



# GBA

Grooving with 3 Cutting Edges



Smooth Chip Evacuation with Molded Chipbreaker

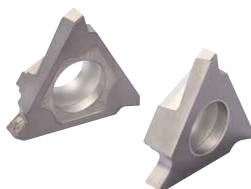
Large Lineup of Chipbreakers and Insert Grades

Smooth Chip Control with GM Chipbreaker



NEW

Hybrid Cermet  
TN620



# GBA Grooving with 3 Cutting Edges

Smooth Chip Control with Molded Chipbreakers Along with Excellent Surface Finish

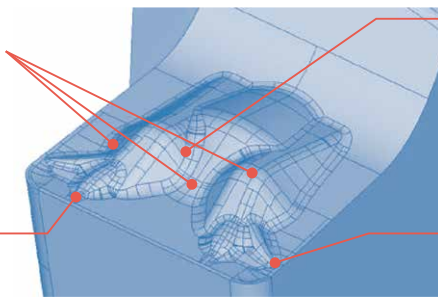
## 1 Smooth Chip Control with GM Chipbreaker

Smooth Chip Control Due to Bump Placement on the Chipbreaker  
Groove Widths from 1.4 mm

### Multi-Bump Design

Center Bump and Dent Squeezes to Better Control the Chips

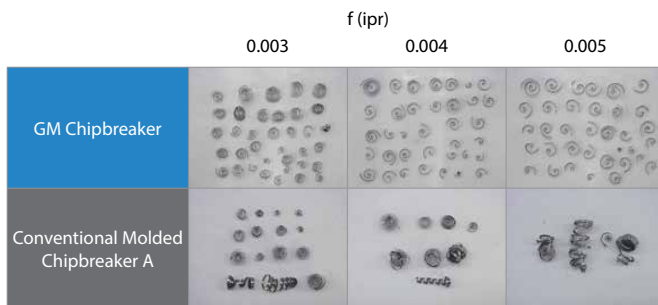
Front Bump: Stabilizes Chip Flow at Low Feed Rates



Helps Modify Chip Shape

Stable Chip Control During Shouldering and Chamfering

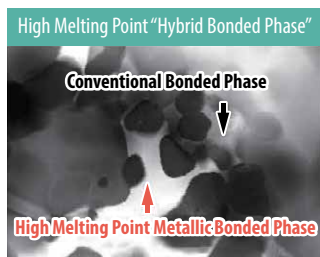
Chip Control Comparison (Internal Evaluation)



Cutting Conditions :  $V_c = 660$  sfm, Edge Width 2.0 mm, Grooving Workpiece : 5120 (01.575")

## 2 Large Lineup of Newly Introduced Hybrid Cermet Grade TN620

Excellent Surface Finish with Sharp Edge Inserts (Ground Chipbreaker)



Combining the conventional cermet bonded phase (nickel, cobalt) and the special high melting point metallic bonded phase, provides high adhesion resistance to eliminate galling of the workpiece.

# GBA Inserts (Inch Size)

Part Number	A	T	Ød	Usage Classification	
				● : Light Interruption / 1st Choice	○ : Light Interruption / 2nd Choice
GBA32_	0.375	0.125	0.173	P	Carbon Steel / Alloy Steel
GBA43_	0.500	0.187	0.217	M	Stainless Steel
GBA43 ¾ 480	0.500	0.197	0.217	K	Cast Iron
				N	Non-ferrous Metals
				S	Titanium Alloy
				H	Hard Materials (≤40HRC)
					Hard Materials (≥40HRC)

Insert Right-handed Insert Shown	Part Number	Dimensions (in)			MEGACOAT Cermets	MEGACOAT	Applicable Toolholders	
		W	B	re	PV7040	PR1215		
	<b>GBA32 ¾</b>	<b>031N</b>	0.031	0.079	0.002	○	●	KGBA ¾ ...-3 KGBA ¾ ...-16 KGBAS ¾ ...-3 KGBAS ¾ ...-16
	<b>041N</b>	0.041	0.079	0.002	●	●		
	<b>047N</b>	0.047	0.079	0.008	○	●		
	<b>058N</b>	0.058	0.079	0.008	●	●		
	<b>062N</b>	0.062	0.079	0.008	●	Ⓡ		
	<b>078N</b>	0.078	0.098	0.008	●	Ⓡ		
	<b>094N</b>	0.094	0.098	0.008	○	●	KGBA ¾ ...-4-15 KGBA ¾ ...-22-15 KGBAS ¾ ...-4-15 KGBAS ¾ ...-22-15	
	<b>GBA43 ¾</b>	<b>031N</b>	0.031	0.079	0.008	Ⓡ		●
	<b>047N</b>	0.047	0.079	0.008	○	●		
	<b>062N</b>	0.062	0.138	0.008	●	●		
	<b>072N</b>	0.072	0.138	0.008	○	Ⓡ		
	<b>078N</b>	0.078	0.138	0.008	○	●		
	<b>088N</b>	0.088	0.138	0.008	●	●	KGBA ¾ ...-4-25 KGBA ¾ ...-22-25 KGBA ¾ ...-4-25T KGBA ¾ ...-22-25T5 KGBAS ¾ ...-4-25 KGBAS ¾ ...-22-25 KGBAS ¾ ...-22-25T5	
	<b>094N</b>	0.094	0.157	0.012	●	●		
	<b>097N</b>	0.097	0.157	0.012	●	●		
	<b>105N</b>	0.105	0.157	0.012	○	Ⓡ		
	<b>109N</b>	0.109	0.157	0.012		○		
	<b>110N</b>	0.110	0.157	0.012	Ⓡ	○		
	<b>125N</b>	0.125	0.157	0.012	○	●	KGBA ¾ ...-4-35 KGBA ¾ ...-22-35 KGBAS ¾ ...-4-35 KGBAS ¾ ...-22-35	
	<b>141N</b>	0.141	0.197	0.012		●		
<b>142N</b>	0.142	0.197	0.012	○	●			
<b>156N</b>	0.156	0.197	0.016	○	●			
<b>172N</b>	0.172	0.197	0.016		●			
<b>178N</b>	0.178	0.197	0.016	○	●			
<b>188N</b>	0.188	0.197	0.016		Ⓡ			

