Grooving

G

G1~G80

Product Lineup		**G2~G3**
External Grooving		**G4~G27**
KGBA / KGBAS		G9
KGB / KGBS changes to KGBA / KGBAS.		G11
KTGF-F / KTGF		G12
S…KTGF	Sleeve Holder	G13
KTG changes to KGBA.		G15
KGH / KGHS		G16
KGA		G17
KGM (Automatic Lathe / Long Shank)		G22
KGM / KGM-T		G23
KGMM / KGMS		G24
KGMU		G25
KN91		G26
KGMW (For Aluminum Wheel)		G27
Internal Grooving		**G28~G48**
HPG	2-Edge Tip-Bar	G30
PSG-S changes to HPG.	Tip-Bar	G32
VNG	System Tip-Bar	G33
SIGE-EH / SIGE-WH / SIGE-WH-90		G34
GIV / GIV-E / GIV-W		G40
KIGBA		G43
KITG changes to KIGBA.		G44
KIGH		G45
KIGM-V		G46
KIGM-8 / KIGMU-8		G47
KGIA		G48
Face Grooving		**G49~G71**
HPFG	2-Edge Tip-Bar	G53
TWFG / TWFGT	Twin Bar	G54
VNFG	System Tip-Bar	G56
PSFG-S changes to HPFG.	Tip-Bar	G57
GFVS-AA / GFVT-AA		G58
GFV		G60
GFVS / GFVT		G62
KFMS		G66
KFMS-8		G68
KFTB-S		G69
GIFV (Boring Bar Type)		G70
Technical Information		**G72~G79**
Recommended Cutting Conditions		G72
Guide for Machining		G78

Product Lineup

External Grooving (G4-G26)

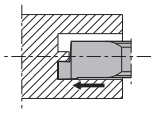
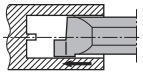
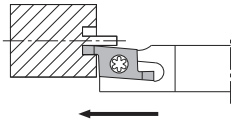
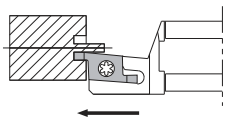
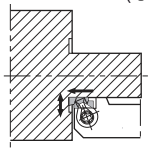
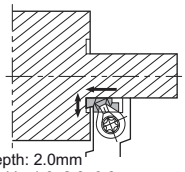
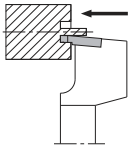
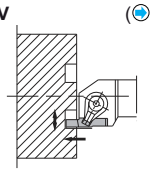
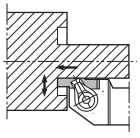
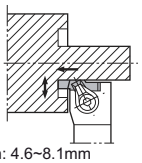
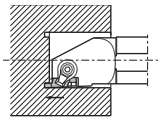
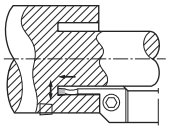
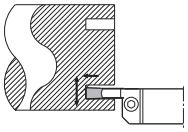
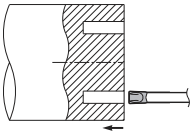
Shallow Grooving (3-Edge)	**KGBA** (G9) KGB (Changes to KGBA) (G11) Depth: 1.0~5.0mm Width: 0.5~4.8mm	KTG (Changes to KGBA) (G15) Depth: 2.0~5.0mm Width: 0.75~4.5mm	**KGBAS** (G9) KGBS (Changes to KGBAS) (G11) Depth: 1.0~5.0mm Width: 0.5~4.8mm	**KTGF** (G12) **KTGF-F** Depth: 0.8~2.5mm Width: 0.33~2.5mm	**S-KTGF** (G13) Depth: 0.8~2.5mm Width: 0.33~2.5mm
Deep Grooving (1-Edge) (2-Edge)	**KGH** (G16) Depth: 13, 17mm Width: 4.0~12.0mm	**KGHS** (G16) Depth: 13mm Width: 4.0~8.0mm	**KGA** (G17) Depth: 16, 20, 25mm Width: 3.0, 4.0, 5.0mm	**KN91** (G26) Depth: 15, 17mm Width: 4.0~8.0mm	
Grooving / Plunge&Turn (Grooving / Multi-Function)	**KGM** (G22) Depth: 5.0~16.0mm Width: 1.5~4.0mm	**KGM** (G23) Depth: 8.0~25.0mm Width: 3.0~8.0mm	**KGM-T** (G23) Depth: 17.0~30.0mm Width: 2.0~6.0mm	**KGMM** (G24) Depth: 4.8mm Width: 3.0, 4.0, 5.0mm	**KGMS** (G24) Depth: 4.8mm Width: 3.0, 4.0, 5.0mm

Internal Grooving (G27-G48)

Internal Grooving (Small Dia.) (Solid) Min. Bore Dia. ø4-ø8	**VNG** (G33) Depth: 0.8~2.0mm Width: 1.0, 2.0mm	**HPG** (G30) **PSG-S** (G32) Depth: 1.5, 2.0mm Width: 1.0, 2.0mm		**KGMW** (G27) For Aluminum Wheel Depth: 25mm Width: 6.0, 8.0mm	**KGMU** (G25) Depth: 3.5~4.5mm Width: 3.0, 4.0, 5.0mm
Internal Grooving (Small Dia.) (2-Edge) Min. Bore Dia. ø8~ø40	**SIGE-EH** (G36) (With Coolant Hole) Depth: 1.5~6.5mm Width: 1.0~5.0mm	**SIGE-WH** (G37) (With Coolant Hole) Depth: 1.5~2.5mm Width: 1.0~3.5mm	**SIGE-WH-90** (G38) (For Automatic Lathe / With Coolant Hole) Depth: 1.5~2.5mm Width: 1.0~3.5mm		
Internal Grooving (Small Dia.) (1-Edge) (2-Edge) Min. Bore Dia. ø35, ø40, ø45	**GIV** (G40) Depth: 2.2~6.3mm Width: 1.0~5.0mm	**GIV-E** (G40) Depth: 1.7~6.3mm Width: 1.0~5.0mm	**GIV-W** (G40) Depth: 2.2~6.3mm Width: 1.0~5.0mm		
Internal Shallow Grooving (3-Edge) Min. Bore Dia. ø35, ø40, ø45	**KIGBA** (G43) Depth: 1.0~2.8mm Width: 0.5~4.8mm	**KITG** (G44) Depth: 2.0, 2.5mm Width: 0.75~4.5mm	Internal Deep Grooving (Large Dia.) (2-Edge) Min. Cutting Dia. ø32~ø66	**KGIA** (G48) Depth: 10, 15mm Width: 3.0, 4.0, 5.0mm	**KIGH** (G45) Depth: 12.0mm Width: 4.0~8.0mm
CERACUT / Plunge&Turn (Grooving / Multi-Function) Min. Bore Dia. ø20~ø40, ø65	**KIGM-V** (G46) Depth: 5.5~11.0mm Width: 3.0, 4.0, 5.0mm	**KIGM-8** (G47) Depth: 20.0mm Width: 8.0mm	**KIGMU-8** (G47) Depth: 2.2mm Width: 8.0mm		

Face Grooving (G49-G71)

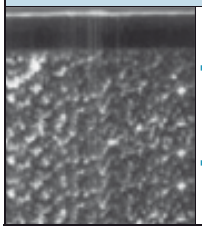
For Face Grooving Diameter Table ➡ See Page **G52**

Face Grooving (Small Dia.) (Solid) Face Grooving Dia. ø8~	**VNFG** (➡ G56)  Depth: 2.0, 3.0mm Width: 1.0, 2.0, 3.0mm	**HPFG** (➡ G53) **PSFG-S** (➡ G57)  Depth: 2.0, 3.0mm (HPFG) Width: 1.0, 2.0, 3.0mm		Micro Face Grooving Face Grooving Dia. ø6 -	**STW** (➡ G55)  Depth: 1.0~3.0mm Width: 0.5~2.0mm	**S..-STW** (➡ G55)  Depth: 1.0~3.0mm Width: 0.5~2.0mm
Face Grooving (Small Dia.) (2-Edge) Face Grooving Dia. ø8~	**GFVS-AA** (➡ G58)  Depth: 2.2mm Width: 1.0, 2.0, 3.0mm	**GFVT-AA** (➡ G58)  Depth: 2.0mm Width: 1.0, 2.0, 3.0mm			**STWS** (➡ G55)  Depth: 1.0~3.0mm Width: 0.5~2.0mm	
Face Grooving (General purpose) (2-Edge) For face grooving dia. see each page.	**GFV** (➡ G60)  Depth: 2.2~8.1mm Width: 2.0~6.0mm	**GFVS** (➡ G62)  Depth: 4.6~8.1mm Width: 2.5~6.0mm	**GFVT** (➡ G62)  Depth: 4.6~8.1mm Width: 2.5~6.0mm		**GIFV** (➡ G70)  Depth: 2.2~8.1mm Width: 2.0~6.0mm	
Grooving / Plunge&Turn (Grooving / Multi-Function) For face grooving dia. see each page.	**KFMS** (➡ G66)  Depth: 13.0~32.0mm Width: 3.0~6.0mm	**KFMS-8** (➡ G68)  Depth: 25.0mm Width: 8.0mm			**KFTB-S** (➡ G69)  Depth: 25.0~38.0mm Width: 4.0, 5.0mm	

PR1115 : PVD Coated Carbide for Steel

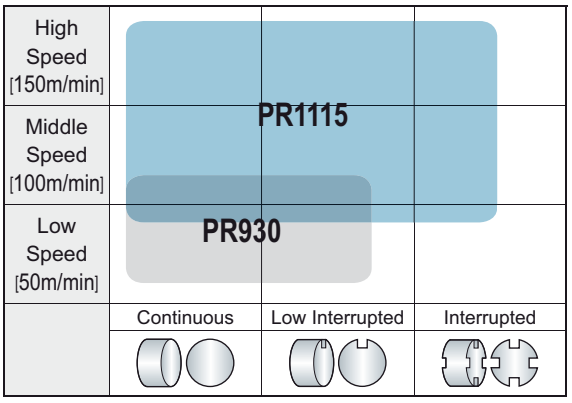
1. **Micro-grain carbide improves its bending strength better than conventional carbide!**
2. **New Fine Surface PVD Coating improves wear and chipping resistance!**
3. **Supports wide range for continuous / interrupted cutting with middle~high speed**

● Coating layer of PR1115

Sectional Structure		Performance
	➡NEW FS(Fine Surface) Coat (TiAlN) Suitable for high speed machining, and excellent in wear resistance ➡Micro-grain carbide substrate	• High hardness (30GPa) • High Adhesive Strength • Precise, fine texture • High oxidation resistance (800°C)

NEW FS (Fine Surface) coating (TiAlN)

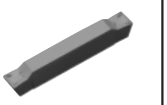
Newly developed TiAlN PVD coat brings stability and smooth machining. coating layer hardness / adhesive strength better than conventional FS coating



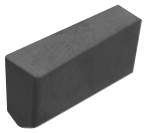
PR905: PVD Coated Carbide for Cast Iron

1. **High efficiency and stability made possible during machining of gray cast iron / nodular cast iron**
2. **Long life is made possible with TiAlN coating, bringing smooth insert surface, wear resistance, and, high temperature stability**
3. **Special carbide substrate made of hard material with excellent plastic deformation performance reduces edge wear**

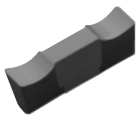
External Grooving


Molded Chipbreaker

Width: 3.0~5.0
Depth: 16~25
KGA
➡G17


Ceramic

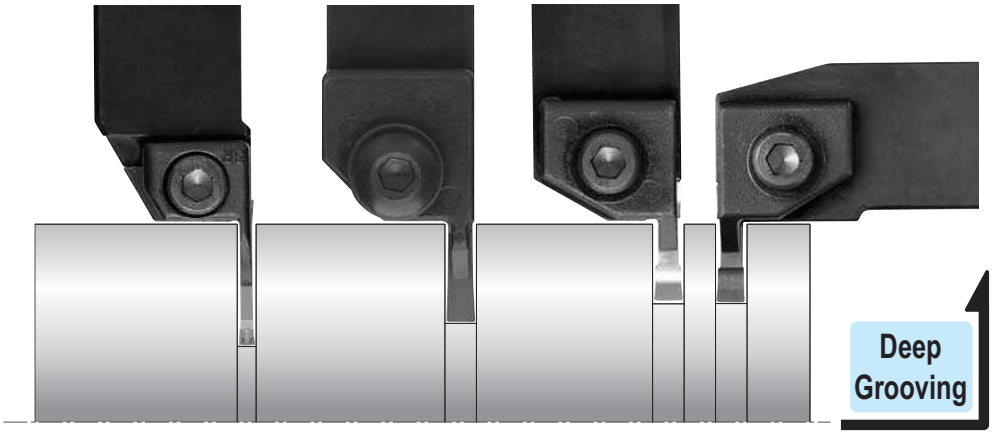
Width: 4.0~8.0
Depth: 15~17
KN91
➡G26

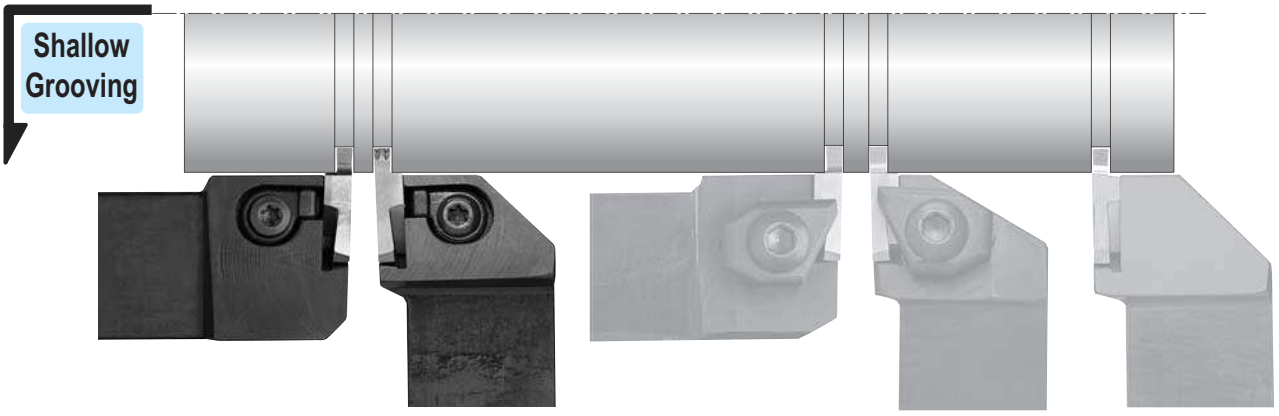

Ground Chipbreaker

Molded Chipbreaker

Width: 4.0~12.0
Depth: 13~17
KGH
➡G16

Width: 4.0~8.0
Depth: 13
KGHS
➡G16





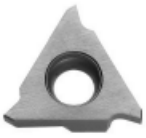
➡G9
KGBAS
Width: 0.5~4.8
Depth: 1.0~5.0

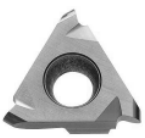
➡G9
KGBA
Width: 0.5~4.8
Depth: 1.0~5.0

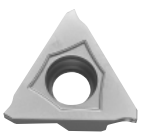
➡G11
KGBS
Width: 0.5~4.8
Depth: 1.0~5.0

➡G11
KGB
Width: 0.5~4.8
Depth: 1.0~5.0

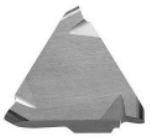
➡G15
KTG
Width: 0.75~4.5
Depth: 2.0~5.0

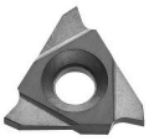

Ground Chipbreaker

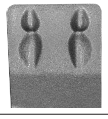

Ground Chipbreaker Full-R


MY Chipbreaker

Ground Chipbreaker


Ground Chipbreaker Full-R


Ground Chipbreaker

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.

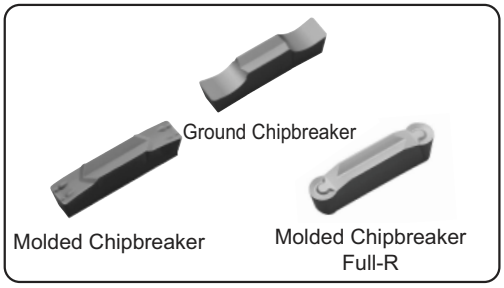
KGBS Type ⟶ **KGBSA Type**
KGB Type, **KTG Type** ⟶ **KGBA Type**

External Grooving & Traversing

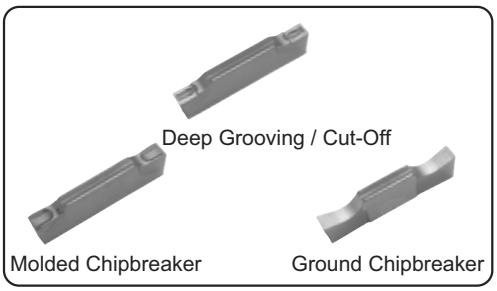
Multi-function CERACUT Plunge & Turn

External Grooving of Precision Parts

Small Shank

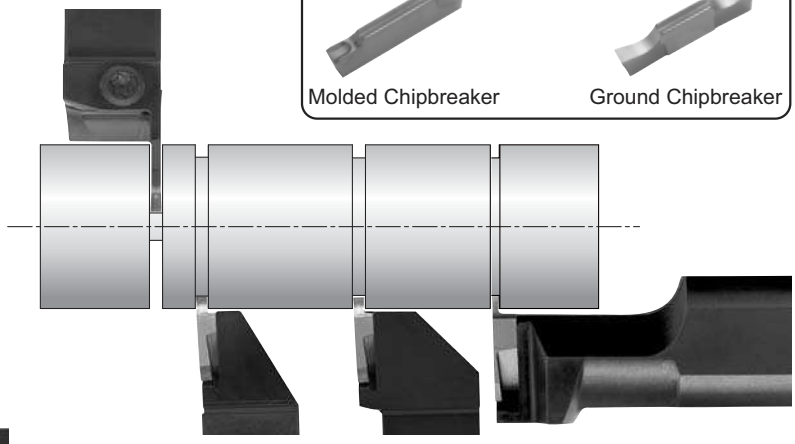


Width: 1.5~4.0
Depth: 5~16
KGM
➡G16



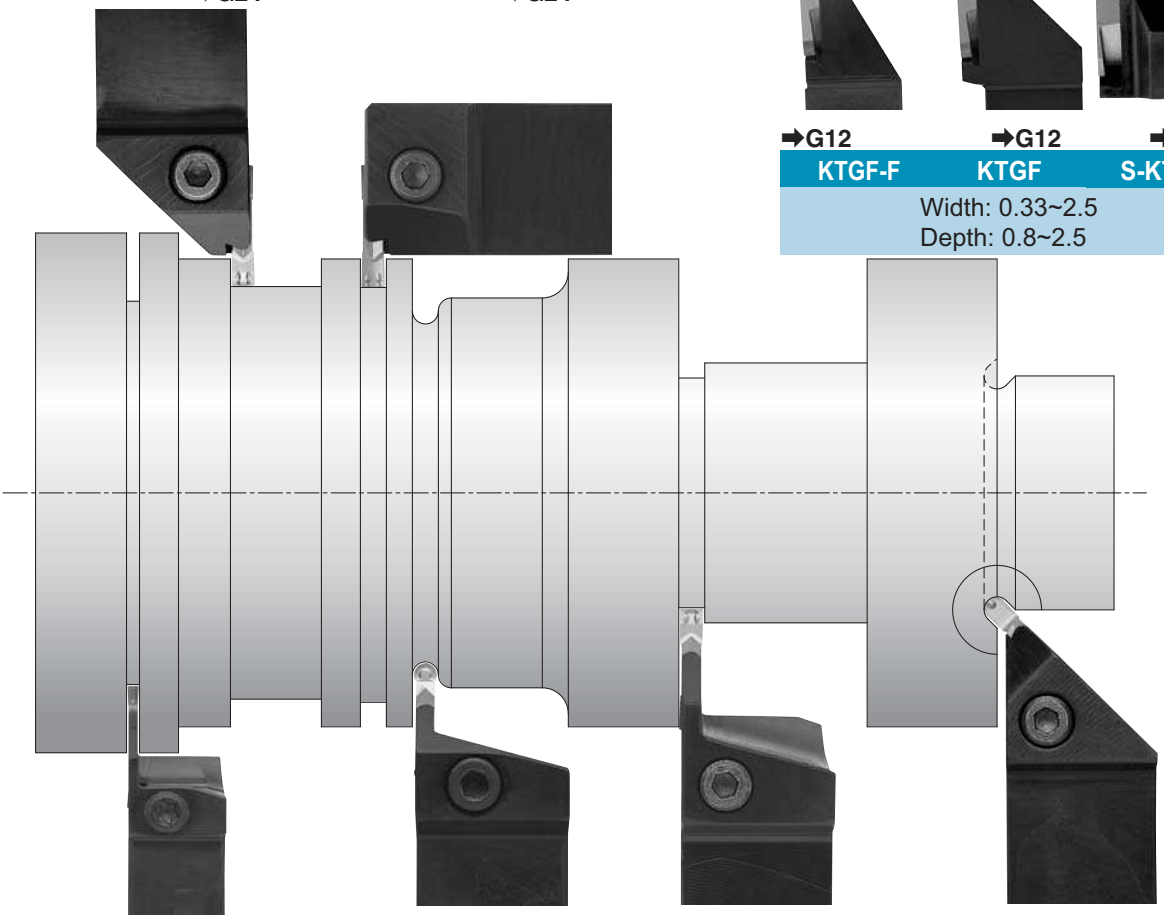
Width: 3.0~5.0
Depth: 4.8
KGMM
➡G24

Width: 3.0~5.0
Depth: 4.8
KGMS
➡G24



➡G12 ➡G12 ➡G13

KTGF-F	KTGF	S-KTGF
Width: 0.33~2.5 Depth: 0.8~2.5		

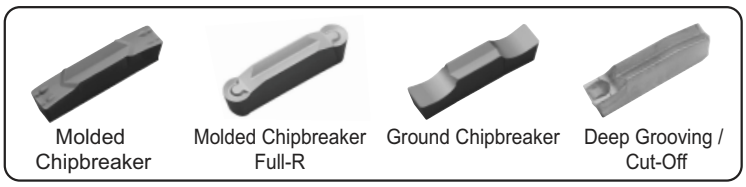


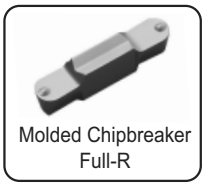
➡G22
KGM
Width: 1.5~4.0
Depth: 5~16

➡G23
KGM
Width: 3.0~8.0
Depth: 9~25

➡G23
KGM-T
Width: 2.0~6.0
Depth: 17~30

➡G25
KGMU
Width: 3.0~5.0
Depth: 4.8





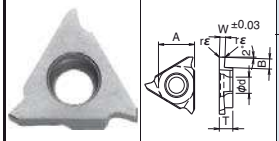
Applicable Inserts

(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	PR630	PR930	PR1115	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 (R-hand shown)	Description	(Previous Description)	W	B	rε	TC40	TN6020	TN90	PR630	PR930	PR1115	PR905	KW10	Applicable Toolholder	Reference Page for Toolholder
	GBA32R/L 033-005	-	0.33	0.8	0.05						●	●		KGBAR/L...16 KGBASR/L...16	G9 G11 G43
	050-005 *	GBA32R/L 050 *	0.50	1.0				●	○	●			●		
	050-005 *	-	0.50	1.2							●	●			
	075-005	GBA32R/L 075	0.75	2.0				●	○	●	●	●	●		
	095-005	095	0.95					●	○	●	●	●	●		
	100-005	100	1.00					●	○	●	●	●	●		
	110-005	110	1.10								●	●			
	120-005	120	1.20								●	●			
	125-020	125	1.25		0.2			●	○	●	●	●	●		
	130-020	130	1.30								●	●			
	140-020	140	1.40								●	●			
	145-020	145	1.45					●	○	●			●		
	145-020	-	1.45	2.5							●	●			
	150-020	GBA32R/L 150	1.50	2.0				●	○	●			●		
	150-020	-	1.50	2.5							●	●			
	160-020	GBA32R/L 160	1.60								●	●			
	170-020	170	1.70	2.0							●	●			
	175-020	GBA32R/L 175	1.75					●	○	●			●		
	175-020	-	1.75	2.5							●	●			
	200-020	GBA32R/L 200	2.00					●	○	●	●	●	●		
	225-020	225	2.25								●	●			
	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	
	125-020	GBA43R/L 125	1.25		0.2	●		●	○	●	●	●	●		
	140-020	140	1.40								●	●			
	145-020	145	1.45			●		●	○	●			●		
	145-020	-	1.45	3.5	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			●		●	○	●	●	●	●		
	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						●			KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	250-030	GBA43R/L 250	2.50	4.0	0.3	●		●	○	●			●	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	250-030	-	2.50	5.0							●	●		KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	265-030	GBA43R/L 265	2.65	4.0		●		●	○	●			●	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	265-030	-	2.65	5.0							●	●		KGBAR/L...22-25T5 KGBASR/L...22-25T5	

• Dimension B: shows available grooving depth.
* The edge width tolerance of GBA32R/L050 (with * mark) is different ($0.50^{+0.05}_{-0}$)
• For KIGBA Internal Grooving Toolholder, See page **G43**

For recommended cutting conditions, see page **G72**

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

Inserts are sold in 10 piece boxes.

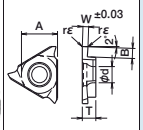
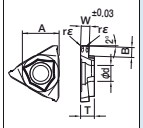
Applicable Inserts

(mm)

Description	A	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	PR630	PR930	PR1115	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 (R-hand shown)	Description	(Previous Description)	W	B	rε	TC40	TN6020	TN90	PR630	PR930	PR1115	PR905	KW10	Applicable Toolholder	Reference 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	G9 G11 G43
	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	4.0							R	R		KGBAR/L...22-25 KGBASR/L...22-25	
	330-030	330	3.30			●		●	○	●			●	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	5.0	0.3	●		●	○	●	●	●	●		
	400-010	-	4.00		0.1						●				
	400-040	GBA43R/L 400	4.00		0.4	●		●	○	●	●	●	●		
	430-040	430	4.30			●		●	○	●	●	●	●		
	450-040	450	4.50			●		●	○	●	●	●	●		
	480-040	480	4.80			●		●	○	●	●	●	●		
With 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	G9 G11 G43
	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.
• For KIGBA type Internal Grooving Toolholder, See page **G43**

For recommended cutting conditions, see page ➡ **G72**

● : 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

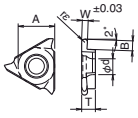
(mm)

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

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

Reference Page for Toolholder

Insert (R-hand shown)	Description	(Previous Description)	W	B	rε	TC40	TN6020	TN90	PR630	PR930	PR1115	PR905	KW10	Applicable Toolholder	Reference Page for Toolholder
Full-R Full-R (Round) 	GBA32R/L 200-100R	-	2.00	2.5	1.00						R			KGBAR...16 KGBASL...16	G9 G11 G43
	300-150R		3.00		1.50						R				
	GBA43R/L 100-050R	GBA43R/L 050R	1.00	2.0	0.50			●	○	●	●	●	●	KGBAR/L...22-15 KGBASR/L...22-15	
	150-075R	075R	1.50	3.5	0.75			●	○	●	●	●	●		
	200-100R	100R	2.00		1.00			●	○	●	●	●	●		
	250-125R	125R	2.50	4.0	1.25			●	○	●	●	●	●	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	300-150R	150R	3.00		1.50			●	○	●	●	●	●		
	400-200R	200R	4.00	5.0	2.00			●	○	●	●	●	●	KGBAR/L...22-35 KGBASR/L...22-35	

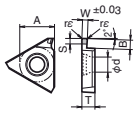
(mm)

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

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

Reference Page for Toolholder

Insert (R-hand shown)	Description	(Previous Description)	W	B	rε	KBN10B	KBN510	KBN525	KPD001	KPD010	Applicable Toolholder	Reference 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					R	KGBAR...16 KGBASL...16	G9 G11 G43
	150-010	150	1.50						R	R		
	GBA43R/L 125-010	GBA43R/L 125	1.25	2.0	0.1					●	KGBAR/L...22-15 KGBASR/L...22-15	
	125-020	125			0.2	●	●	●				
	150-010	150	1.50	3.5	0.1				●	●		
	150-020	150			0.2	●	●	●				
	200-010	200	2.00		0.1				●	●		
	200-020	200			0.2	●	●	●				
	250-010	250	2.50	4.0	0.1				●	●	KGBAR/L...22-25 KGBASR/L...22-25 KGBAR/L...22-25T5 KGBASR/L...22-25T5	
	250-020	250			0.2	●	●	●				
	300-010	300	3.00		0.1				●	●		
	300-020	300			0.2	●	●	●				

• Dimension B: shows available grooving depth.
• For KIGBA Internal Grooving Toolholder, See page **G43**

For recommended cutting conditions, see page **G72**

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

The following is a table for application compatibility.

