

# H



## Introduction H2

## Small diameter cut-off H6

Inserts	TKF	H6
Toolholder	KTKF	H9
	KTKF-JCTM	H15
	KTKF-S	H18

## KGD type H20

Inserts	GDM/GDMS/GDG	H20
Toolholder	KGD (Integral type for automatic lathe)	H22
	KGDS (for sub spindle tooling)	H24
	KGD-JCTM (Integral type for automatic lathe)	H27
	KGD (Integral type)	H28
	KGD-S (0° separate type)	H29
	KGD-JCT (Integral type, coolat-through holder)	H31

## KGM type H34

Inserts	GM/GMM/GMN/GMR	H34
Toolholder	KGM/KGM-T	H38

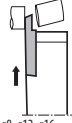
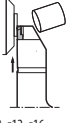
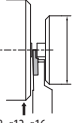
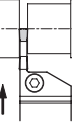
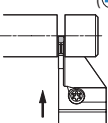
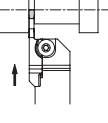
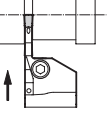
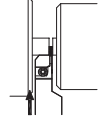
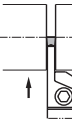
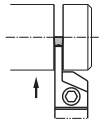
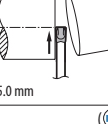
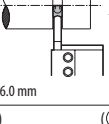
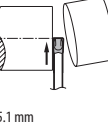
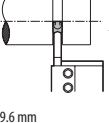
## KPK type H46

Inserts	PKM	H46
Blades	KPKB-JCT/KPKB	H48
Toolblocks	KPKTB-JCT/KTKTB/KTKTBF	H50
Toolholder	KPKH-JCT/KPKH (Integral type)	H55

## KTK type H58








Inserts	TKN/TK	H58
Blades	KTKB-SS/KTKB-S	H60
Toolholder	KTKH-S (Integral type)	H61

## 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)  For sub spindle tooling CUTDIA: ~ ø5, ø8, ø12, ø16 CW: 0.5 ~ 2.0 mm	
KGD (Bolt clamp) CUTDIA ~ø51 mm	KGD (H22, H28)  CW: 1.3 ~ 4.0 mm	KGD-JCTM (for automatic lathes) (H27)  CUTDIA: ~ ø24, ø32 CW: 2.0 ~ 4.0 mm	KGD-S (H29)  CW: 2.0 ~ 4.0 mm	KGD-JCT (H31)  CW: 3.0 ~ 4.0 mm	KGDS (H24)  For sub spindle tooling CUTDIA: ~ ø24 CW: 1.3 ~ 3.0 mm
KGM (Bolt clamp) CUTDIA ~ø60 mm	KGM (H38, H39)  CW: 1.5 ~ 4.0 mm, 3 ~ 8 mm	KGM-T (H40)  CW: 2.0 ~ 6.0 mm			
KPK (1-edge) CUTDIA ~ ø120	Toolholder Type CUTDIA ø35 ~ ø79	KPKH(-JCT) (H55, H56)  CW: 2.0 ~ 5.0 mm		Blade type CUTDIA ø32 ~ ø120	KPKB(-JCT) (H48, H49)  CW: 1.6 ~ 6.0 mm
KTKB KTKH (1-edge) CUTDIA ~ ø120	Toolholder Type CUTDIA ø30 ~ ø79	KTKH-S (H61)  CW: 2.2 ~ 5.1 mm		Blade type CUTDIA ø32 ~ ø120	KTKB-S(S) (H60)  CW: 1.6 ~ 9.6 mm



## Cut-off Tools

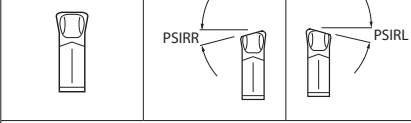
Series Name	Shape	Advantage	Applications
For small diameter cut-off		<ol style="list-style-type: none"> <li>1) Insert clamp is side screw type from lateral side</li> <li>2) 2-edge insert</li> <li>3) Max. Cut-off Dia. : ø16</li> </ol>	<ol style="list-style-type: none"> <li>1) For cut-off and grooving of small workpieces</li> <li>2) For automatic lathe, small machine</li> </ol>
KGD		<ol style="list-style-type: none"> <li>1) Insert is clamped from top side</li> <li>2) 1-edge and 2-edge inserts available</li> <li>3) Integral type and separate type are available</li> <li>4) Max. Cut-off Dia. : ø50</li> </ol>	<ol style="list-style-type: none"> <li>1) PM chipbreaker ... for cut-off</li> <li>2) PH chipbreaker ... for cut-off (high feed rate) for grooving</li> <li>3) PG chipbreaker ... for cut-off (for automatic lathe), sharp-cutting oriented</li> <li>4) PF chipbreaker ... for cut-off (for automatic lathe), low feed</li> <li>5) PQ chipbreaker ... for cut-off (for automatic lathe), medium feed</li> </ol>
KGM		<ol style="list-style-type: none"> <li>1) Insert is clamped from top side</li> <li>2) 1-edge and 2-edge inserts available</li> <li>3) Max. Cut-off Dia. : ø60</li> </ol>	<ol style="list-style-type: none"> <li>1) For cut-off and grooving of small workpieces</li> <li>2) For automatic lathe, small machine</li> <li>3) TMR Chipbreaker provides stable chip control up to high feed rate ranges</li> </ol>
KPK		<ol style="list-style-type: none"> <li>1) Self-clamping System that Opens and Closes the Contact Surface with a Wrench</li> <li>2) 1-edge insert</li> <li>3) Molded Chipbreaker</li> <li>4) Blade Type JCT Type for High-pressure Coolant (Internal Coolant) is Available</li> <li>5) Max. Cut-off Dia. : ø100</li> </ol>	<ol style="list-style-type: none"> <li>1) For cut-off and deep grooving</li> <li>2) PM Chipbreaker ... General Purpose PH Chipbreaker ... For Tough Edge / High Feed Rate</li> </ol>
KTKB KTKH		<ol style="list-style-type: none"> <li>1) Self-Clamping System Tap the insert lightly with a plastic hammer to set it in the pocket</li> <li>2) 1-edge insert</li> <li>3) Blade type and Integral Shank type</li> <li>4) Max. Cut-off Dia. : ø120</li> </ol>	<ol style="list-style-type: none"> <li>1) For cut-off and deep grooving</li> <li>2) Standard chipbreaker is general cut-off type Feed rate : 0.1mm/rev or over</li> </ol>   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	KGM	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	GMM	PKM	TKN
	3. Insert with lead angle is recommended to prevent remaining boss.	TKF...DR	GDM- <sup>R</sup> /L ( Fig. 2)	GMM- <sup>R</sup> /L ( Fig. 2)	PKM- <sup>R</sup> /L ( Fig. 1)	TK <sup>R</sup> /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	-	GMM- <sup>R</sup> /L ( Fig. 2)	-	-
	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.

