

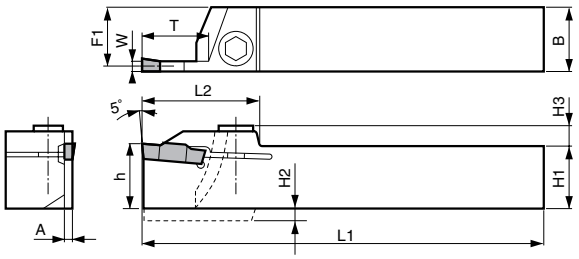
• 4.0mm width Insert can be installed in KGMR/L1212H-3, but is not recommended due to the toolholder's rigidity.

● : Std. Item

KGM-T (Deep Grooving Type)

Width: 2.0~6.0mm





• Right-hand shown

• Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F1	A	T		Width W (mm) MIN.	MAX.	Spare Parts: Screw		Spare Parts: Wrench	
KGM$^{R}_{L}$	2012K-2T17	●	●	20			12	125		11.15						SB-5TR	-	LTW-20	-
	2020K-2T17	●	●	20	-	7	20	125	33	19.15	1.7	17		2.0	3.0	-	HH5X16	-	LW-4
	2525M-2T17	●	●	25			25	150		24.15							HH5X25		
	1616H-3T20	●	●	16	4		16	100		14.8						-	HH5X16	-	LW-4
	2012K-3T20	●	●	20	-	7	12	125	36	10.8	2.4	20		3.0	4.0	SB-5TR	-	LTW-20	-
	2020K-3T20	●	●	20	-		20	125		18.8						-	HH5X16	-	LW-4
	2525M-3T20	●	●	25	-		25	150		23.8							HH5X25		
	2020K-4T20	●	●	20			20	125	36	18.3		20				-	HH5X16	-	LW-4
	2525M-4T20	●	●	25	-	7.5	25	150	36	23.3	3.4	20		4.0	5.0		HH5X25		
	2525M-4T25	●	●	25			25	150	41	23.3		25							
	2525M-5T25	●	●	25	-	8.5	25	150	42	22.8	4.4	25		5.0	6.0	-	HH5X25	-	LW-4
	3232P-5T25	●	●	32			32	170		29.8									
	2525M-6T30	●	●	25	-	9.5	25	150	45	22.4	5.2	30		6.0	6.0	-	HH5X25	-	LW-4

• Dimension T shows the distance from the Toolholder to the cutting edge. Refer to the Table (**G35**) for the relationship between the available Grooving Depth and the Cutting Dia.
• When using GMG / GMM type (2-Edge) insert, set the groove depth under 15mm.

● Applicable Inserts

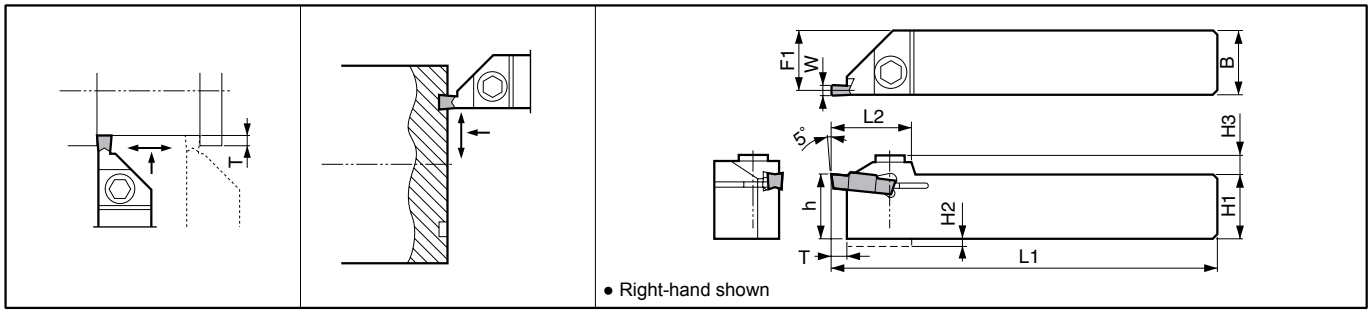
Applications	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Full-R / Copying	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving
Ref. Page	G32	G32	G32	G32	G33	G34	G34	G34	G34	G34	G35
Insert / Toolholder	MW	MS	MG			MT	NB	TK	TK		CBN PCD
KGM$^{R}_{L}$...1.5	-	-	-	-	-	GMM1520..MT GMM2020..MT GMM1520$^{R}_{L}$..MT GMM2020$^{R}_{L}$..MT	GMM1520..NB GMM2020..NB	GMM2020..TK GMM2020$^{R}_{L}$..TK	GMN2..TK GM$^{R}_{L}$2..TK	-	-
KGM$^{R}_{L}$...2(T)	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMG3020..MG	GMG3020..R GMM3020..R	-	GMM2020..MT GMM2520..MT GMM3020..MT GMM2020$^{R}_{L}$..MT GMM2520$^{R}_{L}$..MT GMM3020$^{R}_{L}$..MT	GMM2020..NB GMM2520..NB GMM3020..NB	GMM2020..TK GMM2520..TK GMM3020..TK GMM2020$^{R}_{L}$..TK GMM2520$^{R}_{L}$..TK GMM3020$^{R}_{L}$..TK	GMN2..TK GMN3..TK GM$^{R}_{L}$2..TK GM$^{R}_{L}$3..TK	GMN2 GMN2.2 GMN3 GM$^{R}_{L}$2.2 GM$^{R}_{L}$3	GMN2 GMN3
KGM$^{R}_{L}$...2.5	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMG3020..MG	GMG3020..R GMM3020..R	-	GMM2520..MT GMM3020..MT GMM2520$^{R}_{L}$..MT GMM3020$^{R}_{L}$..MT	GMM2520..NB GMM3020..NB	GMM2520..TK GMM3020..TK GMM2520$^{R}_{L}$..TK GMM3020$^{R}_{L}$..TK	GMN3..TK GM$^{R}_{L}$3..TK	GMN3 GM$^{R}_{L}$3	GMN3
KGM$^{R}_{L}$...3(T)	GMM3020..MW GMM4020..MW	GMG3020..MS GMM3020..MS GMG4020..MS GMM4020..MS	GMG3020..MG GMG3520..MG GMG4020..MG	GMG3020..R GMM3020..R GMG4020..R GMM4020..R	-	GMM3020..MT GMM3020$^{R}_{L}$..MT	GMM3020..NB	GMM3020..TK GMM3020$^{R}_{L}$..TK	GMN3..TK GMN4..TK GM$^{R}_{L}$3..TK GM$^{R}_{L}$4..TK	GMN3 GMN4 GM$^{R}_{L}$3 GM$^{R}_{L}$4	GMN3 GMN4
KGM$^{R}_{L}$...4(T)	GMM4020..MW GMM5020..MW	GMG4020..MS GMM4020..MS GMG5020..MS GMM5020..MS	GMG4020..MG GMG5020..MG	GMG4020..R GMM4020..R GMG5020..R GMM5020..R	-	-	-	-	GMN4..TK GM$^{R}_{L}$4..TK	GMN4 GMN5 GM$^{R}_{L}$4	GMN4 GMN5
KGM$^{R}_{L}$...5(T)	GMM5020..MW GMM6020..MW	GMG5020..MS GMM5020..MS GMG6020..MS GMM6020..MS	GMG5020..MG GMG6020..MG	GMG5020..R GMM5020..R GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN5 GMN6	GMN5 GMN6
KGM$^{R}_{L}$...6T	GMM6020..MW	GMG6020..MS GMM6020..MS	GMG6020..MG	GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN6	GMN6
KGM$^{R}_{L}$...8	GMM8030..MW	-	GMG8030..MG	-	GMGA8030..R	-	-	-	-	-	-

• If using a full-R insert, you need to modify the corner of insert adapter part (dimension A) of toolholder.

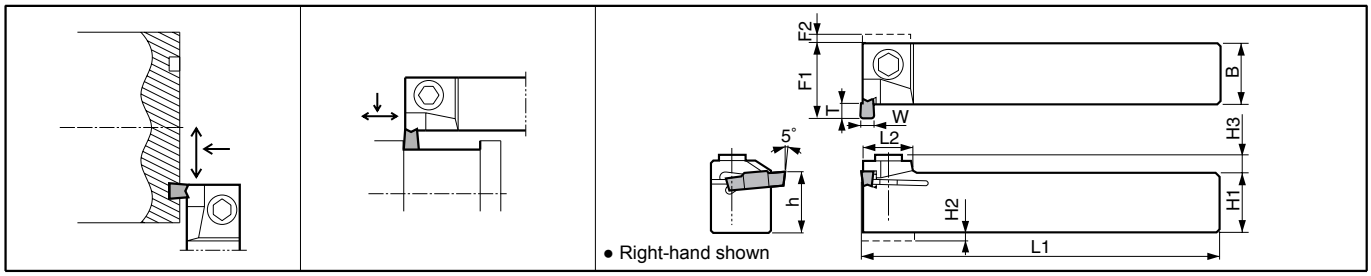
For recommended cutting conditions, see page ➡ **G93**
For recommended cutting conditions of CBN / PCD, see page ➡ **G91**

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

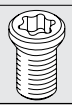
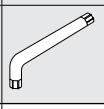
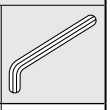
KGMM



KGMS



Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F1	F2	T		Width W (mm) MIN	Width W (mm) MAX	Spare Parts: Screw	Spare Parts: Screw	Spare Parts: Wrench	Spare Parts: Wrench
																			
KGMMR/L	**1212H-3**	○	○	12	4	5	12	100	25	10.8	-	4.8		3.0	5.0	SB-5TR	-	LTW-20	-
	1616H-3	○	○	16	-		16			14.8						-	HH5X16	-	LW-4
	2020K-3	●	●	20		6	20	125		18.8						-		-	
	2525M-3	●	●	25			25	150		23.8						-	HH5X25	-	
KGMSR/L	**1212H-3**	○	○	12	4	5	12	100	17	17	1.5	4.8		3.0	3.0	SB-5TR	-	LTW-20	-
	1616H-3	○	○	16	-		16			21.5				3.0	5.0	GS-50	-	-	LW-3
	2020K-3	●	●	20		6	20	125		25	-					-	HH5X16	-	LW-4
	2525M-3	●	●	25			25	150		30						-	HH5X25	-	

• Dimension T shows available grooving depth. (See the table **G39** for Face Grooving)

Applicable Inserts [External Grooving]

Applications	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Grooving	Grooving	Grooving	Grooving	Grooving	Grooving
Ref. Page	G32,G33	G32	G32	G32	G34	G34	G34	G34	G34	G35
Insert / Toolholder	**MW**	**MS**	**MG**		**MT**	**NB**	**TK**	**TK**		**CBN PCD**
KGMSR/L**1212H-3**	GMM3014..	-	-	GMM3014..R	-	-	-	-	-	-
KGMMR/L**...3** **KGMS**R/L**...3**	GMM3020..MW GMM4020..MW GMM5020..MW	GMG3020..MS GMM3020..MS GMG4020..MS GMM4020..MS GMG5020..MS GMM5020..MS	GMG3020..MG GMG3520..MG GMG4020..MG GMG5020..MG	GMG3020..R GMM3020..R GMG4020..R GMM4020..R GMG5020..R GMM5020..R	GMM3020..MT	GMM3020..NB	GMM3020..TK	GMN3..TK GMN4..TK	GMN3 GMN4 GMN5	GMN3 GMN4 GMN5

Applicable Inserts [Face Grooving]

Applications	Grooving / Traversing	Grooving / Traversing	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Grooving	Grooving	Grooving	Grooving
Ref. Page	G33	G32,G33	G32	G32	G32	G32	G34	G34	G34	G34,G35
Insert / Toolholder			**MW**	**MS**	**MG**		**MT**	**NB**	**TK**	
KGMSR/L**1212H-3**	-	GMM3014..RU	-	-	-	-	-	-	-	-
KGMMR/L**...3** **KGMS**R/L**...3**	FGGR/L3020.. FGGR/L4020.. FGGR/L5020..	GMG3020..RU GMG4020..RU GMG5020..RU	GMM3020..MW GMM4020..MW GMM5020..MW	GMG3020..MS GMM3020..MS GMG4020..MS GMM4020..MS GMG5020..MS GMM5020..MS	GMG3020..MG GMG3520..MG GMG4020..MG GMG5020..MG	GMG3020..R GMM3020..R GMG4020..R GMM4020..R GMG5020..R GMM5020..R	GMM3020..MT	GMM3020..NB	GMM3020..TK	GMN3 GMN4 GMN5 GMN3..TK GMN4..TK

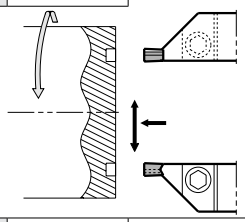
For recommended cutting conditions, see page **G93**
For recommended cutting conditions of CBN / PCD, see page **G91**

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

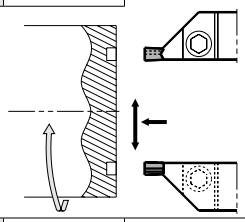
Selection of Insert & Toolholder (Face Grooving)

Case of KGMM

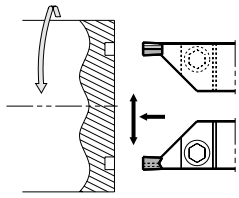
Toolholder	L-hand
Insert	L-hand



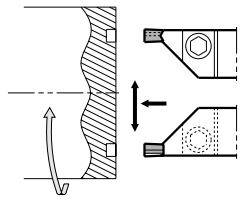
Toolholder	R-hand
Insert	R-hand



Toolholder	R-hand
Insert	L-hand

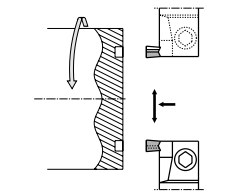


Toolholder	L-hand
Insert	R-hand

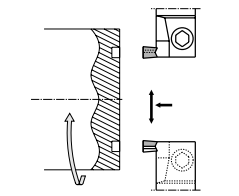


Case of KGMS

Toolholder	R-hand
Insert	L-hand

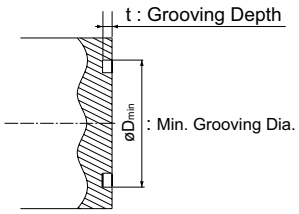


Toolholder	L-hand
Insert	R-hand



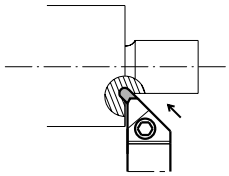
Min. Cutting Dia. (Face Grooving)

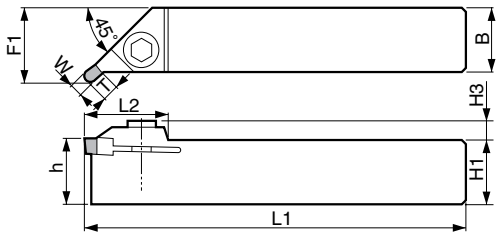
KGMM / KGMS (Common)



Description	øDmin	t
GMG / GMM3020-○○□□	ø100	4.8
GMG / GMM4020-○○□□		
GMG / GMM5020-○○□□		
FGGR/L3020-02	ø22	4.3
FGGR/L4020-04	ø28	4.8
FGGR/L5020-04	ø30	
GMG3020-150RU	ø22	4.3
GMG4020-200RU	ø28	4.8
GMG5020-250RU	ø30	

KGMU (External Undercutting Toolholder)





• Right-hand shown

Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H3	B	L1	L2	F1	T				Edge Width W (mm) MIN.	MAX.	Spare Parts Screw		Spare Parts Wrench	
KGMUR/L	2020K	●	●	20	6	20	125	28.5	23.6	4.8				3.0	5.0	HH5X16		LW-4	
	2525M	●	●	25		25	150		28.6						(6.0)	HH5X25			

• Dimension T shows the distance from the Toolholder to the cutting edge. See the table below for the available Grooving Depth.

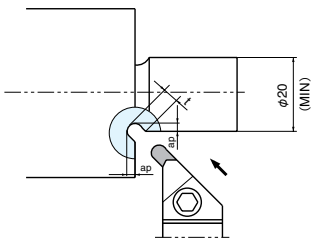
Dimension F1 shows at GMM5020-RU. ( ) indicates external grooving inserts when installed.

Applicable Insert

Applications	Undercutting		
Ref. Page	G32		
Shape / Toolholder			
KGMUR/L 2020K 2525M	GMG3020..RU GMG4020..RU GMG5020..RU		

• External grooving inserts (grooving width 3mm~6mm) will be attached.
(In case of using GMG○○20-○○, GMM○○20-○○○○, GMN○ insert)

Undercut Depth t



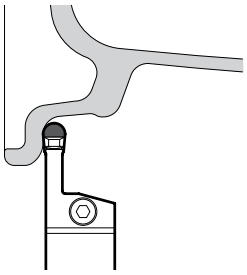
Description	Undercut Depth t (mm)	Distance from the face of the workpiece. ap (mm)
GMG3020-15RU	3.5	1.8
GMG4020-20RU	4.0	1.9
GMG5020-25RU	4.5	2.1

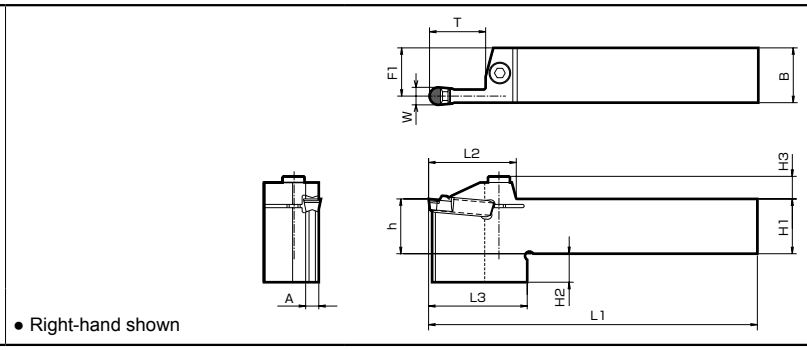
* In case of undercutting for the diameter over 100mm, external grooving inserts
GMG ○○ 20- ○○ , GMM ○○ 20- ○○□□ ,
GMN ○ are also available.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

For Aliminum Wheel External Grooving

KGMW (External / Facing / Copying)



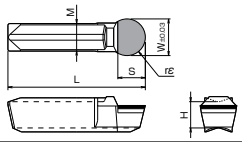
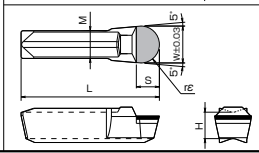


• Right-hand shown

Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	L3	F1	A	T	Spare Parts Screw	Spare Parts Wrench	Applicable Inserts
KGMW R/L	2525M-6	●	●	25	13	10.3	25	150	40	55	22.8	4.4	25	HH6X25	LW-5	GMGW6030-30R
	2525M-8	●	●								22	6				GMGW8030-40R GMGW8030-40R-HR

Applicable Inserts

Shape		Description		Dimension (mm) W	rε	L	H	M	S	No. of Edge	PCD KPD001
		GMGW	6030-30R	6	3	30	5.5	5	4.5	1	●
			8030-40R	8	4			6	6	1	●
		GMGW	8030-40R-HR	8	4	30	5.5	6	5	1	●

• GMGW insert is exclusively used for KGMW type / KIGMW type toolholder. It cannot be used for other toolholder because of its different installation angle.
• GMGW inserts Edge Preparation: R-honed Cutting Edge.

Recommended Cutting Conditions

Workpiece Material	Insert Grade (Vc: m/min) PCD KPD001	① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ ap at Traversing (mm)
Aluminum	★ 150~2700	① 0.05~0.3 mm/rev ② 0.2~0.8 mm/rev ③ MAX.3 mm

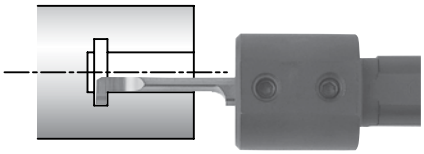
★ : 1st Recommendation

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Summary of Internal Grooving

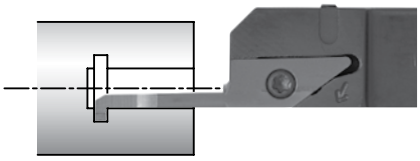
Small Dia. Internal Grooving ϕ 4 ～ (G43 ～ G45)

2-Edge Tip-Bar & System Tip-Bar



Type	HPG
Min.Bore Dia.	ϕ 4 ～ ϕ 7
Width (mm)	1.0 ～ 2.0
Grooving Depth (mm)	1.0 ～ 2.0
Ref. Page	G44

2-Edge Tip-Bar

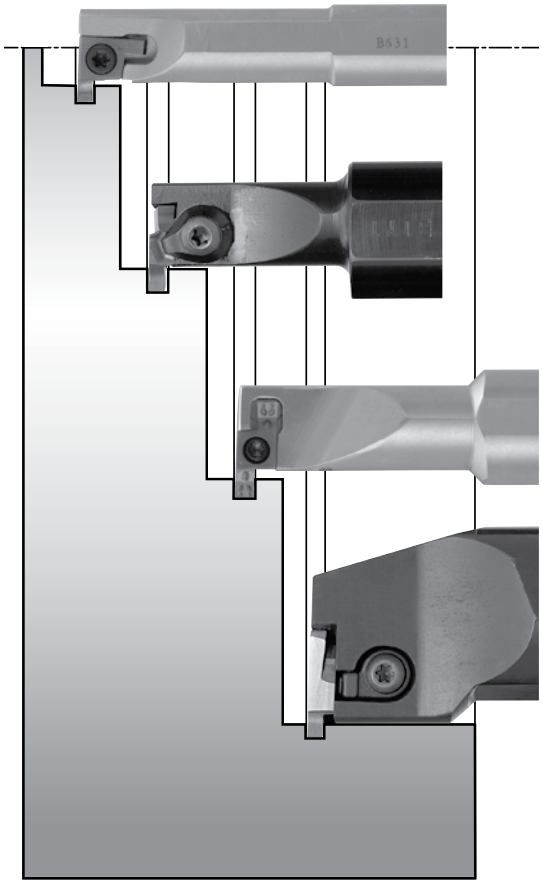


Type	VNG
Min.Bore Dia.	ϕ 4 ～ ϕ 7
Width (mm)	1.0 ～ 2.0
Grooving Depth (mm)	0.8 ～ 2.0
Ref. Page	G43

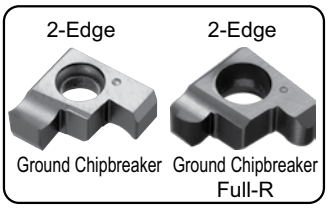
System Tip-bars

Internal Grooving ϕ 8 ～ (G46 ～ G56)

Shallow Grooving

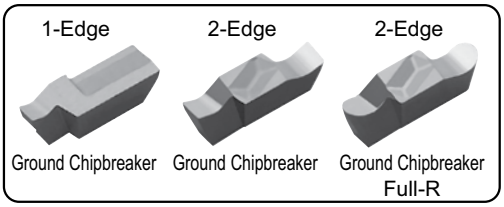


Type	SIGE
Min.Bore Dia.	ϕ 8 ～ ϕ 12
Width (mm)	1.0 ～ 3.0
Grooving Depth (mm)	1.5 ～ 2.2
Ref. Page	G48



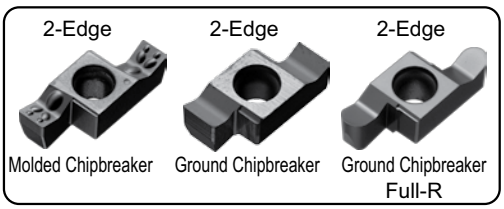
2-Edge Ground Chipbreaker; 2-Edge Ground Chipbreaker Full-R

Type	GIV
Min.Bore Dia.	ϕ 12 ～ ϕ 40
Width (mm)	1.0 ～ 5.0
Grooving Depth (mm)	1.7 ～ 6.3
Ref. Page	G52



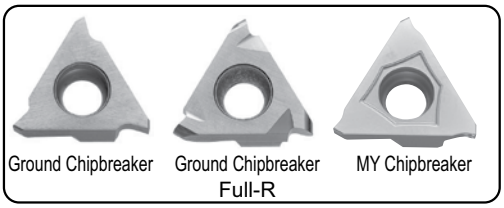
1-Edge Ground Chipbreaker; 2-Edge Ground Chipbreaker; 2-Edge Ground Chipbreaker Full-R

Type	SIGE
Min.Bore Dia.	ϕ 14 ～ ϕ 40
Width (mm)	1.0 ～ 5.0
Grooving Depth (mm)	2.5 ～ 6.5
Ref. Page	G48



2-Edge Molded Chipbreaker; 2-Edge Ground Chipbreaker; 2-Edge Ground Chipbreaker Full-R

Type	KIGBA
Min.Bore Dia.	ϕ 35 ～ ϕ 40
Width (mm)	0.33 ～ 4.8
Grooving Depth (mm)	0.8 ～ 2.8
Ref. Page	G55



Ground Chipbreaker; Ground Chipbreaker Full-R; MY Chipbreaker

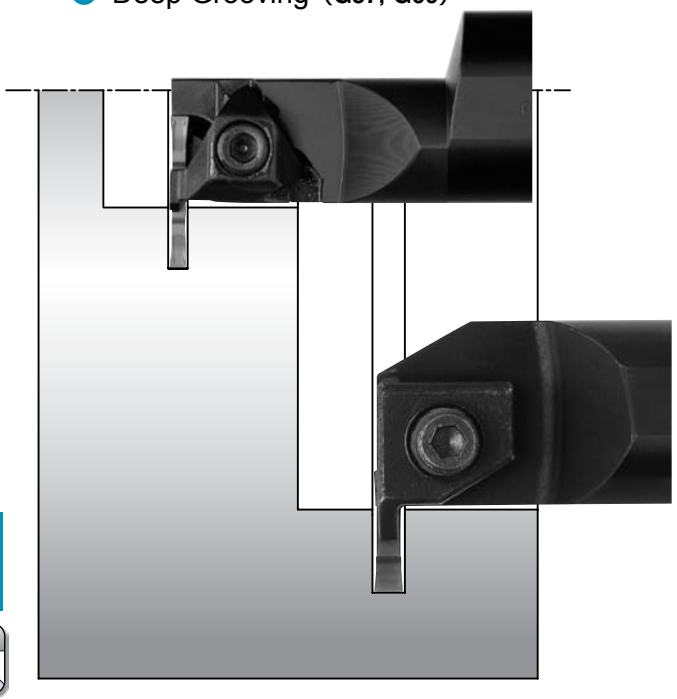
Type	KITG
Min.Bore Dia.	ϕ 35 ～ ϕ 45
Width (mm)	0.75 ～ 4.5
Grooving Depth (mm)	2.0 ～ 2.5
Ref. Page	G56

Ground Chipbreaker

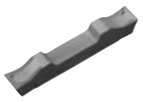
※KITG will be switched to KIGBA.

Summary of Internal Grooving

Deep Grooving (G57, G60)



Type	KGIA
Min.Bore Dia.	ϕ 32 ~ ϕ 66
Width (mm)	3.0 ~ 5.0
Grooving Depth (mm)	10 ~ 15
Ref. Page	**G60**



Molded Chipbreaker

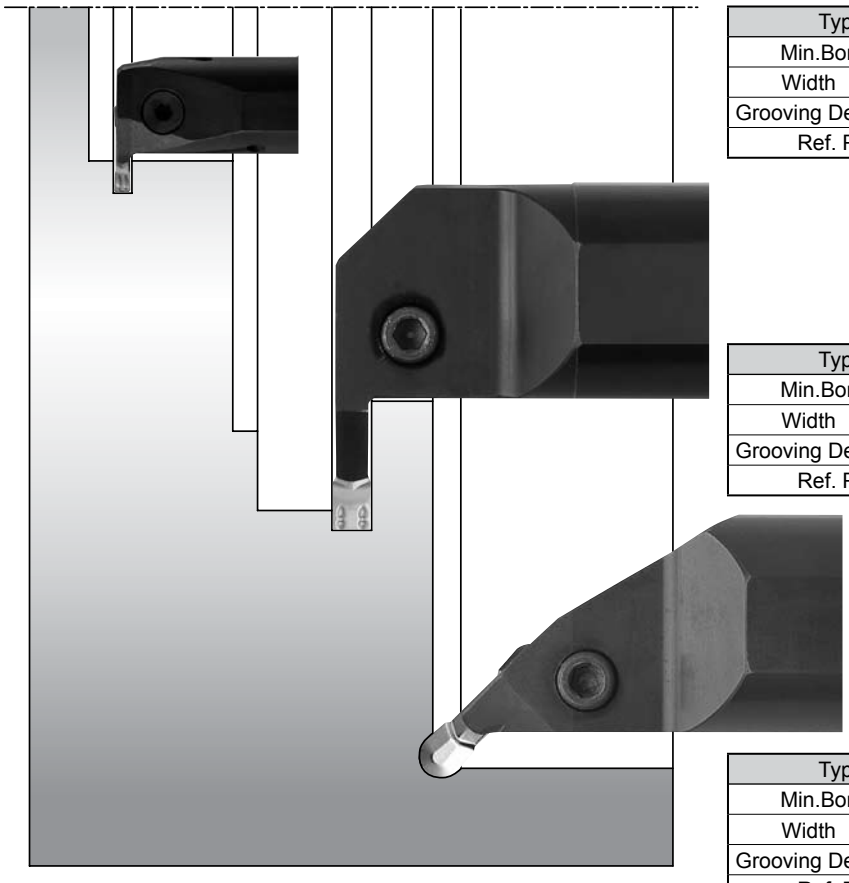
Type	KIGH
Min.Bore Dia.	ϕ 45 ~ ϕ 65
Width (mm)	4.0 ~ 8.0
Grooving Depth (mm)	12
Ref. Page	**G57**

Ground Chipbreaker

Molded Chipbreaker

Internal Grooving & Traversing ϕ20 ~ (G58, G59)

CERACUT Plunge & Turn

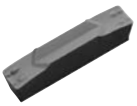


Type	KIGM-V
Min.Bore Dia.	ϕ 20 ~ ϕ 40
Width (mm)	3.0 ~ 5.0
Grooving Depth (mm)	5.5 ~ 11.0
Ref. Page	**G58**

Molded Chipbreaker

Molded Chipbreaker Full-R

Type	KIGM-8
Min.Bore Dia.	ϕ 65
Width (mm)	8.0
Grooving Depth (mm)	20
Ref. Page	**G59**



Molded Chipbreaker

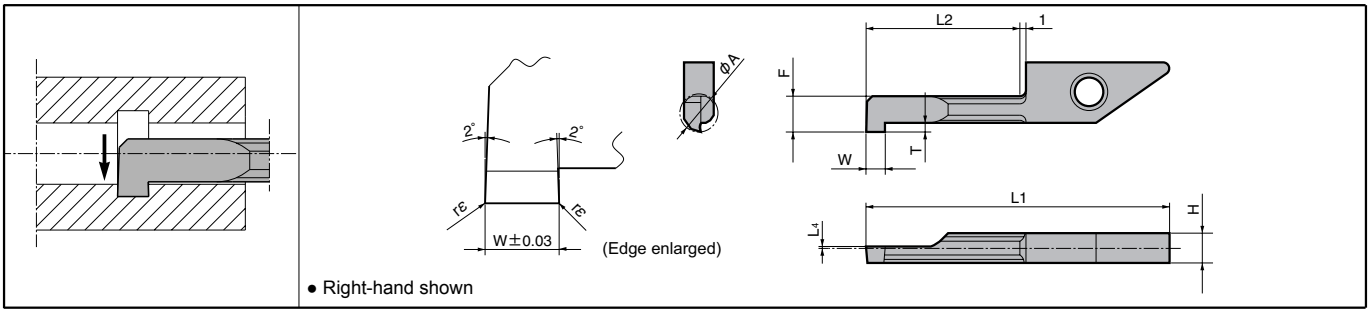
Ground Chipbreaker

Type	KIGMU-8
Min.Bore Dia.	ϕ 65
Width (mm)	8.0
Grooving Depth (mm)	2.2
Ref. Page	**G59**

Ground Chipbreaker Full-R

System Tip-Bar for Micro Internal Grooving

VNG



• Right-hand shown

Classification of usage			P	M	K	N	S	H	H	Ref. Page for Toolholder
● : Continuous / 1st Choice ○ : Continuous / 2nd Choice			Carbon Steel / Alloy Steel	Stainless Steel	Cast Iron	Non-ferrous Metals	Titanium Alloy	Hard materials (under 40HRC)	Hard materials (over 40HRC)	
			●	○	●			●		

● Insert Dimensions

Description		Min. Cutting Dia.	Dimension (mm)										Cermet	PVD Coated Carbide			Carbide	PCD		Ref. Page for Toolholder
		øA	W	rε	øD	H	L1	L2	L3	L4	F	T	TC60	PR630	PR915	PR930	KW10	KPD001	KPD010	
VNGR	0410-11	4	1.0	0.05	-	3.9	30.8	11	-	0.1	3.5	0.8								F16 F17 F18
	0420-11		2.0																	
	0510-11	5	1.0								4.4	1.0								
	0520-11		2.0																	
	0610-20	6	1.0				39.8	20		0.3	5.2	1.8								
	0620-20		2.0																	
	0710-20	7	1.0								6.2	2.0	□							
	0720-20		2.0										□							
VNGR	0410-11NB	4	1.0	0.05	-	3.9	30.8	11	-	0.1	3.5	0.8								
	0420-11NB		2.0																	
	0510-11NB	5	1.0								4.4	1.0								
	0520-11NB		2.0																	
	0610-20NB	6	1.0				39.8	20		0.3	5.2	1.8								
	0620-20NB		2.0																	
	0710-20NB	7	1.0								6.2	2.0								
	0720-20NB		2.0																	

• Dimension T shows available grooving depth.
• Dimension L4 indicates the cutting edge is above the Tool's Center Position.

◆ Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)				VNG04 VNG05	VNG06 VNG07	Remarks
	Cermet	PVD Coated Carbide		Carbide	f (mm/rev)		
	TC60	PR630	PR930	KW10			
Carbon Steel / Alloy Steel	☆ 60～120	☆ 30～100	★ 30～100		～0.03	～0.05	Coolant
Stainless Steel	☆ 50～100	☆ 30～80	★ 30～80		～0.02	～0.03	
Non-ferrous Metals				★ ～300	～0.05	～0.08	

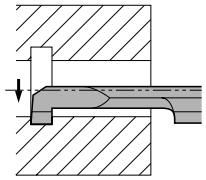
★ : 1st Recommendation ☆ : 2nd Recommendation

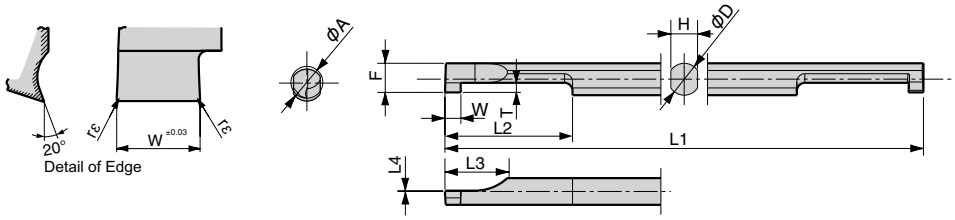
● : Std. Item ○ : Check Availability
R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)
□ : Deleted from the next catalogue

System Tip-Bars (VNG) are sold in 5 piece boxes.
CBN & PCD Inserts are sold in 1 piece boxes.

2-Edge Tip-Bar for Micro Internal Grooving HPG / PSG-S

HPG (Small Dia. Internal Grooving)





• R-hand Shown

Tip-Bars Dimensions

Description		Min.Bore Dia.	Dimension (mm)										PVD Coated Carbide		Carbide	
		φA	W ± 0.03	rε	φD	H	L1	L2	L3	L4	F	T	PR930		KW10	
													R	L	R	L
HPGR/L	0404-10	4	1	+0 -0.02 0.05	4	3.35	60	15	8	0	3.65	1	●	●	●	
	0404-20		2										●	●	●	
	0505-10	5	1		5	4.3	70	20			4.55	1.5	●	●	●	
	0505-20		2										●	●	●	
	0606-10	6	1		6	5.2			10		5.5	2	●	●	●	
	0606-20		2										●	●	●	
	0707-10	7	1		7	6.2	80	25			6.45		●	●	●	
	0707-20		2										●	●	●	

·Dimension T shows available grooving depth.