Dimension B shows available grooving depth

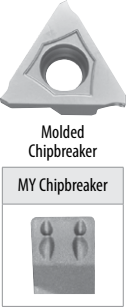
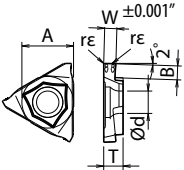
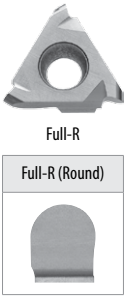
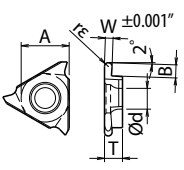
● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) ● : U.S. Stock (L-hand Only) ○ : World Express (Shipping: 7-10 Business Days)

Inserts sold in 5 piece boxes

## Rake Angle (α) After Installment of GBA (External Grooving Toolholders)

GBA32 ¾ ○ ○ ○ N		GBA43 ¾ ○ ○ ○ N	
α	Insert Grade	α	Insert Grade
10°	PV7040, PR1215	10°	PV7040, PR1215

# GBA Inserts (Inch Size)

Part Number	A	T	Ød (in)	P	Carbon Steel / Alloy Steel	●	Usage Classification ● : Light Interruption / 1st Choice ○ : Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice	
				M	Stainless Steel	●		
				K	Cast Iron			
				N	Non-ferrous Metals			
				S	Titanium Alloy	●		
				H	Hard Materials (≤40HRC) Hard Materials (≥40HRC)	●		
Insert		Part Number		Dimensions (in)			MEGACOAT	Applicable Toolholders
Right-handed Insert Shown				W	B	re	PR1215	
 <p>Molded Chipbreaker MY Chipbreaker</p>		<b>GBA43%</b> 078MYN	0.078	0.138	0.008	●	KGBA% ...4-15 KGBA% ...22-15 KGBAS% ...4-15 KGBAS% ...22-15	
		094MYN	0.094	0.157	0.012	●	KGBA% ...4-25 KGBA% ...22-25 KGBA% ...4-25T KGBA% ...22-25T5 KGBAS% ...4-25 KGBAS% ...22-25 KGBAS% ...22-25T5	
		125MYN	0.125	0.157	0.012	●	KGBA% ...4-35 KGBA% ...22-35 KGBAS% ...4-35 KGBAS% ...22-35	
		156MYN	0.156	0.197	0.016	●	KGBA% ...4-15 KGBA% ...22-15 KGBAS% ...4-15 KGBAS% ...22-15	
 <p>Full-R Full-R (Round)</p>		<b>GBA32R</b> 031R	0.062	0.079	0.031	●	KGBA% ...-3 KGBA% ...-16 KGBAS% ...-3 KGBAS% ...-16	
		047R	0.094	0.098	0.047	●	KGBA% ...4-15 KGBA% ...22-15 KGBAS% ...4-15 KGBAS% ...22-15	
		<b>GBA43%</b> 031R	0.062	0.138	0.031	●	KGBA% ...4-25 KGBA% ...22-25 KGBA% ...4-25T KGBA% ...22-25T5 KGBAS% ...4-25 KGBAS% ...22-25 KGBAS% ...22-25T5	
		047R	0.094	0.157	0.047	●	KGBA% ...4-35 KGBA% ...22-35 KGBAS% ...4-35 KGBAS% ...22-35	
		062R	0.125	0.157	0.062	●	KGBA% ...4-15 KGBA% ...22-15 KGBAS% ...4-15 KGBAS% ...22-15	
		078R	0.156	0.197	0.078	○	KGBA% ...4-35 KGBA% ...22-35 KGBAS% ...4-35 KGBAS% ...22-35	
094R	0.188	0.197	0.094	○				

Dimension B shows available grooving depth

● : U.S. Stock ● : U.S. Stock (R-hand Only) ○ : World Express (Shipping: 7-10 Business Days)

Inserts sold in 5 piece boxes

## Rake Angle (α) After Installment of GBA-MY (External Grooving Toolholders)

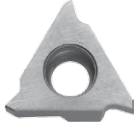
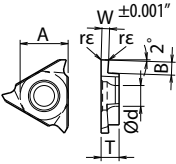
α	Insert Part Number
15°	GBA43% 078MYN }
	GBA43% 125MYN
14°	GBA43% 156MYN

α shows the rake angle at the center of the edge width after installing insert

## Rake Angle (α) After Installment of GBA-R (External Grooving Toolholders)

GBA43%○○○R (Full-R)		
	Insert Grade	Full-R Part Number
10°	PV7040, PR1215	031R ~ 062R
14°	PV7040, PR1215	078R ~ 094R

