KYOCERA

GBF

Grooving Tools for Small Parts Machining

High Precision Grooving Tools for Small Parts Machining

Large Tooling Lineup

Groove Widths from 0.041" to 0.094" and 0.25mm to 3.00mm and Maximum Groove Depths up to 3mm

Available Corner-R : 0.00/0.05/0.10 mm

Stable Chip Control with GL Chipbreaker

NEW **Lineup Expansion: Inch Size Inserts and Ground Chipbreaker (Corner-R 0.10mm)**

NEW **JCTM-Series Direct Jet Coolant-Through Holders**

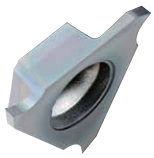
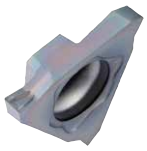
GBF

High Precision, Long Tool Life, and High Efficiency Machining with MEGACOAT Coating Technology

1 Large Tooling Lineup for a Variety of Small Part Operations

Inserts

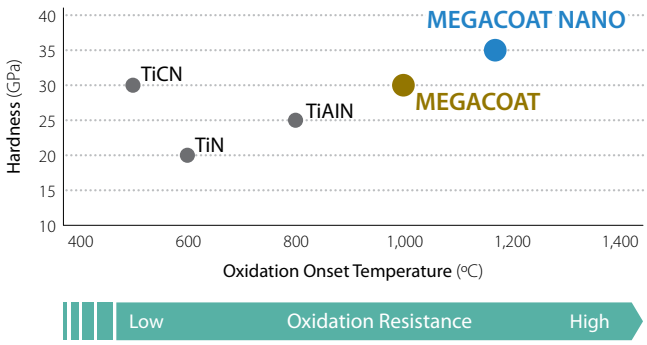
NEW **Lineup Expansion : Ground Chipbreaker**
Corner-R 0.10 mm is available for groove widths 0.75, 0.80, 0.95, 1.00, 1.10, and 1.20 mm

	Lineup		Features
 **Ground Chipbreaker**	Groove Width [CW] 0.041"~0.094" 0.25~0.65mm 0.75~2.00mm 2.25~3.00mm Each width of groove has both R-hand and L-hand	CornerR [RE] 0.002"/0.004" 0.00/0.05mm 0.00/0.05/0.10mm 0.05/0.10mm	· Sharp Cutting Performance · Large Lineup
 **Molded GL Chipbreaker**	Groove Width [CW] (mm) 0.75~1.00 1.50~3.00 R-hand Only	CornerR [RE] (mm) 0.05 0.10	· Excellent Chip Control · Stable Machining

1st Recommendation

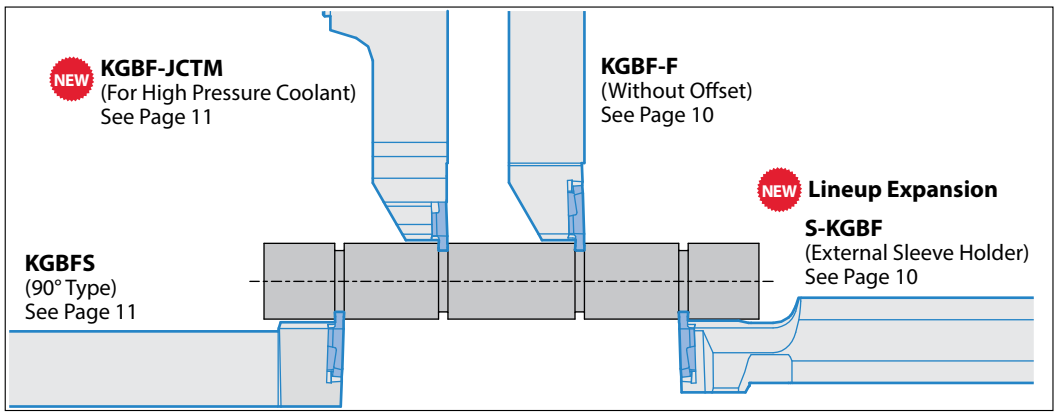
Steel	**PR1215** MEGACOAT
Stainless Steel	**PR1535** MEGACOAT NANO
Non-Ferrous	**GW15**
Cast Iron	**GW15**

Coating Properties

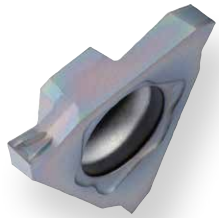


Toolholders

NEW **KGBF-JCTM** Holder for High-Pressure Coolant Added to Lineup

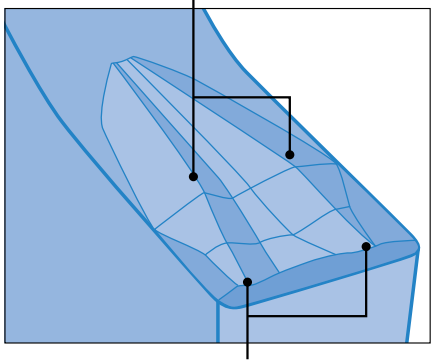


2 Stable Chip Control with GL Chipbreaker



GL Chipbreaker maintains stable chip control while grooving and traversing (Traversing is not recommended for GBF32R075-005GL)

Twin Dots Stabilizes and maintains control of the chip



Front Edge Dots Curls chips and breaks them short to prevent chip clogging or entanglemnt.

Comparison of Chip Control (Internal Evaluation)

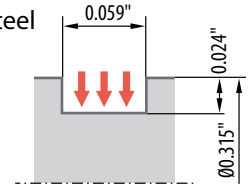
	GL Chipbreaker	Competitor A
Grooving d = 0.059" f = 0.0020 ipr		
Traversing D.O.C. = 0.008" f = 0.0016 ipr		

Cutting Conditions: Vc = 260 sfm, Insert width 0.039" (1mm)
Workpiece: 304

Case Studies

Nozzle Parts - Stainless Steel

Vc = 150 sfm
f = 0.002 ipr
Groove Depth 0.024", Wet
KGBFR1212JX-16F
GBF32R100-005GL PR1535



GL Chipbreaker PR1535

Competitor A

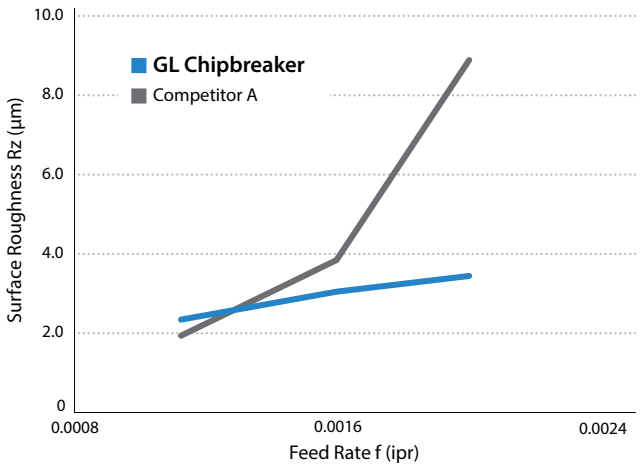
Competitor A's chips became entangled with workpiece due to unstable chip control.
GL Chipbreaker maintained stable chip control without entanglement.