Hand of lead angle	N (Neutral)	R (Right-hand)	L (Left-hand)
			
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.			

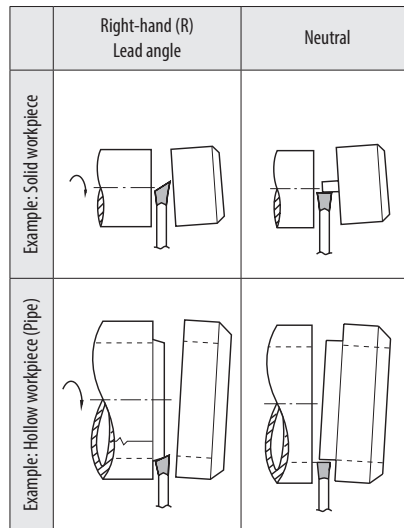


Fig.1

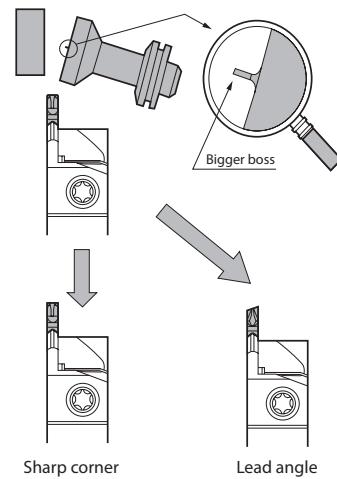


Fig.2

## Caution

1. For PKM, PKM-<sup>R</sup>/L, TKN and TK<sup>R</sup>/L, set the cutting edge height 0.1~0.2 mm above the center height (Fig. 3)
2. For other toolholders, set the cutting edge to the center height.
3. Be sure to perform wet processing. Apply enough coolant to the cutting edge.
4. Keep a constant rate during processing so that optimum product life will be achieved.
5. Cut off as close to the chuck as possible.
6. 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.

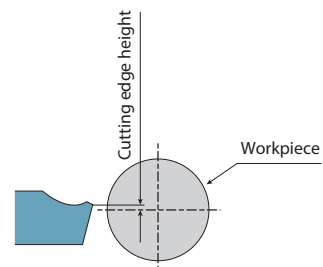
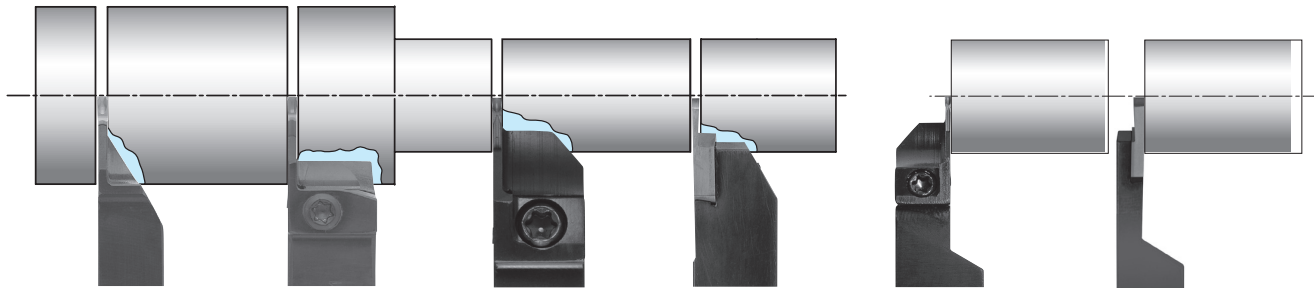


Fig. 3 (PKM, PKM-<sup>R</sup>/L, TKN, TK<sup>R</sup>/L)

## Small dia. cut-off ~ $\phi 51$

## Small shank




KPKH / KTKH-S	KGM	KGD / KGD-JCTM	KTKF	KGDS	KTKF-S
CUTDIA: ~ $\phi 45$ 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: ~ $\phi 32$ Shank: $\square 10\sim 16$ CW: 1.5~4.0 Top clamp	CUTDIA: ~ $\phi 51$ Shank: $\square 10\sim 25$ CW: 1.3~4.0 Top clamp	CUTDIA: ~ $\phi 16$ Shank: $\square 10\sim 25$ CW: 0.5~2.0 Lateral side clamp	CUTDIA: ~ $\phi 24$ Shank: $\square 16$ CW: 1.3~3.0 Top clamp	CUTDIA: ~ $\phi 16$ Shank: $\square 10\sim 12$ CW: 0.5~2.0 Lateral side clamp
H55 H56 H61	H38 H39 H40	H22 H27	H9, H10, H12, H15	H24	H18




