



GBA

Grooving System with 3 Cutting Edges



Smooth Chip Evacuation with Molded Chipbreaker

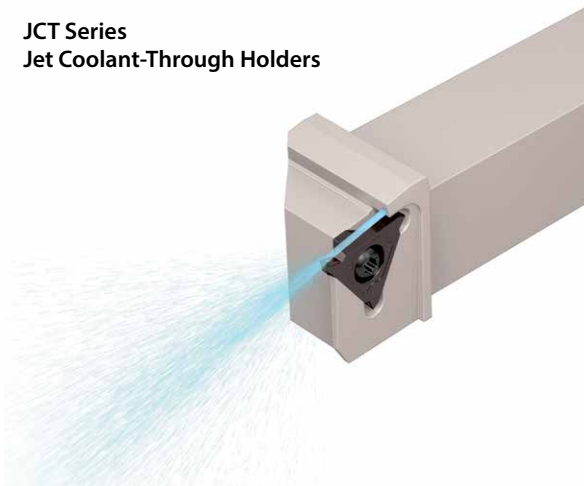
Large Lineup of Chipbreakers and Insert Grades

Smooth Chip Control with GM Chipbreaker

New PR1625 Insert Grade for Stable Machining



JCT Series
Jet Coolant-Through Holders



GBA Grooving System with 3 Cutting Edges

Smooth Chip Control with Molded Chipbreakers Along with Excellent Surface Finish
Stable Machining with PR1625 Insert Grades

1 Multiple Insert Grades Cover a Wide Variety of Applications

Recommended Insert Grades for Steel

General Purpose: PR1215

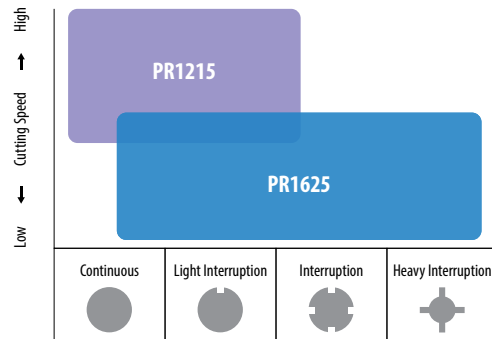
Surface Finish Oriented: TN620

Stable Machining Oriented: PR1625

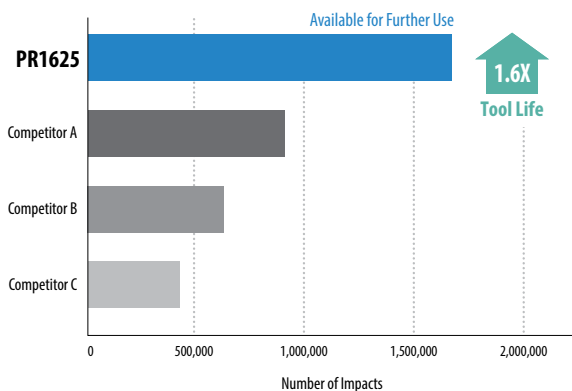


PR1625

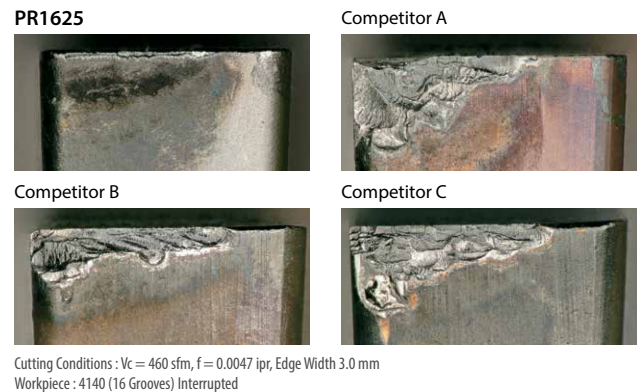
The new PR1625 has high hardness and toughness with a highly stable carbide base material and MEGACOAT NANO coating technology for excellent welding resistance



Fracture Resistance Comparison (Internal Evaluation)



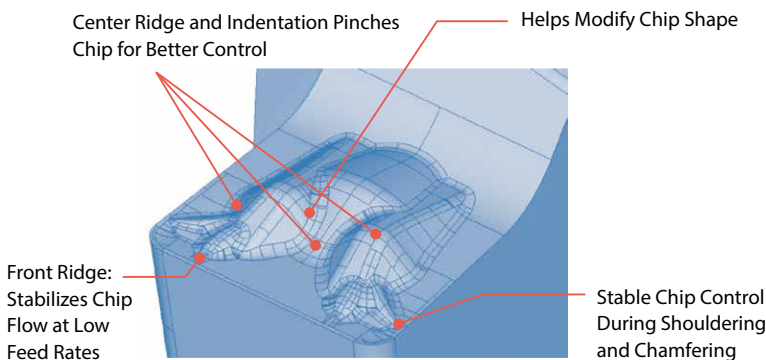
Wear Resistance Comparison (Internal Evaluation)



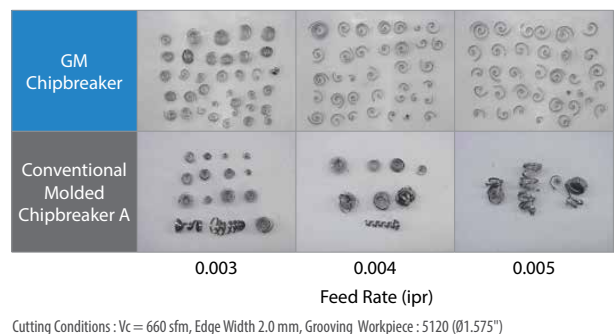
2 Smooth Chip Control with GM Chipbreaker

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

Multi-Bump Design



Chip Control Comparison (Internal Evaluation)



GBA Inserts (Inch Size)