KGBA	(KGB)
KGBAR/L ...22-15	KGBR/L ...22-15
KGBAR/L ...22-25	KGBR/L ...22-25
KGBAR/L ...22-35	KGBR/L ...22-35
KGBAR/L ...22-25T5	KGBR/L ...22-25 (Available grooving depth has a limit)

KGBAS	(KGBS)
KGBASR/L ...22-15	KGBSR/L ...22-15
KGBASR/L ...22-25	KGBSR/L ...22-25
KGBASR/L ...22-35	KGBSR/L ...22-35
KGBASR/L ...22-25T5	KGBSR/L ...22-25 (Available grooving depth has a limit)

• Short shank type is not available for KGB / KGBS.

External Grooving Toolholders KGBA Short Shank types are available

For NC lathe and HSK tooling, KGBAR2020K22-○○ (Overall length 125mm)
short shank type KGBAR2020H22-○○ (Overall length 100mm) is available.
No longer required for the users to cut the shank portion.

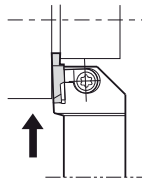
Inserts are sold in 10 piece boxes.

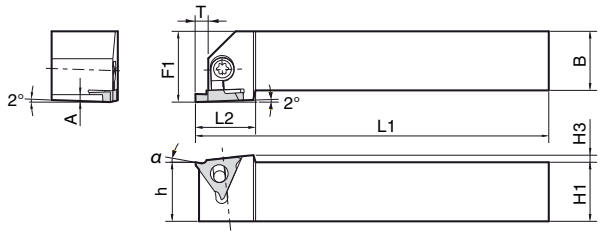
CBN & PCD Inserts are sold in 1 piece boxes.

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

External Shallow Grooving Toolholders

KGBA

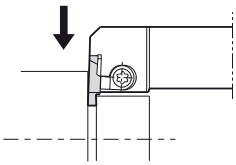


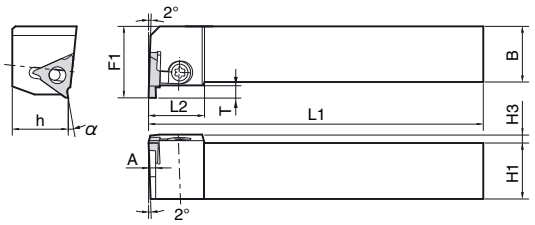


• Right-hand shown

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

KGBAS





• Right-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	F1	A	T			Spare Parts: Clamp Set	Spare Parts: Wrench	Applicable Inserts ➔ G6～G8
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	4.0	20	125	24	25	-	2.5					
	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.

• Clamp Set: KGBA R/L ... LGBA-○RS for Right-hand Toolholder, and LGBA-○LS for Left-hand Toolholder.
KGBAS R/L ... LGBA-○LS for Right-hand Toolholder, and LGBA-○RS for Left-hand Toolholder.

* mark indicates short shank type.

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 PR905 KPD001, KPD010	0°	KBN510, KBN525	10°	TN90 PR630 PR930 PR1115 PR905	050R~150R
		10°	TC40, TN90 PR630 PR930 PR1115 PR905 KPD001, KPD010	14°	TN90 PR630 PR930 PR1115 PR905	200R
20°	KW10				KW10	050R~200R
		20°	KW10			

Rake Angle (α) after Installment of GBA-MY

α	Description
15°	GBA43 R/L175MY ~ GBA43 R/L350MY
14°	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)

Grooving Inserts

[GB insert changes to GBA (G6-G8).]

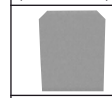
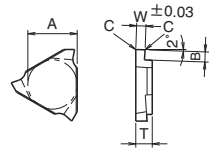
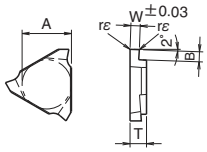
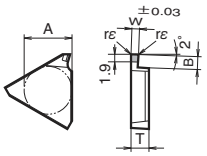
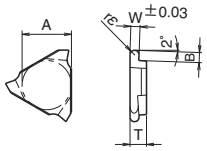
Applicable Inserts

(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	PR930	Carbide KW10	Dia-mond KPD001	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		○	R					KGBR/L ···16 KGBSR/L ···16	G11
		075	0.75	2.0	C0.10		○	R						
		095	0.95				○	R						
		100	1.00				○	○						
		125	1.25				○	R						
		145	1.45				○	R						
		150	1.50				○	R						
		200	2.00	2.5			○	R						
		250	2.50				○	R						
General (Square) (Corner is R shape) GB43 type  GB type insert changes to GBA type 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	○	○	R						
		150	1.50	3.5	0.1				○					
		150			0.2	○	○	○						
		175	1.75		0.2	○	○	R						
		185	1.85		0.2	○	○	R						
		200	2.00		0.1				○					
		200			0.2	○	○	○						
		230	2.30		0.2	○	○	R						
		250	2.50	4.0	0.1				○				KGBR/L ···22-25 KGBSR/L ···22-25	
		250			0.3	○	○	○						
		265	2.65		0.3	○	○	R						
		280	2.80		0.3	○	○	R						
		300	3.00		0.1				○					
		300			0.3	○	○	○						
		330	3.30		0.3	○	○	R						
		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	○	○	R						
		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 ➡ G72

* Material selection standard when changing to GBA.

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

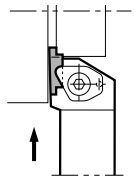
* Check the cornner-R(rε) of the insert when changing.

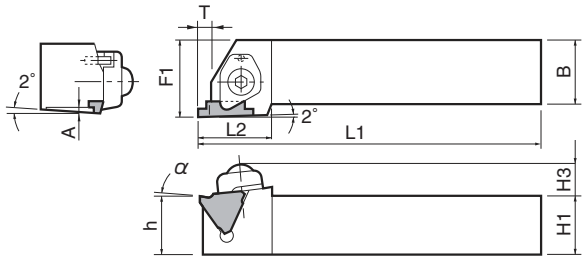
Inserts are sold in 10 piece boxes.

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)

KGB (Changes to KGBA ➡ G9)

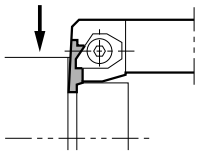


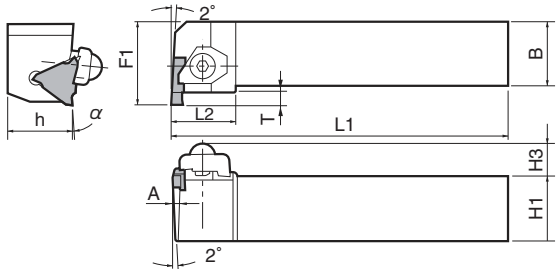


• Right-hand shown

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

KGBS (Changes to KGBAS ➡ G9)





• Right-hand shown

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

Toolholder Dimensions

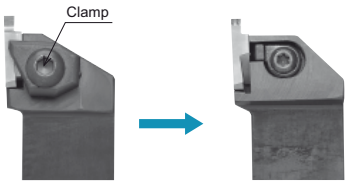
Description		Std. R	Std. L	Dimension (mm) H1=h	H3	B	L1	L2	F1	A	T	Spare Parts: Clamp	Clamp Bolt	Spring	Wrench	Applicable Inserts ➡ G6~G8 ➡ G10
KGB R/L	2020K-16	●	●	20	11	20	125	24	25	-	2.5	CGB R/L	BH6X25	SP-6	LW-4	GB32 R/L GBA32 R/L
	2525M-16	●	●	25		25	150		30							
	2020K22-15	●	●	20	11.5	20	125	25.5	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 L/R	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		



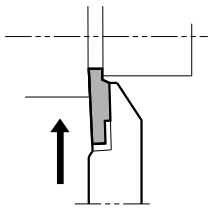
KGB Toolholder → KGBA Toolholder

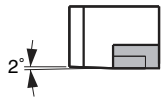
* KGB / KGBS toolholder changes to KGBA / KGBAS.
Better Chip flow.
* For applicable insert, GB insert changes to GBA.
GBA insert has various types of material available for user's cutting condition requirements.

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

External Shallow Grooving Toolholders [for TGF Insert]

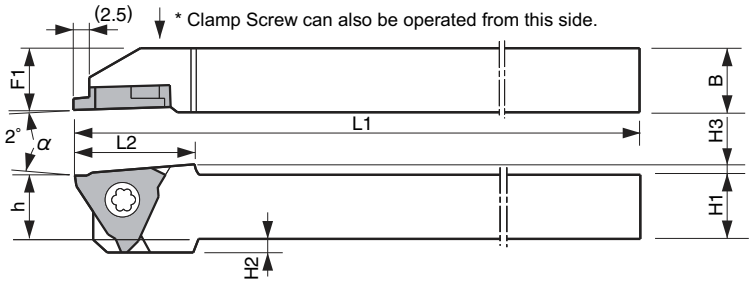
KTGF-F (Without Offset)





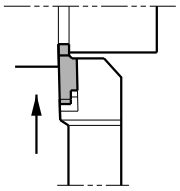
α	Insert Grades
20°	TN90, TC60 PR1115, PR930, KW10
11°	KPD010, KPD001
6°	TC40

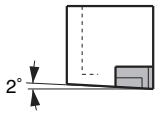
● Right-hand shown



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

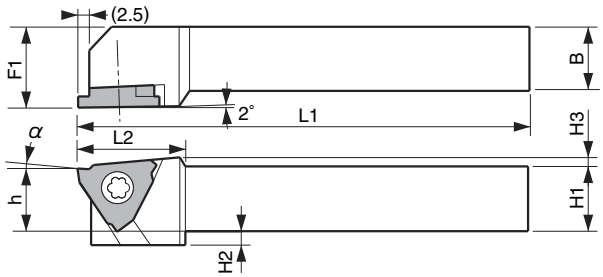
KTGF (With Offset)





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

● Right-hand shown



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

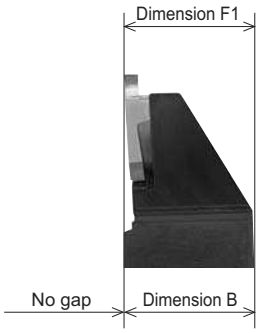
Toolholder Dimensions

Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F1				Spare Parts: Clamp Screw	Wrench			
KTGF R/L	1010K-16F	●	●	10	2	2.5	10	125	18.5	10				SB-4070TRW	FT-8			
	1212F-16F	●		12	-		12	85		12								
	1212M-16F	●	●					150										
	1616M-16F	●	●	16			16	150		16								
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								
	2,020K-16	●	●	20			20	125	20	25								
	2525M-16	●	●	25			25	150		32								

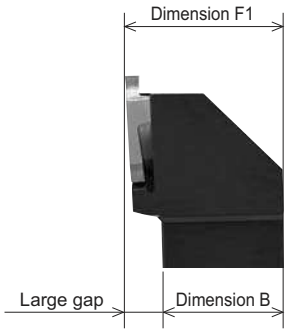
Usage difference between KTGF-F and KTGF toolholders

Q: What is the difference between “Without Offset” and “With Offset” of KTGF toolholders for external grooving?

A: When operating the automatic lathe, the toolholder come very close to the chuck. In such cases, the “With Offset” toolholder sometimes interferes with the chuck due to the large gap between B and F1 dimensions as shown below.
It is necessary to use “Without Offset” in such cases.



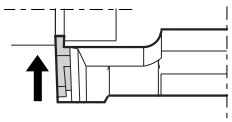
Without Offset Type (KTGF-F)

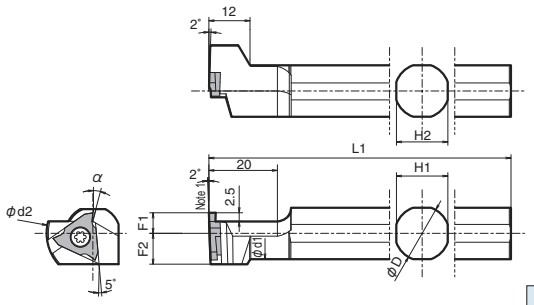


With Offset Type (KTGF)

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

S-KTGF (Sleeve Holder)





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

● Left-hand shown

R-hand Insert for L-hand Toolholder.

Note 1. Dimension B shows available grooving depth.

Toolholder Dimensions

Description	Std.	Dimension (mm)							Spare Parts	
									Clamp Screw	Wrench
		øD	L1	F1	F2	ød1	ød2	H1=H2		
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

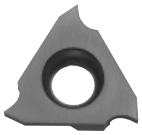
(mm)

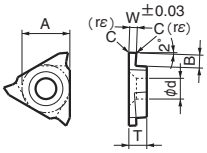
Description	A	T	ød
TGF32_	9.525	3.18	4.5
TGF32R/L325	9.525	3.40	4.5
TGF32R/L315-SRC	9.525	3.40	4.5

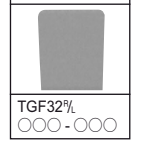
P	Carbon Steel / Alloy Steel						◐	◓			
M	Stainless Steel						◐	◓			
K	Cast Iron								◓		
N	Non-ferrous Metals								◓	●	
S	Titanium Alloy								◓	●	
H	Hard materials (under 40HRC)						○	●			
	Hard materials (over 40HRC)										

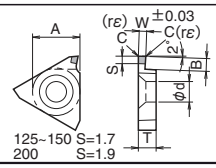
Classification of usage
- ◓ : Continuous-Light Interruption / 1st Choice
- ◐ : Continuous-Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

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 033	0.33	0.8	C0.05						R		●			KTGFR/L...16F KTGFR/L...16 S...KTGFL16	G12 G13
	050	0.50	1.2		●	R				●		●				
	060	0.60			●											
	075	0.75	2.0	C0.1		●				●		●				
	080	0.80			●											
	090	0.90			●											
	095	0.95				R				●		●				
	100	1.00			●	●				●		●				
	120	1.20			●					●						
	125	1.25				●				●		●				
	130	1.30			●											
	140	1.40			●					●						
	145	1.45				R				●		●				
	150	1.50			●	R				●		●				
	170	1.70			●											
	175	1.75				R				●		●				
	185	1.85	2.5							●						
	190	1.90			●											
	200	2.00			●	R				●		●				
	225	2.25			●											
	250	2.50			●	R				●		●				
	275	2.75	3.0	0.2	●					●						
	300	3.00			●					●						
	325	3.25			●					●						
General (Square) (Corner is R shape) TGF32R/L ○○○-○○○	TGF32R/L 033-005	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				
	125-010	1.25					R			●	●	R				
	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 S○○○-S type Edge Width Tolerance W+0.12 +0.06	TGF32R/L S090-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/L S○○○-SRG type Edge Width Tolerance W+0 -0.05 For Circlip Grooves (DIN 471 / 472)	TGF32R/L S080-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	TGF32R/L 125	1.25	2.0	C0.1									R	R		
	150	1.50											R	R		
	200	2.00	2.5										R	R		
	TGF32R/L 125-010	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 G73

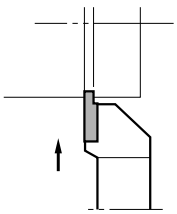
Inserts are sold in 10 piece boxes.

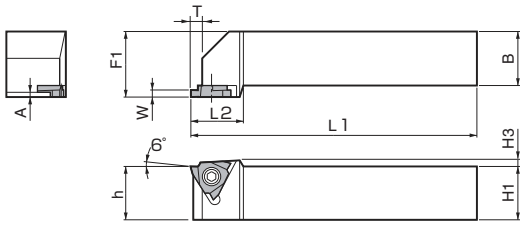
CBN & PCD Inserts are sold in 1 piece boxes.

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

External Shallow Grooving Toolholders [TG Insert]

KTG (Changes to KGBA ➡ G9)





• 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.

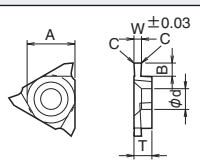
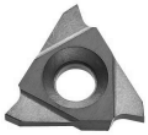
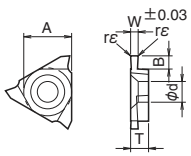
Applicable Inserts

(TG insert changes to GBA ➡ G6~➡ G8)

(mm)

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

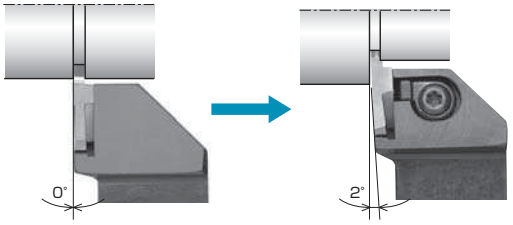
P	Carbon Steel / Alloy Steel					Classification of usage
M	Stainless Steel					
K	Cast Iron					◕: Continuous-Light Interruption / 1st Choice
N	Non-ferrous Metals					◔: Continuous-Light Interruption / 2nd Choice
S	Titanium Alloy					●: Continuous / 1st Choice
H	Hard materials (under 40HRC)					○: Continuous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

Insert (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	G15
			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	G15
			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	0.4	●				KTG R/L...22-35	
			400	4.00			●					
			430	4.30			●					
			450	4.50			●					

• Dimension B shows available grooving depth.

For recommended cutting conditions, see page ➡ G73

* 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.

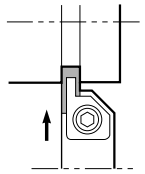


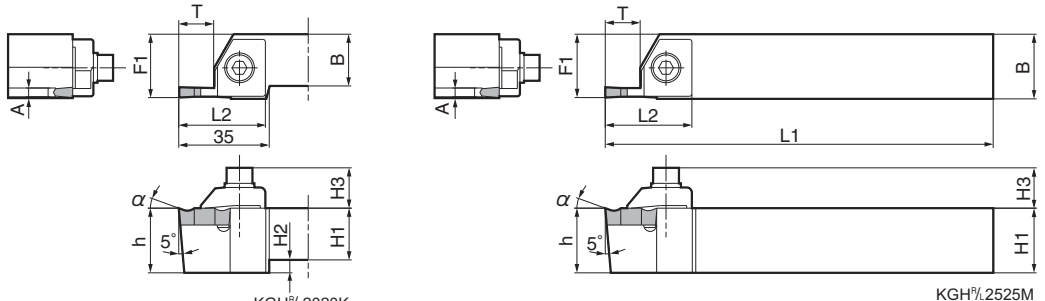
KTG KGBA

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

Inserts are sold in 10 piece boxes.

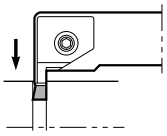
KGH

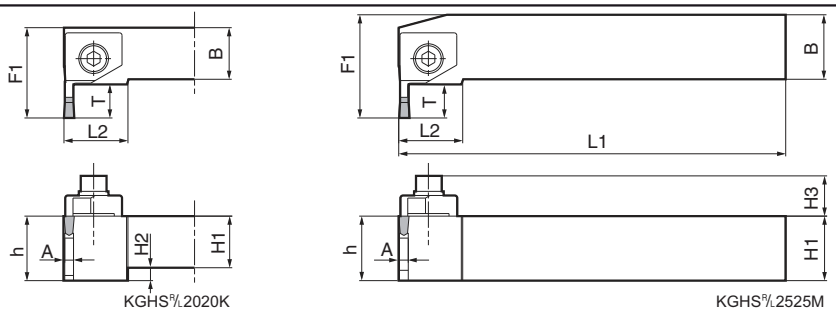




• Right-hand shown

KGHS





• 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	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				

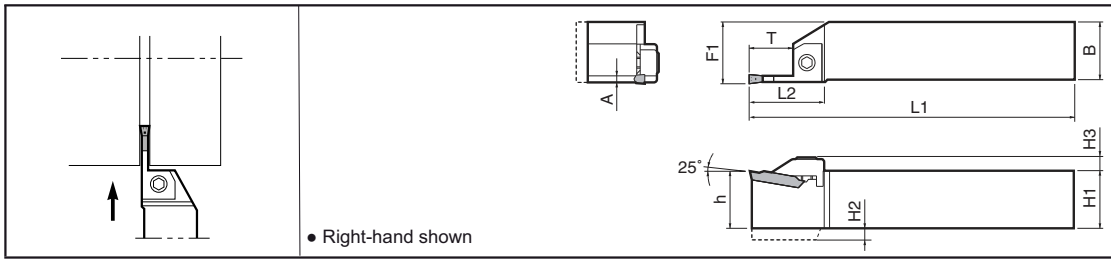
• Dimension T shows available grooving depth.
• Dimension F1 of KGH R/L Toolholder depends on the insert's edge width.
• Clamp: KGH R/L ... CGH- ○ R for Right-hand Toolholder, and CGH- ○ L for Left-hand Toolholder.
KGHS R/L ... CGH- ○ L for Right-hand Toolholder, and CGH- ○ R for Left-hand Toolholder.

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

GH ○○○○ - ○○ α	Insert Grades	GHU ○○○○ 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)

KGA



• Right-hand shown

Toolholder Dimensions

Description		Std. R	Std. L	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-3 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.

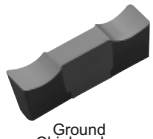
Applicable Inserts

(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	TN90	TC40	TC60	CVD Coated Carbide CR9025	PVD Coated Carbide PR630	PR930	Carbide KW10	Ceramic A65	A66N	PT600M	Applicable Toolholder	Ref. Page for Toolholder
 Ground Chipbreaker	GH	4020-02	4.0	0.2		●	●				●	●				KGH R/L...4 KGHS R/L...4	G16
		4020-05		0.5		●	●				●	●	●	●	●		
		4520-02	4.5	0.2			●										
		4520-05		0.5			●										
		5020-02	5.0	0.2		●	●				●	●				KGH R/L...5 KGHS R/L...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		7020-02	7.0	0.2		●	●				●	●				KGH R/L...7 KGHS R/L...7	
		7020-05		0.5		●	●				●	●	●		●		
		7520-02	7.5	0.2			●										
		7520-05		0.5			●										
		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	G16
		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	G17
		40	4.0	0.25	●				●							KGA R/L...4	
		50	5.0	0.30	●				●							KGA R/L...5	

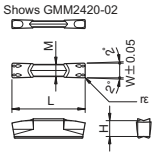
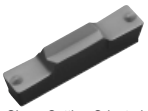
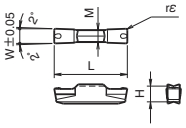
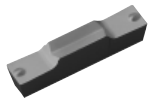
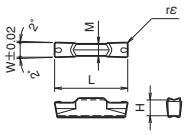
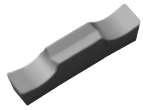
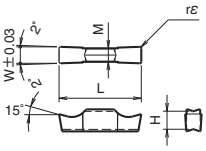
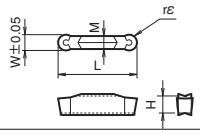
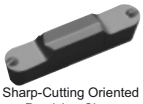
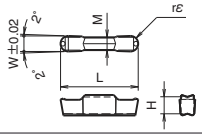
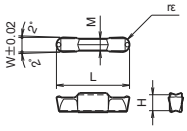
For recommended cutting conditions, see page G73~G74

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

Inserts are sold in 10 piece boxes.

GMM / GMG

Classification of usage			TN90	CR9025	PR915	PR930	PR905	KW10
◉: 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	TN90	CR9025	PR915	PR930	PR905	KW10	Ref. Page for Toolholder
				Dimension (mm)					Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide	
Chip Control Oriented M Class	 Shows GMM2420-02	GMM 2420-020MW	GMM 2420-02	2.4	0.2	1.9	20	4.3	●	●	●	●	●	●	G22 G23 G24
		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			●	●	●	●	●	●	
		4020-040MW	4020-04		0.4				●	●	●	●	●	●	
		4020-080MW	4020-08		0.8				●	●	●	●	●	●	
		5020-040MW	5020-04	5.0	0.4	4.2			●	●	●	●	●	●	G22 G23
		5020-080MW	5020-08		0.8				●	●	●	●	●	●	
		6020-040MW	6020-04	6.0	0.4	5.2			●	●	●	●	●	●	
		6020-080MW	6020-08		0.8				●	●	●	●	●	●	
		8030-080MW	8030-08	8.0	0.8	6.0	30	5.5		●	●	●	●	●	G23
 Sharp-Cutting Oriented M Class		GMM 3020-020MS	GMM 3020-02MS	3.0	0.2	2.3	20	4.3	●	●	●	●		●	G22 G23 G24
		3020-040MS	3020-04MS		0.4				●	●	●	●		●	
		4020-040MS	4020-04MS	4.0	0.4	3.3			●	●	●	●		●	
		5020-040MS	5020-04MS	5.0		4.2			●	●	●	●		●	
		6020-040MS	6020-04MS	6.0		5.2				●		●		●	G22, G23
 Sharp-Cutting Oriented Precision Class		GMG 3020-000MS	GMG 3020-00	3.0	0.0	2.3	20	4.3		●	●	●		●	G22 G23 G24
		3020-020MS	3020-02		0.2				●	●	●	●		●	
		3020-040MS	3020-04		0.4				●	●	●	●		●	
		4020-020MS	4020-02	4.0	0.2	3.3	20	4.3	●	●	●	●		●	
		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		●		●		●	G22
		6020-080MS	6020-08		0.8					●		●		●	G23
 Sharp-Cutting Oriented Precision Class Ground Chipbreaker		GMG 2520-030MG	GMG 2520-03MG	2.5	0.3	2.0	20	4.3	●	●	●	●	●	●	G22 G23 G24
		3020-030MG	3020-03MG	3.0		2.3			●	●	●	●	●	●	
		3520-030MG	3520-03MG	3.5		2.8			●	●	●	●	●	●	
		4020-040MG	4020-04MG	4.0	0.4	3.3			●	●	●	●	●	●	
		5020-040MG	5020-04MG	5.0		4.2			●	●	●	●	●	●	
		6020-040MG	6020-04MG	6.0		5.2			●	●		●	●	●	G22,G23
		8030-050MG	8030-05MG	8.0	0.5	6.0	30	5.5	●	●		●	●	●	G23
Chip Control Oriented M Class Full-R / Copying		GMM 3020-150R	GMM 3020-15R	3.0	1.5	2.3	20	4.3	●	●	●	●	●	●	G22 G23 G24
		4020-200R	4020-20R	4.0	2.0	3.3			●	●	●	●	●	●	
		5020-250R	5020-25R	5.0	2.5	4.2			●	●	●	●	●	●	
		6020-300R	6020-30R	6.0	3.0	5.2			●	●	●	●	●	●	G22,G23
 Sharp-Cutting Oriented Precision Class Full-R / Copying		GMG 3020-150R	GMG 3020-15R	3.0	1.5	2.3	20	4.3	●	●		●		●	G22 G23 G24
		4020-200R	4020-20R	4.0	2.0	3.3			●	●		●		●	
		5020-250R	5020-25R	5.0	2.5	4.2				●		●		●	
		6020-300R	6020-30R	6.0	3.0	5.2				●		●		●	G22,G23
Undercutting Chip Control Oriented		GMG 3020-150RU	GMG 3020-15RU	3.0	1.5	2.3	20	4.3		●		●		●	G24 G25
		4020-200RU	4020-20RU	4.0	2.0	3.3				●		●		●	
		5020-250RU	5020-25RU	5.0	2.5	4.2				●		●		●	

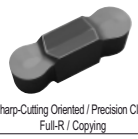
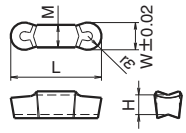
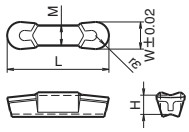
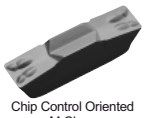
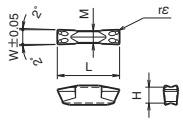
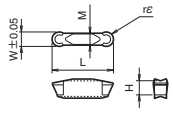
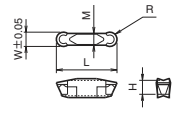
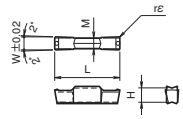
For recommended cutting conditions, see page G76~G77

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

Inserts are sold in 10 piece boxes.

