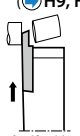
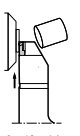
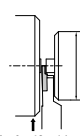
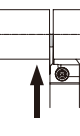
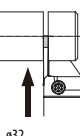
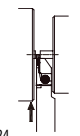
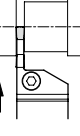
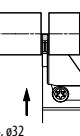
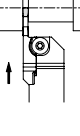
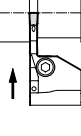
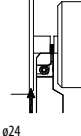
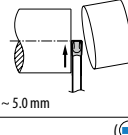
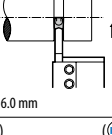
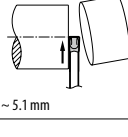
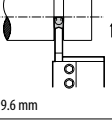


Introduction		H2
Small diameter cut-off		H6
Inserts	TKF	H6
Toolholder	KTKF	H9
	KTKF-JCTM	H15
	KTKF-S	H18
KGZ type		H20
Inserts	GZM/GZMS/GZG	H24
Toolholder	KGZ-JCTM (Integral type for automatic lathe)	H26
	KGZ (Integral type for automatic lathe)	H28
	KGZS (for sub spindle tooling)	H29
KGD type		H32
Inserts	GDM/GDMS/GDG	H32
Toolholder	KGD (Integral type for automatic lathe)	H34
	KGDS (for sub spindle tooling)	H36
	KGD-JCTM (Integral type for automatic lathe)	H39
	KGD (Integral type)	H40
	KGD-S (0° separate type)	H41
	KGD-JCT (Integral type, coolant-through holder)	H43
KGM type		H46
Inserts	GM/GMM/GMN/GMR	H46
Toolholder	KGM/KGM-T	H50
KPK type		H56
Inserts	PKM	H58
Blades	KPKB-JCT/KPKB	H60
Toolblocks	KPKTB-JCT/KTKTB/KTKTBF	H62
Toolholder	KPKH-JCT/KPKH (Integral type)	H67
KTK type		H70
Inserts	TKN/TK	H70
Blades	KTKB-SS/KTKB-S	H72
Toolholder	KTKH-S (Integral type)	H73

Product lineup

For small diameter cut-off (automatic lathes) CUTDIA ~ø16 mm	 KTKF (H9, H10, H12) CUTDIA : ~ ø5, ø8, ø12, ø16 CW : 0.5 ~ 2.0 mm	 KTKF-JCTM (H15) CUTDIA : ~ ø5, ø8, ø12, ø16 CW : 0.5 ~ 2.0 mm		 KTKF-S (H18) CUTDIA : ~ ø5, ø8, ø12, ø16 CW : 0.5 ~ 2.0 mm	
KGZ (Top clamp) CUTDIA ~ø51 mm	 KGZ (H28) CW : 1.3 ~ 3.0 mm	 KGZ-JCTM (H26) CUTDIA : ~ ø24, ø32 CW : 2.0 ~ 3.0 mm		 KGZS (H29) CUTDIA : ~ ø24 CW : 1.3 ~ 3.0 mm	
KGD (Top clamp) CUTDIA ~ø51 mm	 KGD (H34, H40) CW : 1.3 ~ 4.0 mm	 KGD-JCTM (for automatic lathes) (H39) CUTDIA : ~ ø24, ø32 CW : 2.0 ~ 4.0 mm	 KGD-S (H41) CW : 2.0 ~ 4.0 mm	 KGD-JCT (H43) CW : 3.0 ~ 4.0 mm	 KGDS (H36) CUTDIA : ~ ø24 CW : 1.3 ~ 3.0 mm
KPK (1-edge) CUTDIA ~ ø120	Toolholder Type CUTDIA ø35 ~ ø79	 KPKH(-JCT) (H67, H68) CW : 2.0 ~ 5.0 mm		Blade type CUTDIA ø32 ~ ø120	 KPKB(-JCT) (H60, H61) CW : 1.6 ~ 6.0 mm
KTKB KTKH (1-edge) CUTDIA ~ ø120	Toolholder Type CUTDIA ø30 ~ ø79	 KTKH-S (H73) CW : 2.2 ~ 5.1 mm		Blade type CUTDIA ø32 ~ ø120	 KTKB-S(S) (H72) CW : 1.6 ~ 9.6 mm

Cut-off tools

Series name	Shape	Advantage	Applications
For small diameter cut-off		1) Insert clamp is side screw type from lateral side 2) 2-edge insert 3) Max. Cut-off Dia. : ø16	1) For cut-off and grooving of small workpieces 2) For automatic lathe, small machine
KGD		1) Insert is clamped from top side 2) 1-edge and 2-edge inserts available 3) Integral type and separate type are available 4) Max. Cut-off Dia. : ø50	1) PM chipbreaker --- for cut-off 2) PH chipbreaker --- for cut-off (high feed rate) for grooving 3) PG chipbreaker --- for cut-off (for automatic lathe), sharp-cutting oriented 4) PF chipbreaker --- for cut-off (for automatic lathe), low feed 5) PQ chipbreaker --- for cut-off (for automatic lathe), medium feed
KGZ		1) Stable machining with sturdy clamp design Easy insert management 2) 1-edge and 2-edge inserts available 3) Max. Cut-off Dia. : ø51	1) For cut-off and grooving of small workpieces 2) For automatic lathe, small machine
KPK		1) Self-clamping System that Opens and Closes the Contact Surface with a Wrench 2) 1-edge insert 3) Molded Chipbreaker 4) Blade Type JCT Type for High-pressure Coolant (Internal Coolant) is Available 5) Max. Cut-off Dia. : ø100	1) For cut-off and deep grooving 2) PM Chipbreaker --- General Purpose PH Chipbreaker --- For Tough Edge / High Feed Rate
KTKB KTKH		1) Self-Clamping System Tap the insert lightly with a plastic hammer to set it in the pocket 2) 1-edge insert 3) Blade type and Integral Shank type 4) Max. Cut-off Dia. : ø120	1) For cut-off and deep grooving 2) Standard chipbreaker is general cut-off type Feed rate : 0.1mm/rev or over P Chipbreaker is for cut-off at low feed rates Feed rate : 0.03~0.08mm/rev

Tool selection

		For small diameter cut-off	KGD	KGZ	KPK	KTkB / KTkH
Insert	1. Insert's edge number 1-edge insert...For larger dia. workpiece (max. $\phi 120$) 2-edge insert...For smaller dia. workpiece Cost per corner is reduced	-	-	-	✓	✓
	2. Use a neutral angle insert if there is no limit to the finished shape.	TKF...S TKF...NB	GDM GDMS	GDZ	PKM	TKN
	3. Insert with lead angle is recommended to prevent remaining boss.	TKF...DR	GDM- ^R / _L (Fig. 2)	GZM / GZG- ^R / _L (Fig. 2)	PKM- ^R / _L (Fig. 1)	TK ^R / _L (Fig. 1)
	4. If you want to make the remaining boss smaller when machining small or thin parts, use sharp corner and lead angle insert.	TKF...DR	-	-	-	-
	5. Use the minimum width insert suitable for the machining.	✓	✓	✓	✓	✓
Toolholder	1. Use a suitable toolholder (blade) for the workpiece dia.	✓	✓	✓	✓	✓
	2. Use a more rigid toolholder (blade).	✓	✓	✓	✓	✓
	3. Use a back clamp toolholder if there is no space for clamping tools from top side (automatic lathe).	✓	-	-	-	-

How to select cut-off inserts with / without lead angle (Including sharp corner)

1. Use a neutral angle insert if there is no limit to the finished shape.
2. Use an angled insert to reduce the size of the remaining boss.
3. Use a sharp-cornered lead-angled insert to make the remaining boss much smaller when machining small parts and thin parts.

	N (Neutral)	R (Right-hand)	L (Left-hand)
Hand of lead angle			
	Angled insert can reduce the burr size when cutting off. When using a larger lead angle, cutting force becomes smaller, but the feed rate should be reduced.		

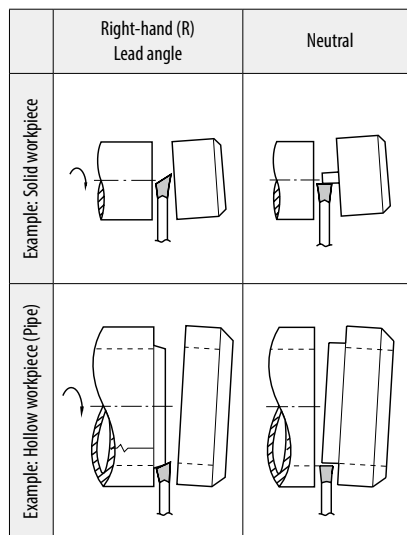


Fig.1

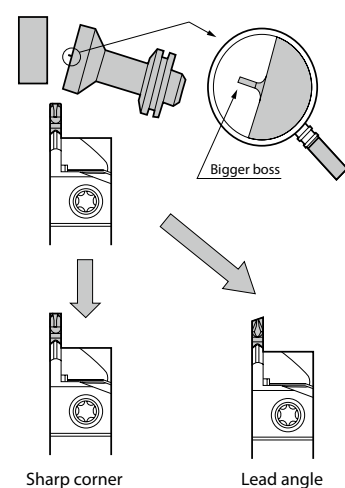
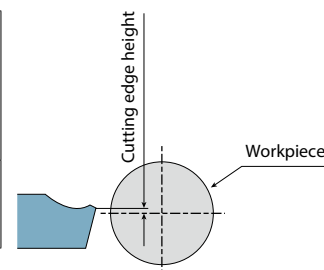


Fig.2

Caution

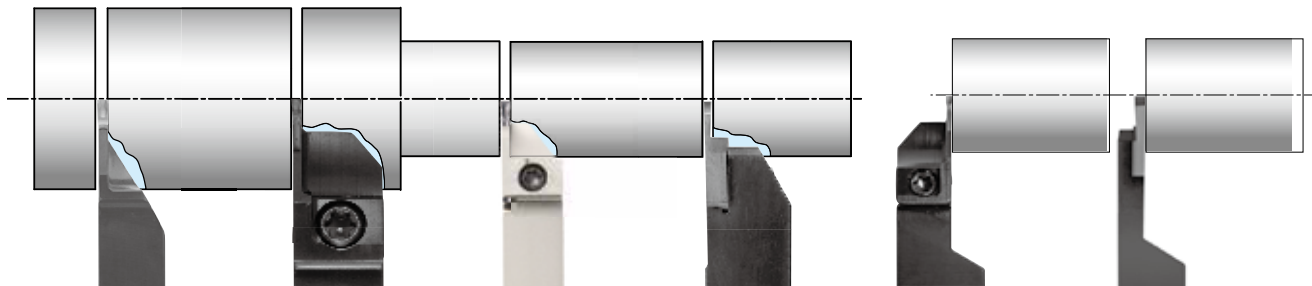
1. For PKM, PKM-^R/_L, TKN and TK^R/_L, set the cutting edge height 0.1~0.2 mm above the center height (Fig. 3)
For other toolholders, set the cutting edge to the center height.
2. Be sure to perform wet processing. Apply enough coolant to the cutting edge.
3. Keep a constant rate during processing so that optimum product life will be achieved.
4. Cut off as close to the chuck as possible.
5. Lower the feed rate to 1/2 to 1/3 at the near center to prevent impact caused by machining.

Overuse of insert and toolholder (blade) may cause insert breakage and toolholder (blade) damage.
Do not rework the insert and toolholder (blade) to prevent damage.
Clean the insert pocket well with compressed air when replacing insert.

Fig. 3 (PKM, PKM-^R/_L, TKN, TK^R/_L)

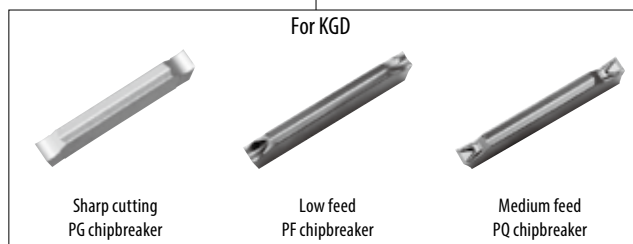
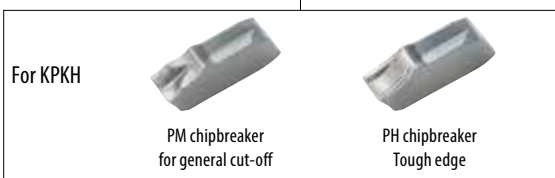
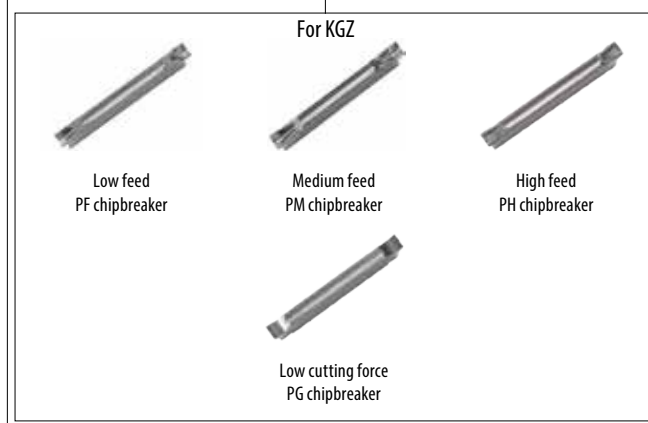
Small dia. cut-off $\sim \phi 51$

Small shank



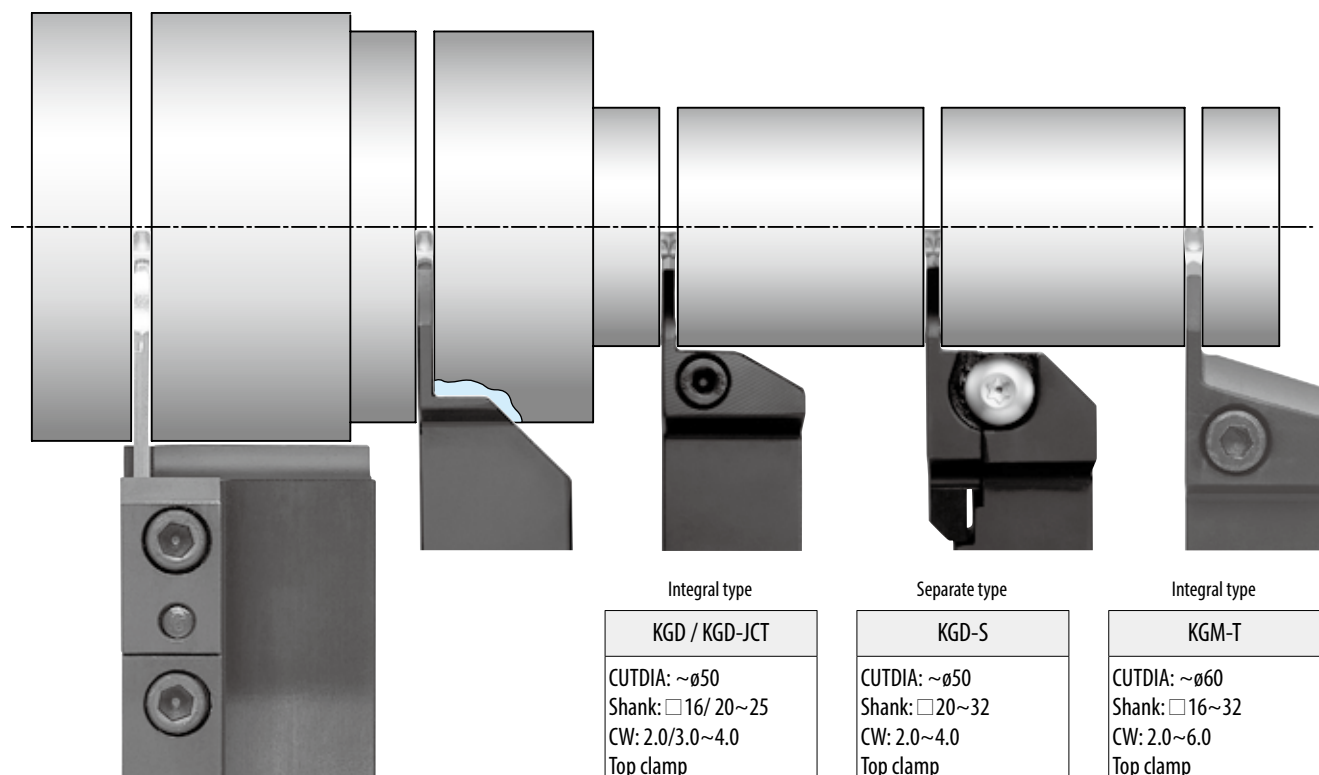
KPKH / KTKH-S	KGD / KGD-JCTM	KGZ	KTKF	KGDS / KGZS	KTKF-S
CUTDIA: $\sim \phi 45$ Shank: $\square 20 \sim 25$ (KPKH) $\square 10 \sim 25$ (KTKH-S) CW: 3.0~4.0 (KPKH) 2.2~4.1 (KTKH-S) Self clamp	CUTDIA: $\sim \phi 51$ Shank: $\square 10 \sim 25$ CW: 1.3~4.0 Top clamp	CUTDIA: $\sim \phi 51$ Shank: $\square 10 \sim 25$ CW: 1.3~3.0 Top clamp	CUTDIA: $\sim \phi 16$ Shank: $\square 10 \sim 25$ CW: 0.5~2.0 Lateral side clamp	CUTDIA: $\sim \phi 24$ Shank: $\square 16$ CW: 1.3~3.0 Top clamp	CUTDIA: $\sim \phi 16$ Shank: $\square 10 \sim 12$ CW: 0.5~2.0 Lateral side clamp
	H34 H39	H28	H9, H10, H12, H15	H29 H36	H18

H67
H68
H73



H

Cut-Off

General cut-off $\sim\phi 120$ 

Blade + Toolblock	Integral type	Integral type	Separate type	Integral type
KPKB / KTKB	KPKH / KTKH-S	KGD / KGD-JCT	KGD-S	KGM-T
CUTDIA: $\sim\phi 120$ Toolblock: $\square 16\sim 32$ CW: 1.6 $\sim$ 6.0 (KPKB) 1.6 $\sim$ 9.6 (KTKB) Self clamp	CUTDIA: $\sim\phi 79$ Shank: $\square 20\sim 25$ CW: 2.0 $\sim$ 5.0 (KPKH) 3.1 $\sim$ 5.1 (KTKH-S) Self clamp	CUTDIA: $\sim\phi 50$ Shank: $\square 16/ 20\sim 25$ CW: 2.0/3.0 $\sim$ 4.0 Top clamp	CUTDIA: $\sim\phi 50$ Shank: $\square 20\sim 32$ CW: 2.0 $\sim$ 4.0 Top clamp	CUTDIA: $\sim\phi 60$ Shank: $\square 16\sim 32$ CW: 2.0 $\sim$ 6.0 Top clamp
H60, H61, H72	H67, H68, H73	H40, H43	H41	H52
For KPKB / KPKH	For KTKB / KTKH-S	2-edge Good chip control PM chipbreaker	2-edge Good chip control PM chipbreaker	2-edge Chipbreaker for sharp cutting
PM chipbreaker for general cut-off	PH chipbreaker Tough edge	1-edge Good chip control PM chipbreaker	2-edge High feed rate PH chipbreaker	2-edge Chipbreaker for stability
For KTKB / KTKH-S	Chipbreaker for general cut-off	1-edge High feed rate PH chipbreaker	1-edge High feed rate PH chipbreaker	1-edge Chipbreaker for stability
Chipbreaker for low feed cut-off				

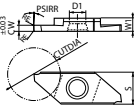
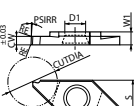
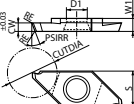
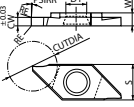
Blade + Toolblock		Separate type	Integral type		
KPKB	KTKB	KGD-S	KTKH-S	KGD / KGD-JCT	KGM-T

H



Cut-Off

TKF12

			Carbon steel / Alloy steel										P				
			Stainless steel										M				
			Cast iron										K				
			Non-ferrous metals										N				
Insert		Description	No. of edges	Dimension (mm)						Angle (°)	Tolerance (mm)		Carbide				Applicable toolholder H9, H10 H12, H15 H18
				CW	S	D1	RE	W1	CUTDIA	PSIRR	CW min.	CW max.	DLC	PVD	-		
		TKF12R 050-S 070-S 100-S 125-S 150-S 200-S	2	0.5	8.7	5	0.03	3	5	0	-0.03	+0.03	●	●	●	●	KTKFR...-12 KTKFR...-12-Y KTKFR-12JCTM KTKFR...-12SA KTKFR...-12SB
				0.7					8				●	●	●	●	
				1					12				●	●	●	●	
				1.25					12				●	●	●	●	
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
		TKF12L 050-S 070-S 100-S 125-S 150-S 200-S	2	0.5					5				●	●	●	●	KTKFL...-12 KTKFL-12JCTM KTKFL...-12SA KTKFL...-12SB
				0.7					8				●	●	●	●	
				1					12				●	●	●	●	
				1.25					12				●	●	●	●	
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
		TKF12R 100-T 150-T 200-T	2	1	8.7	5	0.08	3	12	0	-0.03	+0.03	●	●	●	●	KTKFR...-12 KTKFR...-12-Y KTKFR-12JCTM KTKFR...-12SA KTKFR...-12SB
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
				1					12				●	●	●	●	
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
		TKF12L 100-T 150-T 200-T	2	1					12				●	●	●	●	KTKFL...-12 KTKFL-12JCTM KTKFL...-12SA KTKFL...-12SB
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
				1					12				●	●	●	●	
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
		TKF12R 050-S-16DR 070-S-16DR 100-S-16DR 125-S-16DR 150-S-16DR 200-S-16DR	2	0.5	8.7	5	0.03	3	5	16	-0.03	+0.03	●	●	●	●	KTKFR...-12 KTKFR...-12-Y KTKFR-12JCTM KTKFR...-12SA KTKFR...-12SB
				0.7					8				●	●	●	●	
				1					12				●	●	●	●	
				1.25					12				●	●	●	●	
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
		TKF12L 050-S-16DR 070-S-16DR 100-S-16DR 125-S-16DR 150-S-16DR 200-S-16DR	2	0.5					5				●	●	●	●	KTKFL...-12 KTKFL-12JCTM KTKFL...-12SA KTKFL...-12SB
				0.7					8				●	●	●	●	
				1					12				●	●	●	●	
				1.25					12				●	●	●	●	
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
		TKF12R 100-T-16DR 150-T-16DR 200-T-16DR	2	1	8.7	5	0.08	3	12	16	-0.03	+0.03	●	●	●	●	KTKFR...-12 KTKFR...-12-Y KTKFR-12JCTM KTKFR...-12SA KTKFR...-12SB
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
				1					12				●	●	●	●	
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
		TKF12L 100-T-16DR 150-T-16DR 200-T-16DR	2	1					12				●	●	●	●	KTKFL...-12 KTKFL-12JCTM KTKFL...-12SA KTKFL...-12SB
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
				1					12				●	●	●	●	
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
		TKF12R 050-NB 070-NB 100-NB 150-NB 200-NB	2	0.5	8.7	5	0	3	5	0	-0.03	+0.03	●	●	●	●	KTKFR...-12 KTKFR...-12-Y KTKFR-12JCTM KTKFR...-12SA KTKFR...-12SB
				0.7					8				●	●	●	●	
				1					12				●	●	●	●	
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
				2					12				●	●	●	●	
		TKF12L 050-NB 070-NB 100-NB 150-NB 200-NB	2	0.5					5				●	●	●	●	KTKFL...-12 KTKFL-12JCTM KTKFL...-12SA KTKFL...-12SB
				0.7					8				●	●	●	●	
				1					12				●	●	●	●	
				1.5					12				●	●	●	●	
				2					12				●	●	●	●	
				2					12				●	●	●	●	

Lead angle (PSIRR) shows the angle when installed in toolholder.

As Fig. 1 of H11 shows, the cut-off diameter of the insert (CUTDIA) is indicated when the top of the cut-off edge progresses 1 mm from the center.

Right-hand shown

● : Standard item

TKF12

		Carbon steel / Alloy steel										☺	☹	P			
		Stainless steel										☹	☺	M			
		Cast iron												☹	K		
		Non-ferrous metals												☺	N		
Insert		Description	No. of edges	Dimension (mm)						Angle (°)	Tolerance (mm)		Carbide			Applicable toolholder 🔧 H9, H10 H12, H15 H18	
				CW	S	D1	RE	W1	CUTDIA		PSIRR	CW min.	CW max.	PVD			-
														PR1535	PR1725		
	 Without Chipbreaker	TKF12R	050-NB-20DR	2	0.5	8.7	5	0	3	5	20	-0.03	+0.03	●	●	●	KTKFR...-12
		070-NB-20DR	0.7		8					●				●	●	KTKFR...-12-Y	
		100-NB-20DR	1		12					●				●	●	KTKFR-12JCTM	
		150-NB-20DR	1.5		12					●				●	●	KTKFR...-12SA	
		200-NB-20DR	2		12					●				●	●	KTKFR...-12SB	
	TKF12L	050-NB-20DR	0.5	5	5	●	●	●	KTKFL...-12								
		070-NB-20DR	0.7	8	●	●	●	KTKFL-12JCTM									
		100-NB-20DR	1	12	●	●	●	KTKFL...-12SA									
		150-NB-20DR	1.5	12	●	●	●	KTKFL...-12SB									
		200-NB-20DR	2	12	●	●	●										

Lead angle (PSIRR) shows the angle when installed in toolholder.

As Fig. 1 of H11 shows, the cut-off diameter of the insert (CUTDIA) is indicated when the top of the cut-off edge progresses 1 mm from the center.

Right-hand shown

Inserts identification system

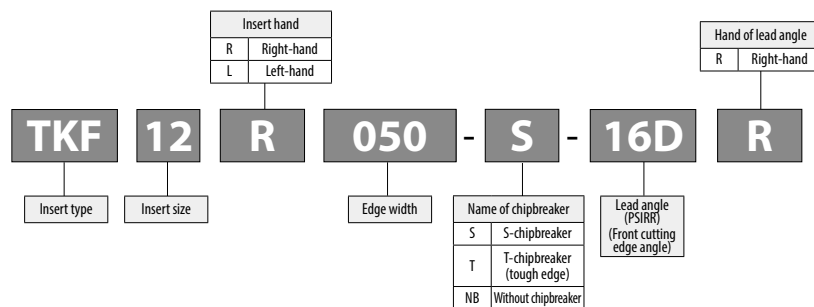
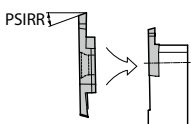
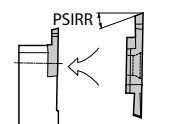
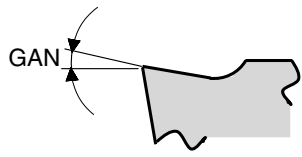


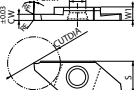
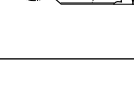
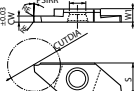
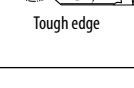
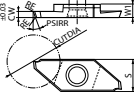
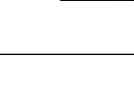
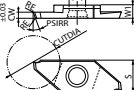
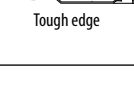
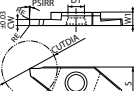
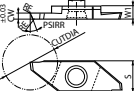
Table 1

Toolholder	Right-hand	Toolholder	Left-hand
Insert	Right-hand	Insert	Left-hand
Lead angle	Right-hand	Lead angle	Right-hand
			

Descriptions of chipbreaker edge shape

Edge shape	S chipbreaker		T chipbreaker (Tough edge)		NB (Without chipbreaker)	
	GAN	Description	GAN	Description	GAN	Description
	15°	TKF12...-S	12°	TKF...-T TKF...-T-16DR	0°	TKF...-NB TKF...-NB-20DR
	20°	TKF16...-S TKF16...-S-16DR				
	25°	TKF12...-S-16DR				

TKF16

			Carbon steel / Alloy steel										☺☺☺☺				P
			Stainless steel										☺☺☺☺				M
			Cast iron										☹☹☹☹				K
			Non-ferrous metals										☹☹☹☹				N
Insert		Description	No. of edges	Dimension (mm)						Angle (°)	Tolerance (mm)		Carbide				Applicable toolholder ☺ H9, H15 H18
				CW	S	D1	RE	W1	CUTDIA		PSIRR	CW min.	CW max.	DLC	PVD	-	
		TKF16R 150-S 200-S	2	1.5 2	9.5	5	0.05	4	16	0	-0.03	+0.03	●	●	●	●	KTKFR...-16 KTKFR-16JCTM KTKFR...-16SA KTKFR...-16SB
		TKF16L 150-S 200-S		1.5 2									●	●	●	●	
		TKF16R 150-T 200-T	2	1.5 2	9.5	5	0.08	4	16	0	-0.03	+0.03	●	●	●	●	KTKFR...-16 KTKFR-16JCTM KTKFR...-16SA KTKFR...-16SB
		TKF16L 150-T 200-T		1.5 2									●	●	●	●	
		TKF16R 150-S-16DR 200-S-16DR	2	1.5 2	9.5	5	0.05	4	16	16	-0.03	+0.03	●	●	●	●	KTKFR...-16 KTKFR-16JCTM KTKFR...-16SA KTKFR...-16SB
		TKF16L 150-S-16DR 200-S-16DR		1.5 2									●	●	●	●	
		TKF16R 150-T-16DR 200-T-16DR	2	1.5 2	9.5	5	0.08	4	16	16	-0.03	+0.03	●	●	●	●	KTKFR...-16 KTKFR-16JCTM KTKFR...-16SA KTKFR...-16SB
		TKF16L 150-T-16DR 200-T-16DR		1.5 2									●	●	●	●	
		TKF16R 150-NB 200-NB	2	1.5 2	9.5	5	0	4	16	0	-0.03	+0.03	●	●	●	●	KTKFR...-16 KTKFR-16JCTM KTKFR...-16SA KTKFR...-16SB
		TKF16L 150-NB 200-NB		1.5 2									●	●	●	●	
		TKF16R 150-NB-20DR 200-NB-20DR	2	1.5 2	9.5	5	0	4	16	20	-0.03	+0.03	●	●	●	●	KTKFR...-16 KTKFR-16JCTM KTKFR...-16SA KTKFR...-16SB
		TKF16L 150-NB-20DR 200-NB-20DR		1.5 2									●	●	●	●	

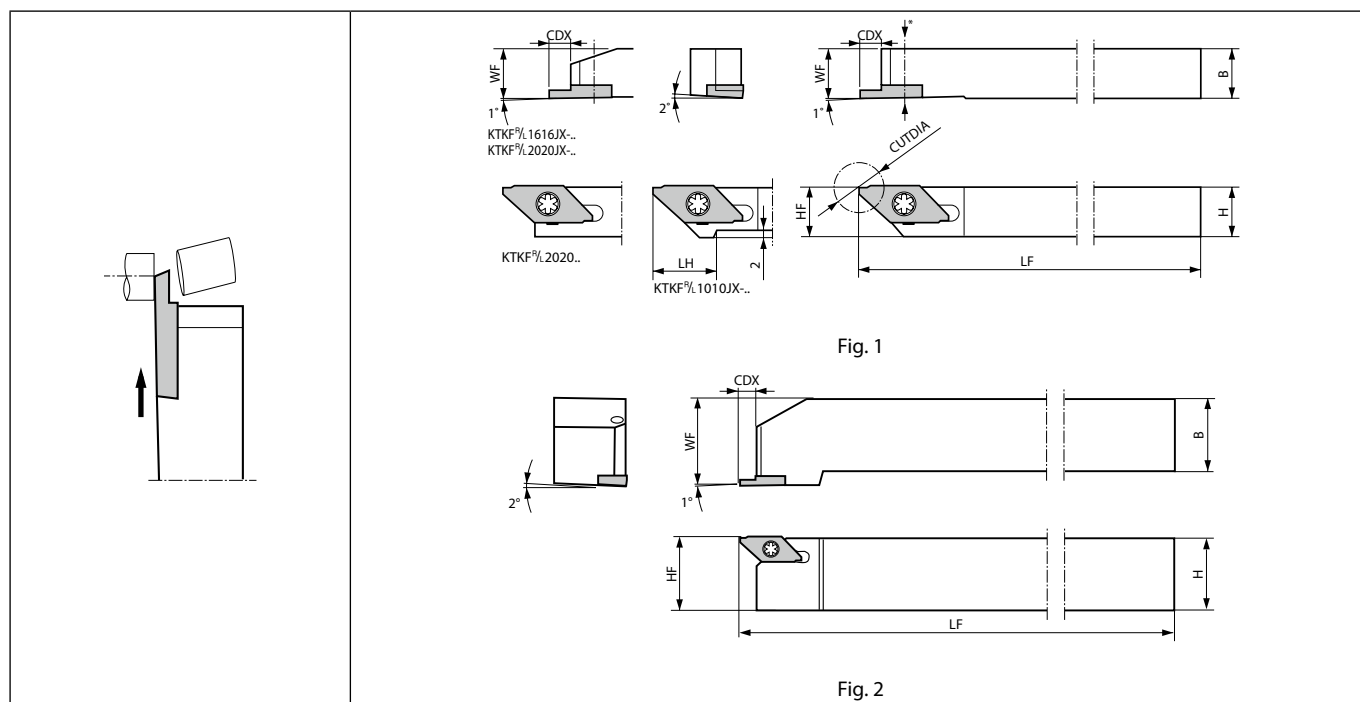
Lead angle (PSIRR) shows the angle when installed in toolholder.