Cut-Off

For KPKH




PM chipbreaker for general cut-off




PH chipbreaker Tough edge




For KTKH-S



Chipbreaker for general cut-off



Chipbreaker for low feed cut-off

Chipbreaker edge shape	TK insert, Cut-off (Self clamp)		
	General cut-off		Low feed cut-off
	Chamfer + R honed	Sharp edge	R honed
			

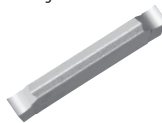
For KTKF / KTKF-S

2-edge




Low cutting force


2-edge




Sharp cutting PG chipbreaker




Low feed PF chipbreaker




Medium feed PQ chipbreaker




(15° Lead angle)




(15° Lead angle)




(15° Lead angle)



KTKH-S (Self clamp)

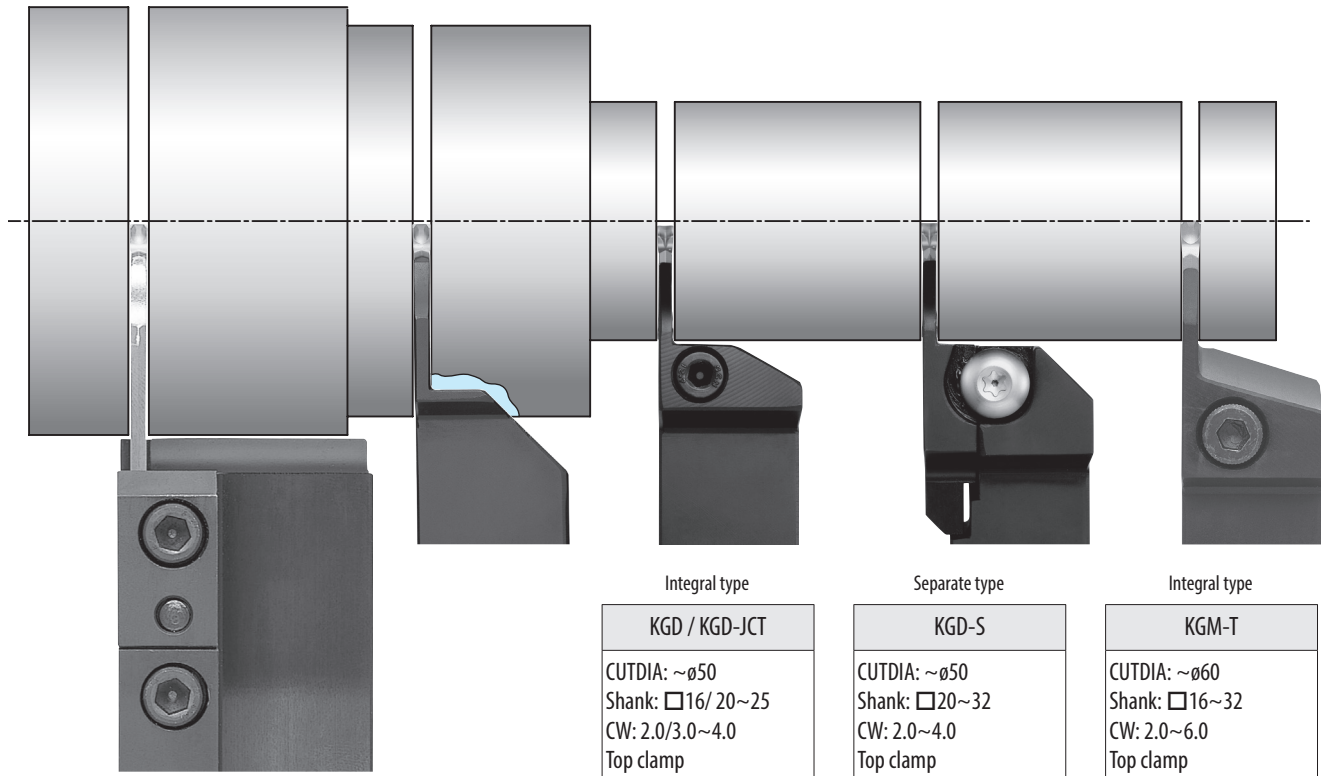


KGD (Top clamp)



KTKF (Lateral side clamp)

General cut-off ~ $\phi 120$

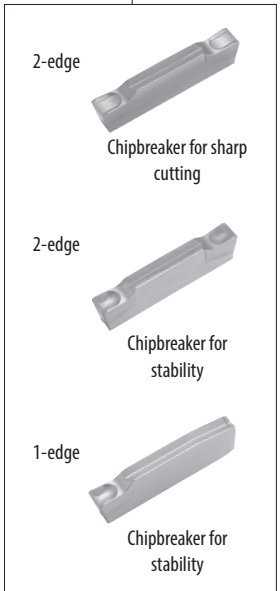
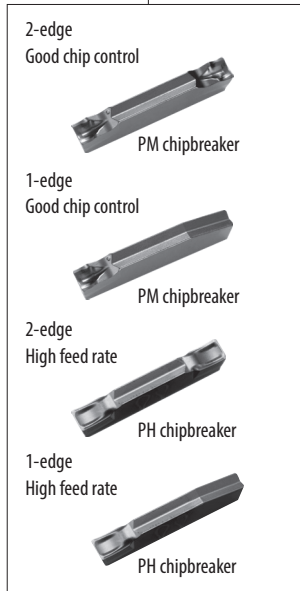
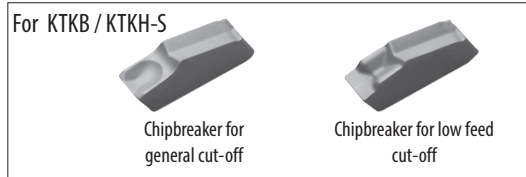
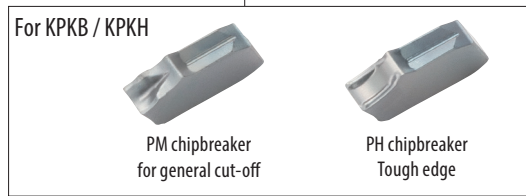