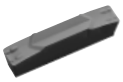
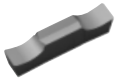
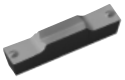
GMM / GMGA / FGG

Classification of usage							
	P	Carbon Steel / Alloy Steel			◔	◕	
	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 (R-hand shown)		Description	(Previous Description)	Dimension (mm) W	rε	M	L	H	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	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					●	G23
Sharp-Cutting Oriented / Precision Class Full-R / Copying		GMGA 8030-400R	GMGA 8030-40R	8.0	4.0	6.0	30	5.5					●	
 Chip Control Oriented M Class		GMM 3014-04	-	3.0	0.4	2.3	14	4.3	●	●	●	●	●	G24
Chip Control Oriented / M Class Full-R / Copying		GMM 3014-15R	-	3.0	1.5	2.3	14	4.3	●	●		●	●	
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	● ● ●	● ● ●		● ● ●	● ● ●	G24

For recommended cutting conditions, see page ➡ G76~G77

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**

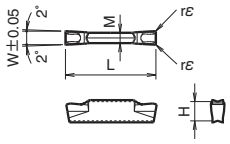
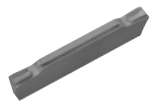
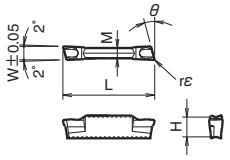
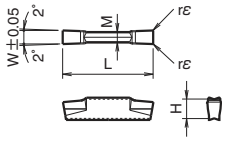
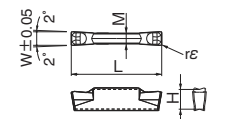
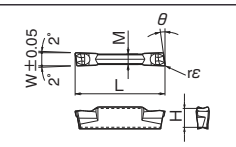
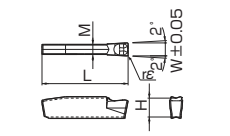
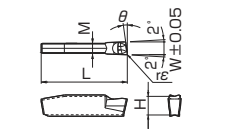
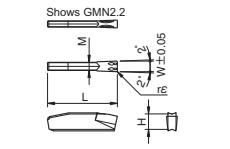
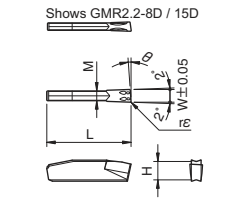
• Sharp Edge Spec. can reduce cutting resistance 40% less than that of chamfer edge.

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

Inserts are sold in 10 piece boxes.

GMM / GMN

Classification of usage			Cermet	CVD Coated Carbide	PVD Coated Carbide		Carbide
			TN90	CR9025	PR915	PR930	KW10
◕ : 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	TN90	CR9025	PR915	PR930	KW10	Ref. Page for Toolholder
Deep Grooving / Cut-Off Sharp-Cutting Oriented 	GMM 1520-MT	1.5	0.0	1.2	20	4.3	-				●	●	G22 G23 G24
			0.05							●			
	2020-MT	2.0	0.0	1.5							●	●	
			0.05						●	●			
	2520-MT	2.5	0.0	1.9							●	●	
			0.05						●	●			
	3020-MT	3.0	0.0	2.3							●	●	
			0.05						●	●			
 Cut-Off Sharp-Cutting Oriented / With lead angle 	GMM 1520R/L-MT-15D	1.5	0.0	1.2	20	4.3	15°				●	●	
			0.05							R			
	2020R/L-MT-15D	2.0	0.0	1.5			15°				●	●	
			0.05						●	R			
	2520R/L-MT-15D	2.5	0.0	1.9			15°				●	●	
			0.05						●	R			
	3020R/L-MT-15D	3.0	0.0	2.3			15°				●	●	
			0.05						●	R			
Deep Grooving / Cut-Off Sharp-Cutting Oriented Without Chipbreaker 	GMM 1520-NB	1.5	0.0	1.2	20	4.3	-				●	●	
			0.05										
	2020-NB	2.0	0.0	1.5							●	●	
			0.05						●				
	2520-NB	2.5	0.0	1.9							●	●	
			0.05						●				
	3020-NB	3.0	0.0	2.3							●	●	
			0.05						●				
Deep Grooving / Cut-Off Stability-Oriented 	GMM 2020-TK	2.0	0.20	1.5	20	4.3	-			●	●	●	
	2520-TK	2.5	0.20	1.9					●	●	●	●	
	3020-TK	3.0	0.25	2.3					●	●	●	●	
Cut-Off Stability-Oriented / With lead angle 	GMM 2020R/L-TK-8D	2.0	0.20	1.5	20	4.3	8°			R	R	R	
	2520R/L-TK-8D	2.5	0.20	1.9					R	R	R	R	
	3020R/L-TK-8D	3.0	0.25	2.3					R	R	R	R	
Cut-Off / Stability-oriented 1-Edge 	GMN 2-TK	2.0	0.20	1.8	20	4.3	-			●	●	●	
	3-TK	3.0	0.25	2.3					●	●	●	●	
	4-TK	4.0	0.30	3.3					●	●	●	●	
Cut-Off / Stability-oriented 1-Edge / With lead angle 	GMR/L 2-TK-8D	2.0	0.20	1.8	20	4.3	8°			R	R	R	
	3-TK-8D	3.0	0.25	2.3					R	R	R	R	
	4-TK-8D	4.0	0.30	3.3					R	R	R	R	
Deep Grooving / Cut-Off 1-Edge  Shows GMN2.2	GMN 2.2	2.2	0.17	1.8	20	4.3	-	●	●		●	●	
	3	3.0	0.20	2.3				●	●		●	●	
	4	4.0	0.25	3.3				●	●		●	●	
	5	5.0	0.8	4.2				●	●		●	●	
	6	6.0	0.8	5.2				●	●		●	●	
Cut-Off / Sharp-Cutting 1-Edge / With lead angle  Shows GMR2.2-8D / 15D	GMR/L 2.2-8D	2.2	0.17	1.8	20	4.3	8°	R	●		●	●	
	2.2-15D	2.2	0.00	1.8			15°	R	●		●	●	
	3-4D	3.0	0.20	2.3			4°	R	●		●	●	
	3-15D	3.0	0.20	2.3			15°		●				
	4-4D	4.0	0.25	3.3			4°		●		R		

For recommended cutting conditions, see page ➡ G76

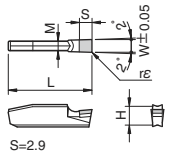
● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

GMN

Classification of usage			KBN10B	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 (under 40HRC)					
		Hard materials (over 40HRC)		○	●		

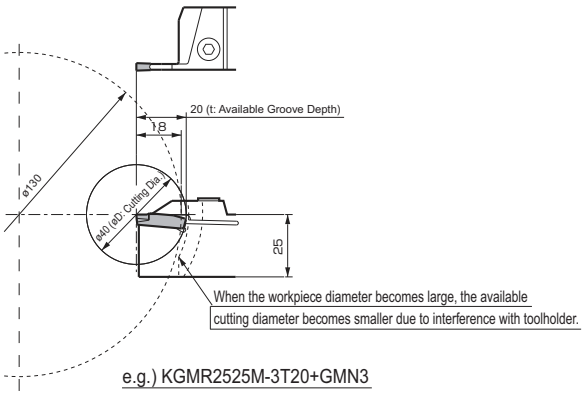
◓ : Continuous-Light Interruption / 1st Choice
(◔) : Continuous-Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert		Description	Dimension (mm) W	rε	M	L	H	Angle (°) θ	CBN KBN10B	KBN510	KBN525	PCD KPD001	KPD010	Ref. Page for Toolholder
Deep Grooving 1-Edge	 S=2.9	GMN 2	2.0	0.2	1.8	20	4.3	-	●	●	●	●	●	G22 G23 G24
				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 ➡ G74

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

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



◆ KGM Available Cutting Diameter Table

Toolholder		øD (Cutting Dia.)																
KGM R/L	0810K-1.5-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	∞
	1010K-1.5-125	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
	1212F-1.5-85 1212M-1.5-150	-	-	-	-	25	26	28	32	36	40	60	100					
	0810K-2-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	
	1010K-2-125	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
	1212F-2-85 1212M-2-150	-	-	-	-	25	26	28	50	∞	∞	∞	∞					
	1616M-2-150	32	40	50	60	80	100	∞	∞									
	1010K-2.5-125	-	-	-	-	-	-	-	20	25	32	40	60					
	1212F-2.5-85 1212M-2.5-150	-	-	-	-	25	26	28	32	36	40	60	100					
	1616M-2.5-150	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞					
	1616M-3-150	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, GM R/L When using 1-edge insert)

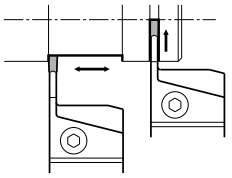
Toolholder		øD (Cutting Dia.)												
KGM R/L	2012K-2T17 2020K-2T17 2525M-2T17	-	-	-	-	-	-	-	-	66	80	130	260	∞
	1616H-3T20	-	-	-	-	-	40	54	70	100	180	∞	∞	
	2012K-3T20 2020K-3T20 2525M-3T20 2020K-4T20 2525M-4T20	-	-	-	-	-	40	90	130	240	∞			
	2525M-4T25 2525M-5T25	-	-	50	140	240	∞	∞	∞	∞				
	3232P-5T25	-	-	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

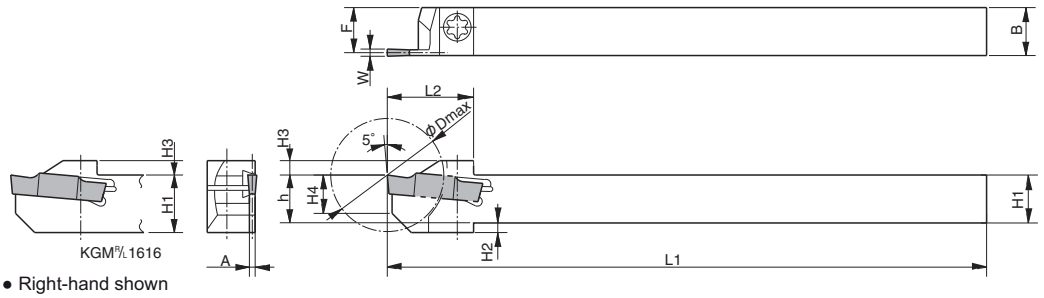
● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

CBN & PCD Inserts are sold in 1 piece boxes.

KGM (For automatic lathe)

Width: 1.5~4.0mm





● Right-hand shown

Toolholder Dimensions

Description		Std. R	Std. L	Cutting Dia. øDmax	Dimension (mm) H1=h	H2	H3	H4	B	L1	L2	F	A	Width W (mm) MIN.	MAX.	Spare Parts Screw	Wrench
KGMR/L	0810K-1.5-125	●	●	10	8	4	3	8	10	125	18	9.4	1.2	1.5	2.0	SE-40120TR	LTW-15S
	1010K-1.5-125	●	●	20	10	2											
	1212F-1.5-85	●		25	12		4	10	12	85	19	11.4					
	1212M-1.5-150	●	●							150							
	0810K-2-125	●	●	10	8	4	3	8	10	125	18	9.2	1.6	2.0	3.0	SE-40120TR	LTW-15S
	1010K-2-125	●	●	20	10	2						9.15	1.7				
	1212F-2-85	●		25	12		4	10	12	85	19	11.15	1.7				
	1212M-2-150	●	●							150							
	1616M-2-150	●	●	32	16	-	4	9	16	150	24.5	15.15				SE-50125TR	LTW-20
	1010K-2.5-125	●	●	20	10	2	3	8	10	125	18	9	2.0	2.4	3.0	SE-40120TR	LTW-15S
	1212F-2.5-85	●		25	12	2	4	10	12	85	19	11					
	1212M-2.5-150	●	●							150							
	1616M-2.5-150	●	●	32	16	-		9	16	150	25.5	15				SE-50125TR	LTW-20
	1616M-3-150	●	●	32	16	-	4	9	16	150	25.5	14.8	2.4	3.0	4.0	SE-50125TR	LTW-20

Applicable Inserts

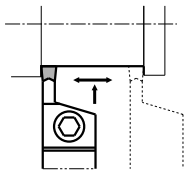
Applications	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Full-R / Copying	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving / Cut-off	Deep Grooving
Ref. Page	G18	G18	G18	G18	G19	G20	G20	G20	G20	G20	G21
Insert / Toolholder	MW	MS	MG			MT	NB	TK	TK		CBN PCD
KGMR/L...1.5	-	-	-	-	-	GMM1520..MT GMM2020..MT GMM1520R/L..MT GMM2020R/L..MT	GMM1520..NB GMM2020..NB	GMM2020..TK GMM2020R/L..TK	GMN2..TK GMR/L2..TK	-	-
KGMR/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 GMM2020R/L..MT GMM2520R/L..MT GMM3020R/L..MT	GMM2020..NB GMM2520..NB GMM3020..NB	GMM2020..TK GMM2520..TK GMM3020..TK GMM2020R/L..TK GMM2520R/L..TK GMM3020R/L..TK	GMN2..TK GMN3..TK GMR/L2..TK GMR/L3..TK	GMN2 GMN2.2 GMN3 GMR/L2.2 GMR/L3	GMN2 GMN3
KGMR/L...2.5	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMG3020..MG	GMG3020..R GMM3020..R	-	GMM2520..MT GMM3020..MT GMM2520R/L..MT GMM3020R/L..MT	GMM2520..NB GMM3020..NB	GMM2520..TK GMM3020..TK GMM2520R/L..TK GMM3020R/L..TK	GMN3..TK GMR/L3..TK	GMN3 GMR/L3	GMN3
KGMR/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 GMM3020R/L..MT	GMM3020..NB	GMM3020..TK GMM3020R/L..TK	GMN3..TK GMN4..TK GMR/L3..TK GMR/L4..TK	GMN3 GMN4 GMR/L3 GMR/L4	GMN3 GMN4
KGMR/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 GMR/L4..TK	GMN4 GMN5 GMR/L4	GMN4 GMN5
KGMR/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
KGMR/L...6T	GMM6020..MW	GMG6020..MS GMM6020..MS	GMG6020..MG	GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN6	GMN6
KGMR/L...8	GMM8030..MW	-	GMG8030..MG	-	GMGA8030..R	-	-	-	-	-	-

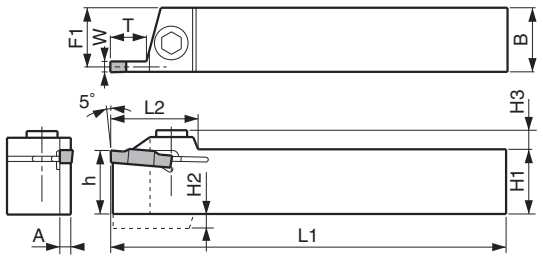
For recommended cutting conditions, see page G76
For recommended cutting conditions of CBN / PCD, see page G74

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

KGM

Width: 3.0~8.0mm





• Right-hand shown

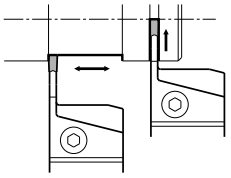
Toolholder Dimensions

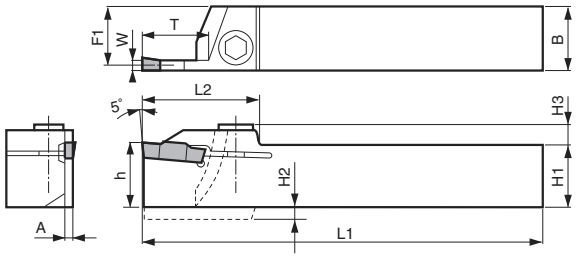
Description		Std. R	Std. L	Dimension (mm) H1=h	H2	H3	B	L1	L2	F1	A	T		Width W (mm) MIN.	MAX.	Spare Parts: Screw		Spare Parts: Wrench	
KGM R/L	1212H-3	●	●	12	4	6	12	100	27	10.8	2.4	9		3.0	3.0	SB-5TR	-	LTW-20	-
	1616H-3	●	●	16		7	16			14.8				3.0	4.0	-	HH5X16	-	LW-4
	2020K-3	●	●	20	-	7	20	125		18.8							HH5X25		
	2525M-3	●	●	25			25	150		23.8									
	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 KGM R/L 1212H-3, but is not recommended due to the toolholder's rigidity.

KGM-T (Deep Grooving Type)

Width: 2.0~6.0mm





• Right-hand shown

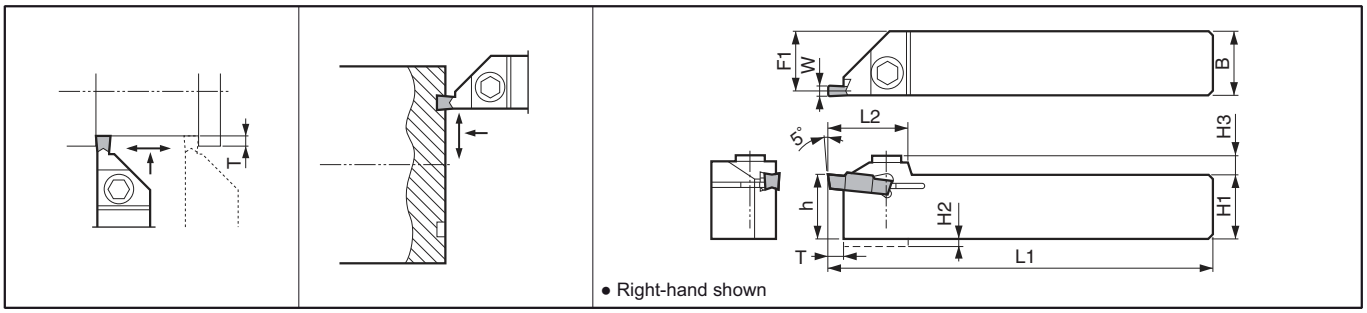
Toolholder Dimensions

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	-	7	12	125	33	11.15	1.7	17		2.0	3.0	SB-5TR	-	LTW-20	-
	2020K-2T17	●	●	20			20	125		19.15						-	HH5X16	-	LW-4
	2525M-2T17	●	●	25			25	150		24.15							HH5X25		
	1616H-3T20	●	●	16	4	7	16	100	36	14.8	2.4	20		3.0	4.0	-	HH5X16	-	LW-4
	2012K-3T20	●	●	20	-		12	125		10.8						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	-	7.5	20	125	36	18.3	3.4	20		4.0	5.0	-	HH5X16	-	LW-4
	2525M-4T20	●	●	25			25	150	36	23.3		20					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

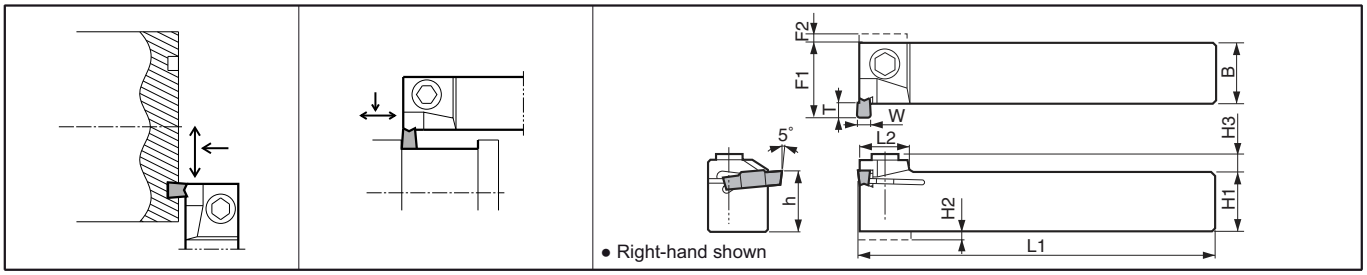
• Dimension T shows the distance from the Toolholder to the cutting edge. Refer to the Table (**G21**) for the relationship between the available Grooving Depth and the Cutting Dia.
• When using GMG / GMM type (2-Edge) insert, set the groove depth under 15mm.

● : 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	MAX	Spare Parts: Screw	Screw	Wrench	Wrench
KGMM R/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	-	
KGMS R/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 **G52** for Face Grooving)

Applicable Inserts [External Grooving]

Applications	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Grooving	Grooving	Grooving	Grooving	Grooving	Grooving
Ref. Page	G18	G18	G18	G18	G20	G20	G20	G20	G20	G21
Insert / Toolholder	MW	MS	MG		MT	NB	TK	TK		CBN PCD
KGMS R/L 1212H-3	GMM3014..	-	-	GMM3014..R	-	-	-	-	-	-
KGMM R/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 GMM3020..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	G19	G18.19	G18	G18	G18	G18	G20	G20	G20	G20, G21
Insert / Toolholder			MW	MS	MG		MT	NB	TK	
KGMS R/L 1212H-3	-	GMM3014..RU	-	-	-	-	-	-	-	-
KGMM R/L...3 KGMS R/L...3	FGG R/L 3020.. FGG R/L 4020.. FGG R/L 5020..	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

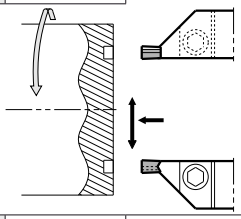
For recommended cutting conditions, see page **G76**
For recommended cutting conditions of CBN / PCD, see page **G74**

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

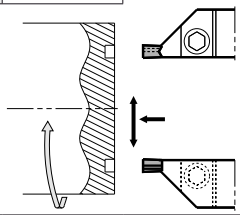
◆ Selection of Insert & Toolholder (Face Grooving)

● Case of KGMM

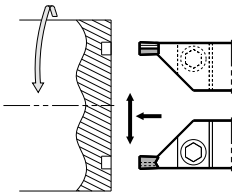
Toolholder	L-hand
Insert	L-hand



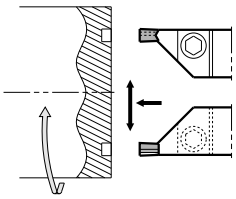
Toolholder	R-hand
Insert	R-hand



Toolholder	R-hand
Insert	L-hand

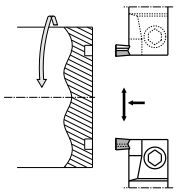


Toolholder	L-hand
Insert	R-hand

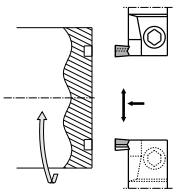


● Case of KGMS

Toolholder	R-hand
Insert	L-hand

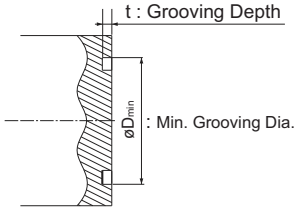


Toolholder	L-hand
Insert	R-hand



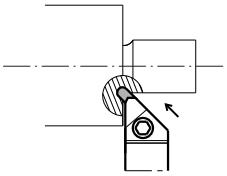
◆ Min. Cutting Dia. (Face Grooving)

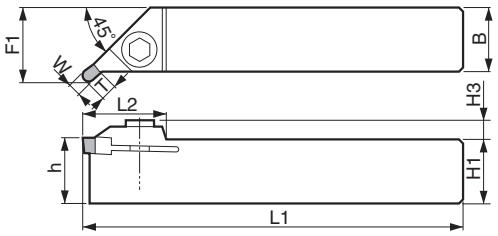
● KGMM / KGMS (Common)



Description	øDmin	t
GMG / GMM3020-○○□□	ø100	4.8
GMG / GMM4020-○○□□		
GMG / GMM5020-○○□□		
FGG R/L 3020-02	ø22	4.3
FGG R/L 4020-04	ø28	4.8
FGG R/L 5020-04	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	
KGMU R/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.

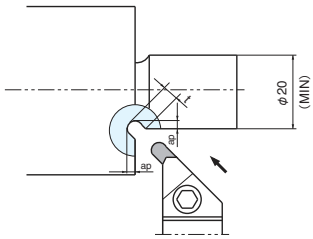
Dimension F1 shows at GMM5020-RU. ( ) indicates external grooving inserts when installed.

● Applicable Insert

Applications	Undercutting		
Ref. Page	G18		
Shape / Toolholder			
KGMU R/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

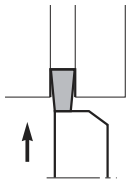


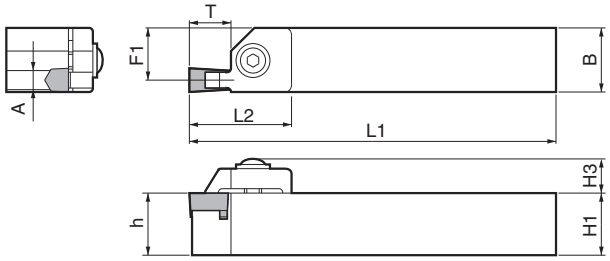
Description	Undercut Depth t (mm)	Distance from the face of the workpiece. ap (mm)
GMG3020-15RU	3.5	1.8
GMG4020-20RU	4.0	1.9
GMG5020-25RU	4.5	2.1

* 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)

KN91





• Right-hand shown

Toolholder Dimensions

Description		Std. R	Std. L	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.

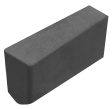
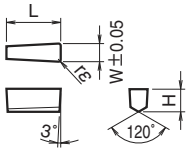
Applicable Inserts

(mm)

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

		Ceramic A65	PVD Ceramic A66N
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	Dimension (mm) rε	Ceramic A65	PVD Ceramic A66N	Applicable Toolholder	Ref. Page for Toolholder
		GS	91-4	4.0	0.5			KN91R/L...4	G26
			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	f (mm/rev) 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

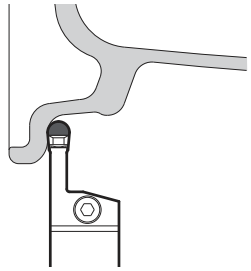
★ : 1st Recommendation

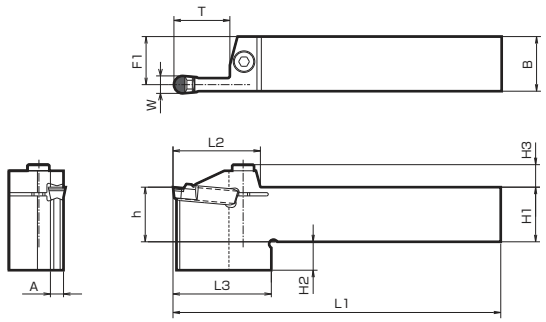
Inserts are sold in 10 piece boxes.

● : 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)



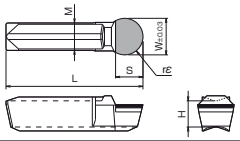
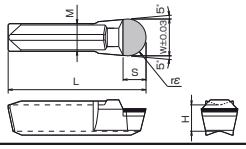


• Right-hand shown

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.

Recommended Cutting Conditions

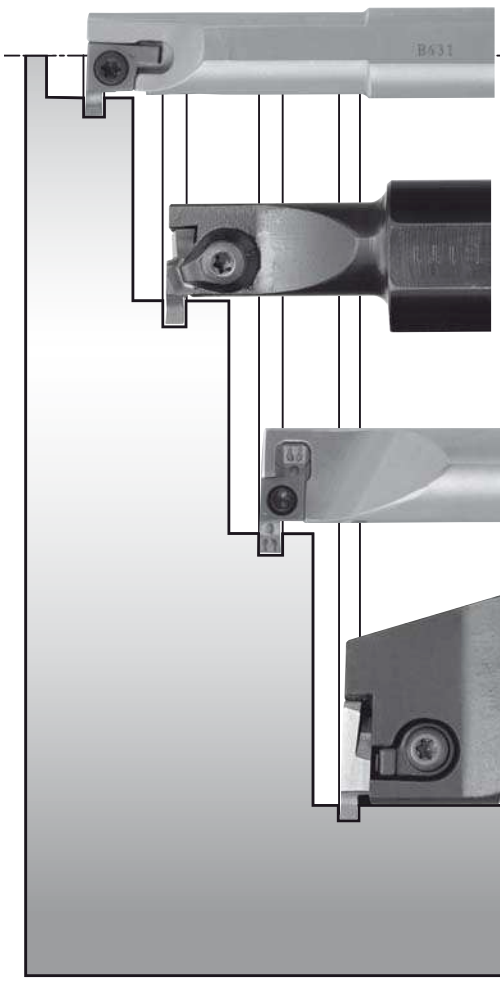
Workpiece Material	Insert Grade (Vc: m/min) PCD KPD001	① f at Grooving (mm/rev) ② f at Traversing (mm/rev) ③ ap at Traversing (mm)
Aluminum	★ 150~2700	① 0.05~0.3 mm/rev ② 0.2~0.8 mm/rev ③ MAX.3 mm

★ : 1st Recommendation

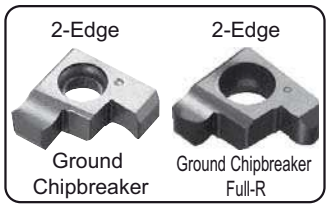
● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Summary of Internal Grooving

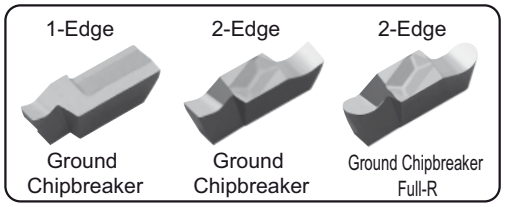
Internal Grooving ø8~



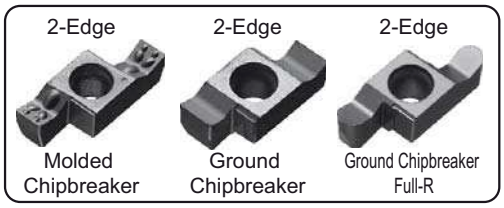
SIGE
Min.Cutting Dia.: ø8~12
Width: 1.0~3.0
Depth: 1.5~2.2
➡G36



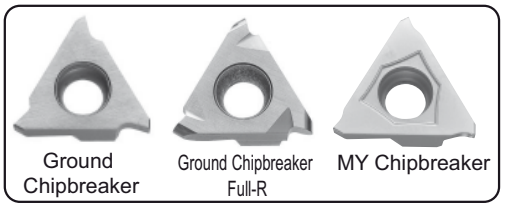
GIV
Min.Cutting Dia.: ø12~40
Width: 1.0~5.0
Depth: 1.7~5.5
➡G40



SIGE
Min.Cutting Dia.: ø14~40
Width: 1.0~5.0
Depth: 2.5~6.5
➡G36



KIGBA
Min.Cutting Dia.: ø35~40
Width: 0.5~4.8
Depth: 1.0~2.8
➡G43

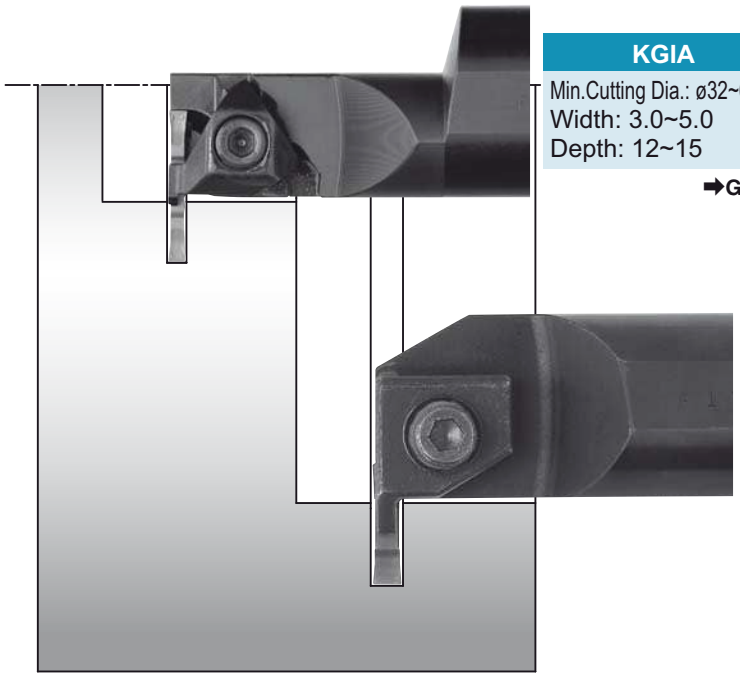


Shallow Grooving

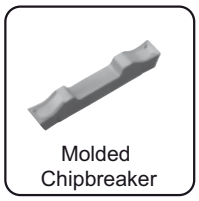
KITG
Min.Cutting Dia.: ø35~40
Width: 0.75~4.5
Depth: 2.0~2.5
➡G44

* KITG type will be switched to KIGBA type.