# GBA Inserts (Metric Size)

Part Number	A	T	Ød	Material		Usage Classification													
				P	Carbon Steel / Alloy Steel	●	○	●	○	○	○	○	○	○	○				
				M	Stainless Steel	○	○	●	○	○	○	○	○	○	○				
(mm)				K	Cast Iron	○	○	○	○	○	○	○	○	○	○				
				N	Non-ferrous Metals	○	○	○	○	○	○	○	○	○	○	○			
				S	Titanium Alloy	○	○	○	○	○	○	○	○	○	○	○			
				H	Hard Materials (≤40HRC)	○	○	○	○	○	○	○	○	○	○	○			
					Hard Materials (≥40HRC)	○	○	○	○	○	○	○	○	○	○	○			
Insert Right-handed Insert Shown	Part Number	Previous Part Number	Dimensions (mm)			Applicable Toolholders													
			W	B	re	MEGA COAT Cermet	Cermet	MEGA COAT	PVD Coated Carbide			Carbide							
						PV7040	TC40	TN90	PR1215	PR1115	PR905	PR930	KW10						
 	<b>GBA32%</b> 033-005 *1	-	0.33	0.8	0.05														
	050-005 *2*3	<b>GBA32%</b> 050 *2	0.50	1.0															
	075-005	<b>GBA32%</b> 075	0.75	1.2															
	095-005	<b>095</b>	0.95																
	100-005	<b>100</b>	1.00																
	110-005	<b>110</b>	1.10	2.0															
	120-005	<b>120</b>	1.20																
	125-020	<b>125</b>	1.25																
	130-020	<b>130</b>	1.30																
	140-020	<b>140</b>	1.40	2.5															
	145-020 *3	<b>145</b>	1.45	2.0															
		-	-	2.5															
	150-020 *3	<b>GBA32%</b> 150	1.50	2.0															
		-	-	2.5															
	160-020	<b>GBA32%</b> 160	1.60	2.5	0.2														
	170-020	<b>170</b>	1.70																
	175-020 *3	<b>GBA32%</b> 175	1.75	2.0															
		-	-	2.5															
	200-020	<b>GBA32%</b> 200	2.00																
	225-020	<b>225</b>	2.25	2.5															
	250-020	<b>250</b>	2.50																
	300-020	<b>300</b>	3.00																
	<b>GBA43%</b> 125-010	-	-	0.1	2.0														
	125-020	<b>GBA43%</b> 125	1.25																
	140-020	<b>140</b>	1.40	3.5	0.2														
	145-020 *3	<b>145</b>	1.45	2.0															
		-	-	3.5															
	150-010	-	-	0.1	1.50														
	150-020	<b>GBA43%</b> 150	1.50																
	170-020	<b>170</b>	1.70																
	175-020	<b>175</b>	1.75	0.2															
	185-020	<b>185</b>	1.85																
	195-020	<b>195</b>	1.95	3.5															
	200-010	-	-	0.1	2.00														
	200-020	<b>GBA43%</b> 200	2.00																
	225-020	<b>225</b>	2.25	0.2															
	230-020	<b>230</b>	2.30																
	250-010	-	-	0.1	5.0													★1	
	250-030 *3	<b>GBA43%</b> 250	2.50	4.0														★2	
		-	-	5.0														★1	
	265-030 *3	<b>GBA43%</b> 265	2.65	4.0	0.3													★2	
		-	-	5.0														★1	
	280-030 *3	<b>GBA43%</b> 280	2.80	4.0														★2	
		-	-	5.0														★1	
	300-010	-	-	0.1	5.0													★1	
	300-030 *3	<b>GBA43%</b> 300	3.00	4.0														★2	
		-	-	5.0														★1	
	325-030	<b>GBA43%</b> 325	3.25	5.0	0.3													★2	
330-030 *3	<b>330</b>	3.30	4.0														★2		
	-	-	5.0														★1		
350-010	-	-	0.1	3.50															
350-030	<b>GBA43%</b> 350	3.50																	
400-010	-	-	0.1	4.00															
400-040	<b>GBA43%</b> 400	4.00																	
430-040	<b>430</b>	4.30	0.4																
450-040	<b>450</b>	4.50																	
480-040	<b>480</b>	4.80																	

Dimension B shows available grooving depth

● : U.S. Stock    Ⓡ : U.S. Stock (R-hand Only)    Ⓛ : U.S. Stock (L-hand Only)



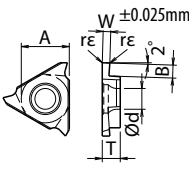
○ : World Express (Shipping: 7-10 Business Days)    Ⓡ : World Express (R-hand Only)    Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes

\*1: The edge width tolerance of GBA32% 033-005 : 0.33 <sup>+0.02mm</sup>/<sub>-0.03mm</sub>  
 \*2: The edge width tolerance of GBA32% 050-005 : 0.50 <sup>+0.05mm</sup>/<sub>-0.05mm</sub>  
 \*3: Available grooving depth is different based on grade

★1: KGBA% ...4-25T, KGBA% ...22-25T5, KGBAS% ...22-25T5, KIGBA% ...4, KIGBA% ...22  
 ★2: KGBA% ...4-25T, KGBA% ...22-25T5, KGBAS% ...22-25T5, KGBA% ...4-25, KGBA% ...22-25, KGBAS% ...4-25, KGBAS% ...22-25, KIGBA% ...4, KIGBA% ...22

# GBA Inserts (Metric Size)

Part Number	A	T	Ød	(mm)	P	Carbon Steel / Alloy Steel	●	○	●	⊙	⊙	Usage Classification ● : Light Interruption / 1st Choice ⊙ : Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice
					M	Stainless Steel			●	●	⊙	
					K	Cast Iron						
					N	Non-ferrous Metals						
					S	Titanium Alloy						
					H	Hard Materials (≤40HRC)			●	○	○	
						Hard Materials (≥40HRC)						
Insert Right-handed Insert Shown	Part Number	Dimensions (mm)			Cermet		MEGA COAT		PVD Coated Carbide		Applicable Toolholders	
		W	B	re	TN620	TN6020	PR1215	PR1115	PR930			
  	<b>GBA32%</b>	<b>050-005F</b> *1	0.50	1.0	0.05	○					KGBA% ...-3 KGBA% ...-16 KGBAS% ...-3 KGBAS% ...-16 KIGBA% ...-3 (Internal) KIGBA% ...-16 (Internal)	
		<b>075-005F</b>	0.75	2.0		○						
		<b>095-005F</b>	0.95			○						
		<b>100-005F</b>	1.00			○						
		<b>125-020F</b>	1.25	0.2	2.0	○						
		<b>145-020F</b>	1.45			○						
		<b>150-020F</b>	1.50			○						
		<b>175-020F</b>	1.75			○						
		<b>200-020F</b>	2.00			○						
		<b>250-020F</b>	2.50			○						
		<b>GBA43%</b>	<b>125-020F</b>	1.25	0.2	2.0	○					KGBA% ...-4-15 KGBA% ...-22-15 KGBAS% ...-4-15 KGBAS% ...-22-15 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)
		<b>145-020F</b>	1.45	○								
		<b>150-020F</b>	1.50	○								
		<b>175-020F</b>	1.75	○								
		<b>185-020F</b>	1.85	3.5			○					
		<b>200-020F</b>	2.00				○					
		<b>230-020F</b>	2.30	0.3	4.0	○				KGBA% ...-4-25T KGBA% ...-22-25T5 KGBAS% ...-22-25T5 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)		
		<b>250-030F</b>	2.50			○						
		<b>265-030F</b>	2.65			○						
		<b>280-030F</b>	2.80			○						
		<b>300-030F</b>	3.00			○						
		<b>330-030F</b>	3.30			○						
		<b>350-030F</b>	3.50	0.4	5.0	○				KGBA% ...-4-35 KGBA% ...-22-35 KGBAS% ...-4-35 KGBAS% ...-22-35 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)		
		<b>400-040F</b>	4.00			Ⓜ						
		<b>430-040F</b>	4.30			Ⓜ						
		<b>450-040F</b>	4.50			Ⓜ						
		<b>480-040F</b>	4.80			Ⓜ						