As Fig. 1 of H11 shows, the cut-off diameter of the insert (CUTDIA) is indicated when the top of the cut-off edge progresses 1 mm from the center.

Right-hand shown

● : Standard item

KTKF



Right-hand shown | Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Toolholder dimensions

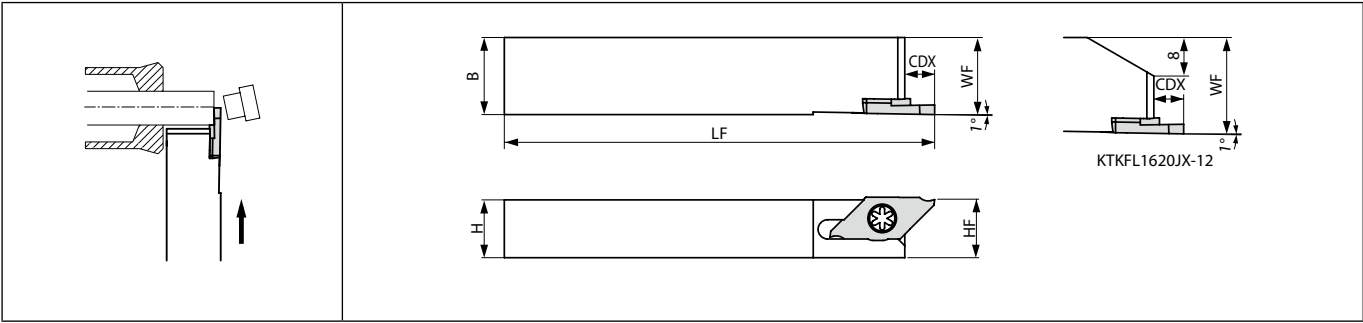
Description	Availability		Dimension (mm)							Fig.	Spare parts		Applicable inserts ➡ H6~H8
											Screw	Wrench	
	R	L	CDX	H	B	LH	HF	LF	WF				
KTKF% 1010JX-12	●	●	6	10	10	15	10	120	10	1	SB-4590TRWN	FT-10	TKF12%...
1212F-12	●	●		12	12		12	85	12				
1212JX-12	●	●		16	16	-	16	120	16				
1616JX-12	●	●		20	20		20		20				
2020JX-12	●	●		25	25		25	150	30				
2525M-12	●									2			TKF12R...
KTKF% 1010JX-16	●	●	8	10	10	20	10	120	10	1	SB-4590TRWN	FT-10	TKF16%...
1212F-16	●	●		12	12		12	85	12				
1212JX-16	●	●		16	16	-	16	120	16				
1616JX-16	●	●		20	20		20		20				
2020JX-16	●	●		25	25		25	150	30				
2525M-16	●									2			TKF16R...

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

See H6 to H8 for the actual cut-off diameter.

Recommended cutting conditions ➡ H19

KTKF (Goose-neck holder)



Left-hand shown | Left-hand Insert for Left-hand Toolholder.

Toolholder dimensions

Description	Availability	Dimension (mm)							Spare parts		Applicable inserts ➡ H6, H7
									Screw	Wrench	
		L	CDX	H	B	HF	LF	WF			
KTKFL 1216JX-12 1620JX-12	●	6		12	16	12	120	16	SB-4590TRWN	FT-10	TKF12L...
	●			16	20	16		20			

CDX shows the distance from the toolholder to the cutting edge.
See H6 to H7 for the actual cut-off diameter.

Recommended cutting conditions ➡ H19

● : Standard item

How to Use

1) When using main spindle only

Maximum cutting diameter is CUTDIA (Fig.1).

Even if the cutting edge runs beyond the center line (Fig.2),

the insert does not contact the workpiece, since the workpiece falls off.

(The clearance between the insert and the workpiece is 0.2 mm)

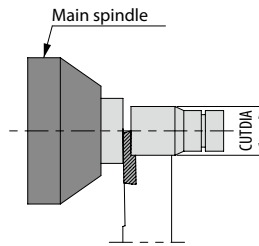


Fig.1

(When the edge is at the center)

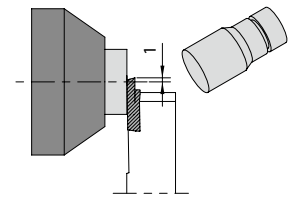


Fig.2

(When the edge is 1mm beyond the center)

2) When using both main and sub spindles

In this case, when the cutting edge runs beyond the center line, the insert will contact the workpiece, since the workpiece does not fall off.

Therefore the programmed distance beyond the center must be considered.

e.g.) When the cutting edge is programmed to run 1mm beyond the center.

Workpiece maximum, CUTDIA2 (Fig.4) = [CUTDIA - 1 mm × 2] (mm)

(The clearance between the insert and the workpiece is 0.2 mm)

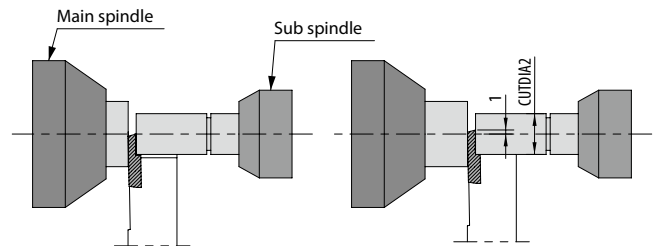


Fig.3

(When the edge is at the center)

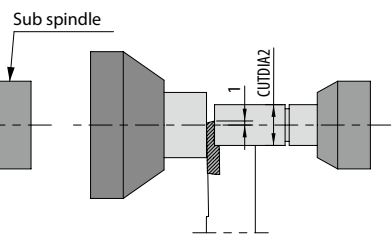


Fig.4

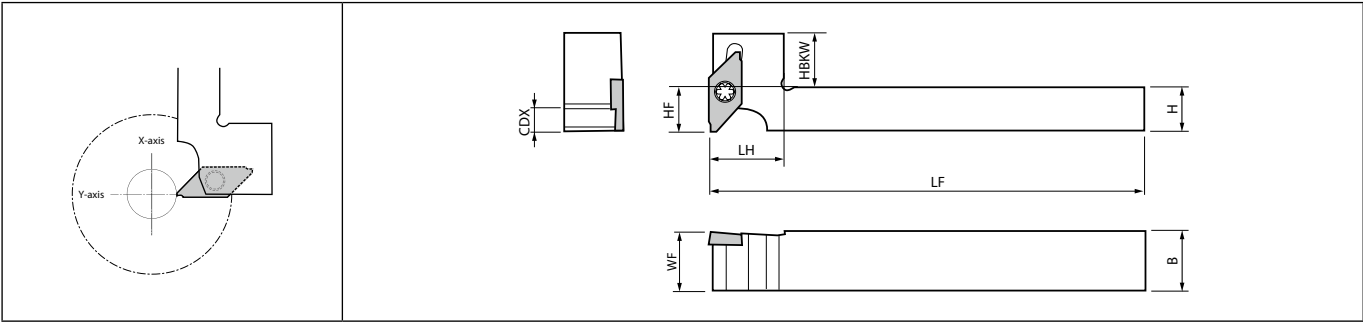
(When the edge is 1mm beyond the center)

How to select edge preparation

Troubleshooting

Problems	Countermeasures	Countermeasures						
		Lead angle (PSIRR)		Edge width		Name of chipbreaker		
		Neutral (0°)	Yes	Narrower	Wider	S	T	NB
Insert fracture	Insert fracture prevention	Effective			Effective		Effective	Effective
Long cutting time	Cutting time reduction	Effective			Effective		Effective	Effective
Entangled chips	Prevention of chip entanglement	Effective		Effective		Effective		
Large boss remain	Small boss remain		Effective	Effective		Effective		
Ring remain (Hollow workpiece)	Prevention of ring remain		Effective	Effective		Effective		
Deformation of hollow workpiece (pipe)	Preventing deformation		Effective	Effective		Effective		

KTKF (Y-axis toolholder)



Right-hand shown | Right-hand Insert for Right-hand Toolholder.

Toolholder dimensions

Description		Availability	Dimension (mm)								Spare parts		Applicable inserts ➡ H6, H7
											Screw	Wrench	
			R	CDX	H	B	LH	HF	HBKW	LF	WF		
KTKFR	1216JX-12-Y	●	6	12	16	20	12	15	120	16	SB-4590TRWN	FT-10	TKF12R...
	1616JX-12-Y	●		16		25	16	11					

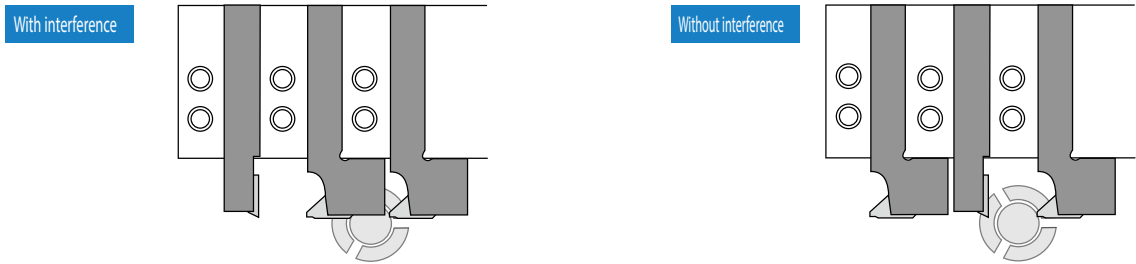
CDX shows the distance from the toolholder to the cutting edge.
See **H6** to **H7** for the actual cut-off diameter.

Recommended cutting conditions ➡ **H19**

● : Standard item

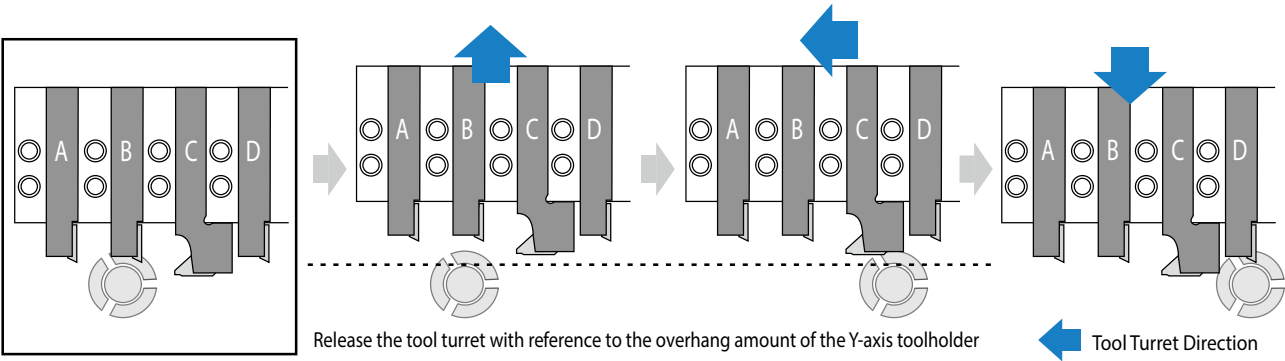
Precautions for using Y-axis toolholder

Do not use Y-axis toolholders side by side to prevent interference. (Only two Y-axis holder can be used at the same time)

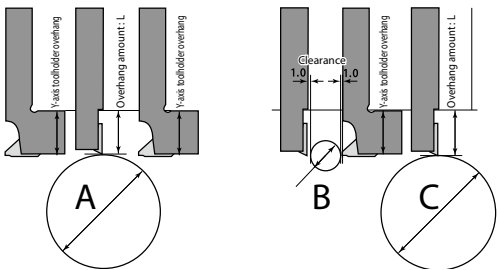
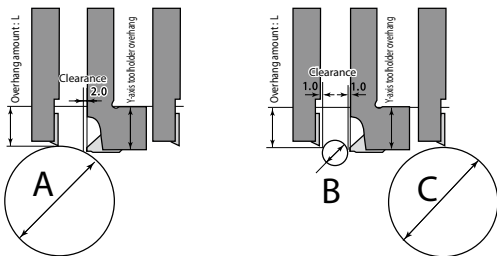


Standard toolholders may be mounted between two Y-axis toolholders

When changing the tool, set the retracted position with reference to the cutting edge of the Y-axis holder. (When exchanging from tool B to D)



Note that using other toolholders together will result in dierent outside diameters (Unit : mm)

Y-axis toolholder overhang	Examples	Overhang amount L	20	22	25
		Available outside cutting diameter (φ)			
20		A	Without restriction	Without restriction	Without restriction
		B	13.0	13.0	13.0
		C	Without restriction	Without restriction	Without restriction
25		A	38.0	58.0	Without restriction
		B	14.9	13.6	13.0
		C	45.0	60.0	Without restriction

Direct coolant cut-off toolholders for automatic lathe

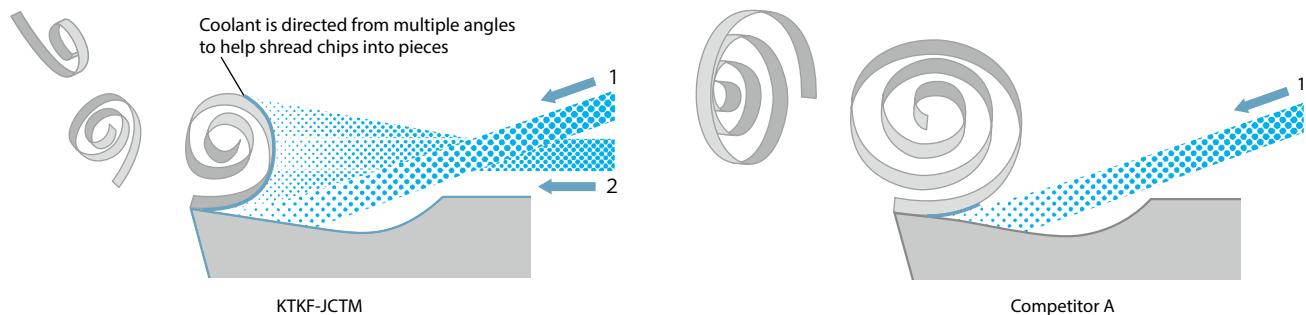
KTKF-JCTM

Finely breaks chips into small pieces. Superior chip control performance when machining difficult-to-cut material and stainless steel. Superior cooling action improves tool life.

1 Superior chip control performance

Discharges coolant in two directions toward rake surface of insert. Finely breaks chips into small pieces.

Coolant discharge structure comparison

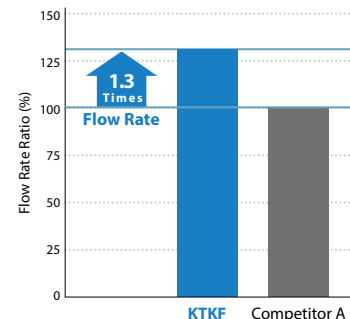


Chip control comparison (Internal evaluation)

SUS304				TAB6400 (Ti-6Al-4V)			
f (mm/rev)	0.01	0.02	0.03	f (mm/rev)	0.01	0.02	0.03
KTKF-JCT				KTKF-JCT			
Competitor A				Competitor A			

Cutting conditions: $V_c = 80$ m/min, Wet (Oil-based) lubricating pressure: 1.5 MPa (Internal)
Workpiece: $\phi 12$ mm

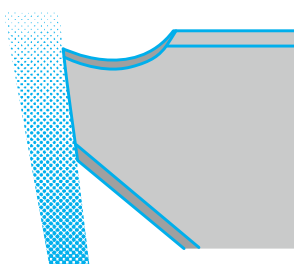
Coolant flow rate comparison (Internal evaluation)



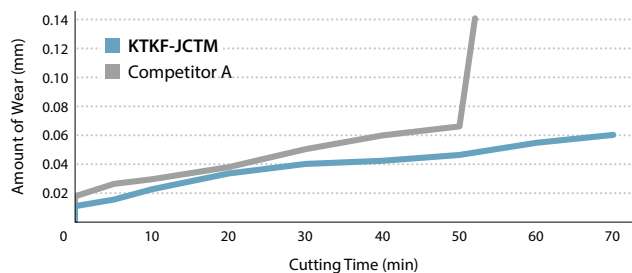
Lubricating Pressure: 1.5 MPa (Internal)

2 Superior cooling action improves tool life

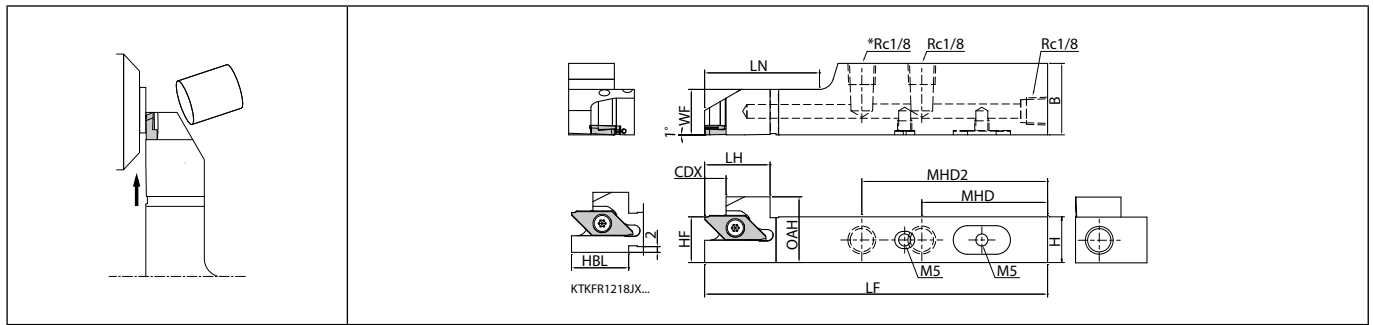
Coolant is directed from the flank face of the insert as well. An ample supply of coolant to the tool edge area helps to further suppress insert wear.



Wear resistance comparison (Internal evaluation)



Cutting conditions: $V_c = 100$ m/min, $f = 0.02$ mm/rev, Wet (Oil-based)
Lubricating Pressure: 1.5 MPa (Internal) Workpiece material: TAB6400 (Ti-6Al-4V) $\phi 12$

KTKFR-JCTM (Coolant-through holders / Right-hand(R))

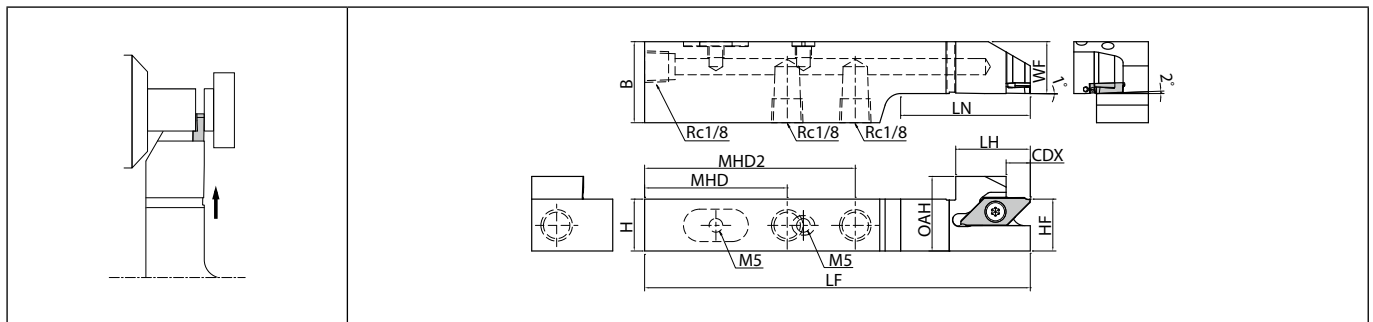
Right-hand shown | Right-hand Insert for Right-hand Toolholder. | KTKFR12-JCTM : 2-Rc1/8

Toolholder dimensions

Description		Availability	Dimension (mm)												Coolant hole	Spare parts				Applicable inserts ➡ H6~H8
																Plug	Plug	Screw	Wrench	
			R	CDX	H	B	LH	OAH	MHD	MHD2	HF	HBL	LF	LN		WF				
KTKFR 1218JX-12JCTM 1625JX-12JCTM 2025JX-12JCTM	●	7.5	12	18	20	19	54	-	12	20		28	12	Yes	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF12R...	
	●		16		25	23		23	44	65	16		120			40				16
	●		20				27			20						20				
KTKFR 1625JX-16JCTM 2025JX-16JCTM	●	9.6	16	25	23	23	44	65	16	20	-	120	40	16	Yes	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF16R...
	●		20																	

CDX shows the distance from the toolholder to the cutting edge.
See H6 to H8 for the actual cut-off diameter.

Recommended cutting conditions H19

KTKFL-JCTM (Coolant-through holders / Left-hand(L))

Left-hand shown | Left-hand Insert for Left-hand Toolholder.

Toolholder dimensions

Description		Availability	Dimension (mm)												Coolant hole	Spare parts				Applicable inserts  H6~H8
																Plug	Plug	Screw	Wrench	
																				
KTKFL 1625JX-12JCTM	●	7.5	16	25	23	23	44	65	16	120	40	16	Yes	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF12L...		
	●		20		27	20			20											
KTKFL 1625JX-16JCTM	●	9.6	16	25	23	23	44	65	16	120	40	16	Yes	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF16L...		
	●		20		27	20			41		20									

CDX shows the distance from the toolholder to the cutting edge.
See H6 to H8 for the actual cut-off diameter.

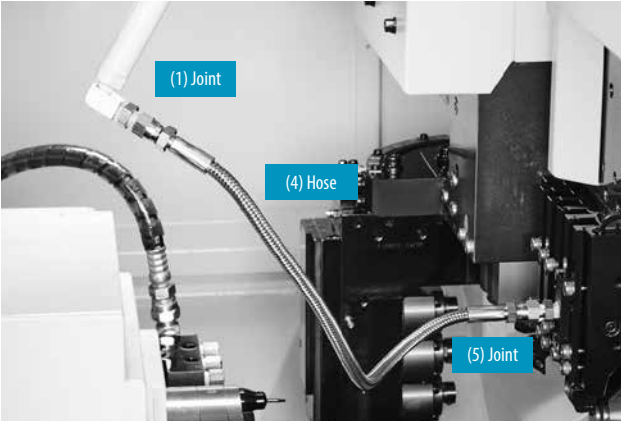
Recommended cutting conditions H19

● : Standard item

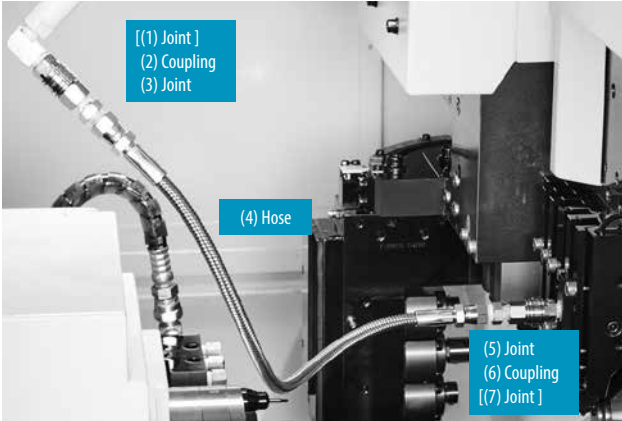
Coolant pipe parts

Pipe parts will be required separately if internal coolant is used.

Without coupling (Pump pressure: Up to 20 MPa)



With coupling (Pump pressure: Up to 7.5 MPa)



Combination part description (Example)

Spare parts	Description
(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.

Combination part description (Example)

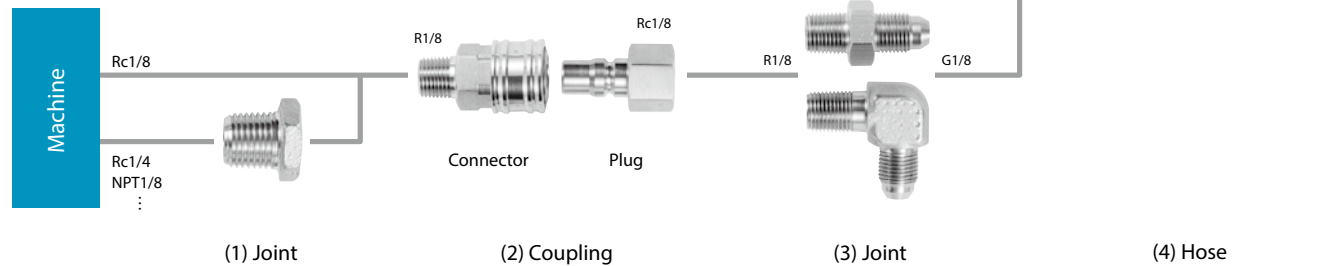
Spare parts	Description
[(1) Joint]	-
(2) Coupling	CP-ST-R1/8, P-ST-RC1/8
(3) Joint	J-ST-R1/8-G1/8
(4) Hose	HS-G1/8-G1/8-500
(5) Joint	J-ST-R1/8-G1/8
(6) Coupling	P-ST-RC1/8, CP-ST-R1/8
[(7) Joint]	-

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

Without coupling (Pump pressure: Up to 20 MPa)



With coupling (Pump pressure: Up to 7.5 MPa)



Piping installation parts description

Joint [(1)(3)(5)(7)]

Pressure resistance: ~20.0MPa

Exterior	Description	Thread standard	Std.
	J-ST-R1/4-G1/8	R1/4 ⇔ G1/8	●
	J-ST-NPT1/8-G1/8	NPT1/8 ⇔ G1/8	●
	J-ST-R1/8-G1/8	R1/8 ⇔ G1/8	●
	J-AN-R1/8-G1/8		●
	J-ST-R1/4-Rc1/8	R1/4 ⇔ Rc1/8	●
	J-ST-NPT1/8-Rc1/8	NPT1/8 ⇔ Rc1/8	●
	J-ST-R1/8-Rc1/8	Rc1/8 ⇔ R1/8 (Extension Joint)	●

Coupling [(2)(6)]

Pressure resistance: ~7.5MPa

Exterior	Description	Thread standard	Std.
	CP-ST-R1/8	R1/8	●
	P-ST-Rc1/8	Rc1/8	●

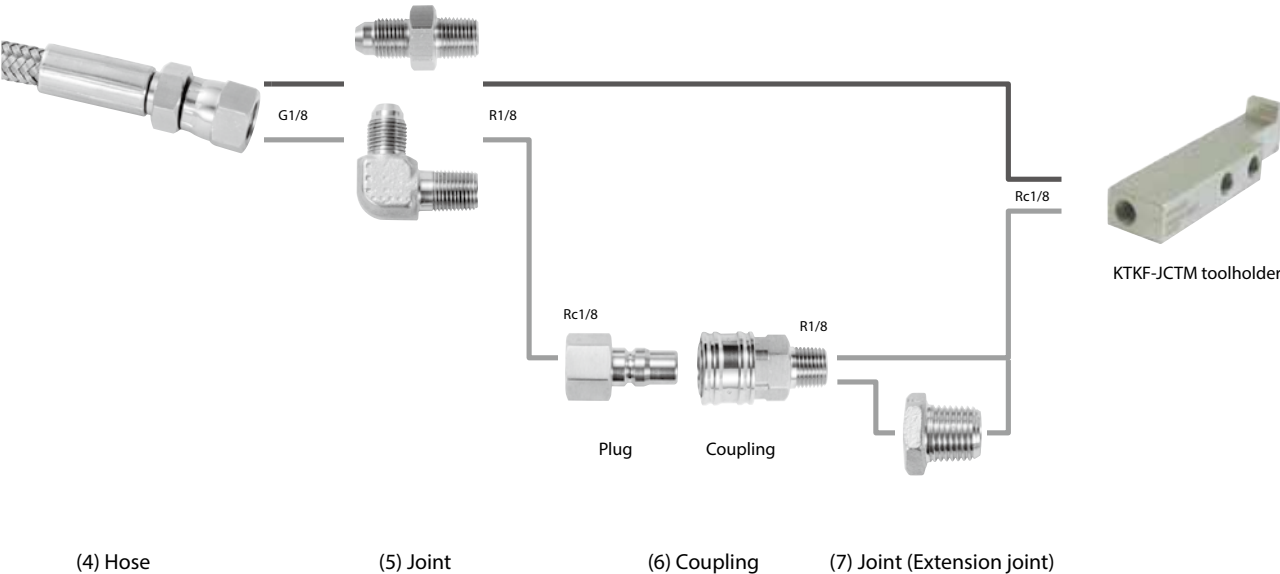
Hose (4)

Pressure resistance: ~20.0MPa

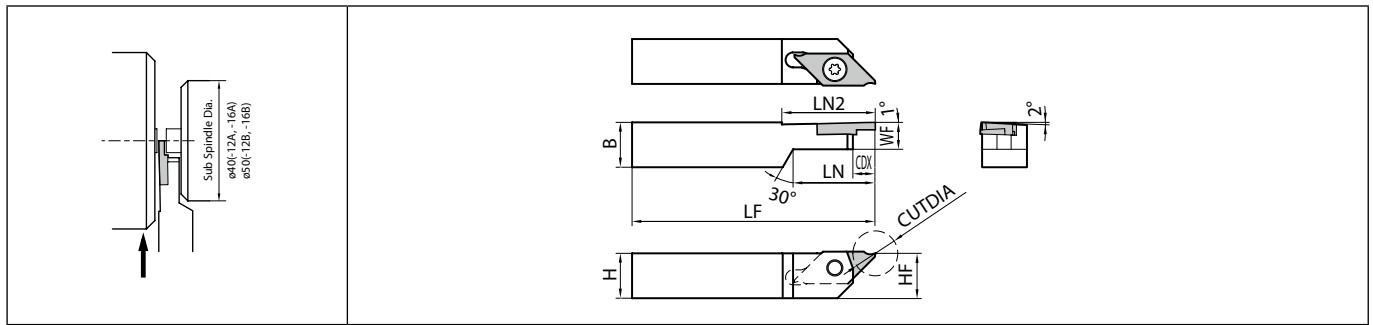
Exterior	Description	Thread standard	Total length (mm)	Std.
	HS-G1/8-G1/8-200	G1/8	200	●
	HS-G1/8-G1/8-300		300	●
	HS-G1/8-G1/8-400		400	●
	HS-G1/8-G1/8-500		500	●
	HS-G1/8-G1/8-600		600	●
	HS-G1/8-G1/8-800		800	●

Cautions

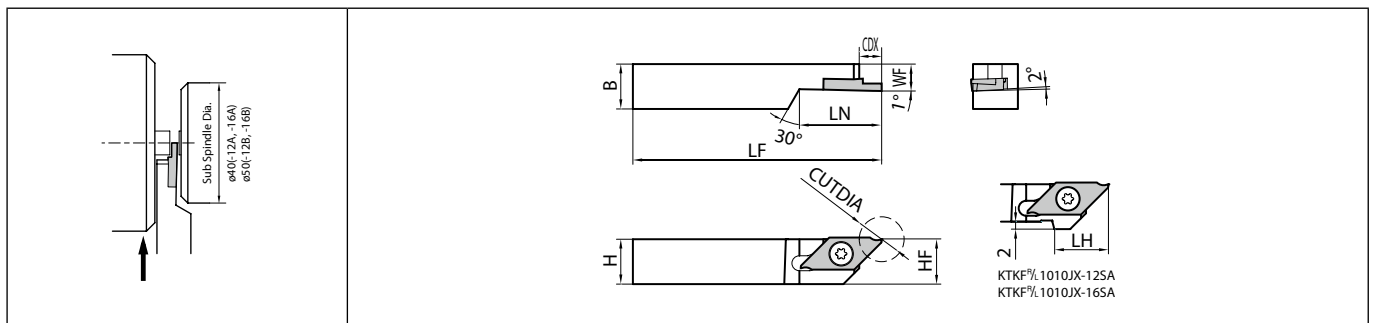
- 1. Make sure machine door is completely closed before use of these parts.
- 2. Use appropriate seal for the male thread of the piping parts and make sure the connection is secure.
Use plugs to seal off unused coolant holes.
- 3. Connect and fasten the coolant hose firmly.
- 4. The use of copper washers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



● : Standard item

KTKF-S (Cut-off / for sub spindle tooling)

Right-hand shown | Right-hand Insert for Right-hand Toolholder.



Left-hand shown | Left-hand Insert for Left-hand Toolholder.

H

Cut-Off

Toolholder dimensions

Description	Availability		Dimension (mm)										Spare parts		Applicable inserts ➡ H6~H8
													Screw	Wrench	
	R	L	CDX	H	B	LH	HF	LF	LN	LN2	WF				
KTKF%L 1010JX-12SA	●	●	6	10	10	15	10	120	22	26	7.2	SB-4570TRN	FT-10		TKF12%L...
1212F-12SA	●	●		12	12	-	12	85							
KTKF%L 1212JX-12SB	●	●	8	10	10	20	10	120	22	30	7.2	SB-4570TRN	FT-10		TKF16%L...
KTKF%L 1010JX-16SA	●	●		12	12	-	12	85							
1212F-16SA	●	●		12	12	-	12	120	26						
KTKF%L 1212JX-16SB	●	●													

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

Cut-off diameter (CUTDIA) depends on the insert edge width.