(User Evaluation)

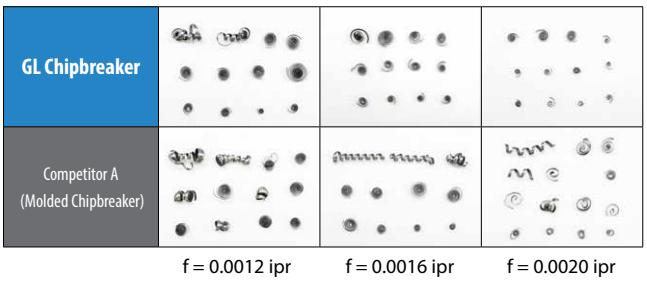
3 Good Surface Finish

GL Chipbreaker maintains stable chip control at high feed rates
Good surface finish of side wall

Surface Finish Comparison (Internal Evaluation)



Chip Control Comparison (Internal Evaluation)



Cutting Conditions: Vc = 260 sfm, d = 0.059", f = 0.0012~0.0020 ipr, Insert width 0.039" (1mm)
Workpiece: 4140

4 JCTM Series Direct Coolant Holder for Small Parts Machining Added to Lineup

Supports internal coolant with or without piping systems

Internal coolant delivers improved chip control and longer tool life while grooving

Internal Coolant without Piping

***When the tool turret supports direct coolant**

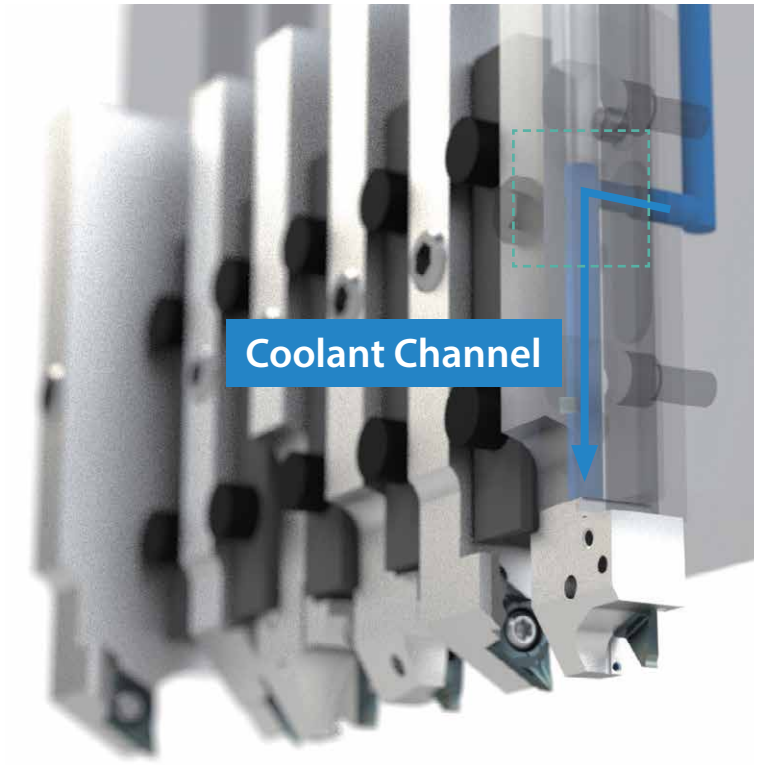
NEW

Coolant is supplied directly from the tool turret into the holder without the need to install piping

Applicable to Wide Range of Machines **The tool turret is optional. Please contact our company sales representative for details.**

CITIZEN MACHINERY CO., LTD. (L20, D25, M32)
STAR MICRONICS CO., LTD. (SB-R series, SR series, SV series)
TSUGAMI CORPORATION (S205/206-Ⅱ□16 type, S205A/206A-Ⅱ□16 type)
Compatible with various machine including the above. Toolholders can be customized as well.

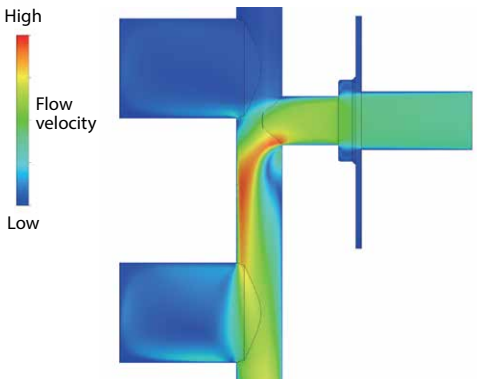
(Random order)
Based on Kyocera Survey in January 2021



Optimized Coolant Supply

Supply hole designed to reduce energy loss based on extensive flow analysis

Analysis Image (Internal Evaluation)

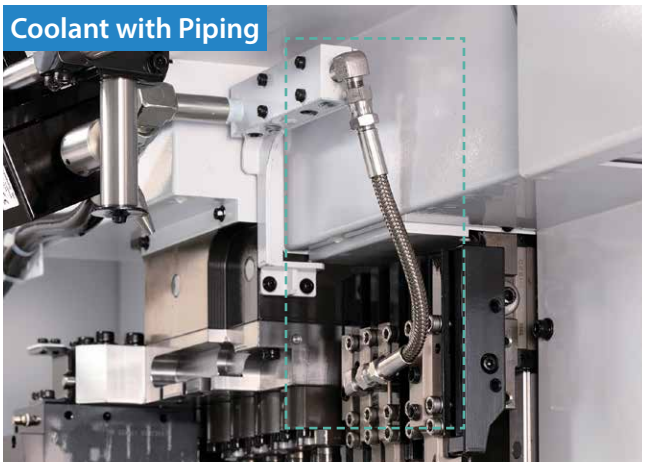


Internal Coolant with Piping

*Piping Parts : See Pages 10-11

Compatible with internal coolant on any machine with standard piping parts

Commercial piping parts are available when using at normal pressure



External Grooving KGBF-JCTM

Discharges coolant from the top of the insert to deliver superior chip control and longer tool life