Description Table for Tip-Bars and Applicable Sleeves

Tip-Bar Description		Applicable Sleeves ➡G45	
HPGR/L	0404-···	PSH	04-····
	0505-···		05-····
	0606-···		06-····
	0707-···		07-····

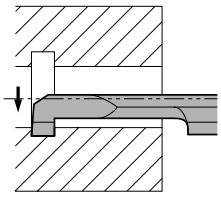
◆Recommended Cutting Conditions

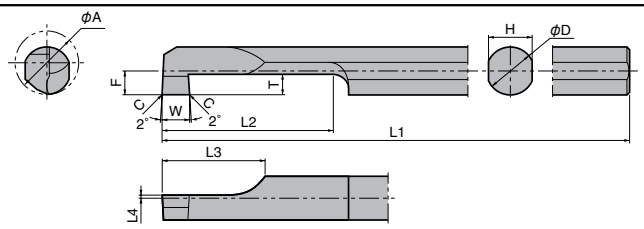
Workpiece Material	Recommended Insert Grade (Vc: m/min)		HPGR/L04 HPGR/L05	HPGR/L06 HPGR/L07	Remarks
	PVD Coated Carbide	Carbide	Feed Rate (mm/rev)		
	PR930	KW10			
Carbon steel / Alloy steel(C45 / 34CrMo4 etc)	★ 30~100	-	~0.03	~0.05	Coolant
Stainless Steel(SUS304 etc)	★ 30~80	-	~0.02	~0.03	
Non-ferrous Metals (Aluminum / Brass)	-	★ ~300	~0.05	~0.08	

★:1st Recommendation ☆:2nd Recommendation

PSG-S (Tip-Bars)

This insert will be switched to HPG Type (2-Edge).





• R-hand Shown

Tip-Bars Dimensions

Description		Min.Bore Dia.	Dimension (mm)										Cermet	PVD Coated Carbide	Carbide	Ref. page for Applicable Sleeves
		φA	W ± 0.03	C	φD	H	L1	L2	L3	L4	F	T	TC60M	PR930	KW10	
PSGR/L	0510-60S	5	1.0	0.05	3.8	3.6	60	15	8	0.1	1.86	1.5			□	F80
	0520-60S		2.0	0.1											□	
	0610-70S	6	1.0	0.05	4.8	4.4	70	20		0.3	2.36	2.0	□	□	□	
	0620-70S		2.0	0.1									□	□	□	
	0710-70S	7	1.0	0.05	5.8	5.2	70	20	10		2.86		□	□	□	
	0720-70S		2.0	0.1									□	□	□	
	0810-80S	8	1.0	0.05	6.8	6.2	80	25			3.38		□	□	□	
	0820-80S		2.0	0.1									□	□	□	

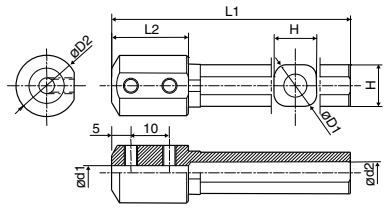
· Dimension T shows available grooving depth.
· Dimension L4 indicates the cutting edge is above the Tool's Center Position.

Recommended Cutting Conditions ➡G89

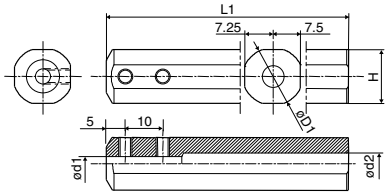
● : Std. Item
□ : Deleted from the next catalogue

Tip-Bar is sold in 1 piece boxes.

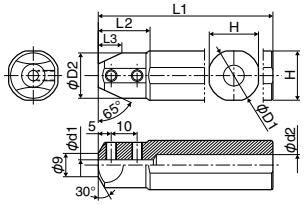
Applicable Sleeve



(Tip-Bar installation side) Fig.1



(Tip-Bar installation side) Fig.2



(Tip-Bar installation side) Fig.3

Description	Std.	Dimension (mm)								Drawing	Spare Parts		Applicable Machine Manufactuer	Ref. Page for 2-Edge Tip-Bar
		*ød1	øD1	øD2	ød2	H	L1	L2	L3		Screw	Wrench		
PSH 0412-80	●	4	12	16	6	11	80	20	-	Fig.1	HS4×4P	LW-2	(General use)	Grooving (HPG) ⇒ **G44** Boring (HPB) ⇒ **F22** Back Boring (HPBT) ⇒ **F22** Face Grooving (HPFG) ⇒ **G65** Threading (HPT) ⇒ **J24**
0512-80	●	5												
0612-80	●	6			8									
0712-80	●	7												
PSH 0416-100	●	4	16	-	6	15	100	-	-	Fig.2	HS4×4P	LW-2		
0516-100	●	5												
0616-100	●	6			8									
0716-100	●	7												
PSH 0420-120	●	4	20	17.5	6	19	120	20	9	Fig.3	HS4×4P	LW-2	Amada Wasino Eguro Citizen machinery Precision Tsugami Miyano (General use)	
0520-120	●	5												
0620-120	●	6			8				7.5					
0720-120	●	7												
PSH 0425.0-135	●	4	25	18	6	24	135	23	9.5	Fig.3	HS4×4P	LW-2	Amada Wasino Eguro Precision Tsugami Miyano (General use)	
0525.0-135	●	5												
0625.0-135	●	6			8				8					
0725.0-135	●	7												
PSH 0419-120	●	4	19.05 (0.75")	17.5	6	18	120	20	9	Fig.3	HS4×4P	LW-2	Citizen Machinery	
0519-120	●	5												
0619-120	●	6			8				7.5					
0719-120	●	7												
PSH 0425-120	●	4	25.4 (1")	18	6	24.4	120	23	9.5	Fig.3	HS4×4P	LW-2		
0525-120	●	5												
0625-120	●	6			8				8					
0725-120	●	7												
PSH 0422-135	●	4	22	18	6	21	135	22	9.5	Fig.3	HS4×4P	LW-2	Star Micronics Nomura VTC	
0522-135	●	5												
0622-135	●	6			8				8					
0722-135	●	7												
PSH 0423-120	●	4	23	18	6	22	120	22	9.5	Fig.3	HS4×4P	LW-2	Nomura VTC	
0523-120	●	5												
0623-120	●	6			8				8					
0723-120	●	7												

*: Length of ød1...20mm (PSH04)
...25mm (PSH05, PSH06, PSH07)

- Choose sleeves (ød1) to meet with øD dimension of Tip-Bar.
- Names of machine builders are listed in the order of the Japanese syllabary with omitted titles of respect.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Internal Grooving SIGE

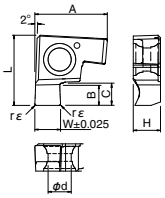
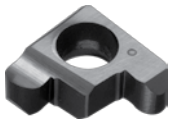
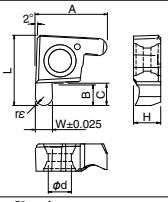
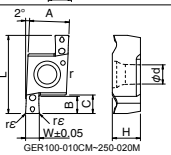
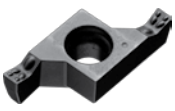
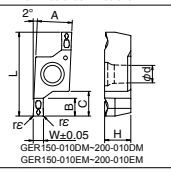
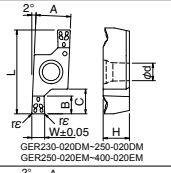
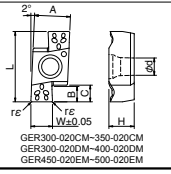
Applicable Inserts

(mm)

Description	A	L	H	ød
GE$^{R}_{L}$...-A	6.69	6.5	2.58	2.5
GER...-AR				
GE$^{R}_{L}$...-B	8.46	8.2	3.18	2.7
GER...-BR				
GER...-CM	5.8	11.48	4.05	2.8
GER...-DM	6.8	16.44	5.05	3.4
GER...-EM	9.54	21.66	5.55	4.4

		Cermet	PVD Coated Carbide	Carbide	
		TN6020	PR1025	GW15	KW10
P	Carbon Steel / Alloy Steel		●		
M	Stainless Steel		●		
K	Cast Iron				◔
N	Non-ferrous Metals				●
S	Titanium Alloy				●
H	Hard materials (under 40HRC)		●		
	Hard materials (over 40HRC)				

Classification of usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (R-hand shown)		Description		Dimension (mm) W	B	C	rε	TN6020 R	TN6020 L	PR1025 R	PR1025 L	GW15 R	GW15 L	KW10 R	KW10 L	Applicable Toolholder	Ref. Page for Toolholder
 2-Edge		GE$^{R}_{L}$	100-005A	1.00	1.5	1.8	0.05	●	●	●	●			●	●	SIGE$^{R}_{L}$...A-EH SIGE$^{R}_{L}$...A-WH	G48 G49
			120-005A	1.20				●	●	●	●			●	●		
			125-005A	1.25				●	●	●	●			●	●		
			150-010A	1.50			0.1	●	●	●	●			●	●		
			200-010A	2.00				●	●	●	●			●	●		
		GE$^{R}_{L}$	100-005B	1.00	2.2	2.6	0.05	●	●	●	●			●	●	SIGE$^{R}_{L}$...B-EH SIGE$^{R}_{L}$...B-WH SIGER...B-WH-90	G48 G49 G50
			120-005B	1.20				●	●	●	●			●	●		
			125-005B	1.25				●	●	●	●			●	●		
			145-010B	1.45			0.1	●	●	●	●			●	●		
			150-010B	1.50				●	●	●	●			●	●		
			200-010B	2.00				●	●	●	●			●	●		
			250-020B	2.50			0.2	●	●	●	●			●	●		
			300-020B	3.00				●	●	●	●			●	●		
 Full-R		GER	100-050AR	1.00	1.5	1.8	0.5			●				●		SIGER...A-EH SIGER...A-WH	G48 G49
			200-100AR	2.00			1.0			●				●			
		GER	100-050BR	1.00	2.2	2.6	0.5			●				●		SIGER...B-EH SIGER...B-WH SIGER...B-WH-90	G48 G49 G50
			200-100BR	2.00			1.0			●				●			
	 GER100-010CM~250-020M	GER	150-010CM	1.50	2.5	2.7	0.1			●						SIGER...C-EH SIGER...C-WH SIGER...C-WH-90	
			200-010CM	2.00						●							
			250-020CM	2.50			0.2			●							
			300-020CM	3.00						●							
			350-020CM	3.50						●							
	 GER150-010DM~200-010DM GER150-010EM~200-010EM	GER	150-010DM	1.50	3.0	4.8	0.1			●						SIGER...D-EH	G48
			200-010DM	2.00						●							
			230-020DM	2.30	3.2		0.2			●							
			250-020DM	2.50						●							
			300-020DM	3.00	4.5					●							
			350-020DM	3.50						●							
			400-020DM	4.00						●							
	 GER230-020DM~250-020DM GER250-020EM~400-020EM	GER	150-010EM	1.50	3.0	6.8	0.1			●						SIGER...E-EH	G48
			200-010EM	2.00	3.2					●							
			250-020EM	2.50	4.5		0.2			●							
			300-020EM	3.00						●							
	 GER300-020CM~350-020CM GER300-020DM~400-020DM GER450-020EM~500-020EM		350-020EM	3.50	5.5					●							
			400-020EM	4.00						●							
2-Edge Molded Chipbreaker			450-020EM	4.50	6.5					●							
			500-020EM	5.00						●							

• Dimension B: shows available grooving depth.

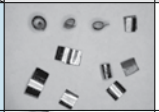
For recommended cutting conditions, see page ➡ G51

Comparison of Chip evacuation (Molded Chipbreaker)

Description \ f (mm/rev)	15CrMo4 (SCM415) (Minimum Bore Dia. ø16) 0.05	0.07	0.1	Evaluation
SIGER1612C-EH GER300-020CM(PR1025)				Good Chip Control
Competitor A Width: 3mm			Insert cracks	Unstable chip control and biting
Competitor B Width: 3mm				Unstable chip control and biting

[Vc =100m/min, ap=2.0mm, Wet] (Internal evaluation)

Comparison of Chip evacuation (Min. Bore Dia.: ø8)

Description \ f (mm/rev)	15CrMo4 (JIS:SCM415) 0.02	Evaluation
SIGER0808A-EH GER200-010A (PR1025)		◎
Competitor C Width: 2mm		✕ Chipping

[Vc=50m/min, ap=1.25mm, Wet] (Internal evaluation)

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

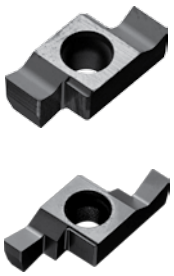
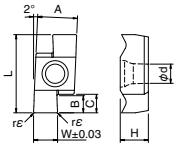
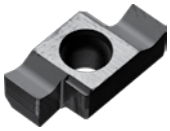
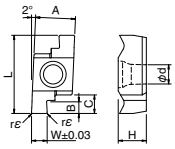
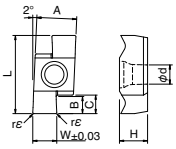
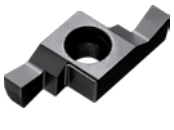
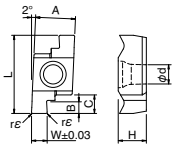
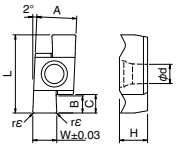
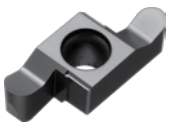
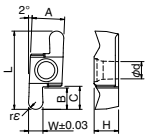
Applicable Inserts

(mm)

Description	A	L	H	ød
GE$^{R}/_{L}$...-C	5.8	11.48	4.05	2.8
GER...-CR				
GE$^{R}/_{L}$...-D	6.8	16.44	5.05	3.4
GER...-DR				
GE$^{R}/_{L}$...-E	9.54	21.66	5.55	4.4

P	Carbon Steel / Alloy Steel		●		
M	Stainless Steel		●		
K	Cast Iron			◔	
N	Non-ferrous Metals			●	
S	Titanium Alloy			●	
H	Hard materials (under 40HRC)		●		
	Hard materials (over 40HRC)				

Classification of usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (R-hand shown)		Description		Dimension (mm) W	B	C	rε	Cermet TN6020 R	TN6020 L	PVD Coated Carbide PR1025 R	PR1025 L	Carbide GW15 R	GW15 L	KW10 R	KW10 L	Applicable Toolholder	Ref. Page for Toolholder
 2-Edge		GE$^{R}/_{L}$	100-005C	1.00	2.5	2.7	0.05	●	●	●	●	●	●			SIGE$^{R}/_{L}$...C-EH SIGE$^{R}/_{L}$...C-WH SIGER...C-WH-90	G48 G49 G50
			120-005C	1.20				●		●	●	●					
			125-005C	1.25				●	●	●	●	●	●				
			140-005C	1.40				●		●	●	●					
			145-010C	1.45			0.1	●	●	●	●	●	●				
			150-010C	1.50				●	●	●	●	●	●				
			170-010C	1.70				●		●	●	●					
			185-010C	1.85				●		●	●	●					
			195-010C	1.95				●		●	●	●					
			200-010C	2.00				●	●	●	●	●	●				
			250-020C	2.50			0.2	●	●	●	●	●	●				
			300-020C	3.00				●	●	●	●	●	●				
			350-020C	3.50				●	●	●	●	●	●				
	 GER100-005D~280-020D  GER300-020D~400-020D	GE$^{R}/_{L}$	100-005D	1.00	2.5	4.8	0.05	●	●	●	●	●	●			SIGE$^{R}/_{L}$...D-EH	G48
			140-005D	1.40				●		●	●	●					
			145-010D	1.45	3.0		0.10	●	●	●	●	●	●				
			150-010D	1.50				●	●	●	●	●	●				
			170-010D	1.70				●		●	●	●					
			185-010D	1.85				●		●	●	●					
			195-010D	1.95				●		●	●	●					
			200-010D	2.00	3.2		0.20	●	●	●	●	●	●				
			225-010D	2.25				●		●	●	●					
			230-020D	2.30				●	●	●	●	●	●				
			250-020D	2.50				●	●	●	●	●	●				
			275-020D	2.75				●		●	●	●					
			280-020D	2.80				●		●	●	●					
			300-020D	3.00	4.5			●	●	●	●	●	●				
			330-020D	3.30				●		●	●	●					
			350-020D	3.50				●	●	●	●	●	●				
			400-020D	4.00				●	●	●	●	●	●				
 2-Edge	 GER100-005E~430-020E  GER450-020E~500-020E	GE$^{R}/_{L}$	100-005E	1.00	2.5	6.8	0.05	●	●	●	●	●	●			SIGE$^{R}/_{L}$...E-EH	G48
			150-010E	1.50	3.0		0.1	●	●	●	●	●	●				
			170-010E	1.70				●		●	●	●					
			185-010E	1.85				●		●	●	●					
			195-010E	1.95				●		●	●	●					
			200-010E	2.00	3.2			●	●	●	●	●	●				
			225-010E	2.25				●		●	●	●					
			230-020E	2.30			0.2	●	●	●	●	●	●				
			250-020E	2.50	4.5			●	●	●	●	●	●				
			275-020E	2.75				●		●	●	●					
			280-020E	2.80				●		●	●	●					
			300-020E	3.00				●	●	●	●	●	●				
			330-020E	3.30				●		●	●	●					
			350-020E	3.50	5.5			●	●	●	●	●	●				
			400-020E	4.00				●	●	●	●	●	●				
			430-020E	4.30				●		●	●	●					
			450-020E	4.50	6.5			●	●	●	●	●	●				
			460-020E	4.60				●		●	●	●					
			500-020E	5.00				●	●	●	●	●	●				
 Full-R		GER	200-100CR	2.00	2.5	2.7	1.0			●		●				SIGER...C-EH SIGER...C-WH SIGER...C-WH-90	G48 G49 G50
			250-125CR	2.50			1.25			●		●					
			300-150CR	3.00			1.5			●		●					
		GER	200-100DR	2.00	3.2	4.8	1.0			●		●				SIGER...D-EH	G48
			300-150DR	3.00	4.5		1.5			●		●					

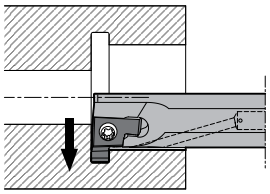
• Dimension B: shows available grooving depth.

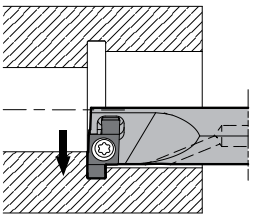
For recommended cutting conditions, see page ➡ G51

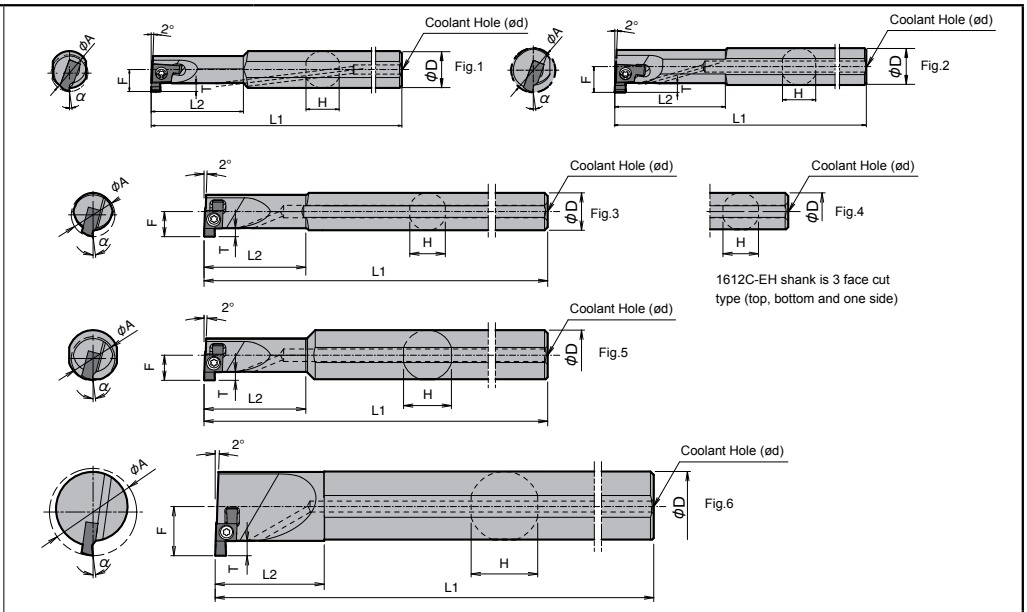
● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

SIGE-EH Excellent Bar (with Coolant Hole)







• Right-hand Shown

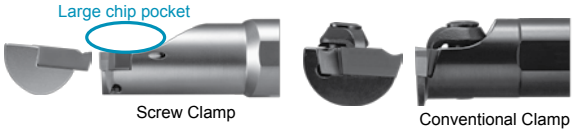
R-hand Insert for R-hand Toolholder, L-hand Insert for L-hand Toolholder.

Description		Std. R	Std. L	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	T	ød	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench FT	Spare Parts: Wrench DT	Applicable Inserts
SIGE$^{R/L}$	0808A-EH	●	●	8	8	7.2	100	20	4.8	1.5	3	Fig.1	SB-2045TRN	FT-6	-	GE$^{R/L}$100-005A~GE$^{R/L}$200-010A GER100-050AR~GER200-100AR
	1010B-EH	●	●	10	10	9	125	25	6.2	2.2	3	Fig.1	SB-2255TR	-	DT-7	GE$^{R/L}$100-005B~GE$^{R/L}$300-020B GER100-050BR~GER200-100BR
	1210B-EH	●	●	12				30	7			Fig.2				
	1412C-EH	●	●	14	12	11.4	150	33	8	2.5	4	Fig.3	SB-2570TR	FT-8	-	GE$^{R/L}$100-005C~GE$^{R/L}$350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR
	1612C-EH	●	●	16				20	8.5			Fig.4				
	1616C-EH	●	●		16	15	160	36	9		5	Fig.5				
	2020D-EH	●	●	20	20	19	180	40	12.1	4.5	5		SB-3080TR	FT-10	-	GE$^{R/L}$100-005D~GE$^{R/L}$400-020D GER150-010DM~GER400-020DM GER200-100DR~GER300-150DR
	2525E-EH	●	●	25	25	24	200	45	15.6	6.5	5		SB-4085TR	FT-15	-	GE$^{R/L}$100-005E~GE$^{R/L}$500-020E GER150-010EM~GER500-020EM
	3232E-EH	●	●	32	32	30.4	220	55	19							
	4032E-EH	●	●	40			250	45	23			Fig.6				

• Dimension T: shows available grooving depth.

Features

- Large chip pocket screw clamp toolholder design provides excellent chip evacuation.

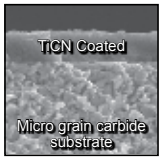


- Cost effective chip control from a molded chipbreaker

- Cutting edge is free from contact face.

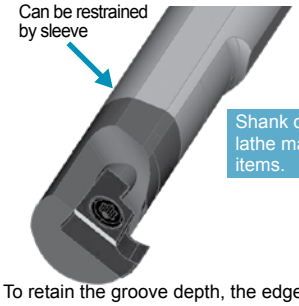
- An 8mm minimum cutting diameter with a 2-Edge design
- Grade PR1025 improves stable machining

Grade PR1025
(Micro Grain Carbide + PVD Coated Carbide)
Long tool life and stable machining for internal grooving



- SIGE toolholder and Sleeve for Automatic Lathes

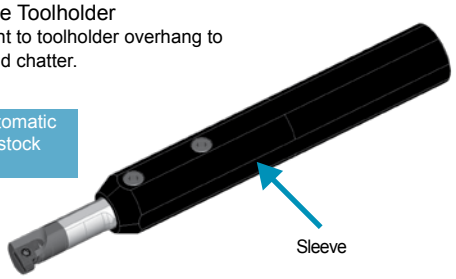
• SIGE toolholder
The locating surface for the sleeve lock screw reaches nearly to the insert pocket.
This provides a maximum range of overhang adjustment to reduce chatter.



To retain the groove depth, the edge is single straight core shape thinner than the shank.

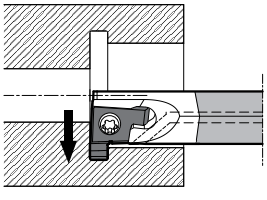
• Applicable Sleeve Toolholder
Provides adjustment to toolholder overhang to reduce vibration and chatter.

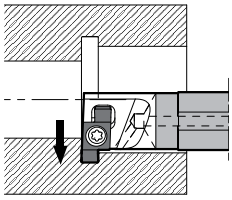
Shank diameters for other automatic lathe manufactures added to stock items.

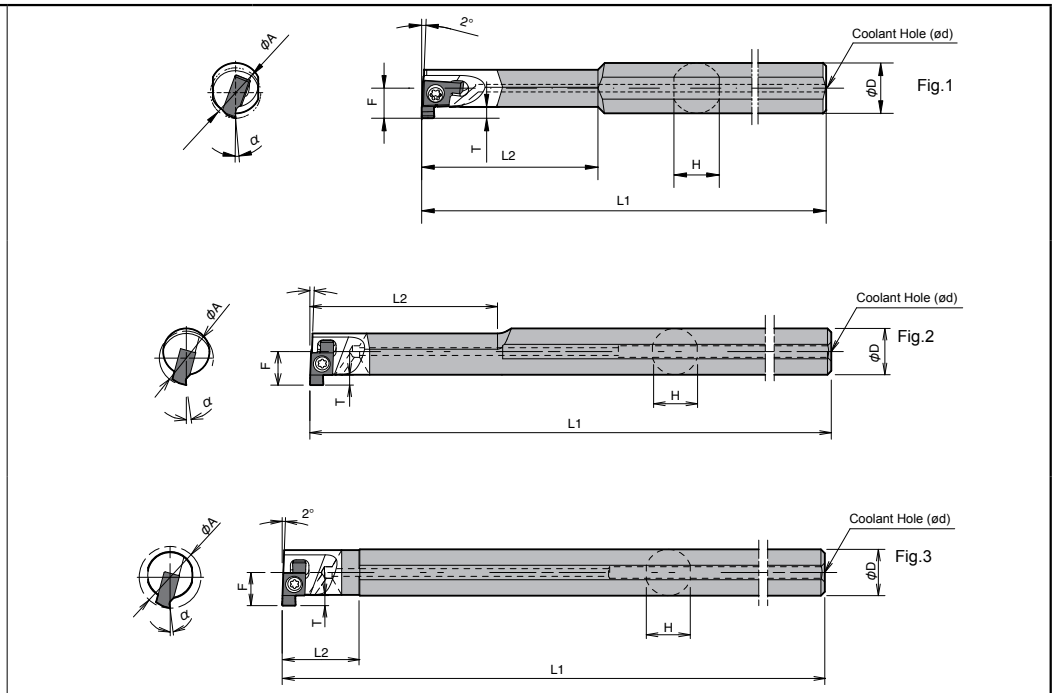


● : Std. Item ○ : Check Availability
R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

SIGE-WH Carbide Shank Bar (with Coolant Hole)







● Right-hand Shown

R-hand Insert for R-hand Toolholder, L-hand Insert for L-hand Toolholder.

Toolholder Dimensions

Description		Std.		Min. Cutting Dia.	Dimension (mm)							Drawing	Spare Parts			Applicable Inserts
													Clamp Screw	Wrench		
		R	L	øA	øD	H	L1	L2	F	T	ød			FT	DT	
SIGE$^{R/L}$	0808A-WH	●	●	8	8	7.2	125	28	4.8	1.5	3	Fig.1	SB-2045TRN	FT-6	-	GE$^{R/L}$100-005A~GE$^{R/L}$200-010A GER100-050AR~GER200-100AR
	1010B-WH	●	●	10	10	9	125	35	6.2	2.2	3		SB-2255TR	-	DT-7	GE$^{R/L}$100-005B~GE$^{R/L}$300-020B GER100-050BR~GER200-100BR
	1210B-WH	●	●	12			140	45	7							
	1412C-WH	●	●	14	12	11.4	150	50	8.7	2.5	4	Fig.2	SB-2570TR	FT-8	-	GE$^{R/L}$100-005C~GE$^{R/L}$350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR
	1612C-WH	●	●	16			180	20	8.5			Fig.3				

• Dimension T: shows available grooving depth.

Applicable Insert & Rake Angle (α) after Installment of Insert

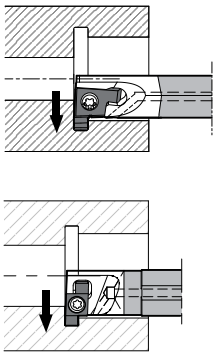
Description		Applicable Insert & Rake Angle (α) after Installment of Insert			
		Ground Chipbreaker	α (°)	Molded Chipbreaker	α (°)
SIGE$^{R/L}$	0808A-EH	GE$^{R/L}$100-005A~GE$^{R/L}$200-010A GER100-050AR~GER200-100AR	5°	-	-
	1010B-EH	GE$^{R/L}$100-005B~GE$^{R/L}$300-020B GER100-050BR~GER200-100BR	5°	-	-
	1210B-EH				
	1412C-EH	GE$^{R/L}$100-005C~GE$^{R/L}$350-020C GER200-100CR~GER300-150CR	8°	GER150-010CM~GER350-020CM	10°
	1612C-EH				
	1616C-EH				
	2020D-EH	GE$^{R/L}$100-005D~GE$^{R/L}$400-020D GER200-100DR~GER300-150DR	9°	GER150-010DM~GER400-020DM	10°
	2525E-EH	GE$^{R/L}$100-005E~GE$^{R/L}$500-020E	10°	GER150-010EM~GER500-020EM	10°
	3232E-EH				
	4032E-EH				
SIGE$^{R/L}$	0808A-WH	GE$^{R/L}$100-005A~GE$^{R/L}$200-010A GER100-050AR~GER200-100AR	5°	-	-
	1010B-WH	GE$^{R/L}$100-005B~GE$^{R/L}$300-020B GER100-050BR~GER200-100BR	5°	-	-
	1210B-WH				
	1008B-WH-90				
	1210B-WH-90				
	1412C-WH	GE$^{R/L}$100-005C~GE$^{R/L}$350-020C GER200-100CR~GER300-150CR	8°	GER150-010CM~GER350-020CM	10°
	1612C-WH				
	1412C-WH-90				

α indicates the rake angle at the center of the edge width, after installing insert.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Internal Grooving SIGE

SIGE-WH Carbide Shank Bar (with Coolant Hole)



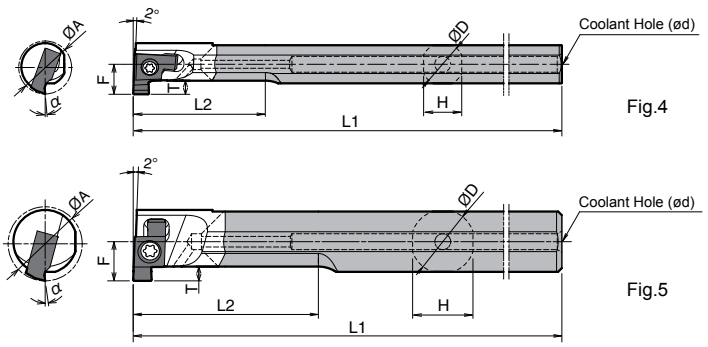


Fig.4

Fig.5

• Right-hand shown

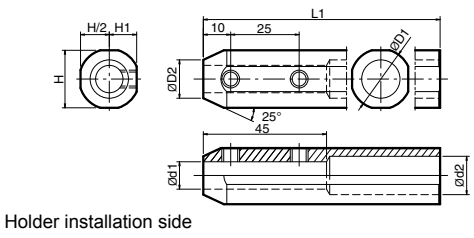
R-hand Insert for R-hand Toolholder.

Toolholder Dimensions

Description		Std.	Min. Cutting Dia.	Dimension (mm)							Drawing	Spare Parts			Applicable Inserts
												Clamp Screw	Wrench		
			øA	øD	H	L1	L2	F	T	ød			FT	DT	
SIGER	1008B-WH-90	●	10	8	7.2	90	25	5.6	2.2	3	Fig.4	SB-2255TR	-	DT-7	GER100-005B~GER300-020B GER100-050BR~GER200-100BR
	1210B-WH-90	●	12	10	9.4		30	6.6							
	1412C-WH-90	●	14	12	11.4	90	35	7.4	2.5	3	Fig.5	SB-2570TR	FT-8	-	GER100-005C~GER350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR

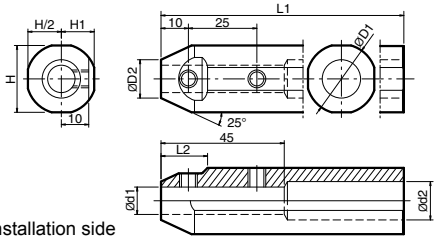
• See page G49 for applicable Insert & Rake Angle (α) after Installment of Insert.

Applicable Sleeve



Holder installation side

Fig.1



Holder installation side

Fig.2

Description		Std.	Dimension (mm)							Drawing	Spare Parts		Applicable Machine Manufactuer
											Screw	Wrench	
			ød1	øD1	øD2	ød2	H	H1	L1	L2			
SHA	0820-120	●	8	20	14	12	19	9.25	120	-	Fig.1	HS6x4P	LW-3	Amada Wasino Eguro Precision Tsugami Miyano
	1020-120	●	10											
SHA	0825.0-135	●	8	25	14	14	24	11.5	135	17	Fig.2			
	1025.0-135	●	10											
	1225.0-135	●	12		16									
SHA	0819-120	●	8	19.05	14	12	18	8.75	120	-	Fig.1	HS6x4P	LW-3	Citizen Machinery
	1019-120	●	10											
SHA	0820-120	●	8	20	14	12	19	9.25	120	-	Fig.1			
	1020-120	●	10											
SHA	0825.4-120	●	8	25.4	14	14	24.4	12	120	17	Fig.2			
	1025.4-120	●	10											
	1225.4-120	●	12		16									
SHA	0822-125	●	8	22	14	14	21	10	125	-	Fig.1	HS6x4P	LW-3	Star Micronics Nomura VTC
	1022-125	●	10											
	1222-125	●	12		16									
SHA	0823-120	●	8	23	14	14	22	10.5	120	16	Fig.2	HS6x4P	LW-3	Nomura VTC
	1023-120	●	10											
	1223-120	●	12		16									

* Length of ød1...45mm (SHA all types)

• Select a sleeve dimension ød1 by adjusting for toolholder dimension øD.