Integral type	Separate type	Integral type
<b>KGD / KGD-JCT</b>	<b>KGD-S</b>	<b>KGM-T</b>
CUTDIA: ~ $\phi 50$ Shank: $\square 16/20 \sim 25$ CW: 2.0/3.0~4.0 Top clamp	CUTDIA: ~ $\phi 50$ Shank: $\square 20 \sim 32$ CW: 2.0~4.0 Top clamp	CUTDIA: ~ $\phi 60$ Shank: $\square 16 \sim 32$ CW: 2.0~6.0 Top clamp

Blade + Toolblock	Integral type
<b>KPKB / KTKB</b>	<b>KPKH / KTKH-S</b>
CUTDIA: ~ $\phi 120$ Toolblock: $\square 16 \sim 32$ CW: 1.6~6.0 (KPKB) 1.6~9.6 (KTKB) Self clamp	CUTDIA: ~ $\phi 79$ Shank: $\square 20 \sim 25$ CW: 2.0~5.0 (KPKH) 3.1~5.1 (KTKH-S) Self clamp

H48, H49, H60

H55, H56, H61



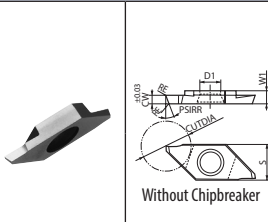
Blade + Toolblock		Separate type	Integral type		
<b>KPKB</b>	<b>KTKB</b>	<b>KGD-S</b>	<b>KTKH-S</b>	<b>KGD / KGD-JCT</b>	<b>KGM-T</b>



Cut-Off



TKF12

		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 H9, H10 H12, H15 H18		
			CW	S	D1	RE	W1	CUTDIA		CW min.	CW max.	PVD	-	KW10			
	TKF12R 050-NB-20DR	2	0.5					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	8.7	5	0	3	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	●	●	KTKFL...-12SB							

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

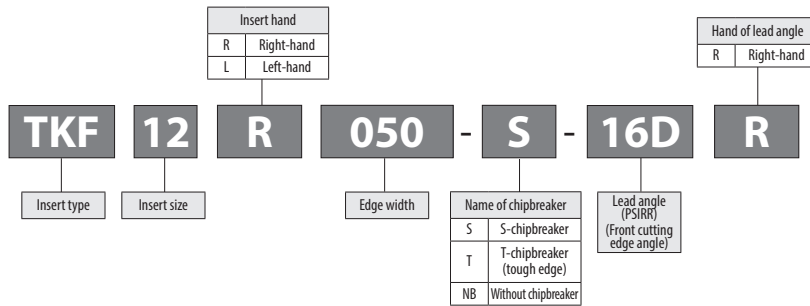
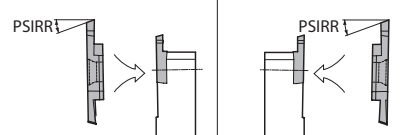
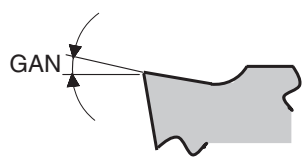


Table 1

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

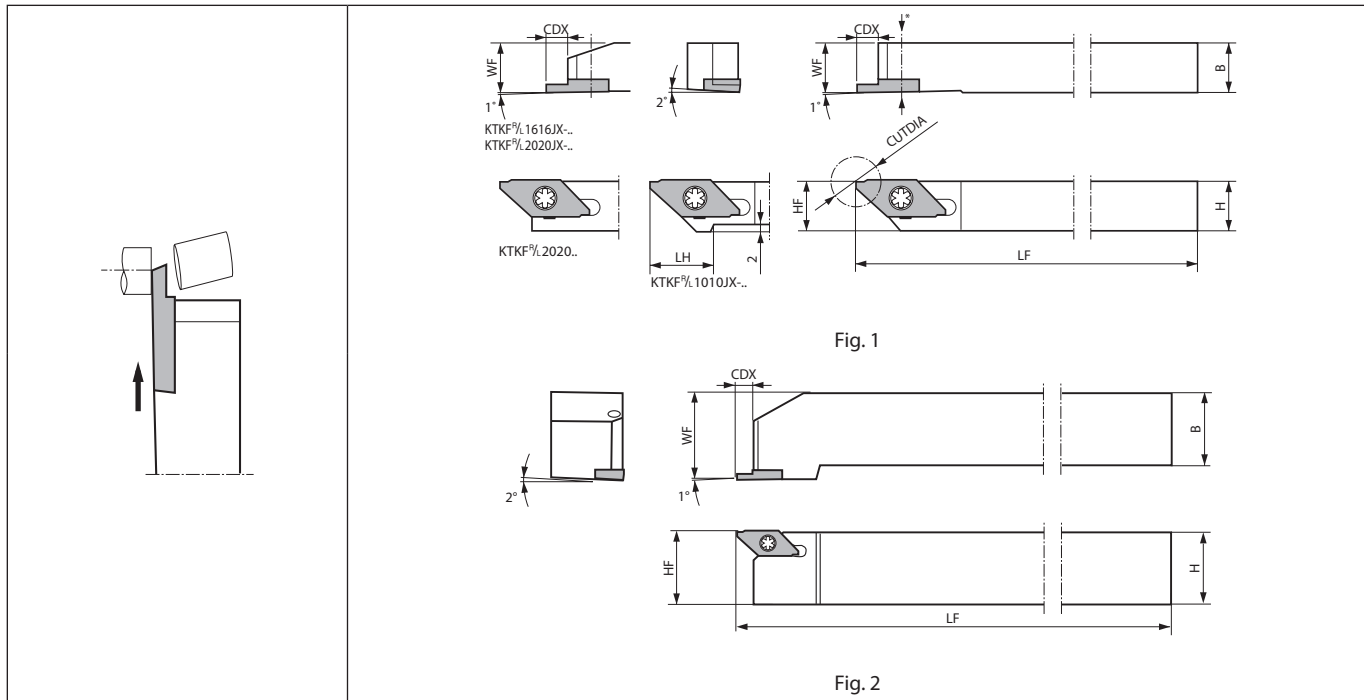
Edge Shape	S Chipbreaker		T Chipbreaker (Tough Edge)		NB (Without Chipbreaker)	
	GAN	Description	GAN	Description	GAN	Description
	15°	TKF12...-S	12°	TKF...-T TKF...-T-16DR	0°	TKF...-NB TKF...-NB-20DR
	20°	TKF16...-S TKF16...-S-16DR				
	25°	TKF12...-S-16DR				