See **H6** to **H8** for the actual cut-off diameter.

Only Right-hand is available for LN2 dimension.

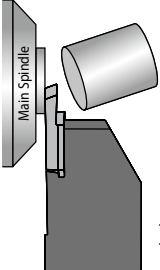
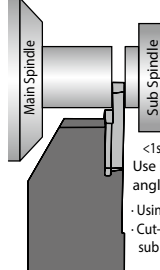
Recommended cutting conditions ➡ **H19**

● : Standard item

KTKF / KTKF-S selection reference

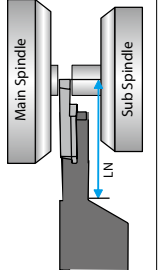
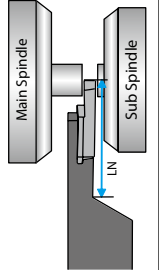
KTKF

- Both Right-hand and Left-hand types are applicable to gang tool post.
- Basically Left-hand type is used for cut-off operation using a sub spindle.

KTKFR (Right-hand toolholder)	KTKFL (Left-hand toolholder)
 <1st. Recommendation> Use insert with lead angle to remove boss. · Not using sub spindle · Cut-off operation near main spindle side	 <1st. Recommendation> Use insert without lead angle. · Using sub spindle · Cut-off operation near sub spindle side

KTKF-S

- When machining workpiece with small diameter, use KTKF-S to reduce overhang distance from the main spindle.

KTKFR-SA/B (Right-hand toolholder)	KTKFL-SA/B (Left-hand toolholder)
 <How to select> Hand of Toolholder · Long workpiece and more rigidity · Cut-off operation near main spindle side <How to select> LN dimension · Sub Spindle Dia. ø40→22 (SA type) ø50→26 (SB type)	 <How to select> Hand of Toolholder · Short workpiece and less rigidity · Cut-off operation near sub spindle side <How to select> LN dimension · Sub Spindle Dia. ø40→22 (SA type) ø50→26 (SB type)

Recommended cutting conditions (TKF12 / 16)

Workpiece material	Recommended insert grades (Vc: m/min)					TKF12						TKF16		Remarks
						Edge width CW (mm)								
	MEGACOAT NANO PLUS	MEGACOAT NANO	MEGACOAT	DLC coated carbide	Carbide	0.5	0.7	1.0	1.25	1.5	2.0	1.5	2.0	
	PR1725	PR1535	PR1225	PDL025	KW10	f (mm/rev)								
Carbon steel	★ 70 ~ 170 (50 ~ 140)	☆ 70 ~ 150 (50 ~ 120)	☆ 70 ~ 150 (50 ~ 120)	-	-	0.01 ~ 0.02	0.01 ~ 0.03	0.01 ~ 0.04 (0.01 ~ 0.05)	0.01 ~ 0.04	0.01 ~ 0.04 (0.02 ~ 0.1)	0.01 ~ 0.04 (0.02 ~ 0.1)	0.02 ~ 0.07 (0.02 ~ 0.1)	0.02 ~ 0.07 (0.02 ~ 0.1)	Coolant
Alloy steel	★ 70 ~ 170 (50 ~ 140)	☆ 70 ~ 150 (50 ~ 120)	☆ 70 ~ 150 (50 ~ 120)	-	-	0.01 ~ 0.02	0.01 ~ 0.03	0.01 ~ 0.04 (0.01 ~ 0.05)	0.01 ~ 0.04	0.01 ~ 0.04 (0.02 ~ 0.1)	0.01 ~ 0.04 (0.02 ~ 0.1)	0.02 ~ 0.07 (0.02 ~ 0.1)	0.02 ~ 0.07 (0.02 ~ 0.1)	
Stainless steel	☆ 60 ~ 140 (40 ~ 120)	★ 60 ~ 120 (40 ~ 100)	☆ 60 ~ 120 (40 ~ 100)	-	-	0.005 ~ 0.015	0.01 ~ 0.02	0.01 ~ 0.02 (0.01 ~ 0.03)	0.01 ~ 0.02	0.01 ~ 0.02 (0.01 ~ 0.05)	0.01 ~ 0.02 (0.01 ~ 0.05)	0.01 ~ 0.04 (0.01 ~ 0.05)	0.01 ~ 0.04 (0.01 ~ 0.05)	
Cast iron	-	-	-	-	★ 50 ~ 100	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.05	0.01 ~ 0.05	0.01 ~ 0.05	0.01 ~ 0.05	0.02 ~ 0.08	0.02 ~ 0.08	
Aluminum alloys	-	-	-	★ 200 ~ 500	☆ 200 ~ 450	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.05	0.01 ~ 0.05	0.01 ~ 0.05	0.01 ~ 0.05	0.02 ~ 0.08	0.02 ~ 0.08	
Brass	-	-	-	-	★ 100 ~ 200	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.06	0.01 ~ 0.06	0.01 ~ 0.06	0.01 ~ 0.06	0.02 ~ 0.1	0.02 ~ 0.1	

*(): Tough edge type (TKF, T..)

★: 1st Recommendation ☆: 2nd Recommendation

H



Cut-Off

Cut-off solutions for small parts machining

KGZ

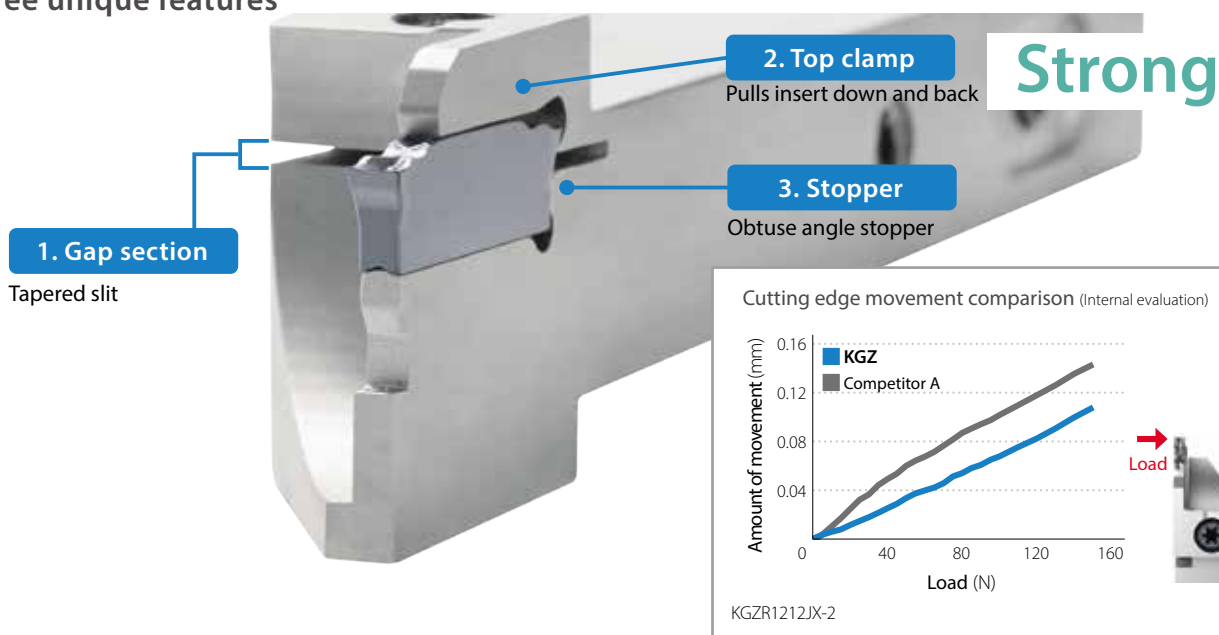
Provides stable machining and is easy to use with unique clamp design

New coating PR20 series provides longer tool life and supports a wide range of applications

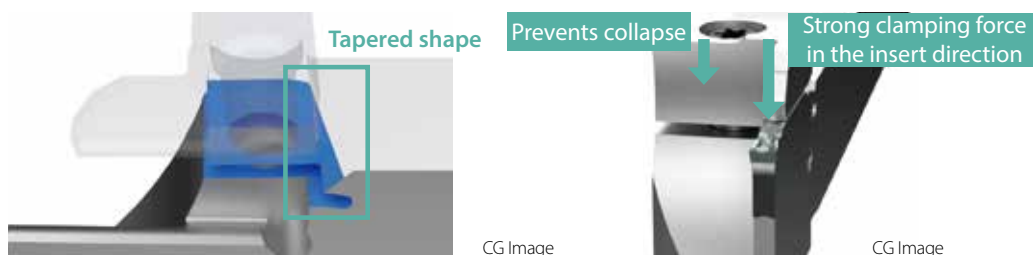
1 Achieved stable machining with newly developed clamp structure

Toolholder Sturdy clamps

Three unique features



1. Gap section Tapered slit creates strong insert hold



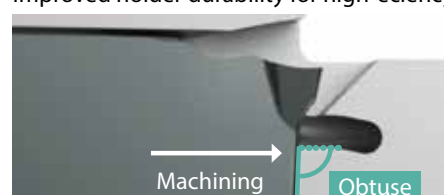
2. Top clamp

Pulls insert inward to increase hold



3. Stopper

The insert stop is designed with an obtuse shape to resist machining load and a large surface area distributes stress. Improved holder durability for high-efficiency machining.



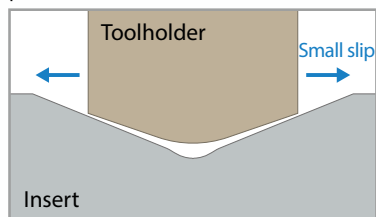
Insert Ease insert installation

Top V Shape Different groove angles at ends and center

Dependability

Groove end

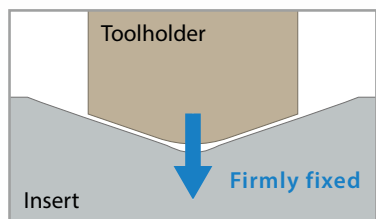
Small groove angle on top of insert
These grooves prevent the insert from shifting and provide fast and accurate insert mounts



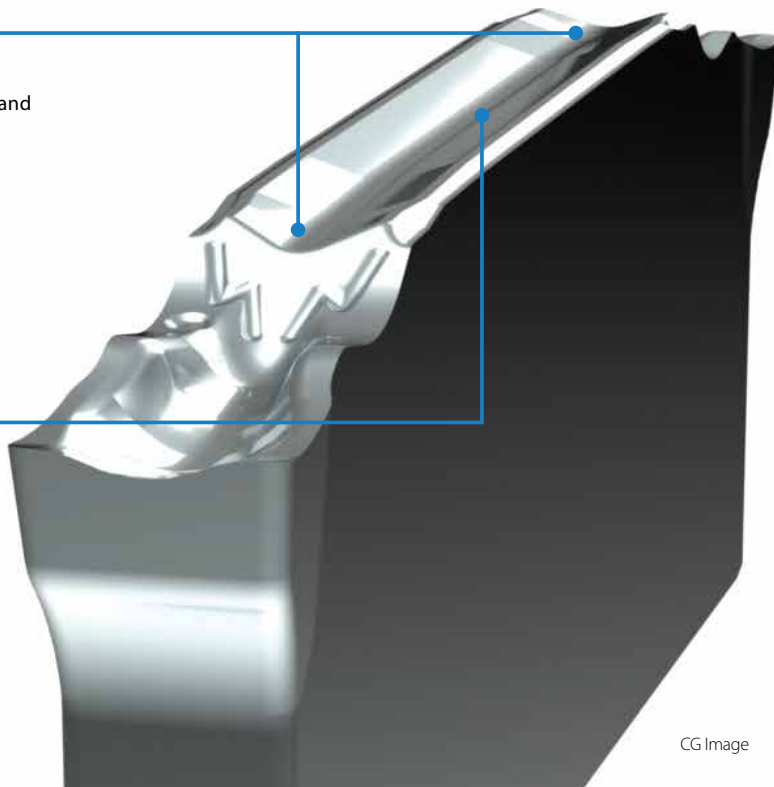
Image

Center of groove

Large groove angle on top of insert
Firmly engages the toolholder to increase hold



Image



CG Image

Excellent chatter resistance

Machined surface comparison (Internal evaluation)



Cutting conditions : $V_c \approx 60$ m/min, $f = 0.12$ mm/rev, Workpiece material : SUS303 ($\phi 14$)
Wet (External coolant) KGZR1212JX-2 Edge width : 2 mm(PM Chipbreaker)

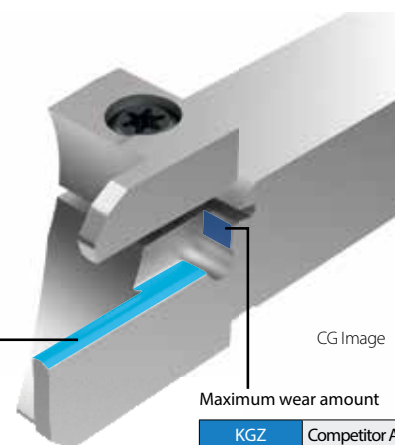
Strong toolholder durability

Toolholder durability comparison (Internal evaluation)

Toolholder damage comparison after 100,000 cuts

Maximum wear amount

KGZ	Competitor A
0.015 mm	0.02 mm
	Large



CG Image

Maximum wear amount

KGZ	Competitor A
0.01 mm	0.035 mm
	Large



Cutting conditions : $V_c \approx 80$ m/min, $f = 0.1$ mm/rev, Workpiece material : SUS303 ($\phi 14$)
Wet (External coolant) KGZR1212JX-2 Edge width : 2 mm(PM Chipbreaker)

2

New insert grades PR20 series is available MEGACOAT NANO EX coating technology provides longer tool life

New insert grades for grooving and cut-off solutions

PR20 Series

PR2015

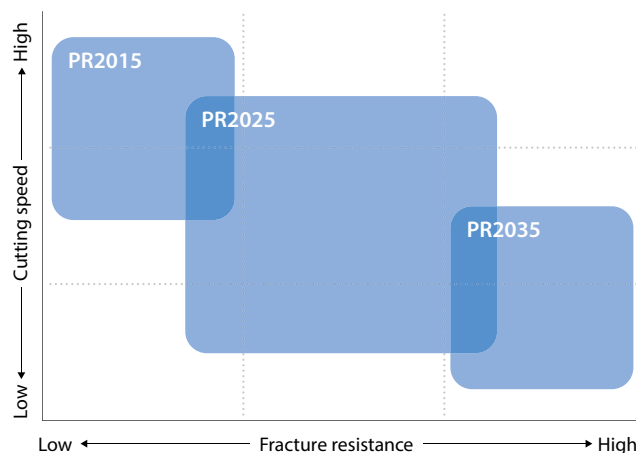
1st recommendation for cast iron
Also available for steel and stainless steel

PR2025

1st recommendation for steel
Also available for stainless steel

PR2035

1st recommendation for stainless steel
Also available for steel



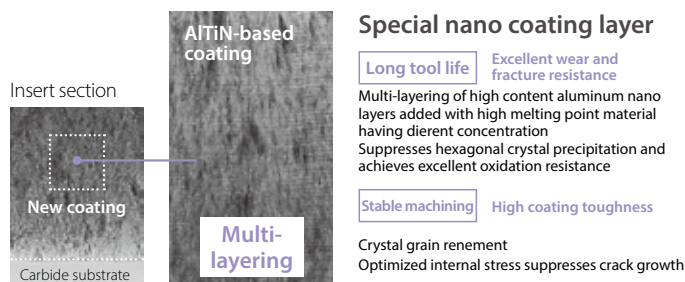
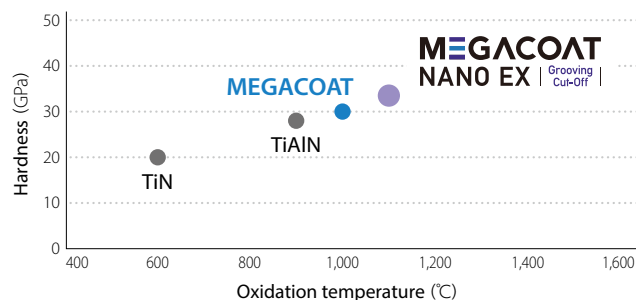
H

New coating for grooving and cut-off machining



Achieve long tool life and high stability with the combination of high content aluminum nano coating layer

Coating characteristics (Internal evaluation)

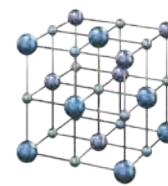


Unique Technology (Patent applied)

Proprietary coating process
Improve high content aluminum nano layers performance

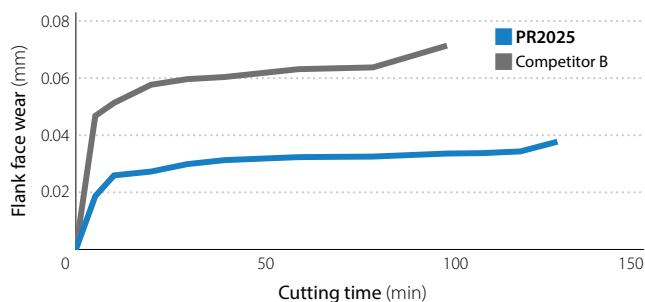
Maintains a cubic crystal structure to maximize the properties of aluminum (Al)

CG image



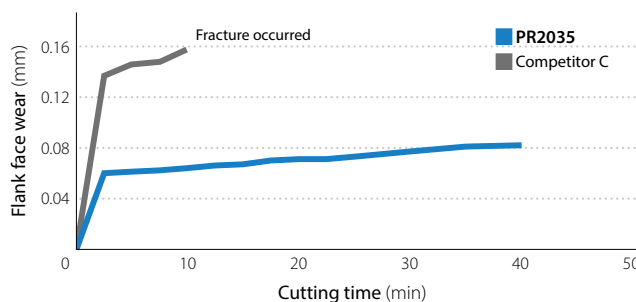
Cutting performance

S45C Wear resistance comparison (Internal evaluation)



Cutting conditions : $V_c \sim 100$ m/min, $f = 0.1$ mm/rev
Workpiece material : S45C ($\phi 20$) Wet (External coolant) GZM2020N-020PM

SUS304 Wear resistance comparison (Internal evaluation)



Cutting conditions : $V_c \sim 80$ m/min, $f = 0.05$ mm/rev
Workpiece material : SUS304 ($\phi 20$) Wet (External coolant) GZM2020N-020PM

3

Choose from a variety of insert and chipbreaker combinations for a wide range of applications

	Chip control oriented			Sharp edge
Chipbreakers	Low feed machining PF Chipbreaker	Medium feed machining PM Chipbreaker	High feed machining PH Chipbreaker	Low cutting force PG Chipbreaker
				
	With/Without Lead angle	With/Without Lead angle	No Lead angle	With/Without Lead angle
Grades	PR2015 PR2025 PR2035	PR2015 PR2025 PR2035	PR2015 PR2025 PR2035	PR2025 PR2035 PDL025 GW15
Features	Edge width from 1.3 mm For reducing cost of steel workpiece	High versatility For a variety of machining	Reduced cycle time For high feed machining	Superior sharpness For aluminum alloy machining
				
	S10C	SUS304	S45C	A6061

H



Cut-Off

4

Supports vibration/oscillation machining with stable chip control and longer tool life

Stable machining

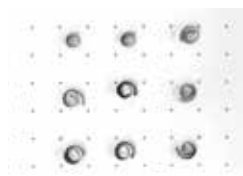
Breaks chips into small pieces with vibration machining

SUS304 Chip control comparison (Internal evaluation)

PF Chipbreaker



Good

Vibration
machiningBreaks chips into
small pieces

Cutting conditions : $V_c \sim 120$ m/min, $f = 0.03$ mm/rev
Workpiece material : SUS304 ($\phi 14$) Wet (External coolant)
KGZR1212JX-2 Edge width : 2 mm

PM Chipbreaker

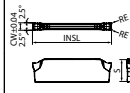


Good

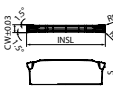
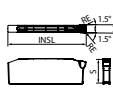
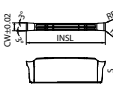
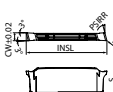
Vibration
machiningBreaks chips into
small pieces

Cutting conditions : $V_c \sim 120$ m/min, $f = 0.05$ mm/rev
Workpiece material : SUS304 ($\phi 14$) Wet (External coolant)
KGZR1616JX-2 Edge width : 2 mm

GZM/GZMS/GZG

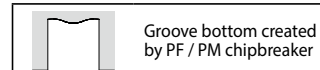
												Carbon steel / Alloy steel			Stainless steel			Cast iron			Non-ferrous metals			P			M			K			N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Insert		Description		No. of edges		Dimension (mm)				Angle (°)		Tolerance (mm)		Carbide			Applicable toolholder ➡ H26~H29																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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	 Low feed	GZM 1316N-003PF 1316N-015PF	2	1.3	4.4	0.03 0.15	16	-	-0.04	+0.04	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●</

GZM/GZMS/GZG

		Carbon steel / Alloy steel										P			
		Stainless steel										M			
		Cast iron										K			
		Non-ferrous metals										N			
Insert	Description	No. of edges	Dimension (mm)				Angle (°)	Tolerance (mm)		Carbide				Applicable toolholder ➡ H26-H29	
			CW	S	RE	INSL		PSIR [®] %	CW min.	CW max.	DLC	PVD			-
												PDL025	PR2015		
  High feed	GZM 2020N-020PH	2	2	5.9	0.2	20	-	-0.03	+0.03		●	●	●		KGZ [®] /L...-2(...) KGZS [®] /L-2(...)
	GZM 2520N-020PH	2	2.5	5.9	0.2	20	-	-0.03	+0.03		●	●	●		KGZ [®] /L...-2(...) KGZ [®] /L...-2.4(...) KGZS [®] /L-2(...)
	GZM 3020N-030PH	2	3	5.9	0.03	20	-	-0.03	+0.03		●	●	●		KGZ [®] /L...-2(...) KGZ [®] /L...-2.4(...) KGZ [®] /L...-3(...) KGZS [®] /L-2(...)
  High feed	GZMS 2020N-020PH	1	2	5.9	0.2	20	-	-0.03	+0.03		●	●	●		KGZ [®] /L...-2(...) KGZS [®] /L-2(...)
	GZMS 3020N-030PH	1	3	5.9	0.03	20	-	-0.03	+0.03		●	●	●		KGZ [®] /L...-2(...) KGZ [®] /L...-2.4(...) KGZ [®] /L...-3(...) KGZS [®] /L-2(...)
  Low cutting force	GZG 2020N-005PG	2	2	5.9	0.05	20	-	-0.02	+0.02	●		●	●	●	KGZ [®] /L...-2(...) KGZS [®] /L-2(...)
	GZG 2520N-005PG	2	2.5	5.9	0.05	20	-	-0.02	+0.02	●		●	●	●	KGZ [®] /L...-2(...) KGZ [®] /L...-2.4(...) KGZS [®] /L-2(...)
	GZG 3020N-005PG	2	3	5.9	0.05	20	-	-0.02	+0.02	●		●	●	●	KGZ [®] /L...-2(...) KGZ [®] /L...-2.4(...) KGZ [®] /L...-3(...) KGZS [®] /L-2(...)
  Low cutting force	GZG 2020R-005PG-15D	2	2	5.9	0.05	20	15	-0.02	+0.02	●		●	●	●	KGZ [®] /L...-2(...) KGZS [®] /L-2(...)
	GZG 2520R-005PG-15D	2	2.5	5.9	0.05	20	15	-0.02	+0.02	●		●	●	●	KGZ [®] /L...-2(...) KGZ [®] /L...-2.4(...) KGZS [®] /L-2(...)
	GZG 3020R-005PG-15D	2	3	5.9	0.05	20	15	-0.02	+0.02	●		●	●	●	KGZ [®] /L...-2(...) KGZ [®] /L...-2.4(...) KGZ [®] /L...-3(...) KGZS [®] /L-2(...)

Handed insert shows Right-hand

Using the PF / PM chipbreaker (for cut-off) for grooving cannot create a flat bottom (Ref. to the right figure).



Inserts identification system

Tolerance symbol		Edge width				Hand of tool		Chipbreaker symbol			
G	Ground insert	13	1.3 mm	25	2.5 mm	R	Right-hand	PF	Cut-off (Low feed)	PG	Cut-off (Low cutting force)
M	M class	15	1.5 mm	30	3 mm	L	Left-hand	PM	Cut-off (Medium feed)		
		20	2 mm			N	Neutral	PH	Cut-off (High feed rate)		

GZ	M	30	20	R	-	025	PM	-	6D
Series	No. of edge	Insert length	Corner-R (RE)	Lead angle					
Cut-off	No indication 2-edge	16 16 mm	003 0.03 mm 020 0.2 mm	No indication 0°					
GZ Series	S 1-edge	20 20 mm	005 0.05 mm 025 0.25 mm	6D 6°					
			015 0.15 mm 030 0.3 mm	15D 15°					

● : Standard item

H



Cut-Off

KGZ-JCTM (Coolant-through holders)

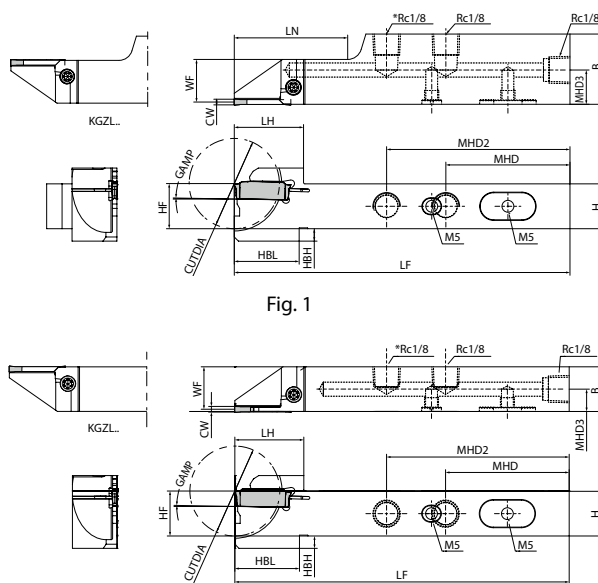
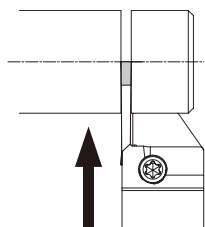


Fig. 1

Fig. 2

Right-hand shown | KGZ%12...JCTM : 2-Rc1/8

Toolholder dimensions

Description		Availability		Dimension (mm)																Angle	Coolant hole	Fig.	Spare parts				Applicable inserts ➡ H24, H25																										
																							Plug 1	Plug 2	Screw	Wrench																											
		R	L	CUTDIA	H	B	LH	MHD	MHD2	MHD3	HF	HBH	HBL	LF	LN	WF	CW min.	CW max.	GAMP (°)																																		
KGZR 1212JX-2JCTM	●		24	12	12	19.8	59	-	6	12	5	19.8	120	-	11.2	2	3	1	Yes	2	GP-1	H55X4LP	SB-40120TR	LTW-15S	GZG2020... GZM2020... GZMS2020... GZG2520... GZM2520... GZG3020... GZM3020... GZMS3020...																												
KGZL 1212JX-2JCTM		●																								18	54	8.4	8.5	43.7	11.2	2	3	1	Yes	1																	
KGZR 1218JX-2JCTM	●																																				32	16	24.8	44	65	8	16	4.5	23.2	120	-	15.2	2	3	1	Yes	2
KGZL 1218JX-2JCTM		●																																																			
KGZR 1616JX-2JCTM	●		32	16	24.8	44	65	8	16	4.5	23.2	120	-	15	2.4	3	1	Yes	2																																		
KGZL 1616JX-2JCTM		●																		25	12.2	7.7	40	15	2.4	3	1	Yes	1																								
KGZR 1625JX-2JCTM	●																													24	12	19.8	54	8.4	8.5	43.7	11	2.4	3	1	Yes	2											
KGZL 1625JX-2JCTM		●																																									32	16	24.8	44	65	8	16	4.5	23.2	120	-
KGZR 1212JX-2.4JCTM	●		24	12	19.8	54	8.4	8.5	43.7	11	2.4	3	1	Yes	1																																						
KGZL 1212JX-2.4JCTM		●														32	16	24.8	44	65	8	16	4.5	23.2	120	-	15	2.4	3																								
KGZR 1218JX-2.4JCTM	●																													24	12	19.8	54	8.4	8.5	43.7	11	2.4	3	1	Yes	1											
KGZL 1218JX-2.4JCTM		●																																									32	16	24.8	44	65	8	16	4.5	23.2	120	-
KGZR 1616JX-2.4JCTM	●		24	12	19.8	54	8.4	8.5	43.7	11	2.4	3	1	Yes	1																																						
KGZL 1616JX-2.4JCTM		●														32	16	24.8	44	65	8	16	4.5	23.2	120	-	15	2.4	3																								
KGZR 1625JX-2.4JCTM	●																													24	12	19.8	54	8.4	8.5	43.7	11	2.4	3	1	Yes	1											
KGZL 1625JX-2.4JCTM		●																																									32	16	24.8	44	65	8	16	4.5	23.2	120	-
KGZR 1212JX-3JCTM	●		24	12	19.8	54	8.6	8.5	43.7	10.8	3	3	1	Yes	2																																						
KGZL 1212JX-3JCTM		●														32	16	24.8	44	65	8	16	4.5	23.2	120	-	14.8	3	3																								
KGZR 1218JX-3JCTM	●																													24	12	19.8	54	7.7	8.5	43.7	10.8	3	3	1	Yes	1											
KGZL 1218JX-3JCTM		●																																									32	16	24.8	44	65	8	16	4.5	23.2	120	-
KGZR 1616JX-3JCTM	●		24	12	19.8	54	7.7	8.5	43.7	10.8	3	3	1	Yes	1																																						
KGZL 1616JX-3JCTM		●														32	16	24.8	44	65	8	16	4.5	23.2	120	-	14.8	3	3																								
KGZR 1625JX-3JCTM	●																													24	12	19.8	54	7.7	8.5	43.7	10.8	3	3	1	Yes	1											
KGZL 1625JX-3JCTM		●																																									32	16	24.8	44	65	8	16	4.5	23.2	120	-

Recommended cutting conditions ➡ H44, H45

● : Standard item

Direct coolant holder for small parts machining

JCTM Series

Long tool life and stable machining by internal coolant
with/without piping system
Rectangular shank with optimized coolant channel design

1st recommendation

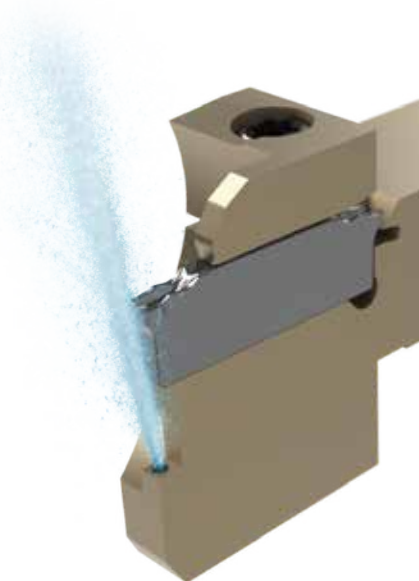
Square shank is also available

Without piping When the tool turret supports direct coolant

- Coolant is supplied directly from tool turret into the holder
- No need for piping just by installing tools

With piping

- Compatible with internal coolant on any machine with standard piping parts



CG Image

H



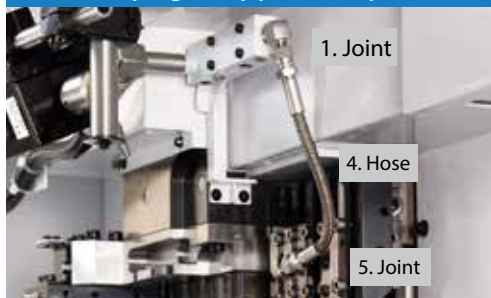
Cut-Off

Piping parts

Piping parts will be required separately if internal coolant is used.

Pump pressure : Up to 20 MPa. Pump pressure: Up to 7.5 MPa if coupling is used.