Edge Width : 0.041"-0.094" / 0.25mm-3.00mm

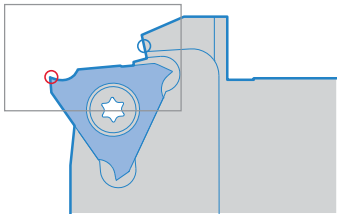
Ground Chipbreaker / Molded GL Chipbreaker

Maximum groove depth : 0.079 / 3mm

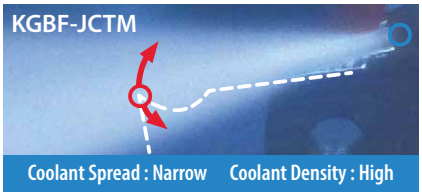
Coolant Discharging Comparison (Internal Evaluation)

Small chips and better cooling of the insert leads to longer tool life

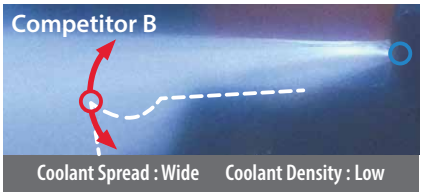
○ Cutting Edge
○ Coolant Hole



(Without Insert)



(Without Insert)

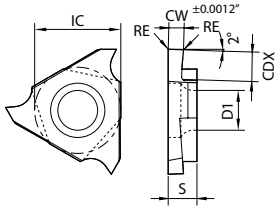


GBF Inserts (Inch: 0.041" - 0.094" Widths) NEW

Insert Size	IC	S	D1
GBF32	3/8	1/8	0.173

●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice

P	Carbon Steel / Alloy Steel	●	◔	
M	Stainless Steel	◔	●	
K	Cast Iron			●
N	Non-ferrous Material			●
S	Titanium Alloy			●

Shape	Part Number	Dimensions						MEGACOAT		MEGACOAT NANO		Carbide	
		CW		CDX		RE		PR1215		PR1535		GW15	
		in	mm	in	mm	in	mm	R	L	R	L	R	L
	GBF32R/L 041N	0.041	1.05	0.039	1.00	0.002	0.05	●	●	●	●	●	●
	058N	0.058	1.47	0.047	1.20	0.004	0.10	●	●	●	●	●	●
	062N	0.062	1.57	0.047	1.20	0.004	0.10	●	●	●	●	●	●
	094N	0.094	2.39	0.079	2.00	0.004	0.10	●	●	●	●	●	●

The maximum machining diameter is Ø2.008" (51mm) (Please check caution on Page 9)

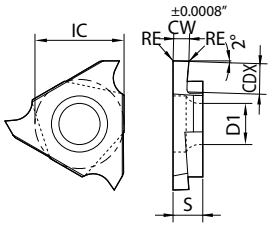
● : Standard Item

GBF Inserts (Metric: 0.25mm - 1.20mm Widths)

Insert Size	IC	S	D1
GBF32	3/8	1/8	0.173

●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice

P	Carbon Steel / Alloy Steel	●	◔	
M	Stainless Steel	◔	●	
K	Cast Iron			●
N	Non-ferrous Material			●
S	Titanium Alloy			●

Shape	Part Number	Dimensions						MEGACOAT		MEGACOAT NANO		Carbide	
		CW		CDX		RE		PR1215		PR1535		GW15	
		in	mm	in	mm	in	mm	R	L	R	L	R	L
	GBF32R/L 025-000F	0.010	0.25	0.024	0.6	0.000	0.00	●	●	●	●	●	●
	025-005					0.002	0.05	●	●	●	●	●	●
	030-000F	0.012	0.30	0.031	0.8	0.000	0.00	●	●	●	●	●	●
	030-005					0.002	0.05	●	●	●	●	●	●
	033-000F *1	0.013	0.33	0.031	0.8	0.000	0.00	●	●	●	●	●	●
	033-005 *1					0.002	0.05	●	●	●	●	●	●
	043-000F *2	0.017	0.43	0.039	1.0	0.000	0.00	●	●	●	●	●	●
	043-005 *2					0.002	0.05	●	●	●	●	●	●
	050-000F	0.020	0.50	0.047	1.2	0.000	0.00	●	●	●	●	●	●
	050-005					0.002	0.05	●	●	●	●	●	●
	053-000F *3	0.021	0.53	0.047	1.2	0.000	0.00	●	●	●	●	●	●
	053-005 *3					0.002	0.05	●	●	●	●	●	●
	065-000F	0.026	0.65	0.047	1.2	0.000	0.00	●	●	●	●	●	●
	065-005					0.002	0.05	●	●	●	●	●	●
	075-000F	0.030	0.75	0.079	2.0	0.000	0.00	●	●	●	●	●	●
	075-005					0.002	0.05	●	●	●	●	●	●
	075-010					0.004	0.10	●	●	●	●	●	●
	080-000F	0.031	0.80	0.079	2.0	0.000	0.00	●	●	●	●	●	●
	080-005					0.002	0.05	●	●	●	●	●	●
	080-010					0.004	0.10	●	●	●	●	●	●
	095-000F	0.037	0.95	0.079	2.0	0.000	0.00	●	●	●	●	●	●
	095-005					0.002	0.05	●	●	●	●	●	●
	095-010					0.004	0.10	●	●	●	●	●	●
	100-000F	0.039	1.00	0.079	2.0	0.000	0.00	●	●	●	●	●	●
	100-005					0.002	0.05	●	●	●	●	●	●
	100-010					0.004	0.10	●	●	●	●	●	●
	110-000F	0.043	1.10	0.079	2.0	0.000	0.00	●	●	●	●	●	●
	110-005					0.002	0.05	●	●	●	●	●	●
	110-010					0.004	0.10	●	●	●	●	●	●
	120-000F	0.047	1.20	0.079	2.0	0.000	0.00	●	●	●	●	●	●
	120-005					0.002	0.05	●	●	●	●	●	●
	120-010					0.004	0.10	●	●	●	●	●	●

The maximum machining diameter is Ø2.008" (51mm) (Please check caution on Page 9)

● : Standard Item

※1 : The edge width (CW) tolerance of GBF32R 033-005 : 0.013" $^{+0.0006"}_{-0.0010"}$ (0.33mm $^{+0.015mm}_{-0.025mm}$)