● : Standard item





KTKF



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



Cut-Off

Toolholder dimensions

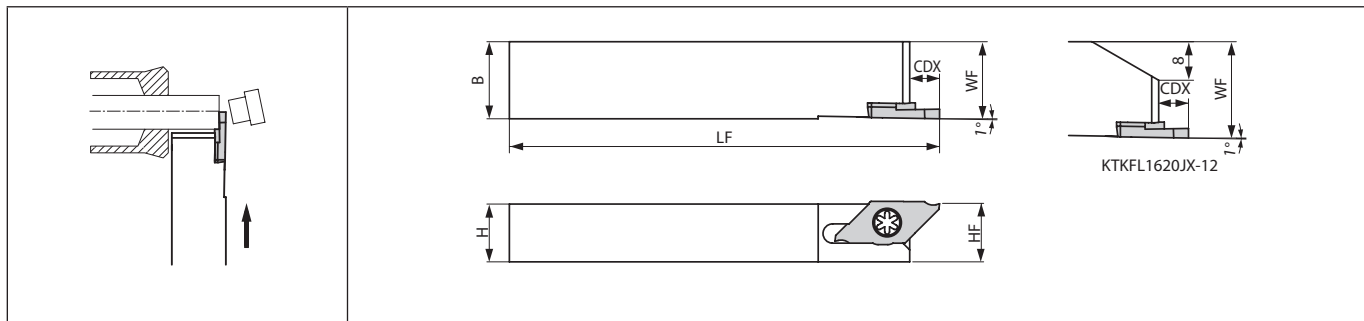
Description	Availability		Dimension (mm)								Fig.	Spare parts		Applicable inserts H6~H8
												Screw	Wrench	
	R	L	CDX	H	B	LH	HF	LF	WF					
KTKF%/ 1010JX-12 1212F-12 1212JX-12 1616JX-12 2020JX-12 2525M-12	●	●	6	10	10	15	10	120	10	1	SB-4590TRWN	FT-10	TKF12%/...	
	●	●		12	12		12	85	12					
	●	●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

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

Recommended cutting conditions H19

● : Standard item

**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	
		L	CDX	H	B	HF	LF	WF	Screw		Wrench
KTKFL 1216JX-12	●	6	12	16	12	120	16	SB-4590TRWN	FT-10	TKF12L...	
1620JX-12	●		16	20	16		20				

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

Recommended cutting conditions ➔ H19



Cut-Off

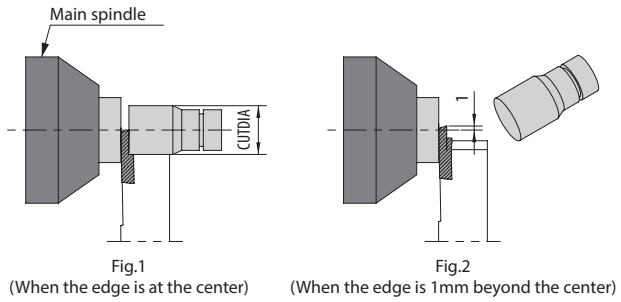
● : Standard item

**H10**

### How to Use

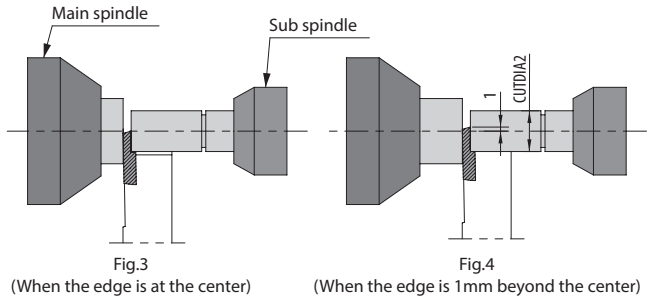
#### 1) When using main spindle only

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)



#### 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 x 2] (mm)  
 (The clearance between the insert and the workpiece is 0.2 mm)