Part Number	IC	S	D1	(in)		P	M	K	N	S	H	MEGACOAT Cermet		MEGA COAT		Classification of Usage	
				CW	CDX							RE	PV7040	PRT215	R		L
GBA32_	3/8	1/8	0.173														Classification of Usage ● : Light Interruption / 1st Choice ○ : Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice
GBA43_	1/2	3/16	0.217														
Insert Right-handed Insert Shown		Part Number		Unit	Dimensions (in)			MEGACOAT Cermet		MEGA COAT		Applicable Toolholders					
					CW	CDX	RE	PV7040	PRT215	R		L					
										R	L	R	L				
		GBA32% 031N		inch	0.031	0.079	0.002	●	●	●	●	KGBA%...-3 KGBA%...-16 (JCT) KGBAS%...-3 KGBAS%...-16 KIGBA%...-3 (Internal) KIGBA%...-16 (Internal)					
		041N			0.041	0.079	0.002	●	●		●						
		047N			0.047	0.079	0.008	●	●	●							
		058N			0.058	0.079	0.008	●	●		●						
		062N			0.062	0.079	0.008	●	●	●							
		078N			0.078	0.098	0.008	●	●	●	●						
		094N			0.094	0.098	0.008	●	●	●	●						
		GBA43% 031N *1		inch	0.031	0.079	0.002 0.008	●	●	●	●	KGBA%...-4-15 KGBA%...-22-15 (JCT) KGBAS%...-4-15 KGBAS%...-22-15 KIGBA%...-4 (Internal) KIGBA%...-22 (Internal)					
		047N			0.047	0.079	0.008	●	●	●							
		062N			0.062	0.138	0.008	●	●	●	●						
		072N			0.072	0.138	0.008		●	●	●						
		078N			0.078	0.138	0.008	●	●	●	●						
		088N			0.088	0.138	0.008	●	●	●	●						
		094N			0.094	0.157	0.012	●	●	●	●						
		097N			0.097	0.157	0.012	●	●		●						
		105N			0.105	0.157	0.012	●	●	●	●						
		109N			0.109	0.157	0.012			●	●						
		110N			0.110	0.157	0.012	●	●	●	●						
		125N			0.125	0.157	0.012	●	●	●	●						
		141N			0.141	0.197	0.012			●	●						
142N		0.142	0.197		0.012		●	●	●								
156N		0.156	0.197		0.016	●	●	●	●								
172N		0.172	0.197		0.016			●	●								
178N		0.178	0.197		0.016	●	●	●	●								
188N		0.188	0.197		0.016				●								

Dimension CDX shows available grooving depth


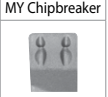
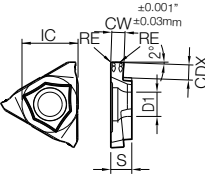
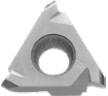
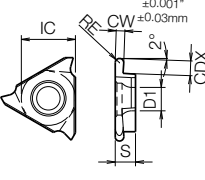

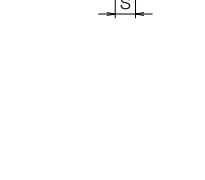
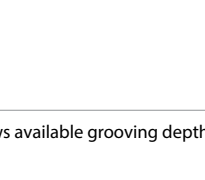
*1 : Corner Radius (RE) for GBA43% 031N is different based on the grade

● : Standard Item

Recommended Cutting Conditions P15


Inserts sold in 5 piece boxes

GBA Inserts (Inch Size)

Part Number	IC	S	D1	Classification of Usage		MEGACOAT Cermet	MEGA COAT		Applicable Toolholders										
				P	M		PV7040	PR1215											
				Unit	Dimensions (in)														
				Unit	CW	CDX	RE												
								R	L		R	L							
GBA [®] 32_	3/8	1/8	0.173	inch	0.078	0.138	0.008			KGBA [®] ...-4-15 KGBA [®] ...-22-15 (JCT) KGBAS [®] ...-4-15 KGBAS [®] ...-22-15 KIGBA [®] ...-4 (Internal) KIGBA [®] ...-22 (Internal)									
GBA [®] 43_	1/2	3/16	0.217																
 <p>Molded Chipbreaker</p>  <p>MY Chipbreaker</p>				inch	0.094	0.157	0.012			KGBA [®] ...-4-25 KGBA [®] ...-22-25 (JCT) KGBA [®] ...-22-25T5 KGBAS [®] ...-4-25 KGBAS [®] ...-22-25 KIGBA [®] ...-4 (Internal) KIGBA [®] ...-22 (Internal)									
								 <p>Full-R (Round)</p>				inch	0.125	0.157	0.062			KGBA [®] ...-4-25 KGBA [®] ...-22-25 (JCT) KGBA [®] ...-22-25T5 KGBAS [®] ...-4-25 KGBAS [®] ...-22-25 KIGBA [®] ...-4 (Internal) KIGBA [®] ...-22 (Internal)	
																 <p>Full-R (Round)</p>			
											0.188	0.197	0.094						

Dimension CDX shows available grooving depth

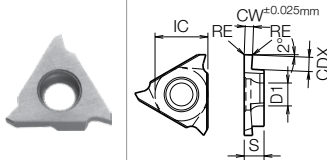
● : Standard Item △ : Phase out Item

Recommended Cutting Conditions  P15

Inserts sold in 5 piece boxes

● : Standard Item

GBA Inserts (Metric Size)