Without coupling (Pump pressure: Up to 20 MPa)



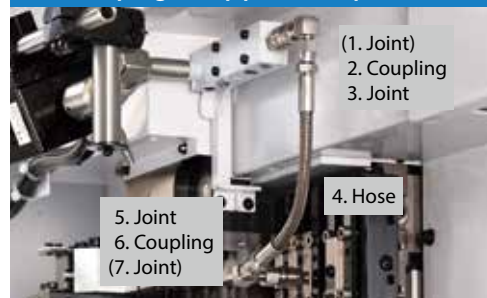
Combination Part Description (Example)

Spare Parts	Description
1. Joint	J-AN-R1/8-G1/8
4. Hose	HS-G1/8-G1/8-200
5. Joint	J-AN-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 coupling (Pump pressure: Up to 7.5 MPa)



Combination Part Description (Example)

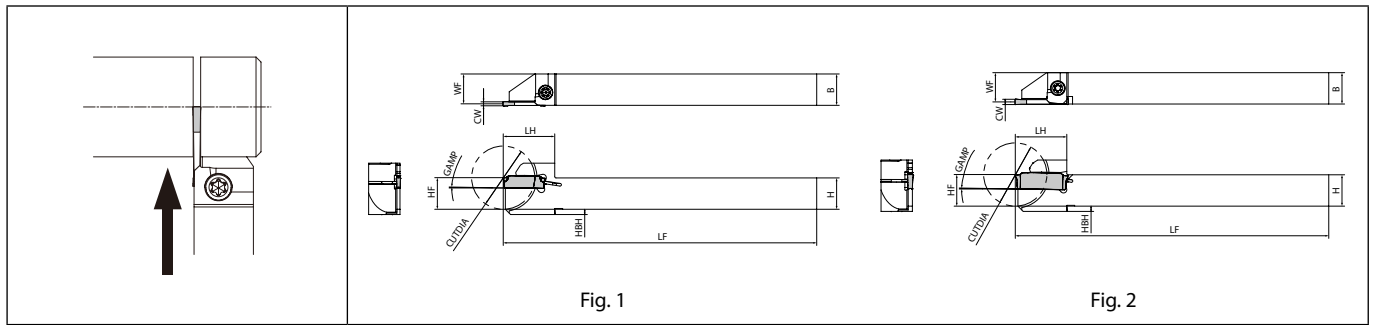
Spare Parts	Description
(1. Joint)	-
2. Coupling	CP-ST-R1/8, P-ST-RC1/8
3. Joint	J-AN-R1/8-G1/8
4. Hose	HS-G1/8-G1/8-200
5. Joint	J-AN-R1/8-G1/8
6. Coupling	P-ST-RC1/8, CP-ST-R1/8
(7. Joint)	-

Convert the thread standards on the machine's side (Rc1/4, Rc1/8, NPT1/8, etc.) to the thread standards of the coupling (Rc1/8, etc.) or hose (G1/8) for use.

Use sealing agents such as seal tapes when installing piping parts.

For piping installation parts description, please refer to H17.

KGZ (for Automatic Lathe)



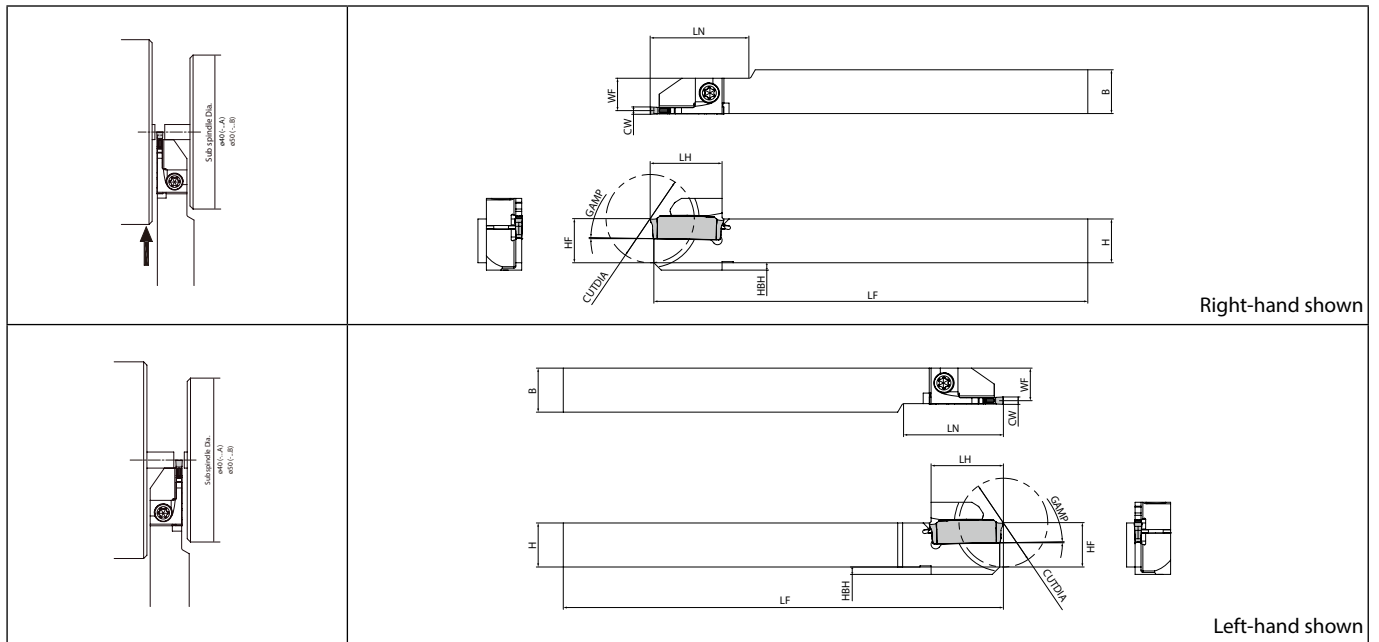
Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)											Angle Fig.	Spare parts					Applicable inserts H24, H25
															Clamp bolt	Screw	Screw	Wrench	Wrench	
	R	L	CUTDIA	H	B	LH	HF	HBH	LF	WF	CW min.	CW max.	GAMP (°)							
KGZ [®] /L 1010JX-1.3D16 1010JX-1.3 1212F-1.3D16 1212JX-1.3D16 1212F-1.3 1212JX-1.3	●	●	16	10	10	17.8	10		120	9.5					-	SB-40120TR	-	-	LTW-15S	GZM1316...
	●	●	20			18.7														
	●	●	16			17.8	2.1		85		1.3	1.3	1	1						
	●	●		12	12		12		120	11.5										
	●	●							85											
	●	●	24			19.8			120											
KGZ [®] /L 1010JX-1.5D16 1010JX-1.5 1212F-1.5D16 1212JX-1.5D16 1212F-1.5 1212JX-1.5	●	●	16	10	10	17.8	10		120	9.4					-	SB-40120TR	-	-	LTW-15S	GZM1516...
	●	●	20			18.7														
	●	●	16			17.8	2.1		85		1.5	1.5	1	1						
	●	●		12	12		12		120	11.4										
	●	●							85											
	●	●	24			19.8			120											
KGZ [®] /L 1010JX-2 1212F-2 1212JX-2 1616JX-2 2012K-2D34 2020K-2D34 2525K-2D34	●	●	20	10	10	18.7	10		120	9.2			2		-	SB-40120TR	-	-	LTW-15S	GZG2020... GZM2020... GZMS2020... GZG2520... GZM2520... GZG3020... GZM3020... GZMS3020...
	●	●						2.1	85	11.2										
	●	●	24	12	12	19.8	12		120											
	●	●							15.2	2	3		1	2						
	●	●	32	16	16	24.8	16		11.2											
	●	●		20	20	26.8	20	-	125	19.2										
	●	●	34						24.2						HH5X16	-	SE-50125TR	LTW-20		
	●	●		25	25	32.7	25										LW-4	-		
KGZ [®] /L 1010JX-2.4 1212F-2.4 1212JX-2.4 1616JX-2.4 2012K-2.4D34 2020K-2.4D34 2525K-2.4D34	●	●	20	10	10	18.7	10		120	9			2		-	SB-40120TR	-	-	LTW-15S	GZG2520... GZM2520... GZG3020... GZM3020... GZMS3020...
	●	●						2.1	85	11										
	●	●	24	12	12	19.8	12		120											
	●	●							15	2.4	3		1	2						
	●	●	32	16	16	24.6	16		11											
	●	●		20	20	26.6	20	-	125	19										
	●	●	34						24						HH5X16	-	SE-50125TR	LTW-20		
	●	●		25	25	32.7	25										LW-4	-		
KGZ [®] /L 1212JX-3 1616JX-3 1616JX-3D38 1913K-3D38 2012JX-3D42 2012JX-3D51 2020JX-3D42 2020JX-3D51 2525K-3D51	●	●	24	12	12	19.8	12	2.1	10.8						-	SB-40120TR	-	-	LTW-15S	GZG3020... GZM3020... GZMS3020...
	●	●	32			24.6			120	14.8										
	●	●		16	16		16													
	●	●	38			28.6		19	125	11.8										
	●	●																		
	●	●	42			30.7					3	3	1	2						
	●	●	51			35.2		20	120	18.8										
	●	●		20		30.7														
	●	●	42			35.2														
	●	●	51												HH5X16	-	LW-4	-		

Recommended cutting conditions H31

● : Standard item

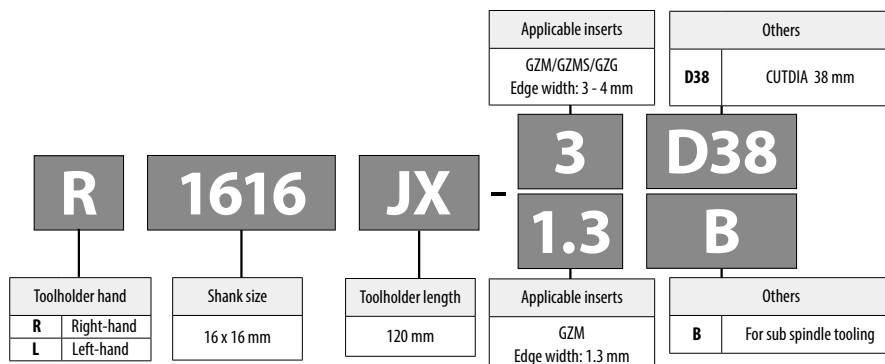
KGZS (Cut-off / for sub spindle tooling)

Toolholder dimensions

Description	Availability		Dimension (mm)												Angle	Spare parts		Applicable inserts ➡ H24, H25
																Screw	Wrench	
	R	L	CUTDIA	H	B	LH	HF	HBH	LF	LN	WF	CW min.	CW max.	GAMP (°)				
KGZS ^{90°} 1212F-1.3A 1212JX-1.3B 1616JX-1.3B	●	●	24	12	12	19.8	12	2.1	85	22	8.4	1.3	1.3	1		SB-40120TR	LTW-15S	GZM1316...
	●	●		16	16		16	-	120	27								
	●	●		16	16		16	-	120	27								
KGZS ^{90°} 1212F-1.5A 1212JX-1.5B 1616JX-1.5B	●	●	24	12	12	19.8	12	2.1	85	22	8.4	1.5	1.5	1		SB-40120TR	LTW-15S	GZM1516...
	●	●		16	16		16	-	120	27								
	●	●		16	16		16	-	120	27								
KGZS ^{90°} 1212F-2A 1212JX-2B 1616JX-2B	●	●	24	12	12	19.8	12	2.1	85	22	8.7	2	3	1		SB-40120TR	LTW-15S	GZG2020..., GZM2020..., GZMS2020..., GZG2520..., GZM2520..., GZG3020..., GZM3020..., GZMS3020...
	●	●		16	16		16	-	120	27								
	●	●		16	16		16	-	120	27								

Recommended cutting conditions ➡ H31

Toolholder identification system

KGZ
KGZS

● : Standard item

KGZ / KGZS selection reference

KGZ

Standard type	
- Both Right-hand and Left-hand types are applicable to gang tool post. - Basically Left-hand type is used for cut-off operation using a sub spindle.	
KGZR (Right-hand toolholder)	KGZL (Left-hand toolholder)
<1st. Recommendation> Use insert with lead angle to remove boss. · Not using sub spindle · Cut-off operation near main spindle side	<1st. Recommendation> Use insert without lead angle. · Using sub spindle · Cut-off operation near sub spindle side

KGZS

Sub spindle type	
When machining workpiece with small diameter, use KGZS to reduce overhang distance from the main spindle.	
KGZSR (Right-hand toolholder)	KGZSL (Left-hand toolholder)
- Long workpiece and more rigidity - Cut-off operation near main spindle side	- Short workpiece and less rigidity - Cut-off operation near sub spindle side

H

KGZ recommended cutting conditions

Workpiece material	Recommended insert grades (Vc: m/min)			f (mm/rev)						Remarks
				PF (RE = 0.03 mm)			PF (RE = 0.15 mm)			
	MEGACOAT NANO EX			Edge width CW (mm)						
	PR2015	PR2025	PR2035	1.3 / 1.5	2.0	2.5 / 3.0	1.3 / 1.5	2.0	2.5 / 3.0	
Carbon steel	☆ 70 ~ 180	★ 70 ~ 150	☆ 70 ~ 150	0.01 ~ 0.04	0.02 ~ 0.06	0.02 ~ 0.08	0.01 ~ 0.05	0.03 ~ 0.08	0.04 ~ 0.10	Coolant
Alloy steel	☆ 70 ~ 180	★ 70 ~ 150	☆ 70 ~ 150							
Stainless steel	☆ 60 ~ 150	☆ 60 ~ 120	★ 60 ~ 120	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.05	0.01 ~ 0.04	0.03 ~ 0.07	0.04 ~ 0.08	
Cast iron	★ 80 ~ 200	-	-	0.01 ~ 0.05	0.02 ~ 0.07	0.03 ~ 0.08	0.01 ~ 0.06	0.03 ~ 0.09	0.04 ~ 0.10	

★: 1st Recommendation : 2nd Recommendation

Workpiece material	Recommended insert grades (Vc: m/min)					f (mm/rev)				Remarks
						PM	PH	PG		
	MEGACOAT NANO EX			DLC coated carbide	Carbide	Edge width CW (mm)				
	PR2015	PR2025	PR2035	PDL025	GW15	2.0 ~ 3.0	2.0 ~ 3.0	2.0	2.5 / 3.0	
Carbon steel	☆ 70 ~ 180	★ 70 ~ 150	☆ 70 ~ 150	-	-	0.05 ~ 0.15	0.10 ~ 0.20	0.01 ~ 0.04	0.01 ~ 0.05	Coolant
Alloy steel	☆ 70 ~ 180	★ 70 ~ 150	☆ 70 ~ 150	-	-					
Stainless steel	☆ 60 ~ 150	☆ 60 ~ 120	★ 60 ~ 120	-	-	0.04 ~ 0.12	0.08 ~ 0.16	0.01 ~ 0.03	0.01 ~ 0.04	
Cast iron	★ 80 ~ 200	-	-	-	☆ 50 ~ 100	0.05 ~ 0.15	0.10 ~ 0.20	0.01 ~ 0.04	0.01 ~ 0.05	
Aluminum alloys	-	-	-	★ 200 ~ 500	☆ 200 ~ 450	-	-	0.01 ~ 0.05	0.01 ~ 0.06	
Brass	-	-	-	-	★ 100 ~ 200	-	-	0.01 ~ 0.07	0.01 ~ 0.08	

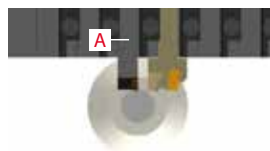
★: 1st Recommendation : 2nd Recommendation

Precautions

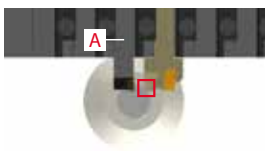
Maximum ap of the next tool (indicated as tool A) and holder interference

1. When using JCTM holder 1218/1212, note maximum ap of the next tool to avoid interference.

No interference



Interference

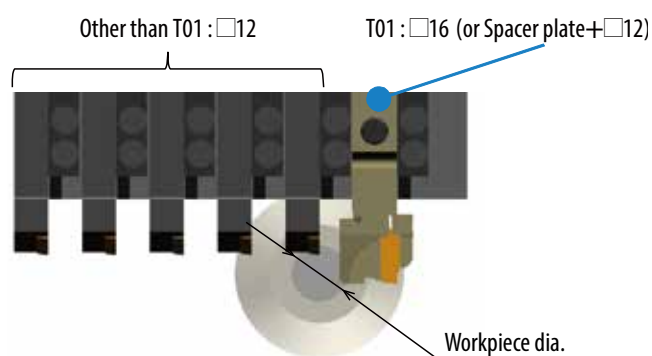


Estimated maximum ap of tool A (mm)

Workpiece dia.	ø12	ø16	ø20
JCTM Description			
KGZ ^R /L 1218JX-*JCTM	2.4	2.0	1.7
KGZ ^R /L 1212JX-*JCTM	-	-	3.8

2. When using JCTM holder 1218/1625/1616 for T01 of the following target models, check the workpiece dia. in advance to avoid interference.

< Target models > T01: □16 (or Spacer plate + □12) holder is mounted, and machines other than T01: □12 holder only is mounted.

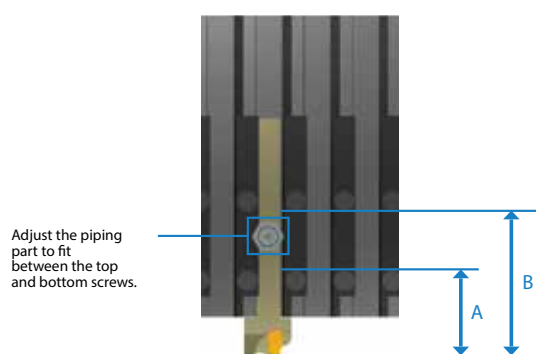


Interference guideline of workpiece dia. (mm)

Workpiece dia.	ø14 or less	Greater than ø14
JCTM Description		
KGZ ^R /L 1218JX-*JCTM	Available	Not available → Use □12 square shank
KGZ ^R /L 1616JX-*JCTM		
KGZ ^R /L 1625JX-*JCTM		

Piping part interference avoidance

Rectangular shank (KGZ^R/L 1218..., KGZ^R/L 1625...) are recommended for use with piping parts connected to JCTM holders. When connecting piping parts to the JCTM square shank, check the lengths of A and B below to avoid interference with the screws of the tool turret

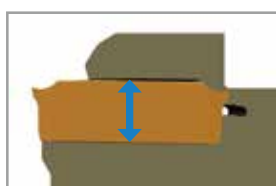


Shank size	Availability of square shank use
□12	"A" shorter than 51.5 mm and "B" longer than 68.5 mm → Available Other than the above conditions → Not available (Use a rectangular shank)
□16	Available

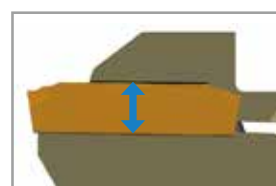
Compatibility with conventional tools

KGZ is not compatible with the conventional tools (KGD/KGM)

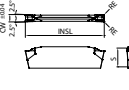
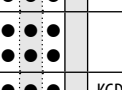
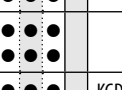
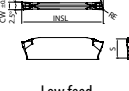
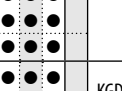
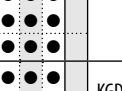
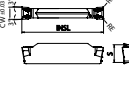
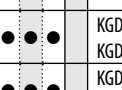
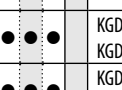
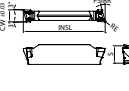
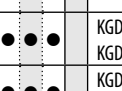
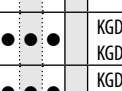
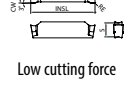
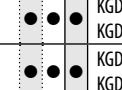
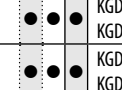
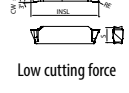
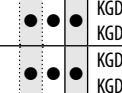
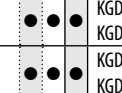
KGZ



Conventional

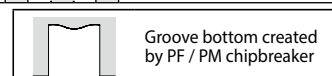


GDM/GDMS/GDG

				Carbon steel / Alloy steel				   				P								
				Stainless steel				   				M								
				Cast iron				   				K								
				Non-ferrous metals				   				N								
Insert		Description		No. of edges	Dimension (mm)				Angle (°)	Tolerance (mm)		Carbide				Applicable toolholder  H34, H36, H39 H40, H41, H43				
					CW	S	RE	INSL		PSIR%/	CW min.	CW max.	DLC PD025	PVD PR1215 PR1225 PR1535	-					
		GDM 1316N-003PF 1316N-015PF	2	1.3	3.7	0.03 0.15	16	-	- 0.04	+ 0.04			KGD [®] /L...-1.3(D16) KGD [®] /L...-1.3B							
		GDM 1516N-003PF 1516N-015PF		1.5		0.03 0.15							KGD [®] /L...-1.5(D16) KGD [®] /L...-1.5B							
		GDM 2020N-003PF 2020N-015PF	2	2	0.03 0.15	20	KGD [®] /L...-2(...) KGD [®] /L...-2B													
		GDM 2520N-003PF 2520N-015PF	2.5	4.3	0.03 0.15		KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-2B													
		GDM 3020N-003PF 3020N-015PF	3	0.03 0.15	KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-3(...), KGD [®] /L...-2B															
		GDM 1316R-003PF-15D 1316L-003PF-15D	2	1.3	3.7	0.03	16	15	- 0.04	+ 0.04			KGD [®] /L...-1.3(D16) KGD [®] /L...-1.3B							
		GDM 1516R-003PF-15D 1516L-003PF-15D 1516R-015PF-15D		1.5		0.03 0.03 0.15							KGD [®] /L...-1.5(D16) KGD [®] /L...-1.5B							
		GDM 2020R-003PF-15D 2020L-003PF-15D 2020R-015PF-15D	2	2	0.03 0.03 0.15	20	KGD [®] /L...-2(...) KGD [®] /L...-2B													
		GDM 2520R-003PF-15D 2520L-003PF-15D 2520R-015PF-15D	2.5	4.3	0.03 0.03 0.15		KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-2B													
		GDM 3020R-003PF-15D 3020L-003PF-15D 3020R-015PF-15D	3	0.03 0.03 0.15	KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-3(...), KGD [®] /L...-2B															
				GDM 2020N-010PQ	2	2	4.3						0.1	20	-	- 0.03	+ 0.03			KGD [®] /L...-2(...) KGD [®] /L...-2B
				GDM 2520N-010PQ		2.5														KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-2B
GDM 3020N-010PQ	3			KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-3(...), KGD [®] /L...-2B																
		GDM 2020R-010PQ-15D	2	2	4.3	0.1	20	15	- 0.03	+ 0.03			KGD [®] /L...-2(...) KGD [®] /L...-2B							
		GDM 2520R-010PQ-15D		2.5									KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-2B							
		GDM 3020R-010PQ-15D		3									KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-3(...), KGD [®] /L...-2B							
		GDG 2020N-005PG	2	2	4.3	0.05	20	-	- 0.02	+ 0.02			KGD [®] /L...-2(...) KGD [®] /L...-2B							
		GDG 2520N-005PG		2.5									KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-2B							
		GDG 3020N-005PG		3									KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-3(...), KGD [®] /L...-2B							
		GDG 2020R-005PG-15D	2	2	4.3	0.05	20	15	- 0.02	+ 0.02			KGD [®] /L...-2(...) KGD [®] /L...-2B							
		GDG 2520R-005PG-15D		2.5									KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-2B							
		GDG 3020R-005PG-15D		3									KGD [®] /L...-2(...), KGD [®] /L...-2.4(...) KGD [®] /L...-3(...), KGD [®] /L...-2B							

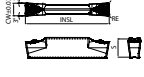
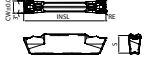
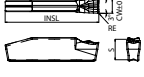
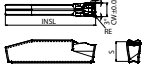
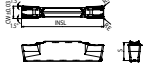
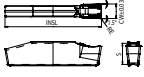
Handed insert shows Right-hand

Using the PF / PM chipbreaker (for cut-off) for grooving cannot create a flat bottom (Ref. to the right figure).



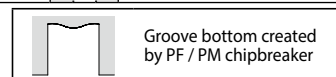
● : Standard item

GDM/GDMS/GDG

			Carbon steel / Alloy steel							  			P		
			Stainless steel							  			M		
			Cast iron							  			K		
			Non-ferrous metals							  			N		
Insert		Description	No. of edges	Dimension (mm)				Angle (°)	Tolerance (mm)		Carbide			Applicable toolholder ➡ H34, H39~H41, H43	
				CW	S	RE	INSL		PSIR ⁹ /L	CW min.	CW max.	PVD			
												PR1215	PR1215		PR1335
		GDM 2020N-020PM	2	2	4.3	0.2	20	-	-0.03	+0.03	  	  	KGDP ⁹ /L...-2(...) KGDS ⁹ /L...-2B		
		GDM 2520N-020PM		2.5									KGDP ⁹ /L...-2(...), KGDP ⁹ /L...-2.4(...) KGDS ⁹ /L...-2B		
		GDM 3020N-025PM		3									0.25	KGDP ⁹ /L...-2(...), KGDP ⁹ /L...-2.4(...) KGDP ⁹ /L...-3(...), KGDS ⁹ /L...-2B	
		GDM 4020N-030PM		4									0.3	KGDP ⁹ /L...-3(...), KGDP ⁹ /L...-3... KGDP ⁹ /L...-4T...	
		GDM 2020R-020PM-6D	2	2	4.3	0.2	20	6	-0.03	+0.03	  	  	KGDP ⁹ /L...-2(...) KGDS ⁹ /L...-2B		
		GDM 2520R-020PM-6D		2.5									KGDP ⁹ /L...-2(...), KGDP ⁹ /L...-2.4(...) KGDS ⁹ /L...-2B		
		GDM 3020R-025PM-6D		3									0.25	KGDP ⁹ /L...-2(...), KGDP ⁹ /L...-2.4(...) KGDP ⁹ /L...-3(...), KGDS ⁹ /L...-2B	
		GDMS 2020N-020PM	1	2	4.3	0.2	20	-	-0.03	+0.03	  	  	KGDP ⁹ /L...-2(...) KGDS ⁹ /L...-2B		
		GDMS 3020N-025PM		3									0.25	KGDP ⁹ /L...-2(...), KGDP ⁹ /L...-2.4(...) KGDP ⁹ /L...-3(...), KGDS ⁹ /L...-2B	
		GDMS 4020N-030PM		4									0.3	KGDP ⁹ /L...-3(...), KGDP ⁹ /L...-3... KGDP ⁹ /L...-4T...	
		GDMS 2020R-020PM-6D	1	2	4.3	0.2	20	6	-0.03	+0.03	  	  	KGDP ⁹ /L...-2(...) KGDS ⁹ /L...-2B		
		GDMS 3020R-025PM-6D		3									0.25	KGDP ⁹ /L...-2(...), KGDP ⁹ /L...-2.4(...) KGDP ⁹ /L...-3(...), KGDS ⁹ /L...-2B	
		GDMS 4020R-030PM-6D		4									0.3	KGDP ⁹ /L...-3(...), KGDP ⁹ /L...-3... KGDP ⁹ /L...-4T...	
		GDM 2020N-020PH	2	2	4.3	0.2	20	-	-0.03	+0.03	  	  	KGDP ⁹ /L...-2(...) KGDS ⁹ /L...-2B		
		GDM 3020N-030PH		3									0.3	KGDP ⁹ /L...-2(...), KGDP ⁹ /L...-2.4(...) KGDP ⁹ /L...-3(...), KGDS ⁹ /L...-2B	
		GDM 4020N-030PH		4									0.3	KGDP ⁹ /L...-3(...), KGDP ⁹ /L...-3... KGDP ⁹ /L...-4T...	
		GDMS 2020N-020PH	1	2	4.3	0.2	20	-	-0.03	+0.03	  	  	KGDP ⁹ /L...-2(...) KGDS ⁹ /L...-2B		
		GDMS 3020N-030PH		3									0.3	KGDP ⁹ /L...-2(...), KGDP ⁹ /L...-2.4(...) KGDP ⁹ /L...-3(...), KGDS ⁹ /L...-2B	
		GDMS 4020N-030PH		4									0.3	KGDP ⁹ /L...-3(...), KGDP ⁹ /L...-3... KGDP ⁹ /L...-4T...	

Handed insert shows Right-hand

Using the PF / PM chipbreaker (for cut-off) for grooving cannot create a flat bottom (Ref. to the right figure).



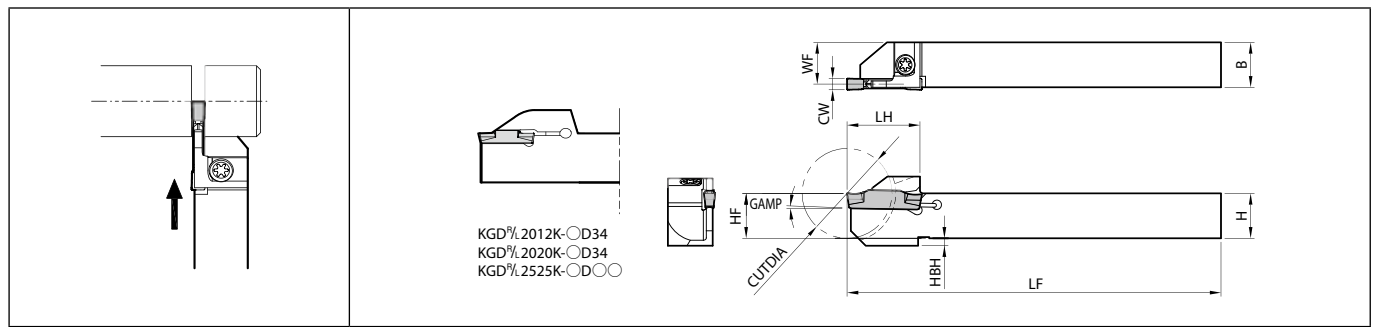
Inserts identification system

Tolerance symbol		Edge width		Hand of tool		Chipbreaker symbol	
G	Ground insert	13	1.3 mm	R	Right-hand	PF	Cut-off (Low feed)
M	M class	15	1.5 mm	L	Left-hand	PQ	Cut-off (Medium feed)
		20	2 mm	N	Neutral	PG	Cut-off (Low cutting force)
		25	2.5 mm			PM	Cut-off (General purpose)
		30	3 mm			PH	Grooving and cut-off (High feed rate)
		40	4 mm				

GD	M	S	30	20	R	-	025	PM	-	6D
Series	No. of edge	Insert length	Corner-R (RE)	Lead angle						
Grooving / Cut-off	No indication 2-edge	16 16 mm	003 0.03 mm	No indication 0°						
GD Series	S 1-edge	20 20 mm	005 0.05 mm	6D 6°						
			010 0.1 mm	15D 15°						
			015 0.15 mm							
			020 0.2 mm							
			025 0.25 mm							
			030 0.3 mm							

● : Standard item

KGD (for Automatic Lathe)



Right-hand shown

Toolholder dimensions

Description		Availability		Dimension (mm)												Angle	Spare parts					Applicable inserts 🔧 H32, H33
																	Clamp bolt	Screw	Screw	Wrench	Wrench	
		R	L	CUTDIA	H	B	LH	HF	HBH	LF	WF	CW min.	CW max.	GAMP (°)								
KGD% 1010JX-1.3D16 1010JX-1.3 1212F-1.3D16 1212JX-1.3D16 1212F-1.3 1212JX-1.3	●	●	16	10	10	18	10	2	120	9.9	1.3	1.3	5	-	SB-40120TR	-	-	LTW-15S	GDM1316...			
	●	●	20	12	12	19.5	12		85	9.5												
	●	●	16						120	11.9												
	●	●	24						85	11.5												
	●	●	120																			
	●	●																				
KGD% 1010JX-1.5D16 1010JX-1.5 1212F-1.5D16 1212JX-1.5D16 1212F-1.5 1212JX-1.5	●	●	16	10	10	18	10	2	120	9.7	1.5	1.5	5	-	SB-40120TR	-	-	LTW-15S	GDM1516...			
	●	●	20	85	9.4																	
	●	●	16	120	11.7																	
	●	●	24	85	11.4																	
	●	●																				
	●	●																				
KGD% 1010JX-2 1212F-2 1212JX-2 1616JX-2 2012K-2D34 2020K-2D34 2525K-2D34	●	●	20	10	10	18	10	2	120	9.2	2	3	1	-	SB-40120TR	-	-	LTW-15S	GDG2020... GDM2020... GDMS2020... GDG2520... GDM2520... GDG3020... GDM3020... GDMS3020...			
	●	●	24	12	12	19.5	12		85	11.2												
	●	●					120		15.2													
	●	●	32	16	16	24.5	16	-	11.2	0	HH5X16	-	LW-4	-								
	●	●	20	12		20	19.2															
	●	●	34	20	32.5	25	24.2															
	KGD% 1010JX-2.4 1212F-2.4 1212JX-2.4 1616JX-2.4 2012K-2.4D34 2020K-2.4D34 2525K-2.4D34	●	●	20	10	10	18	10	2	120	9	2.4	3	1	-	SB-40120TR	-	-		LTW-15S	GDG2520... GDM2520... GDG3020... GDM3020... GDMS3020...	
		●	●	24	12	12	19.5	12		85	11											
		●	●					120		15												
●		●	32	16	16	24.5	16	-	11	0	HH5X16	-	LW-4	-								
●		●	20	12		20	19															
●		●	34	20	32.5	25	24															
KGD% 1212JX-3		●	●	24	12	12	19.5	12	2	120	10.8	3	3	1	-	SB-40120TR	-	-	LTW-15S	GDG3020..., GDM3020... GDMS3020...		
		KGD% 1616JX-3 1616JX-3D38 1913K-3D38 2012JX-3D42 2012JX-3D51 2020JX-3D42 2020JX-3D51 2525K-3D51	●	●	32	16	16	24.5	16	-	120	14.8	3	4	1	-	SB-40120TR	-	-	LTW-15S		GDG3020... GDM3020... GDMS3020... GDM4020... GDMS4020...
●			●	38	19	13	29	19	125		11.8											
●	●		42	20	12	31	20	120	10.8													
●	●		51		31	18.8																
●	●		42		36																	
●	●		20	20	36	125	23.8	0	HH5X16		-	SE-50125TR					-	LW-4		-		
●	●		25	25	41.5																25	
●	●		51																			

4mm width Insert cannot be installed in KGD% 1212JX-3

Recommended tightening torque of clamp screw : 2.0N·m (SB-40120TR), 2.5N·m (SE-50125TR), 6.5N·m (HH5X16)

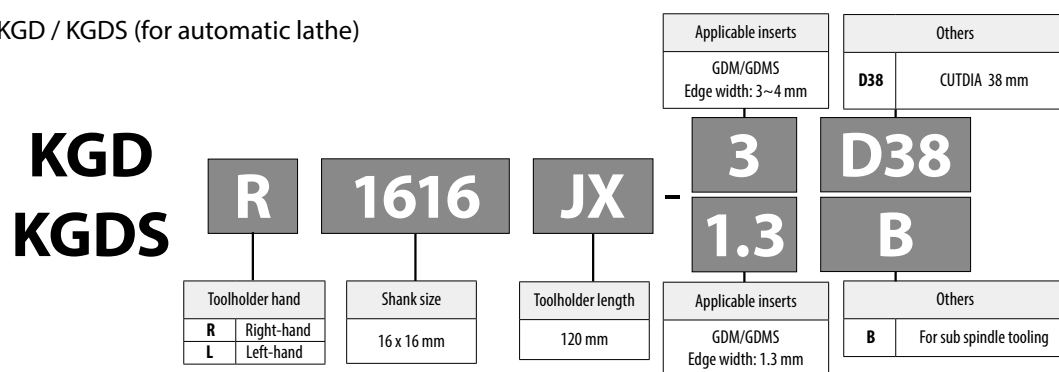
When machining the material greater than ø36 mm with KGD%L...-3D38, KGD%L...-3D42 and KGD%L...-3D51 toolholders, please use 1-edge inserts.