※2 : The edge width (CW) tolerance of GBF32R 043-005 : 0.017" $^{+0.0006"}_{-0.0010"}$ (0.43mm $^{+0.015mm}_{-0.025mm}$)

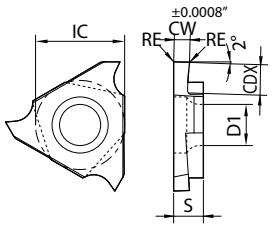
※3 : The edge width (CW) tolerance of GBF32R 053-005 : 0.021" $^{+0.0006"}_{-0.0010"}$ (0.53mm $^{+0.015mm}_{-0.025mm}$)

GBF Inserts (Metric: 1.25mm - 3mm Widths)

Insert Size	IC	S	D1
GBF32	3/8	1/8	0.173

●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice

P	Carbon Steel / Alloy Steel	●	◔	
M	Stainless Steel	◔	●	
K	Cast Iron			●
N	Non-ferrous Material			●
S	Titanium Alloy			●

Shape	Part Number	Dimensions						MEGACOAT		MEGACOAT NANO		Carbide	
		CW		CDX		RE		PR1215		PR1535		GW15	
		in	mm	in	mm	in	mm	R	L	R	L	R	L
	GBF32R/L 125-000F	0.049	1.25	0.079	2.0	0.000	0.00	●	●	●	●	●	●
	125-005					0.002	0.05	●	●	●	●	●	●
	125-010					0.004	0.10	●	●	●	●	●	●
	130-000F	0.051	1.30	0.079	2.0	0.000	0.00	●	●	●	●	●	●
	130-005					0.002	0.05	●	●	●	●	●	●
	130-010					0.004	0.10	●	●	●	●	●	●
	140-000F	0.055	1.40	0.106	2.7	0.000	0.00	●	●	●	●	●	●
	140-005					0.002	0.05	●	●	●	●	●	●
	140-010					0.004	0.10	●	●	●	●	●	●
	145-000F	0.057	1.45	0.106	2.7	0.000	0.00	●	●	●	●	●	●
	145-005					0.002	0.05	●	●	●	●	●	●
	145-010					0.004	0.10	●	●	●	●	●	●
	150-000F	0.059	1.50	0.106	2.7	0.000	0.00	●	●	●	●	●	●
	150-005					0.002	0.05	●	●	●	●	●	●
	150-010					0.004	0.10	●	●	●	●	●	●
	165-000F	0.065	1.65	0.106	2.7	0.000	0.00	●	●	●	●	●	●
	165-005					0.002	0.05	●	●	●	●	●	●
	165-010					0.004	0.10	●	●	●	●	●	●
	170-000F	0.067	1.70	0.118	3.0	0.000	0.00	●	●	●	●	●	●
	170-005					0.002	0.05	●	●	●	●	●	●
	170-010					0.004	0.10	●	●	●	●	●	●
	175-000F	0.069	1.75	0.118	3.0	0.000	0.00	●	●	●	●	●	●
	175-005					0.002	0.05	●	●	●	●	●	●
	175-010					0.004	0.10	●	●	●	●	●	●
	200-000F	0.079	2.00	0.118	3.0	0.000	0.00	●	●	●	●	●	●
	200-005					0.002	0.05	●	●	●	●	●	●
	200-010					0.004	0.10	●	●	●	●	●	●
	225-005	0.089	2.25	0.118	3.0	0.002	0.05	●	●	●	●	●	●
	225-010					0.004	0.10	●	●	●	●	●	●
	250-005	0.098	2.50	0.118	3.0	0.002	0.05	●	●	●	●	●	●
	250-010					0.004	0.10	●	●	●	●	●	●
	300-005	0.118	3.00	0.118	3.0	0.002	0.05	●	●	●	●	●	●
	300-010					0.004	0.10	●	●	●	●	●	●

The maximum machining diameter is Ø2.008" (51mm) (Please check caution on Page 9)

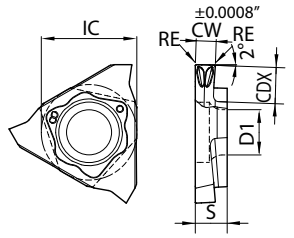
● : Standard Item

GBF-GL Inserts

Insert Size	IC	S	D1
GBF32	3/8	1/8	0.173

● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice

P	Carbon Steel / Alloy Steel	●	◔
M	Stainless Steel	◔	●

Insert	Part Number	Dimensions						MEGACOAT		MEGACOAT NANO	
		CW		CDX		RE		PR1215		PR1535	
		in	mm	in	mm	in	mm	R	L	R	L
	GBF32R 075-005GL	0.030	0.75	0.079	2.0	0.002	0.05	●		●	
	095-005GL	0.037	0.95	0.079	2.0	0.002	0.05	●		●	
	100-005GL	0.039	1.00	0.079	2.0	0.002	0.05	●		●	
	150-010GL	0.059	1.50	0.106	2.7	0.004	0.10	●		●	
	200-010GL	0.079	2.00	0.118	3.0	0.004	0.10	●		●	
	300-010GL	0.118	3.00	0.118	3.0	0.004	0.10	●		●	

Please check precautions below for the maximum machining diameter.

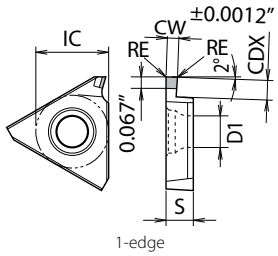
● : Standard Item

GBA PCD Inserts

When using a KGBF/KGBFS holders to machine non-ferrous metals, etc.

Applicable Insert

Insert Size	IC	S	D1
GBA32	3/8	1/8	0.173

Insert	Part Number	Dimensions						PCD			
		CW		CDX		RE		KPD001		KPD010	
		in	mm	in	mm	in	mm	R	L	R	L
 1-edge	GBA32R 125-010	0.049	1.25	0.079	2.00	0.004	0.10	●		●	
	150-010	0.059	1.50					●		●	
	200-010	0.079	2.00	0.098	2.50			●		●	

· CDX shows available grooving depth.

● : Standard Item

When using a KGBF/KGBFS holder for non-ferrous metal machining, use a GBA PCD insert.
*See above details for insert description. Also, please refer to the precautions below when using.