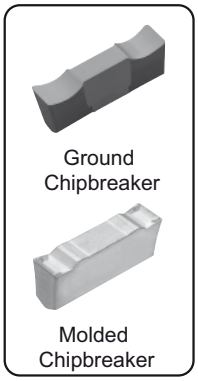
Deep Grooving



KGIA
Min.Cutting Dia.: ø32~66
Width: 3.0~5.0
Depth: 12~15
➡G48

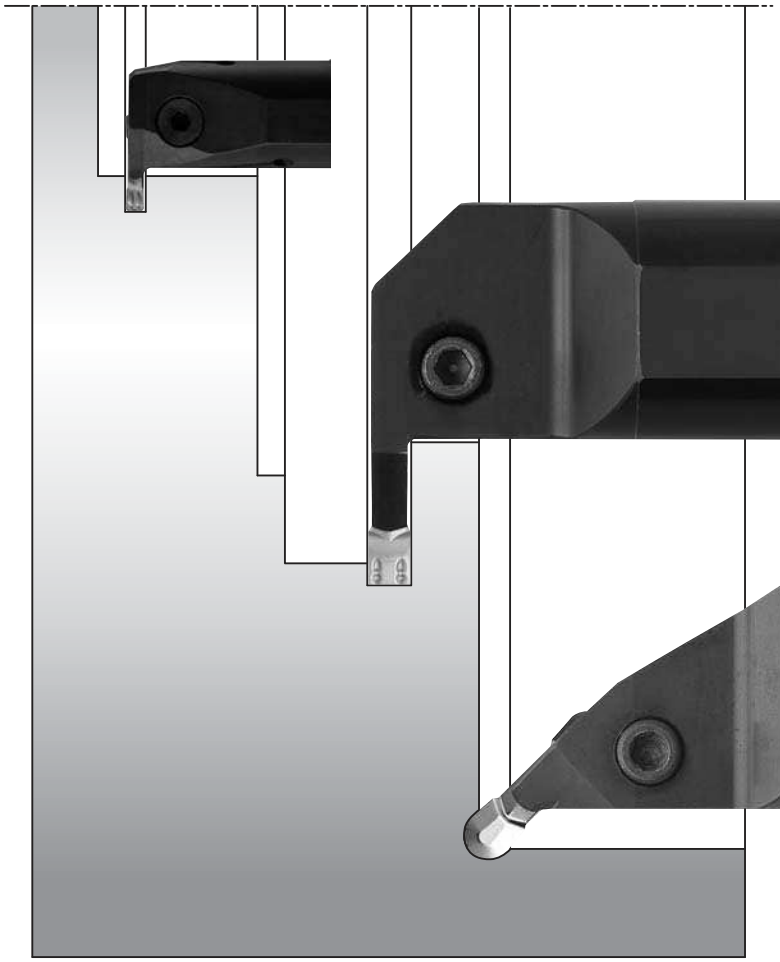


KIGH
Min.Cutting Dia.: ø45~65
Width: 4.0~8.0
Depth: 12
➡G45



Internal Grooving & Traversing ø20~

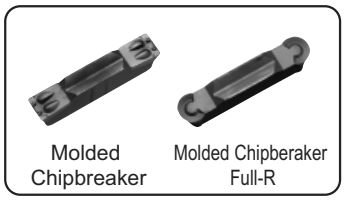
CERACUT Plunge & Turn



➡G46

KIGM-V

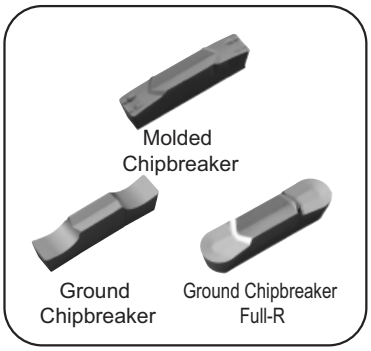
Min.Cutting Dia.: ø20~40
Width: 3.0~5.0
Depth: 5.5~11.0



➡G47

KIGM-8

Min.Cutting Dia.: ø65
Width: 8.0
Depth: 20



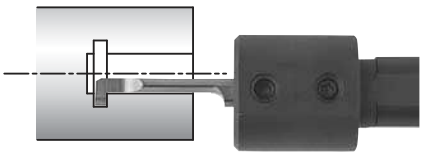
KIGMU-8

Min.Cutting Dia.: ø65
Width: 8.0
Depth: 2.2

➡G47

Small Dia. Internal Grooving ø4~

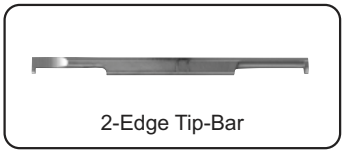
2-Edge Tip-Bar & System Tip-Bar

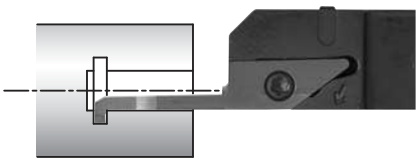


HPG

Min.Cutting Dia.: ø4~7
Width: 1.0~2.0
Depth: 1.5~2.0

➡G30

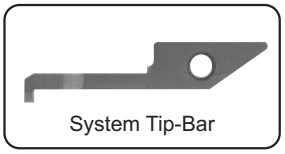




VNG

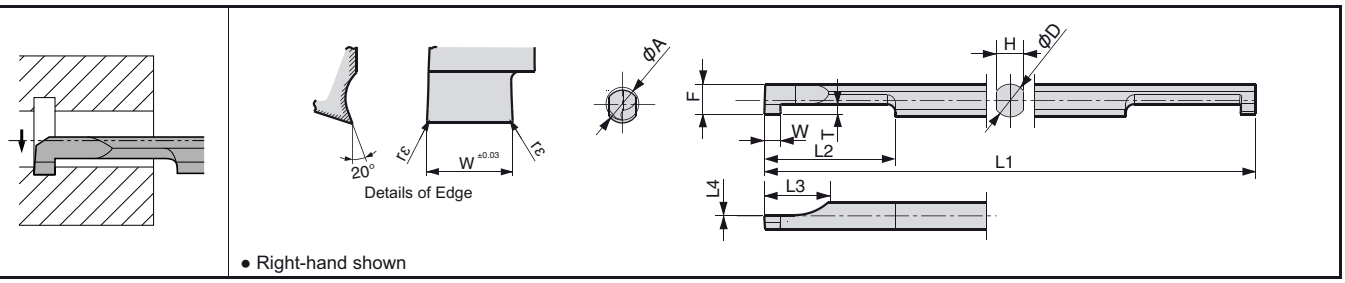
Min.Cutting Dia.: ø4~7
Width: 1.0~2.0
Depth: 0.8~2.0

➡G33



2-Edge Tip-Bar for Micro Internal Grooving HPG type

HPG (Micro Internal Grooving)



• Right-hand shown

Tip-Bar Dimensions

Description		Min. Cutting Dia. øA	Dimension (mm) W±0.03	rε	øD	H	L1	L2	L3	L4	F	T	Insert Grade PVD Coated Carbide PR930 R	PR930 L	Carbide KW10 R	KW10 L
HPG R/L	0404-10	4	1	0.05 (+0 -0.02)	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		Applicable Sleeve ➡G31	
HPG R/L	0404-···	PSH	04···-···
	0505-···		05···-···
	0606-···		06···-···
	0707-···		07···-···

Recommended Cutting Conditions

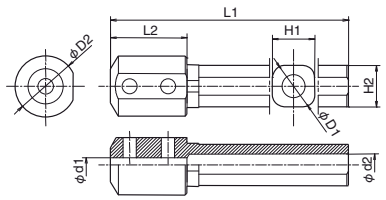
Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min) PVD Coated Carbide PR930	Carbide KW10	HPG R/L04 HPG R/L05 f (mm/rev)	HPG R/L06 HPG R/L07	Remarks
Carbon Steel / Alloy Steel	★ 30～100	-	~0.03	~0.05	Coolant
Stainless Steel	★ 30～80	-	~0.02	~0.03	
Non-ferrous Metals	-	★ ～300	~0.05	~0.08	

★: 1st Recommendation ☆: 2nd Recommendation

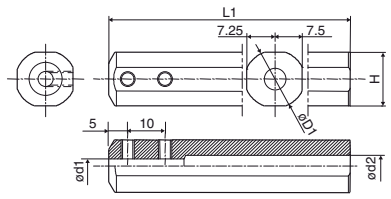
Tip-Bars are sold in 1 piece boxes.

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

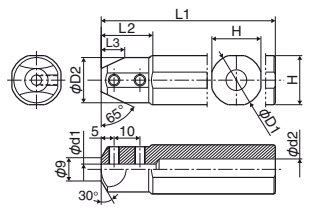
Applicable Sleeve



(Tip-Bar installation side) Fig.1



(Tip-Bar installation side) Fig.2



(Tip-Bar installation side) Fig.3

Description		Std.	Dimension (mm) *ød1	øD1	øD2	ød2	H	L1	L2	L3	Drawing	Spare Parts Screw	Spare Parts Wrench	Applicable Machine Manufactuer	Ref. Page for 2-Edge Tip-Bar (Ref. Page for other 2-Edge Tip-Bar)
PSH	0412-80	●	4	12	16	6	11	80	20	-	Fig.1	HS4×4P	LW-2	(General use)	Grooving (HPG) ⇒ **G30**
	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)	Boring (HPB) ⇒ **F18**
	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	Back Boring (HPBT) ⇒ **F18**
	0519-120	●	5												
	0619-120	●	6			8				7.5					Face Grooving (HPFG) ⇒ **G53**
	0719-120	●	7												
PSH	0425-120	●	4	25.4 (1")	18	6	24.4	120	23	9.5	Fig.3	HS4×4P	LW-2		Threading (HPT) ⇒ **J24**
	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)

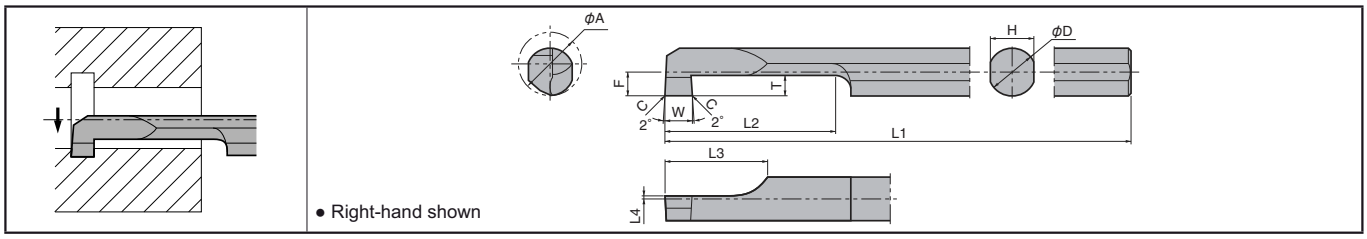
- Choose sleeves (ød1) to meet with øD dimension of Tip-Bar.
- Names of machine builders are listed in the order of the Japanese syllabary with omitted titles of respect.

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

Tip-Bar for Micro Internal Grooving

PSG-S (Tip-Bar)

This insert will be switched to **HPG** type (2-Edge See Page ➡ **G30**).



Classification of usage			Cermet	PVD Coated Carbide			Carbide			Ref. Page for Sleeve
● : 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)								

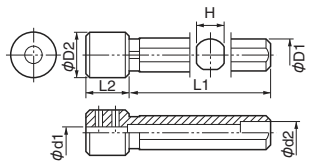
● Tip-Bar

Description		Min. Cutting Dia.	Dimension (mm)											Cermet	PVD Coated Carbide			Carbide			Ref. Page for Sleeve
		øA	W±0.03	C	øD	H	L1	L2	L3	L4	F	T		TC60		PR915	PR930	KW10			
PSG R/L	0510-60S	5	1.0	0.05	3.8	3.6	60	15	8	0.1	1.86	1.5						●			G32
	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.

● Applicable Sleeve

This sleeve is for 1-Edge Tip-Bar. For 2-Edge Tip-Bar, See Page ➡ **G31**.

Shape	Description	(Previous Description)	Std.	Dimension (mm) øD1	øD2	ød1	ød2	H	L1	L2	Spare Parts: Screw	Spare Parts: Wrench	Applicable Tip-Bar
 (Tip-Bar installation side)	PH 0412-60	PH -0412	○	12	19	3.8	6	11	60	20	HS4X4	LW-2	PSG R/L 05 ○○ - ○○ S
	0512-60	-0512	○			4.8							PSG R/L 06 ○○ - ○○ S
	0612-60	-0612	○			5.8	8						PSG R/L 07 ○○ - ○○ S
	0712-60	-0712	○			6.8							*PSG R/L 08 ○○ - ○○ S
	PH 0416-80	PH -0416	○	16	22	3.8	Rp1/4 (PS1/4)	15	80	20	HS4X4	LW-2	PSG R/L 05 ○○ - ○○ S
	0516-80	-0516	○			4.8							PSG R/L 06 ○○ - ○○ S
	0616-80	-0616	○			5.8							PSG R/L 07 ○○ - ○○ S
	0716-80	-0716	○			6.8							*PSG R/L 08 ○○ - ○○ S

• Besides the above Sleeves, Collet Chucks are also available in the market .

* PSFG R/L 08 ○○ _20S is available.

◆ Recommended Cutting Conditions

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

★ : 1st Recommendation ☆ : 2nd Recommendation

Remarks on PSG-S type Tool

How to install

PSG-S should be installed accurately because errors from the cutting edge's height and angle affect the machining precision in the micro grooving application. When installing, set the cutting edge above the center position as shown in the Table 1. All PSG-S type tools are produced to have the cutting edge above the center position.

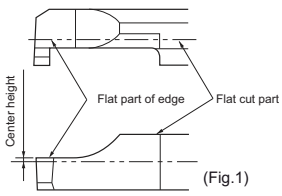
(See dimension L4)

① In case of using the exclusive sleeve (PH ○○ 12-60, PH ○○ 16-80), the cutting edge of PSG-S tool comes to the suitable position automatically.

② In case of using the collet chuck in the market, adjust the center height according to the Table 1.
It is easy to adjust the center height using the edge's flat part. (Fig.1)

(Table1)

Grooving Tip-bar	Center height (mm)
PSG05 type	0.1
PSG06 type PSG07 type PSG08 type	0.3



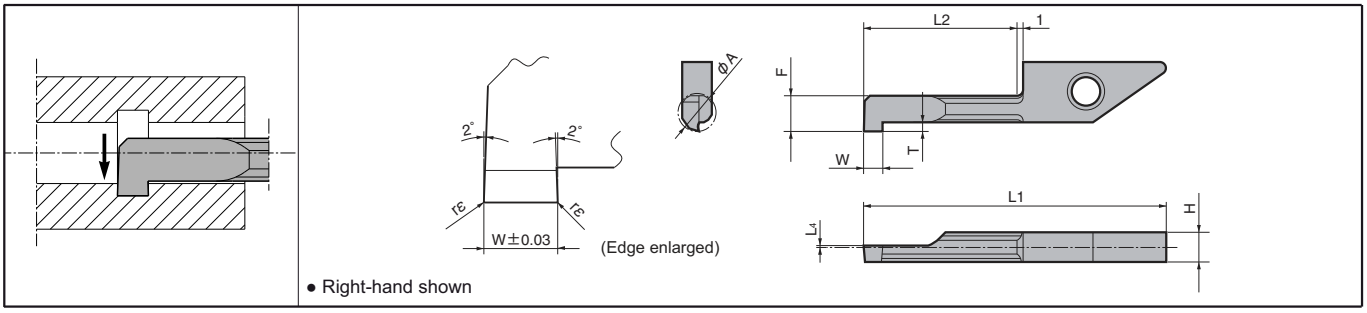
(Fig.1)

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

Tip-Bars are sold in 1 piece boxes.

System Tip-Bar for Micro Internal Grooving

VNG



• Right-hand shown

Classification of usage										Ref. Page for Toolholder
	P	Carbon Steel / Alloy Steel				●				
	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 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				●	●			F12 F13 F14
	0420-11		2.0	0.10												●	●			
	0510-11	5	1.0	0.05							4.4	1.0	●	●		●	●			
	0520-11		2.0	0.10									●	●		●	●			
	0610-20	6	1.0	0.05			39.8	20		0.3	5.2	1.8	●	●		●	●			
	0620-20		2.0	0.10									●	●		●	●			
	0710-20	7	1.0	0.05							6.2	2.0	●	●		●	●			
	0720-20		2.0	0.10									●	●		●	●			
VNGR	0410-11NB	4	1.0	0.05	-	3.9	30.8	11	-	0.1	3.5	0.8						○	○	
	0420-11NB		2.0	0.10														○	○	
	0510-11NB	5	1.0	0.05							4.4	1.0						○	○	
	0520-11NB		2.0	0.10														○	○	
	0610-20NB	6	1.0	0.05			39.8	20		0.3	5.2	1.8						○	○	
	0620-20NB		2.0	0.10														○	○	
	0710-20NB	7	1.0	0.05							6.2	2.0						○	○	
	0720-20NB		2.0	0.10														○	○	

• 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			
Carbide 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)

System Tip-Bars (VNG) are sold in 5 piece boxes.

CBN & PCD Inserts are sold in 1 piece boxes.

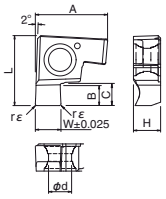
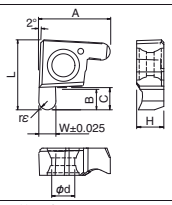
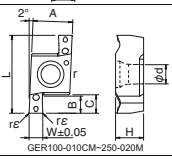
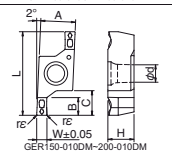
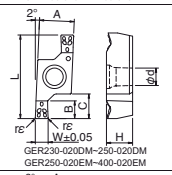
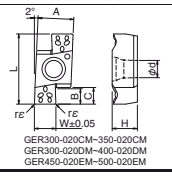
Applicable Inserts

(mm)

Description	A	L	H	ød
GE R/L...-A GER...-AR	6.69	6.5	2.58	2.5
GE R/L...-B GER...-BR	8.46	8.2	3.18	2.7
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

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	100-005A	1.00	1.5	1.8	0.05	●	●	●	●			●	●	SIGE R/L...A-EH SIGE R/L...A-WH	G36 G37 G38
			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	
			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	
			200-100AR	2.00			1.0			●				●			
		GER	100-050BR	1.00	2.2	2.6	0.5			●				●		SIGER...B-EH SIGER...B-WH	
			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	
			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	G36 G37
			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	
			200-010EM	2.00	3.2					●							
			250-020EM	2.50	4.5		0.2			●							
			300-020EM	3.00						●							
			350-020EM	3.50	5.5					●							
			400-020EM	4.00						●							
	 GER300-020CM~350-020CM GER300-020DM~400-020DM GER450-020EM~500-020EM		450-020EM	4.50	6.5					●							
2-Edge Molded Chipbreaker			500-020EM	5.00						●							

• Dimension B: shows available grooving depth.

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.

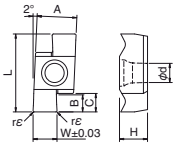
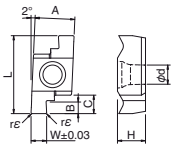
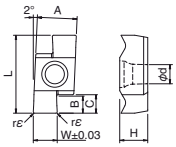
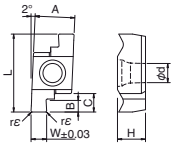
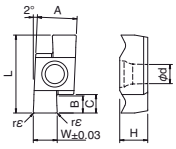
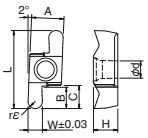
Applicable Inserts

(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

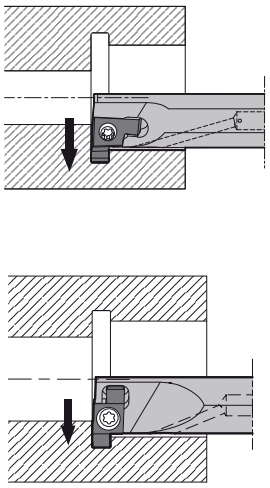
Insert (R-hand shown)	Description		Dimension (mm) W	B	C	rε	Cermet TN6020 R	TN6020 L	PVD Coated Carbide PR1025 R	PR1025 L	Carbide GW15 R	GW15 L	KW10 R	KW10 L	Applicable Toolholder	Ref. Page for Toolholder
2-Edge		GE R/L	100-005C	1.00	2.5	2.7	0.05	●	●	●	●	●	●			SIGE R/L...C-EH SIGE R/L...C-WH	G36 G37 G38
			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	GE R/L	100-005D	1.00	2.5	4.8	0.05	●	●	●	●	●	●			SIGE R/L...D-EH	
			140-005D	1.40				●		●	●	●					
			145-010D	1.45			0.10	●	●	●	●	●	●				
			150-010D	1.50	3.0			●	●	●	●	●	●				
			170-010D	1.70				●		●	●	●					
			185-010D	1.85				●		●	●	●					
			195-010D	1.95				●		●	●	●					
			200-010D	2.00	3.2			●	●	●	●	●	●				
			225-010D	2.25				●		●	●	●					
	 GER300-020D~400-020D		230-020D	2.30			0.20	●	●	●	●	●	●				
			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	GE R/L	100-005E	1.00	2.5	6.8	0.05	●	●	●	●	●	●			SIGE R/L...E-EH	G36 G37
			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	4.5		0.2	●	●	●	●	●	●				
			250-020E	2.50				●	●	●	●	●	●				
			275-020E	2.75				●		●	●	●					
			280-020E	2.80				●		●	●	●					
			300-020E	3.00				●	●	●	●	●	●				
			330-020E	3.30				●		●	●	●					
	 GER450-020E~500-020E		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	G36 G37 G38
			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	G36 G37
			300-150DR	3.00	4.5		1.5			●		●					

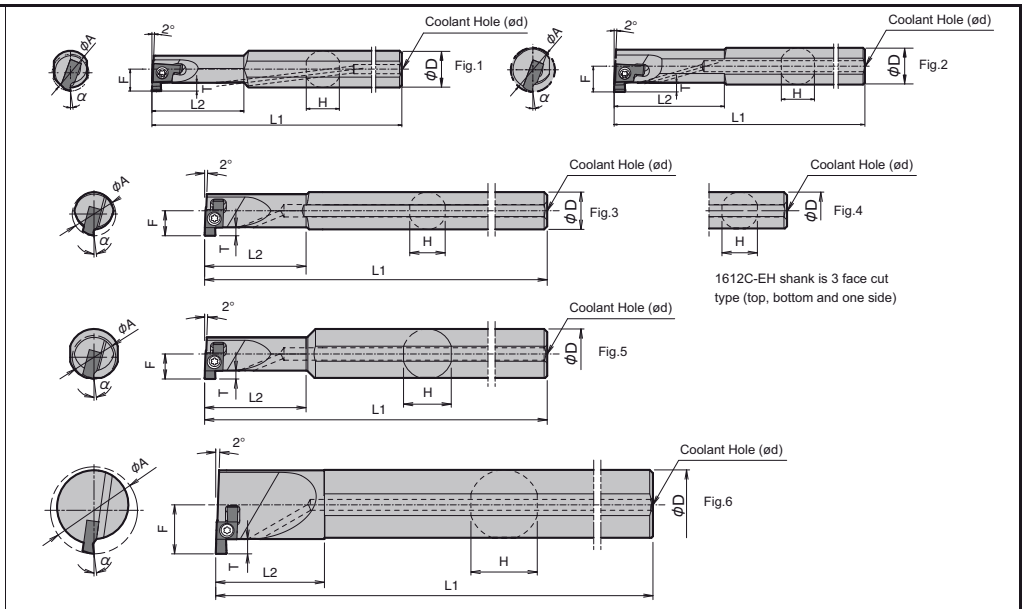
• Dimension B: shows available grooving depth.

● : 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.

Toolholder Dimensions

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

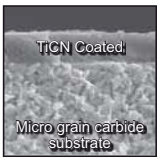
GER···M type

● Cutting edge is free from contact face.

● An 8mm minimum cutting diameter with a 2-Edge design

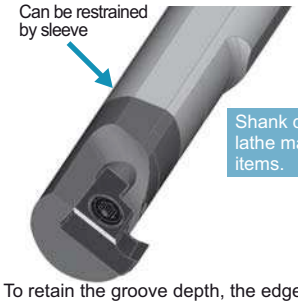
● New Grade PR1025 improves stable machining

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



● SIGE toolholder and Sleeve for Automatic Lathes

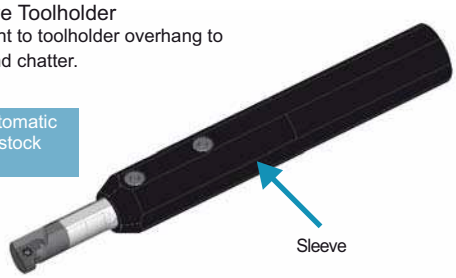
• SIGE toolholder
The locating surface for the sleeve lock screw reaches nearly to the insert pocket.
This provides a maximum range of overhang adjustment to reduce chatter.



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

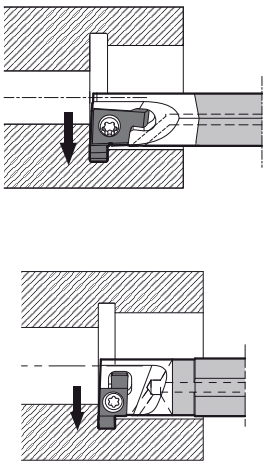
• Applicable Sleeve Toolholder
Provides adjustment to toolholder overhang to reduce vibration and chatter.