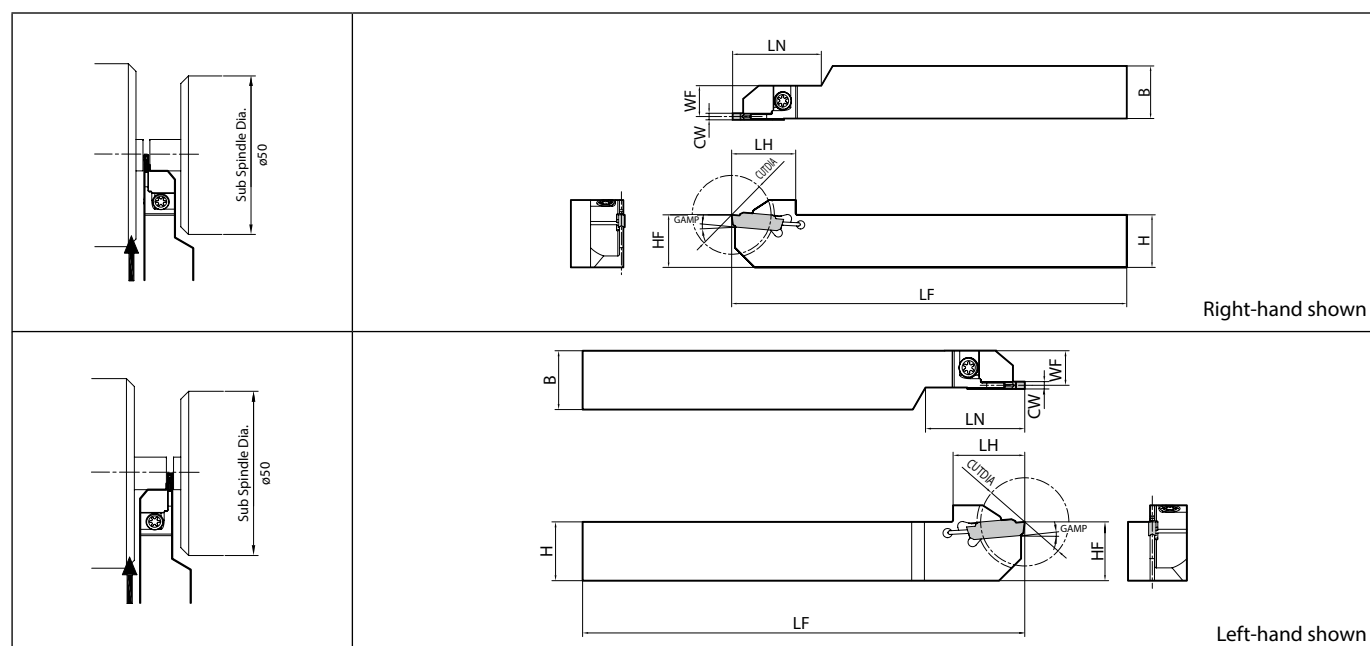
Maximum cutting diameter for 2-edge inserts is ø36 mm.

● : Standard item

Recommended cutting conditions H44, H45

KGD / KGDS (for automatic lathe)



KGDS (Cut-off / for sub spindle tooling)

Toolholder dimensions

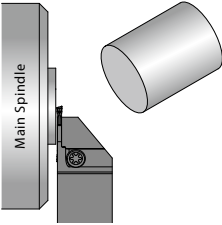
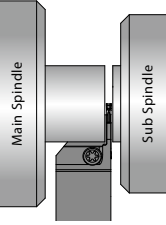
Description	Availability		Dimension (mm)											Angle	Spare parts		Applicable inserts 🔧 H32, H33
															Screw	Wrench	
	R	L	CUTDIA	H	B	LH	HF	LF	LN	WF	CW min.	CW max.	GAMP (°)				
KGDS%L 1616JX-1.3B	●	●	24	16	16	19.5	16	120	27	9.5	1.3	1.3	5	SB-40120TR	LTW-15S	GDM1316...	
	●	●								9.4	1.5	1.5				GDM1516...	
	●	●								9.2	2	3				1	GDG2020..., GDM2020..., GDMS2020..., GDG2520... GDM2520..., GDG3020..., GDM3020..., GDMS3020...

Recommended cutting conditions ➡ H44, H45

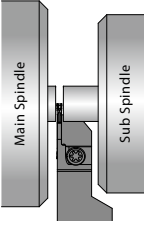
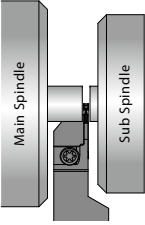
● : Standard item

KGD / KGDS selection reference

KGD

Standard type	
- Both Right-hand and Left-hand types are applicable to gang tool post. - Basically Left-hand type is used for cut-off operation using a sub spindle.	
KGDR (Right-hand toolholder)	KGDL (Left-hand toolholder)
	
<1st. Recommendation> Use insert with lead angle to remove boss. - Not using sub spindle - Cut-off operation near main spindle side	<1st. Recommendation> Use insert without lead angle. - Using sub spindle - Cut-off operation near sub spindle side

KGDS

Sub spindle type	
When machining workpiece with small diameter, use KGDS to reduce overhang distance from the main spindle.	
KGDSR (Right-hand toolholder)	KGDSL (Left-hand toolholder)
	
- Long workpiece and more rigidity - Cut-off operation near main spindle side	- Short workpiece and less rigidity - Cut-off operation near sub spindle side

H



Cut-Off

Direct coolant cut-off toolholders for automatic lathe

KGD-JCTM

(for automatic lathe)

1 Optimized coolant hole position

2 Discharge coolant towards the flank face of the insert

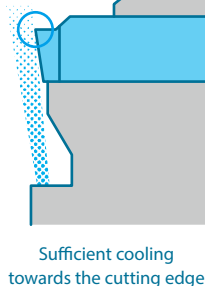
Directing coolant towards the cutting edge lengthens tool life.

H

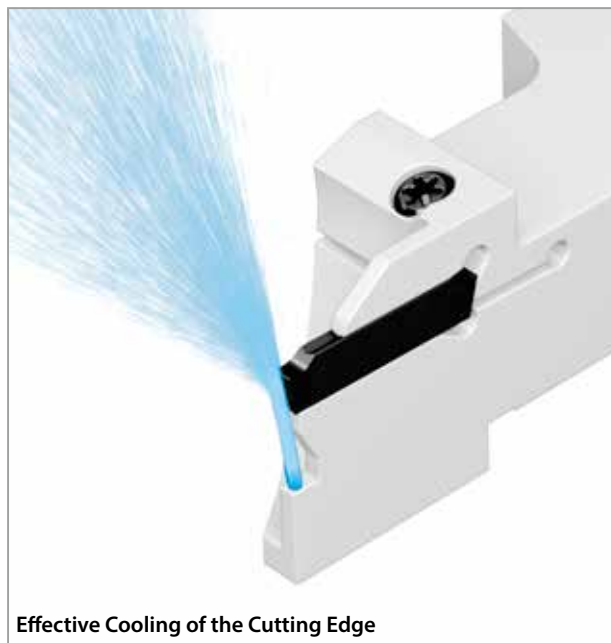
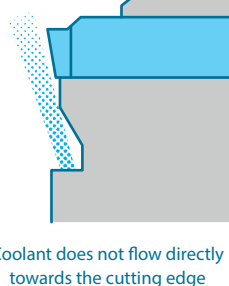
Cut-Off

Coolant discharging

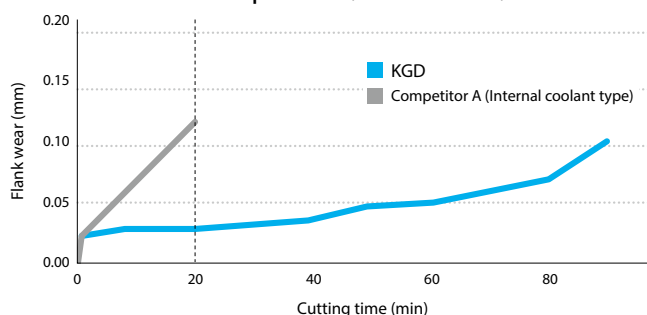
KGD-JCTM



Competitor A

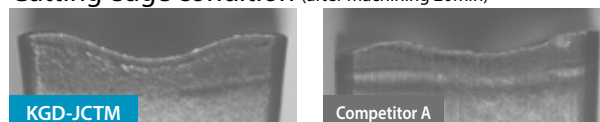


Wear resistance comparison (Internal evaluation)

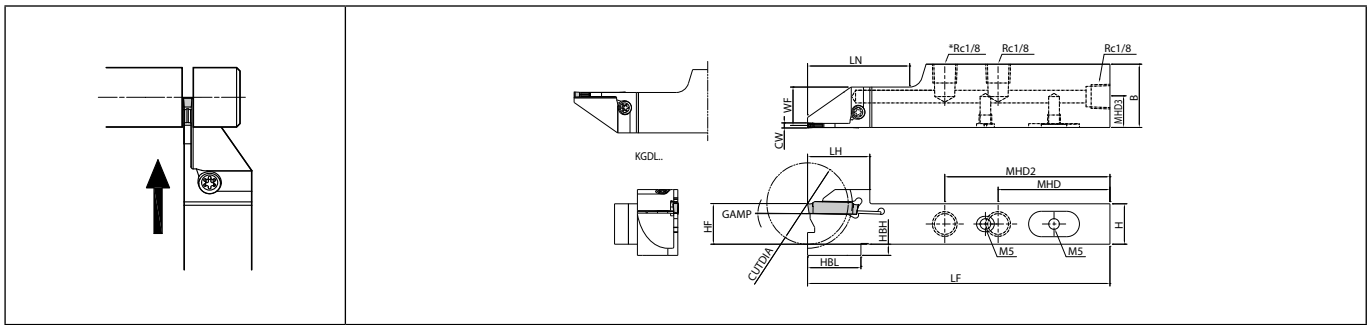


Cutting conditions: $V_c = 80$ m/min, $f = 0.06$ mm/rev (~ 2 mm : $f = 0.02$ mm/rev),
 KGDR1625H-2JCT, GDM2020N-015PF PR1535 (CW: 2.0 mm)
 Workpiece material : SUS304 ($\phi 25$) Internal coolant (1.5MPa) Cut-off

Cutting edge condition (after machining 20min)



High density and high speeds coolant provides effective cooling of the cutting edge
 Superior cooling action improves tool life

KGD-JCTM (Coolant-through holders)Right-hand shown | KGD[®]/L 12-JCTM : 2-Rc1/8

Toolholder dimensions

Description		Availability		Dimension (mm)															Angle	Coolant hole	Spare parts				Applicable inserts ➔ H32, H33					
																					Plug	Plug	Screw	Wrench						
		R	L	CUTDIA	H	B	LH	MHD	MHD2	MHD3	HF	HBH	HBL	LF	LN	WF	CW min.	CW max.	GAMP (°)											
KGDR	1218JX-2JCTM	●		24	12	18	19.5	54	-	8.4	12	8.5	21	44	11.2	2	3	1	Yes	GP-1	H55X4LP	SB-40120TR	LTW-15S	GDG2020... GDM2020... GDMS2020... GDG2520... GDM2520... GDG3020... GDM3020... GDMS3020...						
KGDL	1218JX-2JCTM		●						-	7.7	21.5																			
KGDR	1625JX-2JCTM	●		32	16	25	24.5	44	65	12.2	16	4.5	21	40	15.2															
KGDL	1625JX-2JCTM		●							-	7.7																			
KGDR	1218JX-2.4JCTM	●		24	12	18	19.5	54	-	8.4	12	8.5	21	44	11															
KGDL	1218JX-2.4JCTM		●						-	7.7	21.5																			
KGDR	1625JX-2.4JCTM	●		32	16	25	24.5	44	65	12.2	16	4.5	21	40	15	2.4	3	1	Yes											
KGDL	1625JX-2.4JCTM		●							-	7.7																			
KGDR	1218JX-3JCTM	●		24	12	18	19.5	54	-	8.6	12	8.5	21	44	10.8		3													
KGDL	1218JX-3JCTM		●						-	7.7	21.5																			
KGDR	1625JX-3JCTM	●		32	16	25	24.5	44	65	12.2	16	4.5	21	40	14.8		4													
KGDL	1625JX-3JCTM		●							-	7.7																			

Recommended cutting conditions ➔ H44, H45

Toolholder identification system

KGD-JCTM (Coolant-through holders)

KGD**R****1218****JX****- 2****JCTM**

Toolholder hand	
R	Right-hand
L	Left-hand

Shank size
12 x 18 mm

Toolholder length
120 mm

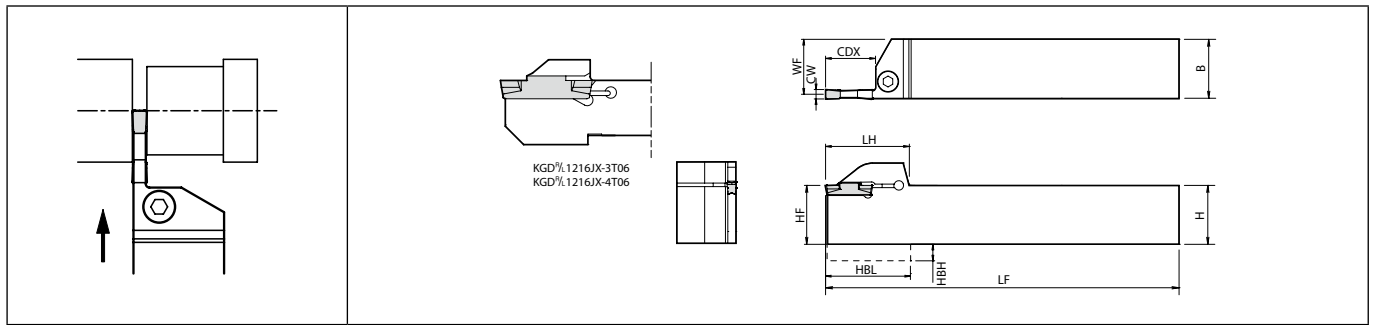
Applicable inserts
GDM/GDMS 2~3 mm

Others
Coolant-through holders

● : Standard item



KGD (Integral type)



Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)													Spare parts				Applicable inserts H32, H33
																Clamp bolt	Screw	Wrench	Wrench	
	R	L	CDX	H	B	LH	HF	HBH	HL	LF	WF	CW min.	CW max.							
KGD% 1616H-2T06	●	●	6			27.7			28											GDG2020... GDM2020... GDMS2020... GDG2520... GDM2520... GDG3020... GDM3020... GDMS3020...
1616H-2T10	●	●	10	16	16	30.2	16	4	30.5	100	15.2									
1616H-2T17	●	●	17			31.2			31.5											
2012K-2T17	●	●			12	32.5					11.2									
2020K-2T06	●	●	6			28														
2020K-2T10	●	●	10	20	20	30.5	20			125	19.2	2	3							
2020K-2T17	●	●	17			32.5														
2525M-2T06	●	●	6			28														
2525M-2T10	●	●	10	25	25	30.5	25			150	24.2									
2525M-2T17	●	●	17			32.5														
KGD% 2012K-2.4T17	●	●	17	20	12	32.5	20	-	-	125	11	2.4	3							GDG2520..., GDM2520..., GDG3020... GDM3020..., GDMS3020...
2020K-2.4T17	●	●		20	20						19									
KGD% 1216JX-3T06	●	●	6	12		19.5	12	2	19	120										GDG3020... GDM3020... GDMS3020... GDM4020... GDMS4020...
1616H-3T06	●	●			16	27.7			28		14.8									
1616H-3T10	●	●	10			30.2	16	4	30.5	100										
1616H-3T20	●	●	20			34.2			34.5											
2012K-3T20	●	●		12	34.5						10.8									
2020K-3T06	●	●	6			28														
2020K-3T10	●	●	10	20	20	30.5	20			125	18.8	3	4							
2020K-3T20	●	●	20			34.5														
2525M-3T06	●	●	6			28														
2525M-3T10	●	●	10	25	25	30.5	25			150	23.8									
2525M-3T20	●	●	20			35.5														
KGD% 1216JX-4T06	●	●	6	12	16	19.5	12	2	19	120	14.3									GDM4020... GDMS4020...
2020K-4T10	●	●	10			30.5														
2020K-4T20	●	●	20	20	20	34.5	20			125	18.3									
2525M-4T10	●	●	10			30.5														
2525M-4T20	●	●	20	25	25	35.5	25			150	23.3									
2525M-4T25	●	●	25			40.5														

CDX : Maximum depth to which processing can be made. (If the CDX is 20 mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18 mm.)

Recommended tightening torque of clamp bolt : 6.5N·m (HH5X○○), 8.0N·m (HH6X25), 2.5N·m (SE-50125TR)

Above toolholders are applicable to external grooving, too.

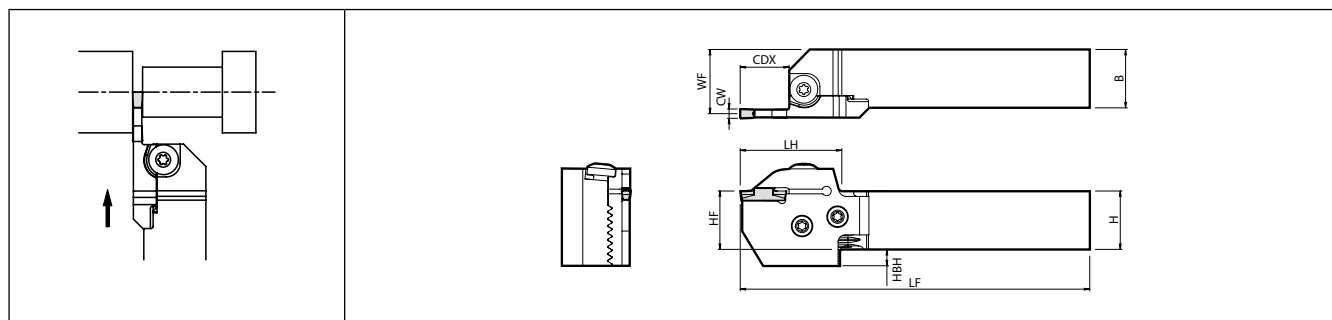
Recommended cutting conditions H44, H45

Toolholder identification system

KGD (Integral type)

KGD	R	1616	H	-	2	T	06
Toolholder hand	Shank size	Toolholder length	Applicable inserts	Max. depth of cut			
R Right-hand L Left-hand	16 × 16 mm	100mm	GDM/GDMS 2~3 mm	06: 6 mm			

● : Standard item

KGD-S (0° separate type)

Right-hand shown (Right-hand blade and right-hand toolholder)

Toolholder dimensions (Blade and toolholder)

Shank angle	Width (mm)	Max. depth of cut (mm)	Shank size (mm)	Unit description	Availability		Blade description ➡ G42	Toolholder description ➡ G42	Dimension (mm)										Spare parts			
					R	L			CDX	H	B	LH	HF	HBH	LF	WF	CW min.	CW max.				
0°	2	17	 20	KGD%L 2020X-2T17S	●		KGD%L-2T17-C	KGD%L 2020-C	17	20	20	40	20	12	122	23.4	2	3	BH6X10TR	SB-60120TR	LTW-25	
			 25	2525X-2T17S	●	●		KGD%L 2525-C														
			 32	No unit description ➡				KGD%L 3232-C														
	3	10	 20	KGD%L 2020X-3T10S	●		KGD%L-3T10-C	KGD%L 2020-C	10	20	20	33	20	12	115	23	3	4				
			 25	2525X-3T10S	●	●		KGD%L 2525-C														
			 32	No unit description ➡				KGD%L 3232-C														
		20	 20	KGD%L 2020X-3T20S	●	●	KGD%L-3T20-C	KGD%L 2020-C	20	20	43	20	12	125	23							
			 25	2525X-3T20S	●	●		KGD%L 2525-C														
			 32	3232X-3T20S	●			KGD%L 3232-C														
	4	10	 20	KGD%L 2020X-4T10S	●		KGD%L-4T10-C	KGD%L 2020-C	10	20	20	33	20	12	115	22.5	4	5				
			 25	2525X-4T10S	●	●		KGD%L 2525-C														
			 32	No unit description ➡				KGD%L 3232-C														
		20	 20	KGD%L 2020X-4T20S	●		KGD%L-4T20-C	KGD%L 2020-C	20	20	43	20	12	125	22.5							
			 25	2525X-4T20S	●	●		KGD%L 2525-C														
			 32	3232X-4T20S	●			KGD%L 3232-C														
	25	 20	KGD%L 2020X-4T25S	●	●	KGD%L-4T25-C	KGD%L 2020-C	25	20	20	48	20	12	130	22.5							
		 25	2525X-4T25S	●	●		KGD%L 2525-C															
		 32	3232X-4T25S	●			KGD%L 3232-C															

1. When using the toolholder in normal mounting position, the lower jaw of toolholder may interfere with the tool presetter.

2. The toolholder and blade descriptions are printed on the toolholder body. (Unit description is not printed.)

KGD-S: Right-hand blade for right-hand toolholder, left-hand blade for left-hand toolholder.

The toolholder is applicable for all blade with suitable hand.

3. When the unit description is not available (No unit description) and/or if stock status is blank, please purchase toolholder and blade separately.

4. CDX: Maximum depth to which processing can be made. (If the CDX is 20 mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18 mm.)

5. Recommended tightening torque of clamp bolt for insert : 6.5N·m (Groove width 2 ~ 4mm)

6. Above toolholders are applicable to external grooving, too.

Applicable inserts ➡ **H32, H33**

Recommended cutting conditions ➡ **H44, H45**

Toolholder identification system

KGD (Separate type / Unit description)

KGD	R	2020	X	-	2	T	17	S
	Toolholder hand	Shank size	Toolholder type		Applicable inserts		Max. depth of cut	
	R Right-hand L Left-hand	20 x 20 mm	Unit description		GDM/GDMS 2~3 mm		17: 17mm	

● : Standard item

Great for High Pressure Coolant External Grooving and Cut-off

KGD-JCT

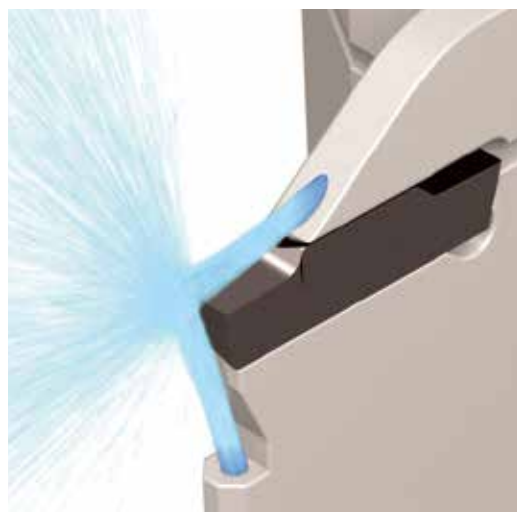
Coolant is directed from two directions towards the flank face of the insert

Improved Chip Control and Longer Tool Life for External Grooving and Cutting-off

1 Excellent Chip Control

Coolant towards the rake face

Coolant hole position and angle improve chip control



Chip Control Comparison (Internal evaluation)

KGD-JCT showed better chip control performance even at lower feed rates

$f = 0.05 \text{ mm/rev}$ (1.5MPa)



Cutting Conditions : $V_c = 150 \text{ m/min}$, $d = 8 \text{ mm}$, $f = 0.05 \text{ mm/rev}$, Wet
Edge Width 4 mm Workpiece Material : SCM415 Grooving

2 Cooling the Cutting Edge Leads to Longer Tool Life

Coolant towards the rake surface and the flank face of the insert

Directing coolant towards the cutting edge lengthens tool life

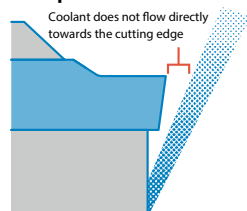
KGD-JCT



After Machining 39 min

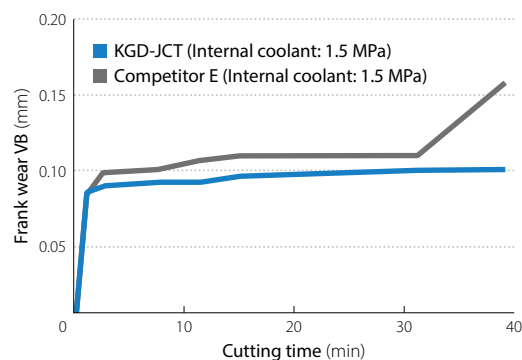


Competitor E



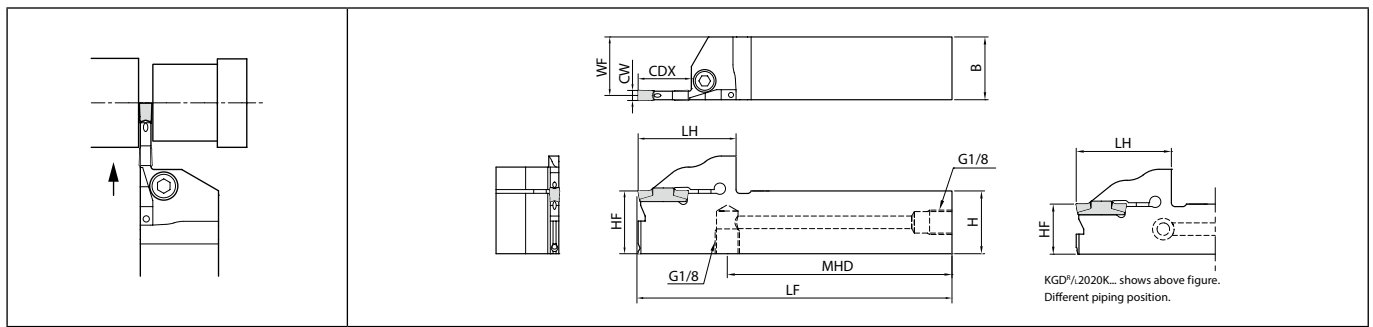
Fracture

Wear Resistance Comparison (Internal evaluation)



Cutting Conditions : $V_c = 180 \text{ m/min}$, $d = 9 \text{ mm}$, $f = 0.15 \text{ mm/rev}$, Wet
Edge Width 4 mm Workpiece Material : SCM415 Grooving

KGD-JCT Minimizes Wear and Provides Longer Tool Life without Insert Fracturing

KGD-JCT (Coolant-through holders)

Right-hand shown | Applicable pressure : ~15MPa

Toolholder dimensions

Description		Availability		Dimension (mm)										Spare parts			Applicable inserts ➡ H32, H33
														Clamp bolt	Plug	Wrench	
		R	L	CDX	H	B	LH	HF	LF	WF	MHD	CW min.	CW max.				
KGD%	2020K-3T06JCT	●	●	6	20	20	31.5	20	125	18.8	96.2	3	4	HH5X16	HSG1/8X8.0	LW-4	GDG3020... GDM3020... GDMS3020... GDM4020... GDMS4020...
	2020K-3T10JCT	●	●	10			34			94.2							
	2020K-3T20JCT	●	●	20			38			90.2							
	2525K-3T06JCT	●	●	6	31.5	96.5	HH5X25										
	2525K-3T10JCT	●	●	10	34	94.5											
	2525K-3T20JCT	●	●	20	39	89.5											
KGD%	2020K-4T10JCT	●	●	10	20	20	34	20	125	18.3	94.2	4	5	HH5X16	HSG1/8X8.0	LW-4	GDM4020... GDMS4020...
	2020K-4T20JCT	●	●	20			38			90.2							
	2525K-4T10JCT	●	●	10			34			94.5	HH5X25						
	2525K-4T20JCT	●	●	20	39	89.5											
	2525K-4T25JCT	●	●	25	44	84.5											

Please see page D12 for piping parts of coolant-through holders.

Recommended cutting conditions ● H44, H45

Toolholder identification system

KGD (Integral type)

KGD	R	2525	K	- 3	T	06	JCT
Toolholder hand		Shank size		Toolholder length		Applicable inserts	
R	Right-hand	25 × 25 mm		125mm		GDM/GDMS 3~4 mm	
L	Left-hand						
						Max. depth of cut	Others
						06: 6 mm	Coolant-through holders

● : Standard item

KGD recommended cutting conditions (PF/PQ/PG chipbreaker)

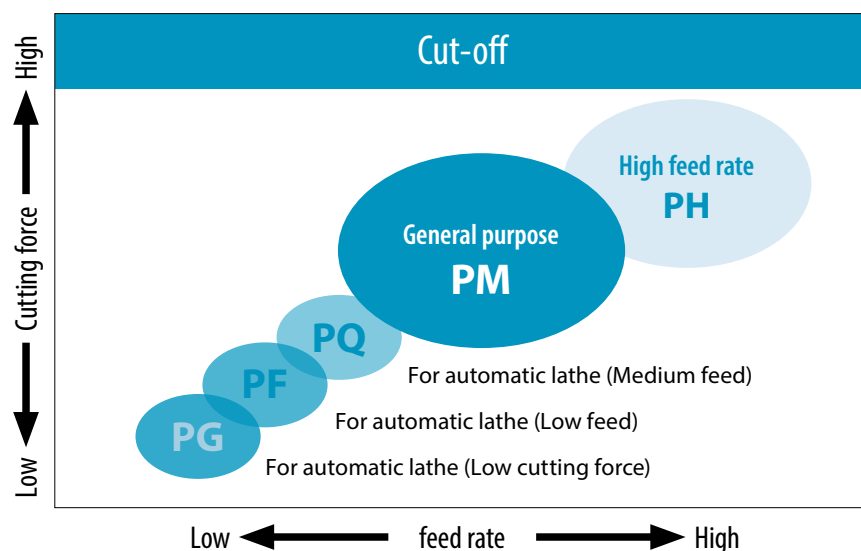
Workpiece material	Recommended insert grades (Vc: m/min)			f (mm/rev)						Remarks
				PF (RE = 0.03 mm)			PF (RE = 0.15 mm)			
	MEGACOAT NANO	MEGACOAT		Edge width CW (mm)						
	PR1535	PR1225	PR1215	1.3 / 1.5	2.0	2.5 / 3.0	1.3 / 1.5	2.0	2.5 / 3.0	
Carbon steel	☆ 70 ~ 150	★ 70 ~ 150	☆ 70 ~ 180	0.01 ~ 0.04	0.02 ~ 0.06	0.02 ~ 0.08	0.01 ~ 0.05	0.03 ~ 0.08	0.04 ~ 0.10	Coolant
Alloy steel	☆ 70 ~ 150	★ 70 ~ 150	☆ 70 ~ 180							
Stainless steel	★ 60 ~ 120	☆ 60 ~ 120	☆ 60 ~ 150	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.05	0.01 ~ 0.04	0.03 ~ 0.07	0.04 ~ 0.08	
Cast iron	-	-	★ 80 ~ 200	0.01 ~ 0.05	0.02 ~ 0.07	0.03 ~ 0.08	0.01 ~ 0.06	0.03 ~ 0.09	0.04 ~ 0.10	

★: 1st Recommendation ☆: 2nd Recommendation

Workpiece Material	Recommended insert grades (Vc: m/min)					f (mm/rev)				Remarks
						PQ		PG		
	MEGACOAT NANO	MEGACOAT		DLC coated carbide	Carbide	Edge width CW (mm)				
	PR1535	PR1225	PR1215	PDL025	GW15	2.0	2.5 / 3.0	2.0	2.5 / 3.0	
Carbon steel	☆ 70 ~ 150	★ 70 ~ 150	☆ 70 ~ 180	-	-	0.03 ~ 0.1	0.04 ~ 0.12	0.01 ~ 0.04	0.01 ~ 0.05	Coolant
Alloy steel	☆ 70 ~ 150	★ 70 ~ 150	☆ 70 ~ 180	-	-					
Stainless steel	★ 60 ~ 120	☆ 60 ~ 120	☆ 60 ~ 150	-	-	0.02 ~ 0.07	0.02 ~ 0.08	0.01 ~ 0.03	0.01 ~ 0.04	
Cast iron	-	-	★ 80 ~ 200	-	☆ 50 ~ 100	0.04 ~ 0.1	0.04 ~ 0.12	0.01 ~ 0.04	0.01 ~ 0.05	
Aluminum Alloys	-	-	-	★ 200 ~ 500	☆ 200 ~ 450	-	-	0.01 ~ 0.05	0.01 ~ 0.06	
Brass	-	-	-	-	★ 100 ~ 200	-	-	0.01 ~ 0.07	0.01 ~ 0.08	

★: 1st Recommendation ☆: 2nd Recommendation

Application map

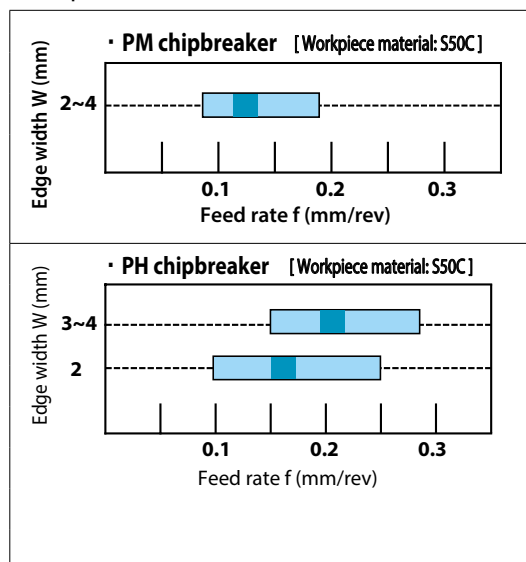


KGD recommended cutting conditions (PM / PH chipbreaker)

Workpiece material	Recommended insert grades (Vc: m/min)			f (mm/rev)			Remarks
				PM	PH		
	MEGACOAT NANO	MEGACOAT		Edge width CW (mm)			
	PR1535	PR1225	PR1215	2 ~ 4	2	3 ~ 4	
Carbon steel	☆ 80 ~ 200	★ 80 ~ 200	☆ 100 ~ 200	0.08 ~ 0.18	0.10 ~ 0.25	0.15 ~ 0.28	Coolant
Alloy steel	☆ 70 ~ 180	★ 70 ~ 180	☆ 80 ~ 180				
Stainless steel	★ 60 ~ 150	☆ 60 ~ 150	☆ 60 ~ 150	0.06 ~ 0.12	0.05 ~ 0.12	0.08 ~ 0.15	
Cast iron	-	-	★ 100 ~ 200	0.08 ~ 0.18	0.10 ~ 0.25	0.15 ~ 0.28	

★: 1st Recommendation ☆: 2nd Recommendation

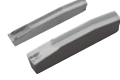
Example of feed [■ In the graph indicates the most recommended value of feed (f)]

**Caution (Cut-off)**

1. Be sure to perform wet processing. Apply enough coolant to the cutting edge.
2. Keep a constant rate during processing so that optimum product life will be achieved.
3. Cut-off as close to the chuck as possible.
4. Lower the feed rate to 1/2 to 1/3 at the near center to prevent impact caused by machining.