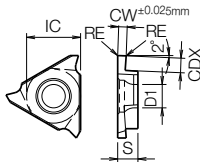
Part Number	IC	S	D1	(mm)	P	Carbon Steel / Alloy Steel	●			●	●	○					
					M	Stainless Steel			●	●	○						
					K	Cast Iron			●	○							
					N	Non-ferrous Metals											
					S	Titanium Alloy							●				
					H	Hard Materials (≤40HRC)						○					
					Hard Materials (≥40HRC)												
Insert Right-handed Insert Shown	Part Number	Dimensions (mm)			MEGACOAT Cermet	Cermet			MEGACOAT NANO	MEGACOAT	PVD Coated Carbide			Carbide	Applicable Toolholders		
		CW	CDX	RE	PV7040	TC40	TN90	PR1625	PR1215	PR905	PR930	KW10					
		R	L	R	L	R	L	R	L	R	L	R	L				
	GBA32%	033-005 *1	0.33	0.8	0.05				●	●							
		050-005 *2#3	0.50	1.0	0.05				●	●							
		075-005	0.75	2.0	0.05	●	●		●	●	●	●	●	●	●	●	
		095-005	0.95	2.0	0.05				●	●	●	●	●	●	●	●	
		100-005	1.00	2.0	0.05	●	●		●	●	●	●	●	●	●	●	
		110-005	1.10	2.0	0.05				●	●	●	●	●	●	●	●	
		120-005	1.20	2.0	0.05				●	●	●	●	●	●	●	●	
		125-020	1.25	2.0	0.20	●	●		●	●	●	●	●	●	●	●	
		130-020	1.30	2.0	0.20				●	●	●	●	●	●	●	●	
		140-020	1.40	2.5	0.20				●	●	●	●	●	●	●	●	
		145-020 *3	1.45	2.0	0.20				●	●	●	●	●	●	●	●	
			1.45	2.5	0.20				●	●	●	●	●	●	●	●	
		150-020 *3	1.50	2.0	0.20	●	●		●	●	●	●	●	●	●	●	
			1.50	2.5	0.20				●	●	●	●	●	●	●	●	
		160-020	1.60	2.5	0.20				●	●	●	●	●	●	●	●	
		170-020	1.70	2.5	0.20				●	●	●	●	●	●	●	●	
		175-020 *3	1.75	2.0	0.20				●	●	●	●	●	●	●	●	
			1.75	2.5	0.20				●	●	●	●	●	●	●	●	
		200-020	2.00	2.5	0.20	●	●		●	●	●	●	●	●	●	●	
		225-020	2.25	2.5	0.20				●	●	●	●	●	●	●	●	
		250-020	2.50	2.5	0.20				●	●	●	●	●	●	●	●	
		300-020	3.00	2.5	0.20				●	●	●	●	●	●	●	●	
		GBA43%	125-010	1.25	2.0	0.10				●	●	●	●	●	●	●	●
			125-020	1.25	2.0	0.20	●	●	●	●	●	●	●	●	●	●	●
			140-020	1.40	3.5	0.20				●	●	●	●	●	●	●	●
			145-020 *3	1.45	2.0	0.20				●	●	●	●	●	●	●	●
				1.45	3.5	0.20				●	●	●	●	●	●	●	●
			150-010	1.50	3.5	0.10				●	●	●	●	●	●	●	●
			150-020	1.50	3.5	0.20	●	●	●	●	●	●	●	●	●	●	●
			170-020	1.70	3.5	0.20				●	●	●	●	●	●	●	●
			175-020	1.75	3.5	0.20				●	●	●	●	●	●	●	●
			185-020	1.85	3.5	0.20				●	●	●	●	●	●	●	●
			195-020	1.95	3.5	0.20				●	●	●	●	●	●	●	●
	200-010		2.00	3.5	0.10				●	●	●	●	●	●	●	●	
	200-020		2.00	3.5	0.20	●	●	●	●	●	●	●	●	●	●	●	
	225-020		2.25	3.5	0.20				●	●	●	●	●	●	●	●	
	230-020		2.30	3.5	0.20				●	●	●	●	●	●	●	●	
	250-010		2.50	5.0	0.10				●	●	●	●	●	●	●	★1	
	250-030 *3		2.50	4.0	0.30	●	●	●	●	●	●	●	●	●	●	●	★2
			2.50	5.0	0.30				●	●	●	●	●	●	●	●	★1
	265-030 *3	2.65	4.0	0.30				●	●	●	●	●	●	●	●	★2	
		2.65	5.0	0.30				●	●	●	●	●	●	●	●	★1	
	280-030 *3	2.80	4.0	0.30				●	●	●	●	●	●	●	●	★2	
		2.80	5.0	0.30				●	●	●	●	●	●	●	●	★1	
	300-010	3.00	5.0	0.10				●	●	●	●	●	●	●	●	★1	
300-030 *3	3.00	4.0	0.30	●	●	●	●	●	●	●	●	●	●	●	★2		
	3.00	5.0	0.30				●	●	●	●	●	●	●	●	★1		
325-030	3.25	5.0	0.30				●	●	●	●	●	●	●	●	★2		
330-030 *3	3.30	4.0	0.30				●	●	●	●	●	●	●	●	★2		
	3.30	5.0	0.30				●	●	●	●	●	●	●	●	★1		
GBA43%	350-010	3.50	5.0	0.10				●	●	●	●	●	●	●	●		
	350-030	3.50	5.0	0.30				●	●	●	●	●	●	●	●		
	400-010	4.00	5.0	0.10				●	●	●	●	●	●	●	●		
	400-040	4.00	5.0	0.40	●	●	●	●	●	●	●	●	●	●	●		
	430-040	4.30	5.0	0.40				●	●	●	●	●	●	●	●		
	450-040	4.50	5.0	0.40				●	●	●	●	●	●	●	●		
480-040	4.80	5.0	0.40				●	●	●	●	●	●	●	●			

*1 : The edge width tolerance of GBA32% 033-005 : 0.33^{+0.02}_{-0.03} Dimension CDX shows available grooving depth ● : Standard Item
 *2 : The edge width tolerance of GBA32% 050-005 : 0.50^{+0.05}_{-0.06} Recommended Cutting Conditions P15
 *3 : Available grooving depth is different based on grade

★1 : KGBA%...4-25, KGBA%...22-25 (JCT), KGBA%...22-25T5, KGBAS%...22-25T5, KIGBA%...4, KIGBA%...22
 ★2 : KGBA%...4-25, KGBA%...22-25 (JCT), KGBA%...22-25T5, KGBAS%...4-25, KGBAS%...22-25, KGBAS%...22-25T5, KIGBA%...4, KIGBA%...22
 Inserts sold in 10 piece boxes

GBA Inserts (Metric Size)

Part Number	IC	S	D1	P					Classification of Usage ● : Light Interruption / 1st Choice ○ : Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice			
				M	K	N	S	H				
GBA32_	9.525	3.18	4.4	P	Carbon Steel / Alloy Steel	●						
GBA43_	12.70	4.76	5.5	M	Stainless Steel							
GBA43 % 480	12.70	5.00	5.5	K	Cast Iron							
				N	Non-ferrous Metals							
				S	Titanium Alloy							
				H	Hard Materials (≤40HRC)							
				H	Hard Materials (≥40HRC)							
Insert Right-handed Insert Shown	Part Number	Dimensions (mm)			Cermet				MEGACOAT NANO		MEGACOAT	Applicable Toolholders
		CW	CDX	RE	TN620		TN6020		PR1625		PR1215	
					R	L	R	L	R	L	R	