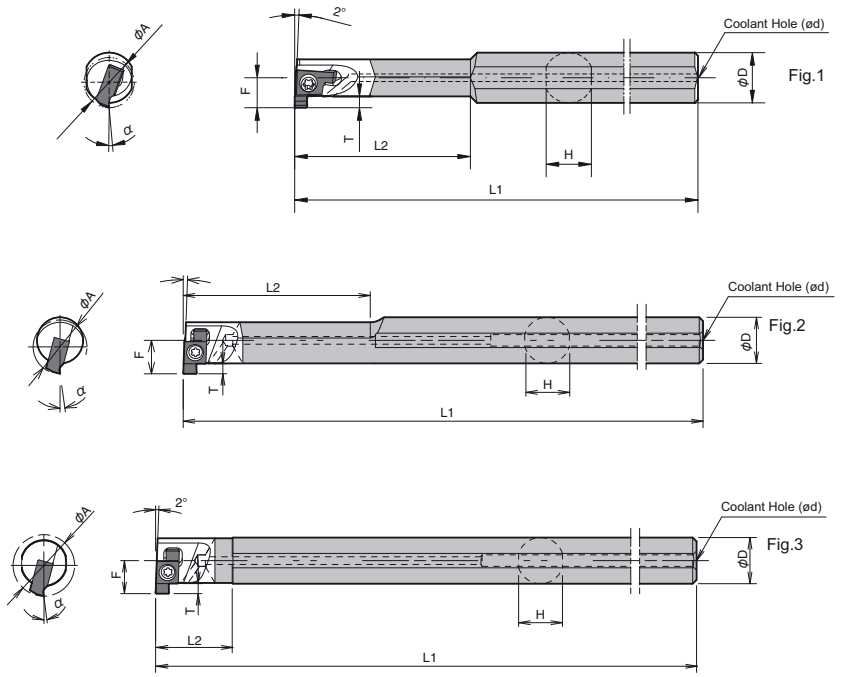
Shank diameters for other automatic lathe manufactures added to stock items.



● : 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. 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-WH	●	●	8	8	7.2	125	28	4.8	1.5	3	Fig.1	SB-2045TRN	FT-6	-	GE R/L100-005A~GE R/L200-010A GER100-050AR~GER200-100AR
	1010B-WH	●	●	10	10	9	125	35	6.2	2.2	3	Fig.1	SB-2255TR	-	DT-7	GE R/L100-005B~GE R/L300-020B 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/L100-005C~GE R/L350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR
	1612C-WH	●	●	16			180	20	8.5			Fig.3				

• Dimension T: shows available grooving depth.

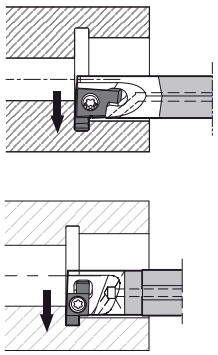
Applicable Insert & Rake Angle (α) after Installment of Insert

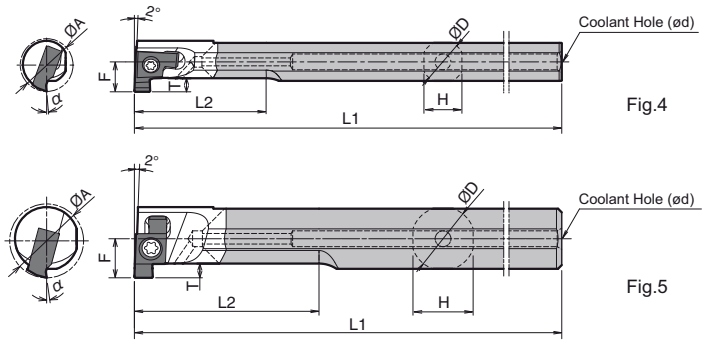
Description		Applicable Insert & Rake Angle (α) after Installment of Insert: Ground Chipbreaker	α (°)	Molded Chipbreaker	α (°)
SIGE R/L	0808A-EH	GE R/L100-005A~GE R/L200-010A GER100-050AR~GER200-100AR	5°	-	-
	1010B-EH	GE R/L100-005B~GE R/L300-020B GER100-050BR~GER200-100BR	5°	-	-
	1210B-EH				
	1412C-EH	GE R/L100-005C~GE R/L350-020C GER200-100CR~GER300-150CR	8°	GER150-010CM~GER350-020CM	10°
	1612C-EH				
	1616C-EH				
	2020D-EH	GE R/L100-005D~GE R/L400-020D GER200-100DR~GER300-150DR	9°	GER150-010DM~GER400-020DM	10°
	2525E-EH	GE R/L100-005E~GE R/L500-020E	10°	GER150-010EM~GER500-020EM	10°
	3232E-EH				
	4032E-EH				
SIGE R/L	0808A-WH	GE R/L100-005A~GE R/L200-010A GER100-050AR~GER200-100AR	5°	-	-
	1010B-WH	GE R/L100-005B~GE R/L300-020B GER100-050BR~GER200-100BR	5°	-	-
	1210B-WH				
	1008B-WH-90				
	1210B-WH-90				
	1412C-WH	GE R/L100-005C~GE R/L350-020C 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)

SIGE-WH Carbide Shank Bar (with Coolant Hole)





• Right-hand shown

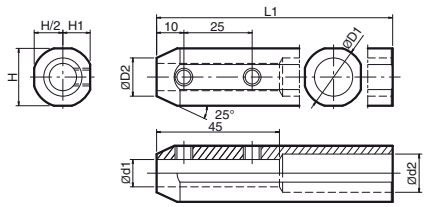
R-hand Insert for R-hand Toolholder.

Toolholder Dimensions

Description	Std.	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	T	ød	Drawing	Spare Parts: Clamp Screw	Wrench FT	Wrench DT	Applicable Inserts
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

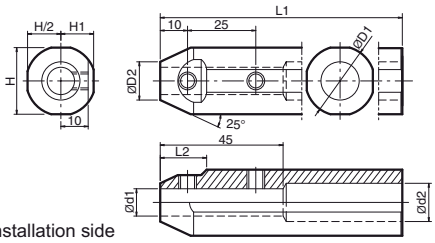
• See page G37 for applicable Insert & Rake Angle (α) after Installment of Insert.

Applicable Sleeve



Holder installation side

Fig.1



Holder installation side

Fig.2

Description	Std.	Dimension (mm) ød1	øD1	øD2	ød2	H	H1	L1	L2	Drawing	Spare Parts: Screw	Wrench	Applicable Machine Manufactuer
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: GER/L•••A(R), GER/L••B(R))

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)			① f at Grooving ② f at Traversing ③ ap at Traversing			Remarks
	Cermet	PVD Coated Carbide	Carbide				
	TN6020	PR1025	KW10	GER/L 100~200-010A 100~200-100AR	GER/L 100~200-010B 100~200-100BR	GER/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. (GER/L100-005A / 100-005B)

★: 1st Recommendation ☆: 2nd Recommendation

Recommended Cutting Conditions (Ground Chipbreaker: GER/L•••C(R), GER/L•••D(R), GER/L•••E)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)			① f at Grooving ② f at Traversing ③ ap at Traversing							Remarks
	Cermet	PVD Coated Carbide	Carbide	GER/L 100~200-010C 200-100CR	GER/L 250~350-020C 250~300-150CR						
	TN6020	PR1025	GW15	GER/L 100~145-010D	GER/L 150~195-010D	GER/L 200~280-020D 200-100DR		GER/L 300~400-020D 300-150DR			
				GER/L 100-010E	GER/L 150~195-010E	GER/L 200~225-010E 230-020E	GER/L 250~330-020E		GER/L 350~430-020E	GER/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. (GER/L100-010C / 100-010D / 100-010E)

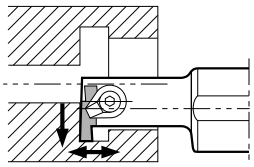
★: 1st Recommendation ☆: 2nd Recommendation

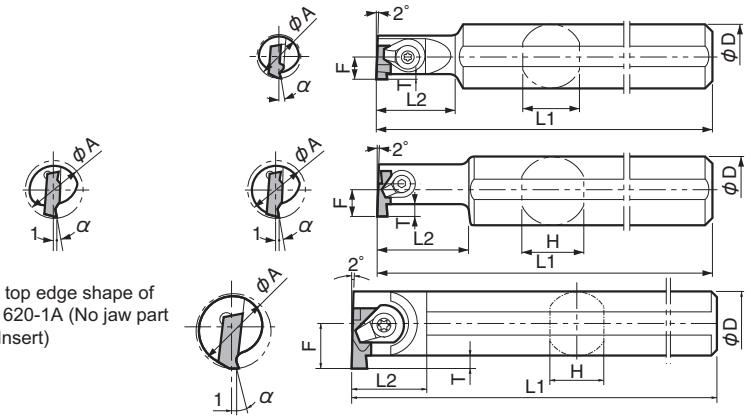
Recommended Cutting Conditions (Molded Chipbreaker: GER•••CM, GER•••DM, GER•••EM)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)			① f at Grooving ② f at Traversing ③ ap at Traversing						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

GIV

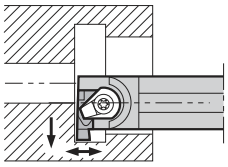


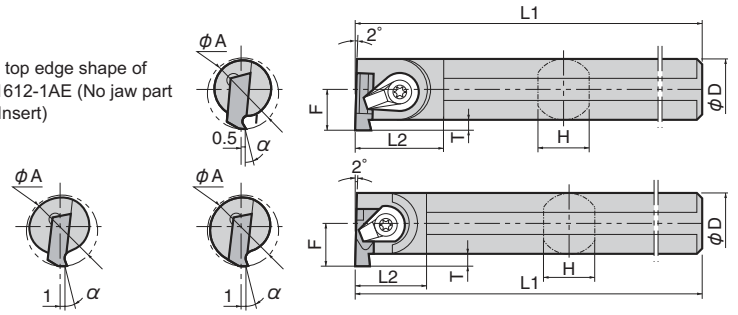


● Right-hand shown

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

GIV-E Excellent Bar

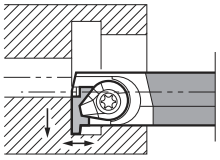


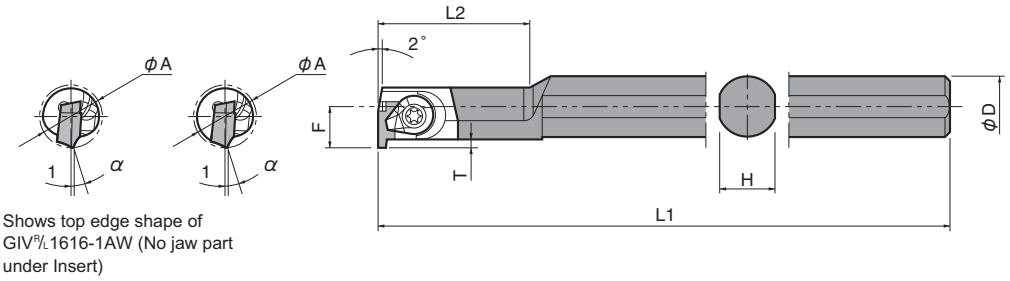


● Right-hand shown

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

GIV-W Carbide Shank Bar





● 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 ➡G42		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	Clamp Set	Wrench	Wrench
GIV R/L	1216-1SS	●	●	12	16	15	150	20	6.0	2.2	Fig.1	CPS-4V	-	FT-10	-
	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)

● : 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)

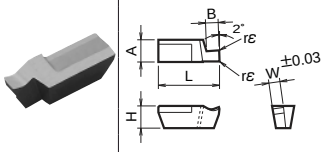
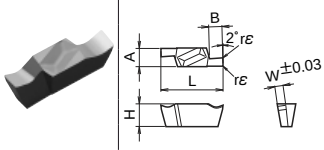
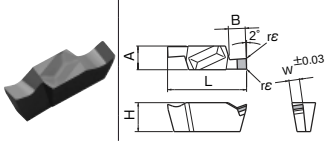
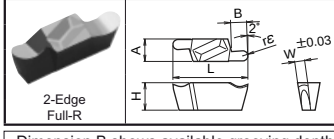
(mm)

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

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
 1-Edge	GV R/L 100-020SS	GV R/L 100SS	1.00	2.3	0.2			●	●	R	●			GIV R/L···1SS	G40
	125-020SS	125SS	1.25					●	●	R	●				
	145-020SS	145SS	1.45					●	●	●	●				
	200-020SS	200SS	2.00					●	●	R	●				
	250-020SS	250SS	2.50					●	●	R	●				
	300-020SS	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	
	125-020S	125S	1.25					●	●	R	●				
	145-020S	145S	1.45					●	●	R	●				
	185-020S	185S	1.85					●	●	R	●				
	200-020S	200S	2.00					●	●	●	●				
	250-020S	250S	2.50					●	●	R	●				
	340-020S	340S	3.40					●	●	R	●				
 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	
	120-020A	120A	1.20					●							
	125-020A	125A	1.25					●	●	R	●				
	140-020A	140A	1.40					●							
	145-020A	145A	1.45					●	●	R	●				
	170-020A	170A	1.70					●							
	185-020A	185A	1.85					●	●	R	●				
	195-020A	195A	1.95					●							
	200-020A	200A	2.00					●	●	●	●				
	225-020A	225A	2.25					●							
	250-020A	250A	2.50					●	●	R	●				
	275-020A	275A	2.75					●							
	300-020A	300A	3.00					●	●	R	●				
	340-020A	340A	3.40					●	●	R	●				
	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	
	185-020B	185B	1.85					●	●	R	●				
	200-020B	200B	2.00	3.2				●	●	●	●				
	225-020B	225B	2.25					●							
	230-020B	230B	2.30					●	R	●	R				
	250-020B	250B	2.50					●	●	●	●				
	275-020B	275B	2.75					●							
	280-020B	280B	2.80					●	R	R	R			GIV R/L···2B GIV R/L···2BE GIV R/L···2BW	
	300-020B	300B	3.00	4.2				●	●	●	●				
	325-020B	325B	3.25					●							
	340-020B	340B	3.40					●	R	R	R				
	400-020B	400B	4.00					●	●	R	●				
	GV R/L 280-020C	GV R/L 280C	2.80	4.5	0.2			●	●	R	●			GIV R/L···1C GIV R/L···1CE GIV R/L···1CW	
	300-020C	300C	3.00					●	●	●	●				
	325-020C	325C	3.25					●							
	340-020C	340C	3.40	5.5				●	●	●	●				
	400-020C	400C	4.00					●	●	●	●			GIV R/L···2C GIV R/L···2CE GIV R/L···2CW	
	425-020C	425C	4.25					●							
	430-020C	430C	4.30	6.3				●	●	R	●				
	460-020C	460C	4.60					●	●	R	●				
	500-020C	500C	5.00					●	●	●	●				
 2-Edge	GV R/L 145-020A	GV R/L 145A	1.45	2.3	0.2								R	GIV R/L···1A	
	200-020A	200A	2.00										R	GIV R/L···1AE	
	300-020A	300A	3.00										○	GIV R/L···1AW	
	GV R/L 200-020B	GV R/L 200B	2.00	3.2	0.2								R	GIV R/L···1B GIV R/L···1BE GIV R/L···1BW	
	250-020B	250B	2.50										R		
	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 ○	
	400-020C	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			●	R	●	R			GIV R/L···1A	
	250-125AR	125AR	2.50		1.25			R	R	R	R			GIV R/L···1AE	
	300-150AR	150AR	3.00		1.50			R	R	R	R			GIV R/L···1AW	
	GV R/L 200-100BR	GV R/L 100BR	2.00	3.2	1.00			●	R	R	R			GIV R/L···1B ○	
	300-150BR	150BR	3.00	4.2	1.50			R	R	R	R			GIV R/L···2B ○	

· Dimension B shows available grooving depth.

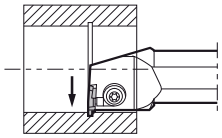
For recommended cutting conditions, see page G75

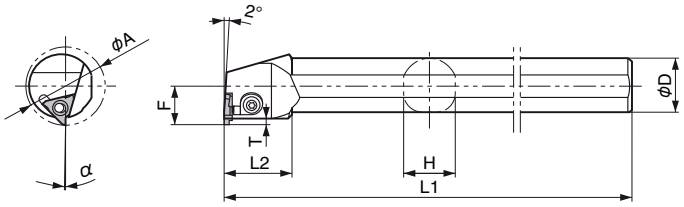
● : Std. Item ○ : Check Availability
R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.

CBN & PCD Inserts are sold in 1 piece boxes.

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 ➡G6~G8
KIGBA R/L	**3525-16**	●	●	35	25	23	220	30	17.5	3.0				LGBA-16L/RS	FT-15	GBA32L/R type
	4032-22	●	●	40	32	30	250	30	23.0	3.0				LGBA-22L/RS	FT-15	GBA43L/R type

・Dimension T shows the distance from the Toolholder to the cutting edge.
Available Groove Depth : KIGBA R/L3525-16 … "B" Dimension of the Applicable Insert
2.0mm for KIGBA R/L4032-22…GBA43R/L125-020,145-020,100-050R
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

GBA32R/L○○○-○○○		GBA43R/L○○○-○○○		GBA43R/L○○○-○○○R (Full-R)		
α	Insert Grades	α	Insert Grades	α	Insert Grades	Full-R Description
+1°	TN90 PR630 PR930 PR1115 PR905 KPD001, KPD010	-9°	KBN510, KBN525	+1°	TN90 PR630 PR930 PR1115 PR905	050R~150R
		+1°	TC40, TN90 PR630 PR930 PR1115 PR905 KPD001, KPD010	+5°	TN90 PR630 PR930 PR1115 PR905	200R
+11°	KW10	+11°	KW10		KW10	050R~200R

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

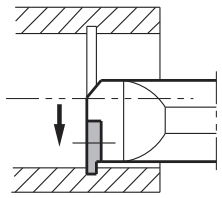
α	Insert
+6°	GBA43R/L175MY ~ GBA43R/L350MY
+5°	GBA43R/L400MY

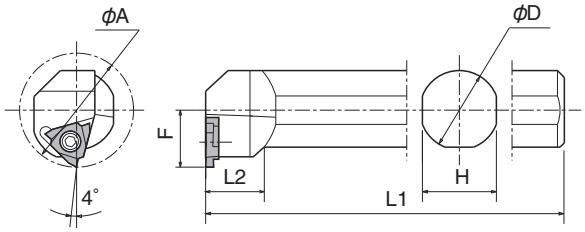
α indicates the rake angle at the center of the edge width, after installing insert.

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

Internal Large Diameter Shallow Grooving Toolholders [TG Insert]

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 G6 ~ ➡ G8)

(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	G44
			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	G44
			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.

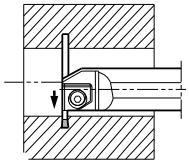
For recommended cutting conditions, see page ➡ G73

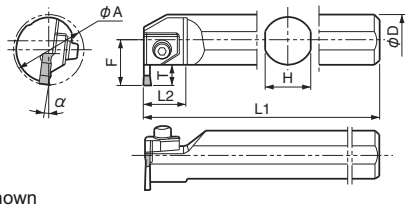
* KITG will be switched to KIGBA.
* For applicable insert, TG insert changes to GBA.
Change Insert Grade TN60 for TN90.
GBA insert has various types of material available for user's cutting condition requirements.
* Check the cornner-R(rε) of the insert when changing.

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

Inserts are sold in 10 piece boxes.

KIGH





● Right-hand shown

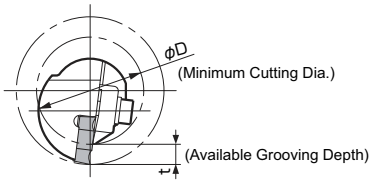


Fig.A

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 ○○○○ - ○○ α	Insert Grades	When using GHU ○○○○ 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

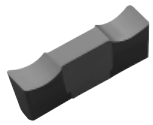
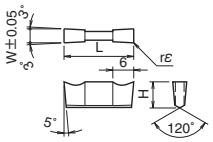
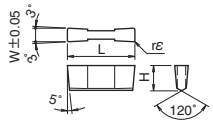
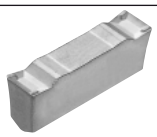
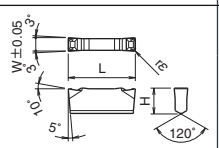
Applicable Inserts

(mm)

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

P	Carbon Steel / Alloy Steel							◕				
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

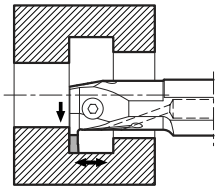
Insert		Description		Dimension (mm) W	rε	Cermet TN60	TN90	TC40	TC60	CVD Coated Carbide CR9025	PVD Coated Carbide PR630	PR930	Carbide KW10	Ceramic A65	A66N	PT600M	Applicable Toolholder
 Ground Chipbreaker		GH	4020-02	4.0	0.2		●	●				●	●				KIGH R/L 4532B-4 5540B-4 6550B-4
			4020-05		0.5		●	●				●	●	●	●	●	
			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		●	●				●	●				KIGH R/L 5540B-7 6550B-7
			7020-05		0.5		●	●				●	●	●		●	
			7520-02	7.5	0.2			●									
			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	●				●							

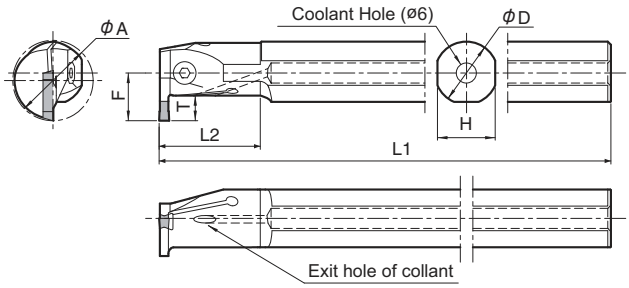
For recommended cutting conditions, see page G73

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

Inserts are sold in 10 piece boxes.

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.	MAX.	Spare Parts: Screw		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									

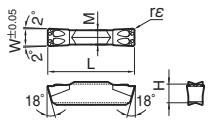
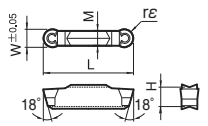
・Dimension T shows available grooving depth.

Applicable Inserts (mm)

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

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	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PR930	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		●		●	●	●	

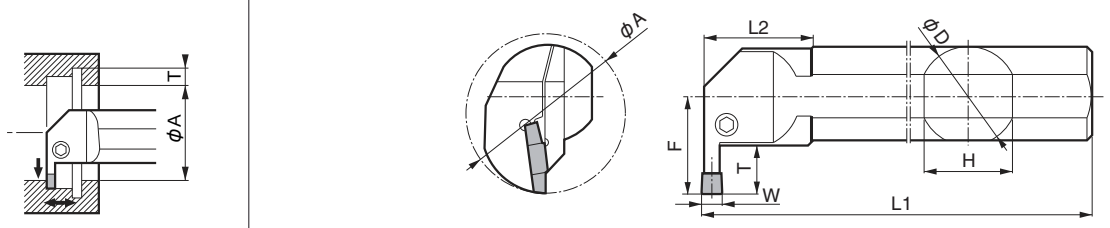
・It is not recommended to use this for KIGM-V Internal Grooving Toolholders against GMM...V / GMM...VR whose front relief angle is 18˚, because the relief angle of the insert used for GMM4020-04 toolholder is 10˚.

For recommended cutting conditions, see page G76

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

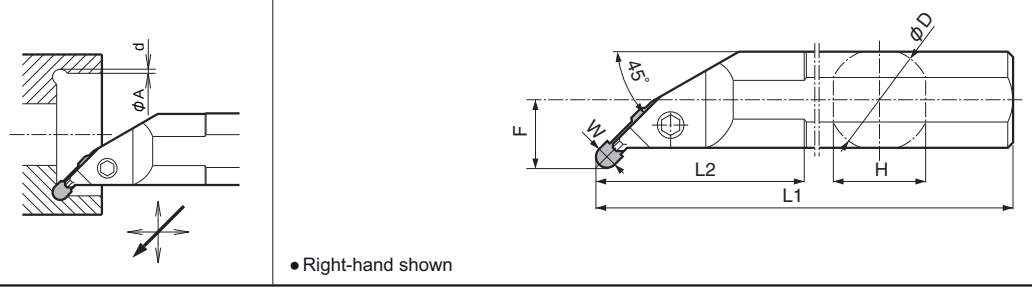
Inserts are sold in 10 piece boxes.

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

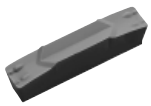
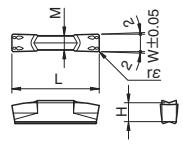
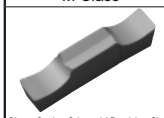
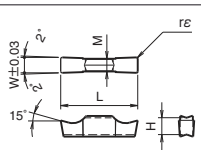
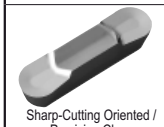
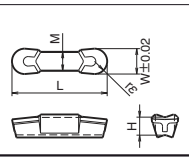
Description	Std. R	Std. L	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	T	d			Width (mm) MIN.	Width (mm) MAX.	Spare Parts: Screw	Spare Parts: Wrench
KIGM R/L 6540B-8	●	●	65	40	36	300	41	41	20	-			8.0	8.0	HH6X20	LW-5
KIGMU R/L 6540B-8	●		65	40	36	300	83	26	-	2.2			8.0	8.0	HH6X20	LW-5

・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		

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

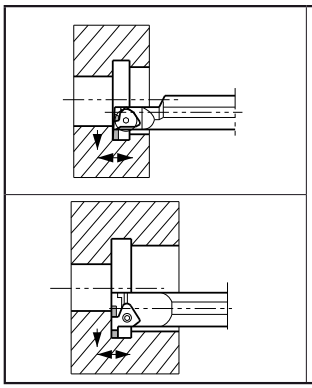
Insert		Description	(Previous Description)	Dimension (mm) W	rε	M	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PR930	PR905	Carbide KW10	Applicable Toolholder	Ref. Page for Toolholder
 Chip Control Oriented / M Class		**GMM 8030-080MW**	**GMM 8030-08**	8.0	0.8	6.0		●	●	●	●	●	**KIGM R/L ···8** **KIGMU R/L ···8**	**G47**
 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 ➡ G77

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

Inserts are sold in 10 piece boxes.

KGIA



Integral Type

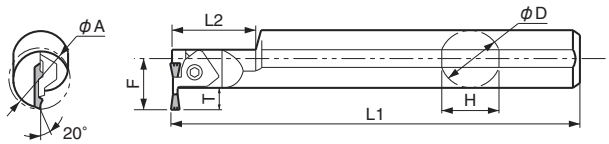


Fig.1

Separate Type

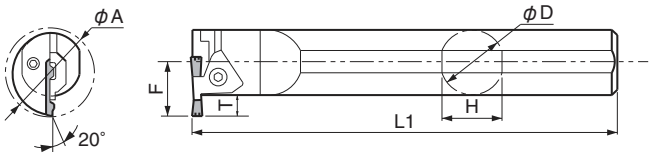


Fig.2

● Right-hand shown

Toolholder Dimensions

Description		Std.	Min. Cutting Dia. øA	Dimension (mm) øD	H	L1	L2	F	T			Drawing	Spare Parts: Clamp	Clamp Bolt	Spring	Wrench	
KGIAR	3232B-3	●	32	32	30	200	45	26.3	10			Fig.1	CGIA-3R	HH5X15	SP-5	LW-4	
	4332B-3	●	43	32	30	200	-	26.3				Fig.2					
	5140B-3	●	51	40	38	250	-	30.3									
	3232B-4	●	32	32	30	200	45	26.3	10			Fig.1	CGIA-4R				
	4332B-4	●	43	32	30	200	-	26.3				Fig.2					
	5140B-4	●	51	40	38	250	-	30.3									
	5640B-5	●	56	40	38	250	-	35.3	15			Fig.2	CGIA-5R				
	6650B-5	●	66	50	48	250	-	40.3									

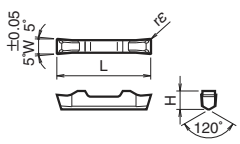
· Dimension T shows available grooving depth.