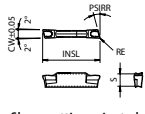
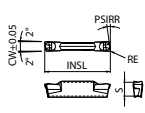
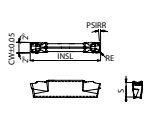
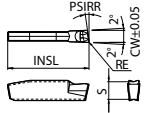
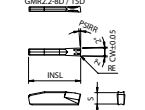


GM/GMM/GMN/GM^R/L

		Carbon steel / Alloy steel								P			
		Stainless steel								M			
		Cast iron								K			
		Non-ferrous metals								N			
Insert	Description	No. of edges	Dimension (mm)				Tolerance (mm)		Carbide				Applicable toolholder H50~H52
			CW	S	RE	INSL	CW min.	CW max.	CVD	PVD	-	Cermet	
									CR9025	PR915	PR930	PRT115	
	GMM 1520-MT	2	1.5	4.3	0 0.05	20	-0.05	+0.05					KGM ^R /L...-1.5(-85)
	GMM 2020-MT	2	2	4.3	0 0.05	20	-0.05	+0.05					KGM ^R /L...-1.5(-85) KGM ^R /L...-2(...)
	GMM 2520-MT	2	2.5	4.3	0 0.05	20	-0.05	+0.05					KGM ^R /L...-2(...) KGM ^R /L...-2.5(-85)
	GMM 3020-MT	2	3	4.3	0 0.05	20	-0.05	+0.05					KGM ^R /L...-2(...), KGM ^R /L...-2.5(-85) KGM ^R /L...-3(T20)
	GMM 1520-NB	2	1.5	4.3	0	20	-0.05	+0.05					KGM ^R /L...-1.5(-85)
	GMM 2020-NB	2	2	4.3	0	20	-0.05	+0.05					KGM ^R /L...-1.5(-85) KGM ^R /L...-2(...)
	GMM 2520-NB	2	2.5	4.3	0	20	-0.05	+0.05					KGM ^R /L...-2(...) KGM ^R /L...-2.5(-85)
	GMM 3020-NB	2	3	4.3	0	20	-0.05	+0.05					KGM ^R /L...-2(...), KGM ^R /L...-2.5(-85) KGM ^R /L...-3(T20)
	GMM 2020-TK	2	2	4.3	0.2	20	-0.05	+0.05					KGM ^R /L...-1.5(-85) KGM ^R /L...-2(...)
	GMM 2520-TK	2	2.5	4.3	0.2	20	-0.05	+0.05					KGM ^R /L...-2(...) KGM ^R /L...-2.5(-85)
	GMM 3020-TK	2	3	4.3	0.25	20	-0.05	+0.05					KGM ^R /L...-2(...), KGM ^R /L...-2.5(-85) KGM ^R /L...-3(T20)
	GMM 2020-TMR	2	2	4.3	0.2	20	-0.05	+0.05					KGM ^R /L...-1.5(-85) KGM ^R /L...-2(...)
	GMM 2520-TMR	2	2.5	4.3	0.2	20	-0.05	+0.05					KGM ^R /L...-2(...) KGM ^R /L...-2.5(-85)
	GMM 3020-TMR	2	3	4.3	0.25	20	-0.05	+0.05					KGM ^R /L...-2(...), KGM ^R /L...-2.5(-85) KGM ^R /L...-3(T20)
	GMN 2-TK	1	2	4.3	0.2	20	-0.05	+0.05					KGM ^R /L...-1.5(-85) KGM ^R /L...-2(...)
	GMN 3-TK	1	3	4.3	0.25	20	-0.05	+0.05					KGM ^R /L...-2(...), KGM ^R /L...-2.5(-85) KGM ^R /L...-3(T20)
	GMN 4-TK	1	4	4.3	0.3	20	-0.05	+0.05					KGM ^R /L...-3(T20), KGM ^R /L...-4(T..)
	GMN 2.2	1	2.2	4.3	0.17	20	-0.05	+0.05					KGM ^R /L...-2(...)
	GMN 3	1	3	4.3	0.2	20	-0.05	+0.05					KGM ^R /L...-2(...), KGM ^R /L...-2.5(-85) KGM ^R /L...-3(T20)
	GMN 4	1	4	4.3	0.25	20	-0.05	+0.05					KGM ^R /L...-3(T20), KGM ^R /L...-4(T..)
	GMN 5	1	5	4.3	0.8	20	-0.05	+0.05					KGM ^R /L...-4(T..), KGM ^R /L...-5(T25)
	GMN 6	1	6	4.3	0.8	20	-0.05	+0.05					KGM ^R /L...-5(T25), KGM ^R /L...-6T30

○ : Will be replaced with a new product

GM/GMM/GMN/GM^{R/L}

																				P	
																				M	
																				K	
																				N	
Insert		Description		No. of edges	Dimension (mm)				Angle (°)	Tolerance (mm)		Carbide						Cermat	Applicable toolholder H50~H52		
					CW	S	RE	INSL		PSIR°	CW min.	CW max.	CVD	PVD						-	-
														CB9025	PR905	PR915	PR930				
	 Sharp cutting oriented	GMM 1520R-MT-15D	2	1.5	4.3	0 0.05	20	15	-0.05	+0.05										KGM°/L...-1.5(-85)	
		GMM 2020R-MT-15D 2020R-MT-15D 2020L-MT-15D	2	2	4.3	0 0.05 0	20	15	-0.05	+0.05										KGM°/L...-1.5(-85) KGM°/L...-2(...)	
		GMM 2520R-MT-15D	2	2.5	4.3	0 0.05	20	15	-0.05	+0.05										KGM°/L...-2(...) KGM°/L...-2.5(-85)	
		GMM 3020R-MT-15D 3020R-MT-15D 3020L-MT-15D	2	3	4.3	0 0.05 0	20	15	-0.05	+0.05										KGM°/L...-2(...), KGM°/L...-2.5(-85) KGM°/L...-3(T20)	
	 Stability oriented	GMM 2020R-TK-8D	2	2	4.3	0.2	20	8	-0.05	+0.05										KGM°/L...-1.5(-85) KGM°/L...-2(...)	
		GMM 2520R-TK-8D	2	2.5	4.3	0.2	20	8	-0.05	+0.05										KGM°/L...-2(...) KGM°/L...-2.5(-85)	
		GMM 3020R-TK-8D	2	3	4.3	0.25	20	8	-0.05	+0.05										KGM°/L...-2(...), KGM°/L...-2.5(-85) KGM°/L...-3(T20)	
	 High feed	GMM 2020R-TMR-6D	2	2	4.3	0.2	20	6	-0.05	+0.05										KGM°/L...-1.5(-85) KGM°/L...-2(...)	
		GMM 2520R-TMR-6D	2	2.5	4.3	0.2	20	6	-0.05	+0.05										KGM°/L...-2(...) KGM°/L...-2.5(-85)	
		GMM 3020R-TMR-6D	2	3	4.3	0.25	20	6	-0.05	+0.05										KGM°/L...-2(...), KGM°/L...-2.5(-85) KGM°/L...-3(T20)	
	 1-edge / Stability oriented	GMR 2-TK-8D	1	2	4.3	0.2	20	8	-0.05	+0.05										KGM°/L...-1.5(-85) KGM°/L...-2(...)	
		GMR 3-TK-8D	1	3	4.3	0.25	20	8	-0.05	+0.05										KGM°/L...-2(...), KGM°/L...-2.5(-85) KGM°/L...-3(T20)	
		GMR 4-TK-8D	1	4	4.3	0.3	20	8	-0.05	+0.05										KGM°/L...-3(T20), KGM°/L...-4(T.)	
	 1-edge / Sharp cutting oriented	GMR 2.2-8D GML 2.2-8D	1	2.2	4.3	0.17	20	8	-0.05	+0.05										KGM°/L...-2(...)	
		GMR 2.2-15D	1	2.2	4.3	0	20	15	-0.05	+0.05										KGM°/L...-2(...)	
		GMR 3-4D GML 3-4D	1	3	4.3	0.2	20	4	-0.05	+0.05										KGM°/L...-2(...), KGM°/L...-2.5(-85) KGM°/L...-3(T20)	
		GMR 4-4D GML 4-4D	1	4	4.3	0.25	20	4	-0.05	+0.05										KGM°/L...-3(T20), KGM°/L...-4(T.)	

Handed insert shows Right-hand

○ : Will be replaced with a new product

H

Cut-Off

Edge preparation

Series	MT-chipbreaker		TK-chipbreaker		TMR-chipbreaker	Without chipbreaker (NB)	
Edge prep.	Chamfer + R honed	Chamfer + R honed	Chamfer + R honed	Sharp Edge	Chamfer + R honed	R honed	Sharp Edge
	Corner-R (RE) = 0.05	Sharp corner	Corner-R (RE) = 0.2-0.3	Corner-R (RE) = 0.2-0.3	Corner-R (RE) = 0.2	Corner-R (RE) = 0.05	Sharp Corner
							
	CR9025/PR915	PR930/KW10	CR9025/PR915	PR930/KW10	PR1115	CR9025	PR930/KW10

· Sharp edge specification can reduce cutting force by 40% less than that of chamfer edge.

Series	Advantage
GMM-MT	Specific chipbreaker for cut-off operations requiring sharp cutting performance. Minimizes the boss.
GMM-NB	Cutting edge is flat with non-chipbreaker. It works well for brass, etc.
GMM-TK	Stable design with chipbreaker for cut-off. Large corner-R. 2-edge for economical performance.
GMN-TK	Same chipbreaker geometry as GMM-TK. 1-edge. Wide application range.
GMN (Std.) (No indication)	Mainly for deep grooving, but available for groove widening and turning due to projection near side cutting edge. 1-edge and wide application range. Available for cut-off applications.

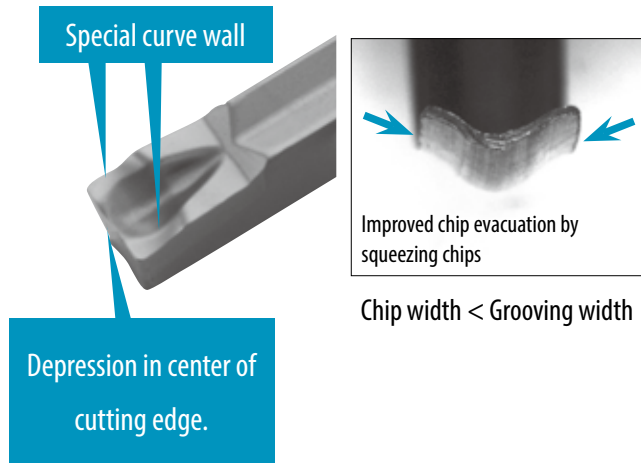
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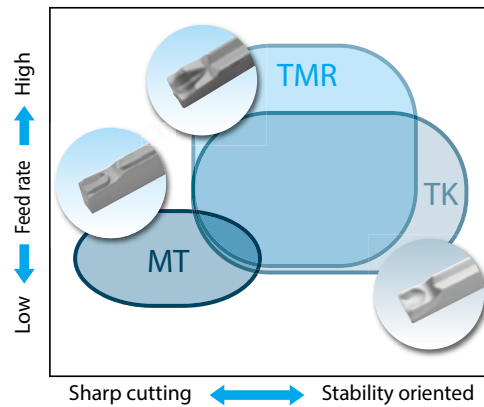
Cut-Off

TMR-chipbreaker

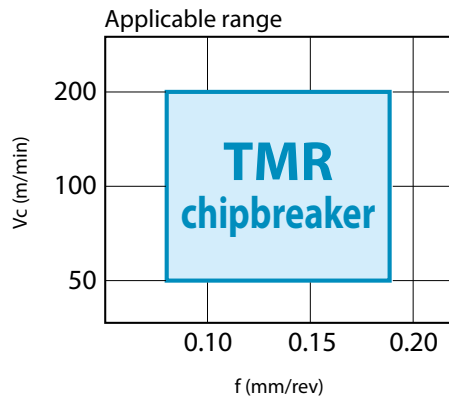
Advantages



GMM chipbreaker MAP



TMR application range



TMR-chipbreaker enables stable chip control also for high feed rates

Good chip control even when cutting speed (spindle revolution) is increased.

(Workpiece Material: SCM415, $\phi 30$, constant spindle revolution)

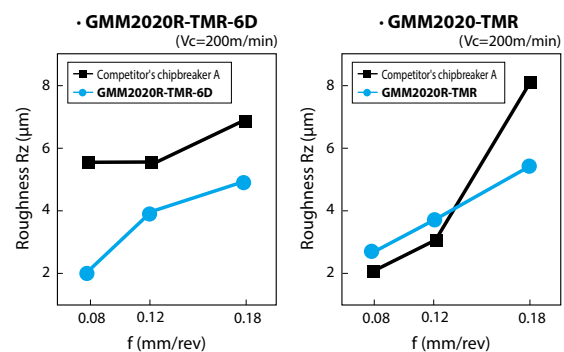
Description	$n=1,060\text{min}^{-1}$ ($V_c=100\text{m/min}$)		$n=2,123\text{min}^{-1}$ ($V_c=200\text{m/min}$)	
	$f=0.12\text{mm/rev}$	$f=0.18\text{mm/rev}$	$f=0.12\text{mm/rev}$	$f=0.18\text{mm/rev}$
GMM 3020-TMR (Neutral)				
GMM 3020R-TMR-6D (Lead angle)				

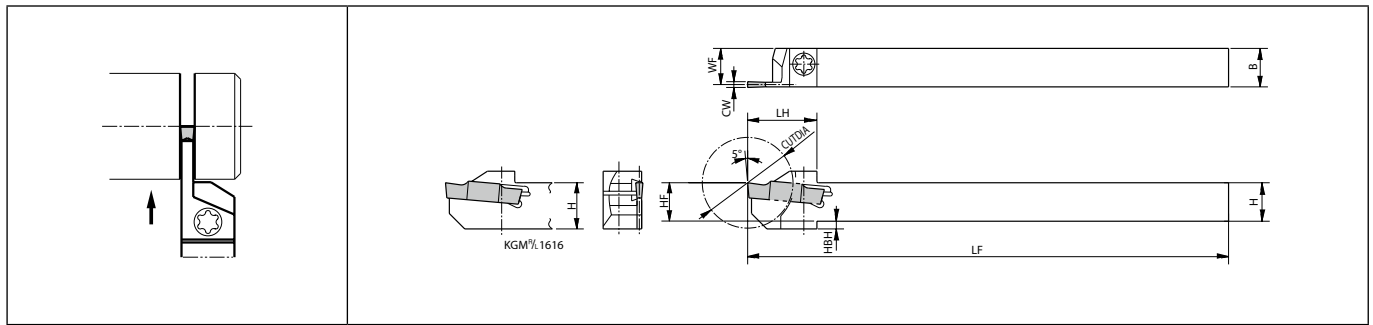
Recommended Cutting Conditions

Workpiece Material	V_c (m/min)	f (mm/rev)
Carbon steel	60 ~ 200	0.08 ~ 0.18
Alloy steel	60 ~ 150	
Stainless steel	50 ~ 140	

Workpiece Surface Roughness

TMR Chipbreaker provides good surface roughness on the workpiece end face at high feed rate ranges.



KGM (for Automatic Lathe)

Right-hand shown

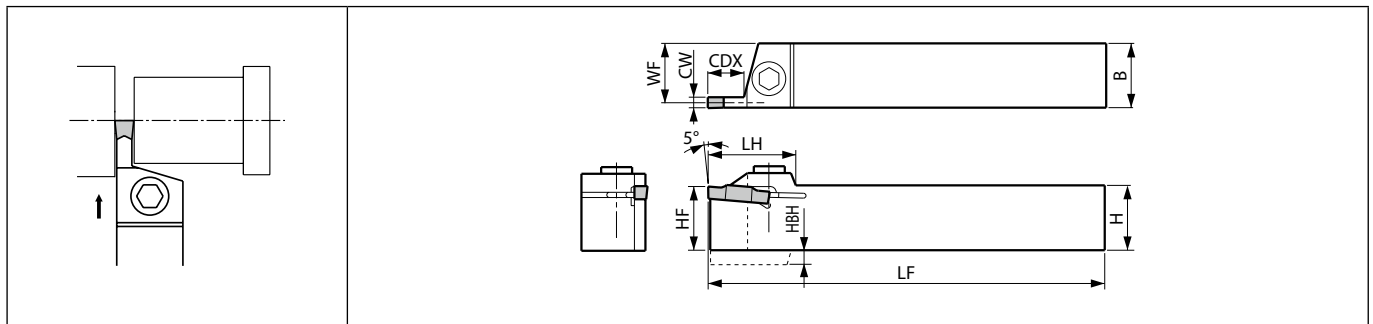
Toolholder dimensions

Description		Availability		Dimension (mm)										Spare parts		Applicable inserts  H46, H47
														Screw	Wrench	
		R	L	CUTDIA	H	B	LH	HF	H8H	LF	WF	CW min.	CW max.			
KGM%L 1010JX-1.5 1212F-1.5-85 1212JX-1.5	☐	☐	18	10	10	18	10	2	120	9.4	1.5	2	SE-40120TR	LTW-15S	GMM1520... GMM2020... GM_2-TK(-8D)	
	☐	☐	23	12	12	19	12		85	11.4						120
	☐	☐														
KGM%L 1010JX-2 1212F-2-85 1212JX-2 1616JX-2	☐	☐	18	10	10	18	10	2	120	9.15	2	3	SE-40120TR	LTW-15S	GMM2020... GM_2-TK(-8D) GM_2.2(-...D) GM_3(...)	
	☐	☐	23	12	12	19	12		85	11.15						
	☐	☐							120	15.15			SE-50125TR	LTW-20		
	☐	☐	30	16	16	24.5	16	-								
KGM%L 1212F-2.5-85 1212JX-2.5 1616JX-2.5	☐	☐	23	12	12	19	12	2	85	11	2.4	3	SE-40120TR	LTW-15S	GMM2520... GMM3020... GM_3(...)	
	☐	☐						120	15							
	☐	☐	30	16	16	24.5	16	-					SE-50125TR	LTW-20		
KGM%L 1616JX-3	☐	☐	30	16	16	24.5	16	-	120	14.8	3	4	SE-50125TR	LTW-20	GMG3020..., GM_3(...), GM_4(...)	

KGM(for automatic lathe) will be switched to KGZ=> **H28**Recommended cutting conditions ➡ **H55**

☐: Expected to be discontinued in September 2026

KGM



Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)										Spare parts				Applicable inserts ➡ H46, H47
													Clamp bolt	Screw	Wrench	Wrench	
	R	L	CDX	H	B	LH	HF	HBH	LF	WF	CW min.	CW max.					
KGM [®] /L 1212H-3	○			12	12		12	4	100	10.8		3	-	SB-5TR	-	LTW-20	GMG3020..., GM_3(...)
1616H-3	○			16	16	27	16			14.8		3	HH5X16	-	LW-4	-	GMG3020..., GM_3(...), GM_4(...)
2020K-3	○	○		20	20		20	-	125	18.8		4	HH5X25	-	LW-4	-	
2525M-3	○	○		25	25		25		150	23.8							
KGM [®] /L 2020K-4	○			20	20	27	20	-	125	18.3		4	HH5X16	-	LW-4	-	GM_4(...)
2525M-4	○	○		25	25		25		150	23.3		5	HH5X25	-	LW-4	-	GMN5
KGMR 2020K-5	○			20	20	27	20	-	125	17.8		5	HH5X16	-	LW-4	-	GMN5
2525M-5	○			25	25		25		150	22.8		6	HH5X25	-	LW-4	-	GMN6

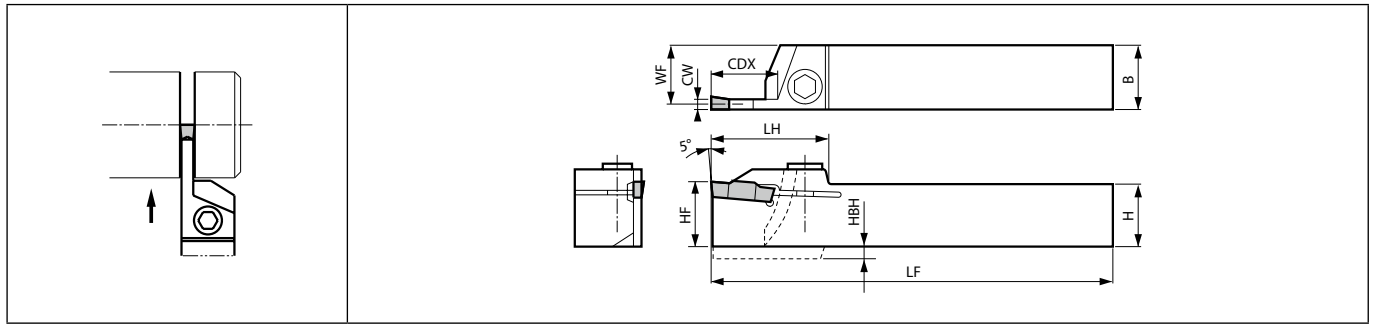
CDX shows available grooving depth.

4mm width Insert can be installed in KGM[®]/L 1212H-3, but is not recommended due to the toolholder's rigidity.KGM will be switched to KGD=> **H40**Recommended cutting conditions ➡ **H55**

H



Cut-Off

KGM-T (Deep grooving)

Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)											Spare parts				Applicable inserts 🔩 H46, H47
														Clamp bolt	Screw	Wrench	Wrench	
	R	L	CDX	H	B	LH	HF	HBH	LF	WF	CW min.	CW max.						
KGM%L 2012K-2T17 2020K-2T17 2525M-2T17	☐	☐	17	20	12	33	20		125	11.15	2	3	-	SB-STR	-	LTW-20	GMM2020..., GM_2-TK(-8D) GM_2.2(..D), GM_3(...)	
	☐	☐		20	20		19.15		HH5X16	-			LW-4	-				
	☐	☐		25	25		24.15		HH5X25	-			LW-4	-				
KGM%L 1616H-3T20 2012K-3T20 2020K-3T20 2525M-3T20	☐	☐	20	16	16	36	16	4	100	14.8	3	4	HH5X16	-	LW-4	-	GMG3020... GM_3(...) GM_4(...)	
	☐	☐		20	12		10.8	-	SB-STR	-			LTW-20					
	☐	☐		20	20		18.8	HH5X16	-	LW-4			-					
	☐	☐		25	25		23.8	HH5X25	-	LW-4			-					
KGM%L 2020K-4T20 2525M-4T20 2525M-4T25	☐	☐	20	20	20	36	20		125	18.3	4	5	HH5X16	-	LW-4	-	GM_4(...) GMN5	
	☐	☐		25	25		25		150	23.3			HH5X25					
	☐	☐		25	25		41		25	150			23.3					HH5X25
KGM%L 2525M-5T25 3232P-5T25	☐	☐	25	25	25	42	25		150	22.8	5	6	HH5X25	-	LW-4	-	GMN5 GMN6	
	☐	☐		32	32		32		170	29.8								
KGMR 2525M-6T30	☐	☐	30	25	25	45	25		150	22.4	6	6	HH5X25	-	LW-4	-	GMN6	

CDX shows the distance from the toolholder to the cutting edge. Ref. to the Table (H54) for the relationship between the available grooving depth and the cutting dia.

When using GMG / GMM (2-edge) insert, set the groove depth under 15 mm.

KGM will be switched to KGD=> **H40**Recommended cutting conditions ➡ **H55**

○ : Will be replaced with a new product

Applicable inserts

Applications See page	G48	G48	G49	G49	G50	H46, H47	H46	H46, H47	H46, H47	H46, H47
Insert	MW	MS	MG			MT	NB	TK	TK	
Toolholder description								TMR		
KGM [®] /L...1.5	-	-	-	-	-	GMM1520..MT GMM2020..MT GMM1520 [®] /L...MT GMM2020 [®] /L...MT	GMM1520..NB GMM2020..NB	GMM2020..T GMM2020R..T	GMN2..TK GMR2..TK	-
KGM [®] /L...2(T)	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMG3020..MG	GMG3020..R GMM3020..R	-	GMM2020..MT GMM2520..MT GMM3020..MT GMM2020 [®] /L...MT GMM2520 [®] /L...MT GMM3020 [®] /L...MT	GMM2020..NB GMM2520..NB GMM3020..NB	GMM2020..T GMM2520..T GMM3020..T GMM2020R..T GMM2520R..T GMM3020R..T	GMN2..TK GMN3..TK GMR2..TK GMR3..TK	GMN2.2 GMN3 GM [®] /L 2.2 GM [®] /L 3
KGM [®] /L...2.5	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMG3020..MG	GMG3020..R GMM3020..R	-	GMM2520..MT GMM3020..MT GMM2520 [®] /L...MT GMM3020 [®] /L...MT	GMM2520..NB GMM3020..NB	GMM2520..T GMM3020..T GMM2520R..T GMM3020R..T	GMN3..TK GMR3..TK	GMN3 GM [®] /L 3
KGM [®] /L...3(T)	GMM3020..MW GMM4020..MW	GMG3020..MS GMM3020..MS GMG4020..MS GMM4020..MS	GMG3020..MG GMG3520..MG GMG4020..MG	GMG3020..R GMM3020..R GMG4020..R GMM4020..R	-	GMM3020..MT GMM3020 [®] /L...MT	GMM3020..NB	GMM3020..T GMM3020R..T	GMN3..TK GMN4..TK GMR3..TK GMR4..TK	GMN3 GMN4 GM [®] /L 3 GM [®] /L 4
KGM [®] /L...4(T)	GMM4020..MW GMM5020..MW	GMG4020..MS GMM4020..MS GMG5020..MS GMM5020..MS	GMG4020..MG GMG5020..MG	GMG4020..R GMM4020..R GMG5020..R GMM5020..R	-	-	-	-	GMN4..TK GMR4..TK	GMN4 GMN5 GM [®] /L 4
KGM [®] /L...5T	GMM5020..MW GMM6020..MW	GMG5020..MS GMM5020..MS GMG6020..MS GMM6020..MS	GMG5020..MG GMG6020..MG	GMG5020..R GMM5020..R GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN5 GMN6
KGM [®] /L...6T	GMM6020..MW	GMG6020..MS GMM6020..MS	GMG6020..MG	GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN6
KGM [®] /L...8	GMM8030..MW	-	GMG8030..MG	-	GMGA8030..R	-	-	-	-	-

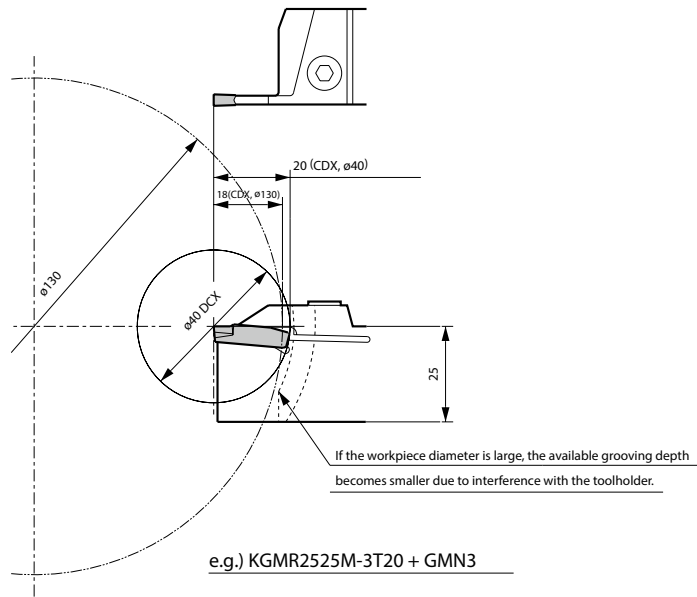
Recommended cutting conditions  H55

H



Cut-Off

Possible cutting diameter of KGM / KGM-T type



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

H

Cut-Off

KGM (for automatic lathe) possible cutting diameter and available grooving depth table

Toolholder description		DCX (Cutting dia.)																
KGM ^{R/L}	1010□-1.5...	-	-	-	-	-	-	-	18	21	26	38	76	∞				
	1212□-1.5...	-	-	-	-	23	27	37	71	∞	∞	∞	∞					
	1010□-2...	-	-	-	-	-	-	-	18	21	26	38	76					
	1212□-2...	-	-	-	-	23	27	37	71	∞								
	1616□-2...	30	37	47	68	89	131	∞	∞									
	1212□-2.5...	-	-	-	-	23	27	37	71									
	1616□-2.5...	30	37	47	68	89	131	∞	∞									
	1616□-3...																	
Available grooving depth CDX (mm)		15	14	13	12	11.5	11	10	9	8	7	6	5	4	3	2	1	

KGM-T possible cutting diameter and available grooving depth table (GMN, GM^{R/L} when using 1-edge insert)

Toolholder description		DCX (Cutting dia.)															
KGM ^{R/L}	2012K-2T17	-	-	-	-	-	-	-	-	66	80	130	260	∞			
	2020K-2T17																
	2525M-2T17																
	1616H-3T20	-	-	-	-	-	40	54	70	100	180						
	2012K-3T20	-	-	-	-	-	40	90	130	240	∞					∞	∞
	2020K-3T20																
	2525M-3T20																
	2020K-4T20																
	2525M-4T20	-	-	50	140	240	∞	∞	∞	∞	∞	∞	∞				
	2525M-4T25																
	2525M-5T25				280	600											
	3232P-5T25																
	2525M-6T30	100	300	∞	∞	∞											
Available grooving depth CDX (mm)		30	27	25	23	22	20	19	18	17	16	15	14	13 or under			

Recommended cutting conditions (GMM-MT, GMM-TK, GMM-NB)

Workpiece material	Recommended insert grades (Vc: m/min)				Edge width CW (mm)				Remarks
	CVD coated carbide	PVD coated carbide		Carbide	1.5	2.0 / 2.5	3.0	4.0	
	CR9025	PR915	PR930	KW10	f (mm/rev)				
Carbon steel	☆ 80 ~ 180	★ 60 ~ 150	☆ 60 ~ 130	-	0.01 ~ 0.04	0.02 ~ 0.15	0.03 ~ 0.20	0.08 ~ 0.30	Coolant
Alloy steel	☆ 70 ~ 150	★ 60 ~ 150	☆ 60 ~ 130	-	0.01 ~ 0.04	0.02 ~ 0.15	0.03 ~ 0.20	0.08 ~ 0.30	
Stainless steel	☆ 60 ~ 140	★ 50 ~ 140	☆ 50 ~ 120	-	0.01 ~ 0.03	0.02 ~ 0.10	0.03 ~ 0.15	0.08 ~ 0.25	
Cast iron	-	-	-	★ 50 ~ 100	0.01 ~ 0.05	0.05 ~ 0.12	0.10 ~ 0.25	0.10 ~ 0.30	
Aluminum alloys	-	-	-	★ 200 ~ 450	0.01 ~ 0.05	0.05 ~ 0.10	0.05 ~ 0.20	0.05 ~ 0.25	
Brass	-	-	-	★ 100 ~ 200	0.01 ~ 0.05	0.05 ~ 0.10	0.05 ~ 0.15	0.05 ~ 0.20	

· When machining Steel and Stainless Steel by Insert of PR930, decrease the feed rate by 20%.

