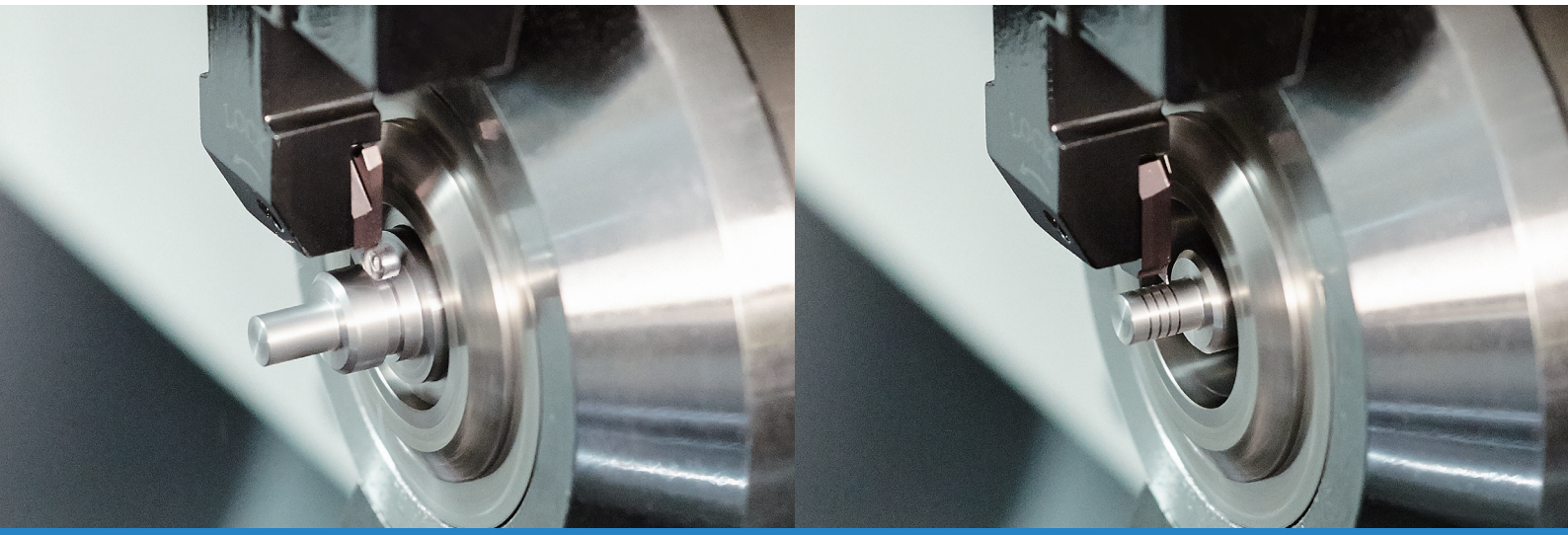
THE NEW VALUE FRONTIER

KYOCERA

Grooving tools for small parts machining | GBF

GBF



Low cutting force with a large rake angle for high precision grooving

Groove widths from 0.25 mm

Maximum groove depths up to 3 mm

Long tool life and stable machining with MEGACOAT series

GW15 for non-ferrous metal machining added to the lineup

Grooving tools for small parts machining

GBF

- Low cutting force with a large rake angle
- High-precision grooving with insert width tolerance of ±0.02 mm

1
- Groove widths from 0.25 mm
- Maximum groove depths up to 3 mm

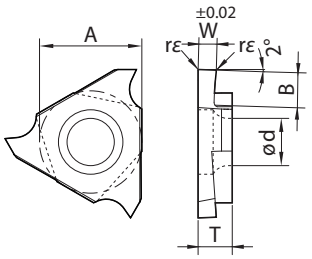
2
Chattering resistance with a large rake angle
(20° when installed in holder)

3
- Long tool life and stable machining with MEGACOAT series
- GW15 for non-ferrous machining added to the lineup