• Names of machine builders are listed in the order of the Japanese syllabary with omitted titles of respect.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Recommended Cutting Conditions (Ground Chipbreaker: GE^{R}/L•••A(R), GE^{R}/L••B(R))

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)			① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ ap at Traversing (mm)			Remarks
	Cermet	PVD Coated Carbide	Carbide				
	TN6020	**PR1025**	**KW10**	GE^{R}/L 100~200-010A 100~200-100AR	GE^{R}/L 100~200-010B 100~200-100BR	GE^{R}/L 250~300-020B	
Carbon Steel	☆ 50~80	★ 50~80	-	①0.01~0.03 ②0.01~0.03 ③Max. 0.05	①0.02~0.04 ②0.02~0.04 ③Max. 0.05	①0.02~0.04 ②0.02~0.04 ③Max. 0.1	Coolant
Alloy Steel	☆ 50~80	★ 50~80	-	①0.01~0.03 ②0.01~0.03 ③Max. 0.05	①0.02~0.04 ②0.02~0.04 ③Max. 0.05	①0.02~0.04 ②0.02~0.04 ③Max. 0.1	
Stainless Steel	-	★ 50~80	-	①0.01~0.03 ②0.01~0.03 ③Max. 0.05	①0.01~0.03 ②0.01~0.03 ③Max. 0.05	①0.01~0.03 ②0.01~0.03 ③Max. 0.1	
Cast Iron	-	-	★ 50~80	①0.01~0.03 ②0.01~0.03 ③Max. 0.05	①0.02~0.04 ②0.02~0.04 ③Max. 0.05	①0.02~0.04 ②0.02~0.04 ③Max. 0.1	
Non-ferrous Metals	-	-	★ 50~100	①0.01~0.03 ②0.01~0.03 ③Max. 0.1	①0.02~0.04 ②0.02~0.04 ③Max. 0.1	①0.02~0.04 ②0.02~0.04 ③Max. 0.2	
Brass	-	-	★ 50~100	①0.01~0.03 ②0.01~0.03 ③Max. 0.1	①0.02~0.04 ②0.02~0.04 ③Max. 0.1	①0.02~0.04 ②0.02~0.04 ③Max. 0.2	

* Use PVD coated grade or carbie for traversing with edge width 1mm. (GE^{R}/L100-005A / 100-005B)

★: 1st Recommendation ☆: 2nd Recommendation

Recommended Cutting Conditions (Ground Chipbreaker: GE^{R}/L•••C(R), GE^{R}/L•••D(R), GE^{R}/L•••E)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)			① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ ap at Traversing (mm)							Remarks
	Cermet	PVD Coated Carbide	Carbide								
	TN6020	**PR1025**	**GW15**	GE^{R}/L 100~200-010C 200-100CR	GE^{R}/L 250~350-020C 250~300-150CR						
				GE^{R}/L 100~145-010D	GE^{R}/L 150~195-010D	GE^{R}/L 200~280-020D 200-100DR		GE^{R}/L 300~400-020D 300-150DR			
				GE^{R}/L 100-010E	GE^{R}/L 150~195-010E	GE^{R}/L 200~225-010E 230-020E	GE^{R}/L 250~330-020E		GE^{R}/L 350~430-020E	GE^{R}/L 450~500-020E	
Carbon Steel	☆ 120~180	★ 60~140	-	①0.03~0.08 ②0.03~0.08 ③Max. 0.3	①0.03~0.08 ②0.03~0.08 ③Max. 0.3	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	Coolant
Alloy Steel	☆ 100~160	★ 60~120	-	① 0.03~0.07 ② 0.03~0.1 ③Max. 0.3	① 0.03~0.07 ② 0.03~0.1 ③Max. 0.3	① 0.04~0.08 ② 0.04~0.08 ③Max. 0.3	① 0.04~0.08 ② 0.04~0.08 ③Max. 0.3	① 0.05~0.1 ② 0.05~0.1 ③Max. 0.5	① 0.05~0.1 ② 0.05~0.1 ③Max. 0.5	① 0.05~0.1 ② 0.05~0.1 ③Max. 0.5	
Stainless Steel	☆ 70~130	★ 60~110	-	① 0.03~0.07 ② 0.03~0.1 ③Max. 0.3	① 0.03~0.07 ② 0.03~0.1 ③Max. 0.3	① 0.04~0.08 ② 0.04~0.08 ③Max. 0.3	① 0.04~0.08 ② 0.04~0.08 ③Max. 0.3	① 0.05~0.1 ② 0.05~0.1 ③Max. 0.5	① 0.05~0.1 ② 0.05~0.1 ③Max. 0.5	① 0.05~0.1 ② 0.05~0.1 ③Max. 0.5	
Cast Iron	-	-	★ 60~100	① 0.03~0.08 ② 0.03~0.08 ③Max. 0.3	① 0.03~0.08 ② 0.03~0.08 ③Max. 0.3	① 0.04~0.09 ② 0.04~0.09 ③Max. 0.3	① 0.04~0.09 ② 0.04~0.09 ③Max. 0.3	① 0.05~0.12 ② 0.05~0.1 ③Max. 0.5	① 0.05~0.12 ② 0.05~0.1 ③Max. 0.5	① 0.05~0.12 ② 0.05~0.1 ③Max. 0.5	
Non-ferrous Metals	-	-	★ 150~300	① 0.05~0.12 ② 0.05~0.12 ③Max. 0.5	① 0.05~0.12 ② 0.05~0.12 ③Max. 0.5	① 0.05~0.15 ② 0.05~0.15 ③Max. 0.5	① 0.05~0.15 ② 0.05~0.15 ③Max. 0.5	① 0.08~0.15 ② 0.08~0.15 ③ Max. 0.8	① 0.08~0.15 ② 0.08~0.15 ③ Max. 0.8	① 0.08~0.15 ② 0.08~0.15 ③ Max. 0.8	
Brass	-	-	★ 100~250	① 0.05~0.12 ② 0.05~0.12 ③Max. 0.5	① 0.05~0.12 ② 0.05~0.12 ③Max. 0.5	① 0.05~0.15 ② 0.05~0.15 ③Max. 0.5	① 0.05~0.15 ② 0.05~0.15 ③Max. 0.5	① 0.08~0.15 ② 0.08~0.15 ③ Max. 0.8	① 0.08~0.15 ② 0.08~0.15 ③ Max. 0.8	① 0.08~0.15 ② 0.08~0.15 ③ Max. 0.8	

* Use PVD coated grade or carbie for traversing with edge width 1mm. (GE^{R}/L100-010C / 100-010D / 100-010E)

★: 1st Recommendation ☆: 2nd Recommendation

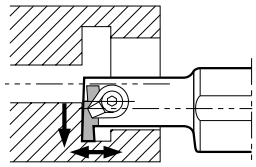
Recommended Cutting Conditions (Molded Chipbreaker: GER•••CM, GER•••DM, GER•••EM)

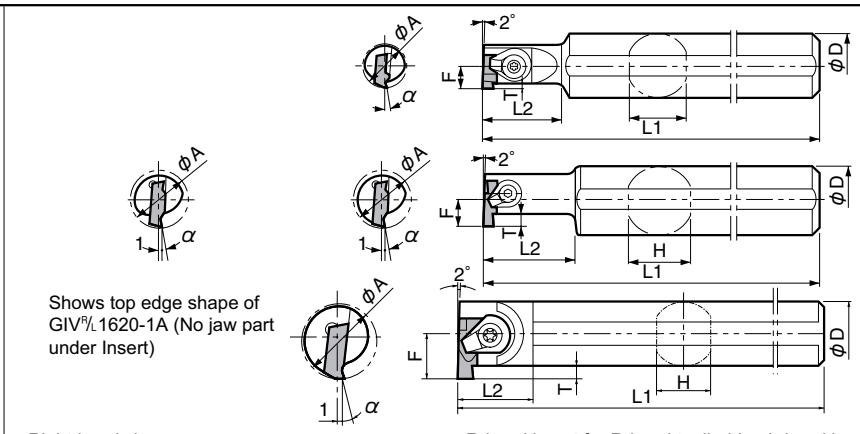
Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)			① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ ap at Traversing (mm)						Remarks
	Cermet	PVD Coated Carbide	Carbide							
	TN6020	**PR1025**	**GW15**	GER 150~200-010CM	GER 250~350-020CM					
				GER 150~200-010DM		GER 230~250-020DM	GER 300~400-020DM			
				GER 150~200-010EM			GER 250~300-020EM	GER 350~400-020EM	GER 450~500-020EM	
Carbon Steel	-	★ 60~160	-	① 0.03~0.1 ② 0.03~0.1 ③ Max. 1.0	① 0.03~0.12 ② 0.03~0.1 ③ Max. 1.5	① 0.04~0.12 ② 0.04~0.1 ③ Max. 1.5	① 0.05~0.12 ② 0.05~0.1 ③ Max. 1.5	① 0.05~0.12 ② 0.05~0.1 ③ Max. 1.5	① 0.05~0.12 ② 0.05~0.1 ③ Max. 1.5	Coolant
Alloy Steel	-	★ 60~140	-	① 0.03~0.1 ② 0.03~0.1 ③ Max. 1.0	① 0.03~0.1 ② 0.03~0.1 ③ Max. 1.5	① 0.04~0.12 ② 0.04~0.1 ③ Max. 1.5	① 0.05~0.12 ② 0.05~0.1 ③ Max. 1.5	① 0.05~0.12 ② 0.05~0.1 ③ Max. 1.5	① 0.05~0.12 ② 0.05~0.1 ③ Max. 1.5	
Stainless Steel	-	★ 60~110	-	① 0.03~0.08 ② 0.03~0.1 ③ Max. 1.0	① 0.03~0.08 ② 0.03~0.1 ③ Max. 1.5	① 0.04~0.08 ② 0.04~0.1 ③ Max. 1.5	① 0.05~0.1 ② 0.05~0.1 ③ Max. 1.5	① 0.05~0.1 ② 0.05~0.1 ③ Max. 1.5	① 0.05~0.1 ② 0.05~0.1 ③ Max. 1.5	

★: 1st Recommendation ☆: 2nd Recommendation

Internal Small Diameter Grooving Toolholders [GV Insert]

GIV



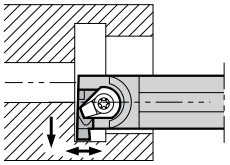


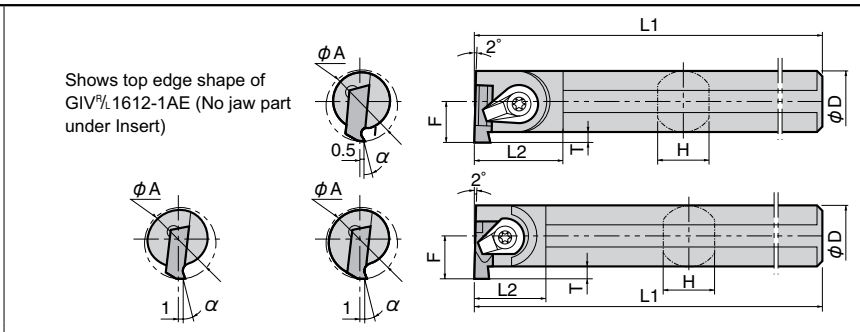
Shows top edge shape of GIV$^{R/L}$1620-1A (No jaw part under Insert)

● Right-hand shown

R-hand insert for R-hand toolholder, L-hand insert for L-hand toolholder.

GIV-E Excellent Bar



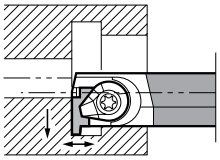


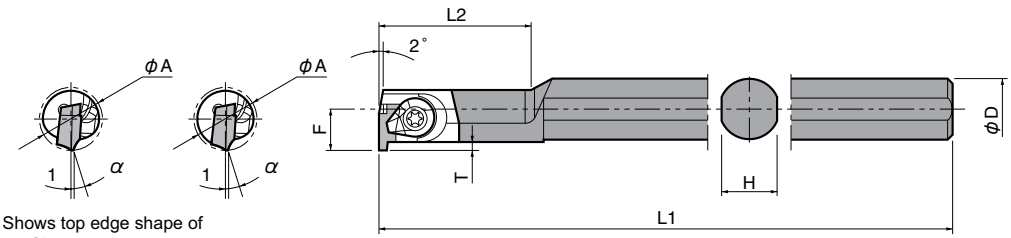
Shows top edge shape of GIV$^{R/L}$1612-1AE (No jaw part under Insert)

● Right-hand shown

R-hand insert for R-hand toolholder, L-hand insert for L-hand toolholder.

GIV-W Carbide Shank Bar





Shows top edge shape of GIV$^{R/L}$1616-1AW (No jaw part under Insert)

● Right-hand shown

R-hand insert for R-hand toolholder, L-hand insert for L-hand toolholder.

● Applicable Insert & Rake Angle (α) after Installment of Insert

Toolholder	Description ➔G54		Rake Angle (α)	
	General Grooving (Square)	Full-R Grooving (Round)	TC40	TN90, TC60 PR630, PR930 KW10
GIV$^{R/L}$...1SS	GV$^{R/L}$100SS~300SS	-	10°	15°
GIV$^{R/L}$...1S	GV$^{R/L}$100S~340S	-	10°	15°
GIV$^{R/L}$...1SE	GV$^{R/L}$100S~340S	-	3°	8°
GIV$^{R/L}$...1A(□)	GV$^{R/L}$100A~340A	GV$^{R/L}$100AR~150AR	3°	8°
GIV$^{R/L}$...1B(□)	GV$^{R/L}$145B~250B	GV$^{R/L}$100BR	4°	9°
GIV$^{R/L}$...2B(□)	GV$^{R/L}$280B~400B	GV$^{R/L}$150BR		
GIV$^{R/L}$...1C(□)	GV$^{R/L}$280C~340C	-	5°	10°
GIV$^{R/L}$...2C(□)	GV$^{R/L}$400C~500C	-		

Toolholder Dimensions

Description		Std. R	Std. L	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	T		Drawing	Spare Parts: Clamp Set		Wrench	Wrench	Reference page for applicable inserts
GIV$^{R}_{L}$	1216-1SS	●	●	12	16	15	150	20	6.0	2.2		Fig.1	CPS-4V	-	FT-10	-	G54
	1420-1S	●	●	14	20	19	150	24	7.0	2.2		Fig.1	CPS-5F	-	FT-15	-	
	1620-1A	●	●	16	20	19	160	28	8.0	2.2		Fig.2	CPS-5V	-	FT-15	-	
	2025-1B	●	●	20	25	23	180	35	10.0	Note2) 2.8		Fig.2	CPS-5V	-	FT-15	-	
	2025-2B	●	●							Note2) 3.2							
	2532-1C	●	●	25	32	30	200	43	12.5	Note3) 4.5		Fig.2	-	CPS-6V	-	LW-3	
	3232-1C	●	●	32			220	52	16.0								
	4032-1C	●	●	40			250	43	21.0			Fig.3					
	2532-2C	●	●	25	32	30	200	43	12.5	Note4) 5.5		Fig.2					
	3232-2C	●	●	32			220	52	16.0								
	4032-2C	●	●	40			250	43	22.2			Fig.3					
GIV$^{R}_{L}$	1412-1SE	●	●	14	12	11.4	150	18	7.7	1.7		Fig.1	CPS-5F	-	FT-15	-	
	1612-1AE	●	●	16	12	11.4	150	19	8.2	2.2		Fig.2	CPS-5V	-	FT-15	-	
	2016-1BE	●	●	20	16	15.2	180	20	11.2	Note1) 2.8		Fig.2	CPS-5V	-	FT-15	-	
	2016-2BE	●	●					19	11.7	Note5) 3.2							
	2520-1CE	●	●	25	20	19	200	25	14.5	Note6) 4.5		Fig.2	-	CPS-6V	-	LW-3	
	3225-1CE	●	●	32	25	24	220	24	17.5	Note7) 4.5							
	4032-1CE	●	●	40	32	31	240	29	21.0	Note7) 4.5							
	2720-2CE	●	●	27	20	19	200	25	16.2	Note4) 5.5							
	3225-2CE	●	●	32	25	24	220	24	18.7								
	4032-2CE	●	●	40	32	31	240	29	22.2								
GIV$^{R}_{L}$	1616-1AW	●	●	16	16	15	175	48	10.6	2.2		-	CPS-5V	-	FT-15	-	
	2020-1BW	●	●	20	20	19	220	60	14.6	Note1) 2.8		-	CPS-5V	-	FT-15	-	
	2020-2BW	●	●							Note2) 3.2							
	2525-1CW	●	●	25	25	24	260	70	19.1	Note3) 4.5		-	-	CPS-6V	-	LW-3	
	2525-2CW	●	●							Note4) 5.5							

•Dimension T shows available grooving depth.

Note 1: GV$^{R}_{L}$200B~250B Insert is available up to a Groove Depth 3.2mm.
Note 2: GV$^{R}_{L}$300B~400B Insert is available up to a Groove Depth 4.2mm.
Note 3: GV$^{R}_{L}$340C Insert is available up to a Groove Depth 5.5mm
Note 4: GV$^{R}_{L}$430C~500C Insert is available up to a Groove Depth 6.3mm
Note 5: GV$^{R}_{L}$300B~400B Insert is available up to a Groove Depth 3.8mm.（When using GIV$^{R}_{L}$2016-2BE）
Note 6: GV$^{R}_{L}$340C Insert is available up to a Groove Depth 4.7mm.（When using GIV$^{R}_{L}$2520-1CE）
Note 7: GV$^{R}_{L}$340C Insert is available up to a Groove Depth 5.3mm.（When using GIV$^{R}_{L}$3225-1CE, GIV$^{R}_{L}$4032-1CE）
If you need any of insert groove depth specified in notes 1 to 7, modify the dimension T of toolholder.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Insert for Small Internal Grooving

Applicable Inserts (GIV / GIV-E / GIV-W)

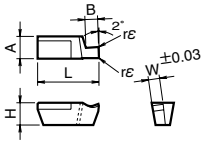
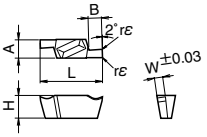
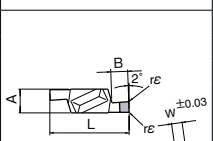
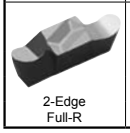
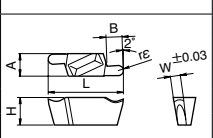
(mm)

Description	A	L	H
GV$^{R}_{L}$...SS	3.6	9	3.0
GV$^{R}_{L}$...S	4.0	11	4.0
GV$^{R}_{L}$...A	4.0	12	5.0
GV$^{R}_{L}$...B	4.5	15	5.5
GV$^{R}_{L}$...C	5.8	21	6.5

		Cermet			PVD Coated Carbide		Carbide	PCD	
		TN90	TC40	TC60	PR630	PR930	KW10	KPD001	KPD010
P	Carbon Steel / Alloy Steel					◕			
M	Stainless Steel					◕			
K	Cast Iron						◕		
N	Non-ferrous Metals						◕	●	
S	Titanium Alloy						◕	●	
H	Hard materials (under 40HRC)					○			
	Hard materials (over 40HRC)								

Classification of usage

◕ : Continuous-Light Interruption / 1st Choice
◔ : Continuous-Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (R-hand shown)	Description	(Previous Description)	W	B	rε	Applicable Toolholder	Ref. Page for Toolholder
  1-Edge	GV$^{R}_{L}$ 100-020SS	GV$^{R}_{L}$ 100SS	1.00	2.3	0.2	GIV$^{R}_{L}$···1SS	G52
	GV$^{R}_{L}$ 125-020SS	GV$^{R}_{L}$ 125SS	1.25				
	GV$^{R}_{L}$ 145-020SS	GV$^{R}_{L}$ 145SS	1.45				
	GV$^{R}_{L}$ 200-020SS	GV$^{R}_{L}$ 200SS	2.00				
	GV$^{R}_{L}$ 250-020SS	GV$^{R}_{L}$ 250SS	2.50				
	GV$^{R}_{L}$ 300-020SS	GV$^{R}_{L}$ 300SS	3.00				
	GV$^{R}_{L}$ 100-020S	GV$^{R}_{L}$ 100S	1.00	2.3	0.2	GIV$^{R}_{L}$···1S GIV$^{R}_{L}$···1SE	
	GV$^{R}_{L}$ 125-020S	GV$^{R}_{L}$ 125S	1.25				
	GV$^{R}_{L}$ 145-020S	GV$^{R}_{L}$ 145S	1.45				
	GV$^{R}_{L}$ 185-020S	GV$^{R}_{L}$ 185S	1.85				
	GV$^{R}_{L}$ 200-020S	GV$^{R}_{L}$ 200S	2.00				
	GV$^{R}_{L}$ 250-020S	GV$^{R}_{L}$ 250S	2.50				
	GV$^{R}_{L}$ 340-020S	GV$^{R}_{L}$ 340S	3.40				
  2-Edge	GV$^{R}_{L}$ 100-020A	GV$^{R}_{L}$ 100A	1.00	2.3	0.2	GIV$^{R}_{L}$···1A GIV$^{R}_{L}$···1AE GIV$^{R}_{L}$···1AW	
	GV$^{R}_{L}$ 120-020A	GV$^{R}_{L}$ 120A	1.20				
	GV$^{R}_{L}$ 125-020A	GV$^{R}_{L}$ 125A	1.25				
	GV$^{R}_{L}$ 140-020A	GV$^{R}_{L}$ 140A	1.40				
	GV$^{R}_{L}$ 145-020A	GV$^{R}_{L}$ 145A	1.45				
	GV$^{R}_{L}$ 170-020A	GV$^{R}_{L}$ 170A	1.70				
	GV$^{R}_{L}$ 185-020A	GV$^{R}_{L}$ 185A	1.85				
	GV$^{R}_{L}$ 195-020A	GV$^{R}_{L}$ 195A	1.95				
	GV$^{R}_{L}$ 200-020A	GV$^{R}_{L}$ 200A	2.00				
	GV$^{R}_{L}$ 225-020A	GV$^{R}_{L}$ 225A	2.25				
	GV$^{R}_{L}$ 250-020A	GV$^{R}_{L}$ 250A	2.50				
	GV$^{R}_{L}$ 275-020A	GV$^{R}_{L}$ 275A	2.75				
	GV$^{R}_{L}$ 300-020A	GV$^{R}_{L}$ 300A	3.00				
	GV$^{R}_{L}$ 340-020A	GV$^{R}_{L}$ 340A	3.40				
	GV$^{R}_{L}$ 145-020B	GV$^{R}_{L}$ 145B	1.45	2.8	0.2	GIV$^{R}_{L}$···1B GIV$^{R}_{L}$···1BE GIV$^{R}_{L}$···1BW	
	GV$^{R}_{L}$ 185-020B	GV$^{R}_{L}$ 185B	1.85				
	GV$^{R}_{L}$ 200-020B	GV$^{R}_{L}$ 200B	2.00	3.2			
	GV$^{R}_{L}$ 225-020B	GV$^{R}_{L}$ 225B	2.25				
	GV$^{R}_{L}$ 230-020B	GV$^{R}_{L}$ 230B	2.30				
	GV$^{R}_{L}$ 250-020B	GV$^{R}_{L}$ 250B	2.50				
	GV$^{R}_{L}$ 275-020B	GV$^{R}_{L}$ 275B	2.75				
	GV$^{R}_{L}$ 280-020B	GV$^{R}_{L}$ 280B	2.80			GIV$^{R}_{L}$···2B GIV$^{R}_{L}$···2BE GIV$^{R}_{L}$···2BW	
	GV$^{R}_{L}$ 300-020B	GV$^{R}_{L}$ 300B	3.00	4.2			
	GV$^{R}_{L}$ 325-020B	GV$^{R}_{L}$ 325B	3.25				
	GV$^{R}_{L}$ 340-020B	GV$^{R}_{L}$ 340B	3.40				
	GV$^{R}_{L}$ 400-020B	GV$^{R}_{L}$ 400B	4.00				
	GV$^{R}_{L}$ 280-020C	GV$^{R}_{L}$ 280C	2.80	4.5	0.2	GIV$^{R}_{L}$···1C GIV$^{R}_{L}$···1CE GIV$^{R}_{L}$···1CW	
	GV$^{R}_{L}$ 300-020C	GV$^{R}_{L}$ 300C	3.00				
	GV$^{R}_{L}$ 325-020C	GV$^{R}_{L}$ 325C	3.25				
	GV$^{R}_{L}$ 340-020C	GV$^{R}_{L}$ 340C	3.40	5.5			
	GV$^{R}_{L}$ 400-020C	GV$^{R}_{L}$ 400C	4.00			GIV$^{R}_{L}$···2C GIV$^{R}_{L}$···2CE GIV$^{R}_{L}$···2CW	
	GV$^{R}_{L}$ 425-020C	GV$^{R}_{L}$ 425C	4.25				
	GV$^{R}_{L}$ 430-020C	GV$^{R}_{L}$ 430C	4.30	6.3			
	GV$^{R}_{L}$ 460-020C	GV$^{R}_{L}$ 460C	4.60				
	GV$^{R}_{L}$ 500-020C	GV$^{R}_{L}$ 500C	5.00				
  2-Edge	GV$^{R}_{L}$ 145-020A	GV$^{R}_{L}$ 145A	1.45	2.3	0.2	GIV$^{R}_{L}$···1A GIV$^{R}_{L}$···1AE GIV$^{R}_{L}$···1AW ○	
	GV$^{R}_{L}$ 200-020A	GV$^{R}_{L}$ 200A	2.00				
	GV$^{R}_{L}$ 300-020A	GV$^{R}_{L}$ 300A	3.00				
	GV$^{R}_{L}$ 200-020B	GV$^{R}_{L}$ 200B	2.00	3.2	0.2	GIV$^{R}_{L}$···1B GIV$^{R}_{L}$···1BE GIV$^{R}_{L}$···1BW	
	250-020B	250B	2.50				
	300-020B	300B	3.00	4.2		GIV$^{R}_{L}$···2B ○	
	GV$^{R}_{L}$ 300-020C	GV$^{R}_{L}$ 300C	3.00	4.5	0.2	GIV$^{R}_{L}$···1C ○	
	GV$^{R}_{L}$ 400-020C	GV$^{R}_{L}$ 400C	4.00	5.5		GIV$^{R}_{L}$···2C ○	
  2-Edge Full-R	GV$^{R}_{L}$ 200-100AR	GV$^{R}_{L}$ 100AR	2.00	2.3	1.00	GIV$^{R}_{L}$···1A	
	250-125AR	GV$^{R}_{L}$ 125AR	2.50		1.25	GIV$^{R}_{L}$···1AE	
	300-150AR	GV$^{R}_{L}$ 150AR	3.00		1.50	GIV$^{R}_{L}$···1AW	
	GV$^{R}_{L}$ 200-100BR	GV$^{R}_{L}$ 100BR	2.00	3.2	1.00	GIV$^{R}_{L}$···1B ○	
	300-150BR	150BR	3.00	4.2	1.50	GIV$^{R}_{L}$···2B ○	

• Dimension B shows available grooving depth.

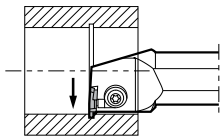
For recommended cutting conditions, see page ➡ G92

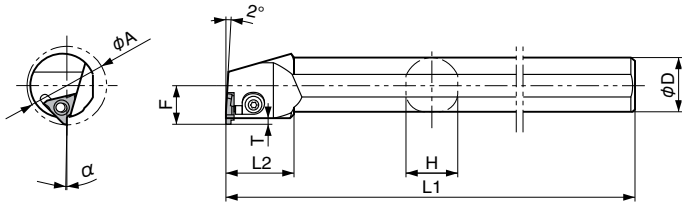
● : Std. Item
○ : Check Availability
R : Std. Item (R-hand Only)
L : Std. Item (L-hand Only)
□ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes.

CBN & PCD Inserts are sold in 1 piece boxes.

KIGBA





● Right-hand shown

L-hand insert for R-hand toolholder, R-hand insert for L-hand toolholder.

Toolholder Dimensions

Description		Std. R	Std. L	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	T	Spare Parts: Clamp Set	Spare Parts: Wrench	Applicable Inserts ➡G10~G12
KIGBA R/L	3525-16	●	●	35	25	23	220	30	17.5	2.8	LGBA-16 L/R S	FT-15	GBA32 L/R type
	4032-22	●	●	40	32	30	250	30	23.0	3.0	LGBA-22 L/R S	FT-15	GBA43 L/R type

・Dimension T shows the distance from the Toolholder to the cutting edge.
Available Groove Depth : KIGBA R/L 3525-16 … "B" Dimension of the Applicable Insert
2.0mm for KIGBA R/L 4032-22…GBA43 R/L 125-020,145-020,100-050R
2.8mm for the Inserts except the above.

・Clamp Set : LGBA-○LS for Right-hand Toolholder, and LGBA-○RS for Left-hand Toolholder.

Rake Angle (α) after Installment of GBA type

GBA32 R/L○○○-○○○		GBA43 R/L○○○-○○○		GBA43 R/L○○○-○○○R (Full-R)		
α	Insert Grades	α	Insert Grades	α	Insert Grades	Full-R Description
+1°	TN90 PR630 PR930 PR1115, PR1215, PR905 KPD001, KPD010	-9°	KBN510, KBN525	+1°	TN90 PR630 PR930 PR1115, PR1215, PR905	050R~150R
		+1°	TC40, TN90 PR630 PR930 PR1115, PR1215, PR905 KPD001, KPD010	+5°	TN90 PR630 PR930 PR1115, PR1215, PR905	200R
+11°	KW10	+11°	KW10		KW10	050R~200R

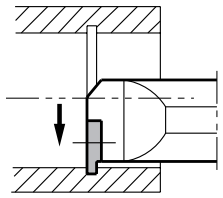
Rake Angle (α) after Installment of GBA-MY type

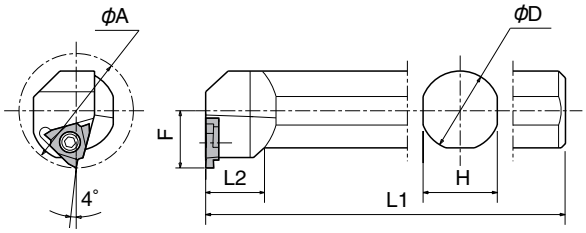
α	Insert
+6°	GBA43 R/L175MY ⟩ GBA43 R/L350MY
+5°	GBA43 R/L400MY

α indicates the rake angle at the center of the edge width, after installing insert.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

KITG (Changes to KIGBA, See Page G43)





• Right-hand shown

L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder.

Toolholder Dimensions

Description		Std. R	Std. L	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	Spare Parts: Clamp Screw	Clamp Screw	Wrench	Wrench
KITG R/L	3525T-16	●	●	35	25	23	220	18	17.5	SB-4TR	-	FT-15	-
	4532T-22	●	●	45	32	30	250	20	22.5	-	GS-50	-	LW-3

・Available Grooving Depth : KITG R/L3525T-16=2.0mm, KITG R/L4532T-22=2.5mm

* KITG will be switched to KIGBA as an Internal Large Diameter Shallow Grooving Toolholder; however, it will continue to be sold as Internal Threading Toolholder (J23).
・GBA Insert cannot be installed to this toolholder.

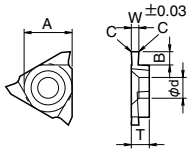
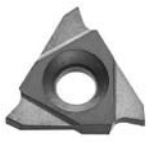
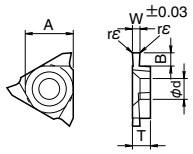
Applicable Inserts

(TG type insert changes to GBA type See page G10 ~ G12)

(mm)

Description	A	T	ød
TG32_	9.525	3.18	4.5
TG43_	12.70	4.76	5.5

						Classification of usage
P	Carbon Steel / Alloy Steel	●				◕ : Continuous-Light Interruption / 1st Choice
M	Stainless Steel					◔ : Continuous-Light Interruption / 2nd Choice
K	Cast Iron					● : Continuous / 1st Choice
N	Non-ferrous Metals					○ : Continuous / 2nd Choice
S	Titanium Alloy					
H	Hard materials (under 40HRC)					
	Hard materials (over 40HRC)					

Insert (R-hand shown)		Description		Dimension (mm) W	B	C or rε	Cermet TN60	TN90	TC40	TC60	Applicable Toolholder	Ref. Page for Toolholder
General (Square) TG32 type	 (Corner is C shape)	TG32 R/L	075	0.75	2.0	C0.1	○				KITG R/L ···16	G56
			095	0.95			○					
			125	1.25			○					
			145	1.45			○					
			150	1.50			○					
			175	1.75			○					
			200	2.00			○					
 General (Square) (Corner is R shape) TG43 type		TG43 R/L	150	1.50	3.5	0.2	○				KITG R/L ···22	G56
			175	1.75			○					
			200	2.00			○					
			230	2.30			○					
			250	2.50	4.0	0.3	○					
			265	2.65			○					
			280	2.80			○					
			300	3.00			○					
			330	3.30			○					
			350	3.50	5.0		○					
			400	4.00		0.4	○					
			430	4.30			○					
			450	4.50			○					

・Dimension B: shows available grooving depth.

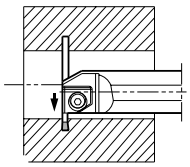
For recommended cutting conditions, see page G90

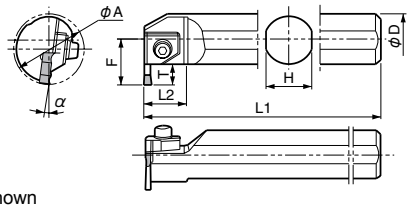
* KITG will be switched to KIGBA.
* For applicable insert, TG insert changes to GBA.
Change Insert Grade TN60 for TN90.
GBA insert has various types of material available for user's cutting condition requirements.
* Check the cornner-R(rε) of the insert when changing.

Inserts are sold in 10 piece boxes.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

KIGH





• Right-hand shown

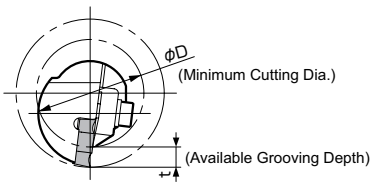


Fig.A

Toolholder Dimensions

Description		Std. R	Std. L	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	T	Spare Parts: Clamp	Clamp Bolt	Washer	Spring	Wrench
KIGH R/L	4532B-4	●		45	32	30	200	27	28.2	12	CGH-1L	HH6X25	W-6	SP-6	LW-5
	5540B-4	●		55	40	38	250		32.2						
	6550B-4	●		65	50	48	300		37.2						
	4532B-5	●		45	32	30	200	27	28.2	12					
	5540B-5	●		55	40	38	250		32.2						
	6550B-5	●		65	50	48	300		37.2						
	5540B-7	●		55	40	38	250	27	32.2	12	CGH-2L				
	6550B-7	●		65	50	48	300		37.2						

・Dimension T shows the distance from the Toolholder to the cutting edge. For the available Grooving Depth (t) see "List of Minimum Available Cutting Diameter and Groove Depth".
・Dimension L2 depends on the width of the installed Insert.

Rake Angle (α) after Installment of GH / GHU

When using GH ○○○○ - ○○		When using GHU ○○○○	
α	Insert Grades	α	Insert Grades
-5°	A65, A66N	+5°	TN60 CR9025
+5°	TC40		
+15°	TN90, TC60 PR630, PR930 KW10		

List of the Minimum Cutting Diameter and Grooving Depth (Refer Fig.A)

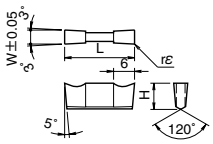
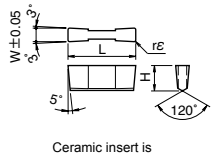
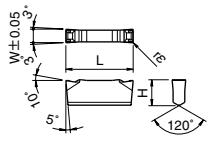
Toolholder		øD (Minimum Cutting Dia.)					
KIGH R/L	4532B- ○	ø110	ø70	ø65	ø60	ø55	ø45
	5540B- ○	ø70	ø60	ø55			
	6550B- ○	ø65					
Available Grooving Depth t (mm)		12	11.5	11	10	9	under 8

Applicable Inserts

(mm)

Description	L	H
GH4020- ○○ ~GH8020- ○○	20	7.5
GHU ○○○○	20	

P	Carbon Steel / Alloy Steel							●					Classification of usage
M	Stainless Steel							●					
K	Cast Iron								◕	○		●	◕ : Continuous-Light Interruption / 1st Choice
N	Non-ferrous Metals								◕				○ : Continuous-Light Interruption / 2nd Choice
S	Titanium Alloy								◕				● : Continuous / 1st Choice
H	Hard materials (under 40HRC)							●					○ : Continuous / 2nd Choice
	Hard materials (over 40HRC)										○	●	

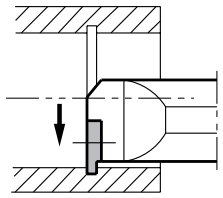
Insert		Description		Dimension (mm) W	rε	Cermet TN60	TN90	TC40	TC60	CVD Coated Carbide CR9025	PVD Coated Carbide PR630	PR930	Carbide KW10	Ceramic A65	A66N	PT600M	Applicable Toolholder
 Ground Chipbreaker		GH	4020-02	4.0	0.2		●	●				●	●				KIGH R/L 4532B-4 5540B-4 6550B-4
			4020-05		0.5		●	●				●	●	●	●	●	
			4520-02	4.5	0.2			●									
			4520-05		0.5			●									
			5020-02	5.0	0.2		●	●				●	●				KIGH R/L 4532B-5 5540B-5 6550B-5
			5020-05		0.5		●	●				●	●	●	●	●	
			5520-02	5.5	0.2			●									
			5520-05		0.5			●									
			6020-02	6.0	0.2		●	●				●	●				
			6020-05		0.5		●	●				●	●	●		●	
			6520-02	6.5	0.2			●									
			6520-05		0.5			●									
 Ceramic	 Ceramic insert is above shape.		7020-02	7.0	0.2		●	●				●	●				
			7020-05		0.5		●	●				●	●	●		●	
			7520-02	7.5	0.2			●									KIGH R/L 5540B-7 6550B-7
			7520-05		0.5			●									
			8020-02	8.0	0.2		●	●				●	●				
			8020-05		0.5		●	●				●	●				
 Molded Chipbreaker		GHU	4020	4.0	0.25	●				●							KIGH R/L ···○○○ B-4
			5020	5.0	0.30	●				●							KIGH R/L ···○○○ B-5
			6020	6.0	0.30	●				●							

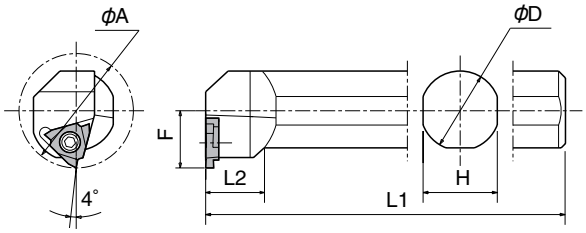
For recommended cutting conditions, see page G90

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

KITG (Changes to KIGBA, See Page G43)

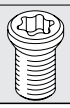
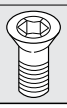
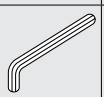




• Right-hand shown

L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder.

Toolholder Dimensions

Description		Std. R	Std. L	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	Spare Parts: Clamp Screw		Wrench		
														
KITG R/L	3525T-16	●	●	35	25	23	220	18	17.5	SB-4TR	-	FT-15	-	
	4532T-22	●	●	45	32	30	250	20	22.5	-	GS-50	-	LW-3	

・Available Grooving Depth : KITG R/L3525T-16=2.0mm, KITG R/L4532T-22=2.5mm

* KITG will be switched to KIGBA as an Internal Large Diameter Shallow Grooving Toolholder; however, it will continue to be sold as Internal Threading Toolholder (J23).
・GBA Insert cannot be installed to this toolholder.