Dimension B shows available grooving depth


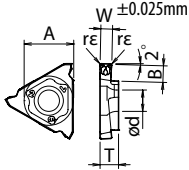
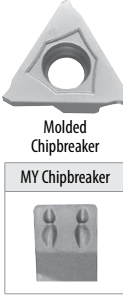
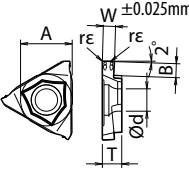
○ : World Express (Shipping: 7-10 Business Days) Ⓜ : World Express (R-hand Only)

\*1 : The edge width tolerance of GBA32% 050-005F : 0.50 <sup>+0.05mm</sup>/<sub>-0.05mm</sub>

Inserts sold in 10 piece boxes

# GBA Inserts (Metric Size)

NEW

Part Number	A	T	Ød	Usage Classification					Applicable Toolholders		
				P	M	K	N	S			
GBA32_	9.525	3.18	4.4	Carbon Steel / Alloy Steel	●	○	●	☺	☺	Usage Classification ● : Light Interruption / 1st Choice ☺ : Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice	
GBA43_	12.70	4.76	5.5	Stainless Steel			●	●	☺		
GBA43% 480	12.70	5.00	5.5	Cast Iron							
				Non-ferrous Metals							
				Titanium Alloy							
				Hard Materials (≤40HRC)			●	○	○		
				Hard Materials (≥40HRC)							
Insert Right-handed Insert Shown	Part Number	Dimensions (mm)			Cermet		MEGA COAT	PVD Coated Carbide			
		W	B	re	TN620	TN6020	PR1215	PR1115	PR930		
		<b>GBA43%</b>	<b>140-010GM</b>	3.5	0.1	○		○			KGBA% ...-4-15 KGBA% ...-22-15 KGBAS% ...-4-15 KGBAS% ...-22-15 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)
			<b>150-020GM</b>			○		●			
			<b>175-020GM</b>			○		○			
			<b>185-020GM</b>			○		○			
			<b>200-020GM</b>			○		Ⓟ			
			<b>230-020GM</b>			○		Ⓛ			
			<b>250-030GM</b>			○		Ⓟ			
			<b>265-030GM</b>			○		○			
			<b>300-030GM</b>			○		○			
			<b>330-030GM</b>			○		○			
		<b>GBA43%</b>	<b>175-020MY</b>	3.5	0.2		○	●	○	○	KGBA% ...-4-15 KGBA% ...-22-15 KGBAS% ...-4-15 KGBAS% ...-22-15 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)
			<b>185-020MY</b>				○	●	○	○	
			<b>200-020MY</b>				Ⓟ	●	Ⓟ	Ⓟ	
			<b>230-020MY</b>				○	○	Ⓛ	○	
			<b>250-030MY</b> <sup>*1</sup>			4.0	Ⓟ				
						5.0		Ⓛ	○	Ⓟ	
			<b>265-030MY</b> <sup>*1</sup>			4.0		●			
						5.0		●	○	○	
			<b>300-030MY</b> <sup>*1</sup>			4.0		○			
						5.0		Ⓟ	○	○	
<b>330-030MY</b> <sup>*1</sup>	4.0		Ⓟ								
	5.0			○	○						
<b>350-030MY</b>	3.5	5.0		○	○	○	○	○	KGBA% ...-4-35 KGBA% ...-22-35 KGBAS% ...-4-35 KGBAS% ...-22-35 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)		
<b>400-040MY</b>	4.0	0.4		○	●	Ⓛ	Ⓟ				

Dimension B shows available grooving depth

● : U.S. Stock Ⓟ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)  
 ○ : World Express (Shipping: 7-10 Business Days) Ⓟ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes

\*1 : Available grooving depth is different based on grade

- ★1: KGBA% ...-4-25T, KGBA% ...-22-25T5, KGBAS% ...-22-25T5, KIGBA% ...-4, KIGBA% ...-22
- ★2: KGBA% ...-4-25T, KGBA% ...-22-25T5, KGBAS% ...-22-25T5, KGBA% ...-4-25, KGBA% ...-22-25, KGBAS% ...-4-25, KGBAS% ...-22-25, KIGBA% ...-4, KIGBA% ...-22

### Rake Angle (α) After Installment of GBA-GM (External Grooving Toolholders)

α	Insert Part Number	α	Insert Part Number
10°	GBA43% 150-020GM	12°	GBA43% 300-030GM GBA43% 400-040GM
15°	GBA43% 175-020GM		
	GBA43% 265-030GM		

α shows the rake angle at the center of the edge width after installing insert

### Rake Angle (α) After Installment of GBA-MY (External Grooving Toolholders)

α	Insert Part Number
15°	GBA43% 175-020MY GBA43% 350-030MY
14°	GBA43% 400-040MY

α shows the rake angle at the center of the edge width after installing insert

# GBA Inserts (Metric Size)

NEW

Part Number	A	T	Ød	Usage Classification		Applicable Toolholders												
				●	⊖	P	M	K	N	S	H	MEGACOAT Cermet	Cermet	MEGA COAT	PVD Coated Carbide	Carbide		
Insert				Dimensions (mm)														
Right-handed Insert Shown				W	B	rε	PV7040	TN620	TN90	PR1215	PR1115	PR905	PR930	KW10				
	<b>GBA32R</b>	<b>200-100R</b>	2.00	2.5	1.00				⊖	⊖					KGBA% ...-3 KGBA% ...-16 KGBAS% ...-3 KGBAS% ...-16 KIGBA% ...-3 (Internal) KIGBA% ...-16 (Internal)			
			<b>300-150R</b>		3.00	1.50				⊖	⊖							
		<b>GBA43%</b>	<b>100-050R</b>	1.00	2.0	0.50	⊖			Ⓡ	Ⓛ	⊖					KGBA% ...-4-15 KGBA% ...-22-15 KGBAS% ...-4-15 KGBAS% ...-22-15 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)	
				<b>150-075R</b>	1.50	3.5	0.75	⊖			⊖	⊖	⊖			Ⓡ		KGBA% ...-4-15 KGBA% ...-22-15 KGBAS% ...-4-15 KGBAS% ...-22-15 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)
				<b>200-100R</b>	2.00		1.00	⊖			Ⓡ	Ⓛ	⊖					
		<b>250-125R</b>	2.50	4.0	1.25					●	⊖	⊖				★1		
	<b>300-150R</b>	3.00	1.50					⊖	Ⓡ	Ⓡ	⊖	⊖	⊖					
	<b>GBA43%</b>	<b>400-200R</b>	4.00	5.0	2.00										KGBA% ...-4-35 KGBA% ...-22-35 KGBAS% ...-4-35 KGBAS% ...-22-35 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)			
			<b>GBA43%</b>	<b>100-050RF</b>	1.00	2.0	0.50				⊖						KGBA% ...-4-15 KGBA% ...-22-15 KGBAS% ...-4-15 KGBAS% ...-22-15 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)	
					<b>150-075RF</b>	1.50	3.5	0.75				⊖						
					<b>200-100RF</b>	2.00		1.00				⊖						
					<b>250-125RF</b>	2.50	4.0	1.25					⊖					
	<b>300-150RF</b>	3.00	1.50					⊖										
	<b>400-200RF</b>	4.00	5.0	2.00										KGBA% ...-4-35 KGBA% ...-22-35 KGBAS% ...-4-35 KGBAS% ...-22-35 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)				