Precautions

· GBF and GBA Compatibility

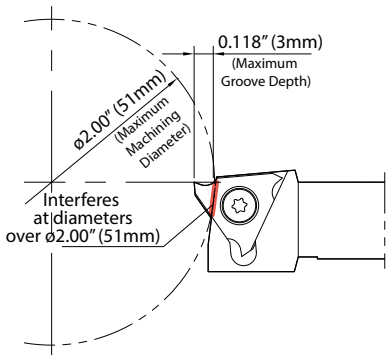
1 GBF will fit KGBA/KGBAS holders.
Caution : The maximum groove depth for KGBA/KGBAS holders is 0.098" (2.5mm)

2 GBA inserts will also fit KGBF/KGBFS holders
Caution : The rake angle after installation in the toolholder is 11°

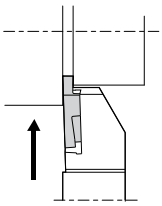
· KGBF/KGBFS Holder with GBF Insert Maximum Machining Diameter

0.118" (3mm) groove depth is available on workpiece diameters up to ø2.008" (51mm)
0.106" (2.7mm) groove depth is available on workpiece diameters up to ø3.937" (100mm)
0.098" (2.5mm) groove depth is available on workpiece diameters up to ø7.874" (200mm)
The workpiece will interfere with the holder at maximum cutting diameter or larger.

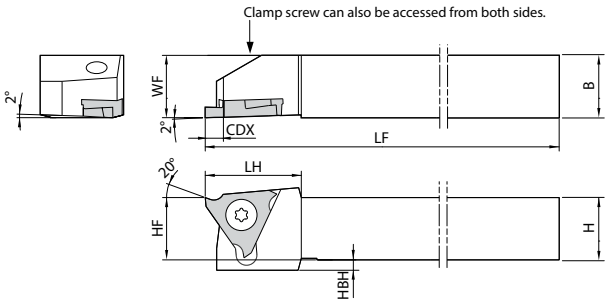
· Grooving Depth : 0.118" (3mm)



KGBF-F (Without Offset)



Right-hand Shown



Right-hand (R) Insert for Right-hand (R) Toolholder. Left-hand (L) Insert for Left-hand (L) Toolholder

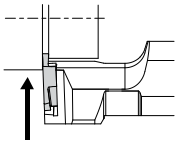
Toolholder Dimensions

Part Number		Stock		Unit	Dimensions						Parts	
											Clamp Screw	Wrench
		R	L		H = HF	HBH	B = WF	LF	LH	CDX *1		
NEW	KGBFR/L 6-3JXF	●	●	in	0.375	0.157	0.375	4.750	0.728	0.118	SB-4070TRW	FT-8
NEW	8-3JXF	●	●		0.500	0.079	0.500					
NEW	10-3JXF	●	●		0.625	-	0.625					
	KGBFR/L 1010JX-16F	●	●	mm	10	4	10	120	18.5	3	SB-4070TRW	FT-8
	1212JX-16F	●	●		12	2	12					
	1616JX-16F	●	●		16	-	16					
	2020JX-16F	●	●		20	-	20					

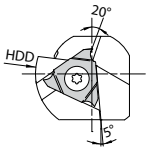
*1 Dimension CDX shows the distance from the toolholder to the cutting edge. Dimension CDX of Insert shows available grooving depth.
Please see cautions on Page 9 for maximum machining diameter

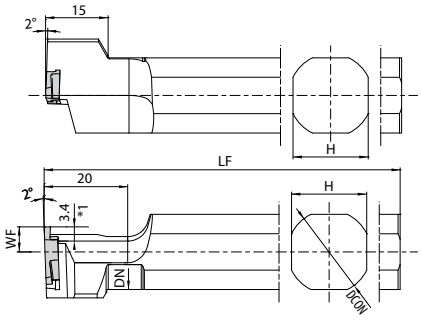
● : Standard Item

S...KGBF (Sleeve Holder)



Left-hand Shown





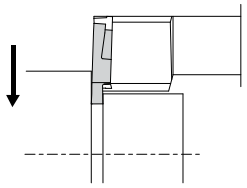
Right-hand (R) Insert for Left-hand (L) Toolholder

Toolholder Dimensions

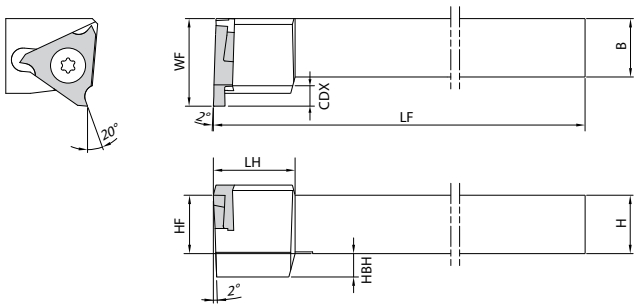
Part Number	Stock	Unit	Dimensions						Parts	
									Clamp Screw	Wrench
	L		DCON	LF	WF	DN	HDD	H		
NEW S12F-KGBFL16	●	mm	12	80	6	11	27	11	SB-4070TRW	FT-8
NEW S14H-KGBFL16	●		14	100		13		13		
NEW S15F-KGBFL16	●		0.625"	85		15		15		
S16F-KGBFL16	●		16							
S19G-KGBFL16	●		0.750"	90		18		17		
S19K-KGBFL16	●			120						
S20G-KGBFL16	●		20	90		19		18		
S20K-KGBFL16	●			120						
S22K-KGBFL16	●		22			21		20		
S25.0H-KGBFL16	●		25	100	10	24	32	23		
S25K-KGBFL16	●		1.000"	120						

● : Standard Item

KGBFS (90° Type)



Right-hand Shown



Right-hand (R) Insert for Left-hand (L) Toolholder. Left-hand (L) Insert for Right-hand (R) Toolholder

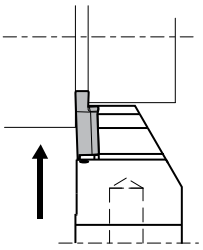
Toolholder Dimensions

Part Number		Stock		Unit	Dimensions							Parts	
												Clamp Screw	Wrench
		R	L		H = HF	HBH	B	LF	LH	WF	CDX *1		
KGBFS R/L	1010JX-16	●	●	mm	10	4	10	120	14	15	3	SB-4070TRW	FT-8
	1212JX-16	●	●		12	2	12			16			
	1616JX-16	●	●		16	-	16			20			

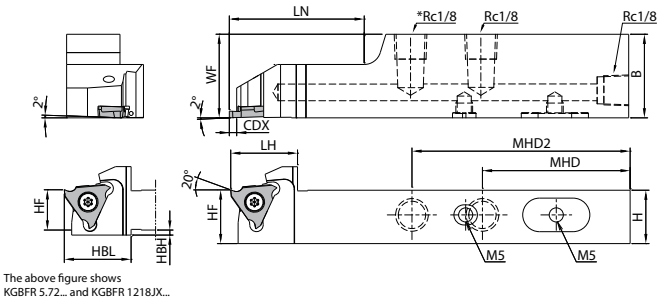
*1 Dimension CDX shows the distance from the toolholder to the cutting edge. Dimension CDX of Insert shows available grooving depth.
Please see cautions on Page 9 for maximum machining diameter

● : Standard Item

KGBF-JCTM (Jet Coolant-Through)



Right-hand Shown



The above figure shows KGBFR 5.72... and KGBFR 1218JX...