KGBA % ...-3
 KGBA % ...-16
 KGBAS % ...-3
 KGBAS % ...-16
 KIGBA % ...-3 (Internal)
 KIGBA % ...-16 (Internal)

KGBA % ...-4-15
 KGBA % ...22-15 (JCT)
 KGBAS % ...-4-15
 KGBAS % ...22-15
 KIGBA % ...-4 (Internal)
 KIGBA % ...22 (Internal)

KGBA % ...-4-25
 KGBA % ...22-25 (JCT)
 KGBA % ...22-25T5
 KGBAS % ...-4-25
 KGBAS % ...22-25
 KGBAS % ...22-25T5
 KIGBA % ...-4 (Internal)
 KIGBA % ...22 (Internal)

KGBA % ...-4-35
 KGBA % ...22-35 (JCT)
 KGBAS % ...-4-35
 KGBAS % ...22-35
 KIGBA % ...-4 (Internal)
 KIGBA % ...22 (Internal)

Dimension CDX shows available grooving depth

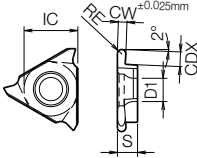
*1 : The edge width tolerance of GBA32 % 050-005F : 0.50mm ^{+0.25mm}/_{-0.00mm}

● : Standard Item

Recommended Cutting Conditions P15

Inserts sold in 10 piece boxes

GBA Inserts (Metric Size)

Part Number	IC	S	D1	P	M	K	N	S	H	Dimensions (mm)											MC*	Cermet	MEGA COAT NANO	MEGA COAT	PVD Coated Carbide	Carbide	Classification of Usage														
										Dimensions (mm)			PV7040			TN620			TN90									PR1625			PR1215			PR905			PR930			KW10	
Part Number	IC	S	D1							CW	CDX	RE	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	Applicable Toolholders								
GBA32_	9.525	3.18	4.4	Carbon Steel / Alloy Steel																													● : Light Interruption / 1st Choice ○ : Light Interruption / 2nd Choice ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice								
GBA43_	12.700	4.76	5.5	Stainless Steel																																					
				Cast Iron																																					
				Non-ferrous Metals																																					
				Titanium Alloy																																					
				Hard Materials (≤40HRC)																																					
				Hard Materials (≥40HRC)																																					
 <p>RF : Sharp Edge</p> <p>Full-R (Round)</p>				GBA32R	200-100R	2.00	2.5	1.00																											KGBA % ...-3 KGBA % ...-16 (JCT) KGBAS % ...-3 KGBAS % ...-16 KIGBA % ...-3 (Internal) KIGBA % ...-16 (Internal)						
					300-150R	3.00	2.5	1.50																																	
					GBA43%	100-050R	1.00	2.0	0.50	●	●																											KGBA % ...-4-15 KGBA % ...-22-15 (JCT) KGBAS % ...-4-15 KGBAS % ...-22-15 KIGBA % ...-4 (Internal) KIGBA % ...-22 (Internal)			
						150-075R	1.50	3.5	0.75	●	●																														
						200-100R	2.00	3.5	1.00	●	●																														
						250-125R	2.50	4.0	1.25																														KGBA % ...-4-25 KGBA % ...-22-25 (JCT) KGBAS % ...-22-25T5 KGBAS % ...-4-25 KGBAS % ...-22-25 KIGBA % ...-4 (Internal) KIGBA % ...-22		
						300-150R	3.00	4.0	1.50																																
						400-200R	4.00	5.0	2.00																															KGBA % ...-4-35 KGBA % ...-22-35 (JCT) KGBAS % ...-4-35 KGBAS % ...-22-35 KIGBA % ...-4 (Internal) KIGBA % ...-22 (Internal)	
					GBA43%	100-050RF	1.00	2.0	0.50		●	●																												KGBA % ...-4-15 KGBA % ...-22-15 (JCT) KGBAS % ...-4-15 KGBAS % ...-22-15 KIGBA % ...-4 (Internal) KIGBA % ...-22 (Internal)	
						150-075RF	1.50	3.5	0.75		●	●																													
						200-100RF	2.00	3.5	1.00		●	●																													
						250-125RF	2.50	4.0	1.25		●	●																													KGBA % ...-4-25 KGBA % ...-22-25 (JCT) KGBAS % ...-22-25T5 KGBAS % ...-4-25 KGBAS % ...-22-25 KIGBA % ...-4 (Internal) KIGBA % ...-22
						300-150RF	3.00	4.0	1.50		●	●																													
						400-200RF	4.00	5.0	2.00		●																														KGBA % ...-4-35 KGBA % ...-22-35 (JCT) KGBAS % ...-4-35 KGBAS % ...-22-35 KIGBA % ...-4 (Internal) KIGBA % ...-22 (Internal)

Dimension CDX shows available grooving depth

*MC stands for MEGACOAT Cermet.

● : Standard Item

Recommended Cutting Conditions P15

Inserts sold in 10 piece boxes

GBA Inserts (Metric Size)