Dimension B shows available grooving depth

● : U.S. Stock ⊖ : U.S. Stock (R-hand Only) ⊕ : U.S. Stock (L-hand Only)

GBA43% ...RF : Sharp Edge Type

⊖ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) ⊕ : World Express (L-hand Only)

Inserts sold in 10 piece boxes

★1: KGBA% ...-4-25T, KGBA% ...-22-25T5, KGBAS% ...-22-25T5, KGBA% ...-4-25, KGBA% ...-22-25, KGBAS% ...-4-25, KGBAS% ...-22-25, KIGBA% ...-4, KIGBA% ...-22

## Rake Angle (α) After Installment of GBA (External Grooving Toolholders)

GBA32%○○○-○○○		GBA43%○○○-○○○		GBA43%○○○-○○○R (Full-R)		
α	Insert Grade	α	Insert Grade	Insert Grade	Full-R Part Number	
10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905 KPD001, KPD010	0°	KBN510, KBN525	10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905	050R ~ 150R
		10°	TN620, TC40N, TN90, PV7040 PR930, PR1115, PR1215, PR905 KPD001, KPD010		TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905	200R
20°	KW10	20°	KW10	KW10	050R ~ 200R	



# GBA Inserts (Metric Size)

Part Number	A	T	Ød	Material				Usage Classification						
				P	M	K	N	S	H	●	○	●	○	
GBA32_	9.525	3.18	4.4	Carbon Steel / Alloy Steel	Stainless Steel									
GBA43_	12.70	4.76	5.5	Cast Iron	Non-ferrous Metals					●				
GBA43% 480	12.70	5.00	5.5	Titanium Alloy	Hard Materials (≤40HRC)					●				
				Hard Materials (≥40HRC)		○	●							

Insert Right-handed Insert Shown	Part Number	Dimensions (mm)			CBN		PCD		Applicable Toolholders
		W	B	rE	KBN510	KBN525	KPD001	KPD010	
<p>GBA32 S = 1.7mm GBA43 S = 1.9mm</p>	<b>GBA32R</b> 125-010	1.25	2.0	0.1				○	KGBA% ...-3 KGBA% ...-16 KGBAS% ...-3 KGBAS% ...-16 KIGBA% ...-3 (Internal) KIGBA% ...-16 (Internal)
	150-010	1.50						○	
	<b>GBA43%</b> 125-010	1.25	2.0	0.1				○	KGBA% ...-4-15 KGBA% ...-22-15 KGBAS% ...-4-15 KGBAS% ...-22-15 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)
	125-020			0.2	○	Ⓛ			
	150-010	1.50	3.5	0.1			○	○	KGBA% ...-4-15 KGBA% ...-22-15 KGBAS% ...-4-15 KGBAS% ...-22-15 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)
	150-020			0.2	●	Ⓢ			
	200-010	2.00	3.5	0.1			●	○	KGBA% ...-4-25 KGBA% ...-22-25 KGBA% ...-4-25T KGBA% ...-22-25T5 KGBAS% ...-4-25 KGBAS% ...-22-25 KGBAS% ...-22-25T5 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)
	200-020			0.2	●	○			
	250-010	2.50	4.0	0.1			○	○	KGBA% ...-4-25 KGBA% ...-22-25 KGBA% ...-4-25T KGBA% ...-22-25T5 KGBAS% ...-4-25 KGBAS% ...-22-25 KGBAS% ...-22-25T5 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)
	250-020			0.2	○	○			
	300-010	3.00	4.0	0.1			○	Ⓢ	KGBA% ...-4-25 KGBA% ...-22-25 KGBA% ...-4-25T KGBA% ...-22-25T5 KGBAS% ...-4-25 KGBAS% ...-22-25 KGBAS% ...-22-25T5 KIGBA% ...-4 (Internal) KIGBA% ...-22 (Internal)
	300-020			0.2		Ⓢ			

Dimension B shows available grooving depth

GBA43% ...RF : Sharp Edge Type

● : U.S. Stock Ⓢ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)

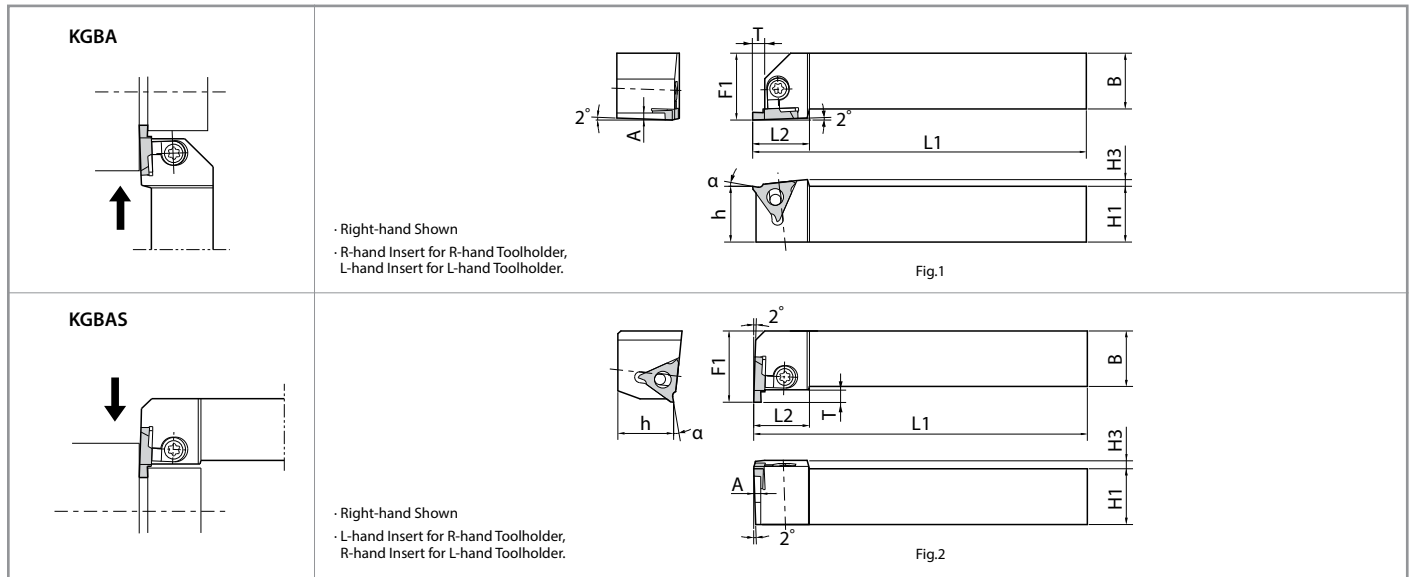
○ : World Express (Shipping: 7-10 Business Days) Ⓢ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes

## Rake Angle (α) After Installment of GBA (External Grooving Toolholders)

GBA32% ○○○-○○○		GBA43% ○○○-○○○		GBA43% ○○○-○○○R (Full-R)	
α	Insert Grade	α	Insert Grade	Insert Grade	Full-R Part Number
10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905 KPD001, KPD010	0°	KBN510, KBN525	10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905
		10°	TN620, TC40N, TN90, PV7040 PR930, PR1115, PR1215, PR905 KPD001, KPD010		14°
20°	KW10	20°	KW10		050R ~ 200R

# KGBA / KGBAS Toolholders



## Toolholder Dimensions

Part Number	Stock		Unit	Dimensions								Drawing	Spare Parts		Applicable Inserts
	R	L		H1=h	H3	B	L1	L2	F1	A	T		Clamp Set	Wrench	
<b>KGBA%</b> 12-3	●	●	inch	0.750	0.160	0.750	5.000	0.945	1.000	-	0.098	Fig.1	LGBA-16% S	FT-15	GBA32%
16-3	●	●		1.000	0.160	1.000	6.000	0.945	1.250	-	0.098				
12-4-15	●	●		0.750	0.160	0.750	5.000	1.004	1.000	0.039	0.157				
16-4-15	●	●		1.000	0.160	1.000	6.000	1.004	1.250	0.039	0.157				
12-4-25	●	●		0.750	0.160	0.750	5.000	1.004	1.000	0.079	0.177				
16-4-25	●	●		1.000	0.160	1.000	6.000	1.004	1.250	0.079	0.217				
<b>KGBA%</b> 2020K-16	●	●	mm	20	4.0	20	125	24	25	-	2.5	Fig.1	LGBA-16% S	FT-15	GBA32%
2525M-16	○	○		25		150	30								
2020K22-15	●	○		20	4.0	20	125	25.5	25	1.0	4.0				
2525M22-15	●	●		25		150	30								
2020K22-25	●	○		20	4.0	20	125	25.5	25	2.0	4.5				
2525M22-25	●	○		25		150	30								
2020K22-25T5	●	○		20	4.0	20	125	25.5	25	2.0	5.5				
2525M22-25T5	○	○		25		150	30								
2020K22-35	○	○		20	4.0	20	125	25.5	25	3.0	5.5				
2525M22-35	○	○		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						
<b>KGBASR</b> 12-3	●		inch	0.750	0.152	0.750	5.000	0.984	0.984	-	0.098	Fig.2	LGBA-16LS	FT-15	GBA32L
16-3	●			1.000	0.172	1.000	6.000	0.984	1.181	-	0.098				
12-4-15	●			0.750	0.160	0.750	5.000	0.984	1.062	0.039	0.157				
16-4-15	●			1.000	0.180	1.000	6.000	0.984	1.260	0.039	0.157				
12-4-25	●			0.750	0.160	0.750	5.000	0.984	1.062	0.079	0.177				
16-4-25	●			1.000	0.197	1.000	6.000	0.984	1.250	0.079	0.177				
<b>KGBAS%</b> 2020K-16	○	○	mm	20	4.0	20	125	25	25	-	2.5	Fig.2	LGBA-16% S	FT-15	GBA32%
2525M-16	○	○		25		150	30								
2020K22-15	○	●		20	4.5	20	125	25	27	1.0	4.0				
2525M22-15	●	○		25		150	32								
2020K22-25	○	○		20	4.5	20	125	25	27	2.0	4.5				
2525M22-25	○	○		25		150	32								
2020K22-25T5	○	○		20	4.5	20	125	25	27	2.0	5.5				
2525M22-25T5	○	○		25		150	32								
2020K22-35	○	○		20	4.5	20	125	25	27	3.0	5.5				
2525M22-35	○	○		25		150	32								

Dimension T shows the distance from the toolholder to the cutting edge. Reference dimension B in applicable insert table for available grooving depth.

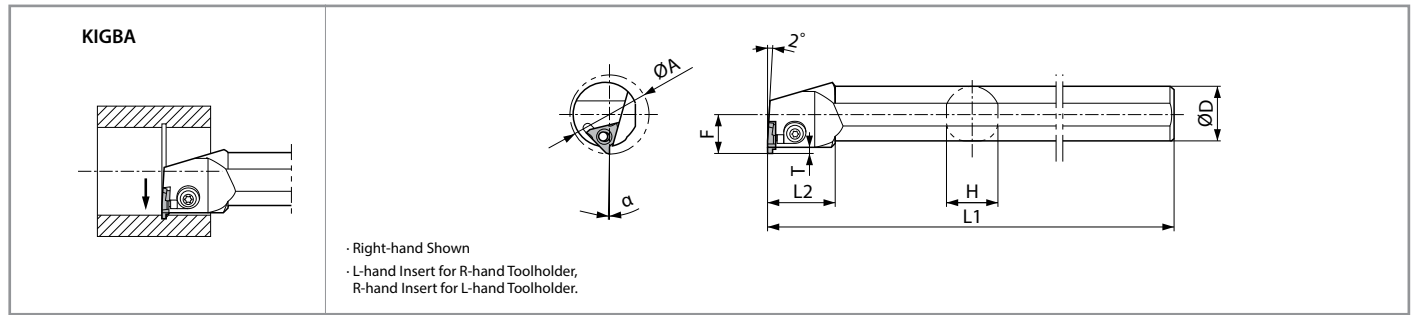
● : U.S. Stock ○ : World Express (Shipping: 7-10 Business Days)

\* Short Shank Type Clamp Set : KGBA% ... LGBA-○○RS for Right-hand Toolholder, and LGBA-○○LS for Left-hand Toolholder.  
KGBAS% ... LGBA-○○LS for Right-hand Toolholder, and LGBA-○○RS for Left-hand Toolholder.