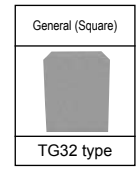
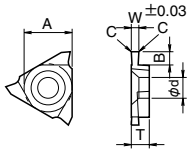
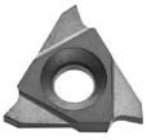
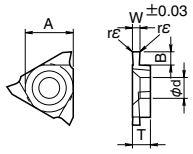
Applicable Inserts

(TG type insert changes to GBA type See page G10 ~ G12)

(mm)

Description	A	T	ød
TG32_	9.525	3.18	4.5
TG43_	12.70	4.76	5.5

						Classification of usage
P	Carbon Steel / Alloy Steel	●				◕ : Continuous-Light Interruption / 1st Choice
M	Stainless Steel					◔ : Continuous-Light Interruption / 2nd Choice
K	Cast Iron					● : Continuous / 1st Choice
N	Non-ferrous Metals					○ : Continuous / 2nd Choice
S	Titanium Alloy					
H	Hard materials (under 40HRC)					
	Hard materials (over 40HRC)					

Insert (R-hand shown)		Description		Dimension (mm) W	B	C or rε	Cermet TN60	TN90	TC40	TC60	Applicable Toolholder	Ref. Page for Toolholder
 General (Square) TG32 type	 (Corner is C shape)	TG32 R/L	075	0.75	2.0	C0.1	○				KITG R/L ···16	G56
			095	0.95			○					
			125	1.25			○					
			145	1.45			○					
			150	1.50			○					
			175	1.75			○					
			200	2.00			○					
 General (Square) (Corner is R shape) TG43 type		TG43 R/L	150	1.50	3.5	0.2	○				KITG R/L ···22	G56
			175	1.75			○					
			200	2.00			○					
			230	2.30			○					
			250	2.50	4.0	0.3	○					
			265	2.65			○					
			280	2.80			○					
			300	3.00			○					
			330	3.30			○					
			350	3.50	5.0		○					
			400	4.00		0.4	○					
			430	4.30			○					
			450	4.50			○					

・Dimension B: shows available grooving depth.

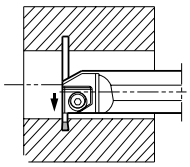
For recommended cutting conditions, see page G90

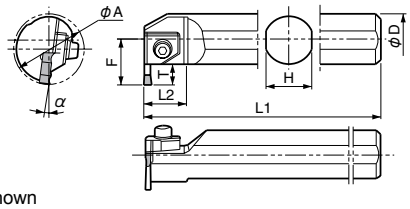
* KITG will be switched to KIGBA.
* For applicable insert, TG insert changes to GBA.
Change Insert Grade TN60 for TN90.
GBA insert has various types of material available for user's cutting condition requirements.
* Check the cornner-R(rε) of the insert when changing.

Inserts are sold in 10 piece boxes.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

KIGH





● Right-hand shown

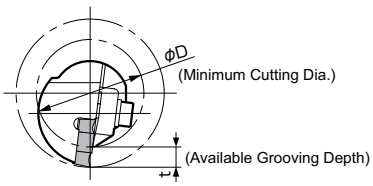


Fig.A

Toolholder Dimensions

Description		Std. R	Std. L	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	T	Spare Parts: Clamp	Clamp Bolt	Washer	Spring	Wrench
KIGH R/L	4532B-4	●		45	32	30	200	27	28.2	12	CGH-1L	HH6X25	W-6	SP-6	LW-5
	5540B-4	●		55	40	38	250		32.2						
	6550B-4	●		65	50	48	300		37.2						
	4532B-5	●		45	32	30	200	27	28.2	12					
	5540B-5	●		55	40	38	250		32.2						
	6550B-5	●		65	50	48	300		37.2						
	5540B-7	●		55	40	38	250	27	32.2	12	CGH-2L				
	6550B-7	●		65	50	48	300		37.2						

・Dimension T shows the distance from the Toolholder to the cutting edge. For the available Grooving Depth (t) see "List of Minimum Available Cutting Diameter and Groove Depth".
・Dimension L2 depends on the width of the installed Insert.

Rake Angle (α) after Installment of GH / GHU

When using GH ○○○○ - ○○		When using GHU ○○○○	
α	Insert Grades	α	Insert Grades
-5°	A65, A66N	+5°	TN60 CR9025
+5°	TC40		
+15°	TN90, TC60 PR630, PR930 KW10		

List of the Minimum Cutting Diameter and Grooving Depth (Refer Fig.A)

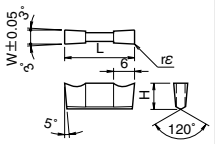
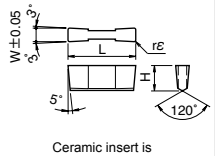
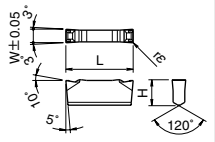
Toolholder		øD (Minimum Cutting Dia.)					
KIGH R/L	4532B- ○	ø110	ø70	ø65	ø60	ø55	ø45
	5540B- ○	ø70	ø60	ø55			
	6550B- ○	ø65					
Available Grooving Depth t (mm)		12	11.5	11	10	9	under 8

Applicable Inserts

(mm)

Description	L	H
GH4020- ○○ ~GH8020- ○○	20	7.5
GHU ○○○○	20	

		Classification of usage
P	Carbon Steel / Alloy Steel	● : Continuous-Light Interruption / 1st Choice
M	Stainless Steel	◔ : Continuous-Light Interruption / 2nd Choice
K	Cast Iron	● : Continuous / 1st Choice
N	Non-ferrous Metals	○ : Continuous / 2nd Choice
S	Titanium Alloy	
H	Hard materials (under 40HRC)	
	Hard materials (over 40HRC)	

Insert		Description		Dimension (mm) W	rε	Cermet TN60	TN90	TC40	TC60	CVD Coated Carbide CR9025	PVD Coated Carbide PR630	PR930	Carbide KW10	Ceramic A65	A66N	PT600M	Applicable Toolholder
 Ground Chipbreaker		GH	4020-02	4.0	0.2		●	●				●	●				KIGH R/L 4532B-4 5540B-4 6550B-4
			4020-05		0.5		●	●				●	●	●	●	●	
			4520-02	4.5	0.2			●									
			4520-05		0.5			●									
			5020-02	5.0	0.2		●	●				●	●				KIGH R/L 4532B-5 5540B-5 6550B-5
			5020-05		0.5		●	●				●	●	●	●	●	
			5520-02	5.5	0.2			●									
			5520-05		0.5			●									
			6020-02	6.0	0.2		●	●				●	●				
			6020-05		0.5		●	●				●	●	●		●	
			6520-02	6.5	0.2			●									
			6520-05		0.5			●									
 Ceramic	 Ceramic insert is above shape.		7020-02	7.0	0.2		●	●				●	●				
			7020-05		0.5		●	●				●	●	●		●	
			7520-02	7.5	0.2			●									KIGH R/L 5540B-7 6550B-7
			7520-05		0.5			●									
			8020-02	8.0	0.2		●	●				●	●				
			8020-05		0.5		●	●				●	●				
 Molded Chipbreaker		GHU	4020	4.0	0.25	●				●							KIGH R/L ···○○○ B-4
			5020	5.0	0.30	●				●							KIGH R/L ···○○○ B-5
			6020	6.0	0.30	●				●							

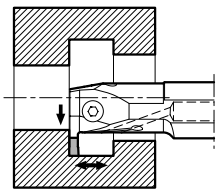
For recommended cutting conditions, see page ➡ G90

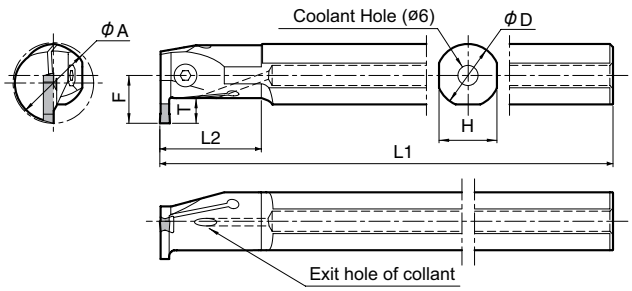
● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

Internal Grooving Toolholders

KIGM-V





• Right-hand shown

Toolholder Dimensions

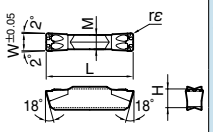
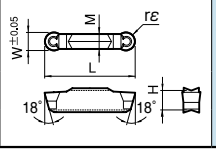
Description		Std. R	Std. L	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	T				Width (mm) MIN.	Width (mm) MAX.	Spare Parts: Screw		Spare Parts: Wrench	
KIGM R/L	2016B-3V	●	●	20	16	15	150	25	11.5	5.5				3.0	3.0	GS-50	-	LW-3	-
	2520B-3V	●	●	25	20	18	180	32	14.5	6.0									
	3225B-3V	●	●	32	25	23	200	40	19	8.0						-	SB-5TR	-	LTW-20
	3225B-4V	●	●	32	25	23	200	40	19	8.5				4.0	5.0	-	SB-5TR	-	LTW-20
	4032B-4V	●	●	40	32	29	220	50	23.5	11.0									

• Dimension T shows available grooving depth.

Applicable Inserts (mm)

Description	L	H
GMM3015...V ○	15.5	4.3
GMM4020...V ○	20	
GMM5020...V ○		

								Classification of usage
P	Carbon Steel / Alloy Steel			◔	●			● : Continuous-Light Interruption / 1st Choice
M	Stainless Steel			●	◔			◔ : Continuous-Light Interruption / 2nd Choice
K	Cast Iron					●	◔	● : Continuous / 1st Choice
N	Non-ferrous Metals						●	○ : Continuous / 2nd Choice
S	Titanium Alloy						●	
H	Hard materials (under 40HRC)			○	●			
	Hard materials (over 40HRC)							

Insert		Description	(Previous Description)	Dimension (mm) W	rε	M	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PVD Coated Carbide PR930	PVD Coated Carbide PR905	Carbide KW10	Applicable Toolholder
 Chip Control Oriented M Class		GMM 3015-040V	GMM 3015-04V	3.0	0.4	2.3	●	●	●	●	●	●	KIGM R/L 2016B-3V 2520B-3V 3225B-3V
		4020-040V	4020-04V	4.0	0.4	3.3	●	●	●	●	●	●	KIGM R/L 3225B-4V 4032B-4V
		5020-080V	5020-08V	5.0	0.8	4.2	●	●	●	●	●	●	
 Chip Control Oriented M Class Full-R / Copying		GMM 3015-150VR	GMM 3015-15VR	3.0	1.5	2.3	●	●		●	●	●	KIGM R/L 2016B-3V 2520B-3V 3225B-3V
		4020-200VR	4020-20VR	4.0	2.0	3.3		●		●	●	●	KIGM R/L 3225B-4V 4032B-4V
		5020-250VR	5020-25VR	5.0	2.5	4.2		●		●	●	●	

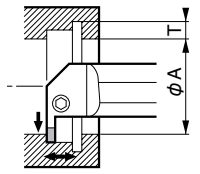
˚ It is not recommended to use this for KIGM-V Internal Grooving Toolholders against GMM...V / GMM...VR whose front relief angle is 18˚, because the relief angle of the insert used for GMM4020-04 toolholder is 10˚.

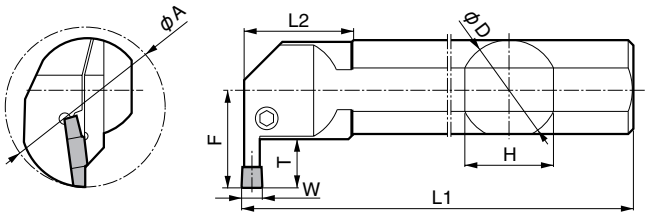
For recommended cutting conditions, see page G93

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

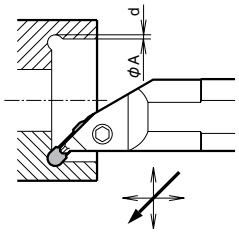
KIGM-8 (8mm-Width Insert / Large Internal Diameter Deep Grooving)

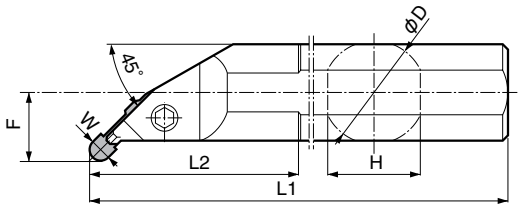




● Right-hand shown

KIGMU-8 (8mm-Width Insert / Large Internal Diameter Undercut Grooving)





● Right-hand shown

Toolholder Dimensions

Description	Std. R	Std. L	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	T	d			Width (mm) MIN.	Width (mm) MAX.	Spare Parts: Screw	Spare Parts: Wrench
KIGM R/L 6540B-8	●	●	65	40	36	300	41	41	20	-			8.0	8.0	HH6X20	LW-5
KIGMU R/L 6540B-8	●		65	40	36	300	83	26	-	2.2			8.0	8.0	HH6X20	LW-5

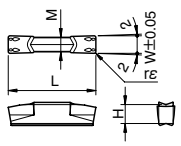
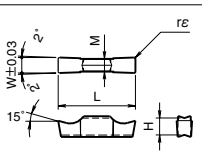
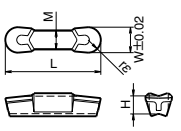
・Dimension T shows available grooving depth.
・Dimension d shows the distance from the Internal face of the workpiece.

Applicable Inserts (mm)

Description	L	H
GMM8030-080MW	30	5.5
GMG8030-050MG		
GMGA8030-400R		

		Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide
		TN90	CR9025	PR915	PR930	PR905	KW10
P	Carbon Steel / Alloy Steel			◔	●		
M	Stainless Steel			●	◔		
K	Cast Iron					●	◔
N	Non-ferrous Metals						●
S	Titanium Alloy						●
H	Hard materials (under 40HRC)			○	●		
	Hard materials (over 40HRC)						

Classification of usage
● : Continuous-Light Interruption / 1st Choice
◔ : Continuous-Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert		Description	(Previous Description)	Dimension (mm) W	rε	M	TN90	CR9025	PR915	PR930	PR905	KW10	Applicable Toolholder	Ref. Page for Toolholder
 Chip Control Oriented / M Class		GMM 8030-080MW	GMM 8030-08	8.0	0.8	6.0		●	●	●	●	●	KIGM R/L ···8 KIGMU R/L ···8	G59
 Sharp-Cutting Oriented / Precision Class Ground Chipbreaker		GMG 8030-050MG	GMG 8030-05MG	8.0	0.5	6.0	●	●		●	●	●		
 Sharp-Cutting Oriented / Precision Class Full-R / Copying		GMGA 8030-400R	GMGA 8030-40R	8.0	4.0	6.0						●		

For recommended cutting conditions, see page G93

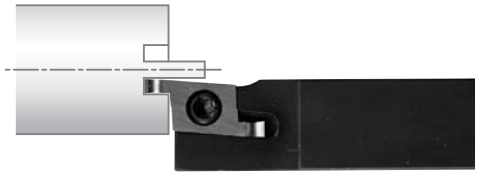
・If using a full-R insert with KIGM-8 type toolholder, you need to modify the corner of insert adapter of toolholder.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

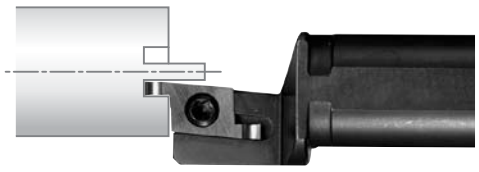
Inserts are sold in 10 piece boxes.

Summary of Face Grooving

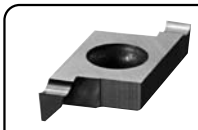
Micro Dia. Face Grooving ø6~



Type	STW
Min. Face Groove Dia.	ø6
Width (mm)	0.5~2.0
Grooving Depth (mm)	1.0~3.0
Ref. Page	**G66**



Type	S..-STW
Min. Face Groove Dia.	ø6
Width (mm)	0.5~2.0
Grooving Depth (mm)	1.0~3.0
Ref. Page	**G66**

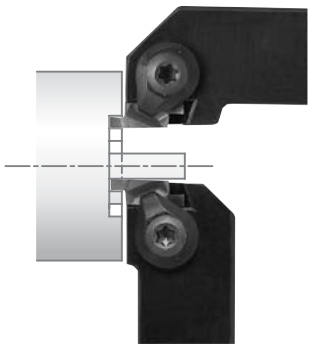


Twin Bar for Lay-down type

Type	STWS
Min. Face Groove Dia.	ø6
Width (mm)	0.5~2.0
Grooving Depth (mm)	1.0~3.0
Ref. Page	**G67**

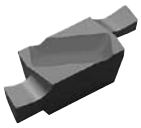
Twin Bar for Stand up type

Small Dia. Face Grooving ø8~



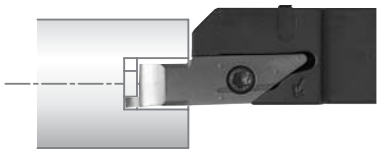
Type	GFVS-AA
Min. Face Groove Dia.	ø8
Width (mm)	1.0~3.0
Grooving Depth (mm)	2.2
Ref. Page	**G76**

Type	GFVT-AA
Min. Face Groove Dia.	ø8
Width (mm)	1.0~3.0
Grooving Depth (mm)	2.2
Ref. Page	**G76**



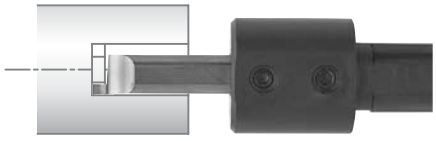
Ground Chipbreaker

Small Dia. Face Grooving ø8~



Type	VNFG
Min. Face Groove Dia.	ø8
Width (mm)	1.0~3.0
Grooving Depth (mm)	2.0~3.0
Ref. Page	**G64**

System Tip-bars

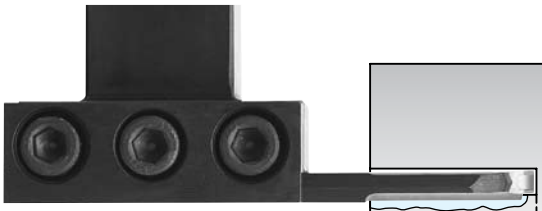


Type	HPFG
Min. Face Groove Dia.	ø8
Width (mm)	1.0~3.0
Grooving Depth (mm)	2.0~3.0
Ref. Page	**G65**

2-Edge Tip-Bar

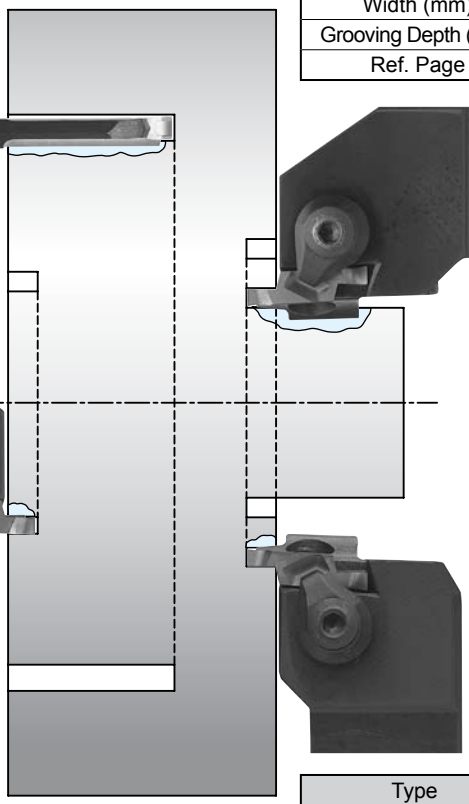
General Purpose Face Grooving ø20~

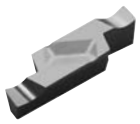

Molded Chipbreaker



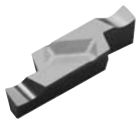
Type	GFVS
Min. Face Groove Dia.	ø35~ø150
Width (mm)	2.5~6.0
Grooving Depth (mm)	4.6~8.1
Ref. Page	**G80**

Type	KFTB
Min. Face Groove Dia.	ø65~ø250
Width (mm)	4.0~5.0
Grooving Depth (mm)	25~38
Ref. Page	**G87**




Ground Chipbreaker


Ground Chipbreaker Full-R

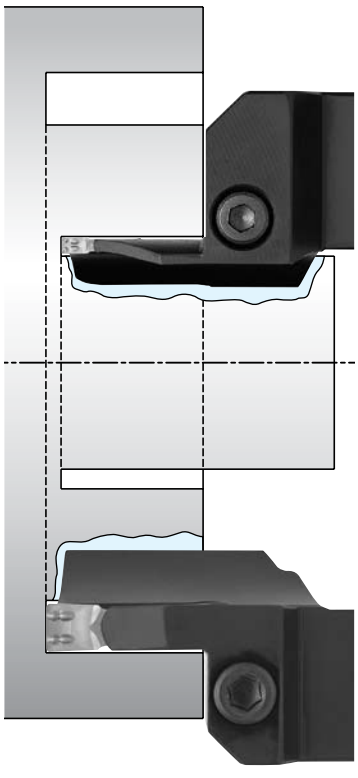

Ground Chipbreaker


Ground Chipbreaker Full-R

Type	GFV
Min. Face Groove Dia.	ø20~ø150
Width (mm)	2.0~6.0
Grooving Depth (mm)	2.2~8.1
Ref. Page	**G78**

Type	GFVT
Min. Face Groove Dia.	ø35~ø150
Width (mm)	2.5~6.0
Grooving Depth (mm)	4.6~8.1
Ref. Page	**G80**

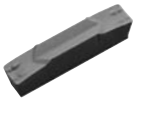
Face Grooving & Traversing ø25~
(CERACUT Plunge & Turn)

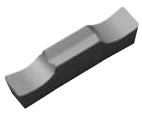


Type	KFMS
Min. Face Groove Dia.	ø25~ø235
Width (mm)	3.0~6.0
Grooving Depth (mm)	13~32
Ref. Page	**G84**


Molded Chipbreaker

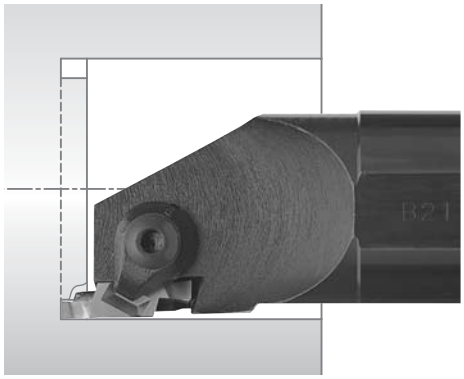
Type	KFMS-8
Min. Face Groove Dia.	ø54~ø155
Width (mm)	8.0
Grooving Depth (mm)	25
Ref. Page	**G86**


Molded Chipbreaker

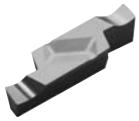

Ground Chipbreaker


Ground Chipbreaker Full-R

Face Grooving ø35~



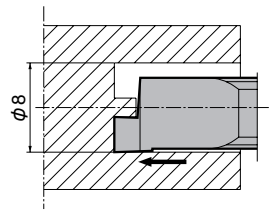
Type	GIFV
Min. Face Groove Dia.	ø35~ø50
Width (mm)	2.0~6.0
Grooving Depth (mm)	2.2~8.1
Ref. Page	**G88**

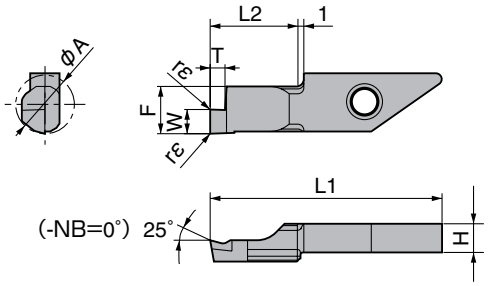

Ground Chipbreaker


Ground Chipbreaker Full-R

Small Diameter Face Grooving

VNFG (System Tip-Bar)





• Right-hand Shown

Insert Dimensions

Classification of usage									
● : Continuous / 1st Choice ○ : Continuous / 2nd Choice	P	Carbon Steel / Alloy Steel				●			
	M	Stainless Steel				○			
	K	Cast Iron					●		
	N	Non-ferrous Metals					○	●	
	S	Titanium Alloy					○	●	
	H	Hard materials (under 40HRC)				●			
		Hard materials (over 40HRC)							

Description		Min. Cutting Dia.		Dimension (mm)							Cermet	PVD Coated Carbide			Carbide	PCD		Ref. Page for Toolholder
		øA		$W^{\pm 0.03}$	rε	H	L1	L2	F	T	TC60	PR630	PR915	PR930	KW10	KPD001	KPD010	
		MIN.	MAX.															
VNFGR	**0810-10**	8 (0)	∞ (∞)	1.0	0.05	3.9	29.6	10	7.3	2.0	●	●		●	●			**F16 F17 F18**
	0820-10			2.0							●	●		●	●			
	0830-10			3.0						3.0	●	●		●	●			
VNFGR	**0820-10NB**			2.0	0.05	3.9	29.6	10	7.3	2.0						○	○	
	0830-10NB			3.0						3.0						○	○	

• Dimension T shows available grooving depth.

• Face grooving diameter øD MIN. (0) means that you can make the initial groove within MIN – MAX and then widen it to the center.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)				VNFG0810	VNFG0820	VNFG0830	Remarks
	Cermet	PVD Coated Carbide		Carbide				
	TC60	PR630	PR930	KW10	f (mm/rev)			
Carbon Steel / Alloy Steel	☆ 60~120	☆ 30~100	★ 30~100		~0.02	~0.04	~0.05	Coolant
Stainless Steel	☆ 50~100	☆ 30~80	★ 30~80		~0.01	~0.02	~0.03	
Non-ferrous Metals				★ ~300	~0.04	~0.06	~0.08	

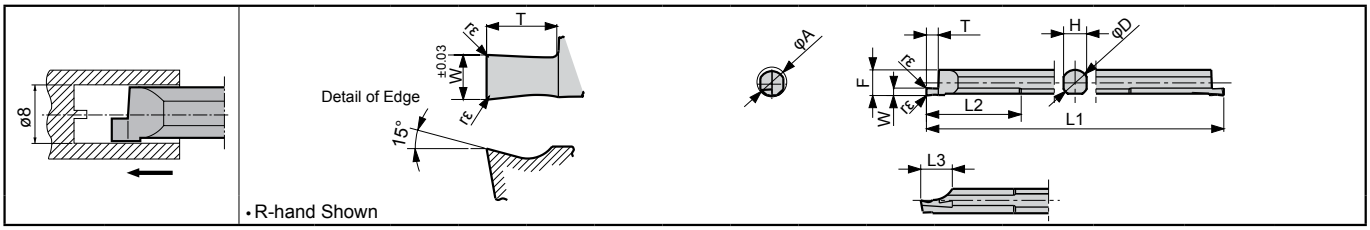
★ : 1st Recommendation ☆ : 2nd Recommendation

System Tip-Bars are sold in 5 piece boxes.

CBN & PCD Tools are sold in 1 piece boxes.

● : Std. Item ○ : Check Availability
R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

HPFG Face Grooving (Small Dia.)



Tip-Bars Dimensions

Description	Face Grooving Dia. øA MIN.	Face Grooving Dia. øA MAX.	W±0.03	rε	øD	H	L1	L2	L3	F	T	Insert Grade: PVD Coated Carbide PR930 R	PVD Coated Carbide PR930 L	Carbide KW10 R	Carbide KW10 L
HPFG R/L 0807-10	8 (0)	∞ (∞)	1	+0 -0.02 0.05	7	6.2	80	25	8.5	6.9	2	●	●	●	
0807-20			2								3	●	●	●	
0807-30			3									●	●	●	

・Dimension T shows available grooving depth.

・Face grooving diameter øD MIN. (0) means that you can make the initial groove within MIN – MAX and then widen it to the center.

Applicable Sleeves F76

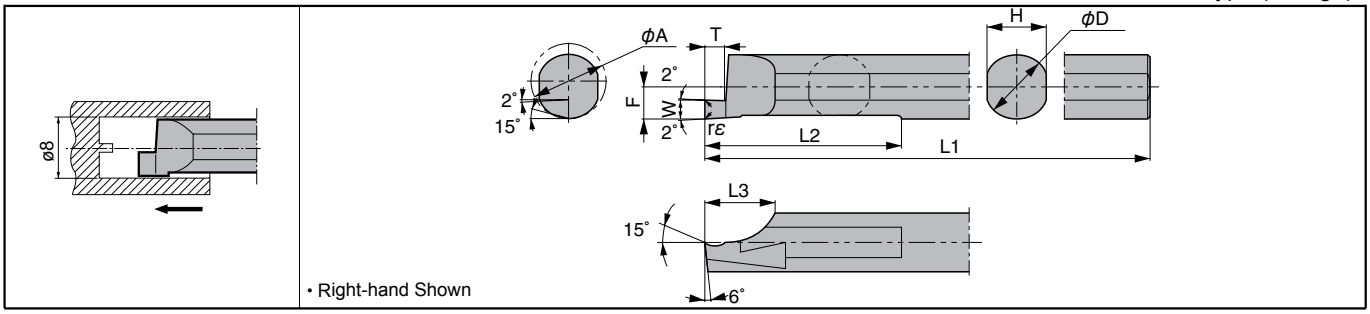
Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc: m/min) PVD Coated Carbide PR930	Carbide KW10	HPFG R/L 0807-10	HPFG R/L 0807-20	HPFG R/L 0807-30	Remarks
			Feed Rate (mm/rev)			
Carbon steel / Alloy steel (C45 / 34CrMo4 etc.)	★ 30~100	–	~0.02	~0.04	~0.05	Coolant
Stainless Steel (SUS304 etc.)	★ 30~80	–	~0.01	~0.02	~0.03	
Non-ferrous Metals (Aluminum / Brass etc.)	–	★ ~300	~0.04	~0.06	~0.08	

★ : 1st Recommendation ☆ : 2nd Recommendation

PSFG-S (Tip-Bars)

This insert will be switched to HPG Type (2-Edge).



Workpiece Material	Face Grooving Dia. øA MIN.	Face Grooving Dia. øA MAX.	W±0.03	rε	øD	H	L1	L2	L3	F	T	Cermet TC60M	PVD Coated Carbide PR630	PVD Coated Carbide PR915	PVD Coated Carbide PR930	Carbide KW10	Ref. Page for Toolholder
PSFG R/L 0810-20S	8 (0)	∞ (∞)	1.0	0.05	6.8	6.2	80	25.5	7	3.4	2.0	□	□		□	□	F80
0820-20S			2.0									□	□		□	□	
0830-20S			3.0									□	□		□	□	

・Dimension T shows available grooving depth.

・Face grooving diameter øD MIN. (0) means that you can make the initial groove within MIN – MAX and then widen it to the center.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc: m/min) Cermet TC60	PVD Coated Carbide PR630	PVD Coated Carbide PR930	Carbide KW10	PSFG0810	PSFG0820	PSFG0830	Remarks
					Feed Rate (mm/rev)			
Carbon steel / Alloy steel (S45C / SCM etc.)	☆ 60~120	☆ 30~100	★ 30~100		~0.02	~0.04	~0.05	Coolant
Stainless Steel (SUS304 etc.)	☆ 50~100	☆ 30~80	★ 30~80		~0.01	~0.02	~0.03	
Non-ferrous Metals (Aluminum / Brass etc.)				★ ~300	~0.04	~0.06	~0.08	

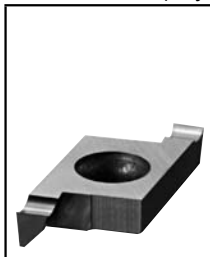
★ : 1st Recommendation ☆ : 2nd Recommendation

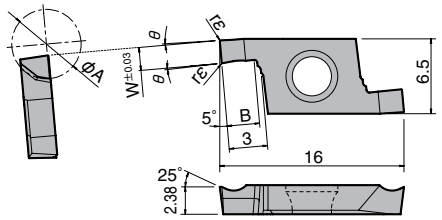
● : Std. Item
□ : Deleted from the next catalogue

Tip-Bar is sold in 1 piece boxes.

Micro Dia. Face Grooving (Twin Bars)

TWFG (Lay-down : Insert specifications)





•L-hand Shown

Description		Face Grooving Dia. øA MIN.	Face Grooving Dia. øA MAX.	Dimension (mm) W	Dimension (mm) rε	Dimension (mm) B	Angle (°) θ	Insert Grade PVD Coated Carbide PR1025	Insert Grade PVD Coated Carbide	Insert Grade Carbide KW10
TWFGL	050	6 (0)	∞ (∞)	0.5	0.05	1.0	1.5°	●		●
	080			0.8		1.5		●		●
	100			1.0		2.2	2°	●		●
	125			1.25				●		●
	150			1.5				●		●
	180			1.8		3.0		●		●
	200			2.0				●		●

・Dimension B shows available grooving depth.

・Face grooving diameter øD MIN. (0) means that you can make the initial groove within MIN – MAX and then widen it to the center.

STW (Square Shank for Lay-down type)

(For right-hand toolholder for boring, see **F12**.)

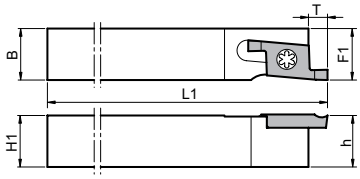


Fig.1

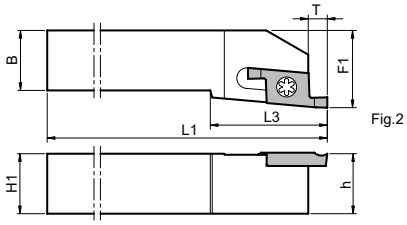


Fig.2

•L-hand Shown

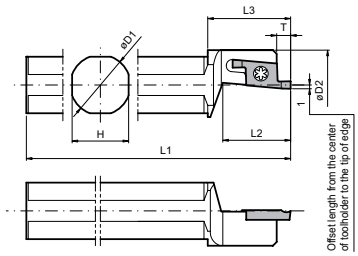
Toolholder Dimensions

Description		Std.	Dimension (mm) H1=h	B	L1	L2	L3	F1	F2	T	F3	Shape	Spare Parts Clamp Screw	Spare Parts Wrench	Applicable Inserts G66
STWL	1010F-15	●	10	10	85	-	-	10	-	3	-	Fig.1	SB-3080TR	LTW-10S	TWFGL ○○○
	1212F-15	●	12	12				12							
	1010K-15	□	10	10	125			10							
	1212K-15	●	12	12				12							
	1616K-15	●	16	16				16							
	2020K-15	●	20	20			25	25				Fig.2			
	2525M-15	●	25	25	150			32							

・Dimension T shows the distance from the Toolholder to the cutting edge. Available Groove Depth : "B" Dimension of Insert.

S..-STW (Round Shank for Lay-down type)

(For right-hand toolholder for boring, see **F12**.)



•L-hand Shown

Fig.1

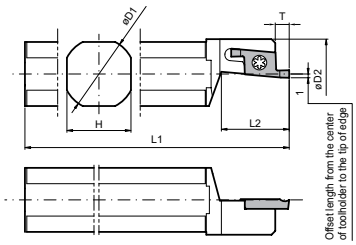


Fig.2

Toolholder Dimensions

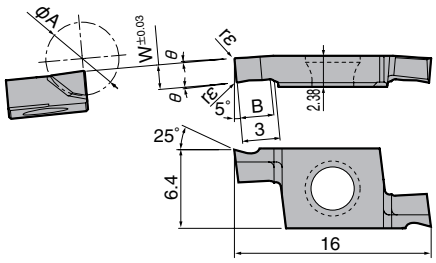
Description		Std.	Dimension (mm) øD1	øD2	H	L1	L2	L3	T	Shape	Spare Parts Clamp Screw	Spare Parts Wrench	Applicable Inserts G66
S12F-	STWL15	●	12	20	11	80	18	22	3	Fig.1	SB-3080TR	LTW-10S	TWFGL ○○○
S14H-	STWL15	●	14		13	100							
S15F-	STWL15	●	15.875		15	85							
S16F-	STWL15	●	16										
S19G-	STWL15	●	19.05	18.5	17	90		-	3	Fig.2			
S19K-	STWL15	●				120							
S20G-	STWL15	●	20	19.5	18	90							
S20K-	STWL15	●				120							
S22K-	STWL15	●	22	21.5	20	125	22						
S25.0J-	STWL15	●	25	24.5	23	110							
S25K-	STWL15	●	25.4	25	23	120							

・Dimension T shows the distance from the Toolholder to the cutting edge. Available Groove Depth : "B" Dimension of Insert.

● : Std. Item
□ : Deleted from the next catalogue

Twin-bars are sold in 5 piece boxes

TWFGT (Stand up : Insert specifications)



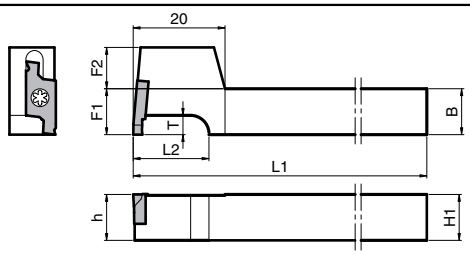
• R-hand Shown

Description		Face Grooving Dia. øA MIN.	Face Grooving Dia. øA MAX.	Dimension (mm) W	Dimension (mm) rε	Dimension (mm) B	Angle (°) θ	Insert Grade PVD Coated Carbide PR1025	Insert Grade Carbide KW10
TWFGTR	050	6 (0)	∞ (∞)	0.5	0.05	1.0	1.5°	●	●
	080			0.8		1.5		●	●
	100			1.0		2.2	2°	●	●
	125			1.25				●	●
	150			1.5				●	●
	180			1.8		3.0		●	●
	200			2.0				●	●

• Dimension B shows available grooving depth.