Part Number	IC	S	D1	Material		Classification of Usage							
				P	M	●	○	●	○				
GBA32_	9.525	3.18	4.4	P	Carbon Steel / Alloy Steel								
GBA43_	12.700	4.76	5.5	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)			CBN				PCD				Applicable Toolholders	
		CW	CDX	RE	KBN510		KBN525		KPD001		KPD010			
					R	L	R	L	R	L	R	L		
<p>1-Edge</p> <p>GBA32 LE=1.7mm GBA43 LE=1.9mm</p>	GBA32R	125-010	1.25	2.0	0.1					●	●			KGBA %...-3 KGBA %...-16 (JCT) KGBAS %...-3 KGBAS %...-16 KIGBA %...-3 (Internal) KIGBA %...-16 (Internal)
		150-010	1.50	2.0	0.1					●	●			
		200-010	2.00	2.0	0.1					●				
	GBA43%	125-010	1.25	2.0	0.1							●	●	KGBA %...-4-15 KGBA %...22-15 (JCT) KGBAS %...-4-15 KGBAS %...22-15 KIGBA %...-4 (Internal) KIGBA %...22 (Internal)
		125-020	1.25	2.0	0.2	●			●					
		150-010	1.50	3.5	0.1					●	●	●	●	
		150-020	1.50	3.5	0.2	●	●	●	●					
		200-010	2.00	3.5	0.1					●	●	●	●	
		200-020	2.00	3.5	0.2	●	●	●	●					
		250-010	2.50	4.0	0.1					●	●	●	●	KGBA %...-4-25 KGBA %...22-25 (JCT) KGBA %...22-25T5 KGBAS %...-4-25 KGBAS %...22-25 KGBAS %...22-25T5 KIGBA %...-4 KIGBA %...22
		300-010	3.00	4.0	0.1					●	●	●		
		300-020	3.00	4.0	0.2			●						

Dimension CDX shows available grooving depth

● : Standard Item

Recommended Cutting Conditions P15

CBN & PCD Inserts sold in 1 piece boxes

Insert Rake Angles

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

GBA32% / GBA32%		GBA43% / GBA43%		GBA43% (Full-R)	
α	Insert Grade	α	Insert Grade	α	Full-R Part Number
10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR1625, PR905 KPD001, KPD010	0°	KBN510, KBN525	10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR1625, PR905 050R ~ 150R
		10°	TN620, TC40N, TN90, PV7040 PR930, PR1115, PR1215, PR1625, PR905 KPD001, KPD010	14°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR1625, PR905 200R
20°	KW10	20°	KW10	14°	KW10 050R ~ 200R

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

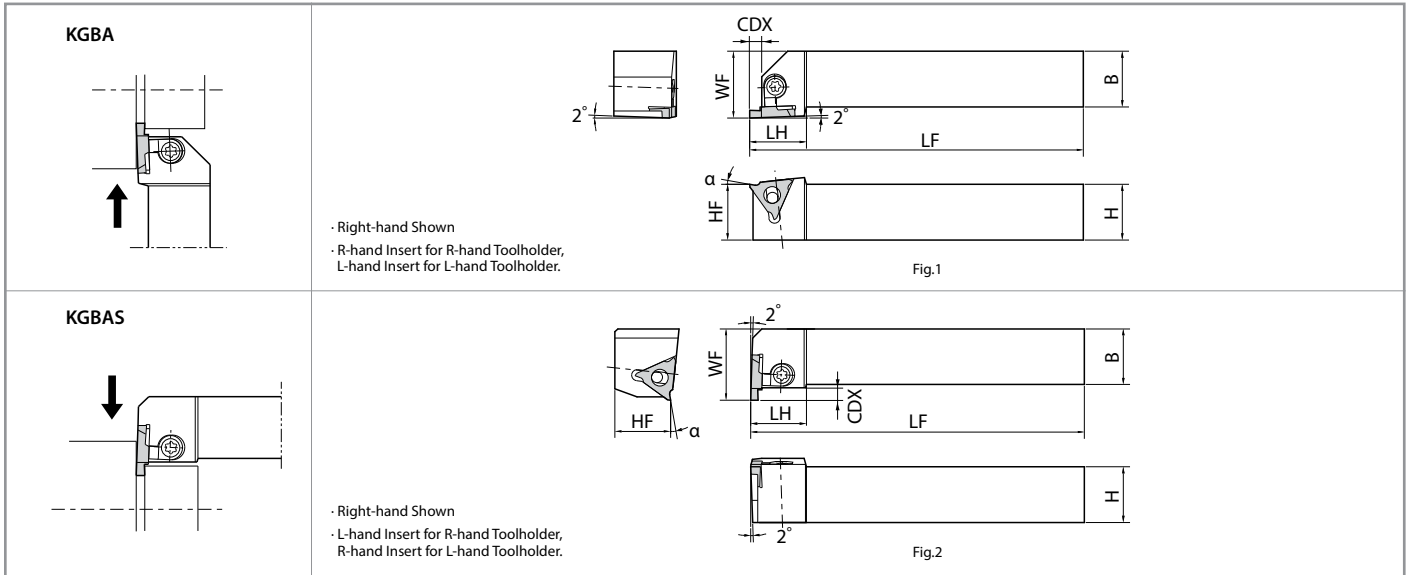
α	Insert Part Number	α	Insert Part Number
+10°	GBA43% 150-020GM	+12°	GBA43% 300-030GM } GBA43% 400-040GM
+15°	GBA43% 175-020GM		
	GBA43% 265-030GM		

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

α	Insert Part Number	
+15°	GBA43% 078MYN	GBA43% 175-020MY
	GBA43% 125MYN	GBA43% 350-030MY
+14°	GBA43% 156MY	GBA43% 400-040MY