Composition

Type	Toolholder \ Spare Parts		Toolholder	Blade	Screw	Wrench
Integral	KGIAR	3232B-3	-	-	-	-
Separate		4332B-3	KGIAR32H	BGIAR43-3	SB-40140TR	FT-15
		5140B-3	KGIAR40H	BGIAR51-3		
Integral		3232B-4	-	-	-	-
Separate		4332B-4	KGIAR32H	BGIAR43-4	SB-40140TR	FT-15
		5140B-4	KGIAR40H	BGIAR51-4		
Separate		5640B-5	KGIAR40H	BGIAR56-5	SB-40140TR	FT-15
		6650B-5	KGIAR50H	BGIAR66-5		

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		Dimension (mm) W	rε	L	H	Cermet TN60	CVD Coated Carbide CR9025	Applicable Toolholder
Molded Chipbreaker		GIA	30	3.0	0.20	25	5.0	●	●	KGIA R/L ···3
			40	4.0	0.25			●	●	KGIA R/L ···4
			50	5.0	0.30	30		●	●	KGIA R/L ···5

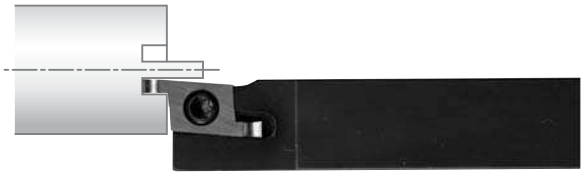
For recommended cutting conditions, see page ➔ G74

● : 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 Face Grooving ø6~

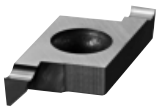


G55

STW
Min. Face
Grooving Dia.: ø6
Width: 0.5~2.0
Depth: 1.0~3.0

G55

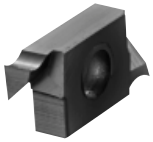
S..-STW
Min. Face
Grooving Dia.: ø6
Width: 0.5~2.0
Depth: 1.0~3.0



Lay-down twin bar

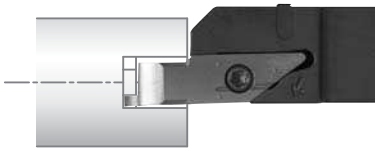
G55

STWS
Min. Face
Grooving Dia.: ø6
Width: 0.5~2.0
Depth: 1.0~3.0



Up-right twin bar

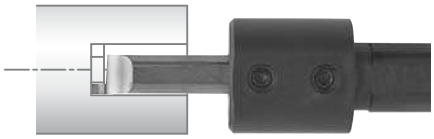
Small Dia. Face Grooving ø8~



G56

VNFG
Min. Face
Grooving Dia.: ø8
Width: 1.0~3.0
Depth: 2.0~3.0

System Tip-Bar

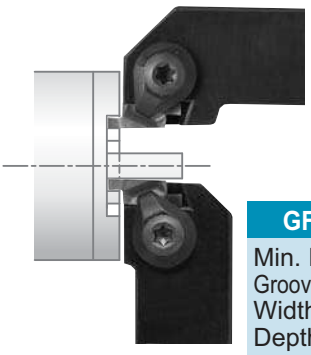


G53

HPFG
Min. Face
Grooving Dia.: ø8
Width: 1.0~3.0
Depth: 2.0~3.0

2-Edge Tip-Bar

Small Dia. Face Grooving ø8~

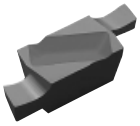


GFVS-AA
Min. Face
Grooving Dia.: ø8
Width: 1.0~3.0
Depth: 2.2

G58

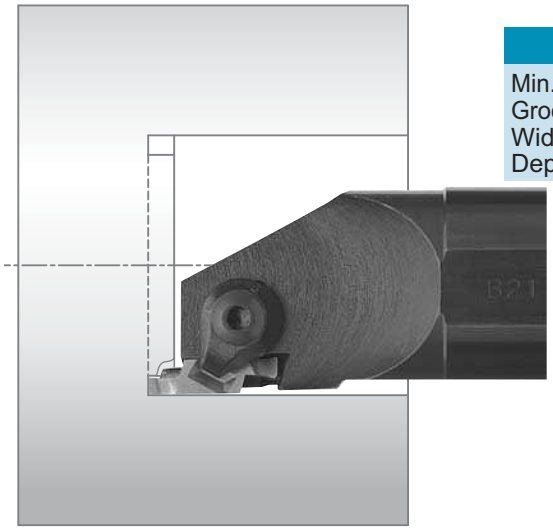
GFVT-AA
Min. Face
Grooving Dia.: ø8
Width: 1.0~3.0
Depth: 2.2

G58



Ground Chipbreaker

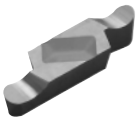
Face Grooving ø35~



G70

GIFV
Min. Face
Grooving Dia.: ø35~50
Width: 2.0~6.0
Depth: 2.2~8.1

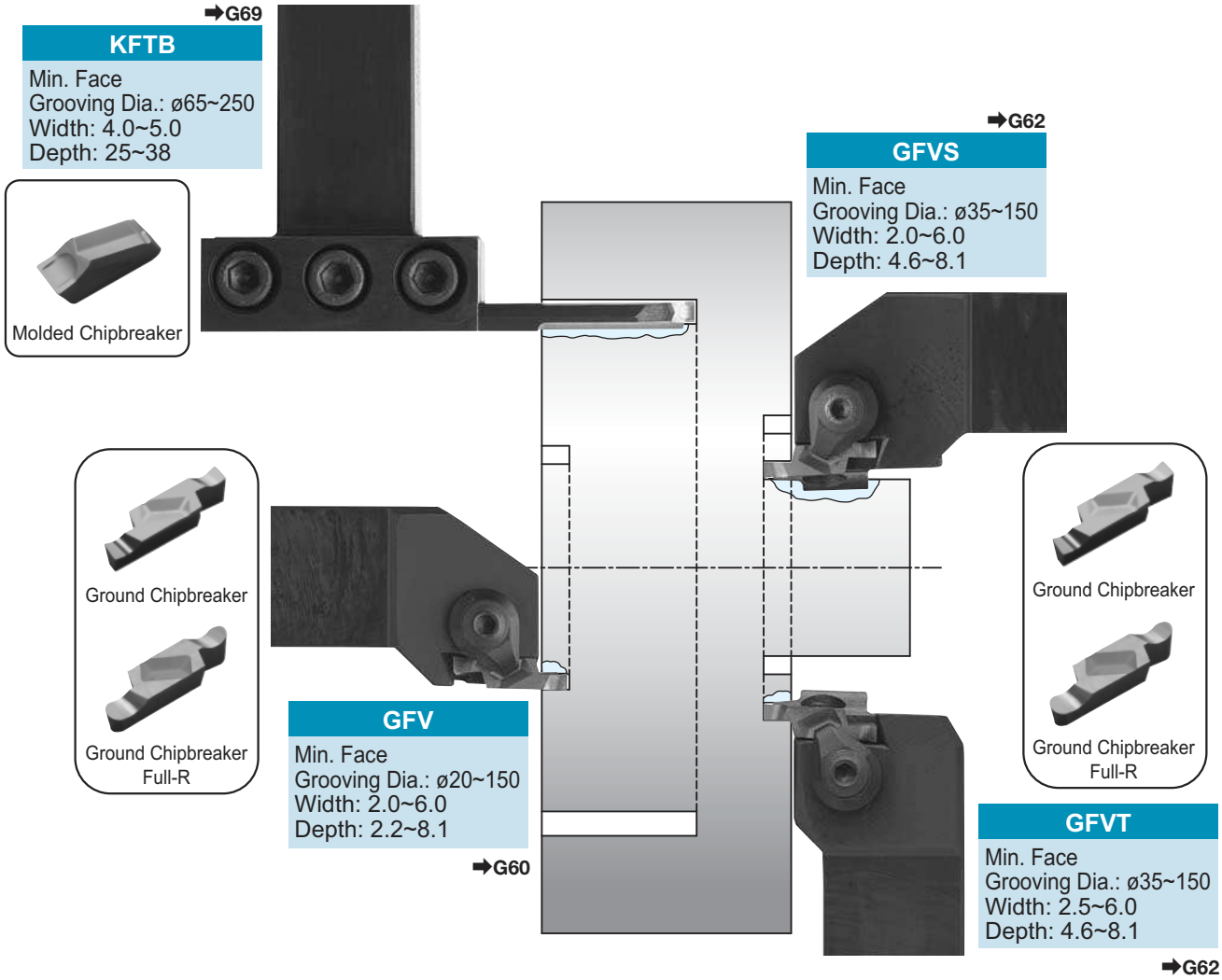
Ground Chipbreaker



Ground Chipbreaker
Full-R

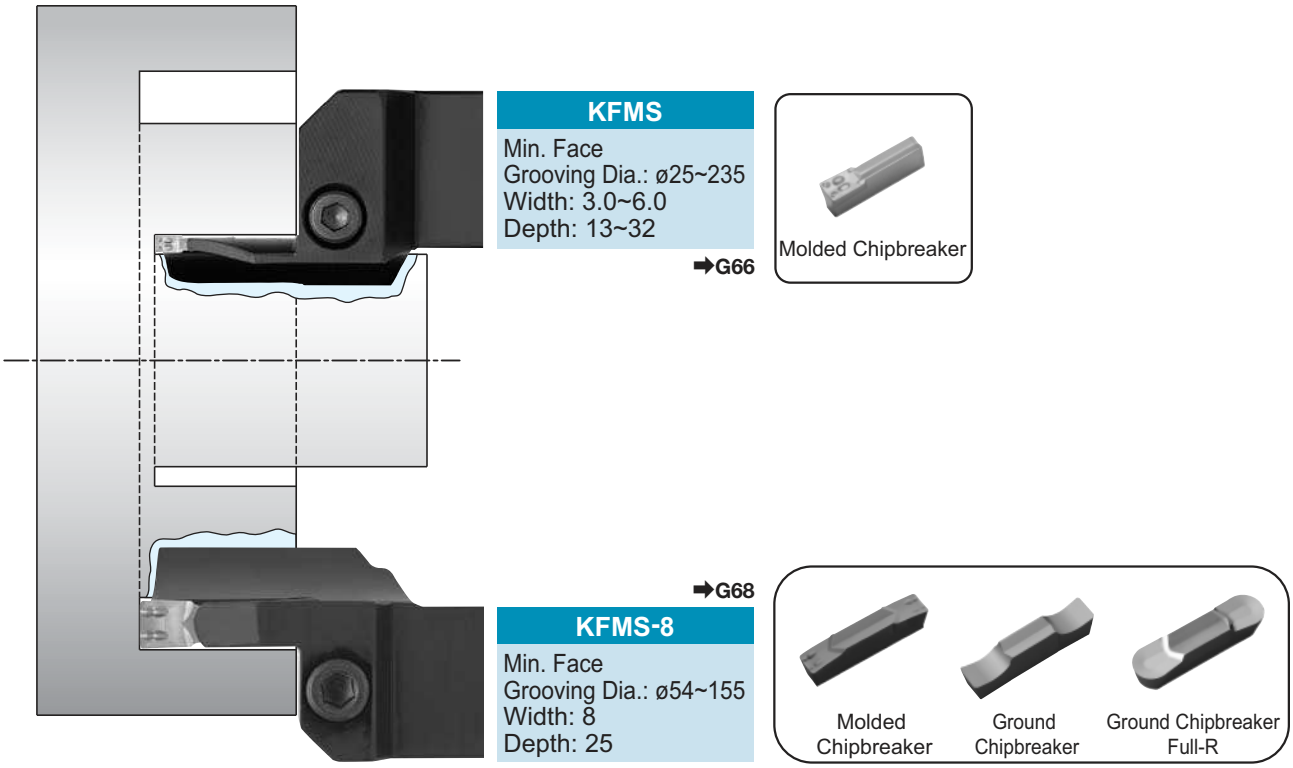
Summary of Face Grooving

General Face Grooving ø20~



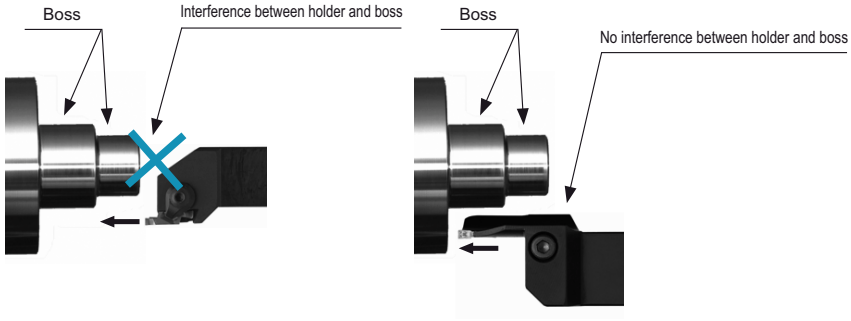
Face Grooving & Traversing ø25~

(CERACUT Plunge & Turn)

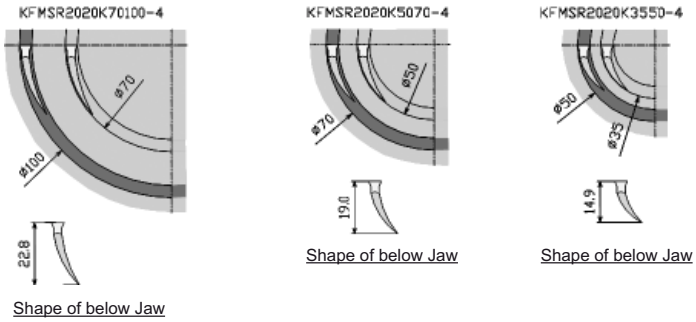


Caution for Face Grooving

1) For face grooving, holder description to be selected is different depending on with or without boss

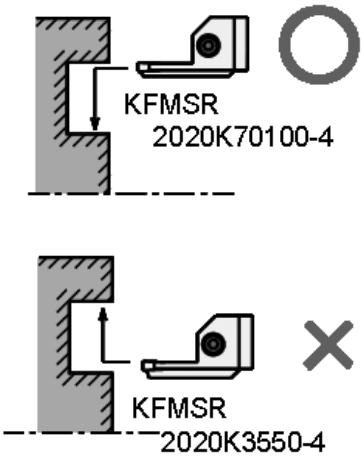


2) Selection of Face Grooving Toolholder



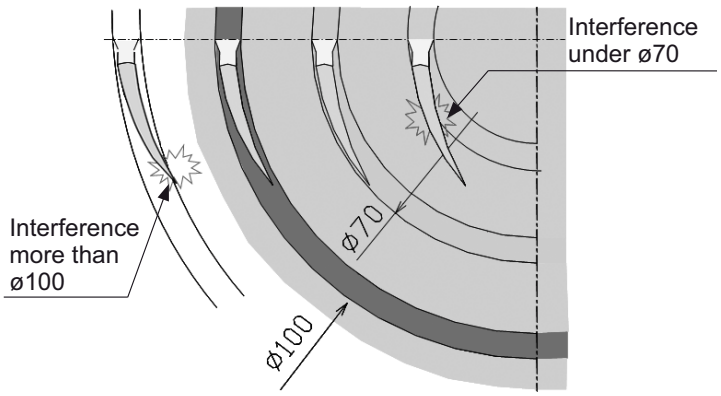
For holders which can machine a face groove of the same dimension, the holders with larger cutting dia. have longer dimension of below jaw and higher holder rigidity.

Widening groove (traversing) should be performed from outer to inner



3) Interference of Face Grooving Toolholder

e.g.) KFMSR2525M70100-4



• Usage example of face grooving toolholder.

When face grooving, KFMSR2525M70100-4 should be between ø70~ø100 for groove outer diameter at first. If it is machined for ø100 and over or ø70 and below at first, the jaw of holder interferes with the workpiece.

Face Grooving Diameter Table

● Specification Table of Shallow Grooving Insert (Depth ≦ 8.1mm)

Type		Width (mm)	Depth (mm)	Face Grooving Dia.øD (mm)	Reference Page
TWFG (Lay-down Twin Bar)		0.5~2.0	1.0~3.0	6~∞ (Traversing is not available)	**G54**
TWFGT (Up-right Twin Bar)		0.5~2.0	1.0~3.0	6~∞ (Traversing is not available)	
VNFG (System Tip-Bar)		1.0~3.0	2.0~3.0	8~∞ (Traversing is not available)	**G56**
HPFG (2 Edges Tip-Bar)		1.0~3.0	2.0~3.0	8~∞ (Traversing is not available)	**G53**
PSFG-S (Tip-Bar)		1.0~3.0	2.0	8~∞ (Traversing is not available)	**G57**
GFVS-AA, GFVT-AA		1.0~3.0	2.2	8~∞ (ap has to be less than corner-R(rε) when traversing with edge width 1.0mm)	**G58**
GFV	**201A**	2.0~3.4	2.2	20~∞	**G60**
KGMM KGMS		3.0	3.0~3.5	22~∞	**G24**
		4.0	4.0	28~∞	
		5.0	4.0	30~∞	
GIFV	**201A**	2.0~3.4	2.2	35~∞	**G70**
GFV, GFVS, GFVT GIFV	**351B**	2.5~3.5	4.6	35~50	**G60 G62 G70**
	352B	4.0~4.9	5.1	35~50	
	501B	2.5~3.5	4.6	50~70	
	502B	4.0~4.9	5.1	50~70	
	501C	3.5~4.5	6.6	50~70	
	502C	5.0~6.0	8.1	50~70	
GFV, GFVS, GFVT	**701B**	2.5~3.5	4.6	70~100	**G60 G62**
	702B	4.0~4.9	5.1	70~100	
	701C	3.5~4.5	6.6	70~100	
	702C	5.0~6.0	8.1	70~100	
GFV, GFVS, GFVT	**1001C**	3.5~4.5	6.6	100~150	
	1002C	5.0~6.0	8.1	100~150	
GFV, GFVS, GFVT	**1501C**	3.5~4.5	6.6	150~250	
	1502C	5.0~6.0	8.1	150~250	

● Specification Table of Deep Grooving Insert (Depth > 8.1mm)

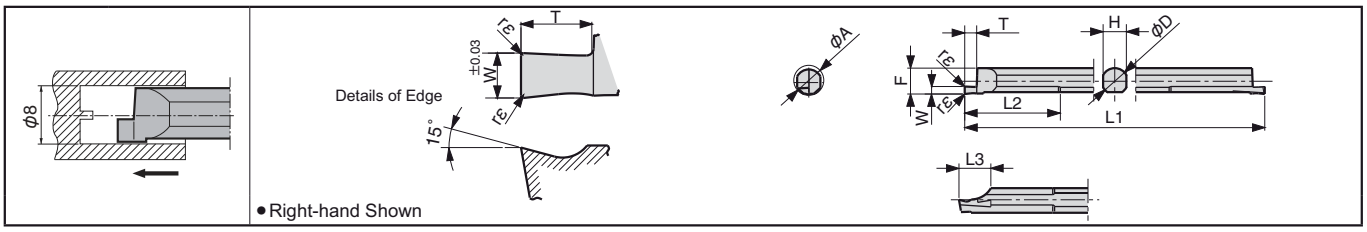
Toolholder Type	Width (mm)	Depth (mm)	Face Grooving Dia.øD (mm)	Reference Page
KFMS R/L-3	3.0	13	25~30	**G66**
			30~40	
			40~50	
		22	50~65	
			65~85	
		25	85~110	
			110~145	
KFMS R/L-4	4.0	12	25~35	
		20	35~50	
		25	50~70	
			70~100	
			100~150	
			150~220	
			220~∞	
KFMS R/L-5	5.0 6.0	20	25~35	**G67**
			35~50	
		25	50~75	
			75~115	
			115~180	
			180~235	
			235~∞	
KFMS R/L-8	8.0	25	54~64	**G68**
			63~82	
			80~115	
			105~160	
			155~510	

Blade type	Width (mm)	Depth (mm)	Face Grooving Dia.øD (mm)	Reference Page
KFTB R/L-4S	4.0	25	65~100	**G69**
		30	90~150	
			140~250	
			230~∞	
KFTB R/L-5S	5.0	30	90~150	
		32	150~250	
		38	250~∞	

G

Grooving

HPFG

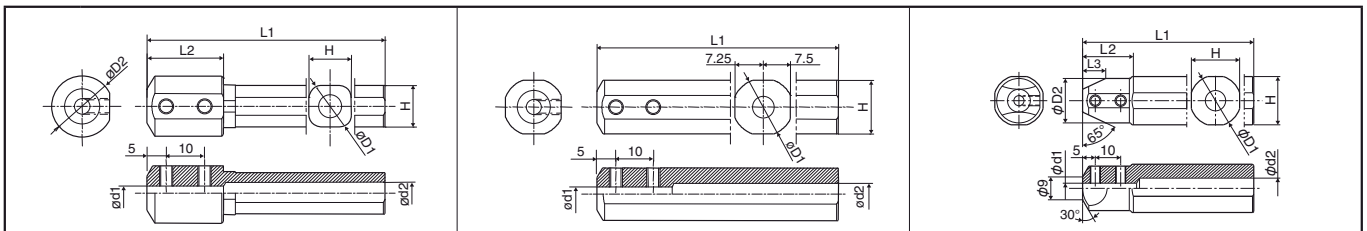


Tip-Bar Dimensions

Description		Min. Face Grooving Dia. øA	Dimension (mm) W±0.03	rε	øD	H	L1	L2	L3	F	T	Insert Grade: PVD Coated Carbide PR930 R	PR930 L	Carbide KW10 R	KW10 L
HPFG R/L	0807-10	8	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.

Applicable Sleeve



(Tip-Bar installation side) Fig.1 (Tip-Bar installation side) Fig.2 (Tip-Bar installation side) Fig.3

Description	Std.	Dimension (mm) *ød1	øD1	øD2	ød2	H	L1	L2	L3	Drawing	Spare Parts: Screw	Wrench	Applicable Machine Manufactuer	Applicable Tip-Bar
PSH 0712-80	●	7	12	16	8	11	80	20	-	Fig.1	HS4×4P	LW-2	(General use)	HPFG R/L 0807···
PSH 0716-100	●	7	16	-	8	15	100	-	-	Fig.2				
PSH 0720-120	●	7	20	17.5	8	19	120	20	7.5	Fig.3	HS4×4P	LW-2	Amada Wasino Eguro Precision Tsugami Miyano (General use)	
PSH 0725.0-135	●	7	25	18	8	24	135	23	8					
PSH 0719-120	●	7	19.05	17.5	8	18	120	20	7.5	Fig.3	HS4×4P	LW-2	Citizen Machinery	
PSH 0720-120	●	7	20	17.5	8	19	120	20	7.5					
PSH 0725-120	●	7	25.4	18	8	24.4	120	23	8					
PSH 0722-135	●	7	22	18	8	21	135	22	8	Fig.3	HS4×4P	LW-2	Star Micronics Nomura VTC	
PSH 0723-120	●	7	23	18	8	22	120	22	8	Fig.3	HS4×4P	LW-2	Nomura VTC	

*: Length of ød1…25mm (PSH07)
・Names of machine builders are listed in the order of the Japanese syllabary with omitted titles of respect.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min) PVD Coated Carbide PR930	Carbide KW10	HPFGR / L 0807-10	HPFGR / L 0807-20	HPFGR / L 0807-30	Remarks
			f (mm/rev)			
Carbon Steel / Alloy Steel	★ 30~100	–	~0.02	~0.04	~0.05	Coolant
Stainless Steel	★ 30~80	–	~0.01	~0.02	~0.03	
Non-ferrous Metals	–	★ ~300	~0.04	~0.06	~0.08	

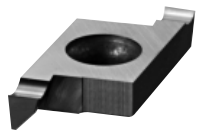
★: 1st Recommendation ☆: 2nd Recommendation

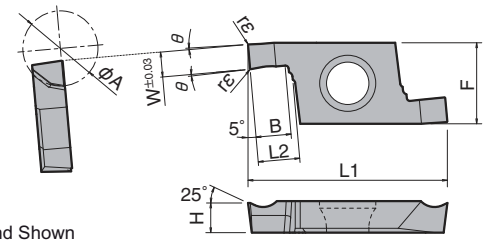
● : Std. Item ○ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Tip-Bars are sold in 1 piece boxes.

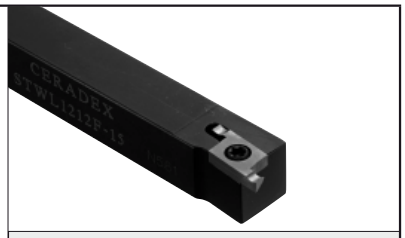
Micro Face Grooving (Twin Bar)

TWFG (Lay-down type)





● Left-hand Shown



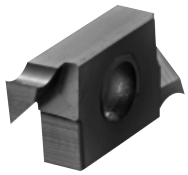
Example of installing insert for straight square shank

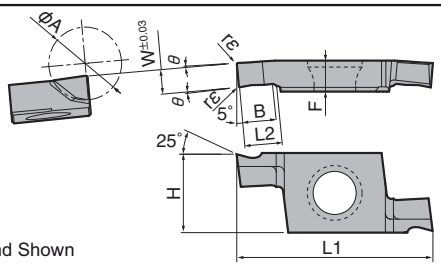
● Insert Dimensions

Description		Min. Cutting Dia. øA	Dimension (mm) W	rε	H	L1	L2	F	B	Angle (°) θ	Insert Grade PVD Coated Carbide PR1025		Carbide KW10	Ref. Page for Toolholder
TWFGL	050	6	0.5	0.05	2.38	16	3	6.5	1.0	1.5°	L		L	G55
	080		0.8						1.5		L		L	
	100		1.0						2.2	2°	L		L	
	125		1.25								L		L	
	150		1.5								L		L	
	180		1.8						3.0		L		L	
	200		2.0								L		L	

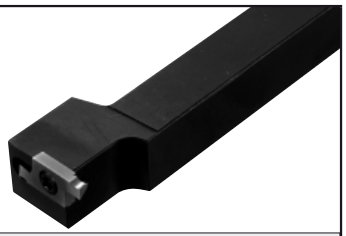
・Dimension B: shows available grooving depth.

TWFGT (Up-right type)





● Right-hand Shown



Example of installing insert for L-shape square shank

● Insert Dimensions

Description		Min. Cutting Dia. øA	Dimension (mm) W	rε	H	L1	L2	F	B	Angle (°) θ	Insert Grade PVD Coated Carbide PR1025		Carbide KW10	Ref. Page for Toolholder
TWFGTR	050	6	0.5	0.05	6.4	16	3	2.35	1.0	1.5°	R		R	G55
	080		0.8						1.5		R		R	
	100		1.0						2.2	2°	R		R	
	125		1.25								R		R	
	150		1.5								R		R	
	180		1.8						3.0		R		R	
	200		2.0								R		R	

・Dimension B: shows available grooving depth.

◆ Recommended Cutting Conditions (TWFG / TWFGT)

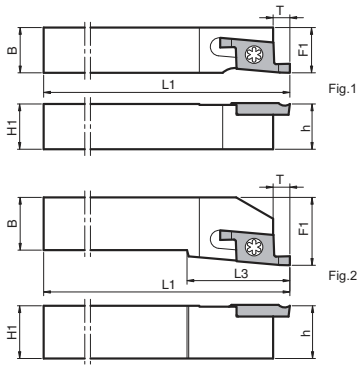
Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min) PVD Coated Carbide PR1025	Carbide KW10	TWFGL050 TWFGL080 TWFGL100 TWFGTR050 TWFGTR080 TWFGTR100	TWFGL125 TWFGL150 TWFGTR125 TWFGTR150	TWFGL180 TWFGL200 TWFGTR180 TWFGTR200	Remarks
			f (mm/rev)			
Carbon Steel / Alloy Steel	★ 30~100		~0.02	~0.03	~0.04	Coolant
Stainless Steel	★ 30~80		~0.01	~0.02	~0.02	
Non-ferrous Metals		★ ~300	~0.03	~0.04	~0.06	

★ : 1st Recommendation ☆ : 2nd Recommendation

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

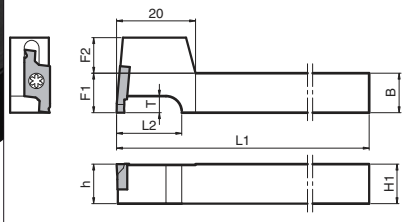
Twin Bars are sold in 5 piece boxes.

STW (Square shank for Lay-down type inserts)



● Left-hand Shown

STWS (Square shank for Up-right inserts: L-shape)



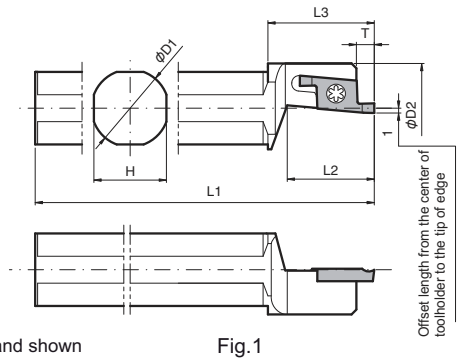
● Right-hand shown

Toolholder Dimensions

Description		Std.	Dimension (mm) H1=h	B	L1	L2	L3	F1	F2	T	F3	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts ➔ G54
STWL	1010F-15	●	10	10	80	-	-	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							
STWSR	1010F-15T	●	10	10	80	16	-	10	9	3	-	-	SB-3080TR	LTW-10S	TWFGTR ○○○
	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. Dimension B shows available grooving depth.

S..-STW (Round shank for Lay-down type inserts)



● Left-hand shown

Fig.1

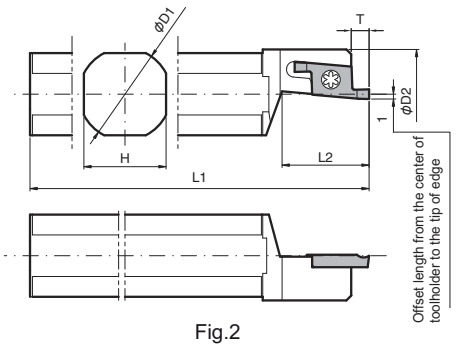


Fig.2

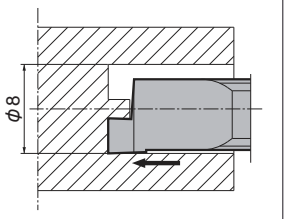
Toolholder Dimensions

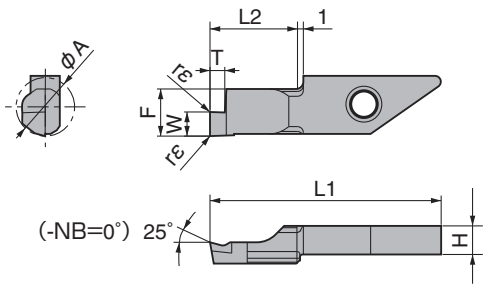
Description		Std.	Dimension (mm) øD1	øD2	H	L1	L2	L3	T			Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts ➔ G54
S12F-	STWL15	●	12	20	11	80	18	22	3			Fig.1	SB-3080TR	LTW-10S	TWFGL ○○○
S14H-	STWL15	●	14		13	100									
S15F-	STWL15	●	15.875		15	85									
S16F-	STWL15	●	16												
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. Dimension B shows available grooving depth.