★: 1st Recommendation ☆: 2nd Recommendation

Recommended cutting conditions (GMM-TMR)

Workpiece material	Vc (m/min)	f (mm/rev)	Remarks
Carbon steel	60 ~ 200	0.08 ~ 0.18	Coolant
Alloy steel	60 ~ 150		
Stainless steel	50 ~ 140		

H



Cut-Off

High-performance cut-off solutions

KPK Series

Easy insert replacement reduces downtime

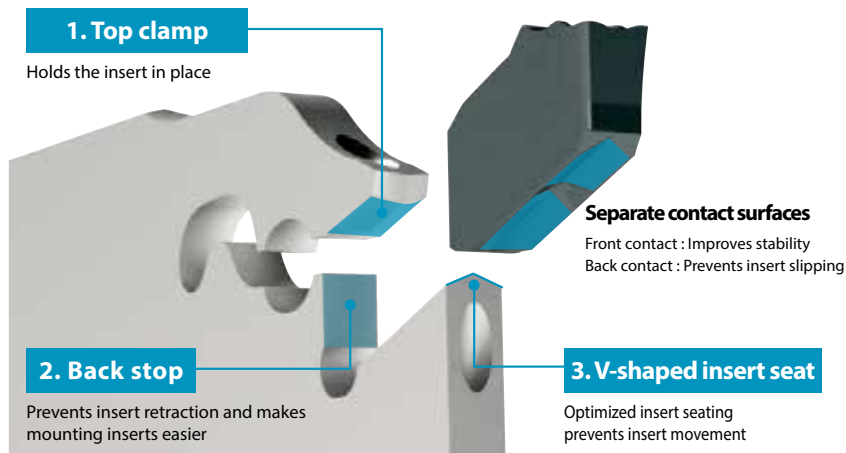
High performance, long tool life and stable machining with strong clamping mechanism

1 Easy insert replacement

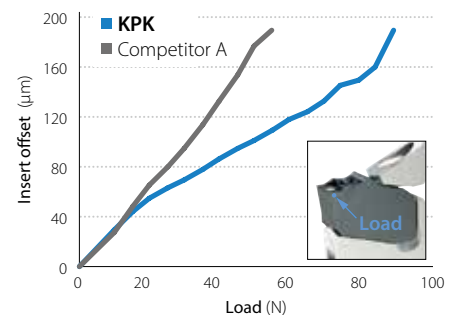


2 Firm insert clamp ensures added safety and security

The firmly secured insert uses three contact surfaces to eliminate sliding or chattering



Insert deviation comparison (Internal evaluation)



Cutting performance comparison (Internal evaluation)



Cutting conditions : $n = 320 \text{ min}^{-1}$ (constant), $V_c = \sim 100 \text{ m/min}$, $f = 0.12 \text{ mm/rev}$, Wet (External coolant) Workpiece material : SCM435 ($\phi 100$) Edge width : 3mm

3 Unique chipbreaker for long tool life and stable machining

Advanced chipbreaker technology inherited from KGD lineup provides excellent chip control



General purpose PM Chipbreaker

Insert grade

For Steel : PR1625
For Stainless steel : PR1535
For Cast Iron and Aluminum : GW15

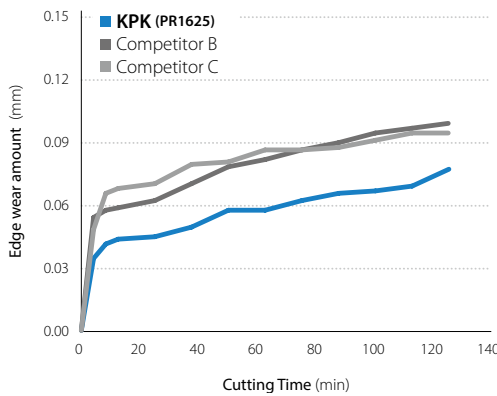


For tough edge and high-feed machining PH Chipbreaker

Insert grade

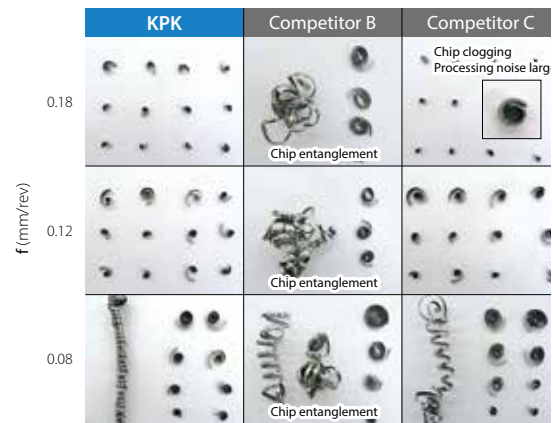
For Steel : PR1625
For Stainless steel : PR1535

Wear resistance comparison (Internal evaluation)



Cutting conditions : $n = 955 \text{ min}^{-1}$ (constant), $V_c \sim 150 \text{ m/min}$
 $f = 0.12 \text{ mm/rev}$ ($\sim \phi 10$: $f = 0.05 \text{ mm/rev}$) Wet (External coolant)
 Workpiece material : SCM415 ($\phi 50$) Edge width : 3 mm (PM Chipbreaker)

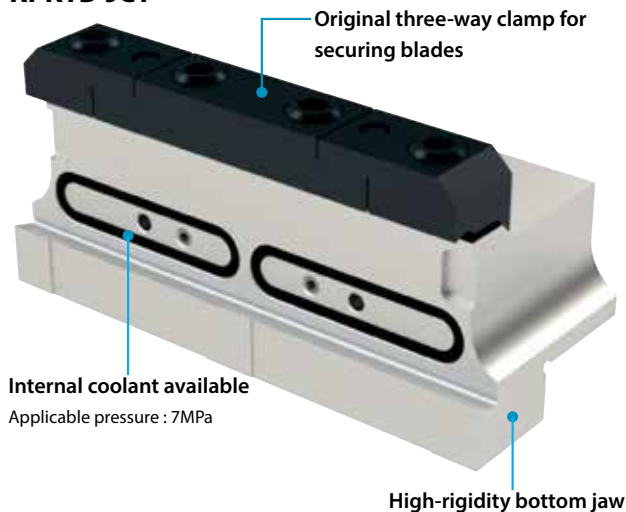
Chip control comparison (Internal evaluation)



Cutting conditions : $n = 780 \text{ min}^{-1}$ (constant), $V_c \sim 120 \text{ m/min}$, Wet (External coolant)
 Workpiece material : SCM415 ($\phi 50$) Edge width : 3 mm (PM Chipbreaker)

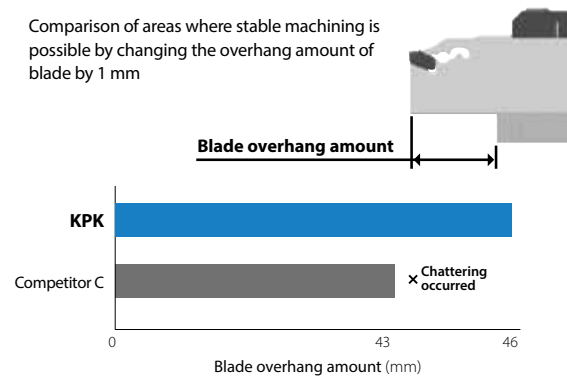
4 Rigid toolblock prevents chattering and provides internal coolant

KPKTB-JCT



Chattering resistance comparison (Internal evaluation)

Comparison of areas where stable machining is possible by changing the overhang amount of blade by 1 mm



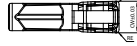
Cutting conditions : $n = 650 \text{ min}^{-1}$ (constant), $V_c \sim 100 \text{ m/min}$, $f = 0.12 \text{ mm/rev}$
 Wet (Internal coolant : Normal pressure) Workpiece material : SCM435 ($\phi 50$),
 Edge width : 3 mm (PM Chipbreaker)

Check

KTKTB type is compatible with internal coolant with an optional internal connector. ($\sim 1 \text{ MPa}$)

*Refer to page H65 for the supply method (Type C).

PKM

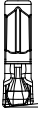
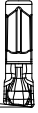
			Carbon steel / Alloy steel					 		P		
			Stainless steel					 		M		
			Cast iron					 		K		
			Non-ferrous metals					 		N		
Insert		Description	No. of edges	Dimension (mm)		Angle (°)	Tolerance (mm)		Carbide		Applicable toolholder  H60, H61, H67, H68	
				CW	RE		PSIR%/	CW min.	CW max.			
										PVD		-
										PR135 PR1625		GW15
	 General purpose	PKM 16N-015PM	1	1.6	0.15	-	-0.03	+0.03	  	KPKB19-1, KPKB26-1(JCT) KPKB32-1(JCT)		
		PKM 20N-020PM	2	2	0.2	-	-0.03	+0.03	  	KPKB19-2, KPKB26-2(JCT) KPKB32-2(JCT), KPKH%/2020K-2(JCT)		
		PKM 24N-020PM	2.4	2.4	0.2	-	-0.03	+0.03	  	KPKB19-2, KPKB26-2(JCT) KPKB32-2(JCT), KPKH%/2020K-2(JCT)		
		PKM 30N-025PM	3	3	0.25	-	-0.03	+0.03	  	KPKB26-3(JCT), KPKB32-3(JCT) KPKH%/....-3(JCT), KPKH%/....-3D45		
		PKM 40N-030PM	4	4	0.3	-	-0.03	+0.03	  	KPKB26-4(JCT), KPKB32-4(JCT) KPKH%/....-4(JCT), KPKH%/....-4D45		
		PKM 48N-030PM	4.8	4.8	0.3	-	-0.03	+0.03	  	KPKB26-5(JCT), KPKB32-5(JCT) KPKH%/2525M-5		
		PKM 50N-030PM	5	5	0.3	-	-0.03	+0.03	  	KPKB26-5(JCT), KPKB32-5(JCT) KPKH%/2525M-5		
		PKM 60N-035PM	6	6	0.35	-	-0.03	+0.03	  	KPKB32-6(JCT)		
	 High feed	PKM 20N-020PH	1	2	0.2	-	-0.03	+0.03	 	KPKB19-2, KPKB26-2(JCT) KPKB32-2(JCT), KPKH%/2020K-2(JCT)		
		PKM 30N-030PH	3	3	0.3	-	-0.03	+0.03	 	KPKB26-3(JCT), KPKB32-3(JCT) KPKH%/....-3(JCT), KPKH%/....-3D45		
		PKM 40N-030PH	4	4	0.3	-	-0.03	+0.03	  	KPKB26-4(JCT), KPKB32-4(JCT) KPKH%/....-4(JCT), KPKH%/....-4D45		
		PKM 50N-030PH	5	5	0.3	-	-0.03	+0.03	  	KPKB26-5(JCT), KPKB32-5(JCT) KPKH%/2525M-5		
		PKM 60N-040PH	6	6	0.4	-	-0.03	+0.03	 	KPKB32-6(JCT)		
	 General purpose with lead angle	PKM 16R-015PM-6D 16L-015PM-6D	1	1.6	0.15	6	-0.03	+0.03	  	KB19-1, KPKB26-1(JCT)KPKB32-1(JCT)		
		PKM 20R-020PM-6D 20L-020PM-6D	2	2	0.2	6	-0.03	+0.03	  	KPKB19-2, KPKB26-2(JCT) KPKB32-2(JCT), KPKH%/2020K-2(JCT)		
		PKM 24R-020PM-6D 24L-020PM-6D	2.4	2.4	0.2	6	-0.03	+0.03	  	KPKB19-2, KPKB26-2(JCT) KPKB32-2(JCT), KPKH%/2020K-2(JCT)		
		PKM 30R-025PM-6D 30L-025PM-6D	3	3	0.25	6	-0.03	+0.03	  	KPKB26-3(JCT), KPKB32-3(JCT) KPKH%/....-3(JCT), KPKH%/....-3D45		
		PKM 40R-030PM-6D 40L-030PM-6D	4	4	0.3	6	-0.03	+0.03	  	KPKB26-4(JCT), KPKB32-4(JCT) KPKH%/....-4(JCT), KPKH%/....-4D45		
		PKM 50R-030PM-6D 50L-030PM-6D	5	5	0.3	6	-0.03	+0.03	  	KPKB26-5(JCT), KPKB32-5(JCT) KPKH%/2525M-5		

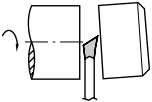
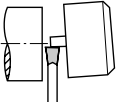
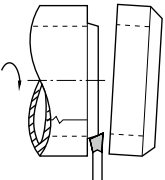
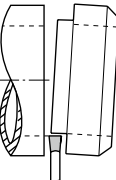
Handed insert shows Right-hand

● : Standard item

Lead angle direction and usage

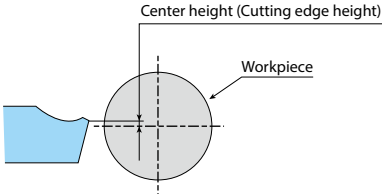
- 1. If there is no restriction on the finished shape, use an insert without lead angle.
- 2. Insert with lead angle is recommended to prevent remaining boss.
- 3. If you want to make the remaining boss smaller when machining small or thin parts, use insert with lead angle.

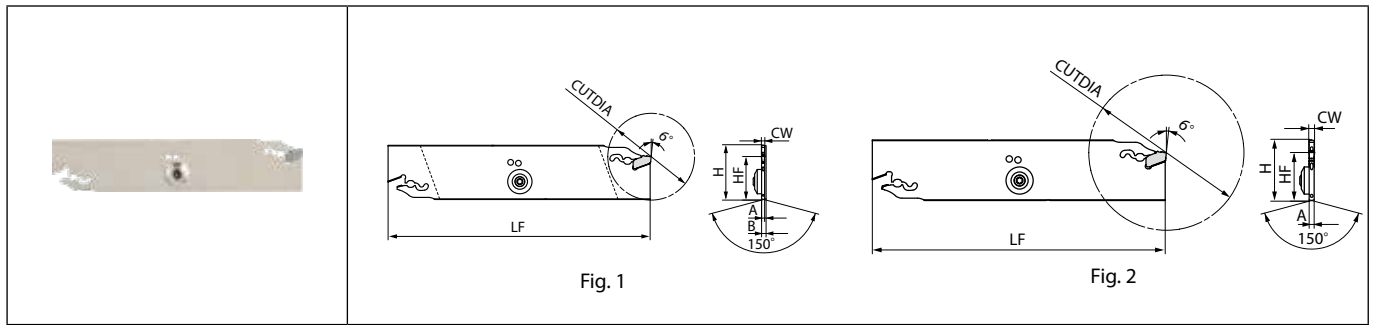
	N (Neutral)	R (Right-hand)	L (Left-hand)
Hand of lead angle			
	· Inserts with lead angle (PSIR $\%$ L) reduce burrs at cut-off machining. · The larger the lead angle (PSIR $\%$ L), the smaller the cutting force. · The feed also needs to be smaller.		

	Right-hand (R) Lead angle	Neutral	Right-hand (R) Lead angle	Neutral
Solid workpiece			Hollow workpiece (Pipe)	
				

Caution

- 1. Set cutting edge height 0.1mm above core height.
 - 2. Machining with ample supply of coolant is recommended.
 - 3. Keep a constant rate during processing so that optimum product life will be achieved.
 - 4. Cut off as close to the chuck as possible.
 - 5. To prevent impacts, reduce feed rate by 1/2 ~ 1/3 when nearing the center of the workpiece.
- Overuse of insert and toolholder (blade) may cause insert breakage and toolholder (blade) damage.



KPKB-JCT (Coolant-through blades)

With coolant supply | Applicable pressure : ~7MPa

Toolholder dimensions

Description	Availability	Dimension (mm)							Coolant hole	Fig.	Spare parts				Applicable inserts H58	Applicable tool block H62, H63	
		CUT/DIA	A	B	H	HF	LF	CW			Releasing wrench	Coolant cap	Screw	Wrench			
KPKB	26-1JCT	●	35	1.4	2.6	26	21.4	110	1.6	Yes	1	LPW-5	CCP-4	SB-4065TR	FT-15	PKM16...	KPKTB...-26JCT KTKTB...-26
	26-2JCT	●	50	1.8					2							PKM20...	
	26-3JCT	●	75	2.6	2.4				PKM24...								
	26-4JCT	●	3.4	4	PKM30...												
	26-5JCT	●	80	4.2	4.8				PKM40...								
					5				PKM48...								
																PKM50...	
KPKB	32-1JCT	●	35	1.4	2.6	32	25	150	1.6	Yes	1	LPW-5	CCP-4	SB-4065TR	FT-15	PKM16...	KPKTB...-32JCT KTKTB...-32 KTKTBF...-32
	32-2JCT	●	50	1.8					2							PKM20...	
	32-3JCT	●	100	2.6	2.4				PKM24...								
	32-4JCT	●	3.4	4	PKM30...												
	32-5JCT	●	120	4.2	4.8				PKM40...								
					5				PKM48...								
																PKM50...	
	32-6JCT	●	5.4	6												PKM60...	

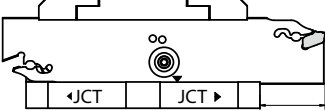
See page H64 for insert mounting and removal instructions

When using internal coolant with KTKTB, KTKTBF type toolblocks, coolant supply piping (CCN -5) sold separately.

H: Length between virtual vertices

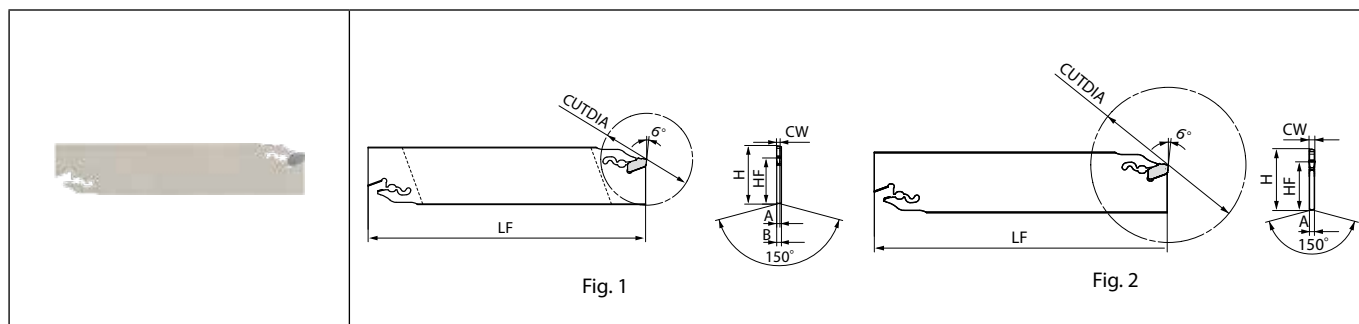
Recommended cutting conditions H69

Minimum /maximum overhang length while using internal coolant

 Overhang Length	Description		Overhang length	
	Blade	Toolblocks	min.	max.
	KPKB26-1JCT	KPKTB20-26JCT	15	34.5
	KPKB26-2/3/4JCT		20	40
	KPKB26-5JCT		23	43
	KPKB32-1JCT	KPKTB20-32JCT	18	49
		KPKTB25-32JCT	13	
		KPKTB32-32JCT		
	KPKB32-2/3/4JCT	KPKTB20-32JCT	27.5	59
		KPKTB25-32JCT	22.5	
		KPKTB32-32JCT		
	KPKB32-5/6JCT	KPKTB20-32JCT	31.5	63
KPKTB25-32JCT		26.5		
KPKTB32-32JCT				

● : Standard item

KPKB



Toolholder dimensions

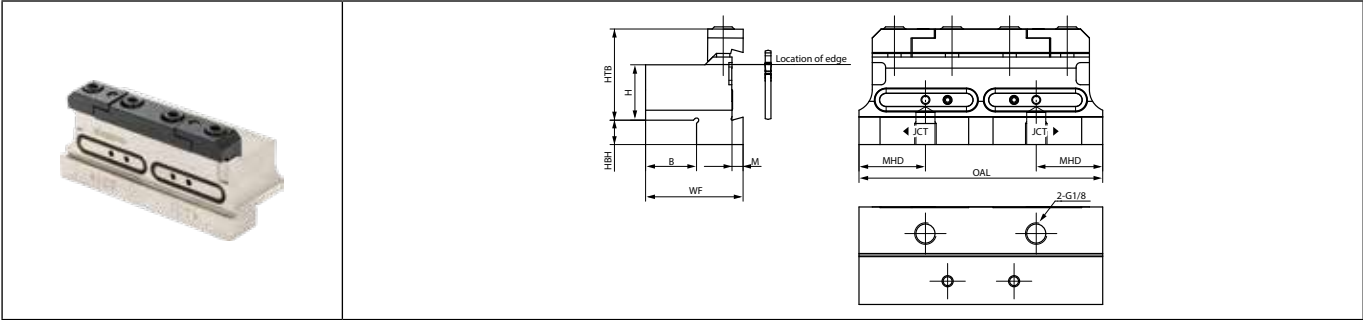
Description	Availability	Dimension (mm)							Coolant hole	Fig.	Spare parts	Applicable inserts 🔧 H58	Applicable tool block 🔧 H62, H63
		CUTDIA	A	B	H	HF	LF	CW			Releasing wrench		
													
KPKB 19-1	●	32	1.4	2.6	19	15.7	86	1.6	No	1	LPW-5	PKM16...	KTKTB..-19
	●	40	1.8	-				2 2.4		2		PKM20... PKM24...	
KPKB 26-1	●	35	1.4	2.6	26	21.4	110	1.6	No	1	LPW-5	PKM16...	KPKTB..-26JCT KTKTB..-26
	●	50	1.8	-				2 2.4		2		PKM20... PKM24...	
	●	75	2.6	-				3				PKM30...	
	●	80	3.4	-				4				PKM40...	
	●	80	4.2	-				4.8 5				PKM48... PKM50...	
	●	35	1.4	2.6				32				25	
●	50	1.8	-	2 2.4	2	PKM20... PKM24...							
●	100	2.6	-	3		PKM30...							
●	100	3.4	-	4		PKM40...							
●	120	4.2	-	4.8 5		PKM48... PKM50...							
●	120	5.4	-	6		PKM60...							

See page H64 for insert mounting and removal instructions

H: Length between virtual vertices

Recommended cutting conditions ➡ H69

KPKTB-JCT (Coolant-through type)



With coolant supply | Applicable pressure : ~7MPa

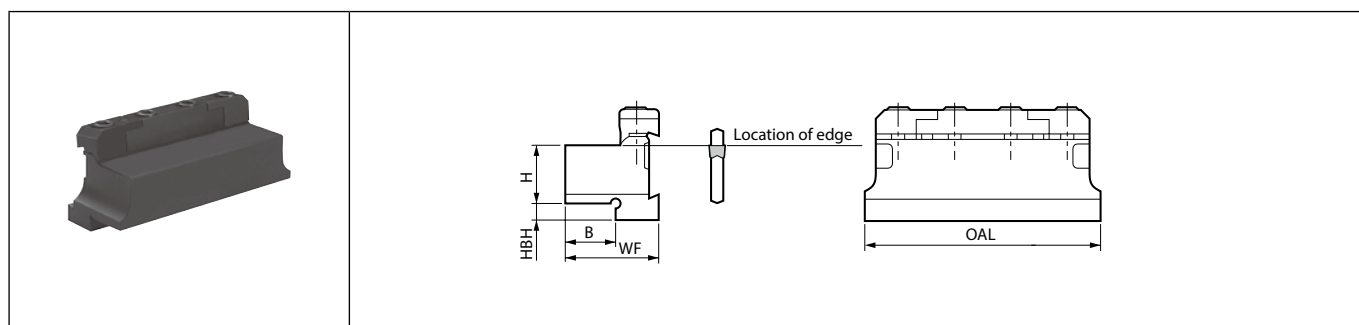
Toolholder dimensions

Description		Availability	Dimension (mm)								Coolant hole	Spare parts						Applicable blade ➡ G140 H60 H61 H72					
												Clamp bolt	Clamp set (separate type)	O-ring	Plug	Screw	Wrench						
			H	B	HBH	HTB	M	MHD	OAL	WF													
KPKTB	20-26JCT	●	20	19	12.4	33	4	23.5	86	39	Yes	HH6X16	BCS-2	GR-020	HSG1/8X8.0	HS3X4	LW-5	KPKB26-__JCT, KTKB26-__					
	20-32JCT	●			16	41	5	25	100	40	Yes		BCS-3	GR-026		HS4X4		KPKB32-__JCT KTKB32-__ KFTB%/L...-4S KFTB%/L...-5S					
	25-32JCT	●	25	23	11			30	110	44	Yes		BCS-4	GR-029									
	32-32JCT	●	32	29	5					50	Yes												

Includes only one HSG1/8X8.0 plug.
KPKTB-JCT type block is also compatible with conventional KTKB type blades.
See page **H66** for coolant piping parts.
When using internal coolant, the coolant may appear to leak slightly, but this should not affect machining performance.
(If the O-ring is damaged, order separately.)

● : Standard item

KTKTB



Toolholder dimensions

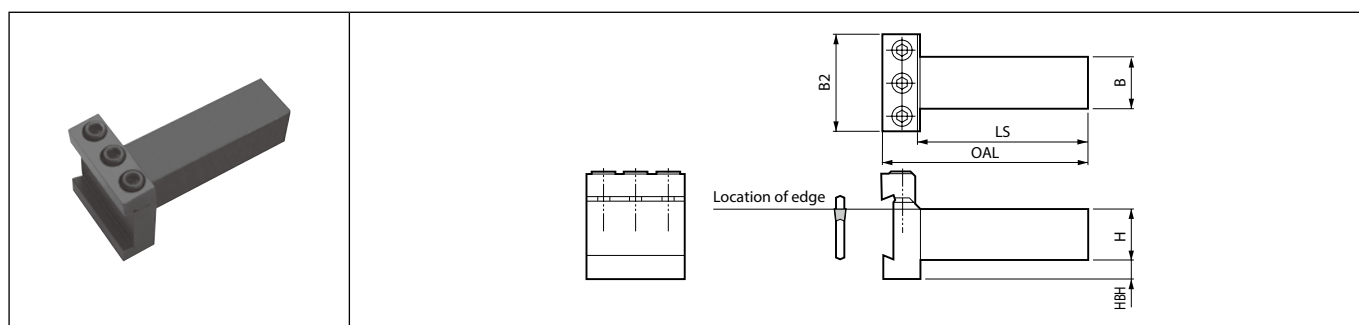
Description	Availability	Dimension (mm)					Spare parts				Applicable blade ➔ G140 H60 H61 H72	
							Clamp bolt	Clamp set (integral type)	Clamp set (separate type)	Wrench		
		H	B	HBH	OAL	WF					Cut-off	Face grooving
KTKTB 16-19 20-19	●	16	15.5	4	76	29.5	HH5X25	BCS-1	-	LW-4	KPKB19- KTKB19-1SS, KTKB19-2S	-
	●	20	19			34						
KTKTB 16-26 20-26	●	16	15.5	13	86	31.5	HH6X30	-	BCS-2	LW-5	KPKB26-_(JCT) KTKB26-1SS, KTKB26-_S	-
	●	20	19	9		36						
KTKTB 20-32 25-32 32-32	●	20	19	13	100	38	HH6X30	-	BCS-3	LW-5	KPKB32-_(JCT) KTKB32-1SS, KTKB32- KTKB%/32-_S	KFTB%/...-4S KFTB%/...-5S
	●	25	23	8	110	42			BCS-4			
	●	32	29	5		48						

H



Cut-Off

KTKTBF



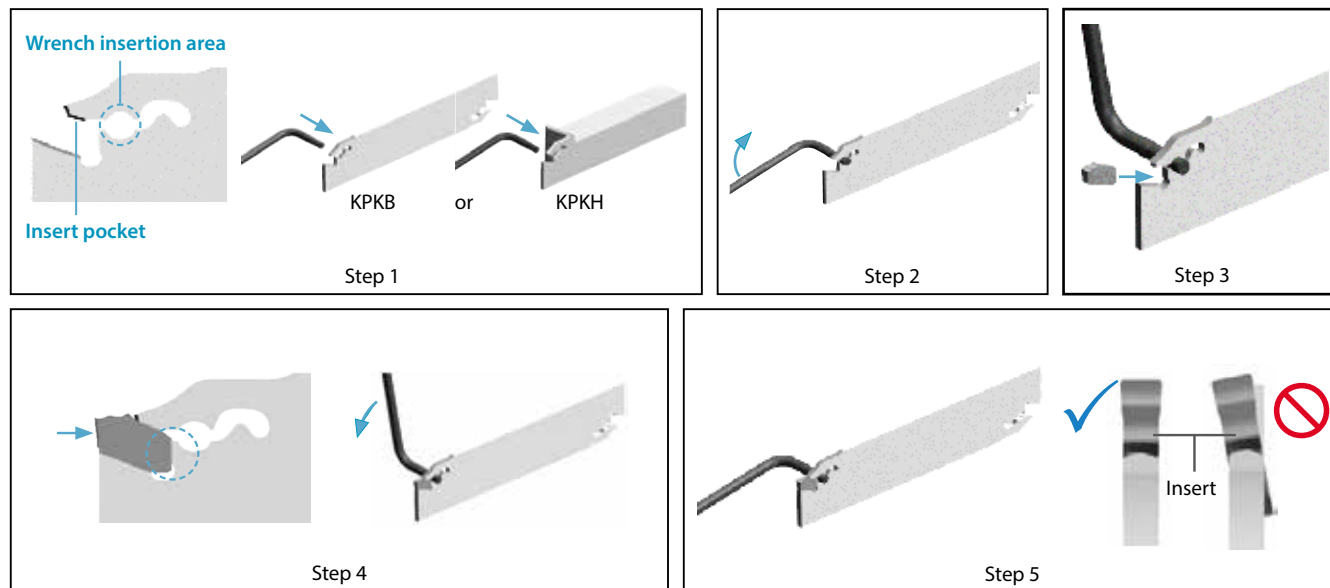
Toolholder dimensions

Description	Availability	Dimension (mm)						Spare parts			Applicable blade ➡ G140 H60 H61 H72	
								Clamp bolt	Clamp set (integral type)	Wrench		
		H	B	B2	HBH	LS	OAL				Cut-off	Face grooving
KTKTBF 25-32	●	25	25	48	9.5	84.5	102	HH6X30	BCS-5	LW-5	KPKB32-_(JCT) KTKB32-1SS , KTKB32-_ KTKBR%/ 32- S	KFTB%/L....-4S KFTB%/L....-5S
32-32	●	32	32		2.5	99.5	117					

● : Standard item

How to mount and remove the insert

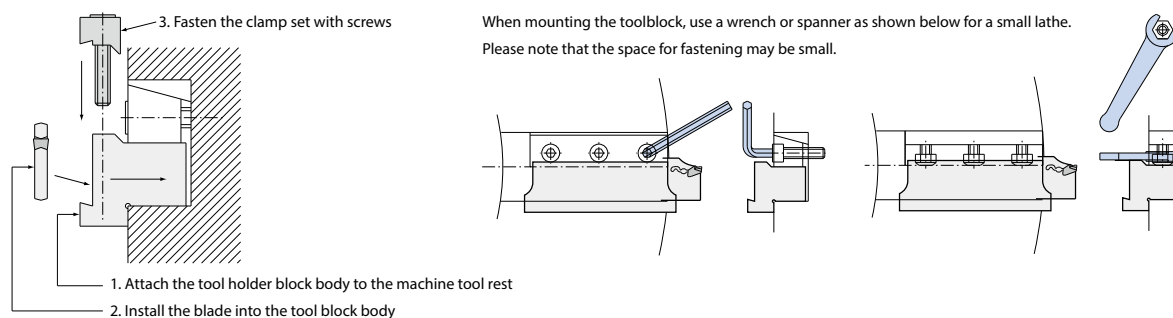
1. Use compressed air or other measures to remove chips from the insert mounting part and wrench insertion space and put in the wrench.
2. Turn the wrench.
3. Put in the insert into insert mounting part. (When removing the insert, follow the same procedure and remove it at step 3.)
4. Please clamp it while gently pressing it makes contact with the back end of blade's surface.
5. Make sure that the insert is set straight.