### How to select edge preparation

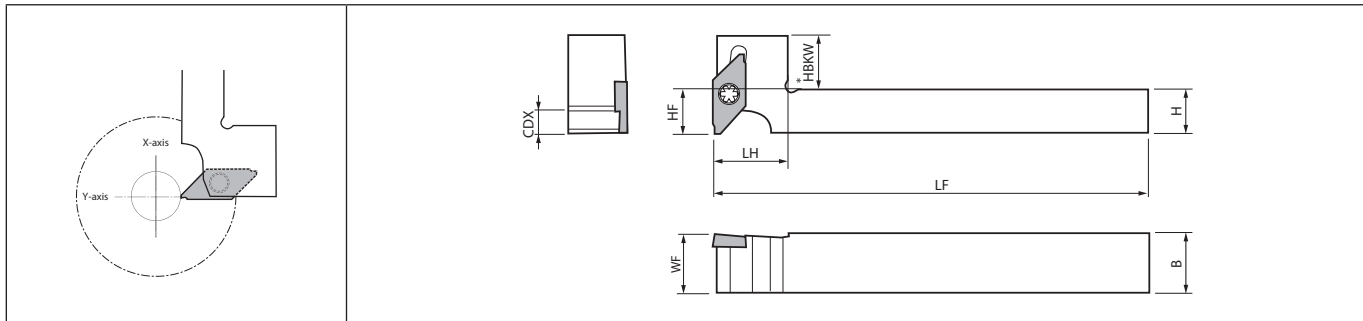
#### Troubleshooting

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		



Cut-Off

**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
		R	CDX	H	B	LH	HF	HBKW	LF	WF	Screw	Wrench	
KTKFR 1216JX-12-Y	●	6	12	16	20	12	15	120	16	SB-4590TRWN		TKF12R...	
1616JX-12-Y	●		16		25	16	11						

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

Recommended cutting conditions ➔ H19



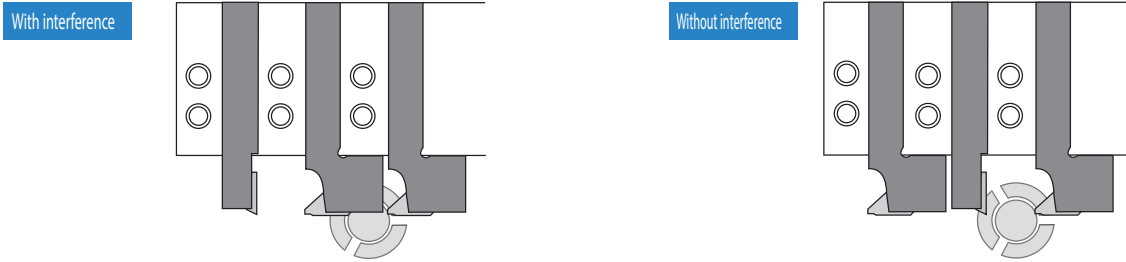
Cut-Off

● : Standard item

**H12**

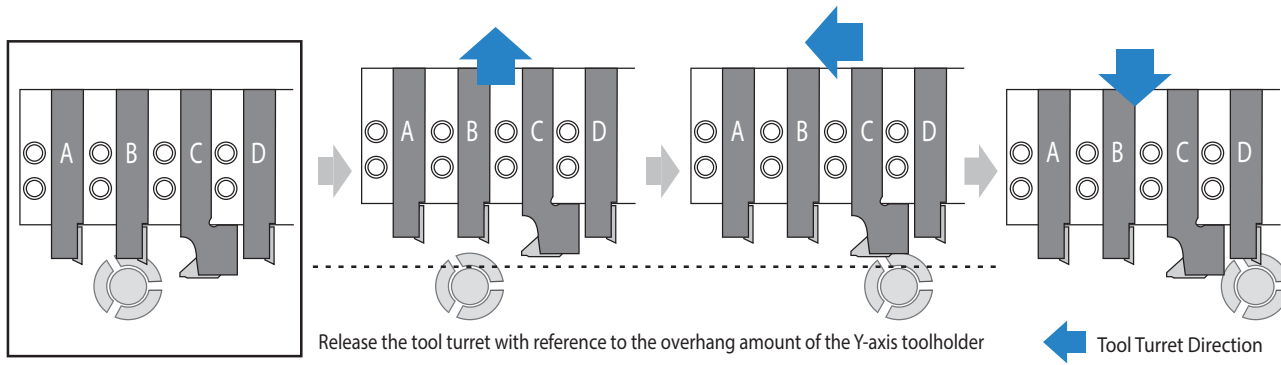
### Precautions for using Y-axis toolholder

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 different outside diameters

(Unit : mm)

Y-axis Toolholder Overhang	Examples	Overhang Amount L			
		Available Outside Cutting Diameter (φ)	20	22	25
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

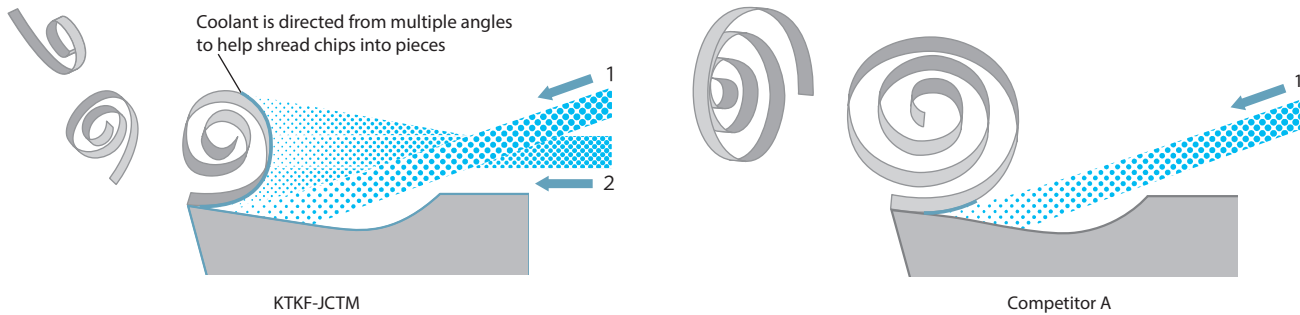
# KTKF-JCTM

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

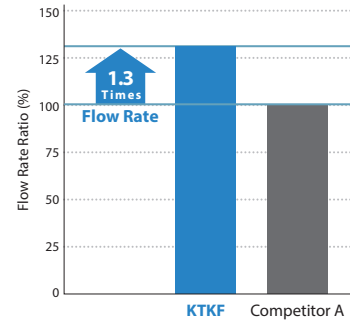


### Chip control comparison (Internal evaluation)

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

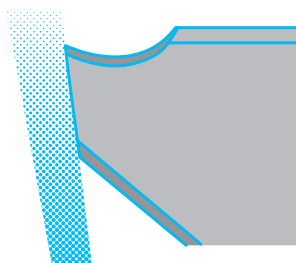
Cutting conditions: Vc = 80 m/min, Wet (Oil-based) lubricating pressure: 1.5 MPa (Internal)  
Workpiece: φ12 mm