GBF

Inserts

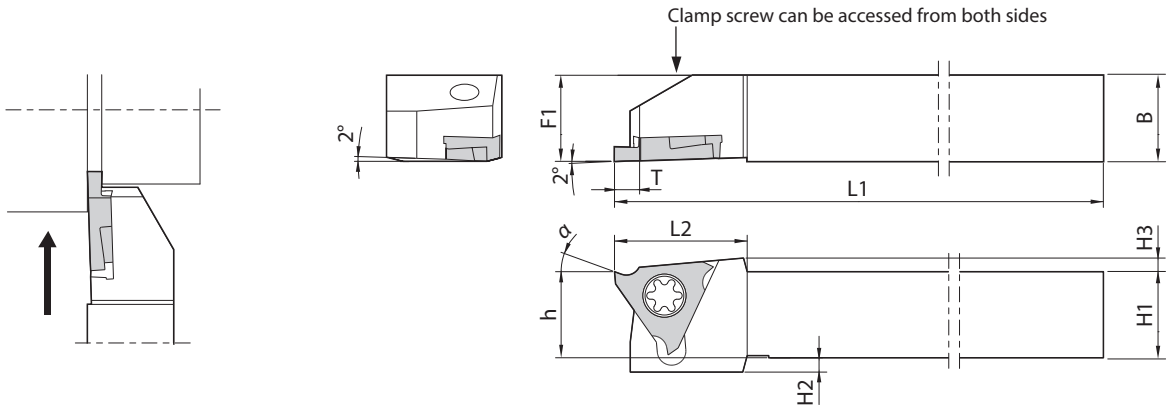
Description	A	T	ø d
GBF32	9.525	3.18	4.4

Shape	Description		Dimensions (mm)			MEGACOAT	MEGACOAT NANO	Carbide
			W	B	rε	PR1215	PR1535	GW15
	GBF32 R/L	025-005	0.25	0.6	0.05	●	●	●
		030-005	0.30	0.8		●	●	●
		033-005	0.33			●	●	●
		043-005	0.43	1.0		●	●	●
		050-005	0.50	1.2		●	●	●
		053-005	0.53			●	●	●
		065-005	0.65			●	●	●
		075-005	0.75	2.0		●	●	●
		080-005	0.80			●	●	●
		095-005	0.95			●	●	●
		100-005	1.00			●	●	●
		110-005	1.10			●	●	●
		120-005	1.20			●	●	●
		125-010	1.25		0.1	●	●	●
		130-010	1.30			●	●	●
		140-010	1.40	2.7		●	●	●
		145-010	1.45			●	●	●
		150-010	1.50			●	●	●
		165-010	1.65			●	●	●
		170-010	1.70	3.0		●	●	●
		175-010	1.75			●	●	●
		200-010	2.00			●	●	●
		225-010	2.25			●	●	●
		250-010	2.50			●	●	●
		300-010	3.00			●	●	●

The maximum machining diameter is ø51 mm (Please check cautions on back cover)

● Available

KGBF-F (No offset)



Right-hand (R) insert shown

Right-hand (R) insert for right-hand (R) toolholder. Left-hand (L) insert for left-hand (L) toolholder.

Toolholder dimensions

Description		Availability		Dimensions (mm)							Parts	
											Clamp screw	Wrench
		R	L	H1 = h	H2	H3	B	L1	L2	T *1		
KGBF $^{R}/_{L}$	1010JX-16F	●	●	10	4	2.1	10	120	18.5	3	SB-4070TRW	FT-8
	1212JX-16F	●	●	12	2		12					
	1616JX-16F	●	●	16	—		16					
	2020JX-16F	●	●	20	—		20					

*1 Dimension T shows the distance from the toolholder to the cutting edge. Dimension B shows available grooving depth.
The maximum machining diameter is ø51 mm. (Please see cautions on back cover)