Right-hand (R) Insert for Right-hand (R) Toolholder

*KGBFR5.72··· : 2 x Rc1/8
*KGBFR1218··· : 2 x Rc1/8

Toolholder Dimensions NEW

Part Number		Stock		Unit	Dimensions											Spare Parts			
																Insert Screw	Wrench	Plug 1	Plug 2
		R	L		H	HF	HBH	B	LF	HBL	LH	LN	WF	CDX*	MHD	MHD2				
KGBFR 5.72-16FJCTM		●		in	0.500	0.500	0.059	0.709	4.750	0.785	0.785	1.110	0.500	0.118	2.125	-	SB-4070TRW	FT-8	GP-1	HS5X4LP
	82.5-16FJCTM	●			0.625	0.625	-	1.000	4.750	-	0.785		0.625	0.118	1.730	2.560				-
KGBFR 1218JX-16FJCTM		●		mm	12	12	1.5	18	120	20	20	28	12	3	54	-	SB-4070TRW	FT-8	GP-1	HS5X4LP
	1625JX-16FJCTM	●			16	16	-	25		-		40	16		44	65				
	2025JX-16FJCTM	●			20	20							20							-

*1 Dimension CDX shows the distance from the toolholder to the cutting edge. Dimension CDX of Insert shows available grooving depth.
Please see cautions on Page 9 for maximum machining diameter
*2 For available coolant piping parts, see Pages 12-13.

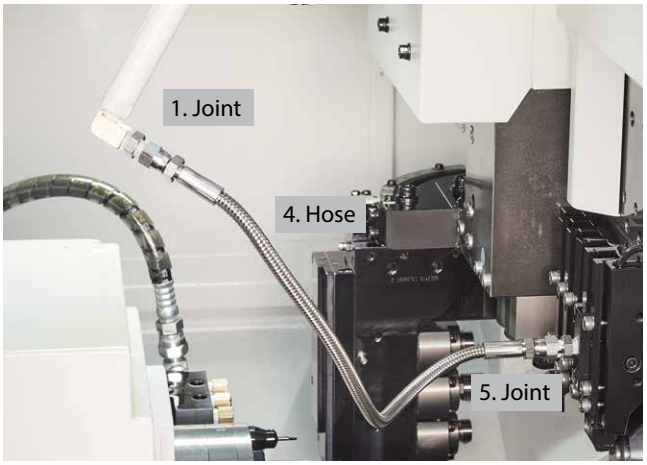
● : Standard Item

Easy Coolant Connections

Pipe parts will be required separately if internal coolant is used

Pump Pressure: up to 2,900 psi
Pump Pressure: up to 1,090 psi if couplers are used

Without Coupler (Pump Pressure: up to 2,900 psi)

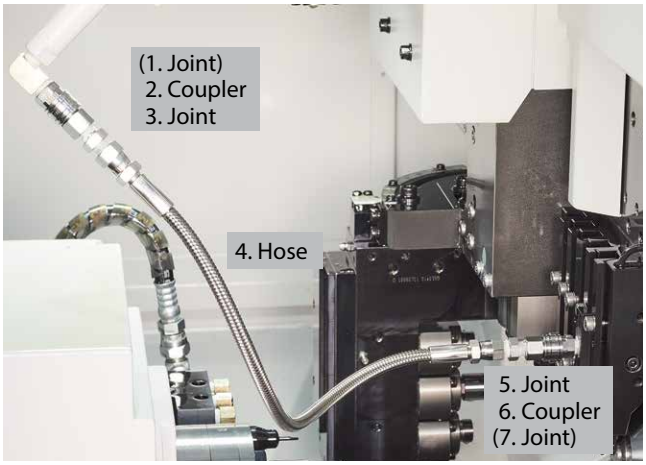


Combination Part Number (Example)

Part	Part Number
1. Joint	J-ST-R1/8-G1/8
4. Hose	HS-G1/8-G1/8-500
5. Joint	J-ST-R1/8-G1/8

Convert the thread standards on the machine's side (Rc1/4, Rc1/8, NPT1/8, etc.) to the thread standard on the hose side (G1/8) for use.
Use sealing agents such as seal tapes when installing piping parts.

With Coupler (Pump Pressure: Up to 1,090 psi)



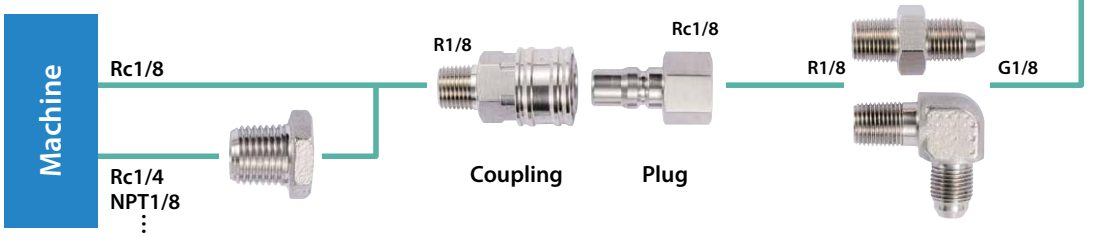
Combination Part Number (Example)

Part	Part Number
(1. Joint)	–
2. Coupler	CP-ST-R1/8, P-ST-RC1/8
3. Joint	J-ST-R1/8-G1/8
4. Hose	HS-G1/8-G1/8-500
5. Joint	J-ST-R1/8-G1/8
6. Coupler	P-ST-RC1/8, CP-ST-R1/8
(7. Joint)	–

Convert the thread standards on the machine's side (Rc1/4, Rc1/8, NPT1/8, etc.) to thread standards of the coupler (Rc1/8, etc.) or hose (G1/8) for use.
Use sealing agents such as seal tapes when installing piping parts.