### Coolant Flow Rate Comparison (Internal evaluation)

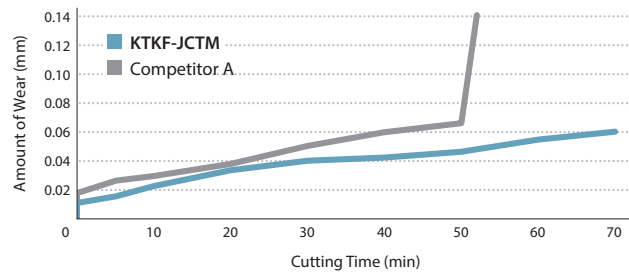


## 2 Superior cooling action improves tool life

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

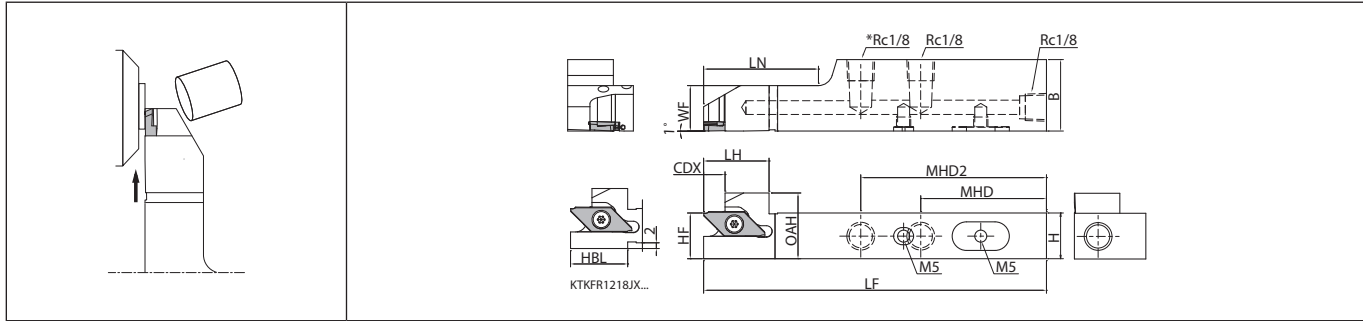


### Wear resistance comparison (Internal evaluation)



Cutting conditions: Vc = 100 m/min, f = 0.02 mm/rev, Wet (Oil-based)  
Lubricating Pressure: 1.5 MPa(Internal) Workpiece material: TAB6400 (Ti-6Al-4v) φ12

**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

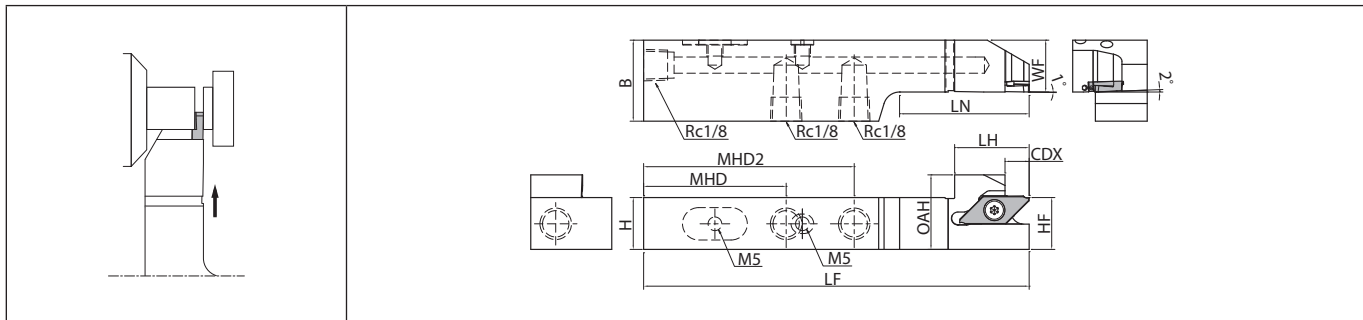
Description	Availability		Dimension (mm)											Coolant hole	Spare parts				Applicable inserts ➡ H6~H8					
	R	CDX	H	B	LH	OAH	MHD	MHD2	HF	HBL	LF	LN	WF		Plug	Plug	Screw	Wrench						
KTKFR 1218JX-12JCTM	●		12	18	20	19	54	-	12	20		28	12	Yes	GP-1	HSSX4LP	SB-4590TRWN	FT-10	TKF12R...					
KTKFR 1625JX-12JCTM	●	7.5	16	25	23	23	44	65	16	-	120	40	16											
KTKFR 2025JX-12JCTM	●		20			27			20			40	20											
KTKFR 1625JX-16JCTM	●	9.6	16	25	23	23	44	65	16	-	120	40	16	Yes	GP-1	HSSX4LP	SB-4590TRWN	FT-10	TKF16R...					
KTKFR 2025JX-16JCTM	●		20			27			20			41	20											