● Available

Recommended cutting conditions ★ 1st recommendation ☆ 2nd recommendation

Workpiece	Recommended insert grade (Cutting speed Vc: m/min)			[1] Grooving feed rate (mm/rev) [2] Traversing feed rate (mm/rev) [3] Max DOC for traversing (mm)			
	MEGACOAT	MEGACOAT NANO	Carbide				
	PR1215	PR1535	GW15	GBF32 $^{R}/_{L}$ 025 – 053	GBF32 $^{R}/_{L}$ 065 – 095	GBF32 $^{R}/_{L}$ 100 – 145	GBF32 $^{R}/_{L}$ 150 – 300
Carbon steel	★ 80 – 180	☆ 70 – 160	—	[1] 0.01 – 0.05 [2] Not recommended [3] Not recommended	[1] 0.02 – 0.07 [2] Not recommended [3] Not recommended	[1] 0.03 – 0.08 [2] 0.03 – 0.06 [3] MAX. 0.2	[1] 0.03 – 0.08 [2] 0.03 – 0.06 [3] MAX. 0.2
Alloy steel	★ 80 – 180	☆ 70 – 160	—	[1] 0.01 – 0.04 [2] Not recommended [3] Not recommended	[1] 0.02 – 0.06 [2] Not recommended [3] Not recommended	[1] 0.03 – 0.07 [2] 0.02 – 0.05 [3] MAX. 0.2	[1] 0.03 – 0.07 [2] 0.02 – 0.05 [3] MAX. 0.2
Stainless steel	☆ 60 – 130	★ 50 – 120	—	[1] 0.01 – 0.04 [2] Not recommended [3] Not recommended	[1] 0.02 – 0.06 [2] Not recommended [3] Not recommended	[1] 0.03 – 0.07 [2] 0.02 – 0.05 [3] MAX. 0.2	[1] 0.03 – 0.07 [2] 0.02 – 0.05 [3] MAX. 0.2
Cast iron	—	—	★ 60 – 100	[1] 0.01 – 0.05 [2] Not recommended [3] Not recommended	[1] 0.02 – 0.07 [2] Not recommended [3] Not recommended	[1] 0.03 – 0.08 [2] 0.03 – 0.06 [3] MAX. 0.2	[1] 0.03 – 0.08 [2] 0.03 – 0.06 [3] MAX. 0.2
Aluminum alloy	—	—	★ 150 – 400	[1] 0.01 – 0.05 [2] Not recommended [3] Not recommended	[1] 0.02 – 0.07 [2] Not recommended [3] Not recommended	[1] 0.03 – 0.08 [2] 0.03 – 0.06 [3] MAX. 0.2	[1] 0.03 – 0.08 [2] 0.03 – 0.06 [3] MAX. 0.2
Brass	—	—	★ 150 – 300	[1] 0.01 – 0.04 [2] Not recommended [3] Not recommended	[1] 0.02 – 0.06 [2] Not recommended [3] Not recommended	[1] 0.03 – 0.07 [2] 0.02 – 0.05 [3] MAX. 0.2	[1] 0.03 – 0.07 [2] 0.02 – 0.05 [3] MAX. 0.2

MEGACOAT NANO PR1535

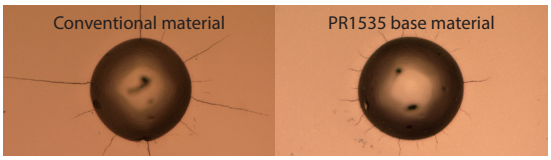
PR1535 achieves long tool life and stable machining of stainless steel with the combination of a tough substrate and a special nano layer coating

1. An increase in cobalt content yields a substrate with greater toughness
   * Fracture toughness values are improved by 23 % over previous grades
2. The coarse grain structure and uniform particle size correspond to improved heat resistance, with conductivity values decreased by 11 %
3. MEGACOAT NANO for long tool life and stable machining

23 % Fracture toughness*

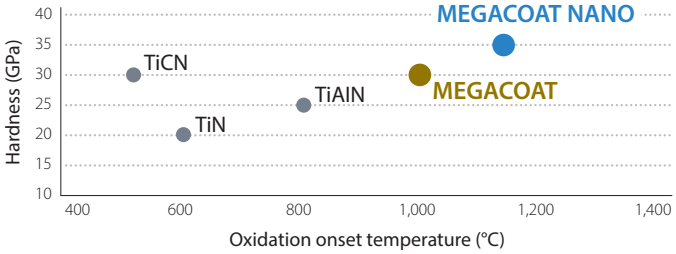
Cracking comparison by diamond indentor (In-house evaluation)

Shock Resistance

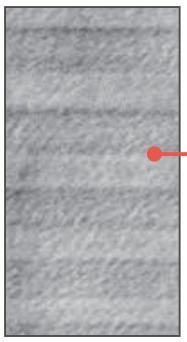


Long cracks　　Short cracks

Coating properties



Low　Oxidation resistance　High



Layer structure of MEGACOAT NANO coating

One point

PR1535 is a good solution for unstable conditions such as early fracturing and variable tool life during steel machining

Precautions

GBF and GBA compatibility

1. GBF will fit KGBA/KGBAS holders
   Caution: The maximum groove depth for KGBA/KGBAS holders is 2.5 mm
2. GBA inserts will also fit KGBF-F holders
   Caution:
   • The rake angle after installation in the toolholder is 11°
   • 2.5 mm groove depth is available on workpiece diameters up to 200 mm max.
   • 2.2 mm groove depth is available on workpiece diamaters over 200 mm

KGBF-F holder with GBF insert maximum machining diameter

- The maximum machining diameter is ø 51 mm
- The workpiece interferes with the holder at ø 51 mm workpiece diameter or larger