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

KGBA / KGBAS Toolholders



Toolholder Dimensions

Part Number	Stock		Unit	Dimensions							Drawing	Spare Parts		Applicable Inserts	
	R	L		H	HF	B	LF	LH	WF	CDX		Clamp Set	Wrench		
KGBA%	12-3	●	●	inch	0.750	0.750	0.750	5.000	0.945	1.000	0.098	Fig.1	LGBA-16% S	FT-15	GBA32%
	16-3	●	●		1.000	1.000	1.000	6.000		1.250					
	12-4-15	●	●		0.750	0.750	0.750	5.000	1.004	1.000	0.157				
	16-4-15	●	●		1.000	1.000	1.000	6.000		1.250					
	12-4-25	●	●		0.750	0.750	0.750	5.000	1.004	1.000	0.177				
	16-4-25	●	●		1.000	1.000	1.000	6.000		1.250					
	12-4-35	●	●		0.750	0.750	0.750	5.000	1.004	1.000	0.217				
	16-4-35	●	●		1.000	1.000	1.000	6.000		1.250					
KGBA%	2020K-16	●	●	mm	20	20	20	125	24	25	2.5	Fig.1	LGBA-16% S	FT-15	GBA32%
	2525M-16	●	●		25	25	25	150		30					
	2020K22-15	●	●		20	20	20	125	25.5	25	4.0				
	2525M22-15	●	●		25	25	25	150		30					
	2020K22-25	●	●		20	20	20	125	25.5	25	4.5				
	2525M22-25	●	●		25	25	25	150		30					
	2020K22-25T5	●	●		20	20	20	125	25.5	25	5.5				
	2525M22-25T5	●	●		25	25	25	150		30					
	2020K22-35	●	●		20	20	20	125	25.5	25	5.5				
	2525M22-35	●	●		25	25	25	150		30					
	2020H22-15*	●									4.0				
	2020H22-25*	●									4.5				
2020H22-35*	●								5.5						
KGBASR	12-3	●		inch	0.750	0.750	0.750	5.000	0.984	0.984	0.098	Fig.2	LGBA-16LS	FT-15	GBA32L
	16-3	●			1.000	1.000	1.000	6.000		1.181					
	12-4-15	●			0.750	0.750	0.750	5.000	0.984	1.062	0.157				
	16-4-15	●			1.000	1.000	1.000	6.000		1.260					
	12-4-25	●			0.750	0.750	0.750	5.000	0.984	1.062	0.177				
	16-4-25	●			1.000	1.000	1.000	6.000		1.250					
	12-4-35	●			0.750	0.750	0.750	5.000	0.984	1.062	0.217				
	16-4-35	●			1.000	1.000	1.000	6.000		1.260					
KGBAS%	2020K-16	●	●	mm	20	20	20	125	25	25	2.5	Fig.2	LGBA-16% S	FT-15	GBA32%
	2525M-16	●	●		25	25	25	150		30					
	2020K22-15	●	●		20	20	20	125	25	27	4.0				
	2525M22-15	●	●		25	25	25	150		32					
	2020K22-25	●	●		20	20	20	125	25	27	4.5				
	2525M22-25	●	●		25	25	25	150		32					
	2020K22-25T5	●	●		20	20	20	125	25	27	5.5				
	2525M22-25T5	●	●		25	25	25	150		32					
	2020K22-35	●	●		20	20	20	125	25	27	5.5				
	2525M22-35	●	●		25	25	25	150		32					

CDX shows the distance from the toolholder to the cutting edge. For available groove depth, see "CDX" dimension of Insert.

● : Standard Item

* 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.

KGBA-JCT

Jet Coolant-Through

Coolant-Through Holders for External Shallow Grooving

KGBA-JCT can Direct Coolant Closer to the Cutting Edge from the Top of the Insert
Excellent Chip Control and Longer Tool Life

1 Excellent Chip Control

Ground Chipbreaker
Chip Control Comparison (Internal Evaluation)

Internal Coolant Provides Excellent Chip Control
High-pressure coolant is more effective

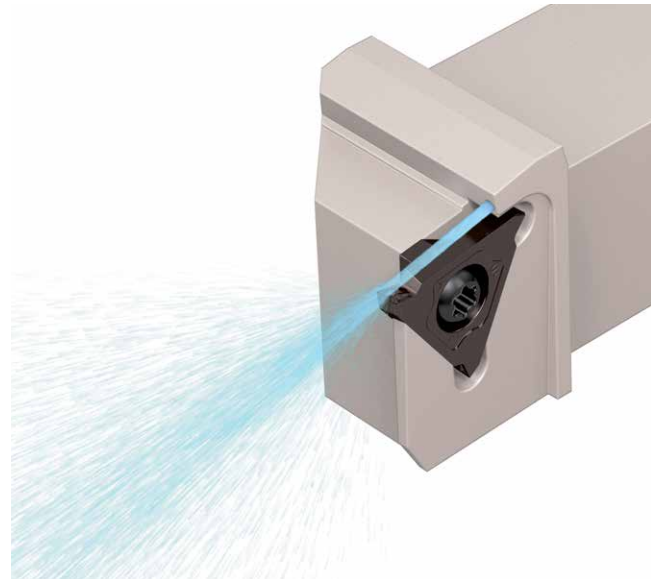
Alloy Steel (5120)

Internal Coolant	1,015 psi			
	290 psi			
	72 psi (Normal Pressure)			
External Coolant	72 psi (Normal Pressure)			
	f (ipr)	0.002	0.003	0.004

Stainless Steel (304)

Internal Coolant	1,015 psi			
	290 psi			
	72 psi (Normal Pressure)			
External Coolant	72 psi (Normal Pressure)			
	f (ipr)	0.002	0.003	0.004

Cutting Conditions: $V_c = 490$ sfm (Alloy Steel) / 330 sfm (Stainless Steel),
 $f = 0.002 - 0.004$ ipr, Groove Depth = 0.079" (2mm), Wet
KGBAR2525K22-15JCT, GBA43R200-020 (PR1215)



Coolant Hole

Coolant is discharged to the cutting edge
Prevents coolant stream spreading which slows the coolant flow

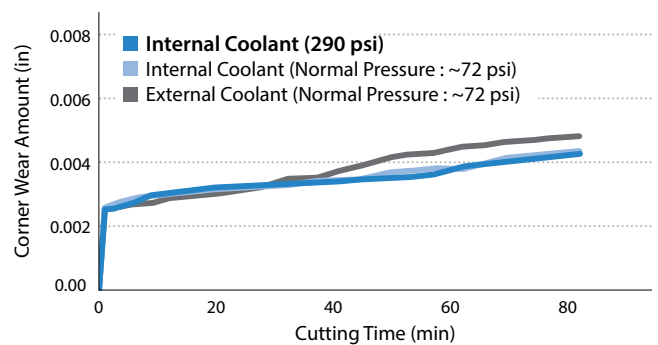
Coolant Direction

Sufficient coolant between the chipbreaker and the chips
Stable chip curls and sufficient cooling of the insert