## External Grooving Toolholders KGBA Short Shank Types are Available

For NC lathe, KGBAR2020K-○○ (Overall length 125mm) short shank type KGBAR2020H22-○○ (Overall length 100mm) is available. No longer requires the user to cut the shank portion.

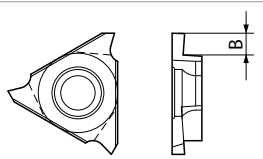
# KIGBA Toolholders



## Toolholder Dimensions

Part Number	Stock		Unit	Min. Bore Dia.	Dimensions						Spare Parts		Applicable Inserts
	R	L			ØA	ØD	H	L1	L2	F	*T	Clamp Set	
KIGBA% 16-3	●	●	inch	1.38	1.00	0.92	9.0	1.18	0.69	0.12	LGBA-16% S	FT-15	GBA32%
	●	●		1.57	1.25	1.18	10.0	1.18	0.90	0.12			LGBA-22% S
KIGBA% 3525-16	○	●	mm	35	25	23	220	30	17.5	2.8	LGBA-16% S	FT-15	GBA32%
	●	●		40	32	30	250	30	23.0	3.0			LGBA-22% S

\* Dimension T shows the distance from the toolholder to the cutting edge.  
Available grooving depth depends on the insert.  
KIGBA% 3525-16 : Dimension B of the applicable insert (GBA32 Type)  
4032-22 : Dimension B of the applicable insert (GBA43 Type)  
① 2.0 mm (Dimension B > 2.8mm)  
② 2.8 mm (Dimension B ≥ 2.8mm)



● : U.S. Stock ○ : World Express (Shipping: 7-10 Business Days)

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

## Rake Angle (α) After Installment of GBA

(External Grooving Toolholders)

GBA32% ○○○-○○○		GBA43% ○○○-○○○		GBA43% ○○○-○○○R (Full-R)		
α	Insert Grade	α	Insert Grade	Insert Grade	Full-R Part Number	
+1°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905 KPD001, KPD010	-9°	KBN510, KBN525	+1°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905	050R ~ 150R
		+1°	TN620, TC40N, TN90, PV7040 PR930, PR1115, PR1215, PR905 KPD001, KPD010		TN620, TN90, PV7040, PR930 PR1115, PR1215, PR905	200R
+11°	KW10	+11°	KW10	KW10	050R ~ 200R	

## Rake Angle (α) After Installment of GBA-GM

(External Grooving Toolholders)

α	Insert Part Number	α	Insert Part Number
+1°	GBA43% 150-020GM	+3°	GBA43% 300-030GM GBA43% 400-040GM
+6°	GBA43% 175-020GM		
	GBA43% 265-030GM		

α shows the rake angle at the center of the edge width after installing insert

## Rake Angle (α) After Installment of GBA-MY

(External Grooving Toolholders)

α	Insert Part Number
+6°	GBA43% 175-020MY
	GBA43% 350-030MY
+5°	GBA43% 400-040MY

α shows the rake angle at the center of the edge width after installing insert

# Recommended Cutting Conditions ★ 1st Recommendation ☆ 2nd Recommendation

## GBA Inserts (Ground Chipbreaker)

Workpiece	Recommended Insert Grades (Cutting Speed Vc : sfm)										(1) f (feed) for Grooving (ipr) (2) f (feed) for Turning (ipr) (3) D.O.C. for Turning (in)					Notes	
	MEGA COAT Cermet	Cermet			MEGA COAT	PVD Coated Carbide			Carbide	CBN	PCD	GBA○○% 031N ~ 041N 033... ~ 100...	GBA○○% 047N ~ 078N 125... ~ 200...	GBA○○% 094N ~ 109N 230... ~ 300...	GBA○○% 125N ~ 156N 330... ~ 400...		GBA○○% 172N ~ 188N 400... ~ 480...
	PI7040	TN620	TC40	TN90	PR1215	PR930	PR1115	PR905	KW10	KBN510 KBN525	KPD001 (KPD010)						
Carbon Steel	☆ 490 - 790	★ 260 - 720	☆ 490 - 720	☆ 490 - 720	★ 260 - 660	☆ 260 - 590	☆ 260 - 590	-	-	-	-	(1) 0.0012 - 0.0031 (2) Not Recommended (3) Not Recommended	(1) 0.0016 - 0.0035 (2) 0.0016 - 0.0035 (3) Max. 0.0118	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0047 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0047 (2) 0.0020 - 0.0039 (3) Max. 0.0315	
Alloy Steel	☆ 430 - 720	★ 260 - 660	☆ 430 - 660	☆ 430 - 660	★ 260 - 520	☆ 260 - 520	☆ 260 - 520	-	-	-	-	(1) 0.0012 - 0.0028 (2) Not Recommended (3) Not Recommended	(1) 0.0016 - 0.0031 (2) 0.0016 - 0.0031 (3) Max. 0.0118	(1) 0.0020 - 0.0035 (2) 0.0020 - 0.0035 (3) Max. 0.0197	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0315	
Stainless Steel	-	-	-	☆ 230 - 490	☆ 200 - 490	☆ 200 - 430	★ 200 - 430	-	-	-	-	(1) 0.0012 - 0.0028 (2) Not Recommended (3) Not Recommended	(1) 0.0016 - 0.0031 (2) 0.0016 - 0.0031 (3) Max. 0.0118	(1) 0.0020 - 0.0035 (2) 0.0020 - 0.0035 (3) Max. 0.0197	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0315	
Cast Iron	-	-	-	-	-	-	-	★ 260 - 590	☆ 200 - 390	★ 490 - 1,310	-	(1) 0.0012 - 0.0031 (2) Not Recommended (3) Not Recommended	(1) 0.0016 - 0.0035 (2) 0.0016 - 0.0035 (3) Max. 0.0118	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0047 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0047 (2) 0.0020 - 0.0039 (3) Max. 0.0315	
Aluminum	-	-	-	-	-	-	-	-	★ 490 - 1,310	-	★ 490 - 6,560	(1) 0.0020 - 0.0047 (2) Not Recommended (3) Not Recommended	(1) 0.0020 - 0.0059 (2) 0.0020 - 0.0059 (3) Max. 0.0197	(1) 0.0020 - 0.0059 (2) 0.0020 - 0.0059 (3) Max. 0.0315	(1) 0.0031 - 0.0059 (2) 0.0031 - 0.0059 (3) Max. 0.0315	(1) 0.0031 - 0.0059 (2) 0.0031 - 0.0059 (3) Max. 0.0315	
Brass	-	-	-	-	-	-	-	-	★ 490 - 980	-	★ 660 - 2,620	(1) 0.0020 - 0.0047 (2) Not Recommended (3) Not Recommended	(1) 0.0020 - 0.0059 (2) 0.0020 - 0.0059 (3) Max. 0.0197	(1) 0.0020 - 0.0059 (2) 0.0020 - 0.0059 (3) Max. 0.0315	(1) 0.0031 - 0.15 (2) 0.0031 - 0.15 (3) Max. 0.0315	(1) 0.0031 - 0.0059 (2) 0.0031 - 0.0059 (3) Max. 0.0315	
Hard materials	-	-	-	-	-	-	-	-	-	★ 260 - 390	-	-	(1) 0.0008 - 0.0020 (2) Not Recommended (3) Not Recommended	(1) 0.0012 - 0.0028 (2) 0.0004 - 0.0016 (3) Max. 0.0039	-	-	