Without Coupler (Pump Pressure: up to 2,900 psi)

With Coupler (Pump Pressure: up to 1,090 psi)



1. Joint 2. Coupler 3. Joint 4. Hose

Piping Installation Parts Description

Joint (1, 3, 5, 7) Pressure Resistance: up to 2,900 psi

(Unit: mm)

Shape	Part Number	Stock	Ød1	Ød2	L	L1	L2	T1	T2
	J-ST-R1/4-G1/8	●	5.5	4.0	34	13	13	R1/4	G1/8
	J-ST-NPT1/8-G1/8	●	3.5	3.5	29	10	13	NPT1/8	G1/8
	J-ST-R1/8-G1/8	●	4.0	4.0	29	10	13	R1/8	G1/8
	J-AN-R1/8-G1/8	●	4.0	4.0	27	14	13	R1/8	G1/8
	J-ST-R1/4-RC1/8	●	–	–	17	12	–	R1/4	Rc1/8
	J-ST-NPT1/8-RC1/8	●	3.5	–	30	10	–	NPT1/8	Rc1/8
	J-ST-R1/8-RC1/8	●	3.5	–	33	13	–	R1/8	Rc1/8

Coupler (2, 6) Pressure Resistance: up to 1,090 psi (Unit: mm)

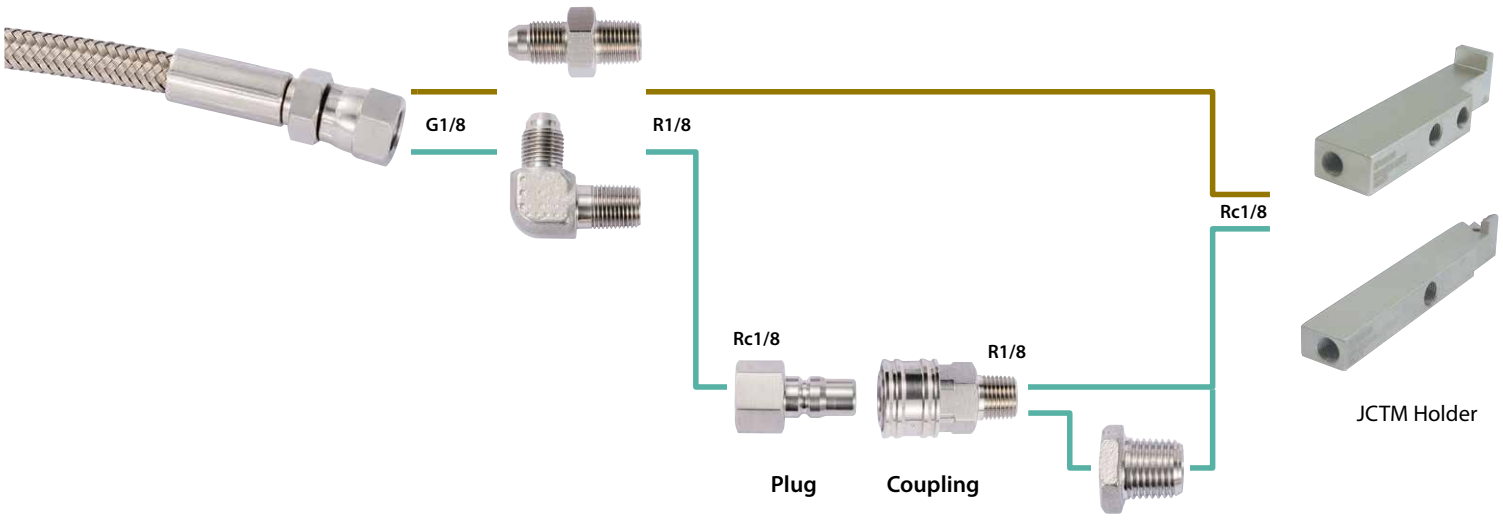
Shape	Part Number	Stock
	CP-ST-R1/8	●
	P-ST-RC1/8	●

Hose (4) Pressure Resistance: up to 2,900 psi

(Unit: mm)

Shape	Part Number	Stock	L
	HS-G1/8-G1/8-200	●	200
	HS-G1/8-G1/8-300	●	300
	HS-G1/8-G1/8-400	●	400
	HS-G1/8-G1/8-500	●	500
	HS-G1/8-G1/8-600	●	600
	HS-G1/8-G1/8-800	●	800

● : Standard Item



4. Hose 5. Joint 6. Coupler 7. Joint (Extension Joint)

Recommended Cutting Conditions ★ 1st Recommendation ☆ 2nd Recommendation

GBF32

Workpiece	Recommended Insert Grade (Cutting Speed Vc: sfm)			**[1]** Grooving Feed Rate (ipr) **[2]** Traversing Feed Rate (ipr) **[3]** Max D.O.C. for Traversing (in)			
	MEGACOAT	MEGACOAT NANO	Carbide				
	PR1215	PR1535	GW15	GBF32R/L 025 ~ 053	GBF32R/L 065 ~ 095	GBF32R/L 041N ~ 058N 100 ~ 145	GBF32R/L 062N ~ 094N 150 ~ 300
Carbon Steel	★ 260 - 590	☆ 230 - 530	-	[1] 0.0004 – 0.0020 [2] Not Recommended [3] Not Recommended	[1] 0.0008 – 0.0028 [2] Not Recommended [3] Not Recommended	[1] 0.0012 – 0.0031 [2] 0.0012 – 0.0024 [3] MAX. 0.0079	[1] 0.0012 – 0.0031 [2] 0.0012 – 0.0024 [3] MAX. 0.0079
Alloy Steel	★ 260 - 590	☆ 230 - 530	-	[1] 0.0004 – 0.0016 [2] Not Recommended [3] Not Recommended	[1] 0.0008 – 0.0024 [2] Not Recommended [3] Not Recommended	[1] 0.0012 – 0.0028 [2] 0.0008 – 0.0020 [3] MAX. 0.0079	[1] 0.0012 – 0.0028 [2] 0.0008 – 0.0020 [3] MAX. 0.0079
Stainless Steel	☆ 200 - 430	★ 160 - 390	-	[1] 0.0004 – 0.0016 [2] Not Recommended [3] Not Recommended	[1] 0.0008 – 0.0024 [2] Not Recommended [3] Not Recommended	[1] 0.0012 – 0.0028 [2] 0.0008 – 0.0020 [3] MAX. 0.0079	[1] 0.0012 – 0.0028 [2] 0.0008 – 0.0020 [3] MAX. 0.0079
Cast Iron	-	-	★ 200 - 330	[1] 0.0004 – 0.0020 [2] Not Recommended [3] Not Recommended	[1] 0.0008 – 0.0028 [2] Not Recommended [3] Not Recommended	[1] 0.0012 – 0.0031 [2] 0.0012 – 0.0024 [3] MAX. 0.0079	[1] 0.0012 – 0.0031 [2] 0.0012 – 0.0024 [3] MAX. 0.0079
Aluminum Alloy	-	-	★ 490 - 1,310	[1] 0.0004 – 0.0020 [2] Not Recommended [3] Not Recommended	[1] 0.0008 – 0.0028 [2] Not Recommended [3] Not Recommended	[1] 0.0012 – 0.0031 [2] 0.0012 – 0.0024 [3] MAX. 0.0079	[1] 0.0012 – 0.0031 [2] 0.0012 – 0.0024 [3] MAX. 0.0079
Brass	-	-	★ 490 - 980	[1] 0.0004 – 0.0016 [2] Not Recommended [3] Not Recommended	[1] 0.0008 – 0.0028 [2] Not Recommended [3] Not Recommended	[1] 0.0012 – 0.0028 [2] 0.0008 – 0.0020 [3] MAX. 0.0079	[1] 0.0012 – 0.0028 [2] 0.0008 – 0.0020 [3] MAX. 0.0079