2 Superior Cooling Action Improves Tool Life

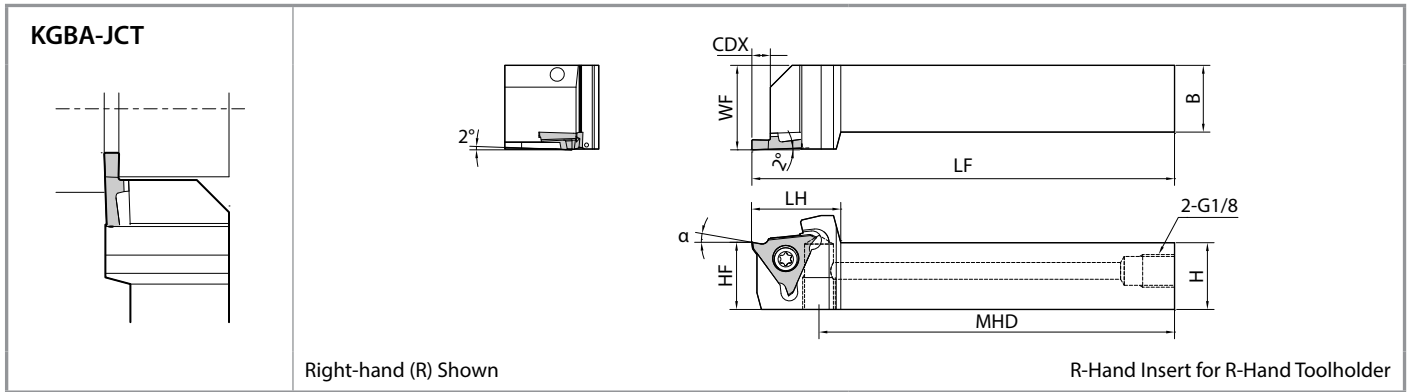
Internal Coolant Provides Better
Corner Wear Resistance

Wear Resistance Comparison (Internal Evaluation)







Cutting Conditions: $V_c = 490$ sfm, $f = 0.003$ ipr, Groove Depth = 0.079" (2mm), Wet
KGBAR2525K22-15JCT, GBA43R200-020 (PR1215) Workpiece: 4137

KGBA-JCT (Shallow Grooving)



Toolholder Dimensions

Pressure Resistance: up to 4,350 psi

Part Number	Stock		Unit	Dimensions (mm)								Spare Parts				Applicable Inserts
	R	L		H	HF	B	LF	LH	WF	CDX	MHD	Clamp Screw	Wrench		Plug	
																
KGBA 2020K-16JCT	●	●	mm	20	20	20	125	24.0	25	2.5	107.5	SB-4085TR	FT-15	-	HSG1/8x8.0	GBA32%
2525K-16JCT	●	●		25	25	25			30							
2020K22-15JCT	●	●		20	20	20		26.5	25	4						
2525K22-15JCT	●	●		25	25	25			30							
2020K22-25JCT	●	●		20	20	20	25	5.5	105	SB-5085TR	-	LTW-20	HSG1/8x8.0	GBA43%		
2525K22-25JCT	●	●		25	25	25	30									
2020K22-35JCT	●	●		20	20	20	25	30	5.5	105	SB-5085TR	-	LTW-20	HSG1/8x8.0	GBA43%	
2525K22-35JCT	●	●		25	25	25	30									

See [Page 13](#) for piping parts

● : Standard Item

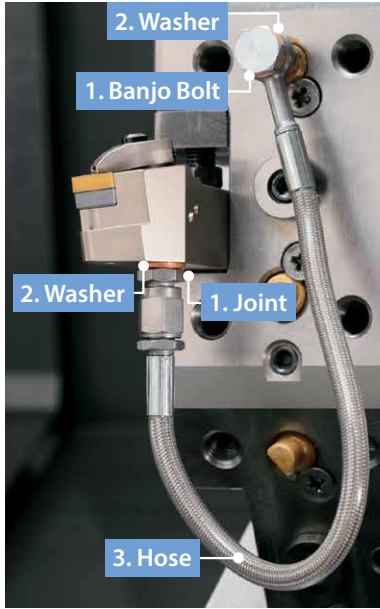
CDX shows the distance from the toolholder to the cutting edge. For available groove depth, see "CDX" dimension of Insert.

KGBA-JCT Toolholder is Screw Clamp Type

Regarding Rake Angle after Installment of GBA (α), please see the KYOCERA general product catalog or GBA brochure

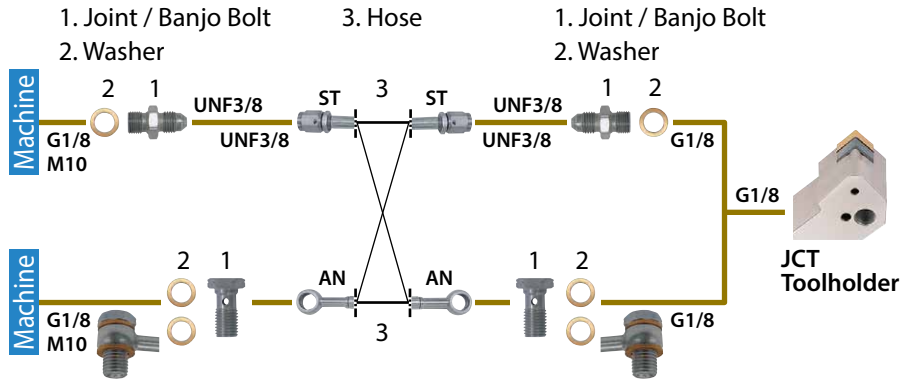
Easy Coolant Connections

Easy Connection with High Pressure Hose and Joint



- Even without a high pressure pump, internal coolant can be used at a normal pressure
- Banjo bolt available for angled hose connection and can be used in a variety of machines

Piping Installation Guide



Piping Parts

Optional Piping Parts Available

Choose from parts below to match your machine specifications

1. Joint / Banjo Bolt

Pressure Resistance: up to 4,350 psi

Shape	Part Number	Stock	Thread Standard
	J-G1/8-UNF3/8	●	G1/8
	J-M10X1.5-UNF3/8	●	M10X1.5
	BB-G1/8	●	G1/8
	BB-M10X1.5	●	M10X1.5