• Face grooving diameter øD MIN. (0) means that you can make the initial groove within MIN – MAX and then widen it to the center.

STWS (Square Shank for Stand up type : L-shape)



• R-hand Shown

Toolholder Dimensions

Description		Std.	Dimension (mm) H1=h	B	L1	L2	L3	F1	F2	T	F3	Shape	Spare Parts Clamp Screw	Spare Parts Wrench	Applicable Inserts G67
STWSR	1010JX-15T	●	10	10	120	16	-	10	9	3	-	-	SB-3080TR	LTW-10S	TWFGTR ○○○
	1212JX-15T	●	12	12				12	7						
	1616JX-15T	●	16	16		20		16	3						
STWSR	1010F-15T	●	10	10	85	16		10	9						
	1212F-15T	●	12	12				12	7						
	1010K-15T	□	10	10	125			10	9						
	1212K-15T	□	12	12				12	7						
	1616K-15T	□	16	16		20		16	3						

• Dimension T shows the distance from the Toolholder to the cutting edge. Available Groove Depth : "B" Dimension of Insert.

Recommended Cutting Conditions (TWFG / TWFGT)

Workpiece Material	Recommended Insert Grade (Vc: m/min) PVD Coated Carbide PR1025	Recommended Insert Grade (Vc: m/min) Carbide KW10	TWFGL050 TWFGL080 TWFGL100 TWFGTR050 TWFGTR080 TWFGTR100 Feed Rate (mm/rev)	TWFGL125 TWFGL150 TWFGTR125 TWFGTR150 Feed Rate (mm/rev)	TWFGL180 TWFGL200 TWFGTR180 TWFGTR200 Feed Rate (mm/rev)	Remarks
Carbon steel / Alloy steel (S45C / SCM etc.)	★ 30~100		~0.02	~0.03	~0.04	Wet
Stainless Steel (SUS304 etc.)	★ 30~80		~0.01	~0.02	~0.02	
Non-ferrous Metals (Aluminum / Brass etc.)		★ ~300	~0.03	~0.04	~0.06	

★ : 1st Recommendation ☆ : 2nd Recommendation

Twin-bars are sold in 5 piece boxes

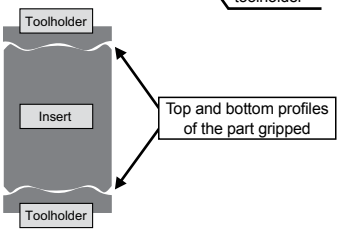
● : Std. Item
□ : Deleted from the next catalogue

KGDF Face Grooving NEW

Features

- Separate type toolholder (toolholder + blade) is available.
  Adaptable to wide applications of facing grooving by changing blades

- New insert clamping system “**W** Grip”
  Unique “**W** Grip” (insert anti-slip structure) provides stable machining quality
  1) Prevents abnormal machining surface and/or insert breakage resulting from slip of insert.
  2) Improves repetitive installation accuracy of insert
  “GDFM type and GDFMS type inserts cannot be used with a KGD type external grooving toolholder.”



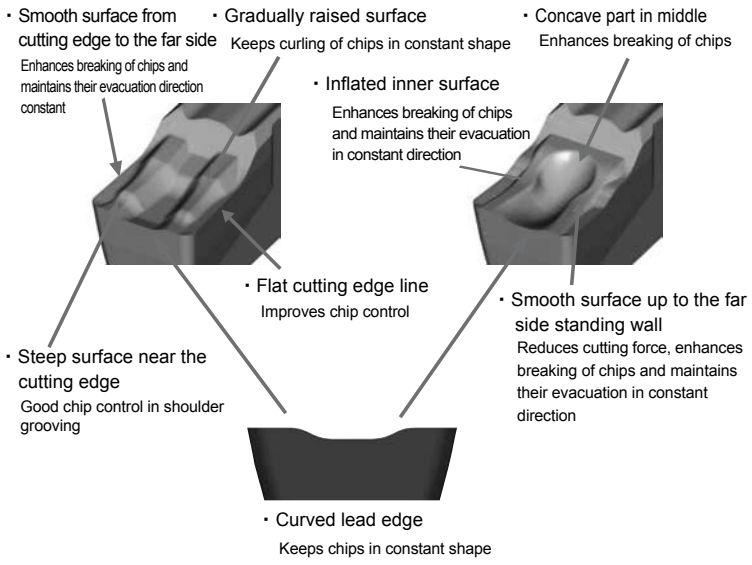
W Grip technology

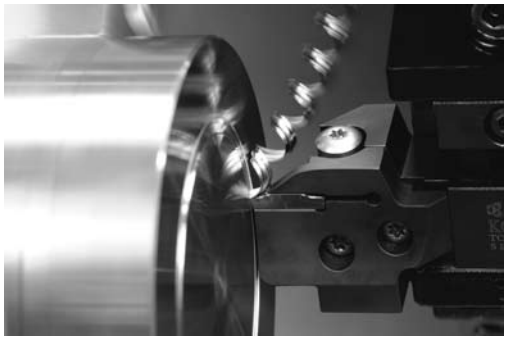
- **Smooth chip control**
  For general purpose **GM** Chipbreaker For deep grooving **DM** Chipbreaker

Advantages of Chipbreaker

For general purpose **GM** Chipbreaker

For deep grooving **DM** Chipbreaker

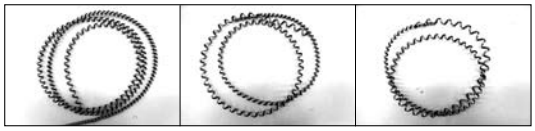




Chip Control of GM Chipbreaker

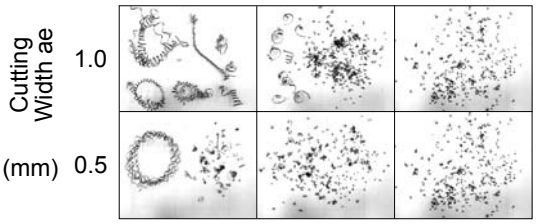
<Cutting Conditions>
V c=150m/min f =0.05~ 0.2mm/rev
GDFM5020N-040GM SCM415 Wet

- Face Grooving (ø**62**)



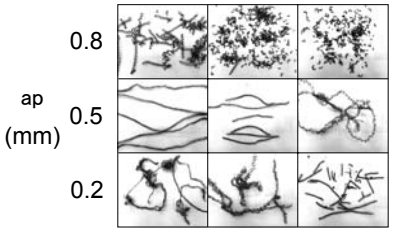
0.05 0.08 0.1
Feed Rate f (mm/rev)

- Side Grooving



0.1 0.15 0.2
Feed Rate f (mm/rev)

- Traversing



0.05 0.1 0.15
Feed Rate f (mm/rev)

- **High precision edge preparation**
  ➡ High precision molding technology with tolerance ±0.03 mm (Edge width 3, 4 mm types)

- **Highly-reputed MEGACOAT technology**
  ➡ Long tool life and high efficiency machining achieved by superior oxidation resistance and wear resistance.

GDFM / GDFMS

Classification of usage						Ref. Page for Toolholder
● : Continuous-Interruption / 1st Choice ◔ : Continuous-Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice	P	Carbon steel / Alloy steel	●	◔		
	M	Stainless Steel		◔		
	K	Cast Iron			◔	
	N	Non-ferrous Metals				
	S	Titanium Alloy				
	H	Hard materials (~40HRC)				
		Hard materials (40HRC~)				

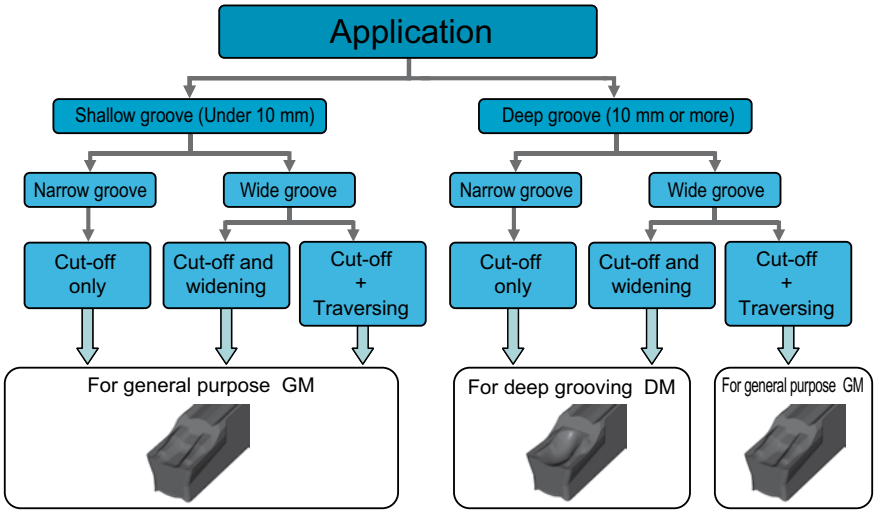
Shape			Description		Dimension (mm) W	W tolerance	rε	M	L	H	Cermet TN90	MEGACOAT PR1225	MEGACOAT PR1215	Ref. Page for Toolholder
Grooving and Traversing	2-Edge		GDFM	3020N-030GM	3.0	±0.03	0.3	2.3	20	4.3	●	●	●	G70 G71 G72
				4020N-040GM	4.0		0.4	3.3			●	●	●	
				5020N-040GM	5.0	±0.04		4.2			●	●	●	
				6020N-040GM	6.0			5.2			●	●	●	
Deep grooving and Traversing	2-Edge		GDFM	3020N-030DM	3.0	±0.03	0.3	2.3	20	4.3	●	●	●	
				4020N-040DM	4.0		0.4	3.3			●	●	●	
				5020N-040DM	5.0	±0.04		4.2			●	●	●	
				6020N-040DM	6.0			5.2			●	●	●	
	1-Edge		GDFMS	3020N-030DM	3.0	±0.03	0.3	2.3	20	4.3	●	●	●	
				4020N-040DM	4.0		0.4	3.3			●	●	●	
				5020N-040DM	5.0	±0.04		4.2			●	●	●	
				6020N-040DM	6.0			5.2			●	●	●	

Recommended Cutting Conditions ➔ G74

Indication of Description

①Series	②Tolerance Symbol	③No. of edges	④Width	⑤Insert Length	⑥Hand of Tool	⑦Corner-R (rε)	⑧Chipbreaker symbol
GDF	M	S	30	20	N	030	GM
	M : M-Class	Without Indication : 2-Edge S : 1-Edge	30 : 3mm 40 : 4mm	20 : 20mm	N : Neutral	0.30 : 0.3mm 0.40 : 0.4mm	GM: Grooving and Traversing DM : Grooving

Chipbreaker Selection

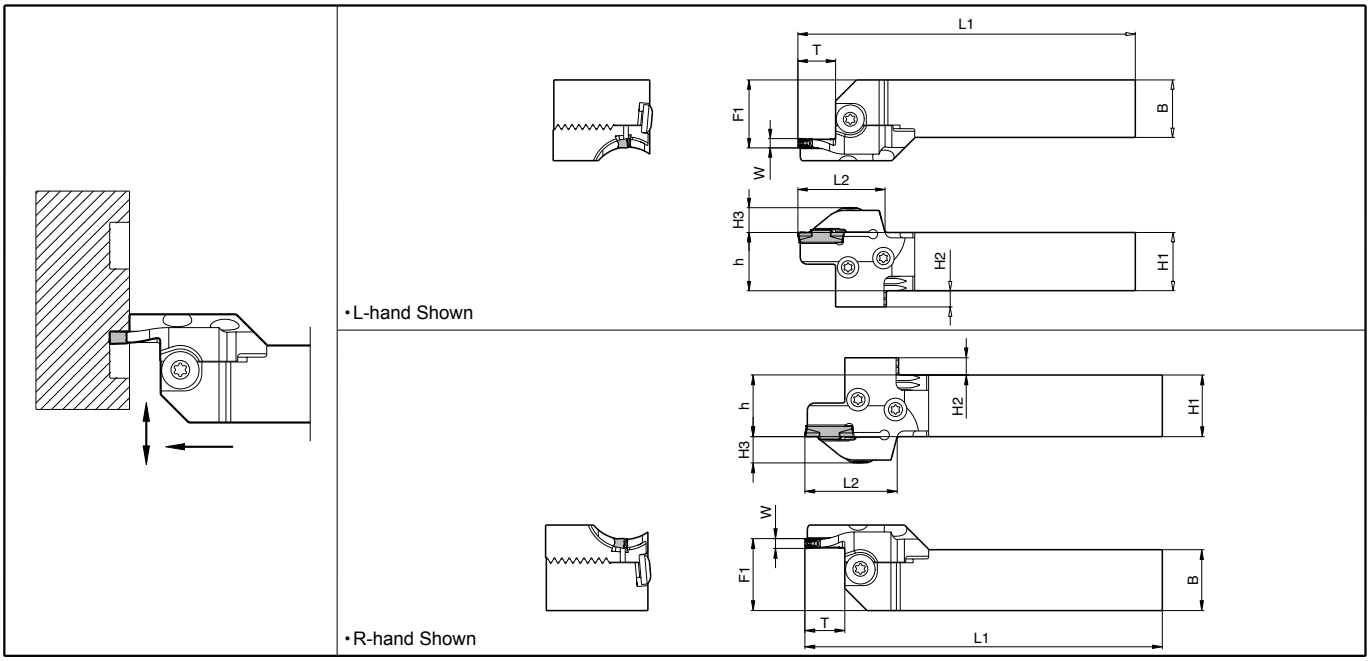


* If chip control is not stable when using the general GM chipbreaker for grooving, change the chipbreaker to the DM type for deep grooving.

● : Std. Item
○ : Check Availability

Inserts are sold in 10 piece boxes.

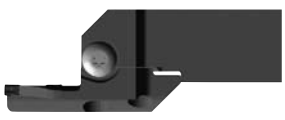
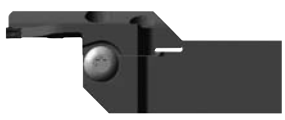
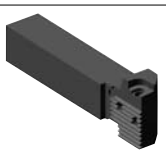
KGDF



Toolholder Dimensions

Angle	Width (mm)	Max. depth of cut (mm)	Unit Description	Std. R	Std. L	Toolholder Description ➔G28	Blade Description ➔G73	H1=h	H2	H3	B	L1	L2	F1	T	W	Face Grooving Dia. øD(mm) MIN.	MAX.
0°	3	13	KGDF$^{R}_{L}$ 2020X25-3AS	●	●	KGD$^{L}_{R}$2020-C	KGDF$^{R}_{L}$ -25-3A-C	20	12	11.6	20	118	36	24.2	13	3	25	30
			2020X30-3AS	●	●		-30-3A-C										30	40
			2020X40-3AS	●	●		-40-3A-C										40	50
		15	2020X50-3BS	●	●		-50-3B-C					120	38		15		50	65
			2020X65-3BS	●	●		-65-3B-C										65	85
			2020X85-3BS	●	●		-85-3B-C										85	110
			2020X110-3BS	●	●		-110-3B-C										110	145
		22	2020X50-3CS	●	●		-50-3C-C					127	45		22		50	65
			2020X65-3CS	●	●		-65-3C-C										65	85
		25	2020X85-3CS	●	●		-85-3C-C					130	48		25		85	110
			2020X110-3CS	●	●		-110-3C-C										110	145
		13	KGDF$^{R}_{L}$ 2525X25-3AS	●	●	KGD$^{L}_{R}$2525-C	KGDF$^{R}_{L}$ -25-3A-C	25	7	11.6	25	143	36	29.2	13		25	30
			2525X30-3AS	●	●		-30-3A-C										30	40
			2525X40-3AS	●	●		-40-3A-C										40	50
		15	2525X50-3BS	●	●		-50-3B-C					145	38		15		50	65
			2525X65-3BS	●	●		-65-3B-C										65	85
			2525X85-3BS	●	●		-85-3B-C										85	110
			2525X110-3BS	●	●		-110-3B-C										110	145
		22	2525X50-3CS	○	○		-50-3C-C					152	45		22		50	65
			2525X65-3CS	○	○		-65-3C-C										65	85
		25	2525X85-3CS	○	○		-85-3C-C					155	48		25		85	110
			2525X110-3CS	○	○		-110-3C-C										110	145

KGDF toolholder Assembly Identification

Unit Description (Unit Description is not printed.)	Toolholder (Toolholder Description is printed.)	Blade (Blade Description is printed.)
L-hand : KGDFL...S	R-hand : KGDR...-C	L-hand : KGDFL...-C
		
• L-hand Shown	• R-hand Shown	• L-hand Shown
R-hand : KGDFR...S	L-hand : KGDL...-C	R-hand : KGDFR...-C
		
• R-hand Shown	• L-hand Shown	• R-hand Shown

- R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder.
- The Unit Description is not printed on the product. It is printed on the box label.
- Combination of the toolholder and blade (both separately sold) can make up the corresponding assembly.
- The insert clamping bolt (BH6x10TR), blade fixing bolt (SB-60120TR) and wrench (LTW-25) which are included in the toolholder can be used.

● : Std. Item
○ : Check Availability

Toolholder Dimensions

Angle	Width (mm)	Max. depth of cut (mm)	Unit Description	Std. R	Std. L	Toolholder Description ➡G28	Blade Description ➡G73	H1=h	H2	H3	B	L1	L2	F1	T	Width (mm) W	Face Grooving Dia. øD(mm) MIN.	MAX.
0°	4	13	KGDF R/L 2020X25-4AS	●	●	KGD L/R 2020-C	KGDF R/L -25-4A-C	20	12	11.6	20	118	36	24.2	13	4	25	35
		15	2020X35-4BS	●	●		-35-4B-C					120	38		15		35	50
			2020X50-4BS	●	●		-50-4B-C										50	70
			2020X70-4BS	●	●		-70-4B-C										70	100
			2020X100-4BS	●	●		-100-4B-C										100	150
			2020X150-4BS	●	●		-150-4B-C										150	220
			2020X220-4BS	●	●		-220-4B-C										220	∞
		25	2020X35-4CS	●	●		-35-4C-C					130	48		25		35	50
			2020X50-4CS	●	●		-50-4C-C										50	70
			2020X70-4CS	●	●		-70-4C-C										70	100
			2020X100-4CS	●	●		-100-4C-C										100	150
			2020X150-4CS	●	●		-150-4C-C										150	220
			2020X220-4CS	●	●		-220-4C-C										220	∞
		13	KGDF R/L 2525X25-4AS	●	●	KGD L/R 2525-C	KGDF R/L -25-4A-C	25	7	11.6	25	143	36	29.2	13		25	35
		15	2525X35-4BS	●	●		-35-4B-C					145	38		15		35	50
			2525X50-4BS	●	●		-50-4B-C										50	70
			2525X70-4BS	●	●		-70-4B-C										70	100
			2525X100-4BS	●	●		-100-4B-C										100	150
			2525X150-4BS	●	●		-150-4B-C										150	220
			2525X220-4BS	●	●		-220-4B-C										220	∞
		25	2525X35-4CS	●	●		-35-4C-C					155	48		25		35	50
			2525X50-4CS	●	●		-50-4C-C										50	70
			2525X70-4CS	●	●		-70-4C-C										70	100
			2525X100-4CS	●	●		-100-4C-C										100	150
			2525X150-4CS	●	●		-150-4C-C										150	220
			2525X220-4CS	●	●		-220-4C-C										220	∞
	5	15	KGDF R/L 2020X25-5BS	●	●	KGD L/R 2020-C	KGDF R/L -25-5B-C	20	12	11.6	20	120	38	24.2	15	5	25	35
			2020X35-5BS	●	●		-35-5B-C										35	50
			2020X50-5BS	●	●		-50-5B-C										50	75
			2020X75-5BS	●	●		-75-5B-C										75	115
			2020X115-5BS	●	●		-115-5B-C										115	180
			2020X180-5BS	●	●		-180-5B-C										180	235
			2020X235-5BS	●	●		-235-5B-C										235	∞
		20	2020X25-5CS	●	●		-25-5C-C					125	43		20		25	35
		25	2020X35-5CS	●	●		-35-5C-C					130	48		25		35	50
			2020X50-5CS	●	●		-50-5C-C										50	75
			2020X75-5CS	●	●		-75-5C-C										75	115
			2020X115-5CS	●	●		-115-5C-C										115	180
			2020X180-5CS	●	●		-180-5C-C										180	235
			2020X235-5CS	●	●		-235-5C-C										235	∞
		15	KGDF R/L 2525X25-5BS	●	●	KGD L/R 2525-C	KGDF R/L -25-5B-C	25	7	11.6	25	145	38	29.2	15		25	35
			2525X35-5BS	●	●		-35-5B-C										35	50
			2525X50-5BS	●	●		-50-5B-C										50	75
			2525X75-5BS	●	●		-75-5B-C										75	115
			2525X115-5BS	●	●		-115-5B-C										115	180
			2525X180-5BS	●	●		-180-5B-C										180	235
			2525X235-5BS	●	●		-235-5B-C										235	∞
		20	2525X25-5CS	●	●		-25-5C-C					150	43		20		25	35
		25	2525X35-5CS	●	●		-35-5C-C					155	48		25		35	50
			2525X50-5CS	●	●		-50-5C-C										50	75
		32	2525X75-5DS	●	●		-75-5D-C					162	55		32		75	115
			2525X115-5DS	●	●		-115-5D-C										115	180
			2525X180-5DS	●	●		-180-5D-C										180	235
			2525X235-5DS	●	●		-235-5D-C										235	∞

Face Grooving Toolholder Assembly Identification System

Hand of Unit	Toolholder shank size	Total toolholder length	Width	Symbol of assembly toolholder
R : R-hand L : L-hand	2020 : □20 2525 : □25	X: Special	3 : 3mm 4 : 4mm	S: Indicate the Unit Description

KGDF R 2020 X 25 - 3 A S

Series	Min. diameter in face grooving	* For the minimum external diameter which can be applied to the initial face grooving (you can also use 1-corner insert), see the MIN. value of "Face Grooving Dia. øD" in the dimension tables of toolholders and blades.
KGDF Face grooving	Indicates the minimum external diameter which can be applied to the initial face grooving. 25 : 25mm ⋮ 235 : 235mm	

Grooving Depth	
A : 13mm B : 15mm	2-Edge insert (1-Edge insert can also be used.)
C : 20~25mm D : 32mm	1-Edge insert

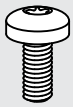
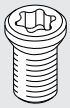
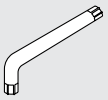
● : Std. Item ○ : Check Availability

KGDF

Toolholder Dimensions

Angle	Width (mm)	Max. depth of cut (mm)	Unit Description	Std. R	Std. L	Toolholder Description G28	Blade Description G73	H1=h	H2	H3	B	L1	L2	F1	T	Width (mm) W	Face Grooving Dia. øD(mm) MIN.	MAX.
0°	6	15	KGDF$^{R}_{L}$ 2020X25-6BS	●	●	KGD$^{L}_{R}$2020-C	KGDF$^{R}_{L}$ -25-6B-C	20	12	11.6	20	120	38	24.2	15	6	25	35
			2020X35-6BS	●	●		-35-6B-C										35	50
			2020X50-6BS	●	●		-50-6B-C										50	75
			2020X75-6BS	●	●		-75-6B-C										75	115
			2020X115-6BS	●	●		-115-6B-C										115	180
			2020X180-6BS	●	●		-180-6B-C										180	235
			2020X235-6BS	●	●		-235-6B-C										235	∞
		20	2020X25-6CS	●	●		-25-6C-C					125	43		20		25	35
		25	2020X35-6CS	●	●		-35-6C-C					130	48		25		35	50
			2020X50-6CS	●	●		-50-6C-C										50	75
			2020X75-6CS	●	●		-75-6C-C										75	115
			2020X115-6CS	●	●		-115-6C-C										115	180
			2020X180-6CS	●	●		-180-6C-C										180	235
			2020X235-6CS	●	●		-235-6C-C										235	∞
		15	KGDF$^{R}_{L}$ 2525X25-6BS	●	●	KGD$^{L}_{R}$2525-C	KGDF$^{R}_{L}$ -25-6B-C	25	7	11.6	25	145	38	29.2	15		25	35
			2525X35-6BS	●	●		-35-6B-C										35	50
			2525X50-6BS	●	●		-50-6B-C										50	75
			2525X75-6BS	●	●		-75-6B-C										75	115
			2525X115-6BS	●	●		-115-6B-C										115	180
			2525X180-6BS	●	●		-180-6B-C										180	235
			2525X235-6BS	●	●		-235-6B-C										235	∞
		20	2525X25-6CS	●	●		-25-6C-C					150	43		20		25	35
		25	2525X35-6CS	●	●		-35-6C-C					155	48		25		35	50
			2525X50-6CS	●	●		-50-6C-C										50	75
		32	2525X75-6DS	●	●		-75-6D-C					162	55		32		75	115
			2525X115-6DS	●	●		-115-6D-C										115	180
			2525X180-6DS	●	●		-180-6D-C										180	235
			2525X235-6DS	●	●		-235-6D-C										235	∞

Spare Parts

Unit Description	Spare Parts: Clamp Bolt (for Insert Clamp)	Fixing bolt (for blade)	Wrench
			
KGDF$^{R}_{L}$.....S	BH6X10TR	SB-60120TR	LTW-25

* Note that the parts are included in the toolholder when purchasing the toolholder and blade separately.

Face Grooving Dia. øD

Face grooving diameter (øD) is the value which can be applied to the initial grooving on the unprocessed workpiece (see Fig.1). Then, you can widen it up to the center toward the inside (excluding the models listed in the right table), and infinitely toward the outside.

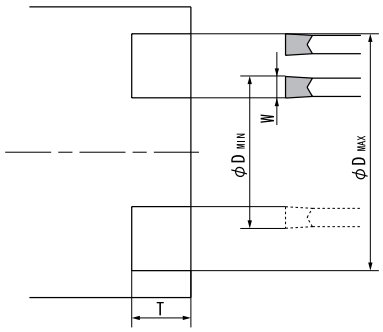
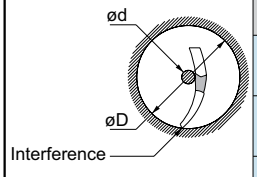


Fig.1

Minimum traversing diameter of small groove

Traversing towards the Center causes the toolholder to interfere with the groove wall depending on the initial cut's diameter.

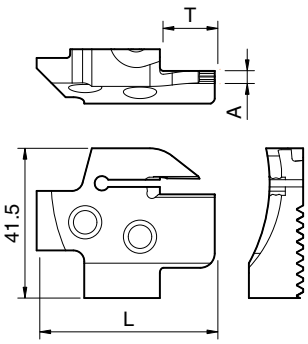


Description	øD 25	26	27	28 Over
	ød			
KGDF$^{R}_{L}$ 2020X25-3AS / 2525X25-3AS	4	2	0	0 (No remaining Boss)
KGDF$^{R}_{L}$ 2020X25-4AS / 2525X25-4AS	6	3	0	
KGDF$^{R}_{L}$ 2020X25-5AS / 2525X25-5AS	7	4	1	
KGDF$^{R}_{L}$ 2020X25-6AS / 2525X25-6AS	9	4	1	

Example)
If a groove of external diameter ø25 is created using KGDFR2020X25-3AS and traversing is made toward the inside, a ø4 portion will be left in middle due to interference of toolholder.

● : Std. Item ○ : Check Availability

Blade Dimensions

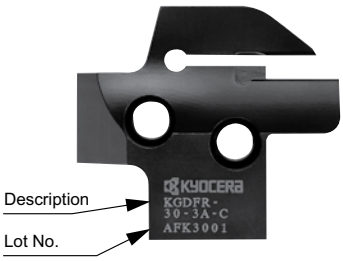


Blade Description	Std. R	Std. L	Dimension (mm) L	T	A	Face Grooving Dia. øD(mm) MIN.	MAX.	Applicable Inserts ⇨G69	Toolholder ⇨G28
KGDF R/L -25-3A-C	●	●	47.4	13	2	25	30	GDFM 3020N-030GM GDFM 3020N-030DM GDFMS 3020N-030DM	KGD L/R·····-C KGDS R/L·····-C
-30-3A-C	●	●				30	40		
-40-3A-C	●	●				40	50		
-50-3B-C	●	●	49.4	15		50	65		
-65-3B-C	●	●				65	85		
-85-3B-C	●	●				85	110		
-110-3B-C	●	●				110	145		
-50-3C-C	●	●	56.4	22		50	65		
-65-3C-C	●	●				65	85		
-85-3C-C	●	●	59.4	25		85	110		
-110-3C-C	●	●				110	145		
KGDF R/L -25-4A-C	●	●	47.4	13	3	25	35	GDFM 4020N-040GM GDFM 4020N-040DM GDFMS 4020N-040DM	
-35-4B-C	●	●	49.4	15		35	50		
-50-4B-C	●	●				50	70		
-70-4B-C	●	●				70	100		
-100-4B-C	●	●				100	150		
-150-4B-C	●	●				150	220		
-220-4B-C	●	●				220	∞		
-35-4C-C	●	●	59.4	25		35	50		
-50-4C-C	●	●				50	70		
-70-4C-C	●	●				70	100		
-100-4C-C	●	●				100	150		
-150-4C-C	●	●				150	220		
-220-4C-C	●	●				220	∞		
KGDF R/L -25-5B-C	●	●	49.4	15	4	25	35	GDFM 5020N-040GM GDFM 5020N-040DM GDFMS 5020N-040DM	
-35-5B-C	●	●				35	50		
-50-5B-C	●	●				50	75		
-75-5B-C	●	●				75	115		
-115-5B-C	●	●				115	180		
-180-5B-C	●	●				180	235		
-235-5B-C	●	●				235	∞		
-25-5C-C	●	●	54.4	20		25	35		
-35-5C-C	●	●	59.4	25		35	50		
-50-5C-C	●	●				50	75		
-75-5C-C	●	●				75	115		
-115-5C-C	●	●				115	180		
-180-5C-C	●	●				180	235		
-235-5C-C	●	●				235	∞		
-75-5D-C	●	●	66.4	32		75	115		
-115-5D-C	●	●				115	180		
-180-5D-C	●	●				180	235		
-235-5D-C	●	●				235	∞		
KGDF R/L -25-6B-C	●	●	49.4	15	5	25	35	GDFM 6020N-040GM GDFM 6020N-040DM GDFMS 6020N-040DM	
-35-6B-C	●	●				35	50		
-50-6B-C	●	●				50	75		
-75-6B-C	●	●				75	115		
-115-6B-C	●	●				115	180		
-180-6B-C	●	●				180	235		
-235-6B-C	●	●				235	∞		
-25-6C-C	●	●	54.4	20		25	35		
-35-6C-C	●	●	59.4	25		35	50		
-50-6C-C	●	●				50	75		
-75-6C-C	●	●				75	115		
-115-6C-C	●	●				115	180		
-180-6C-C	●	●				180	235		
-235-6C-C	●	●				235	∞		
-75-6D-C	●	●	66.4	32		75	115		
-115-6D-C	●	●				115	180		
-180-6D-C	●	●				180	235		
-235-6D-C	●	●				235	∞		

Face Grooving Blade Identification System

KGDF	R	–	25	–	3	A	–	C

- **Series**: KGDF Face Grooving
- **hand of blade**: R : R-hand; L : L-hand
- **Min. diameter in face grooving**: Indicates the minimum external diameter which can be applied to the initial face grooving. 25 : 25mm … 235 : 235mm
- **Width**: 3 : 3mm, 4 : 4mm, 5 : 5mm, 6 : 6mm
- **Grooving Depth**: A : 13mm; B : 15mm; 2-Edge insert (1-Edge insert can also be used.); C : 20mm~25mm; D : 32mm; 1-Edge insert
- **Blade Symbol**: C : Toolholder shank length 20 mm / 25 mm



Example of printing of blade number

● : Std. Item ○ : Check Availability

Recommended Cutting Conditions

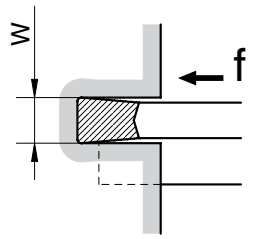
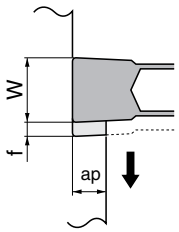
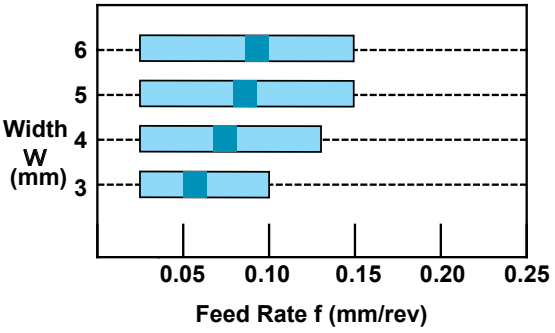
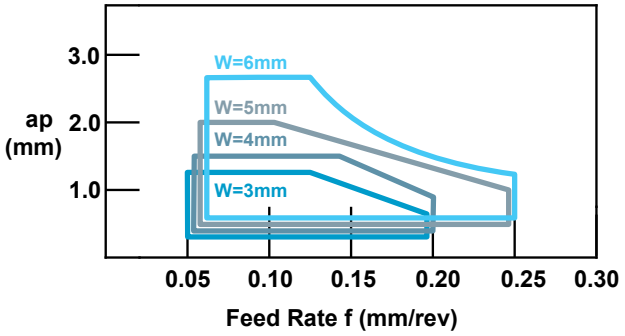
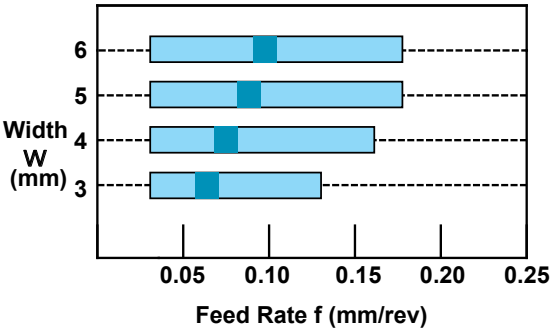
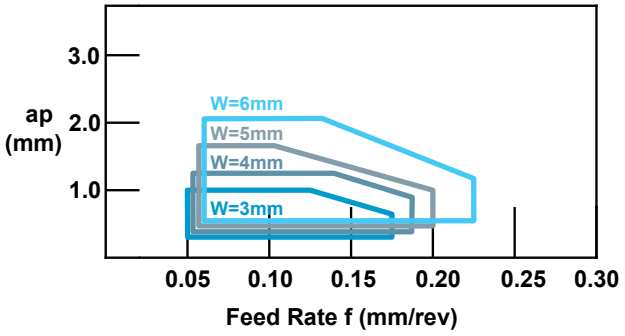
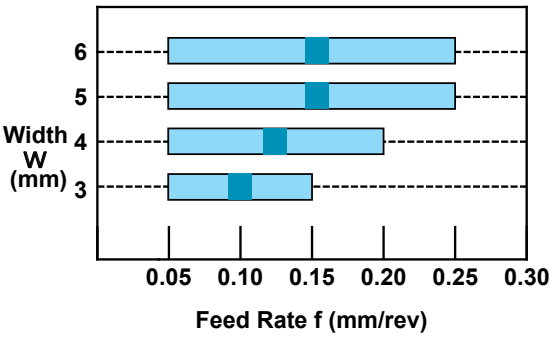
Recommended Cutting Conditions (Vc)

Workpiece Material	Recommended Grade (Vc : m/min)			Remarks
	Cermet	MEGACOAT		
	TN90	PR1225	PR1215	
Carbon Steel (SxxC etc.)	☆ 80~200	★ 60~160	☆ 80~160	Coolant
Alloy Steel (SCM etc.)	☆ 70~160	★ 60~150	☆ 60~150	
Stainless Steel (SUS304 etc.)	☆ 60~150	★ 50~120	☆ 50~120	
Cast Iron (FC/FCD etc.)	-	-	★ 80~160	

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (Feed Rate / ap)

(Workpiece Material: S50C)

Chipbreaker	Grooving and Shoulder grooving (Side grooving)	Traversing
	 ■ in the graph indicates the center value of feed (f)	
GM (Grooving and Traversing)		
GM (Deep grooving and Traversing)		
GM / DM Common		● The left graph shows the feed rate (f) in shoulder grooving (side grooving) using GM/DM chipbreakers.

1）The above values are based on the condition that the dimension T of toolholder is 15 mm or less.
2）If the toolholder's dimension T is over 15 mm, set the values for traversing to less than 90% of those above.

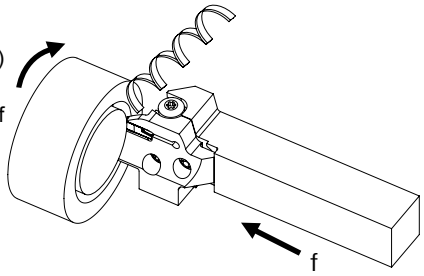
Points to be checked for face grooving

1) Toolholder Selection

Check the range of applicable "face grooving diameter" as well as the groove width and depth.