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

VNFG (System Tip-Bar)





• Right-hand Shown

Insert Dimensions

Classification of usage									
	P	Carbon Steel / Alloy Steel				●			
	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)							

Description		Min. Cutting Dia.	Dimension (mm)							Cermet	PVD Coated Carbide			Carbide	PCD		Ref. Page for Toolholder
		øA	W±0.03	rε	H	L1	L2	F	T	TC60	PR630	PR915	PR930	KW10	KPD001	KPD010	
VNFGR	0810-10	8	1.0	0.05	3.9	29.6	10	7.3	2.0	●	●		●	●			F12 F13 F14
	0820-10	8	2.0							●	●		●	●			
	0830-10	8	3.0						3.0	●	●		●	●			
VNFGR	0820-10NB	8	2.0	0.05	3.9	29.6	10	7.3	2.0						○	○	
	0830-10NB	8	3.0						3.0						○	○	

• Dimension T shows available grooving depth.

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

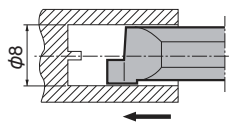
System Tip-Bars are sold in 5 piece boxes.

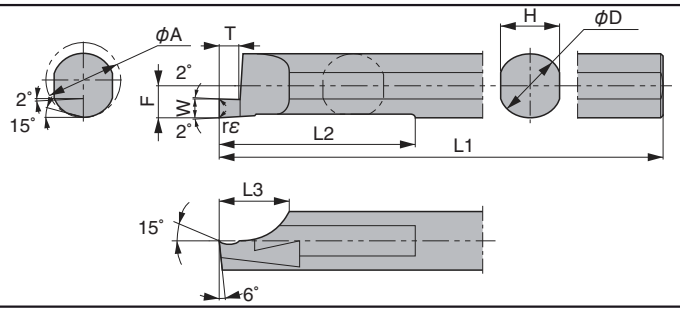
CBN & PCD Tools are sold in 1 piece boxes.

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

PSFG-S (Tip Bar)

This insert will be switched to **HPFG** (2-Edge See Page ➡ **G53**).





• Right-hand Shown

Tip-Bar Dimensions

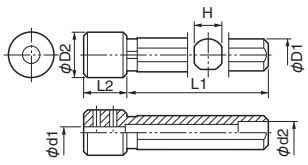
Classification of usage									
● : Continuous / 1st Choice ○ : Continuous / 2nd Choice	P	Carbon Steel / Alloy Steel				●			
	M	Stainless Steel				●			
	K	Cast Iron					●		
	N	Non-ferrous Metals					●		
	S	Titanium Alloy					●		
	H	Hard materials (under 40HRC)				●			
		Hard materials (over 40HRC)							

Description		Min. Cutting Dia.	Dimension (mm)									Cermet		PVD Coated Carbide		Carbide	PCD	
		øA	W±0.03	rε	H	L1	L2	F	T	F	T	TC60	PR630	PR915	PR930	KW10	KPD001	KPD010
PSFG R/L	0810-20S	8	1.0	0.05	6.8	6.2	80	25.5	7	3.4	2.0	●	●		●	●		
	0820-20S	8	2.0									●	●		●	●		
	0830-20S	8	3.0									●	●		●	●		

・Dimension T shows available grooving depth.

Applicable Sleeve

This sleeve is for 1-Edge Tip-Bar. For 2-Edge Tip-Bar, use ➡ **G53**.

Shape	Description	(Previous Description)	Std.	Dimension (mm)							Spare Parts		Applicable Tip-Bar
				øD1	øD2	ød1	ød2	H	L1	L2	Screw	Wrench	
 (Tip-Bar installation side)	PH 0712-60	PH -0712	●	12	19	6.8	8	11	60	20	HS4X4	LW-2	PSFG R/L 08○○-20S
	PH 0716-80	PH -0716	●	16	22	6.8	Rp¼ (PS¼)	15	80	20	HS4X4	LW-2	PSFG R/L 08○○-20S

・Besides the above Sleeves, Collet Chucks are also available in the market.

Recommended Cutting Conditions

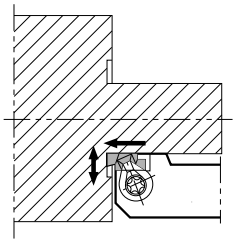
Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min) Cermet TC60	PVD Coated Carbide PR630	PVD Coated Carbide PR930	Carbide KW10	PSFG0810	PSFG0820	PSFG0830	Remarks
					f (mm/rev)			
Carbon Steel / Alloy Steel	☆ 60~120	☆ 30~100	★ 30~100		~0.02	~0.04	~0.05	Coolant
Stainless Steel	☆ 50~100	☆ 30~80	★ 30~80		~0.01	~0.02	~0.03	
Non-ferrous Metals				★ ~300	~0.04	~0.06	~0.08	

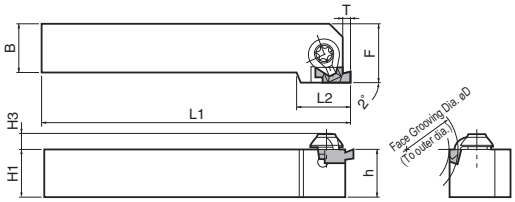
★ : 1st Recommendation ☆ : 2nd Recommendation

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

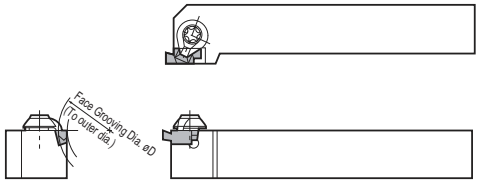
Tip-Bars are sold in 1 piece boxes.

GFVS-AA





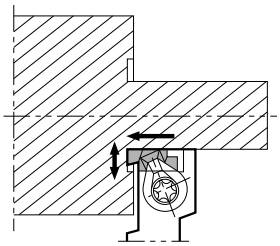
● Right-hand Shown



● Left-hand Shown

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

GFVT-AA



Without Offset (□10mm, □12mm)

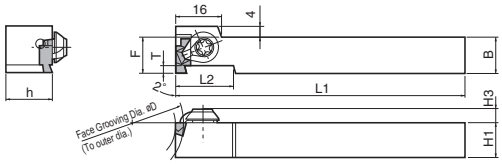
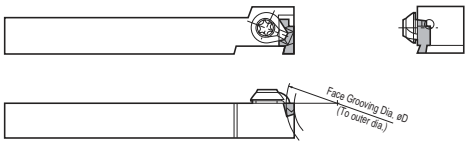


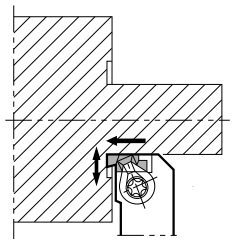
Fig.1

● 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)

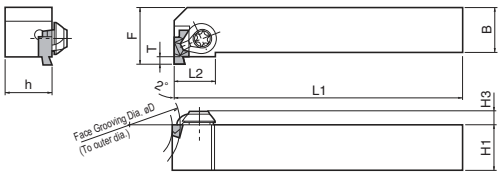
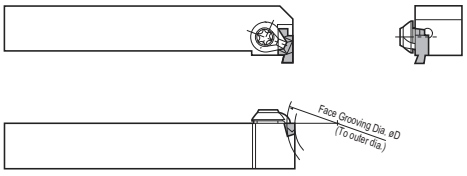


Fig.2

● 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 ➡ G59
GFVS R/L	1010F-08AA	●	●	10	10	5.5	10	80	18	15	2.2	8 (0)	∞ (∞)	-	CPS-5V	FT-15	GVF L/R100-005AA ⟆ GVF L/R300-005AA
	1212H-08AA	●	●	12	12		12	100		16							
	1616H-08AA	●	●	16	16		16	100		20							
	2020K-08AA	●	●	20	20		20	125		25							
	2525M-08AA	●	●	25	25		25	150		32							
GFVT R/L	1010F-08AA	●	●	10	10	5.5	10	80	20	10	2.2	8 (0)	∞ (∞)	Fig.1	CPS-5V	FT-15	GVF L/R100-005AA ⟆ GVF L/R300-005AA
	1212H-08AA	●	●	12	12		12	100		12							
	1616H-08AA	●	●	16	16		16	100	14	20				Fig.2			
	2020K-08AA	●	●	20	20		20	125		25							
	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 R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

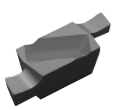
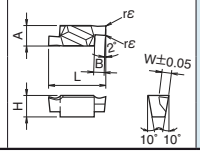
Applicable Inserts

(mm)

Description	A	L	H
GVF R/L ...-100AA ...-200AA ...-300AA	4.3	12	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	(Previous Description)	Dimension (mm) W	B	rε	Cermet TN90	TC40	TC60	PVD Coated Carbide PR630	PR930	Carbide KW10	PCD KPD001	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	G58
		200-005AA	200AA	2.00							●	○				
		300-005AA	300AA	3.00							●	○				

・Dimension B: shows available grooving depth.

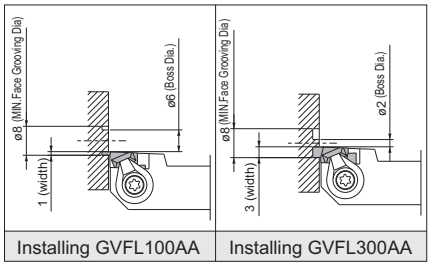
・GVF R/L...005AA inserts are not compatible with GVF R/L...-○○○A (see page **G65**) inserts because their Side Relief Angle is 10˚.

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

Description		Face Grooving Dia. øD MIN.	MAX.	Applicable Inserts
GFVS R/L	1010F-08AA	8	∞	GVF L/R100AA ~ GVF L/R300AA
	1212H-08AA			
	1616H-08AA			
	2020K-08AA	(0)	(∞)	
	2525M-08AA			

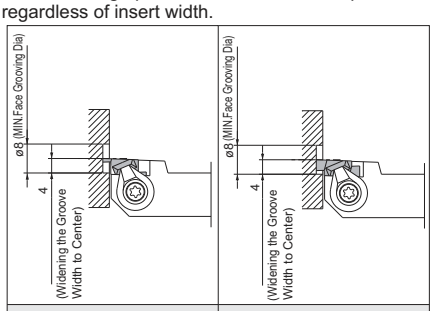
- It is available to infinity ∞ in case of machining the first groove bigger than MIN.
- It is available to infinity ∞ when machining toward outer diameter.
- Refers to the machining of the initial groove with MIN.ø8.

  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	PR930	Carbide KW10	Grooving f (mm/rev)	Traversing* ap (mm)	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	

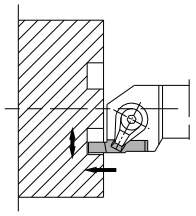
* ap has to be set for less than corner-R(rε) when traversing of edge width 1.0 mm (GVF R/L100AA).

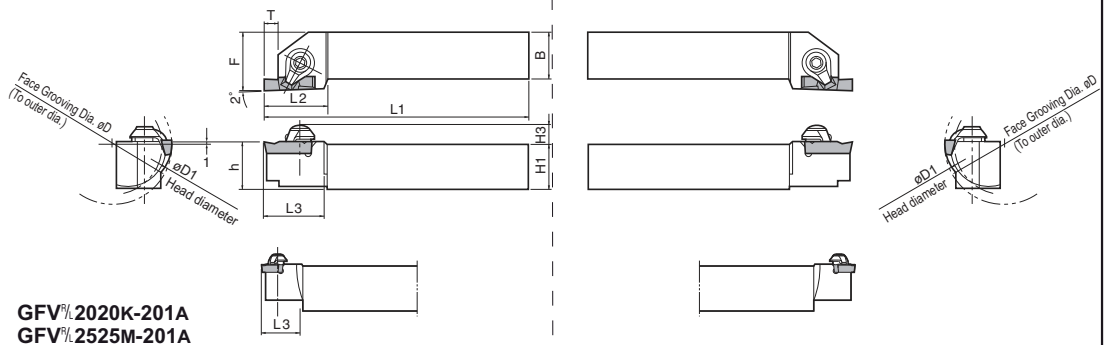
★ : 1st Recommendation ☆ : 2nd Recommendation

● : 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.

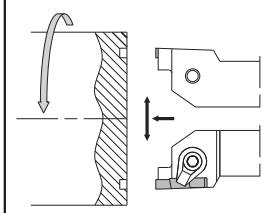
Toolholder Dimensions

Description		Std. R	Std. L	H1	h	H3	B	L1	L2	L3	F	T	øD1	Face Grooving Dia. øD MIN.	Face Grooving Dia. øD MAX.	Spare Parts: Clamp Set	Spare Parts: Clamp Set	Spare Parts: Wrench	Applicable Inserts ➡ G65
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

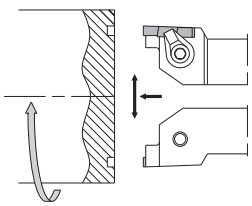
Note1. Dimension T shows available grooving depth.
2. øD1 shows toolholder head diameter to L3.
3. The value ( ) of Face Grooving Dia. (øD Max) is the maximum outer diameter value after the initial groove between MIN~MAX. (It is possible to widen the groove to infinity ∞).
The value ( ) of Face Grooving 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

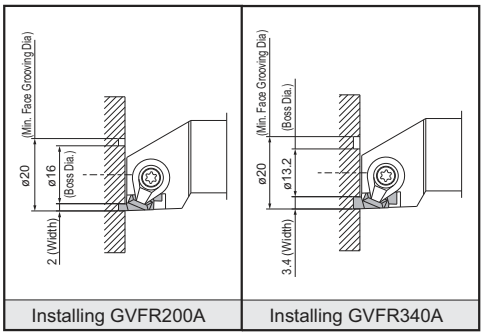
① e.g.) GFV$^{R}/_{L}$…-201A

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

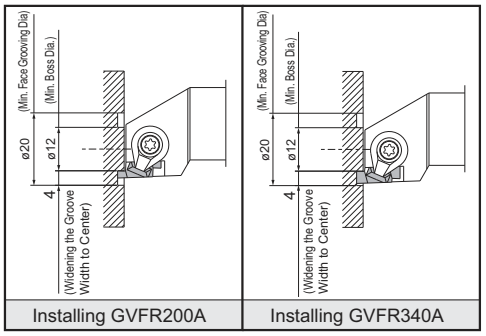
If the initial groove is made smaller than this, the toolholder interferes with the workpiece.



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

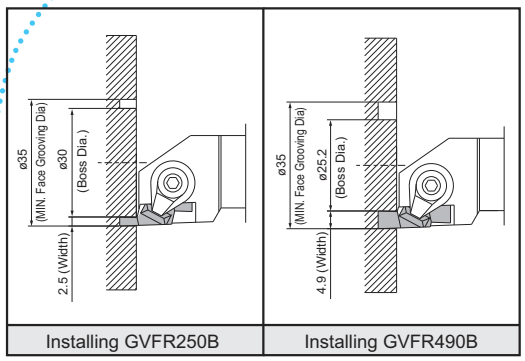
② e.g.) GFV$^{R}/_{L}$…-351B / 352B (same as GFV$^{R}/_{L}$…-○○○B type, GFV$^{R}/_{L}$…-○○○C type)

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

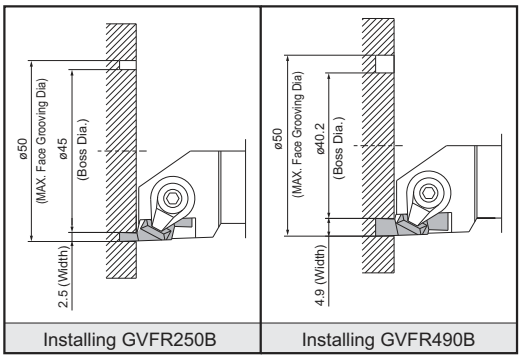
If the initial groove is made smaller than this, the toolholder interferes with the workpiece.



Installing GVFR250B | Installing GVFR490B

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

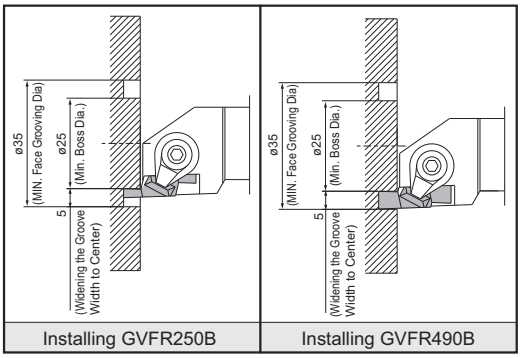
If the first groove is bigger than this, the toolholder intereferes with the workpiece.



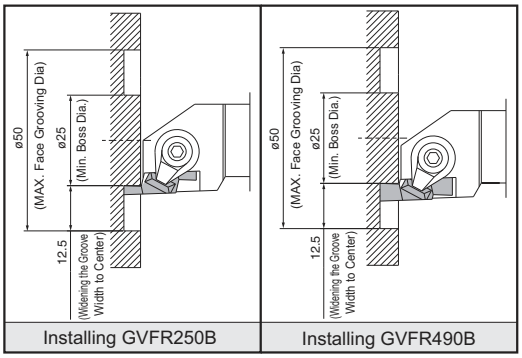
Installing GVFR250B | Installing GVFR490B

- 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.



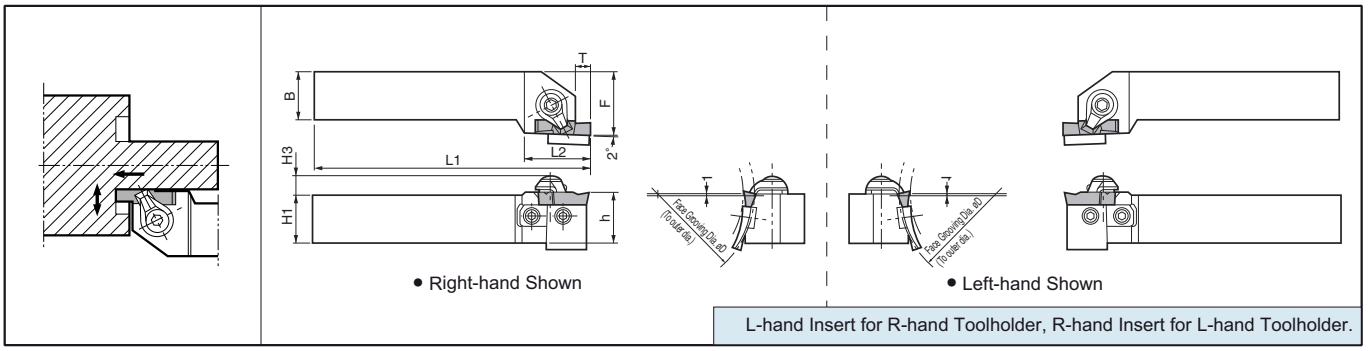
Installing GVFR250B | Installing GVFR490B



Installing GVFR250B | Installing GVFR490B

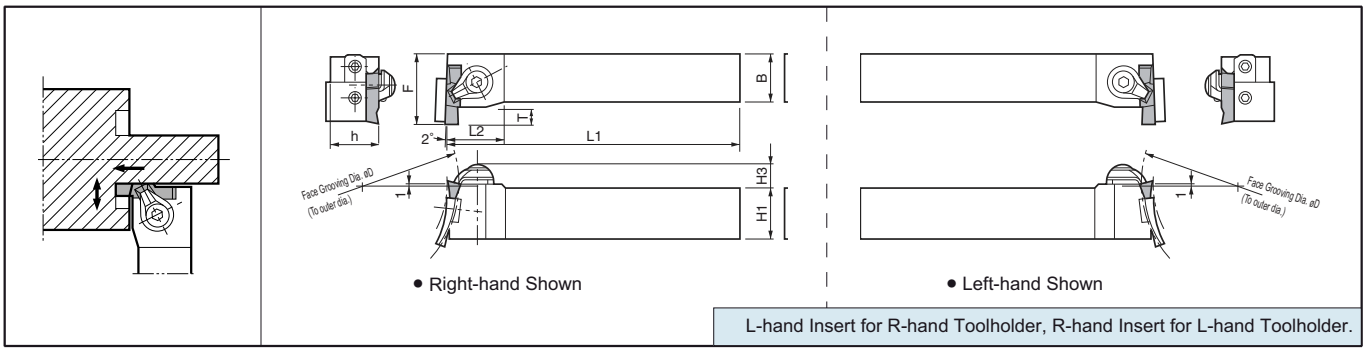
GFVS

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



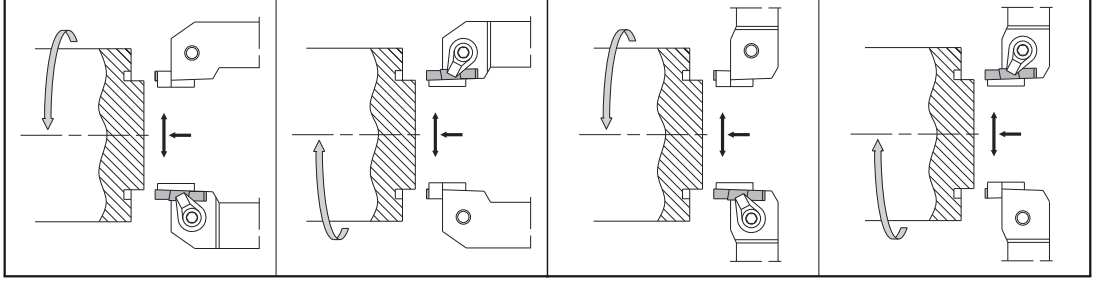
GFVT

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



◆ Selection of Toolholder & Insert

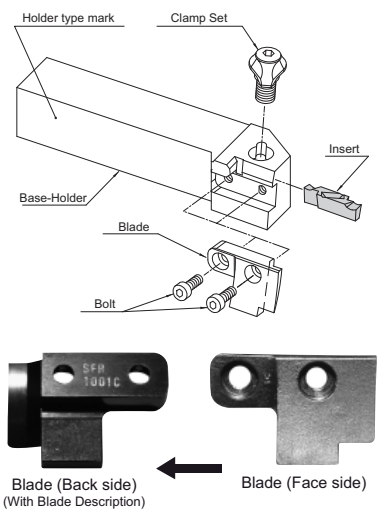
GFVS type		GFVT type	
Toolholder: R-hand Insert: L-hand	Toolholder: L-hand Insert: R-hand	Toolholder: R-hand Insert: L-hand	Toolholder: L-hand Insert: R-hand



● 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 ➔ G65
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 k250B~350B
	2525M-351B	●	●	25	26		25	150	32	32	(4.6)							GVF k150BR
	2020K-352B	●	●	20	21		20	125	30	25	5.1					SF R/L-352B		GVF k400B~490B
	2525M-352B	●	●	25	26		25	150	32	32	(5.1)							GVF k200BR
	2020K-501B	●	●	20	21		20	125	30	25	5.1	50 (25)	70 (∞)			SF R/L-501B		GVF k250B~350B
	2525M-501B	●	●	25	26		25	150	32	32	(4.6)							GVF k150BR
	2020K-502B	●	●	20	21		20	125	30	25	5.1					SF R/L-502B		GVF k400B~490B
	2525M-502B	●	●	25	26		25	150	32	32	(5.1)							GVF k200BR
	2020K-701B	●	●	20	21		20	125	30	25	5.1	70 (25)	100 (∞)			SF R/L-701B		GVF k250B~350B
	2525M-701B	●	●	25	26		25	150	32	32	(4.6)							GVF k150BR
	2020K-702B	●	●	20	21		20	125	30	25	5.1					SF R/L-702B		GVF k400B~490B
	2525M-702B	●	●	25	26		25	150	32	32	(5.1)							GVF k200BR
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 k350C~450C
	2525M-502C	●	●								8.1(8.1)					SF R/L-502C		GVF k500C~600C
	2525M-701C	●	●								8.1(6.6)	70 (25)	100 (∞)			SF R/L-701C		GVF k350C~450C
	2525M-702C	●	●								8.1(8.1)					SF R/L-702C		GVF k500C~600C
	2525M-1001C	●	●								8.1(6.6)	100 (25)	150 (∞)			SF R/L-1001C		GVF k350C~450C
	2525M-1002C	●	●								8.1(8.1)					SF R/L-1002C		GVF k500C~600C
	2525M-1501C	●	●								8.1(6.6)	150 (25)	250 (∞)			SF R/L-1501C		GVF k350C~450C
	2525M-1502C	●	●								8.1(8.1)					SF R/L-1502C		GVF k500C~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 k250B~350B
	2525M-351B	●	●	25	26		25	150	25	35	(4.6)							GVF k150BR
	2020K-352B	●	●	20	21		20	125	22	30	5.1					SF R/L-352B		GVF k400B~490B
	2525M-352B	●	●	25	26		25	150	25	35	(5.1)							GVF k200BR
	2020K-501B	●	●	20	21		20	125	22	30	5.1	50 (25)	70 (∞)			SF R/L-501B		GVF k250B~350B
	2525M-501B	●	●	25	26		25	150	25	35	(4.6)							GVF k150BR
	2020K-502B	●	●	20	21		20	125	22	30	5.1					SF R/L-502B		GVF k400B~490B
	2525M-502B	●	●	25	26		25	150	25	35	(5.1)							GVF k200BR
	2020K-701B	●	●	20	21		20	125	22	30	5.1	70 (25)	100 (∞)			SF R/L-701B		GVF k250B~350B
	2525M-701B	●	●	25	26		25	150	25	35	(4.6)							GVF k150BR
	2020K-702B	●	●	20	21		20	125	22	30	5.1					SF R/L-702B		GVF k400B~490B
	2525M-702B	●	●	25	26		25	150	25	35	(5.1)							GVF k200BR
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 k350C~450C
	2525M-502C	●	●								8.1(8.1)					SF R/L-502C		GVF k500C~600C
	2525M-701C	●	●								8.1(6.6)	70 (25)	100 (∞)			SF R/L-701C		GVF k350C~450C
	2525M-702C	●	●								8.1(8.1)					SF R/L-702C		GVF k500C~600C
	2525M-1001C	●	●								8.1(6.6)	100 (25)	150 (∞)			SF R/L-1001C		GVF k350C~450C
	2525M-1002C	●	●								8.1(8.1)					SF R/L-1002C		GVF k500C~600C
	2525M-1501C	●	●								8.1(6.6)	150 (25)	250 (∞)			SF R/L-1501C		GVF k350C~450C
	2525M-1502C	●	●								8.1(8.1)					SF R/L-1502C		GVF k500C~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.

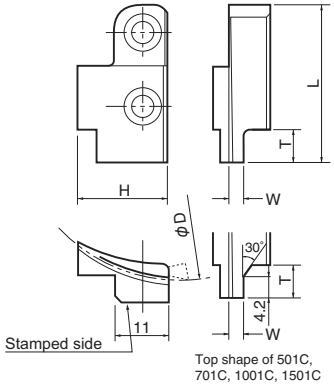
3. Standard toolholders are designed with the edge position 1.0mm above the center.
When using non-standard Toolholder, set the Edge position 1.0mm above the center.