1. Joint / Banjo bolt × 2

2. Washer × 2-4

3. Hose × 1

2. Washer

Pressure Resistance: up to 4,350 psi

Shape	Part Number	Stock
	WS-10	●

* Use 2 washers for a banjo bolt

3. Hose

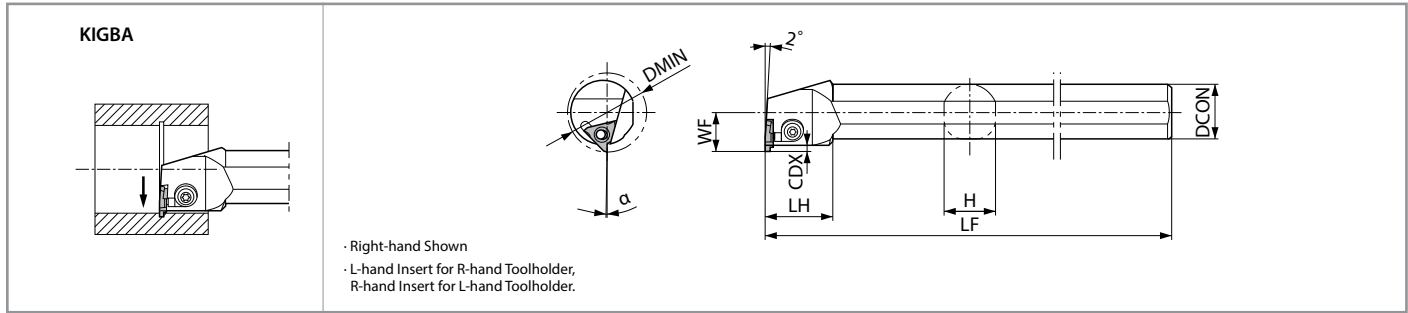
Pressure Resistance: up to 4,350 psi

Shape	Part Number	Stock	Thread Standard		Dimensions (mm)
					L
	HS-ST-ST-200	●	UNF3/8	UNF3/8	200
	HS-ST-ST-250	●	UNF3/8	UNF3/8	250
	HS-ST-AN-200	●	UNF3/8	-	200
	HS-ST-AN-250	●	UNF3/8	(Banjo Bolt)	250
	HS-AN-AN-200	●	-	-	200
	HS-AN-AN-250	●	(Banjo Bolt)	(Banjo Bolt)	250

Precautions

● : Standard Item

1. Make sure machine door is completely closed before use of these parts.
2. Use appropriate seal for the male thread of the piping parts and make sure the connection is secure. Use plugs to seal off unused coolant holes.
3. Connect and fasten the coolant hose firmly.
4. The use of copper washers may cause leakage but will have no effect on the performance.
5. Commercial piping parts can be used if the thread standards are the same. Check the pressure resistance before use.
6. Regularly changing the coolant filter is recommended.



Toolholder Dimensions

Part Number	Stock		Unit	Min. Bore Dia.	Dimensions						Spare Parts		Applicable Inserts
	R	L			DMIN	DCON	H	LF	LH	WF	*CDX	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		GBA32%
	●	●		40	32	30	250	30	23.0	3.0	LGBA-22% S		GBA43%

* Dimension CDX shows the distance from the toolholder to the cutting edge.

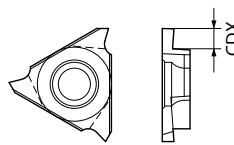
Available grooving depth depends on the insert.

KIGBA % 3525-16 : Dimension CDX of the applicable insert (GBA32 Type)

4032-22 : Dimension CDX of the applicable insert (GBA43 Type)

① 2.0 mm (Dimension CDX < 2.8mm)

② 2.8 mm (Dimension CDX ≥ 2.8mm)



● : Standard Item

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

Rake Angle (α) After Installment of GBA

Internal Grooving Holders (KIGBA)

GBA32%○○○N / GBA32%○○○-○○○		GBA43%○○○N / GBA43%○○○-○○○		GBA43%○○○-○○○R (Full-R)		
α	Insert Grade	α	Insert Grade	α	Insert Grade	Full-R
+1°	TN620, TN90, PV7040, PR930, PR1115, PR1215, PR1625, PR905 KPD001, KPD010	-9°	KBN510, KBN525	+1°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR162, PR905	050R ~ 150R
		+1°	TN620, TC40, TN90, PV7040 PR930, PR1115, PR1215 PR1625, PR905 KPD001, KPD010	+5°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR1625, PR905	200R
+11°	KW10	+11°	KW10	+5°	KW10	050R ~ 200R

Rake Angle (α) After Installment of GBA-GM

Internal Grooving Holders (KIGBA)

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(N)

Internal Grooving Holders (KIGBA)

α	Insert Part Number	
+6°	GBA43% 078MYN	GBA43% 175-020MY
	GBA43% 125MYN	GBA43% 350-030MY
+5°	GBA43% 156MY	GBA43% 400-040MY

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 Traversing (ipr) (3) D.O.C. for Traversing (in)					Notes	
	MEGA COAT Cermet	Cermet			MEGA COAT	MEGA COAT NANO	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...
	PT7040	TN620	TC40	TN90	PR1215	PR1625	PR930	PR1115	PR905	KW10	KBN510 KBN525	KPD001 (KPD010)						
Carbon Steel	☆ 490-790	★ 260-720	☆ 490-720	☆ 490-720	★ 260-660	★ 260-590	☆ 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	☆ 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	☆ 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 Traversing (ipr) (3) D.O.C. for Traversing (in)					Notes
	Cermet	MEGACOAT NANO	MEGACOAT		GBA43% 140-010GM	GBA43% 150-020GM	GBA43% 175-020GM ~ 230-020GM	GBA43% 250-030GM ~ 350-030GM	GBA43% 400-040GM	
	TN620	PR1625	PR1215							
Carbon Steel	★ 260-790	★ 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	★ 260-720	★ 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	★ 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 Traversing (ipr) (3) D.O.C. for Traversing (in)					Notes
	Cermet	MEGA COAT	PVD Coated Carbide							
	TN6020	PR1215	PR930	PR1115	GBA43% 175-020MY ~ 200-020MY	GBA43% 230-020MY ~ 265-030MY	GBA43% 300-030MY	GBA43% 330-030MY ~ 350-030MY	GBA43% 400-040MY	
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 10% lower for internal grooving.



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