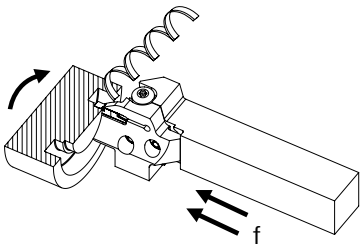
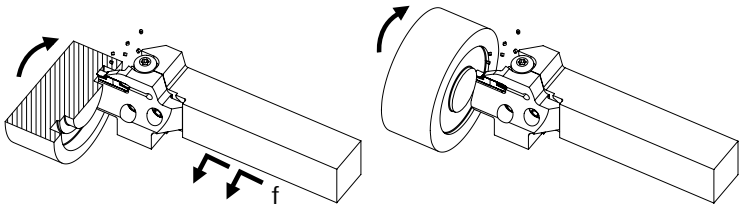
2) Machining conditions (Feed rate: f)

When machining on steel, set the feed rate (f) so that chips are created in a helical form in cut-off (see Fig. 1).



3) How to widen the groove (Cut-off and Traversing)

Start machining from the outside and then proceed to the inside. Chip control will be better in this way.

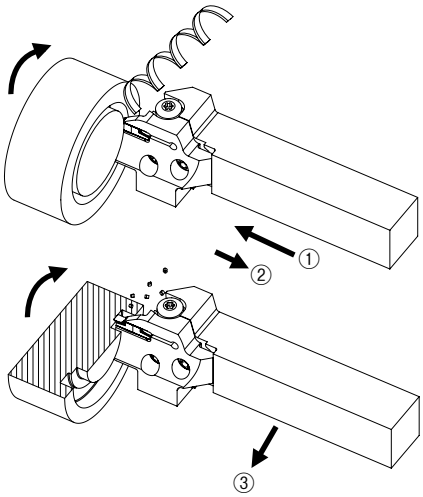
Cut-off (Grooving + Side grooving)	Traversing
	

4) Guide for traversing

A. When the cutting amount (ap) is over 0.5 mm

①Perform Cut-off.
②Return the cutting by 0.1 mm.
③Perform traversing.

(See Fig.1)



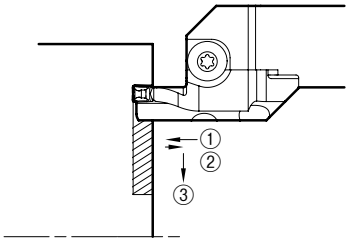


Fig.1

● When widening the face groove width (See Fig.2)
Apply the "Step Turning".
Then perform finishing.

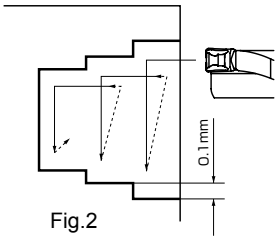
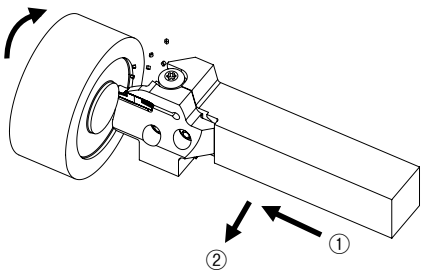


Fig.2

B. When the cutting amount (ap) is under 0.5 mm

①Perform Cut-off.
②Perform traversing.

Machining without interruption is possible. (See Fig.3)



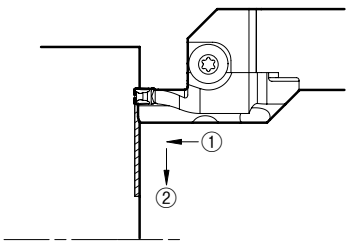
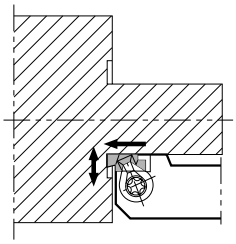
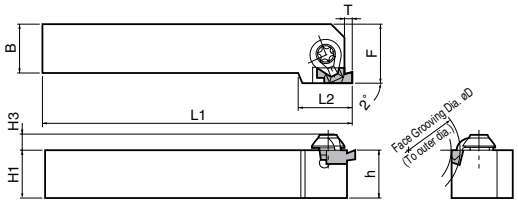


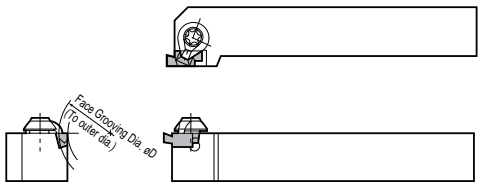
Fig.3

GFVS-AA





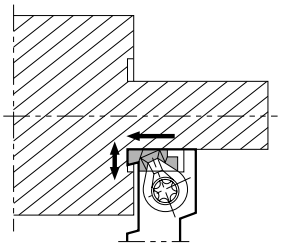
• Right-hand Shown



• Left-hand Shown

L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder.

GFVT-AA



Without Offset (□10mm, □12mm)

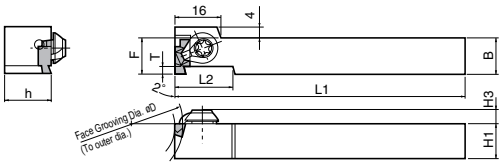
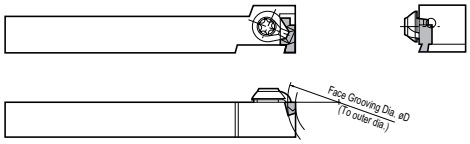


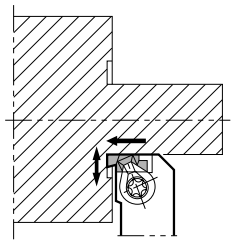
Fig.1

• Right-hand Shown



• Left-hand Shown

L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder.



With Offset (□16mm, □20mm, □25mm)

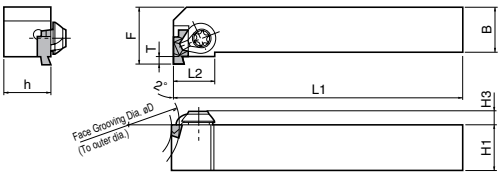
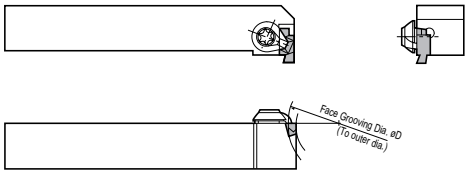


Fig.2

• Right-hand Shown



• Left-hand Shown

L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder.

Toolholder Dimensions

Description		Std. R	Std. L	H1	h	H3	B	L1	L2	F	T	Face Grooving Dia. øD MIN.	Face Grooving Dia. øD MAX.	Drawing	Spare Parts: Clamp Set	Spare Parts: Wrench	Applicable Inserts (G77)
GFVS R/L	1010F-08AA	□	□	10	10		10	80		15							
	1212H-08AA	□	□	12	12		12	100		16							
	1616H-08AA	□	□	16	16	5.5	16	100	18	20	2.2	8 (0)	∞ (∞)	-	CPS-5V	FT-15	GVF L/R 100-005AA ⟆ GVF L/R 300-005AA
	2020K-08AA	●	●	20	20		20	125		25							
	2525M-08AA	●	●	25	25		25	150		32							
GFVT R/L	1010F-08AA	□	□	10	10		10	80	20	10				Fig.1			
	1212H-08AA	□	□	12	12		12	100		12							
	1616H-08AA	□	□	16	16	5.5	16	100		20	2.2	8 (0)	∞ (∞)		CPS-5V	FT-15	GVF L/R 100-005AA ⟆ GVF L/R 300-005AA
	2020K-08AA	●	●	20	20		20	125	14	25				Fig.2			
	2525M-08AA	●	●	25	25		25	150		32							

Note 1: Dimension T shows available grooving depth.

2. The value ( ) of Face Grooving External Dia. (øD Max) is the maximum outer diameter value after the initial groove between MIN~MAX. (It is possible to widen the groove to infinity ∞).
The value ( ) of Face Grooving External Dia. (øD Min) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between MIN~MAX.

● : Std. Item
○ : Check Availability
□ : Deleted from the next catalogue

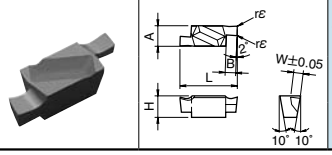
Applicable Inserts

(mm)

Description	A	L	H
GVF$^{R}_{L}$ …-100AA	4.3	12	4.5
…-200AA			
…-300AA			

P	Carbon Steel / Alloy Steel					●			
M	Stainless Steel					●			
K	Cast Iron						◕		
N	Non-ferrous Metals						◕		
S	Titanium Alloy						◕		
H	Hard materials (under 40HRC)					●			
	Hard materials (over 40HRC)								

Classification of usage
- ◕ : Continuous-Light Interruption / 1st Choice
- ◔ : Continuous-Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

Insert (R-hand shown)	Description	(Previous Description)	Dimension (mm) W	B	rε	Cermet TN90	Cermet TC40	Cermet TC60	PVD Coated Carbide PR630	PVD Coated Carbide PR930	Carbide KW10	PCD KPD001	PCD KPD010	Applicable Toolholder	Ref. Page for Toolholder
	GVF$^{R}_{L}$ 100-005AA	GVF$^{R}_{L}$ 100AA	1.00	2.2	0.05					●	○			GFVS$^{R}_{L}$····-08AA GFVT$^{R}_{L}$····-08AA	G76
	200-005AA	200AA	2.00							●	○				
	300-005AA	300AA	3.00							●	○				

・Dimension B: shows available grooving depth.

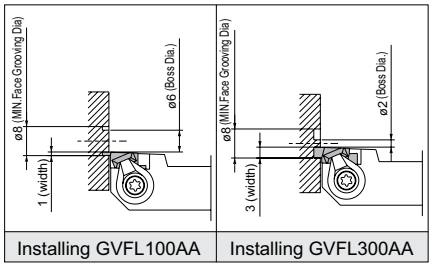
・GVF$^{R}_{L}$….005AA inserts are not compatible with GVF$^{R}_{L}$….−○○○A (see page **G83**) inserts because their Side Relief Angle is 10˚.

Face Grooving Diameter of GFVS-AA (also GFVT-AA)

Description	Face Grooving Dia. øD MIN.	Face Grooving Dia. øD MAX.	Applicable Inserts
GFVS$^{R}_{L}$ 1010F-08AA 1212H-08AA 1616H-08AA 2020K-08AA 2525M-08AA	8 (0)	∞ (∞)	GVF$^{L}_{R}$100AA ~ GVF$^{L}_{R}$300AA

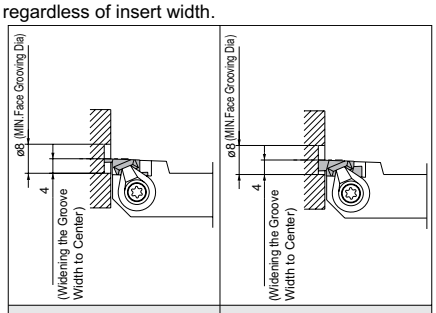
- It is available to infinity ∞ in case of machining the first groove bigger than MIN.
- It is available to infinity ∞ when machining toward outer diameter.
- Refers to the machining of the initial groove with MIN.ø8.

If the initial groove is made smaller than this, the toolholder interferes with the workpiece.



Installing GVFL100AA | Installing GVFL300AA

- When widening the groove width to inner diameter. For machining up to the center of the workpiece regardless of insert width.



Installing GVFL100AA | Installing GVFL300AA

Recommended Cutting Conditions (GFVS-AA / GFVT-AA)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min) PVD Coated Carbide PR630	PVD Coated Carbide PR930	Carbide KW10	Grooving f (mm/rev)	Traversing* ap (mm)	Traversing* f (mm/rev)	Remarks
Carbon Steel / Alloy Steel	☆ 50~100	★ 50~100		0.01~0.05	Max.0.5	0.01~0.05	Coolant
Stainless Steel	☆ 50~80	★ 50~80		0.01~0.03	Max.0.3	0.01~0.02	
Non-ferrous Metals			★ ~200	0.01~0.08	Max.0.5	0.01~0.08	

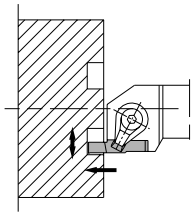
* ap has to be set for less than corner-R(rε) when traversing of edge width 1.0 mm (GVF$^{R}_{L}$100AA).

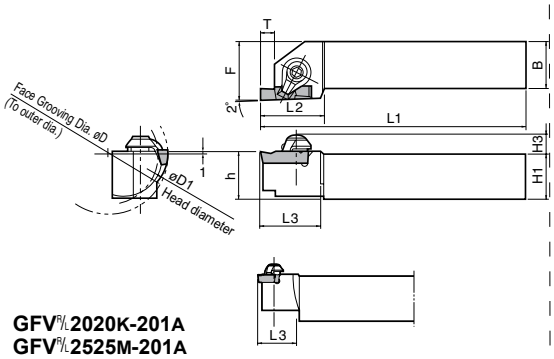
★ : 1st Recommendation ☆ : 2nd Recommendation

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

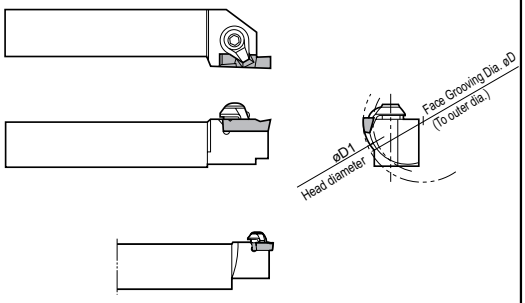
Inserts are sold in 10 piece boxes.

GFV





GFV$^{R/L}$2020K-201A
GFV$^{R/L}$2525M-201A
Shows right Figure.



● Right-hand Shown

● Left-hand Shown

R-hand Insert is for R-hand Toolholder, L-hand Insert is for L-hand Toolholder.

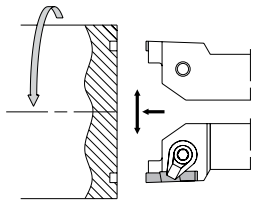
Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1	h	H3	B	L1	L2	L3	F	T	øD1	Face Grooving Dia. øD MIN.	MAX.	Spare Parts: Clamp Set		Spare Parts: Wrench	Applicable Inserts G83
GFV$^{R/L}$	2020K-201A	●	●	20	21	6.5	20	125	20	19	25	2.2	40	20 (12)	∞	CPS-5V	-	FT-15	GVF$^{R/L}$200A~340A
	2525M-201A	●	●	25	26		25	150	23	22	32								GVF$^{R/L}$100AR~150AR
GFV$^{R/L}$	2020K-351B	●	●	20	21	8.0	20	125	28	26	25	4.6	35	35 (25)	50 (∞)	-	CPS-6V	LW-3	GVF$^{R/L}$250B~350B
	2525M-351B	●	●	25	26		25	150	30	28	32								GVF$^{R/L}$150BR
	2020K-352B	●	●	20	21		20	125	28	26	25	5.1							GVF$^{R/L}$400B~490B
	2525M-352B	●	●	25	26		25	150	30	28	32								GVF$^{R/L}$200BR
	2020K-501B	●	●	20	21		20	125	28	26	25	4.6	50	50 (25)	70 (∞)				GVF$^{R/L}$250B~350B
	2525M-501B	●	●	25	26		25	150	30	28	32								GVF$^{R/L}$150BR
	2020K-502B	●	●	20	21		20	125	28	26	25	5.1							GVF$^{R/L}$400B~490B
	2525M-502B	●	●	25	26		25	150	30	28	32								GVF$^{R/L}$200BR
	2020K-701B	●	●	20	21		20	125	28	26	25	4.6	70	70 (25)	100 (∞)				GVF$^{R/L}$250B~350B
	2525M-701B	●	●	25	26		25	150	30	28	32								GVF$^{R/L}$150BR
	2020K-702B	●	●	20	21		20	125	28	26	25	5.1							GVF$^{R/L}$400B~490B
	2525M-702B	●	●	25	26		25	150	30	28	32								GVF$^{R/L}$200BR
GFV$^{R/L}$	2525M-501C	●	●	25	26	9.5	25	150	35	33	32	6.6	50	50 (25)	70 (∞)	-	CPS-8V	LW-4	GVF$^{R/L}$350C~450C
	2525M-502C	●	●									8.1							GVF$^{R/L}$500C~600C
	2525M-701C	●	●									6.6	70	70 (25)	100 (∞)				GVF$^{R/L}$350C~450C
	2525M-702C	●	●									8.1							GVF$^{R/L}$500C~600C
	2525M-1001C	●	●							35		6.6	100	100 (25)	150 (∞)				GVF$^{R/L}$350C~450C
	2525M-1002C	●	●									8.1							GVF$^{R/L}$500C~600C
	2525M-1501C	●	●									6.6	150	150 (25)	250 (∞)				GVF$^{R/L}$350C~450C
	2525M-1502C	●	●									8.1							GVF$^{R/L}$500C~600C

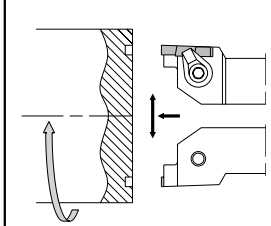
Note1. Dimension T shows available grooving depth.
2. øD1 shows toolholder head diameter to L3.
3. The value ( ) of Face Grooving Dia. (øD Max) is the maximum outer diameter value after the initial groove between MIN~MAX. (It is possible to widen the groove to infinity ∞).
The value ( ) of Face Grooving Dia. (øD Min) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between MIN~MAX.
4. Standard toolholders are designed with the edge position 1.0mm above the center. When using non-standard Toolholders, set the Edge position 1.0mm above the center.

Selection of Toolholder & Insert

Toolholder	R-hand
Insert	R-hand



Toolholder	L-hand
Insert	L-hand



● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

◆ Face Grooving Diameter of GFV

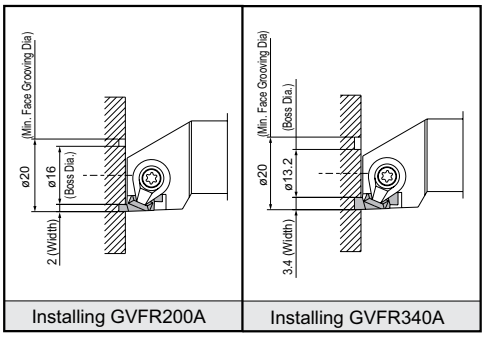
① e.g.) GFV$^{R}/_{L}$…-201A

Description		Face Grooving Dia. øD MIN.	Face Grooving Dia. øD MAX.	Applicable Inserts
GFV$^{R}/_{L}$	**2020K-201A**	20	∞	GVF$^{R}/_{L}$200A~340A
	2525M-201A	(12)	(∞)	GVF$^{R}/_{L}$100AR~150AR

- It is available to infinity ∞ in case of machining the first groove bigger than MIN.
- It is available to infinity ∞ when machining toward outer diameter.

- When machining the initial groove on the face of MIN. ø20

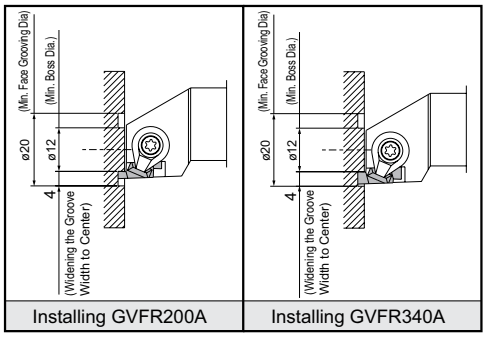
If the initial groove is made smaller than this, the toolholder interferes with the workpiece.



Installing GVFR200A | Installing GVFR340A

- When widening the groove width to inner diameter.

Face groove diameter D MIN (12) is the limit; the toolholder interferes with the workpiece in case of smaller than ø12.



Installing GVFR200A | Installing GVFR340A

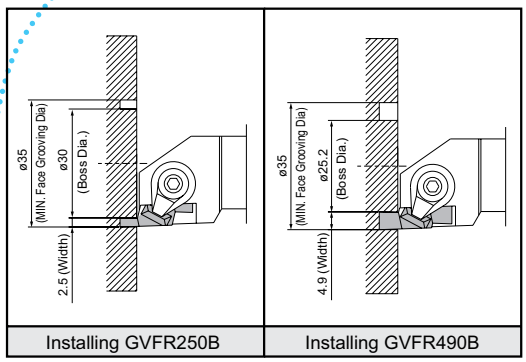
② e.g.) GFV$^{R}/_{L}$…-351B / 352B (same as GFV$^{R}/_{L}$…-○○○B type, GFV$^{R}/_{L}$…-○○○C type)

Description		Face Grooving Dia. øD MIN.	Face Grooving Dia. øD MAX.	Applicable Inserts
GFV$^{R}/_{L}$	**2020K-351B**	35	50	GVF$^{R}/_{L}$250B~350B
	2525M-351B			GVF$^{R}/_{L}$150BR
	2020K-352B	(25)	(∞)	GVF$^{R}/_{L}$400B~490B
	2525M-352B			GVF$^{R}/_{L}$200BR

- It is possible to widen the groove to infinity ∞ when machining the initial groove within MIN-MAX. and then widening to outer diameter.

- When machining the initial groove on the face at MIN.ø35

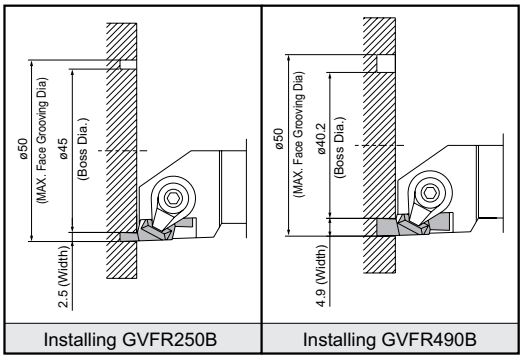
If the initial groove is made smaller than this, the toolholder interferes with the workpiece.



Installing GVFR250B | Installing GVFR490B

- When machining the initial groove on the face at MAX.ø50.

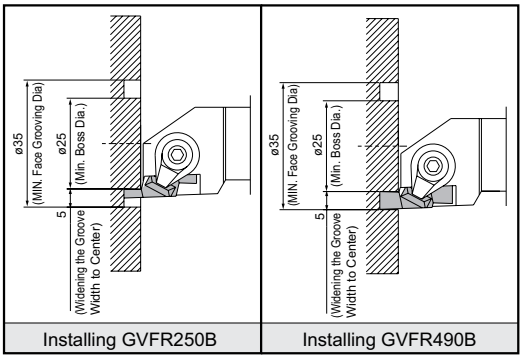
If the first groove is bigger than this, the toolholder intereferes with the workpiece.



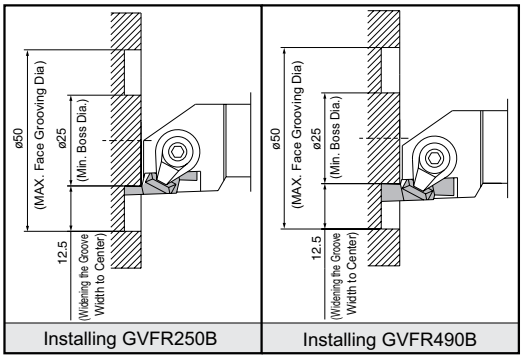
Installing GVFR250B | Installing GVFR490B

- When widening the groove width to inner diameter.

Face Grooving Dia.øD MIN.(ø25 Boss Dia.) is the limitation regardless of insert width, even widening the groove width to the center from the initial groove at øD MIN.(ø35) or øD MAX.(ø50). The toolholder interferes with the workpiece when closer to the center.



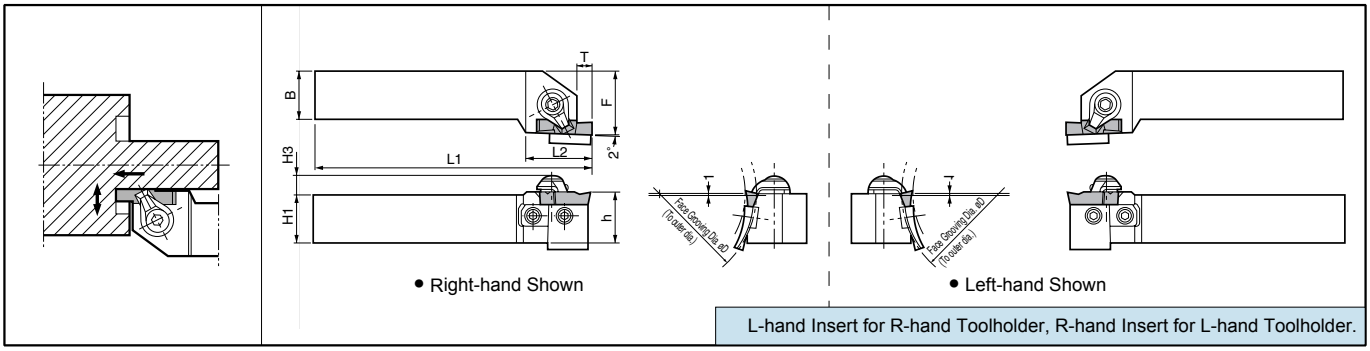
Installing GVFR250B | Installing GVFR490B



Installing GVFR250B | Installing GVFR490B

GFVS

This toolholder can machine various face grooving diameters by replacing the Blade.

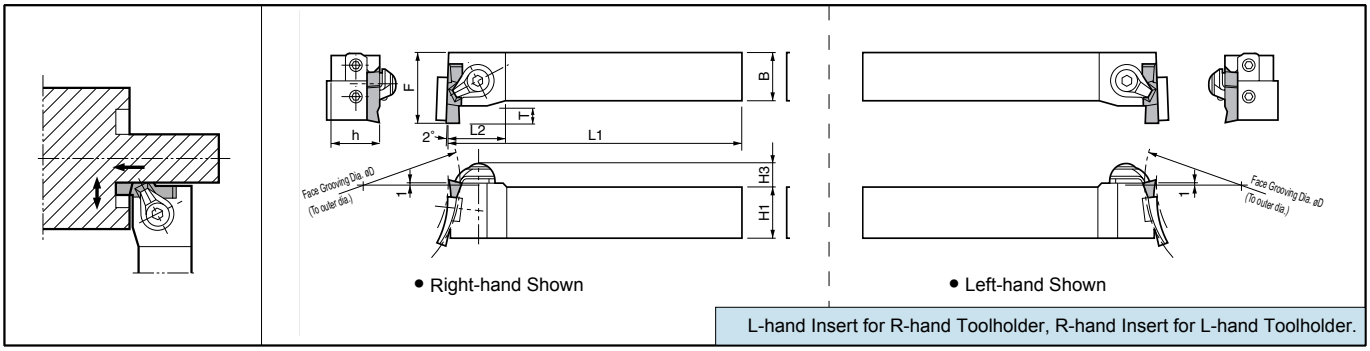


• Right-hand Shown • Left-hand Shown

L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder.

GFVT

This toolholder can machine various face grooving diameters by replacing the Blade.

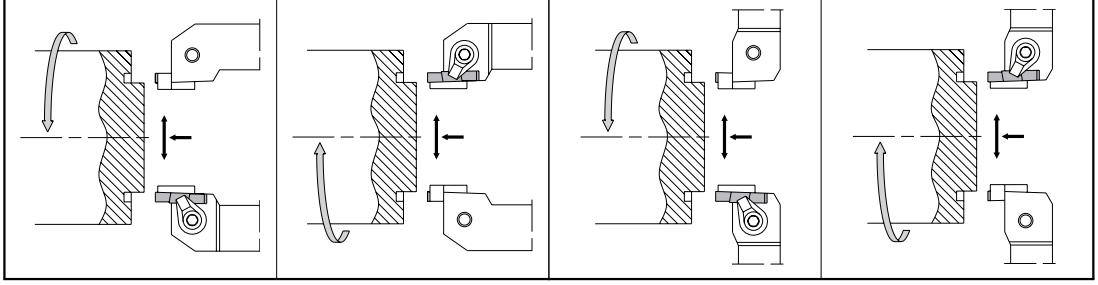


• Right-hand Shown • Left-hand Shown

L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder.

Selection of Toolholder & Insert

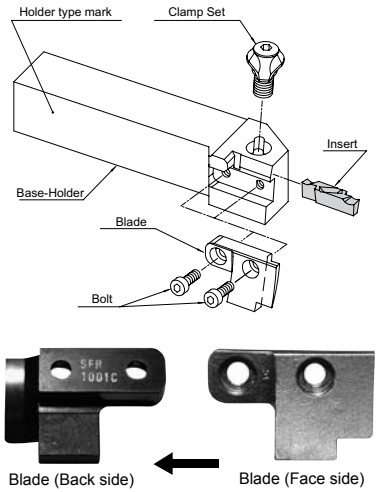
GFVS type		GFVT type	
Toolholder R-hand / Insert L-hand	Toolholder L-hand / Insert R-hand	Toolholder R-hand / Insert L-hand	Toolholder L-hand / Insert R-hand



Combination of Base-Holder & Blade

Base-Holder (Stamped below)	Std. R	Std. L	Blade Description	Toolholder (Integrated Tool)
GFVS$^{R}_{L}$2020K-HB GFVT$^{R}_{L}$2020K-HB	●	●	SF$^{R}_{L}$ -351B -352B -501B -502B -701B -702B	GFVS$^{R}_{L}$2020K -351B GFVT$^{R}_{L}$2020K -352B -501B -502B -701B -702B
GFVS$^{R}_{L}$2525M-HB GFVT$^{R}_{L}$2525M-HB	●	●	SF$^{R}_{L}$ -351B -352B -501B -502B -701B -702B	GFVS$^{R}_{L}$2525M -351B GFVT$^{R}_{L}$2525M -352B -501B -502B -701B -702B
GFVS$^{R}_{L}$2525M-HC GFVT$^{R}_{L}$2525M-HC	●	●	SF$^{R}_{L}$ -501C -502C -701C -702C -1001C -1002C -1501C -1502C	GFVS$^{R}_{L}$2525M -501C GFVT$^{R}_{L}$2525M -502C -701C -702C -1001C -1002C -1501C -1502C

Example of installation (GFVS)



How to refer to the face grooving toolholder and blade

Q: Though "GFVSR2525M-HC" is marked on the face grooving holder, the size of cutting dia. is unknown. How could it be found out?

A: Take off the blade. Description of the blade is listed on the back of the blade. Using the description, check the description of the holder in the catalog. If "SFR-1001C" is integrated to "GFVSR2525M-HC", the description of the holder is "GVFSR2525M-1001C".

・R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder.
・Installation of GFVT type is also pursuing example of installation of GFVS type.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Toolholder Dimensions

Description		Std. R	Std. L	H1	h	H3	B	L1	L2	F	T	Face Grooving Dia. øD MIN.	Face Grooving Dia. øD MAX.	Spare Parts: Clamp Set	Spare Parts: Wrench	Spare Parts: Blade	Spare Parts: Bolt	Applicable Inserts (G83)
GFVS R/L	2020K-351B	●	●	20	21	8.0	20	125	30	25	5.1	35 (25)	50 (∞)	CPS-6V	LW-3	SF R/L-351B	HH4X12	GVF R/L 250B~350B
	2525M-351B	●	●	25	26		25	150	32	32	(4.6)							GVF R/L 150BR
	2020K-352B	●	●	20	21		20	125	30	25	5.1					SF R/L-352B		GVF R/L 400B~490B
	2525M-352B	●	●	25	26		25	150	32	32	(5.1)							GVF R/L 200BR
	2020K-501B	●	●	20	21		20	125	30	25	5.1	50 (25)	70 (∞)			SF R/L-501B		GVF R/L 250B~350B
	2525M-501B	●	●	25	26		25	150	32	32	(4.6)							GVF R/L 150BR
	2020K-502B	●	●	20	21		20	125	30	25	5.1					SF R/L-502B		GVF R/L 400B~490B
	2525M-502B	●	●	25	26		25	150	32	32	(5.1)							GVF R/L 200BR
	2020K-701B	●	●	20	21		20	125	30	25	5.1	70 (25)	100 (∞)			SF R/L-701B		GVF R/L 250B~350B
	2525M-701B	●	●	25	26		25	150	32	32	(4.6)							GVF R/L 150BR
	2020K-702B	●	●	20	21		20	125	30	25	5.1					SF R/L-702B		GVF R/L 400B~490B
	2525M-702B	●	●	25	26		25	150	32	32	(5.1)							GVF R/L 200BR
GFVS R/L	2525M-501C	●	●	25	26	9.5	25	150	32	32	8.1(6.6)	50 (25)	70 (∞)	CPS-8V	LW-4	SF R/L-501C	HH4X12	GVF R/L 350C~450C
	2525M-502C	●	●								8.1(8.1)					SF R/L-502C		GVF R/L 500C~600C
	2525M-701C	●	●								8.1(6.6)	70 (25)	100 (∞)			SF R/L-701C		GVF R/L 350C~450C
	2525M-702C	●	●								8.1(8.1)					SF R/L-702C		GVF R/L 500C~600C
	2525M-1001C	●	●								8.1(6.6)	100 (25)	150 (∞)			SF R/L-1001C		GVF R/L 350C~450C
	2525M-1002C	●	●								8.1(8.1)					SF R/L-1002C		GVF R/L 500C~600C
	2525M-1501C	●	●								8.1(6.6)	150 (25)	250 (∞)			SF R/L-1501C		GVF R/L 350C~450C
	2525M-1502C	●	●								8.1(8.1)					SF R/L-1502C		GVF R/L 500C~600C
GFVT R/L	2020K-351B	●	●	20	21	8.0	20	125	22	30	5.1	35 (25)	50 (∞)	CPS-6V	LW-3	SF R/L-351B	HH4X12	GVF R/L 250B~350B
	2525M-351B	●	●	25	26		25	150	25	35	(4.6)							GVF R/L 150BR
	2020K-352B	●	●	20	21		20	125	22	30	5.1					SF R/L-352B		GVF R/L 400B~490B
	2525M-352B	●	●	25	26		25	150	25	35	(5.1)							GVF R/L 200BR
	2020K-501B	●	●	20	21		20	125	22	30	5.1	50 (25)	70 (∞)			SF R/L-501B		GVF R/L 250B~350B
	2525M-501B	●	●	25	26		25	150	25	35	(4.6)							GVF R/L 150BR
	2020K-502B	●	●	20	21		20	125	22	30	5.1					SF R/L-502B		GVF R/L 400B~490B
	2525M-502B	●	●	25	26		25	150	25	35	(5.1)							GVF R/L 200BR
	2020K-701B	●	●	20	21		20	125	22	30	5.1	70 (25)	100 (∞)			SF R/L-701B		GVF R/L 250B~350B
	2525M-701B	●	●	25	26		25	150	25	35	(4.6)							GVF R/L 150BR
	2020K-702B	●	●	20	21		20	125	22	30	5.1					SF R/L-702B		GVF R/L 400B~490B
	2525M-702B	●	●	25	26		25	150	25	35	(5.1)							GVF R/L 200BR
GFVT R/L	2525M-501C	●	●	25	26	9.5	25	150	27	38	8.1(6.6)	50 (25)	70 (∞)	CPS-8V	LW-4	SF R/L-501C	HH4X12	GVF R/L 350C~450C
	2525M-502C	●	●								8.1(8.1)					SF R/L-502C		GVF R/L 500C~600C
	2525M-701C	●	●								8.1(6.6)	70 (25)	100 (∞)			SF R/L-701C		GVF R/L 350C~450C
	2525M-702C	●	●								8.1(8.1)					SF R/L-702C		GVF R/L 500C~600C
	2525M-1001C	●	●								8.1(6.6)	100 (25)	150 (∞)			SF R/L-1001C		GVF R/L 350C~450C
	2525M-1002C	●	●								8.1(8.1)					SF R/L-1002C		GVF R/L 500C~600C
	2525M-1501C	●	●								8.1(6.6)	150 (25)	250 (∞)			SF R/L-1501C		GVF R/L 350C~450C
	2525M-1502C	●	●								8.1(8.1)					SF R/L-1502C		GVF R/L 500C~600C

Note 1. Dimension T shows the distance from the Toolholder to the cutting edge.
The grooving depth is the mentioned in ( ).

2. The value ( ) of Face Grooving diameter. (øD Max) is the maximum outer diameter value after the initial groove between MIN~MAX. (It is possible to widen the groove to infinity ∞).
The value ( ) of Face Grooving diameter. (øD Min) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between MIN~MAX.

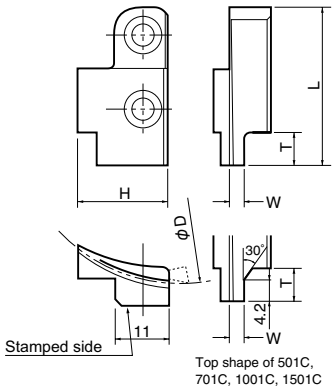
3. Standard toolholders are designed with the edge position 1.0mm above the center.
When using non-standard Toolholder, set the Edge position 1.0mm above the center.