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
	SF R/L -351B	●	●	30.5	11	4.7	2.0	35	50	GVF R/L250B~350B,150BR	GFV(S / T)R/L○○○○□ -○○○B (Toolholder Stamp GFV(S / T)R/L○○○○□-HB)
	-352B	●	●				3.4			GVF R/L400B~490B,200BR	
	SF R/L -501B	●	●		15		2.0	50	70	GVF R/L250B~350B,150BR	
	-502B	●	●				3.4			GVF R/L400B~490B,200BR	
	SF R/L -701B	●	●		17		2.0	70	100	GVF R/L250B~350B,150BR	
	-702B	●	●				3.4			GVF R/L400B~490B,200BR	
	SF R/L -501C	●	●	35	15	7.5	2.8	50	70	GVF R/L350C~450C	GFV(S / T)R/L○○○○□ -○○○C (Toolholder Stamp GFV(S / T)R/L○○○○□-HC)
	-502C	●	●				4.3			GVF R/L500C~600C	
	SF R/L -701C	●	●		20		2.8	70	100	GVF R/L350C~450C	
	-702C	●	●				4.3			GVF R/L500C~600C	
	SF R/L -1001C	●	●		23		2.8	100	150	GVF R/L350C~450C	
	-1002C	●	●				4.3			GVF R/L500C~600C	
	SF R/L -1501C	●	●		23		2.8	150	250	GVF R/L350C~450C	
	-1502C	●	●				4.3			GVF R/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) GFVS R/L. . . -351B / 352B

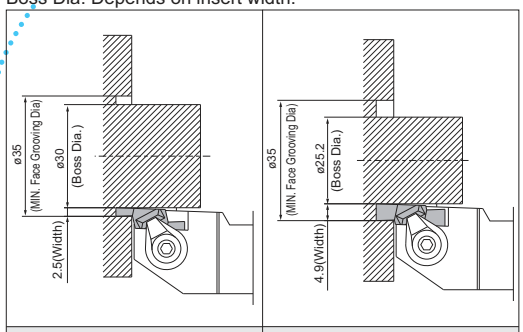
(same as GFVS R/L…-○○○B, GFVS R/L…-○○○C ➡ **G63**
GFVT R/L…-○○○B, GFVT R/L…-○○○C ➡ **G63**)

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

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

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

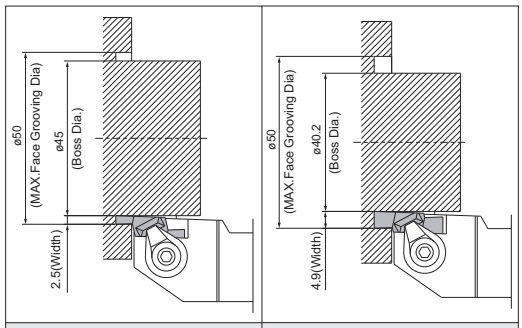
If the initial groove is made smaller than this, the toolholder interferes with the workpiece. Boss Dia. Depends on insert width.



Installing GVFL250B | Installing GVFL490B

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

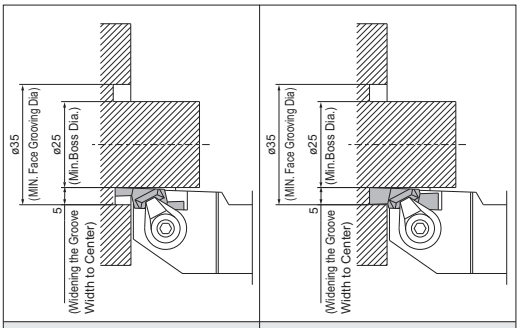
If the first groove is bigger than this, the toolholder intereferes with the workpiece. Boss Dia. Depends on insert width.



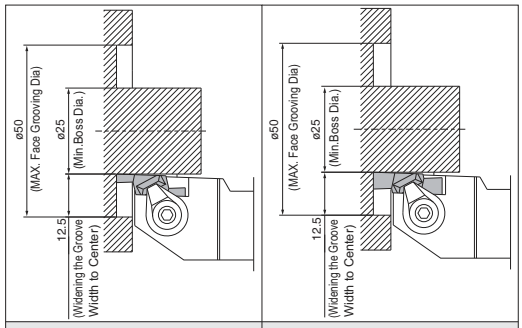
Installing GVFL250B | Installing GVFL490B

● 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

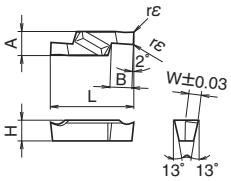
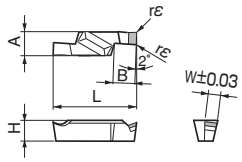
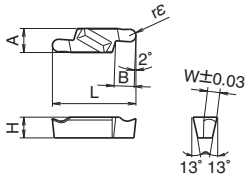
(mm)

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	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	G60
	230-020A	230A	2.30				
	250-020A	250A	2.50				
	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 GFVS R/L ···-○○1B GFVT R/L ···-○○1B	G60 G62
	300-020B	300B	3.00				
	350-020B	350B	3.50				
	400-020B	400B	4.00	5.3		GFV R/L ···-○○2B GFVS R/L ···-○○2B GFVT R/L ···-○○2B	
	430-020B	430B	4.30				
	460-020B	460B	4.60				
	490-020B	490B	4.90				
	GVF R/L 350-040C	GVF R/L 350C	3.50	6.8	0.4	GFV R/L ···-○○1C GFVS R/L ···-○○1C GFVT R/L ···-○○1C	
	400-040C	400C	4.00				
	450-040C	450C	4.50				
	500-040C	500C	5.00	8.3		GFV R/L ···-○○2C GFVS R/L ···-○○2C GFVT R/L ···-○○2C	
	550-040C	550C	5.50				
	600-040C	600C	6.00				
 1-Edge	GVF R/L 250-020B	GVF R/L 250B	2.50	4.8	0.2	GFV R/L ···-○○1B GFVS R/L ···-○○1B GFVT R/L ···-○○1B	
	300-020B	300B	3.00				
	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	GFV R/L ···-○○1C GFVS R/L ···-○○1C GFVT R/L ···-○○1C	
	400-020C	-	4.00				
	GVF R/L 350-040C	GVF R/L 350C	3.50	6.8	0.4		
	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	G60
	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	G60
	400-200BR	200BR	4.00	5.3	2.00	GFV R/L ···-○○2B GFVS R/L ···-○○2B GFVT R/L ···-○○2B	G62

· Dimension B: shows available grooving depth.

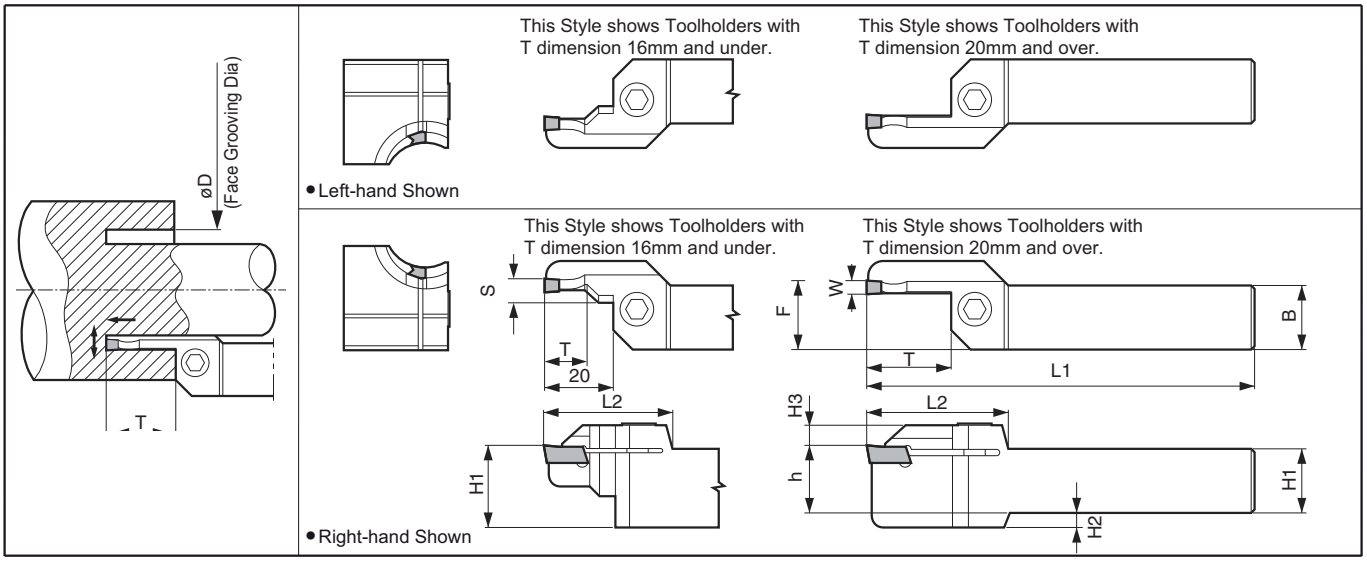
For recommended cutting conditions, see page G75

● : 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	●			5	10			44			25		50	75				
	2020K75115-5	●												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	●	●						51			32		75	115				
	2525M115180-5	●	●											115	180				
	2525M180235-5	●	●											180	235				
	2525M235800-5	●	●											235	∞				

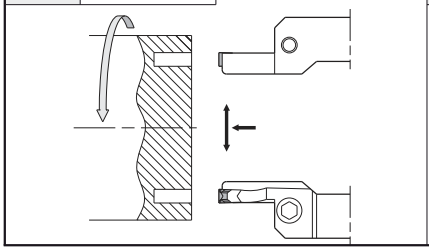
・Dimension T shows available grooving depth.

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

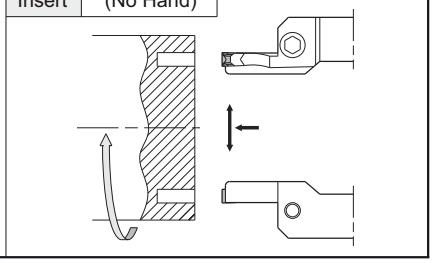
・For KFMS R/L….-5 Toolholder can hold a 6mm width insert. ( ) value shows the dimension of a 6mm width insert.

Selection of Toolholder & Insert

Toolholder	R-hand
Insert	(No Hand)



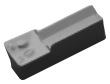
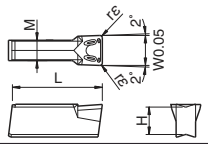
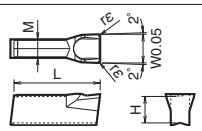
Toolholder	L-hand
Insert	(No Hand)



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)							

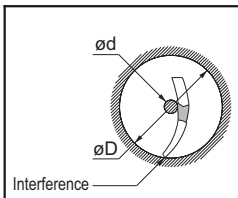
Insert		Description		Dimension (mm) W	rε	M	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PR930	PR905	Carbide KW10	Applicable Toolholder
 Face Grooving Chip Control Oriented / M Class		FMM	30-03	3.0	0.3	2.0	●	●	●	●	●	●	KFMS R/L··· 3
			40-04	4.0	0.4	2.6	●	●	●	●	●	●	KFMS R/L··· 4
			50-04	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 ➡ G77

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.



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.

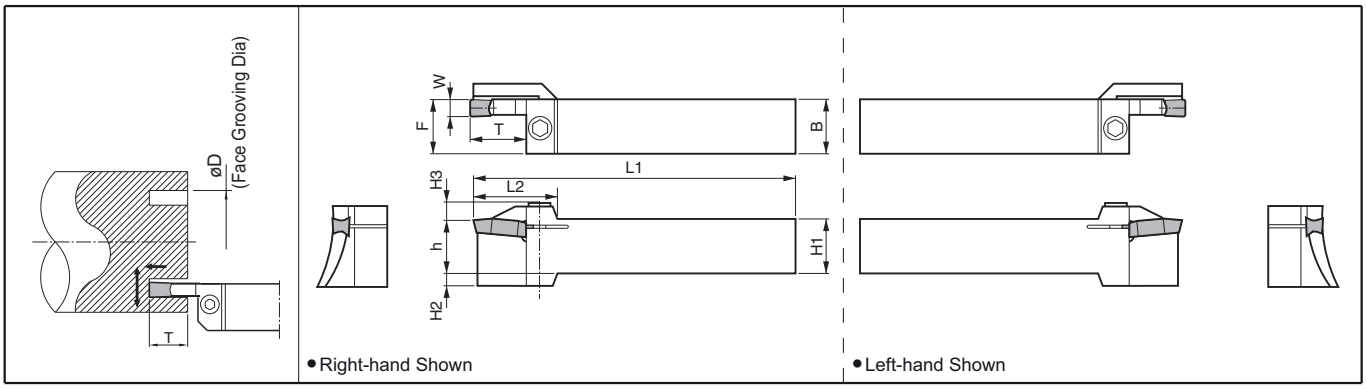
*( ) value shows the Dimension using FMM60-04 Insert.

● : 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	H1=h	H2	H3	B	L1	L2	F	T		W	Face Grooving Dia. øD MIN.	Face Grooving Dia. øD MAX.	Screw	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		G76
	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.

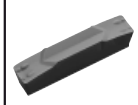
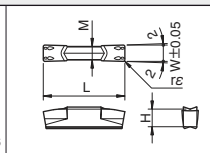
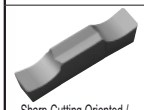
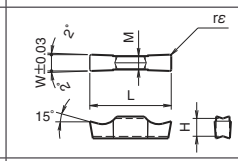
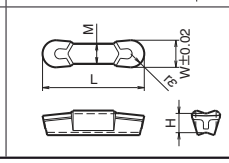
Applicable Inserts

(mm)

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

P	Carbon Steel / Alloy Steel			◐	●		
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

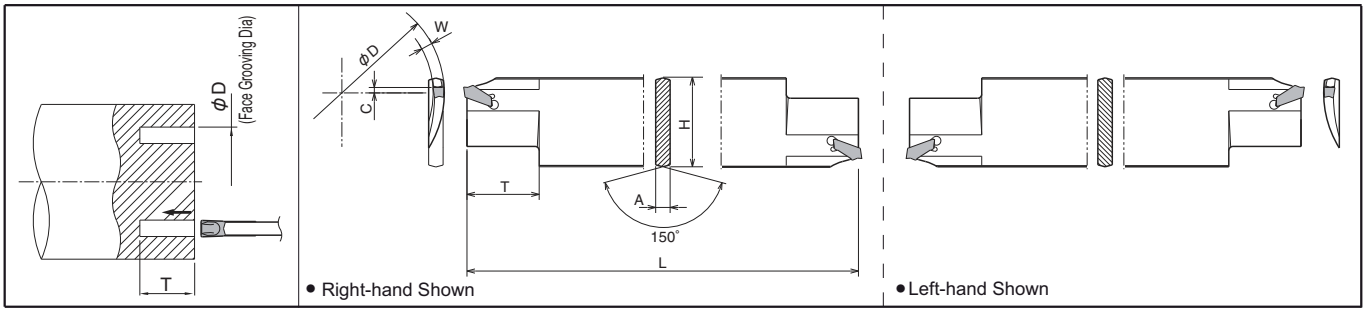
Insert		Description	(Previous Description)	Dimension (mm) W	rε	M	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PR930	PR905	Carbide KW10	Applicable Toolholder	Ref. Page for Toolholder
 Chip Control Oriented / M Class		GMM 8030-080MW	GMM 8030-08	8.0	0.8	6.0		●	●	●	●	●	KFMS R/L ···8	G68
 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						●		

● : 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 Blade

KFTB-S



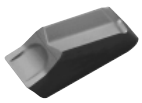
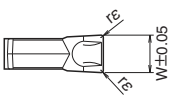
Blade Dimensions

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 ➡ H19
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

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)						

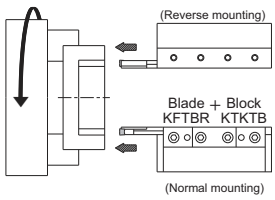
Insert		Description		Dimensions (mm) W	rε	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR660	PR930	Carbide KW10	Applicable Toolholder		Ref. Page for Toolholder
		FTK	4	4.0	0.25	●	●	●	●	●	KFTB R/L	65100-4S 90150-4S 150250-4S 250800-4S	G69
			5	5.0		●	●	●	●	●	KFTB R/L	90150-5S 150250-5S 250800-5S	

For recommended cutting conditions, see page ➡ G75

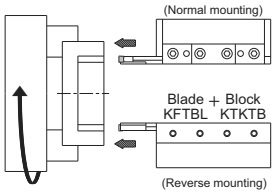
Selection of Blade and Insert

Combination of Blade + KTKTB

Blade	R-hand
Insert	No Hand

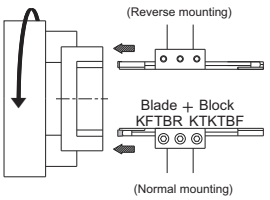


Blade	L-hand
Insert	No Hand

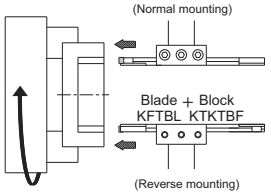


Combination of Blade + KTKTBF

Blade	R-hand
Insert	No Hand

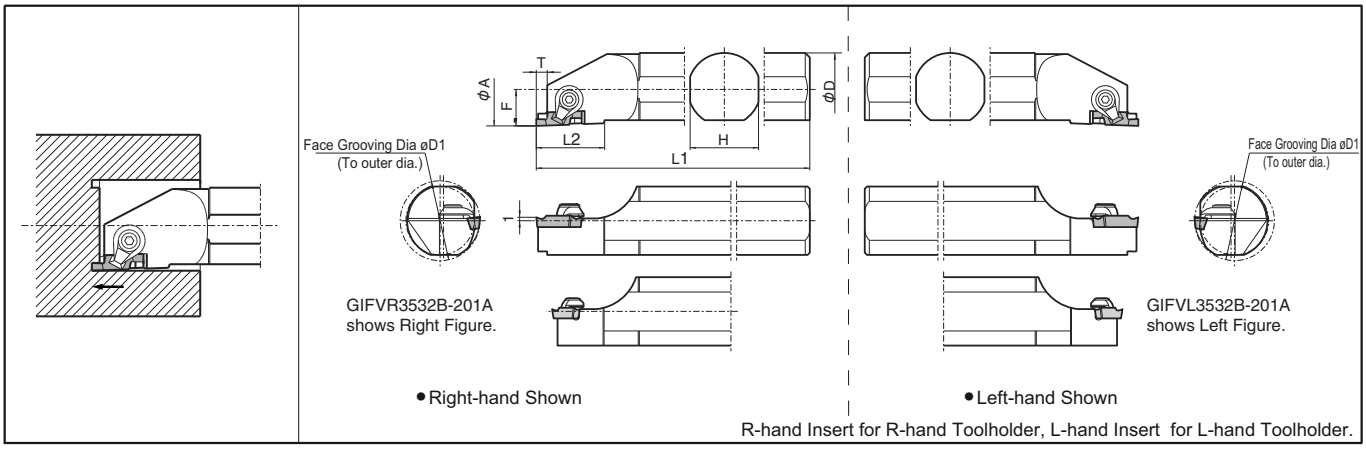


Blade	L-hand
Insert	No Hand



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

GIFV



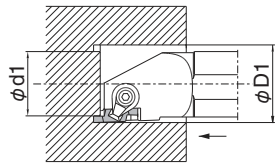
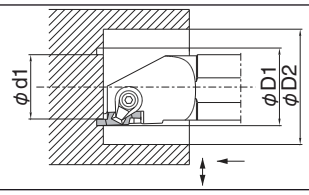
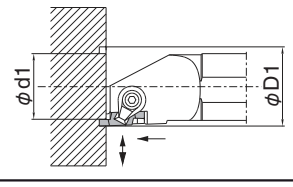
R-hand Insert for R-hand Toolholder, L-hand Insert for L-hand Toolholder.

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		Wrench		Applicable Inserts ➔ G71
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		50	70		
	5032B-501B					
	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		50	70		
	5032B-501B					
	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		50	70		
	5032B-501B					
	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)

Applicable Inserts

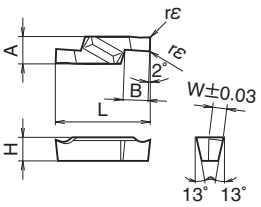
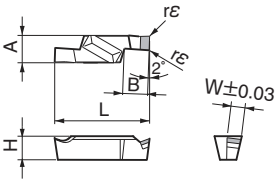
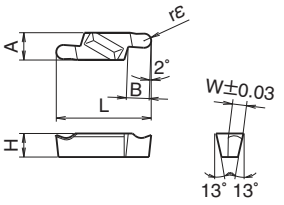
(mm)

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

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	TC40	TC60	PR630	PVD Coated Carbide PR930	Carbide KW10	PCD KPD001	KPD010	Applicable Toolholder	Ref. Page for Toolholder
	GVF R/L 200-020A	GVF R/L 200A	2.00	2.3	0.2			●		●	●			GIFV R/L ···-201A	G70
	230-020A	230A	2.30					●		●	●				
	250-020A	250A	2.50					●		●	●				
	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			●		●	●			GIFV R/L ···-○○1B	
	300-020B	300B	3.00					●		●	●				
	350-020B	350B	3.50					●		●	●				
	400-020B	400B	4.00	5.3				●		●	●			GIFV R/L ···-○○2B	
	430-020B	430B	4.30					●		●	●				
	460-020B	460B	4.60					●		●	●				
	490-020B	490B	4.90					●		●	●				
	GVF R/L 350-040C	GVF R/L 350C	3.50	6.8	0.4			●		●	●			GIFV R/L ···-○○1C	
	400-040C	400C	4.00					●		●	●				
	450-040C	450C	4.50					●		●	●				
	500-040C	500C	5.00	8.3				●		●	●			GIFV R/L ···-○○2C	
	550-040C	550C	5.50					●		●	●				
	600-040C	600C	6.00					●		●	●				
 1-Edge	GVF R/L 250-020B	GVF R/L 250B	2.50	4.8	0.2								●	GIFV R/L ···-○○1B	
	300-020B	300B	3.00										●		
	400-020B	400B	4.00	5.3									○	GIFV R/L ···-○○2B	
	GVF R/L 350-020C	-	3.50	6.8	0.2								○	GIFV R/L ···-○○1C	
	400-020C	-	4.00										○		
	GVF R/L 350-040C	GVF R/L 350C	3.50	6.8	0.4								○		
	400-040C	400C	4.00										○		
 Full-R	GVF R/L 200-100AR	GVF R/L 100AR	2.00	2.3	1.00					●	●			GIFV R/L ···-201A	
	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					●	●			GIFV R/L ···-○○1B	
	400-200BR	200BR	4.00	5.3	2.00					●	●			GIFV R/L ···-○○2B	

・Dimension B: shows available grooving depth.

Recommended Cutting Conditions ➔ G75

● : 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.

Recommended Cutting Conditions

◆ GBA 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						
	TC40	TN90	PR630	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	☆ 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	☆ 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	-	☆ 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	-	-	-	-	-	★ 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 rate lower than 10% for internal grooving. ★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GBA insert (MY 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						
	TN6020	TC40	PR630	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	☆ 150-220	-	-	☆ 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	☆ 130-200	-	-	☆ 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	☆ 70-150	-	-	☆ 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 rate lower than 10% for internal grooving. ★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GB insert (Ground Chipbreaker)

changes 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 (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	-	☆ 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	Coolant
Alloy Steel	-	☆ 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	-	-	☆ 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	-	-	-	-	-	★ 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	

* Above cutting condition is for external grooving. Set both cutting speed and feed rate lower than 10% for internal grooving. ★ : 1st Recommendation ☆ : 2nd Recommendation

◆ 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

Recommended Cutting Conditions

◆ 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

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.

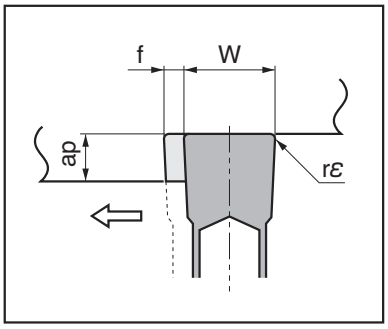
① Case of KGM Toolholder

	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 (mm²) \ 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=0.04w²



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 (mm²) \ 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≦0.02w²

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 (mm²) \ Edge Width (mm)	3.0	4.0	5.0
ap×f	~0.25	~0.44	~0.70

・ap×f≦0.04w²

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

FMM • FMN

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)						Face Grooving (FMM type / FMN type)			Traversing (Case of FMM type)			Remarks
	Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide	Width (mm)			Width (mm)			
	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	・ap≦0.5w
f (MAX) mm/rev	under 3~5% of Edge Width	・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

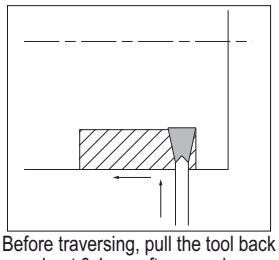
・ap×f≦0.01 w^2

Guide for External Machining

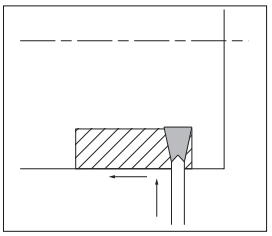
Point (Ⅰ) (Traversing after Grooving)

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.)

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

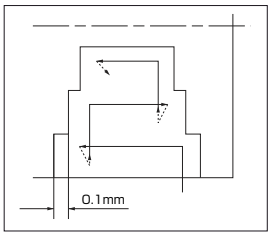


Fig.3

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.

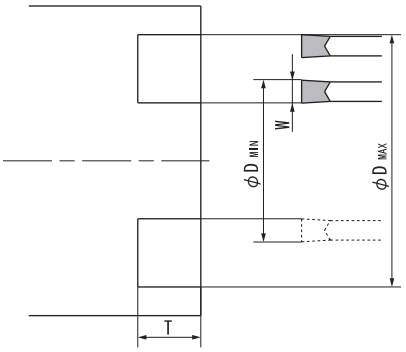


Fig.1

Toolholder	R-hand	Toolholder	L-hand
Insert	(No Hand)	Insert	(No Hand)

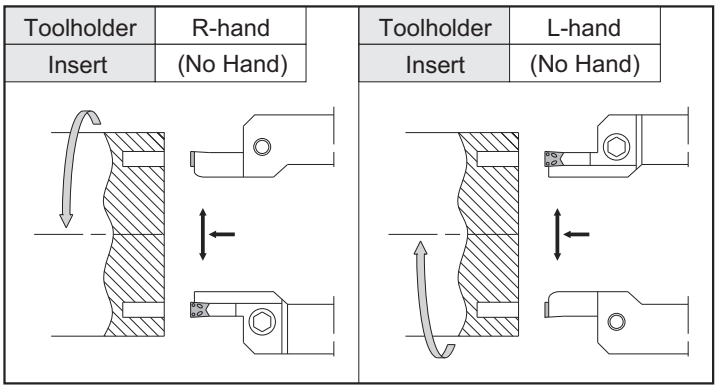


Fig.2 Toolholder's Hand and Rotation

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

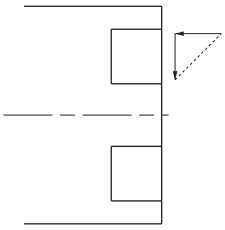
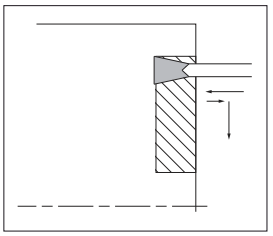


Fig.3

Guide for Face Grooving (Continued)

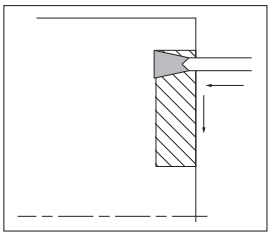
Point (Ⅰ) (Traversing after Grooving)

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.)

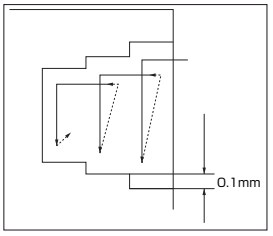
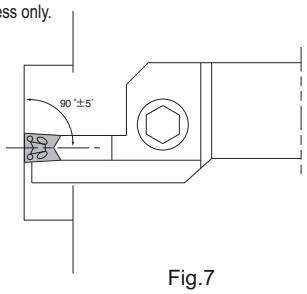


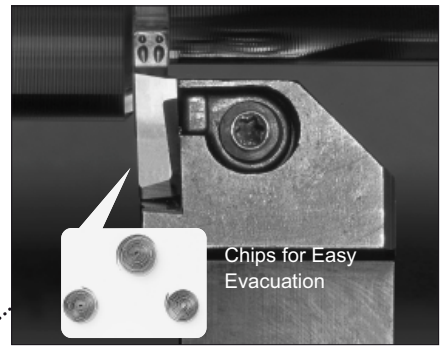
Fig.6

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)

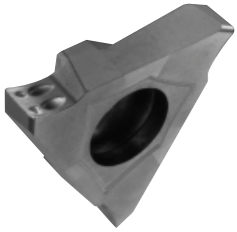
1. Set the f under 0.12mm/rev (0.05~0.10mm/rev normally).
2. Coolant is recommended.
3. Set the cutting speed V_c=150-220m/min.
4. Set the toolholder overhang as short as possible.



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

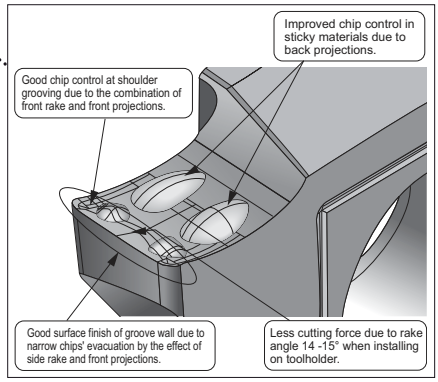
1. Increase the cutting speed (V_c=220m/min.MAX)
2. Program dwell-motion at the groove bottom.
3. Apply a light hone to the cutting edge by hand lapper.

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.