GBF32...-000F (RE = 0.000)

Workpiece	Recommended Insert Grade (Cutting Speed Vc: sfm)			**[1]** Grooving Feed Rate (ipr) **[2]** Traversing Feed Rate (ipr) **[3]** Max D.O.C. for Traversing (in)			
	MEGACOAT	MEGACOAT NANO	Carbide				
	PR1215	PR1535	GW15	GBF32R/L 025 ~ 053 (-000F)	GBF32R/L 065 ~ 095 (-000F)	GBF32R/L 100 ~ 145 (-000F)	GBF32R/L 150 ~ 200 (-000F)
Carbon Steel	★ 260 - 590	☆ 230 - 530	-	[1] 0.0002 – 0.0012 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0016 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0020 [2] 0.0004 – 0.0016 [3] MAX. 0.0079	[1] 0.0004 – 0.0020 [2] 0.0004 – 0.0016 [3] MAX. 0.0079
Alloy Steel	★ 260 - 590	☆ 230 - 530	-	[1] 0.0002 – 0.0010 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0012 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0016 [2] 0.0004 – 0.0012 [3] MAX. 0.0079	[1] 0.0004 – 0.0016 [2] 0.0004 – 0.0012 [3] MAX. 0.0079
Stainless Steel	☆ 200 - 430	★ 160 - 390	-	[1] 0.0002 – 0.0008 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0010 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0012 [2] 0.0004 – 0.0010 [3] MAX. 0.0079	[1] 0.0004 – 0.0012 [2] 0.0004 – 0.0010 [3] MAX. 0.0079
Cast Iron	-	-	★ 200 - 330	[1] 0.0002 – 0.0012 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0016 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0020 [2] 0.0004 – 0.0016 [3] MAX. 0.0079	[1] 0.0004 – 0.0020 [2] 0.0004 – 0.0016 [3] MAX. 0.0079
Aluminum Alloy	-	-	★ 490 - 1,310	[1] 0.0002 – 0.0012 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0016 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0020 [2] 0.0004 – 0.0016 [3] MAX. 0.0079	[1] 0.0004 – 0.0020 [2] 0.0004 – 0.0016 [3] MAX. 0.0079
Brass	-	-	★ 490 - 980	[1] 0.0004 – 0.0012 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0016 [2] Not Recommended [3] Not Recommended	[1] 0.0004 – 0.0020 [2] 0.0004 – 0.0016 [3] MAX. 0.0079	[1] 0.0004 – 0.0020 [2] 0.0004 – 0.0016 [3] MAX. 0.0079

Recommended Cutting Conditions ★ 1st Recommendation ☆ 2nd Recommendation

GBF32-GL

Workpiece	Recommended Insert Grade (Cutting Speed Vc: sfm)		[1] Grooving Feed Rate (ipr) [2] Traversing Feed Rate (ipr) [3] Max D.O.C. for Traversing (in)			
	MEGACOAT	MEGACOAT NANO				
	PR1215	PR1535	GBF32R 075 (GL)	GBF32R 095 – 100 (GL)	GBF32R 150 – 200 (GL)	GBF32R 300 (GL)
Carbon Steel	★ 260 - 590	☆ 230 - 530	[1] 0.0008 – 0.0028 [2] Not Recommended [3] Not Recommended	[1] 0.0012 – 0.0031 [2] 0.0012 – 0.0024 [3] MAX. 0.0079	[1] 0.0012 – 0.0031 [2] 0.0012 – 0.0024 [3] MAX. 0.0079	[1] 0.0016 – 0.0039 [2] 0.0016 – 0.0031 [3] MAX. 0.0197
Alloy Steel	★ 260 - 590	☆ 230 - 530	[1] 0.0008 – 0.0024 [2] Not Recommended [3] Not Recommended	[1] 0.0012 – 0.0028 [2] 0.0012 – 0.0024 [3] MAX. 0.0079	[1] 0.0012 – 0.0028 [2] 0.0012 – 0.0024 [3] MAX. 0.0079	[1] 0.0016 – 0.0035 [2] 0.0016 – 0.0031 [3] MAX. 0.0197
Stainless Steel	☆ 200 - 430	★ 160 - 390	[1] 0.0008 – 0.0024 [2] Not Recommended [3] Not Recommended	[1] 0.0012 – 0.0028 [2] 0.0012 – 0.0024 [3] MAX. 0.0079	[1] 0.0012 – 0.0028 [2] 0.0012 – 0.0024 [3] MAX. 0.0079	[1] 0.0016 – 0.0035 [2] 0.0016 – 0.0031 [3] MAX. 0.0197

GBA32 (PCD)

Workpiece	Recommended Insert Grade (Cutting Speed Vc: sfm)	[1] Grooving Feed Rate (ipr) [2] Traversing Feed Rate (ipr) [3] Max D.O.C. for Traversing (in)
	PCD	
	KPD001 (KPD010)	GBF32R 095 – 100 (-010)
Aluminum Alloy	★ 490 - 6,560	[1] 0.0020 – 0.0059 [2] 0.0020 – 0.0059 [3] MAX. 0.0197
Brass	★ 660 - 2,620	[1] 0.0020 – 0.0059 [2] 0.0020 – 0.0059 [3] MAX. 0.0197

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