Above cutting conditions are for external grooving. Set both cutting speed and feed rate 10% lower for internal grooving.

## GBA Inserts (GM Chipbreaker)

Workpiece	Recommended Insert Grades (Cutting Speed Vc : sfm)			(1) f (feed) for Grooving (ipr) (2) f (feed) for Turning (ipr) (3) D.O.C. for Turning (in)					Notes
	Cermet		MEGACOAT	GBA43% 140-010GM	GBA43% 150-020GM	GBA43% 175-020GM ~ 230-020GM	GBA43% 250-030GM ~ 350-030GM	GBA43% 400-040GM	
	TN620	PR1215							
Carbon Steel	★ 260 - 720	☆ 260 - 720	(1) 0.0012 - 0.0039 (2) 0.0012 - 0.0031 (3) Max. 0.0079	(1) 0.0012 - 0.0047 (2) 0.0012 - 0.0031 (3) Max. 0.0118	(1) 0.0012 - 0.0047 (2) 0.0012 - 0.0035 (3) Max. 0.0118	(1) 0.0016 - 0.0059 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0059 (2) 0.0020 - 0.0039 (3) Max. 0.0315		
Alloy Steel	★ 260 - 660	☆ 260 - 660	(1) 0.0012 - 0.0039 (2) 0.0012 - 0.0031 (3) Max. 0.0079	(1) 0.0012 - 0.0047 (2) 0.0012 - 0.0031 (3) Max. 0.0118	(1) 0.0012 - 0.0047 (2) 0.0012 - 0.0035 (3) Max. 0.0118	(1) 0.0016 - 0.0059 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0059 (2) 0.0020 - 0.0039 (3) Max. 0.0315		
Stainless Steel	-	★ 200 - 490	(1) 0.0012 - 0.0039 (2) 0.0012 - 0.0031 (3) Max. 0.0079	(1) 0.0012 - 0.0039 (2) 0.0012 - 0.0031 (3) Max. 0.0118	(1) 0.0012 - 0.0039 (2) 0.0012 - 0.0035 (3) Max. 0.0118	(1) 0.0016 - 0.0047 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0016 - 0.0047 (2) 0.0020 - 0.0039 (3) Max. 0.0315		

Above cutting conditions are for external grooving. Set both cutting speed and feed rate 20% lower for internal grooving.

## GBA Inserts (MY Chipbreaker)

Workpiece	Recommended Insert Grades (Cutting Speed Vc : sfm)								(1) f (feed) for Grooving (ipr) (2) f (feed) for Turning (ipr) (3) D.O.C. for Turning (in)					Notes
	Cermet		MEGA COAT	PVD Coated Carbide		Carbide	CBN	PCD	GBA43% 175-020MY ~ 200-020MY	GBA43% 230-020MY ~ 265-030MY	GBA43% 300-030MY	GBA43% 330-030MY ~ 350-030MY	GBA43% 400-040MY	
	TN6020	TC40	PR1215	PR930	PR1115	KW10	KBN510	KPD001 (KPD010)						
Carbon Steel	☆ 490 - 720	-	★ 260 - 660	☆ 260 - 660	☆ 260 - 660	-	-	-	(1) 0.0012 - 0.0031 (2) 0.0012 - 0.0031 (3) Max. 0.0118	(1) 0.04 - 0.0035 (2) 0.04 - 0.0035 (3) Max. 0.0118	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0047 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0047 (2) 0.0020 - 0.0039 (3) Max. 0.0315	
Alloy Steel	☆ 430 - 660	-	★ 260 - 590	☆ 260 - 590	☆ 260 - 590	-	-	-	(1) 0.0012 - 0.0028 (2) 0.0012 - 0.0039 (3) Max. 0.0118	(1) 0.04 - 0.0031 (2) 0.04 - 0.0031 (3) Max. 0.0118	(1) 0.0020 - 0.0035 (2) 0.0020 - 0.0035 (3) Max. 0.0197	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0315	
Stainless Steel	☆ 230 - 490	-	☆ 200 - 490	☆ 200 - 490	★ 200 - 490	-	-	-	(1) 0.0012 - 0.0028 (2) 0.0012 - 0.0039 (3) Max. 0.0118	(1) 0.04 - 0.0031 (2) 0.04 - 0.0031 (3) Max. 0.0118	(1) 0.0020 - 0.0035 (2) 0.0020 - 0.0035 (3) Max. 0.0197	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0197	(1) 0.0020 - 0.0039 (2) 0.0020 - 0.0039 (3) Max. 0.0315	

Above cutting conditions are for external grooving. Set both cutting speed and feed rate 20% lower for internal grooving.



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