H

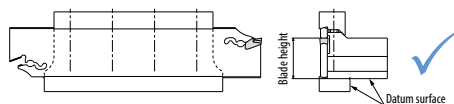
Cut-Off

Installation guide

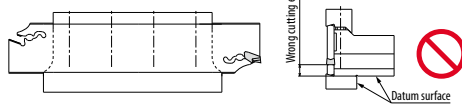


How to install the tool holder block and blade

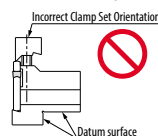
Correct blade installation



Incorrect blade installation



Incorrect Clamp Set Orientation

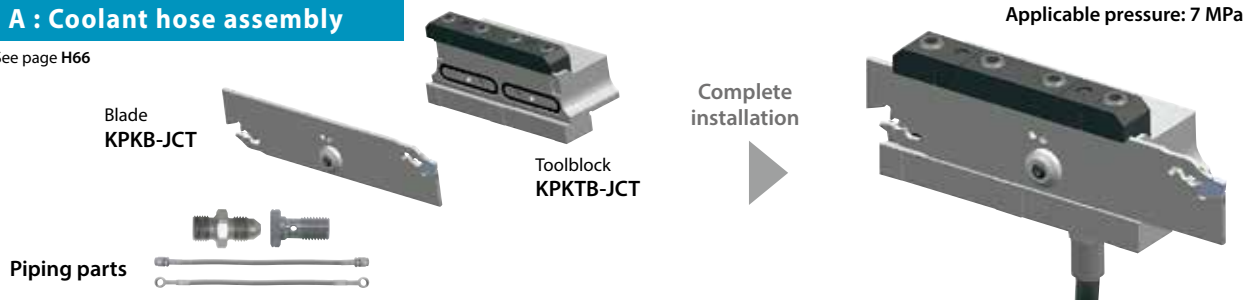


If the clamp set is mounted in the reverse direction, a large gap is created between the tool holder block main body and the clamp set as shown in the left figure. If you continue to use the product, the blade may break off. Reinstall in the correct orientation.

Internal coolant supply method Supplies according to machine specifications and requirements

A : Coolant hose assembly

See page H66



B : VDI holder assembly

(Internal coolant type)

Applicable pressure: 7 MPa



C : Coolant pipe assembly

See page H66



Coolant supply pipe mounting method

Attach to the blade with the supplied screw

Form pipe to the required shape and connect it to the piping of the machine.

Cautions

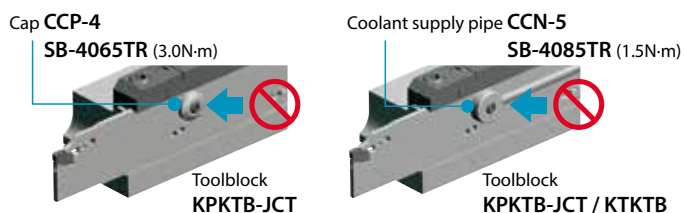
When mounting KPKB-JCT blade

When using internal coolant, keep the arrow (▼) on the blade within the range marked on the toolblock.



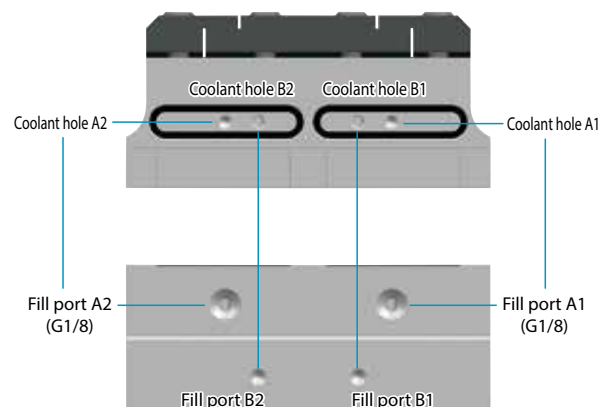
When the cap and coolant supply pipe are mounted

Coolant cannot be supplied correctly if it is mounted in the wrong position.



When using a toolblock

When using the discharge port B1 (B2), use a sealant for the filler cap (HSG 1/8 X 8.0) of the accessory part of the coolant supply port A1 (A2).



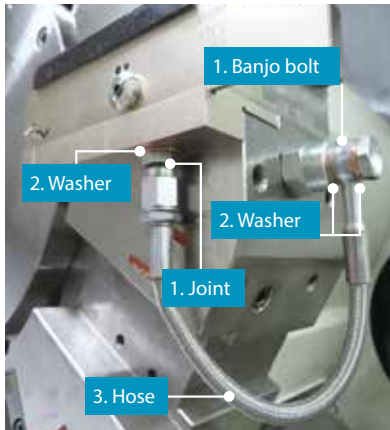
H



Cut-Off

A : Coolant hose assembly

Connection method and piping parts

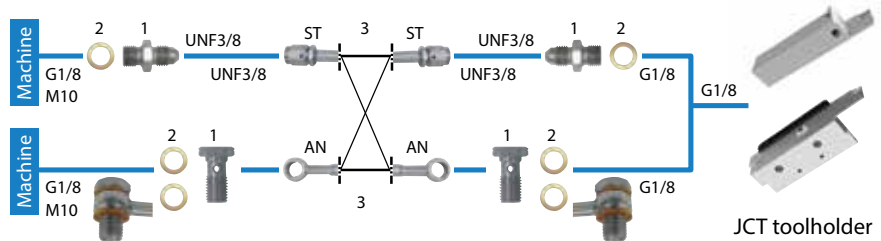


Easy connection with high pressure hose and joint

Even without a high pressure pump, internal coolant can be used at a normal pressure.

Banjo bolt available for angled hose connection

<Piping installation guide>



Depending on machine specifications and piping methods, 1.Joint / Banjo bolt x 2 2.Washer x 2-4 3.Hose x 1

1. Joint / Banjo bolt (Sold separately)

Pressure Resistance : ~30MPa

Shape	Description	Stock	Thread standard
			Thread connection to the machine
	J-G1/8-UNF3/8	●	G1/8
	J-M10X1.5-UNF3/8	●	M10X1.5
	BB-G1/8	●	G1/8
	BB-M10X1.5	●	M10X1.5

2. Washer (Sold separately)

Pressure Resistance : ~30MPa

Shape	Description	Stock
	WS-10	●

*Use 2 washers for a banjo bolt

3. Hose (Sold separately)

Pressure Resistance : ~30MPa

Shape	Description	Stock	Thread standard		Dimension (mm)
					L
	HS-ST-ST-200	●	UNF3/8	UNF3/8	200
	HS-ST-ST-250	●			250
	HS-ST-AN-200	●	UNF3/8	— (Banjo bolt)	200
	HS-ST-AN-250	●			250
	HS-AN-AN-200	●	— (Banjo bolt)	— (Banjo bolt)	200
	HS-AN-AN-250	●			250

Cautions

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 same. Check the pressure resistance before use.
6. Regularly changing the coolant filter is recommended.

C : Coolant pipe assembly

Piping parts

Coolant supply pipe (Sold separately)

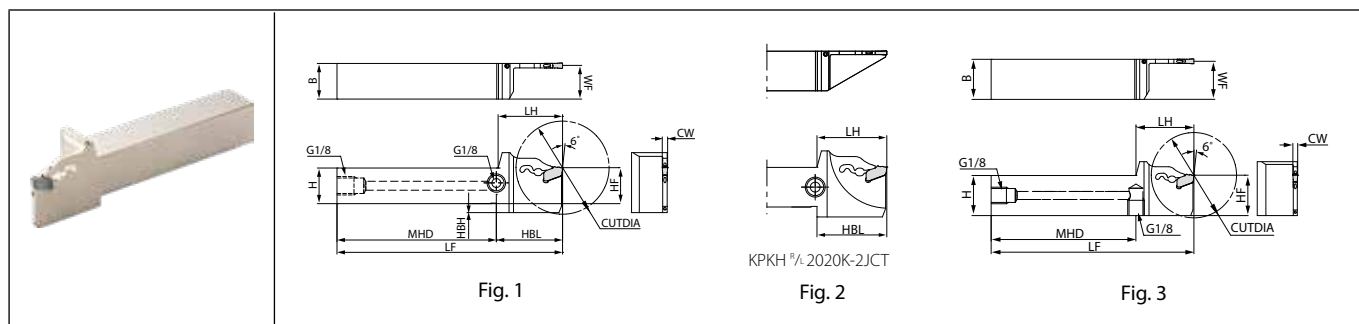
Pressure resistance : ~1MPa

Shape	Description	Stock	Dimension				Parts (Screw)
			A	B	C	D	
	CCN-5	●	190	16	5	6	SB-4085TR

Use wrench (FT -15) supplied with the blade when connecting.

● : Standard item

KPKH-JCT (Coolant-through holders)



Right-hand shown

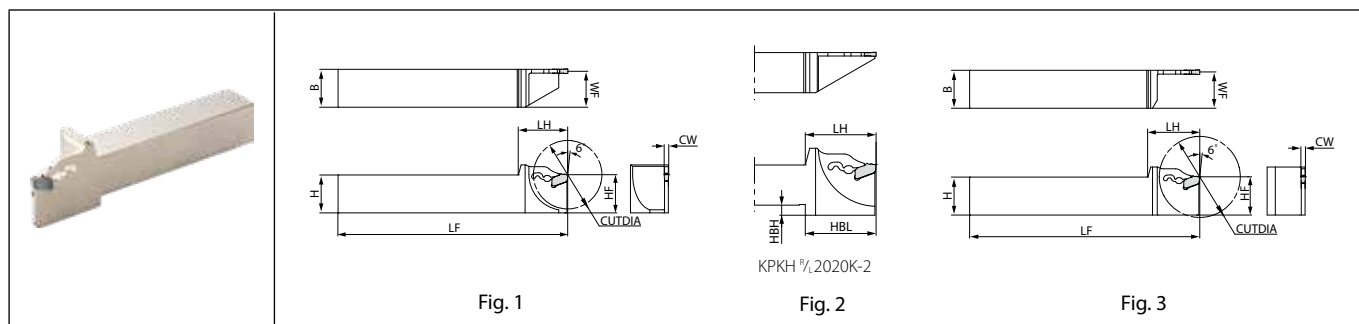
Toolholder dimensions

Description	Availability		Dimension (mm)											Coolant hole	Fig.	Spare parts		Applicable inserts 🔗 H58
																Plug	Releasing wrench	
	R	L	CUTDIA	H	B	LH	MHD	HF	HBH	HBL	LF	WF	CW					
KPKH [®] /L 2020K-2JCT	●	●	38	20	20	35.1	89	20	5	35.1	125	19.15	2 2.4	Yes	2	HSG1/8X8.0	LPW-5	PKM20... PKM24...
KPKH [®] /L 2020K-3JCT 2525K-3JCT	●	●	52	20	20	36	88	20	5	37	125	18.75	3	Yes	1 3	HSG1/8X8.0	LPW-5	PKM30...
	●	●	53	25	25		89	25	-	-		23.75						
KPKH [®] /L 2020K-4JCT 2525K-4JCT	●	●	62	20	20	42.5	83	20	5	42	125	18.35	4	Yes	1 3	HSG1/8X8.0	LPW-5	PKM40...
	●	●	68	25	25		82	25	-	-		23.35						

See page H64 for insert mounting and removal instructions
See page H66 for coolant piping parts.

Recommended cutting conditions ➡ H69

KPKH



Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)											Coolant hole	Fig.	Spare parts	Applicable inserts  H58
																Releasing wrench	
	R	L	CUTDIA	H	B	LH	HF	HBH	HBL	LF	WF	CW					
KPKH%L 2020K-2	●	●	38	20	20	33.1	20	5	33.1	125	19.15	2 2.4	No	2	LPW-5	PKM20... PKM24...	
KPKH%L 2020K-3	●	●	52	20	20	34	20			125	18.75	3	No	3		PKM30...	
2525M-3	●	●	53	25	25					150	23.75						
KPKH%L 2020K-4	●	●	62	20	20	40.5	20			125	18.35	4	No			PKM40...	
2525M-4	●	●	68	25	25					150	23.35						
KPKH%L 2525M-5	●	●	79	25	25	45.9	25			150	22.95	4.8 5	No			PKM48... PKM50...	
KPKH%L 2020K-3D35	●	●	35	20	20	32.5	20			125	18.75	3	No	1	LPW-5	PKM30...	
2525M-3D45	●	●	45	25	25					150	23.75						
KPKH%L 2020K-4D45	●	●	45	20	20	35	20			125	18.35	4	No				PKM40...
2525M-4D45	●	●	45	25	25					150	23.35						

See page H64 for insert mounting and removal instructions

Recommended cutting conditions H69

● : Standard item

Recommended cutting conditions

PM Chipbreaker

Workpiece material	Recommended insert grades (Vc: m/min)			f (mm/rev)			Remarks
	MEGACOAT NANO		Carbide	Edge width CW (mm)			
	PR1625	PR1535	GW15	1.6	2 ~ 4	4.8 ~ 6	
Carbon steel	★ 80 – 220	☆ 80 – 220	-	0.03 – 0.12	0.08 – 0.18	0.10 – 0.22	Coolant
Alloy steel	★ 70 – 200	☆ 70 – 200	-				
Stainless steel	☆ 60 – 150	★ 60 – 150	-	0.03 – 0.08	0.06 – 0.12	0.08 – 0.15	
Cast iron	-	-	★ 50 – 100	0.03 – 0.08	0.08 – 0.18	0.10 – 0.22	
Aluminum alloys	-	-	★ 200 – 450	0.03 – 0.08	0.08 – 0.18	0.10 – 0.22	
Brass	-	-	★ 100 – 200				

Reduce feed to 1/2 ~ 1/3 at the center of the workpiece.

★: 1st Recommendation ☆: 2nd Recommendation

PH Chipbreaker

Workpiece material	Recommended insert grades (Vc: m/min)			f (mm/rev)			Remarks
	MEGACOAT NANO		Carbide	Edge width CW (mm)			
	PR1625	PR1535		GW15	2	3 ~ 4	5 ~ 6
Carbon steel	★ 80 – 220	☆ 80 – 220	-	0.10 – 0.22	0.15 – 0.28	0.15 – 0.35	Coolant
Alloy steel	★ 70 – 200	☆ 70 – 200	-				
Stainless steel	☆ 60 – 150	★ 60 – 150	-				

Reduce feed to 1/2 ~ 1/3 at the center of the workpiece.

★: 1st Recommendation ☆: 2nd Recommendation

H



Cut-Off

				Carbon steel / Alloy steel						P			
				Stainless steel						M			
				Cast iron						K			
				Non-ferrous metals						N			
Insert	Description	No. of edges	Dimension (mm)		Angle (°)	Tolerance (mm)		Carbide			Cer-met	Applicable toolholder H72, H73	
			CW	RE	PSIR [®] /L	CW min.	CW max.	CVD	PVD	-	-		
								CB025	PR135	PR930	KW10		TN620
	TKN 1.6	1	1.6	0.15	-	-0.05	+0.05	●	●	●	●	●	KTKB...-1SS KTKB19-2S, KTKB26-2S, KTKB32-2S, KTKH [®] /L...-2S KTKB26-3S, KTKB32-3S, KTKH [®] /L...-3S, KTKH [®] /L...-3T..S KTKB26-4S, KTKB32-4S, KTKH [®] /L...-4S, KTKH [®] /L...-4T2S KTKB26-5S, KTKB32-5S, KTKH [®] /L2525M-5S KTKB32-6S KTKB [®] /L32-8S KTKB [®] /L32-9S
	TKN 2	1	2.2	0.2									
	TKN 2.4	1	2.4	0.2									
	TKN 3	1	3.1	0.25									
	TKN 4	1	4.1	0.3									
	TKN 4.8	1	4.8	0.3									
	TKN 5	1	5.1	0.3									
	TKN 6	1	6.4	0.35									
	TKN 8	1	8	0.4									
	TKN 9	1	9.6	0.45									
 Low feed	TKN 1.6-P	1	1.6	0.2	-	-0.05	+0.05	●	●		●	KTKB...-1SS KTKB19-2S, KTKB26-2S, KTKB32-2S, KTKH [®] /L...-2S KTKB26-3S, KTKB32-3S, KTKH [®] /L...-3S, KTKH [®] /L...-3T..S	
	TKN 2-P	1	2.2	0.2									
	TKN 3-P	1	3.1	0.25									
	TKR 1.6 TKL 1.6	1	1.6	0.15	8	-0.05	+0.05	●	●	●	●	KTKB...-1SS KTKB19-2S, KTKB26-2S, KTKB32-2S, KTKH [®] /L...-2S KTKB26-3S, KTKB32-3S, KTKH [®] /L...-3S, KTKH [®] /L...-3T..S KTKB26-4S, KTKB32-4S, KTKH [®] /L...-4S, KTKH [®] /L...-4T2S KTKB26-5S, KTKB32-5S, KTKH [®] /L2525M-5S	
	TKR 2 TKL 2	1	2.2	0.2	8	-0.05	+0.05						
	TKR 2.4 TKL 2.4	1	2.4	0.2	8	-0.05	+0.05						
	TKR 3 TKL 3	1	3.1	0.25	8	-0.05	+0.05						
	TKR 4 TKL 4	1	4.1	0.3	8	-0.05	+0.05						
	TKR 5 TKL 5	1	5.1	0.3	8	-0.05	+0.05						
 Low feed	TKR 1.6-P	1	1.6	0.2	8	-0.05	+0.05	●				KTKB...-1SS KTKB19-2S, KTKB26-2S, KTKB32-2S, KTKH [®] /L...-2S KTKB26-3S, KTKB32-3S, KTKH [®] /L...-3S, KTKH [®] /L...-3T..S	
	TKR 2-P TKL 2-P	1	2.2	0.2	8	-0.05	+0.05						
	TKR 3-P TKL 3-P	1	3.1	0.25	8	-0.05	+0.05						

TKN – cut-off tools

Cutting range	Chipbreaker		Advantage
General cut-off	Standard (No indication)		General cut-off type for feed rates over 0.1mm/rev Superior chip evacuation
Low feed cut-off	P		Chipbreaker specially designed for low feed machining on automatic lathes, etc. Chips are controlled at feed rate 0.03~0.08mm/rev

Edge preparation	Chamfer + R honed	Sharp edge	R honed
Standard chipbreaker	TN90 / PR1535 / CR9025	PR930 / KW10	-
P-chipbreaker	-	-	TN620 / TN90 / CR9025 PR1535 / PR930 / KW10

● : Standard item

How to select cut-off inserts with / without lead angle (Including sharp corner)

1. Use a neutral angle insert if there is no limit to the finished shape.
2. Use an angled insert to reduce the size of the remaining boss.
3. Use a sharp-cornered lead-angled insert to make the remaining boss much smaller when machining small parts and thin parts.

	N (Neutral)	R (Right-hand)	L (Left-hand)
Hand of lead angle			
Angled insert can reduce the burr size when cutting off. When using a larger lead angle, cutting force becomes smaller, but the feed rate should be reduced.			

	Right-hand (R) Lead angle	Neutral
Example: Solid workpiece		
Example: Hollow workpiece (Pipe)		

Fig.1

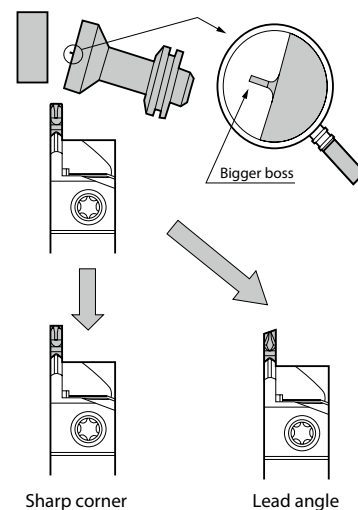
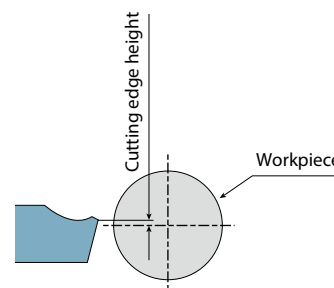


Fig.2

Caution

1. For PKM, PKM-^R/_L, TKN and TK^R/_L, set the cutting edge height 0.1~0.2 mm above the center height (Fig. 3)
For other toolholders, set the cutting edge to the center height.
2. Be sure to perform wet processing. Apply enough coolant to the cutting edge.
3. Keep a constant rate during processing so that optimum product life will be achieved.
4. Cut off as close to the chuck as possible.
5. Lower the feed rate to 1/2 to 1/3 at the near center to prevent impact caused by machining.

Overuse of insert and toolholder (blade) may cause insert breakage and toolholder (blade) damage.
Do not rework the insert and toolholder (blade) to prevent damage.
Clean the insert pocket well with compressed air when replacing insert.

Fig. 3 (PKM, PKM-^R/_L, TKN, TK^R/_L)

Set up (TKN / TK^R/_L)

1. Tap the insert lightly with a plastic hammer to push it into the extent that it cannot be removed by hand. (Fig.1)
(Pull it to the point where it does not fall out when picked up lightly with fingers)
2. Remove the insert with the supplied wrench. (Fig.2)

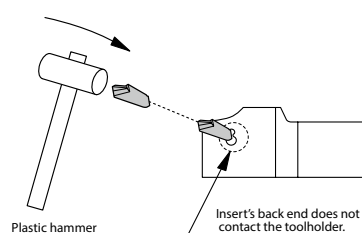


Fig.1: How to attach inserts

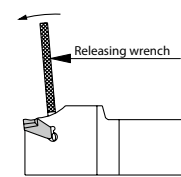
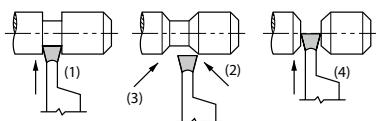


Fig.2: How to detach inserts

Application example of cut-off

1. Cut-off after chamfering

- (1) Grooving (2)(3) Chamfering (4) Cut-off

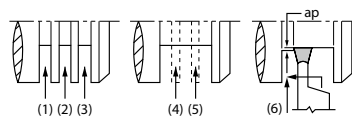


2. Wide grooving

- (1)~(5) Groove widening

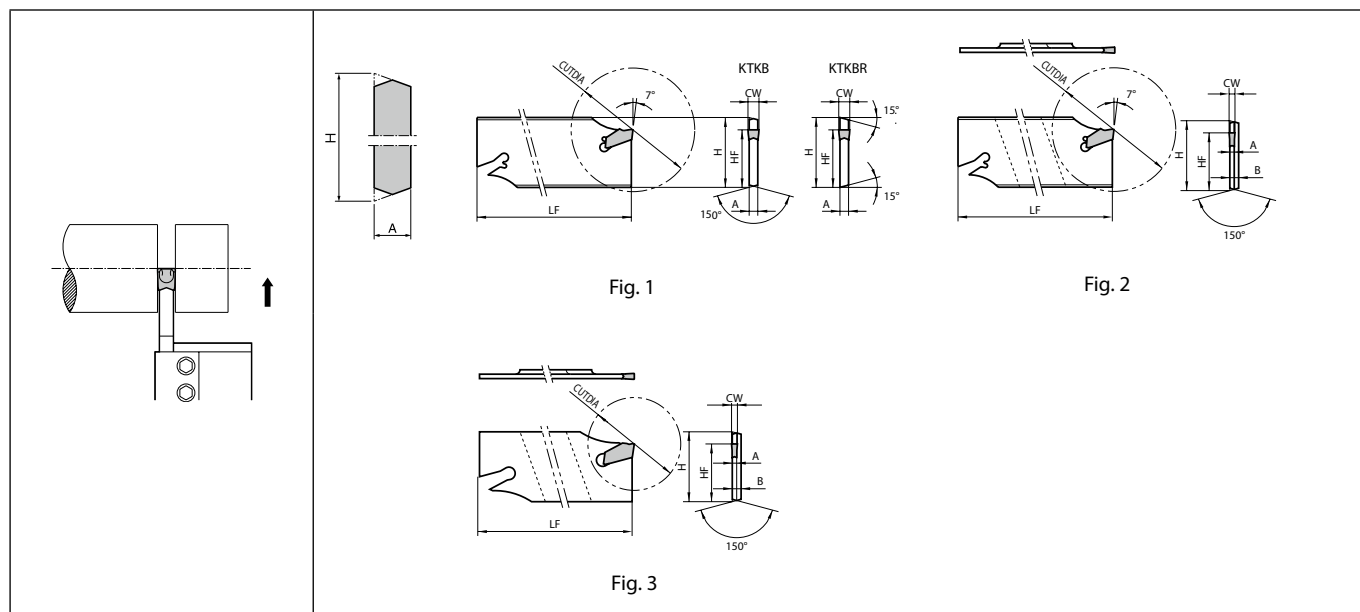
(6) Finishing

(Value of "ap" shall be under the value of Corner-R)



(In order to prevent both corners' unequal wear)

KTKB



Toolholder dimensions

Description	Availability	Dimension (mm)							Fig.	Spare parts Releasing wrench 	Applicable inserts ➡ H70	Applicable tool block ➡ H62, H63
		CUTD/A	A	B	H	HF	LF	CW				
KTKB 19-1SS 26-1SS 32-1SS	● ● ●	32 35	1.2	2.4	19 26 32	15.7 21.4 25	86 110 150	1.6	3	LTK-5 	TKN1.6, TKN1.6-P TK ⁹ /L1.6, TKR1.6-P	KTKTB16-19, KTKTB20-19 KTKTB16-26, KTKTB20-26, KPCTB20-26JCT KTKTB20-32, KTKTB25-32, KTKTB32-32 KTKTB25-32JCT, KTKTB32-32JCT, KPCTB20-32JCT
KTKB 19-2S	●	40	1.8	-	19	15.7	86	2.2 2.4	1		TKN2, TKN2-P TK ⁹ /L2, TK ⁹ /L2-P TKN2.4, TK ⁹ /L2.4	KTKTB16-19, KTKTB20-19
KTKB 26-2S 26-3S 26-4S 26-5S	● ● ● ●	50 75 80	1.8 2.6 3.4 4.2	-	26	21.4	110	2.2 2.4 3.1 4.1 4.8 5.1	1		TKN3, TKN3-P, TK ⁹ /L3, TK ⁹ /L3-P TKN4, TK ⁹ /L4 TKN5, TK ⁹ /L5	KTKTB16-26 KTKTB20-26 KPCTB20-26JCT
KTKB 32-2S 32-3S 32-4S 32-5S 32-6S	● ● ● ● ●	50 100 120	1.8 2.6 3.4 4.2 5.4	2.6	32	25	150	2.2 2.4 3.1 4.1 4.8 5.1 6.4	2 1		TKN2, TKN2-P, TK ⁹ /L2, TK ⁹ /L2-P TKN2.4, TK ⁹ /L2.4 TKN3, TKN3-P, TK ⁹ /L3, TK ⁹ /L3-P TKN4, TK ⁹ /L4 TKN5, TK ⁹ /L5 TKN6	KTKTB20-32 KTKTB25-32 KTKTB32-32 KTKTB25-32JCT KPCTB20-32JCT KPCTB32-32JCT
KTKBR 32-8S KTKBL 32-8S	R L	120	6.8	-	32	25	150	8	1		TKN8	KTKTB20-32JCT KPCTB25-32JCT KPCTB32-32JCT
KTKBR 32-9S	R	120	8	-	32	25	150	9.6	1		TKN9	

Suffix "-SS" means silver coating.

Releasing wrench is "LTK-5".

How to attach inserts, See Page H71.

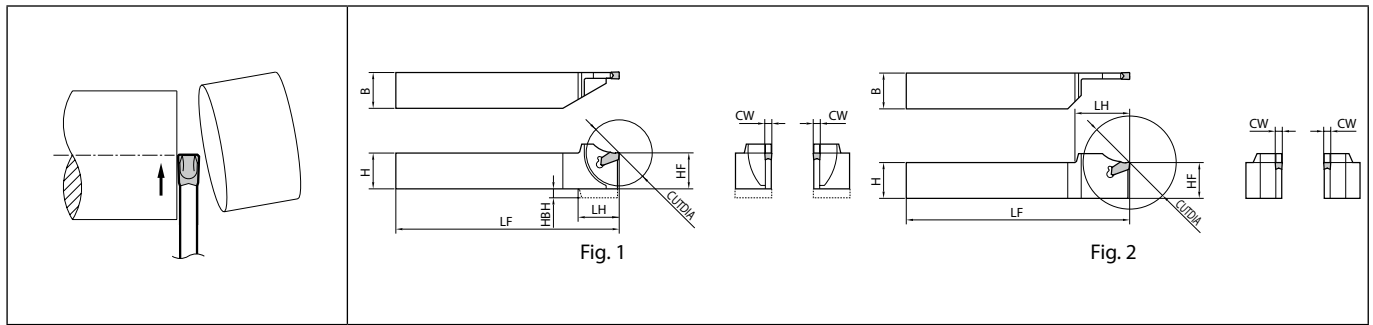
Dimension H shows virtual apex distance.

Recommended cutting conditions ➡ H74

● : Standard item R : Right-hand only L : Left-hand only

H72

KTKH



Right-hand shown

Toolholder dimensions

Description		Availability		Dimension (mm)								Fig.	Spare parts	Applicable inserts  H70
													Releasing wrench	
		R	L	CUTDIA	H	B	LH	HF	HBH	LF	CW			
KTKH% 1010F-2S 1212H-2S 1612H-2S 1616H-2S 2012K-2S 2020K-2S	●	●	28	10	10	18.6	10	5	80		1	LTK-5	TKN2 TKN2-P TK%2 TK%2-P TKN2.4 TK%2.4	
	●	●	31	12	19.8	12	4	100	2.2					
	●	●		16		16	-		2.4					
	●	●	36	20	12	20		125						
	●	●		20	22.8									
	●	●												
KTKH% 1612H-3S 1616H-3S 2012K-3S 2020K-3S 2525M-3S	●	●	35	16	12	21.7	16	4	100	3.1	1	LTK-5	TKN3 TKN3-P TK%3 TK%3-P	
	●	●	40	16	12	25.3	20	-	125					
	●	●		20	20	31								
	●	●	51	20	20	31	20	-	125	2				
	●	●	52	25	25	31.5	25		150					
KTKH% 2012K-4S 2020K-4S 2525M-4S	●	●	43	20	12	26.3	20	-	125	4.1	1	LTK-5	TKN4 TK%4	
	●	●	59		20	35					150			2
	●	●	66	25	25	38	25		150					
KTKH% 2525M-5S	●	●	77	25	25	43.5	25	-	150	4.8 5.1	2	LTK-5	TKN5 TK%5	
KTKH% 2020K-3T17S 2525M-3T22S	●	●	33	20	20	21.8	20	-	125	3.1	1	LTK-5	TKN3, TKN3-P TK%3, TK%3-P	
	●	●	43	25	25	26.8	25		150					
KTKH% 2020K-4T22S 2525M-4T22S	●	●	44	20	20	26.8	20	-	125	4.1			TKN4 TK%4	
	●	●		25	25		25		150					

How to attach inserts, See Page H71.

Recommended cutting conditions H74

Recommended cutting conditions (TKN, TK^{R/L})

Workpiece material	Recommended insert grades (Vc: m/min)						Edge width CW (mm)					Remarks
	Cermet		CVD coated carbide	MEGACOAT NANO	PVD coated carbide	Carbide	1.6	2.2 / 2.4	3.1	4.1	4.8 ~ 9.6	
	TN620	TN90	CR9025	PR1535	PR930	KW10	f (mm/rev)					
Carbon steel	☆ 60 ~ 200	☆ 120 ~ 200	★ 80 ~ 180	☆ 60 ~ 150	☆ 60 ~ 130	-	0.02 ~ 0.08	0.04 ~ 0.18	0.05 ~ 0.25	0.08 ~ 0.30	0.15 ~ 0.40	Coolant
Alloy steel	☆ 60 ~ 160	☆ 100 ~ 160	★ 70 ~ 150	☆ 60 ~ 150	☆ 60 ~ 130	-	0.02 ~ 0.08	0.04 ~ 0.18	0.05 ~ 0.25	0.08 ~ 0.30	0.15 ~ 0.40	
Stainless steel	☆ 60 ~ 150	☆ 80 ~ 150	☆ 60 ~ 140	★ 50 ~ 120	☆ 60 ~ 140	-	0.02 ~ 0.06	0.04 ~ 0.12	0.05 ~ 0.18	0.08 ~ 0.25	0.10 ~ 0.30	
Cast iron	-	-	-	-	-	★ 50 ~ 100	0.02 ~ 0.08	0.05 ~ 0.12	0.10 ~ 0.25	0.10 ~ 0.30	0.15 ~ 0.35	
Aluminum alloys	-	-	-	-	-	★ 100 ~ 450	0.02 ~ 0.10	0.05 ~ 0.10	0.05 ~ 0.20	0.05 ~ 0.25	0.10 ~ 0.25	
Brass	-	-	-	-	-	★ 100 ~ 200	0.02 ~ 0.10	0.05 ~ 0.10	0.05 ~ 0.15	0.05 ~ 0.20	0.10 ~ 0.25	

★: 1st Recommendation ☆: 2nd Recommendation