4. GFVS and GFVT are composed of a base body and a blade.
If the blade should be damaged, replace it with a new blade as listed in the left table.
(e.g.) GFVSR2020K-HB + SFR-351B = GFVSR2020K-351B
(e.g.) GFVTR2020K-HB + SFR-351B = GFVTR2020K-351B

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Face Grooving Toolholders

Blade Dimension

Shape	Description	Std. R	Std. L	Dimension (mm) L	H	T	W	Face Grooving Dia. øD MIN.	MAX.	Applicable Inserts	Applicable Toolholder
	SFR/L -351B	●	●	30.5	11	4.7	2.0	35	50	GVFR/L250B~350B,150BR	GFV(S / T)R/L○○○○□ -○○○B (Toolholder Stamp GFV(S / T)R/L○○○○□ -HB)
	-352B	●	●				3.4			GVFR/L400B~490B,200BR	
	SFR/L -501B	●	●		15		2.0	50	70	GVFR/L250B~350B,150BR	
	-502B	●	●				3.4			GVFR/L400B~490B,200BR	
	SFR/L -701B	●	●		17		2.0	70	100	GVFR/L250B~350B,150BR	
	-702B	●	●				3.4			GVFR/L400B~490B,200BR	
	SFR/L -501C	●	●	35	15	7.5	2.8	50	70	GVFR/L350C~450C	GFV(S / T)R/L○○○○□ -○○○C (Toolholder Stamp GFV(S / T)R/L○○○○□ -HC)
	-502C	●	●				4.3			GVFR/L500C~600C	
	SFR/L -701C	●	●		20		2.8	70	100	GVFR/L350C~450C	
	-702C	●	●				4.3			GVFR/L500C~600C	
	SFR/L -1001C	●	●		23		2.8	100	150	GVFR/L350C~450C	
	-1002C	●	●				4.3			GVFR/L500C~600C	
	SFR/L -1501C	●	●		23		2.8	150	250	GVFR/L350C~450C	
	-1502C	●	●				4.3			GVFR/L500C~600C	

• Right-hand shown

· R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder.

Face Groove Diameter of GFVS / GFVT

ex) GFVSR/L. . . -351B / 352B

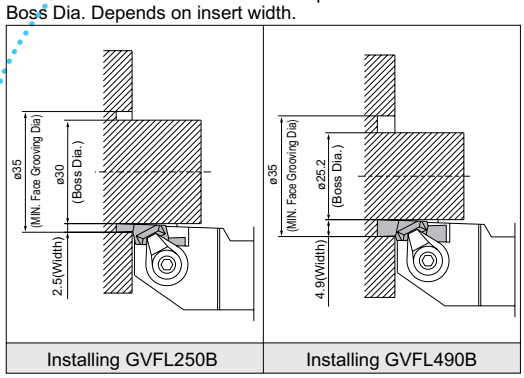
(same as GFVSR/L…-○○○B, GFVSR/L…-○○○C G81
GFVTR/L…-○○○B, GFVTR/L…-○○○C G81)

Description		Face Grooving Dia. øD MIN.	MAX.	Applicable Inserts
GFVSR/L	2020K-351B	35	50	GVFL/R 250B~350B
	2525M-351B			GVFL/R 150BR
	2020K-352B	(25)	(∞)	GVFL/R 400B~490B
	2525M-352B			GVFL/R 200BR

• It is available to infinity ∞ when machining toward outer diameter.

• When machining the initial groove on the face at MIN.ø35.

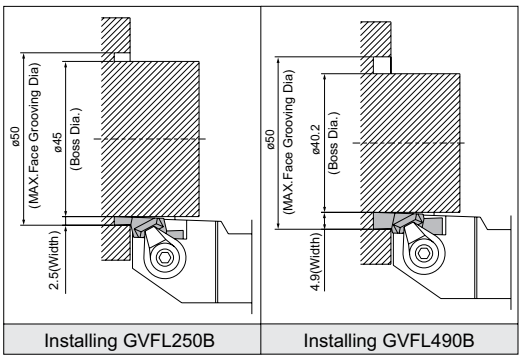
If the initial groove is made smaller than this, the toolholder interferes with the workpiece.
Boss Dia. Depends on insert width.



Installing GVFL250B | Installing GVFL490B

• When machining the initial groove on the face at MAX.ø50.

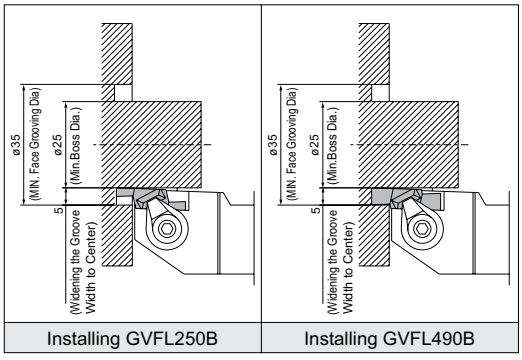
If the first groove is bigger than this, the toolholder intereferes with the workpiece.
Boss Dia. Depends on insert width.



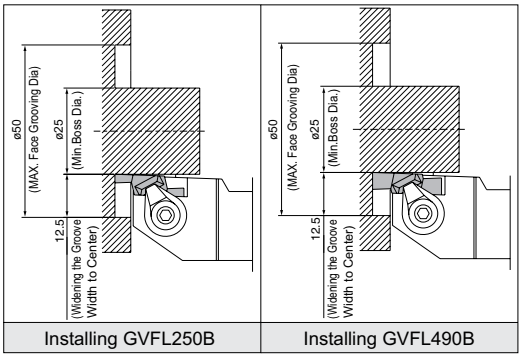
Installing GVFL250B | Installing GVFL490B

• When widening the groove width to inner diameter.

Face Grooving Dia.øD MIN.(ø25 Boss Dia.) is the limitation regardless of insert width, even widening the groove width to the center from the initial groove at øD MIN.(ø35) or øD MAX.(ø50). The toolholder interferes with the workpiece when closer to the center.



Installing GVFL250B | Installing GVFL490B



Installing GVFL250B | Installing GVFL490B

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

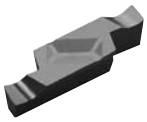
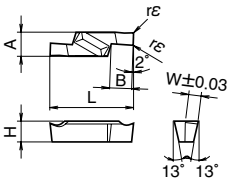
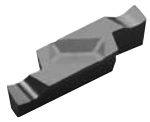
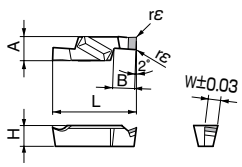
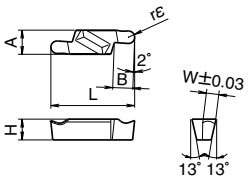
Applicable Inserts (mm)

Description	A	L	H
GVF$^{R}_{L}$ ···- ○○○ **A**	4.3	12	4.5
···- ○○○ **B**	5.8	20	5.0
···- ○○○ **C**	7.0	27	7.0
···- ○○○ **AR**	4.3	12	4.5
···- ○○○ **BR**	5.8	20	5.0

		TN90	TC40	TC60	PR630	PR930	KW10	KPD001	KPD010
P	Carbon Steel / Alloy Steel					◕			
M	Stainless Steel					◕			
K	Cast Iron						◕		
N	Non-ferrous Metals						◕		●
S	Titanium Alloy						◕		●
H	Hard materials (under 40HRC)					○			
	Hard materials (over 40HRC)								

Classification of usage

◕ : Continuous-Light Interruption / 1st Choice
◔ : Continuous-Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (R-hand shown)	Description	(Previous Description)	W	B	rε	TN90	TC40	TC60	PR630	PR930	KW10	KPD001	KPD010	Applicable Toolholder	Ref. Page for Toolholder
 	GVF$^{R}_{L}$ **200-020A**	GVF$^{R}_{L}$ **200A**	2.00	2.3	0.2	●	●			●	●			GFV$^{R}_{L}$ ···-**201A**	**G78**
	230-020A	**230A**	2.30				●			●	●				
	250-020A	**250A**	2.50			R	●			●	●				
	270-020A	**270A**	2.70				●			●	●				
	290-020A	**290A**	2.90				●			●	●				
	340-020A	**340A**	3.40				●			●	●				
	GVF$^{R}_{L}$ **250-020B**	GVF$^{R}_{L}$ **250B**	2.50	4.8	0.2	●	●			●	●			GFV$^{R}_{L}$ ···-○○**1B**	
	300-020B	**300B**	3.00			●	●			●	●			GFVS$^{R}_{L}$ ···-○○**1B**	
	350-020B	**350B**	3.50			●	●			●	●			GFVT$^{R}_{L}$ ···-○○**1B**	
	400-020B	**400B**	4.00	5.3		●	●			●	●			GFV$^{R}_{L}$ ···-○○**2B**	
	430-020B	**430B**	4.30				●			●	●			GFVS$^{R}_{L}$ ···-○○**2B**	
	460-020B	**460B**	4.60				●			●	●			GFVT$^{R}_{L}$ ···-○○**2B**	
	490-020B	**490B**	4.90				●			●	●				
	GVF$^{R}_{L}$ **350-040C**	GVF$^{R}_{L}$ **350C**	3.50	6.8	0.4	●	●			●	●			GFV$^{R}_{L}$ ···-○○**1C**	
	400-040C	**400C**	4.00			●	●			●	●			GFVS$^{R}_{L}$ ···-○○**1C**	
	450-040C	**450C**	4.50				●			●	●			GFVT$^{R}_{L}$ ···-○○**1C**	
	500-040C	**500C**	5.00	8.3		●	●			●	●			GFV$^{R}_{L}$ ···-○○**2C**	
	550-040C	**550C**	5.50				●			●	●			GFVS$^{R}_{L}$ ···-○○**2C**	
	600-040C	**600C**	6.00				●			●	●			GFVT$^{R}_{L}$ ···-○○**2C**	**G78**
  1-Edge	GVF$^{R}_{L}$ **250-020B**	GVF$^{R}_{L}$ **250B**	2.50	4.8	0.2								●	GFV$^{R}_{L}$ ···-○○**1B**	**G80**
	300-020B	**300B**	3.00										●	GFVS$^{R}_{L}$ ···-○○**1B**	
														GFVT$^{R}_{L}$ ···-○○**1B**	
	400-020B	**400B**	4.00	5.3										GFV$^{R}_{L}$ ···-○○**2B**	
														GFVS$^{R}_{L}$ ···-○○**2B**	
														GFVT$^{R}_{L}$ ···-○○**2B**	
	GVF$^{R}_{L}$ **350-020C**	**-**	3.50	6.8	0.2										
	400-020C	**-**	4.00											GFV$^{R}_{L}$ ···-○○**1C**	
														GFVS$^{R}_{L}$ ···-○○**1C**	
	GVF$^{R}_{L}$ **350-040C**	GVF$^{R}_{L}$ **350C**	3.50	6.8	0.4									GFVT$^{R}_{L}$ ···-○○**1C**	
	400-040C	**400C**	4.00												
  Full-R	GVF$^{R}_{L}$ **200-100AR**	GVF$^{R}_{L}$ **100AR**	2.00	2.3	1.00					●	●			GFV$^{R}_{L}$ ···-**201A**	**G78**
	250-125AR	**125AR**	2.50		1.25					●	●				
	300-150AR	**150AR**	3.00		1.50					●	●				
	GVF$^{R}_{L}$ **300-150BR**	GVF$^{R}_{L}$ **150BR**	3.00	4.8	1.50					●	●			GFV$^{R}_{L}$ ···-○○**1B**	
														GFVS$^{R}_{L}$ ···-○○**1B**	
														GFVT$^{R}_{L}$ ···-○○**1B**	**G78**
	400-200BR	**200BR**	4.00	5.3	2.00					●	●			GFV$^{R}_{L}$ ···-○○**2B**	**G80**
														GFVS$^{R}_{L}$ ···-○○**2B**	
														GFVT$^{R}_{L}$ ···-○○**2B**	

· Dimension B: shows available grooving depth.

For recommended cutting conditions, see page ➡ **G92**

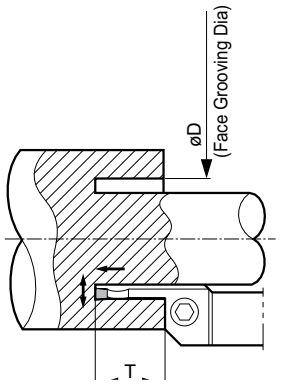
* The inserts are applicable to the GIFV type face grooving toolholder (G88).

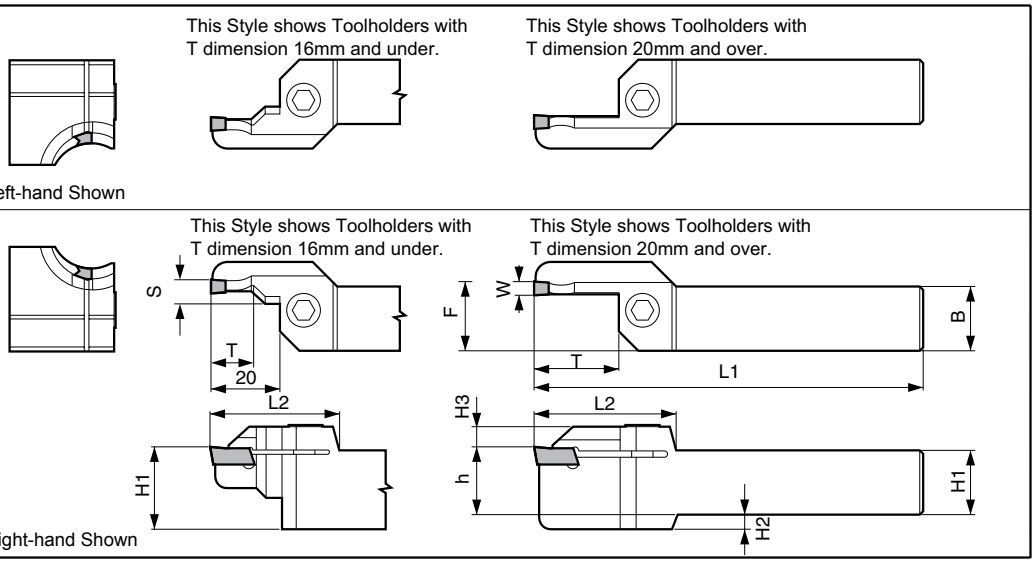
● : Std. Item ○ : Check Availability
R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

CBN & PCD Inserts are sold in 1 piece boxes.

KFMS





Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F	S	T	Width (mm) W	Face Grooving Dia. øD MIN.	MAX.	Spare Parts Screw	Wrench
KFMS R/L	2020K2530-3	●		20	-	10	20	125	39	20.7	6.1	13	3	25	30	HH5X20	LW-4
	2020K3040-3	●												30	40		
	2020K4050-3	●												40	50		
	2020K5065-3	●							41		-	22		50	65		
	2020K6585-3	●												65	85		
	2020K85110-3	●			5				44			25		85	110		
	2020K110145-3	●												110	145		
	2525M2530-3	●	●	25	-	10	25	150	39	25.7	6.1	13		25	30	HH5X25	LW-4
	2525M3040-3	●	●											30	40		
	2525M4050-3	●	●											40	50		
	2525M5065-3	●	●						41		-	22		50	65		
	2525M6585-3	●	●											65	85		
	2525M85110-3	●	●						44			25		85	110		
	2525M110145-3	●	●											110	145		
KFMS R/L	2020K2535-4	●		20	-	10	20	125	39	20.7	7.1	12	4	25	35	HH5X20	LW-4
	2020K3550-4	●									-	20		35	50		
	2020K5070-4	●							44			25		50	70		
	2020K70100-4	●			5									70	100		
	2020K100150-4	●												100	150		
	2020K150220-4	●												150	220		
	2020K220800-4	●												220	∞		
	2525M2535-4	●	●	25	-	10	25	150	39	25.7	7.1	12		25	35	HH5X25	LW-4
	2525M3550-4	●	●								-	20		35	50		
	2525M5070-4	●	●						44			25		50	70		
	2525M70100-4	●	●											70	100		
	2525M100150-4	●	●											100	150		
	2525M150220-4	●	●											150	220		
	2525M220800-4	●	●											220	∞		

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F	S	T	Width (mm) W	Face Grooving Dia. øD MIN.	MAX.	Spare Parts Screw	Wrench
KFMS R/L	2020K2535-5	●		20	-	10	20	125	39	20.7 (21.2)	-	20	5 (6)	25	35	HH5X20	LW-4
	2020K3550-5	●												35	50		
	2020K5075-5	●							44			25		50	75		
	2020K75115-5	●			5	10								75	115		
	2020K115180-5	●												115	180		
	2020K180235-5	●												180	235		
	2020K235800-5	●												235	∞		
	2525M2535-5	●	●	25	-	10	25	150	39	25.7 (26.2)	-	20		25	35	HH5X25	LW-4
	2525M3550-5	●	●											35	50		
	2525M5075-5	●	●						44			25		50	75		
	2525M75115-5	●	●											75	115		
	2525M115180-5	●	●						51			32		115	180		
	2525M180235-5	●	●											180	235		
	2525M235800-5	●	●											235	∞		

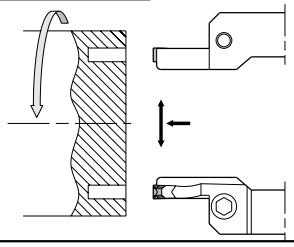
・Dimension T shows available grooving depth.

・Face Grooving Dia.øD: The diameter range of the initial groove.

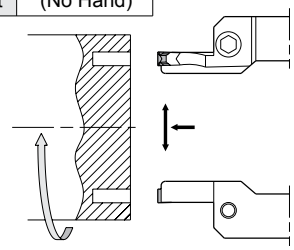
・For KFMS R/L….-5 Toolholder can hold a 6mm width insert. ( ) value shows the dimension of a 6mm width insert.

Selection of Toolholder & Insert

Toolholder	R-hand
Insert	(No Hand)



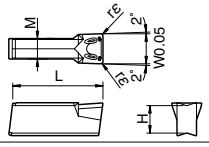
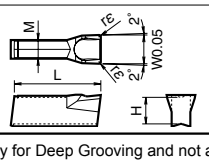
Toolholder	L-hand
Insert	(No Hand)



Applicable Inserts (mm)

Description	L	H
FMM30-03 ~ FMM60-04	12	3.5
FMN3 ~ FMN6	12	3.5

		Classification of usage
P	Carbon Steel / Alloy Steel	● : Continuous-Light Interruption / 1st Choice
M	Stainless Steel	◔ : Continuous-Light Interruption / 2nd Choice
K	Cast Iron	● : Continuous / 1st Choice
N	Non-ferrous Metals	○ : Continuous / 2nd Choice
S	Titanium Alloy	
H	Hard materials (under 40HRC)	
	Hard materials (over 40HRC)	

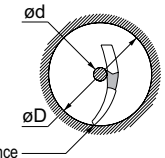
Insert		Description		Dimension (mm) W	rε	M	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PR930	PR905	Carbide KW10	Applicable Toolholder
 Face Grooving Chip Control Oriented / M Class		FMM	30-03	3.0	0.3	2.0	●	●	●	●	●	●	KFMS R/L··· 3
			40-04	4.0	0.4	2.6	●	●	●	●	●	●	KFMS R/L··· 4
			50-04	5.0		3.4	●	●	●	●	●	●	KFMS R/L··· 5
			60-04	6.0		4.0	●	●		●	●	●	
 Face Grooving Sharp-Cutting Oriented / M Class		FMN	3	3.0	0.25	2.0	●	●		●		●	KFMS R/L··· 3
			4	4.0		2.6	●	●		●		●	KFMS R/L··· 4
			5	5.0		3.4	●	●		●		●	KFMS R/L··· 5
			6	6.0		4.0		●		●		●	

・FMN type inserts are only for Deep Grooving and not applicable for Traversing.

Recommended Cutting Conditions G91

Limit of Traversing toward Center

Traversing towards the Center causes the toolholder to interfere with the groove wall depending on the initial cut's diameter.



Remaining Boss Dia.ød

Description	øD 25	26	27	28 and over
	ød			
KFMS R/L 2020K2530-3 / KFMS R/L 2525M2530-3	4	2	0	0
KFMS R/L 2020K2535-4 / KFMS R/L 2525M2535-4	6	3	0	
KFMS R/L 2020K2535-5 / KFMS R/L 2525M2535-5	7 *(5)	4 *(2)	1 *(0)	(No remaining Boss)

e.g.)
KFMSR 2525M2530-3 with ø25 as first cut towards the center, it will encounter rubbing of the holder cartridge when ød is 4.0mm.

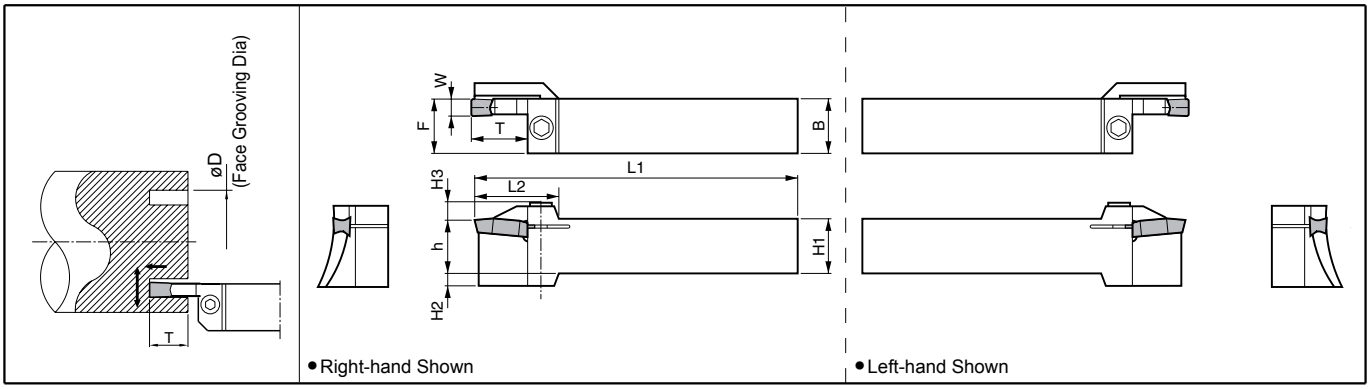
*( ) value shows the Dimension using FMM60-04 Insert.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

Face Grooving Toolholders

KFMS-8



Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F	T	Width (mm) W	Face Grooving Dia. øD MIN.	Face Grooving Dia. øD MAX.	Spare Parts Screw	Spare Parts Wrench	Ref. Page for Recommended Cutting Conditions
KFMS$^{R/L}$	2525M5464-8	●	●	25	-	9	25	150	41	26	25	8	54 (0)	64 (∞)	HH6X25	LW-5	G93
	2525M6382-8	●	●		2.4								63 (0)	82 (∞)			
	2525M80115-8	●	●		6	8			40				80 (0)	115 (∞)			
	2525M105160-8	●	●										105 (0)	160 (∞)			
	2525M155510-8	●	●	25	6	8	25	150	43	26	25	8	155 (0)	510 (∞)			
	3232P155510-8	●		32	-		32	170		33							

・Dimension T shows available grooving depth.

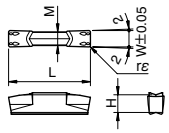
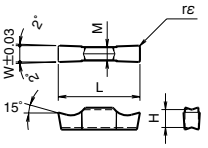
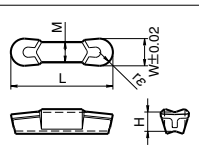
・The value ( ) of Face Grooving Dia. (øD Max) is the maximum outer diameter value after the initial groove between MIN ~ MAX. (It is possible to widen the groove to infinity ∞).
The value ( ) of Face Grooving Dia. (øD Min) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between MIN ~ MAX.

Applicable Inserts

(mm)

Description	L	H
GMM 8030-080MW	30	5.5
GMG 8030-050MG		
GMGA 8030-400R		

P	Carbon Steel / Alloy Steel			◔	●			Classification of usage
M	Stainless Steel			●	◔			
K	Cast Iron					●	◔	● : Continuous-Light Interruption / 1st Choice
N	Non-ferrous Metals						●	◔ : Continuous-Light Interruption / 2nd Choice
S	Titanium Alloy						●	● : Continuous / 1st Choice
H	Hard materials (under 40HRC)			○	●			○ : Continuous / 2nd Choice
	Hard materials (over 40HRC)							

Insert		Description	(Previous Description)	Dimension (mm) W	rε	M	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PVD Coated Carbide PR930	PVD Coated Carbide PR905	Carbide KW10	Applicable Toolholder	Ref. Page for Toolholder
 Chip Control Oriented / M Class		GMM 8030-080MW	GMM 8030-08	8.0	0.8	6.0		●	●	●	●	●	KFMS$^{R/L}$ ···8	G86
 Sharp-Cutting Oriented / Precision Class Ground Chipbreaker		GMG 8030-050MG	GMG 8030-05MG	8.0	0.5	6.0	●	●		●	●	●		
 Sharp-Cutting Oriented / Precision Class Full-R / Copying		GMGA 8030-400R	GMGA 8030-40R	8.0	4.0	6.0						●		

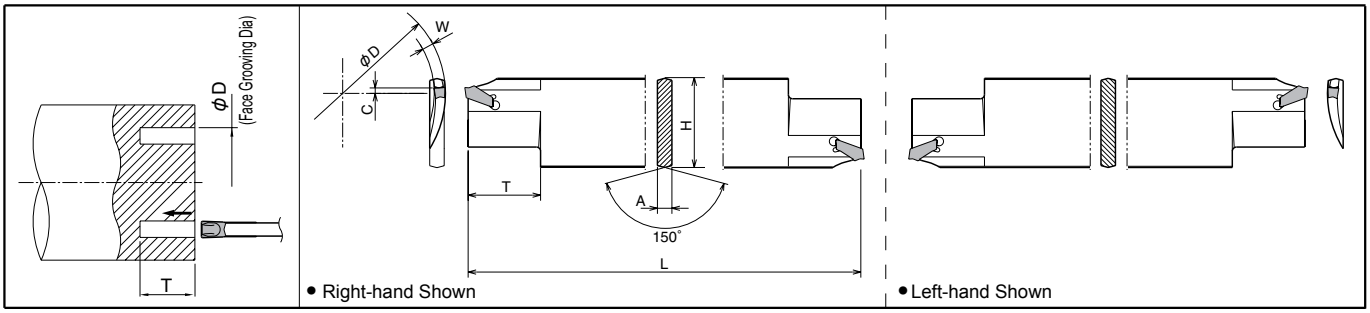
・If using a full-R insert with KIGM-8 type toolholder, you need to modify the corner of insert adapter of toolholder.

Inserts are sold in 10 piece boxes.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Face Grooving Blade

KFTB-S



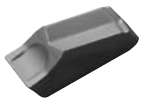
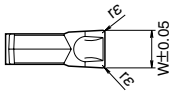
Blade Dimensions

Description		Std. R	Std. L	Dimension (mm) *H	L	A	T	C			Width (mm) W	Face Grooving Dia. øD MIN.	MAX.	Spare Parts Wrench	Applicable Inserts	Applicable Blocks ➔ H23
KFTB R/L	65100-4S	●	●	32	150	5.2	25	4			4.0	65	100	LTK-5	FTK4	KTKTB20-32 25-32 32-32 KTKTBF25-32 32-32
	90150-4S	●	●				30	0				90	150			
	150250-4S	●	●									140	250			
	250800-4S	●	●			3.2						230	∞			
KFTB R/L	90150-5S	●	●	32	150	5.2	30	0			5.0	90	150		FTK5	
	150250-5S	●	●				32					150	250			
	250800-5S	●	●			4.0	38					250	∞			

・Dimension T shows available grooving depth.
・Face Grooving Dia.øD: The diameter range of the initial groove.
・The insert has Self-Clamping system and it is not suitable for tight tolerance grooves (tolerance±0.05mm).
・KFTBR/L65100-4S toolholder is designed with the edge position 4mm above the Center.
* Dimension H shows the length between virtual tops.

Applicable Inserts

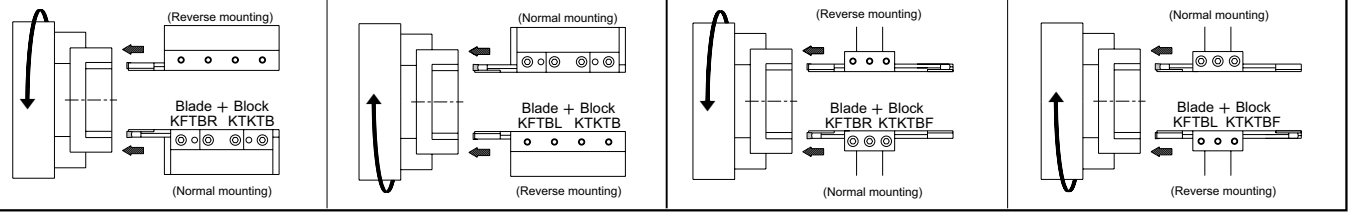
		Classification of usage
P	Carbon Steel / Alloy Steel	● : Continuous-Light Interruption / 1st Choice
M	Stainless Steel	◔ : Continuous-Light Interruption / 2nd Choice
K	Cast Iron	● : Continuous / 1st Choice
N	Non-ferrous Metals	○ : Continuous / 2nd Choice
S	Titanium Alloy	
H	Hard materials (under 40HRC)	
	Hard materials (over 40HRC)	

Insert		Description		Dimensions (mm) W	rε	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR660	PR930	Carbide KW10	Applicable Toolholder	Ref. Page for Toolholder
		FTK	4	4.0	0.25	●	●	●	●	●	KFTB R/L 65100-4S 90150-4S 150250-4S 250800-4S	G87
			5	5.0		●	●	●	●	●	KFTB R/L 90150-5S 150250-5S 250800-5S	

For recommended cutting conditions, see page ➔ G92

Selection of Blade and Insert

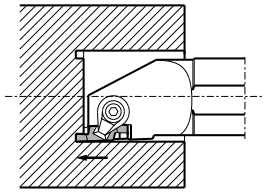
Combination of Blade + KTKTB				Combination of Blade + KTKTBF			
Blade	R-hand	Blade	L-hand	Blade	R-hand	Blade	L-hand
Insert	No Hand	Insert	No Hand	Insert	No Hand	Insert	No Hand

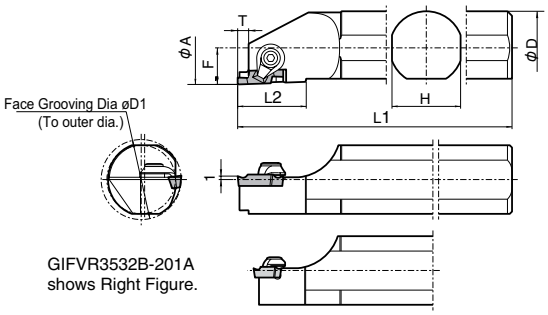


● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Face Grooving Toolholders (Round Shank) [GVF Insert]

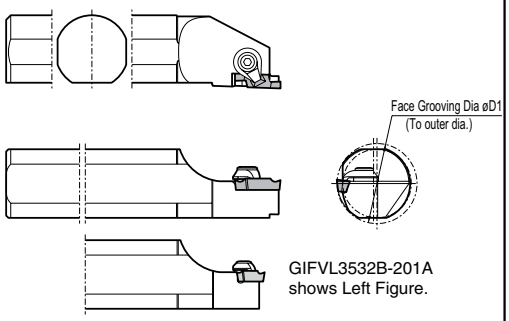
GIFV





GIFVR3532B-201A shows Right Figure.

● Right-hand Shown



GIFVL3532B-201A shows Left Figure.

● Left-hand Shown

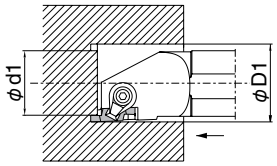
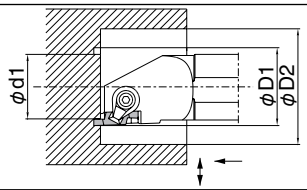
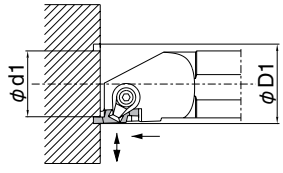
R-hand Insert for R-hand Toolholder, L-hand Insert for L-hand Toolholder.

● Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) øA	øD	H	L1	L2	F	T	Face Grooving Dia. øD1 MIN.	MAX.	Spare Parts: Clamp Set		Spare Parts: Wrench		Applicable Inserts (G83)
GIFV$^{R}_{L}$	3532B-201A	●	●	35	32	30	250	23	16	2.2	35 (12)	∞	CPS-5V	-	FT-15	-	GVF$^{R}_{L}$200A~340A GVF$^{R}_{L}$100AR~150AR
GIFV$^{R}_{L}$	3532B-351B	●	●	35				30		4.6	35 (25)	50 (∞)	-	CPS-6V	-	LW-3	GVF$^{R}_{L}$250B~350B GVF$^{R}_{L}$150BR
	3532B-352B	●	●							5.1	35 (25)	50 (∞)					GVF$^{R}_{L}$400B~490B GVF$^{R}_{L}$200BR
	5032B-501B	●	●	50						4.6	50 (25)	70 (∞)					GVF$^{R}_{L}$250B~350B GVF$^{R}_{L}$150BR
	5032B-502B	●	●							5.1	50 (25)	70 (∞)					GVF$^{R}_{L}$400B~490B GVF$^{R}_{L}$200BR
GIFV$^{R}_{L}$	5032B-501C	●	●	50				35		6.6	50 (25)	70 (∞)		CPS-8V		LW-4	GVF$^{R}_{L}$350C~450C
	5032B-502C	●	●							8.1	50 (25)	70 (∞)					GVF$^{R}_{L}$500C~600C

Note 1. Dimension T shows available grooving depth.
2. Standard toolholders are designed with the edge position 1.0mm above the center.

◆ Face Grooving Dia. øD1 depends on the application.

Application	Description	Face Grooving Dia. ød1 (MIN.)	Face Grooving Dia. øD1 MIN.	MAX.	(MAX.)	Remarks
	GIFV$^{R}_{L}$ 3532B-201A	-	35	∞	∞	-
	GIFV$^{R}_{L}$ 3532B-351B			50		
	3532B-352B					
	5032B-501B		50	70		
	5032B-502B					
	GIFV$^{R}_{L}$ 5032B-501C					
	5032B-502C					
	GIFV$^{R}_{L}$ 3532B-201A	12	35	∞	∞	If øD2 ≧ 58-2W, the Face Grooving Dia. can be expanded to ød1 (MIN.) toward the Center. W = Edge Width If øD2 ≧ 75-2W, the Face Grooving Dia. can be expanded to ød1 (MIN.) toward the Center. W = Edge Width
	GIFV$^{R}_{L}$ 3532B-351B	25		50		
	3532B-352B					
	5032B-501B		50	70		
	5032B-502B					
	GIFV$^{R}_{L}$ 5032B-501C					
	5032B-502C					
	GIFV$^{R}_{L}$ 3532B-201A	12	35	∞	∞	-
	GIFV$^{R}_{L}$ 3532B-351B	25		50		
	3532B-352B					
	5032B-501B		50	70		
	5032B-502B					
	GIFV$^{R}_{L}$ 5032B-501C					
	5032B-502C					

・The value ( ) of Face Grooving Dia. (øD1 (Max)) is the maximum outer diameter value after the initial groove between MIN~MAX. (It is possible to widen the groove to infinity ∞)
・The value ( ) of Face Grooving Dia. (ød1 (MIN)) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between MIN~MAX.

● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Recommended Cutting Conditions

◆ GBA type insert (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)									① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ ap at Traversing (mm)					Remarks
	Cermet		MEGA PVD Coated Carbide				Carbide	CBN	PCD						
	TC40	TN90	PR1215	PR930	PR1115	PR905	KW10	KBN510 KBN525	KPD001 (KPD010)	GBA○○R/L 033~100	GBA○○R/L 125~200	GBA○○R/L 230~300	GBA○○R/L 330~400	GBA○○R/L 400~480	
Carbon Steel (SxxC etc.)	☆ 150~220	☆ 150~220	★ 80~200	☆ 80~180	☆ 80~180	-	-	-	-	①0.03~0.08 ②Traversing N.A. ③Traversing N.A.	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.8	Coolant
Alloy Steel (SCM etc.)	☆ 130~200	☆ 130~200	★ 80~180	☆ 80~160	☆ 80~160	-	-	-	-	①0.03~0.07 ②Traversing N.A. ③Traversing N.A.	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.09 ②0.05~0.09 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.8	
Stainless Steel (SUS304 etc.)	-	☆ 70~150	☆ 60~150	☆ 60~130	★ 60~130	-	-	-	-	①0.03~0.07 ②Traversing N.A. ③Traversing N.A.	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.09 ②0.05~0.09 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.8	
Cast Iron (FC/FCD etc.)	-	-	-	-	-	★ 80~180	☆ 60~120	★ 150~400	-	①0.03~0.08 ②Traversing N.A. ③Traversing N.A.	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.8	
Aluminum	-	-	-	-	-	-	★ 150~400	-	★ 150~2000	①0.05~0.12 ②Traversing N.A. ③Traversing N.A.	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	
Brass	-	-	-	-	-	-	★ 150~300	-	★ 200~800	①0.05~0.12 ②Traversing N.A. ③Traversing N.A.	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	
Hard materials	-	-	-	-	-	-	-	★ 80~120	-	-	①0.02~0.05 ②Traversing N.A. ③Traversing N.A.	①0.03~0.07 ②0.01~0.04 ③Max. 0.1	-	-	

* Above cutting condition is for external grooving. Set both cutting speed and feed 10% higher for internal grooving. MEGA indicates MEGACOAT. ★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GBA type insert (MY Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc: m/min)								① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ ap at Traversing (mm)					Remarks
	Cermet		MEGA	PVD Coated Carbide		Carbide	CBN	PCD						
	TN6020	TC40	PR1215	PR930	PR1115	KW10	KBN510	KPD001 (KPD010)	GBA43R/L 175MY~ 200MY	GBA43R/L 230MY~ 265MY	GBA43R/L 300MY	GBA43R/L 330MY~ 350MY	GBA43R/L 400MY	
Carbon Steel (SxxC etc.)	☆ 150~220	-	★ 80~200	☆ 80~200	☆ 80~200	-	-	-	①0.03~0.08 ②0.03~0.08 ③Max. 0.3	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.8	Coolant
Alloy Steel (SCM etc.)	☆ 130~200	-	★ 80~180	☆ 80~180	☆ 80~180	-	-	-	①0.03~0.07 ②0.03~0.1 ③Max. 0.3	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.09 ②0.05~0.09 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.8	
Stainless Steel (SUS304 etc.)	☆ 70~150	-	☆ 60~150	☆ 60~150	★ 60~150	-	-	-	①0.03~0.07 ②0.03~0.1 ③Max. 0.3	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.09 ②0.05~0.09 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.8	

* Above cutting condition is for external grooving. Set both cutting speed and feed 10% higher for internal grooving. MEGA indicates MEGACOAT. ★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GB type insert (Ground Chipbreaker)

GB type will be switched to GBA type.

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ ap at Traversing (mm)					Remarks
	Cermet			PVD Coated Carbide		Carbide	CBN	PCD						
	TN90	TC40	TC60	PR630	PR930	KW10	KBN510	KPD001 (KPD010)	GB○○R/L 050~100	GB○○R/L 125~200	GB○○R/L 230~300	GB○○R/L 330~400	GB○○R/L 400~480	
Carbon Steel (SxxC etc.)	-	☆ 150~220	☆ 100~150	☆ 80~200	★ 80~180	-	-	-	①0.03~0.08 ②Traversing N.A. ③Traversing N.A.	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.8	Wet
Alloy Steel (SCM etc.)	-	☆ 130~200	☆ 80~130	☆ 80~180	★ 80~160	-	-	-	①0.03~0.07 ②Traversing N.A. ③Traversing N.A.	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.09 ②0.05~0.09 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.8	
Stainless Steel (SUS304 etc.)	-	-	☆ 60~100	☆ 60~150	★ 60~130	-	-	-	①0.03~0.07 ②Traversing N.A. ③Traversing N.A.	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.09 ②0.05~0.09 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.8	
Cast Iron (FC/FCD etc.)	-	-	-	-	-	★ 60~100	-	-	①0.03~0.08 ②Traversing N.A. ③Traversing N.A.	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.8	
Aluminum	-	-	-	-	-	★ 150~400	-	★ 150~2000	①0.05~0.12 ②Traversing N.A. ③Traversing N.A.	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	
Brass	-	-	-	-	-	★ 150~300	-	★ 200~800	①0.05~0.12 ②Traversing N.A. ③Traversing N.A.	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ Recommended Insert Grade (Tip-Bars)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)				PSG05	PSG06 PSG07 PSG08	Remarks
	Cermet	PVD Coated Carbide		Carbide			
	TC60		PR930	KW10	Feed Rate (mm/rev)		
General Steel (S45C etc.)	☆ 60~120		★ 30~100		~0.03	~0.05	Wet
Stainless Steel (SUS304 etc.)	☆ 50~100		★ 30~80		~0.02	~0.03	
Non-ferrous Metals (Aluminum / Brass etc.)				★ ~300	~0.05	~0.08	

★ : 1st Recommendation ☆ : 2nd Recommendation

Note for using the grooving insert bar PSG-S type

How to Install

Ultra small grooving requires accurate installation because an error of insert height or angle can affect the machining precision.When installing, set the cutting edge higher than the center line as shown in the Table 1. The cutting edge of all the PSG-S type bars is designed to be higher than the center line. (L4 of insert bar dimension)

Recommended Cutting Conditions

◆ TGF insert (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ // ap (mm)				Remarks
	Cermet			PVD Coated Carbide		Carbide	CBN	PCD					
	TN90	TC40	TC60	PR930	PR1115	KW10	KBN510	KPD001 (KPD010)	TGF32R/L 033~050	TGF32R/L 075~095	TGF32R/L 100~145	TGF32R/L 150~250	
Carbon Steel	☆ 150~220	☆ 150~220	☆ 100~150	☆ 80~180	★ 80~180	-	-	-	①0.01~0.05 ②Traversing N.A. ③Traversing N.A.	①0.02~0.07 ②Traversing N.A. ③Traversing N.A.	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	Coolant
Alloy Steel	☆ 130~200	☆ 130~200	☆ 80~130	☆ 80~160	★ 80~160	-	-	-	①0.01~0.04 ②Traversing N.A. ③Traversing N.A.	①0.02~0.06 ②Traversing N.A. ③Traversing N.A.	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	
Stainless Steel	☆ 70~150	-	☆ 60~100	☆ 60~130	★ 60~130	-	-	-	①0.01~0.04 ②Traversing N.A. ③Traversing N.A.	①0.02~0.06 ②Traversing N.A. ③Traversing N.A.	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	
Cast Iron	-	-	-	-	-	★ 60~100	-	-	①0.01~0.05 ②Traversing N.A. ③Traversing N.A.	①0.02~0.07 ②Traversing N.A. ③Traversing N.A.	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	
Aluminum	-	-	-	-	-	★ 150~400	-	★ 150~2000	①0.01~0.05 ②Traversing N.A. ③Traversing N.A.	①0.02~0.07 ②Traversing N.A. ③Traversing N.A.	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	
Brass	-	-	-	-	-	★ 150~300	-	★ 200~800	①0.01~0.04 ②Traversing N.A. ③Traversing N.A.	①0.02~0.06 ②Traversing N.A. ③Traversing N.A.	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ TG insert (Ground Chipbreaker)

changes to GBA.

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								Feed Rate (mm/rev)					Remarks
	Cermet			PVD Coated Carbide		Carbide	CBN	PCD						
	TN60	TC40	TC60	PR630	PR930	KW10	KBN510	KPD001 (KPD010)	TG○○R/L 075~095	TG○○R/L 125~200	TG○○R/L 230~300	TG○○R/L 330~400	TG○○R/L 430~450	
Carbon Steel	★ 150~220	-	-	-	-	-	-	-	0.03~0.07	0.03~0.08	0.05~0.1	0.05~0.12	0.05~0.12	Coolant
Alloy Steel	★ 130~200	-	-	-	-	-	-	-	0.02~0.06	0.03~0.07	0.05~0.09	0.05~0.1	0.05~0.1	

* Above cutting condition is for external grooving. Set both cutting speed and feed rate lower than 10% for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GH insert (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ // ap (mm)				Remarks
	Cermet			PVD Coated Carbide		Carbide	Ceramic						
	TN90	TC40	TC60	PR630	PR930	KW10	A65	A66N	GH 40~50	GH 55~70	GH 75~80	GH 100~120	
Carbon Steel	☆ 150~220	☆ 150~220	☆ 100~150	☆ 80~200	★ 80~180	-	-	-	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.1~0.25 ②0.1~0.2 ③Max. 1.5	①0.15~0.3 ②0.15~0.25 ③Max. 2.0	Coolant
Alloy Steel	☆ 130~200	☆ 130~200	☆ 80~130	☆ 80~180	★ 80~160	-	-	-	①0.07~0.18 ②0.07~0.13 ③Max. 1.0	①0.07~0.18 ②0.07~0.13 ③Max. 1.0	①0.1~0.23 ②0.1~0.18 ③Max. 1.5	①0.15~0.27 ②0.15~0.22 ③Max. 2.0	
Stainless Steel	☆ 70~150	-	☆ 60~100	☆ 60~150	★ 60~130	-	-	-	①0.07~0.16 ②0.07~0.13 ③Max. 1.0	①0.07~0.16 ②0.07~0.13 ③Max. 1.0	①0.1~0.21 ②0.1~0.18 ③Max. 1.5	①0.15~0.25 ②0.15~0.22 ③Max. 2.0	
Cast Iron	-	-	-	-	-	★ 60~100	☆ 150~300	☆ 150~300	KW10 ①0.07~0.2 ②0.07~0.15 ③Max. 1.0 A65 / A66N ①0.03~0.07 ②Traversing N.A. ③Traversing N.A.	KW10 ①0.07~0.2 ②0.07~0.15 ③Max. 1.0 A65 / A66N ①0.03~0.07 ②Traversing N.A. ③Traversing N.A.	KW10 ①0.1~0.25 ②0.1~0.2 ③Max. 1.5 A65 / A66N ①0.05~0.09 ②Traversing N.A. ③Traversing N.A.	KW10 ①0.15~0.3 ②0.15~0.25 ③Max. 2.0 A65 / A66N ①0.05~0.09 ②Traversing N.A. ③Traversing N.A.	
Aluminum	-	-	-	-	-	★ 150~400	-	-	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.1~0.25 ②0.1~0.2 ③Max. 1.5	①0.15~0.3 ②0.15~0.25 ③Max. 2.0	
Brass	-	-	-	-	-	★ 150~300	-	-	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.1~0.25 ②0.1~0.2 ③Max. 1.5	①0.15~0.3 ②0.15~0.25 ③Max. 2.0	
Hard Materials	-	-	-	-	-	-	☆ 40~80	☆ 40~80	①0.02~0.05 ②0.01~0.03 ③Max. 0.1	①0.02~0.05 ②0.01~0.03 ③Max. 0.2	①0.02~0.05 ②0.01~0.04 ③Max. 0.2		

* Above cutting condition is for external grooving. Set both cutting speed and feed rate lower than 10% for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GHU insert (Molded Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ // ap (mm)				Remarks
	Cermet			CVD Coated Carbide	PVD Coated Carbide		Ceramic						
	TN60	TC40	TC60	CR9025	PR630	PR930	A65	A66N	GHU 40	GHU 50	GHU 60		
Carbon Steel	☆ 130~200	-	-	☆ 80~180	-	-	-	-	①0.06~0.12 ②0.05~0.1 ③Max. 1.0	①0.06~0.12 ②0.05~0.1 ③Max. 1.0	①0.06~0.15 ②0.05~0.12 ③Max. 1.5		Coolant
Alloy Steel	☆ 100~180	-	-	☆ 80~160	-	-	-	-	①0.06~0.12 ②0.05~0.1 ③Max. 1.0	①0.06~0.12 ②0.05~0.1 ③Max. 1.0	①0.06~0.15 ②0.05~0.12 ③Max. 1.5		
Stainless Steel	-	-	-	☆ 60~130	-	-	-	-	①0.06~0.1 ②0.05~0.08 ③Max. 0.8	①0.06~0.1 ②0.05~0.08 ③Max. 0.8	①0.06~0.12 ②0.05~0.1 ③Max. 1.2		

* Above cutting condition is for external grooving. Set both cutting speed and feed rate lower than 10% for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GA insert (Molded Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ // ap (mm)					Remarks
	Cermet				CVD Coated Carbide	PVD Coated Carbide		Carbide						
	TN60	TN90	TC40	TC60	CR9025	PR630	PR930	KW10	GA 30	GA 40	GA 50			
Carbon Steel	☆ 130~200	-	-	-	★ 80~180	-	-	-	①0.06~0.18 ②0.05~0.15 ③Max. 0.8	①0.06~0.21 ②0.05~0.17 ③Max. 1.0	①0.06~0.25 ②0.05~0.2 ③Max. 1.3			Coolant
Alloy Steel	☆ 100~180	-	-	-	★ 80~160	-	-	-	①0.06~0.15 ②0.05~0.12 ③Max. 0.3	①0.06~0.18 ②0.05~0.15 ③Max. 0.5	①0.06~0.22 ②0.05~0.18 ③Max. 0.8			
Stainless Steel	-	-	-	-	★ 60~130	-	-	-	①0.06~0.1 ②0.05~0.08 ③Max. 0.8	①0.06~0.1 ②0.05~0.08 ③Max. 0.8	①0.06~0.12 ②0.05~0.1 ③Max. 1.2			

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GIA insert (Molded Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ // ap (mm)					Remarks
	Cermet				CVD Coated Carbide	PVD Coated Carbide		Carbide						
	TN60	TN90	TC40	TC60	CR9025	PR630	PR930	KW10	GIA 30	GIA 40	GIA 50			
Carbon Steel	☆ 60~120	-	-	-	★ 60~120	-	-	-	①0.04~0.08 ②0.02~0.08 ③Max. 0.3	①0.04~0.09 ②0.02~0.08 ③Max. 0.4	①0.05~0.1 ②0.05~0.08 ③Max. 0.5			Coolant
Alloy Steel	☆ 60~100	-	-	-	★ 60~100	-	-	-	①0.04~0.07 ②0.02~0.07 ③Max. 0.3	①0.04~0.07 ②0.02~0.07 ③Max. 0.4	①0.05~0.08 ②0.05~0.08 ③Max. 0.5			
Stainless Steel	-	-	-	-	★ 60~80	-	-	-	①0.04~0.07 ②0.02~0.07 ③Max. 0.3	①0.04~0.07 ②0.02~0.07 ③Max. 0.4	①0.05~0.08 ②0.05~0.08 ③Max. 0.5			

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GMN insert (CBN / PCD)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)		① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ // ap (mm)				Remarks
	CBN	PCD					
	KBN510 KBN525 (KBN10B)	KPD001 (KPD010)	GMN2	GMN3	GMN4 GMN5	GMN6	
Aluminum	-	★ 150~2000	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.8	①0.08~0.18 ②0.08~0.18 ③Max. 0.8	①0.10~0.20 ②0.10~0.20 ③Max. 0.8	Coolant
Brass	-	★ 200~800	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.8	①0.08~0.18 ②0.08~0.18 ③Max. 0.8	①0.10~0.20 ②0.10~0.20 ③Max. 0.8	
Cast Iron	★ 150~400	-	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.12 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.8	
Hard Materials	★ 80~120	-	①0.02~0.05 ②0.01~0.03 ③Max. 0.1	①0.03~0.07 ②0.01~0.05 ③Max. 0.2	①0.03~0.08 ②0.03~0.08 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.4	

* Above cutting condition is for external grooving. Set feed rate lower than 20% for face grooving.

★ : 1st Recommendation

■ FMM • FMN

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)						Face Grooving (FMM type / FMN type) Width (mm)			Traversing (Case of FMM type) Width (mm)			Remarks
	Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide							
	TN90	CR9025	PR915	PR930	PR905	KW10	3.0	4.0	5.0 / 6.0	3.0	4.0	5.0 / 6.0	
							f (mm/rev)			f (mm/rev)			
Carbon Steel	☆ 100~220	☆ 80~200	☆ 80~200	★ 80~200	-	-	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	Coolant
Alloy Steel	☆ 80~200	☆ 70~180	☆ 70~180	★ 70~180	-	-	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	
Stainless Steel	☆ 70~160	☆ 60~150	★ 60~150	☆ 60~150	-	-	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	
Cast Iron	-	-	-	-	★ 80~180	☆ 70~150	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	
Aluminum	-	-	-	-	-	★ 200~500	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	
Brass	-	-	-	-	-	★ 100~200	0.03~0.05	0.03~0.08	0.05~0.10	0.05~0.10	0.05~0.25	0.10~0.30	

Set the feed rate 1/100 of edge width on the first groove and check chip evacuation.

FMN type Inserts are only for Deep Grooving, and when used for traversing. set to ap=0.2mm and under.

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ See the notes below for traversing conditions.

ap and f of FMM

	Recommended Conditions
ap (MAX) mm	under 50% of Edge Width
f (MAX) mm/rev	under 3~5% of Edge Width

・ap≦0.5w

・f≦ [0.03 (Min.)~0.05 (MAX.)] w

ap×f should be as follows.

Load (mm^2) \ Edge Width (mm)	3.0	4.0	5.0	6.0
ap×f	~0.09	~0.14	~0.25	~0.36

・ap×f≦0.01 w^2

Recommended Cutting Conditions

GV insert (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)						① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ // ap (mm)						Remarks
	Cermet			PVD Coated Carbide		Carbide	GV$^{R}_{L}$ 100SS~300SS 100S~300S	GV$^{R}_{L}$ 145B~185B	GV$^{R}_{L}$ 200B~280B	GV$^{R}_{L}$ 300B~400B			
	TN90	TC40	TC60	PR630	PR930	KW10	GV$^{R}_{L}$ 100A~340A 100AR~150AR		GV$^{R}_{L}$ 100BR	GV$^{R}_{L}$ 150BR	GV$^{R}_{L}$ 280C~300C	GV$^{R}_{L}$ 340C~400C	GV$^{R}_{L}$ 430C~500C	
Carbon Steel	☆ 120~180	☆ 120~180	☆ 80~120	☆ 80~160	★ 80~140	-	①0.03~0.08 ②0.03~0.08 ③Max. 0.3	①0.03~0.08 ②0.03~0.08 ③Max. 0.3	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	Coolant
Alloy Steel	☆ 100~160	☆ 100~160	☆ 80~100	☆ 80~140	★ 80~120	-	①0.03~0.07 ②0.03~0.1 ③Max. 0.3	①0.03~0.07 ②0.03~0.1 ③Max. 0.3	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	
Stainless Steel	☆ 70~130	-	☆ 60~100	☆ 60~130	★ 60~110	-	①0.03~0.07 ②0.03~0.1 ③Max. 0.3	①0.03~0.07 ②0.03~0.1 ③Max. 0.3	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	
Cast Iron	-	-	-	-	-	★ 60~100	①0.03~0.08 ②0.03~0.08 ③Max. 0.3	①0.03~0.08 ②0.03~0.08 ③Max. 0.3	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	
Aluminum	-	-	-	-	-	★ 150~300	①0.05~0.12 ②0.05~0.12 ③Max. 0.5	①0.05~0.12 ②0.05~0.12 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	
Brass	-	-	-	-	-	★ 100~250	①0.05~0.12 ②0.05~0.12 ③Max. 0.5	①0.05~0.12 ②0.05~0.12 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	

* Use PVD coated grade or carbide for traversing with edge width 1mm (GV$^{R}_{L}$ 100SS / 100S / 100A)

★ : 1st Recommendation ☆ : 2nd Recommendation

GVF insert (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ // ap (mm)					Remarks
	Cermet				CVD Coated Carbide	PVD Coated Carbide		Carbide	GVF$^{R}_{L}$ 200A~340A	GVF$^{R}_{L}$ 250B~350B	GVF$^{R}_{L}$ 400B~490B	GVF$^{R}_{L}$ 350C~450C	GVF$^{R}_{L}$ 500C~600C	
	TN60	TN90	TC40	TC60	CR9025	PR630	PR930	KW10	GVF$^{R}_{L}$ 100AR~150AR	GVF$^{R}_{L}$ 150BR	GVF$^{R}_{L}$ 200BR			
Carbon Steel	-	☆ 150~220	☆ 150~220	☆ 100~150	-	☆ 80~200	★ 80~180	-	①0.03~0.08 ②0.03~0.08 ③Max. 0.3	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.8	Coolant
Alloy Steel	-	☆ 130~200	☆ 130~200	☆ 80~130	-	☆ 80~180	★ 80~160	-	①0.03~0.07 ②0.03~0.1 ③Max. 0.3	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.09 ②0.05~0.09 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.8	
Stainless Steel	-	☆ 70~150	-	☆ 60~100	-	☆ 60~150	★ 60~130	-	①0.03~0.07 ②0.03~0.1 ③Max. 0.3	①0.04~0.08 ②0.04~0.08 ③Max. 0.3	①0.05~0.09 ②0.05~0.09 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.1 ②0.05~0.1 ③Max. 0.8	
Cast Iron	-	-	-	-	-	-	-	★ 60~100	①0.03~0.08 ②0.03~0.08 ③Max. 0.3	①0.04~0.09 ②0.04~0.09 ③Max. 0.3	①0.05~0.1 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.5	①0.05~0.12 ②0.05~0.1 ③Max. 0.8	
Aluminum	-	-	-	-	-	-	-	★ 150~400	①0.05~0.12 ②0.05~0.12 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	
Brass	-	-	-	-	-	-	-	★ 150~300	①0.05~0.12 ②0.05~0.12 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.5	①0.05~0.15 ②0.05~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	①0.08~0.15 ②0.08~0.15 ③Max. 0.8	

・The ap should be under 0.5mm if a good surface finish is required.

★ : 1st Recommendation ☆ : 2nd Recommendation

FTK Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)					Edge Width (mm)					Remarks
	Cermet	CVD Coated Carbide	PVD Coated Carbide		Carbide	4.0	5.0				
	TN90	CR9025	PR660	PR930	KW10	f (mm/rev)					
Carbon Steel	☆ 120~200	★ 80~180	☆ 60~130	☆ 60~130	-	0.05~0.15	0.05~0.15				Coolant
Alloy Steel	☆ 100~160	★ 70~150	☆ 60~130	☆ 60~130	-	0.05~0.15	0.05~0.15				
Stainless Steel	☆ 80~150	☆ 60~140	★ 50~120	☆ 50~120	-	0.05~0.15	0.05~0.15				
Cast Iron	-	-	-	-	★ 50~100	0.10~0.30	0.10~0.30				
Aluminum	-	-	-	-	★ 200~450	0.05~0.25	0.05~0.25				
Brass	-	-	-	-	★ 100~200	0.05~0.25	0.05~0.25				

★ : 1st Recommendation ☆ : 2nd Recommendation

GMG • GMM • GMN • GMGA

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)						Grooving				Traversing				Remarks
	Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide	Width (mm)				Width (mm)				
	TN90	CR9025	PR915	PR930	PR905	KW10	2.0~3.0	4.0	5.0	6.0 / 8.0	2.0~3.0	4.0	5.0	6.0 / 8.0	
							f (mm/rev)				f (mm/rev)				
Carbon Steel	☆ 100~220	☆ 80~200	☆ 80~200	★ 80~200	-	-	0.05~0.15	0.10~0.25	0.15~0.35	0.20~0.35	0.10~0.20	0.15~0.30	0.20~0.40	0.25~0.40	Coolant
Alloy Steel	☆ 80~200	☆ 70~180	☆ 70~180	★ 70~180	-	-	0.05~0.15	0.10~0.25	0.15~0.35	0.20~0.35	0.10~0.20	0.15~0.30	0.20~0.40	0.25~0.40	
Stainless Steel	☆ 70~160	☆ 60~150	★ 60~150	☆ 60~150	-	-	0.05~0.15	0.10~0.20	0.15~0.35	0.20~0.35	0.10~0.20	0.15~0.25	0.20~0.40	0.25~0.40	
Cast Iron	-	-	-	-	★ 100~200	☆ 70~150	0.05~0.20	0.10~0.30	0.15~0.40	0.20~0.40	0.10~0.25	0.15~0.35	0.20~0.45	0.25~0.45	
Aluminum	-	-	-	-	-	★ 200~500	0.05~0.20	0.08~0.25	0.10~0.25	0.12~0.30	0.10~0.20	0.10~0.25	0.10~0.25	0.15~0.30	
Brass	-	-	-	-	-	★ 100~200	0.05~0.15	0.08~0.20	0.10~0.25	0.12~0.30	0.10~0.20	0.10~0.25	0.10~0.25	0.15~0.30	

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ See the notes below for traversing conditions.

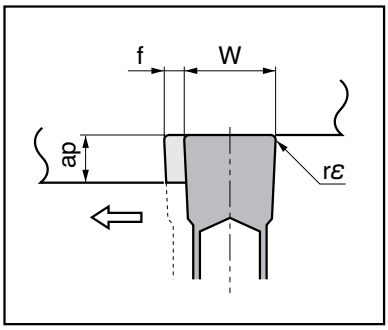
① Case of KGM Toolholder

	Recommended Conditions	
ap (MAX) mm	under 80% of Edge Width	・ap≦0.8w
f (MAX) mm/rev	under 10% of Edge Width	・f≦0.1w

(ap)×(f) shall not exceed 1/2 of ap(Max)×f(Max)

Load (mm^2) \ Edge Width (mm)	2.0~2.5	3.0	4.0	5.0	6.0	8.0
ap×f	~0.20	~0.36	~0.64	~1.00	~1.44	~2.56

・ap×f≦ $\frac{1}{2}$×0.8w×0.1w=0.04w^2



② Case of KGM-T Toolholder (Deep Grooving Type) : Use 90% of KGM conditions

③ Case of KGMM / KGMS / KFMS-8 Toolholder

	Recommended Conditions	
ap (MAX) mm	under 50% of Edge Width	・ap≦0.5w
f (MAX) mm/rev	under 4% of Edge Width	・f≦0.04w

ap×f should be as follows. (Under 50% of KGM)

Load (mm^2) \ Edge Width (mm)	2.0~2.5	3.0	4.0	5.0	6.0	8.0
ap×f	~0.10	~0.18	~0.32	~0.50	~0.72	~1.28

・ap×f≦0.02w^2

④ Case of KIGM Toolholder

	Recommended Conditions	
ap (MAX) mm	under 70% of Edge Width	・ap≦0.7w
f (MAX) mm/rev	under 8% of Edge Width	・f≦0.08w

ap×f should be as follows. (Under 70% of KGM)

Load (mm^2) \ Edge Width (mm)	3.0	4.0	5.0
ap×f	~0.25	~0.44	~0.70

・ap×f≦0.04w^2

GMG / GMM / GMGA 8030 (Face Grooving)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)						Face Grooving			Traversing			Remarks
	Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide	Width (mm)			Width (mm)			
	TN90	CR9025	PR915	PR930	PR905	KW10	8.0			8.0			
							f (mm/rev)			f (mm/rev)			
Carbon Steel	☆ 100~220	☆ 80~160	☆ 80~160	★ 80~160	-	-	0.1~0.2			0.1~0.25			Coolant
Alloy Steel	☆ 80~160	☆ 70~160	☆ 70~160	★ 70~160	-	-	0.1~0.2			0.1~0.25			
Stainless Steel	☆ 70~140	☆ 60~130	★ 60~130	☆ 60~130	-	-	0.1~0.2			0.1~0.25			
Cast Iron	-	-	-	-	★ 80~180	☆ 70~130	0.1~0.3			0.1~0.35			
Aluminum	-	-	-	-	-	★ 200~300	0.08~0.25			0.08~0.30			
Brass	-	-	-	-	-	★ 100~150	0.08~0.25			0.08~0.30			

★ : 1st Recommendation ☆ : 2nd Recommendation

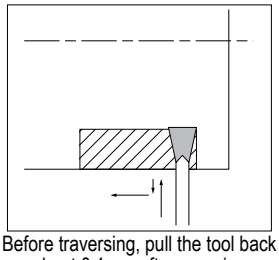
Guide for Grooving

Guide for External Grooving

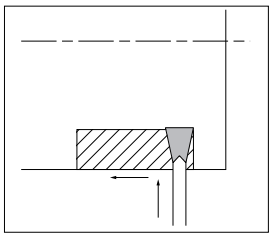
Point (Ⅰ) (Traversing after Grooving)

① Grooving Depth Over 0.5mm: At roughing (Refer to Fig.1)
Before traversing, pull the tool back about 0.1mm after grooving, instead of traversing subsequent to grooving.
(Failure to pull the tool back before traverse cutting will result in an unbalanced load applied on only one side of the cutting edge.)

② Grooving Depth under 0.5mm: At finishing (Refer to Fig.2)
Traversing subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.
(Dwell-motion is not necessary.)



Before traversing, pull the tool back about 0.1mm after grooving
(Grooving Depth Over 0.5mm: At roughing)
Fig.1



Traversing subsequent to grooving
(Grooving Depth under 0.5mm: At finishing)
Fig.2

Point (Ⅱ)

When widening the groove width, apply the “Step Turning” as shown in Fig.3.
The widened groove and side walls should be finished last.
(For better chip control, ap over 0.5mm is recommended.)
Note: If the workpiece is not supported at the center, reduce the feed rate when grooving towards center

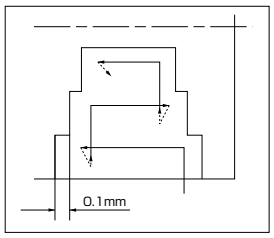


Fig.3

Guide for Face Grooving

〈Toolholder Selection〉

① Choose the best tool depending on the groove width.
The machining Dia. øD listed in the catalog indicates the depth of the first plunge of face grooving as shown in Fig.1.

② Confirm Grooving Depth (dimension T)

③ Toolholder's hand is recommended so as to be mounted in reverse. (Fig.2)
This will provide smooth chip flow and chip clearance.

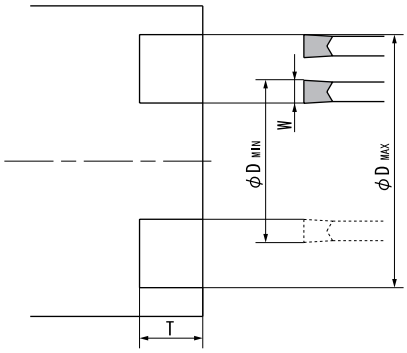


Fig.1

〈Traversing Tips〉

Traversing direction should be from the outer diameter to the inner diameter as shown in Fig.3.
This improves chip evacuation.

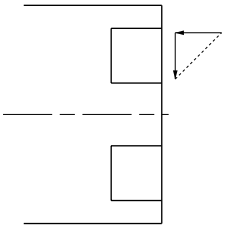


Fig.3

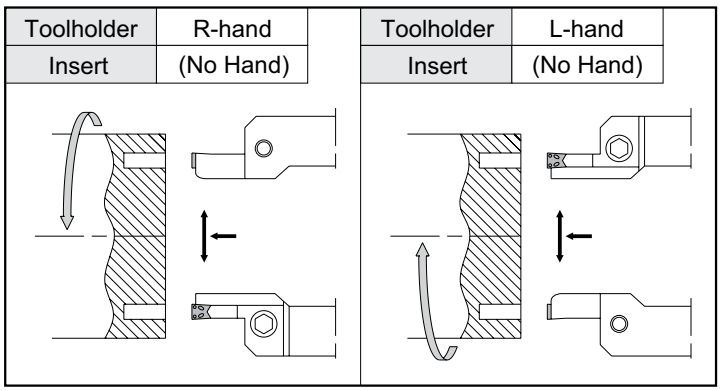
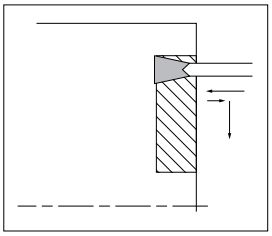


Fig.2 Toolholder's Hand and Rotation

Guide for Face Grooving (Continued)

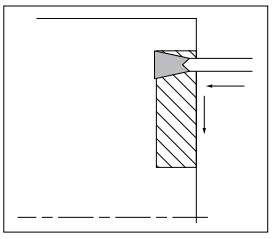
Point (Ⅰ) (Traversing after Grooving)

① Grooving Depth Over 0.5mm: At roughing (Refer to Fig.4)
Before traversing, pull the tool back about 0.1mm after grooving, instead of traversing subsequent to grooving.
(Failure to pull the tool back before traverse cutting will result in an unbalanced load applied on only one side of the cutting edge.)



Before traversing, pull the tool back about 0.1mm after grooving
(Grooving Depth Over 0.5mm: At roughing)
Fig.4

② Grooving Depth under 0.5mm: At finishing (Refer to Fig.5)
Traversing subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.
(Dwell-motion is not necessary.)



Traversing subsequent to grooving
(Grooving Depth under 0.5mm: At finishing)
Fig.5

Point (Ⅱ)

When widening the groove width, apply the “Step Turning” as shown in Fig.6.
The widened groove and side walls should be finished last.
(For better chip control, ap over 0.5mm is recommended.)

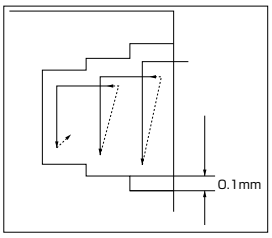
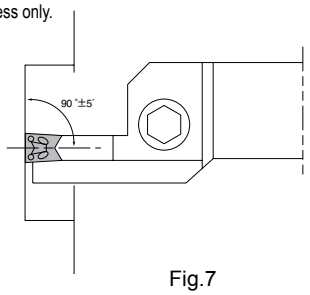


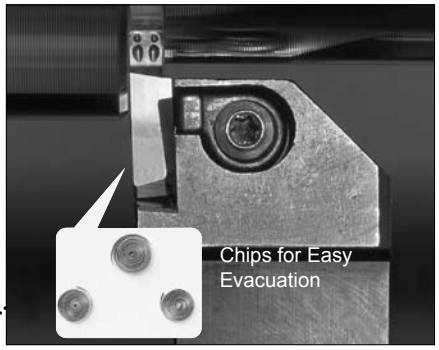
Fig.6

Trouble shooting

Trouble	Countermeasures
Whitish trace remains at the groove bottom.	① Increase the cutting speed for finishing process only. (This can handle most of the cases). If the method is not successful, try ② as follows. ② Check the insert edge's parallelness. (Adjustment: Apply the insert edge to the work face and adjust the toolholder within the angle of ±5'. (Fig.7)  Fig.7
Chips are entangled.	① Apply the toolholder's reverse mounting. Adjust the coolant flow to the cutting edge. ② When widening the groove, do not machine one deep groove. Instead, repeat shallow grooving and turning.
Insert cracks when traversing.	Reverse the facing direction.
Groove is not straight.	Check the edge's parallelness. Decrease the feed rate.

Guide for Grooving by Cermet Insert (Steel)

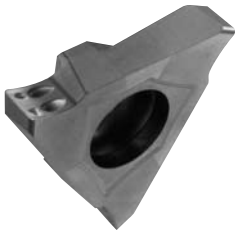
1. Set the f under 0.12mm/rev (0.05~0.10mm/rev normally).
2. Coolant is recommended.
3. Set the cutting speed V_C=150-220m/min.
4. Set the toolholder overhang as short as possible.



How to Improve Surface Finish (when surface roughness below 3 μm Rz is required)

1. Increase the cutting speed (V_C=220m/min.MAX)
2. Program dwell-motion at the groove bottom.
3. Apply a light hone to the cutting edge by hand lapper.

Chip Control of Grooving Insert with Molded Chipbreaker

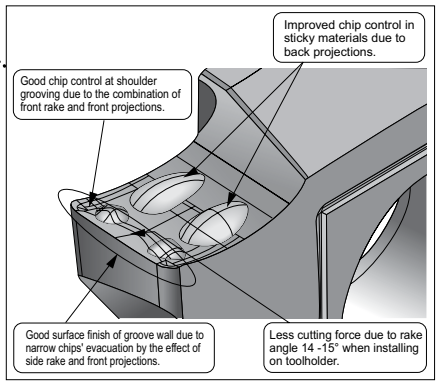


GBA-MY

3-Edge Molded Chipbreaker

- Advantages of MY Chipbreaker

1. Molded chipbreaker curls chips spirally and evacuates chips easily.
2. High precision molded Insert with economical 3 cutting edges.
3. Can be used in automated production.



Alternative Toolholder Reference Table for Grooving Toolholder

Conventional Toolholder						Alternative Toolholder				
Description		Overall length (mm)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Wrench	Description		Overall length (mm)	Remarks	Ref. Page
										
KTGF R/L	1010K-16F	125	SB-4070TRW	FT-8	-	KTGF R/L	1010JX-16F	120		G16
	1212M-16F	150					1212JX-16F	120		
	1616M-16F	150					1616JX-16F	120		
KGM R/L	0810K-1.5-125	125	SE-40120TR	-	LTW-15S	-		-	No replacement	G36
	1010K-1.5-125	125				KGM R/L	1010JX-1.5	120		
	1212M-1.5-150	150					1212JX-1.5	120		
KGM R/L	0810K-2-125	125	SE-40120TR	-	LTW-15S	-		-	No replacement	
	1010K-2-125	125				KGM R/L	1010JX-2	120		
	1212M-2-150	150					1212JX-2	120		
	1616M-2-150	150	SE-50125TR	-	LTW-20		1616JX-2	120		
KGM R/L	1010K-2.5-125	125	SE-40120TR	-	LTW-15S	KGM R/L	1010JX-2.5	120		
	1212M-2.5-150	150					1212JX-2.5	120		
	1616M-2.5-150	150	SE-50125TR	-	LTW-20		1616JX-2.5	120		
KGM R/L	1616M-3-150	150	SE-50125TR	-	LTW-20	KGM R/L	1616JX-3	120		

Note) The corresponding replacements may be different from the conventional parts in insert clamping system or insert size. Make sure their specifications referring to the catalog or other documents.