Recommended cutting conditions ➡ H19



Cut-Off

**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
	L	CDX	H	B	LH	OAH	MHD	MHD2	HF	LF	LN	WF	Plug		Plug	Screw	Wrench		
KTKFL 1625JX-12JCTM	●		16	25	23	23	44	65	16	120	40	16	Yes	GP-1	HSSX4LP	SB-4590TRWN	FT-10	TKF12L...	
KTKFL 2025JX-12JCTM	●	7.5	20			27			20			40	20						
KTKFL 1625JX-16JCTM	●	9.6	16	25	23	23	44	65	16	120	40	16	Yes	GP-1	HSSX4LP	SB-4590TRWN	FT-10	TKF16L...	
KTKFL 2025JX-16JCTM	●		20			27			20			41							20

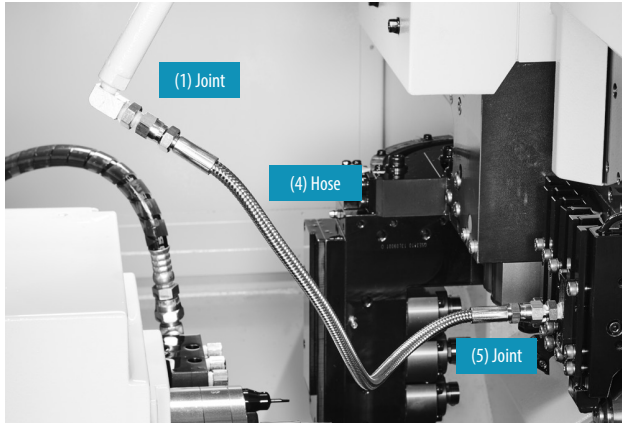
Recommended cutting conditions ➡ H19

● : Standard item

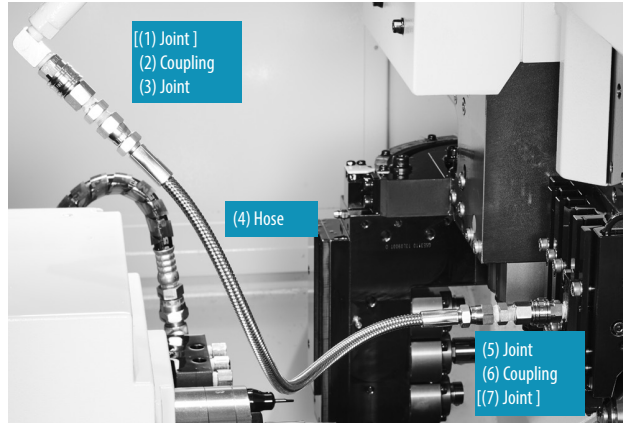
### Coolant pipe parts

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)



Cut-Off

#### 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)

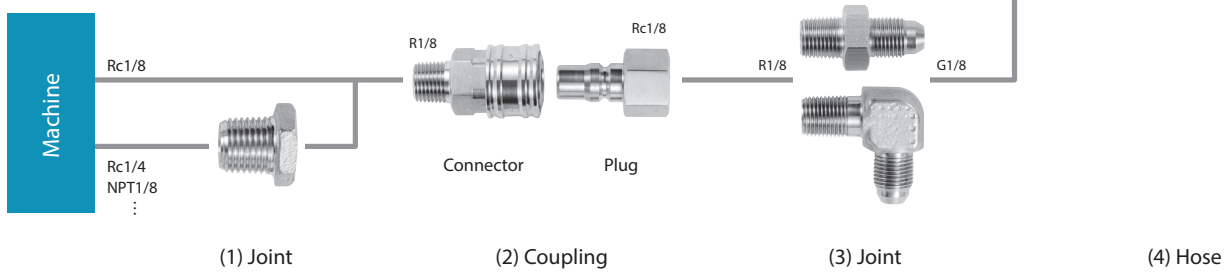
Spare parts	Description
[(1) Joint]	-
(2) Coupling	CP-ST-R1/8,P-ST-RC1/8
(3) Joint	J-ST-R1/8-G1/8
(4) Hose	HS-G1/8-G1/8-500
(5) Joint	J-ST-R1/8-G1/8
(6) Coupling	P-ST-RC1/8,CP-ST-R1/8
[(7) Joint]	-

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)



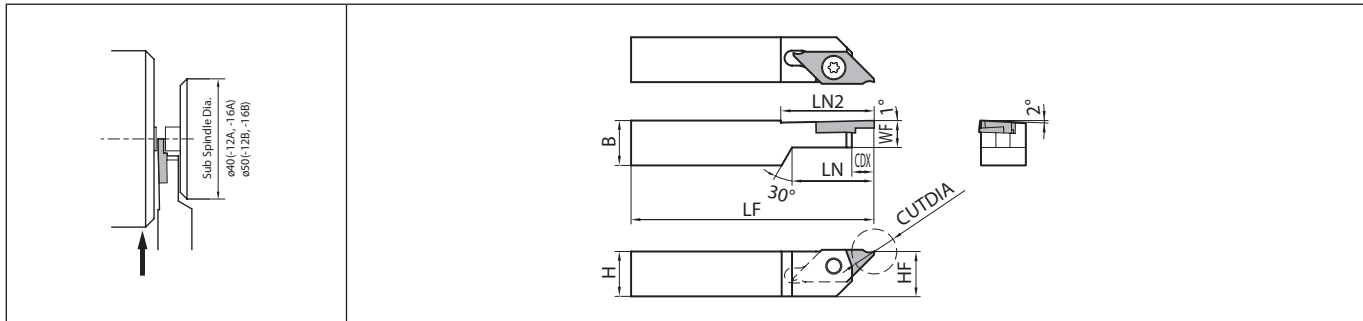
**With coupling** (Pump pressure: Up to 7.5 MPa)



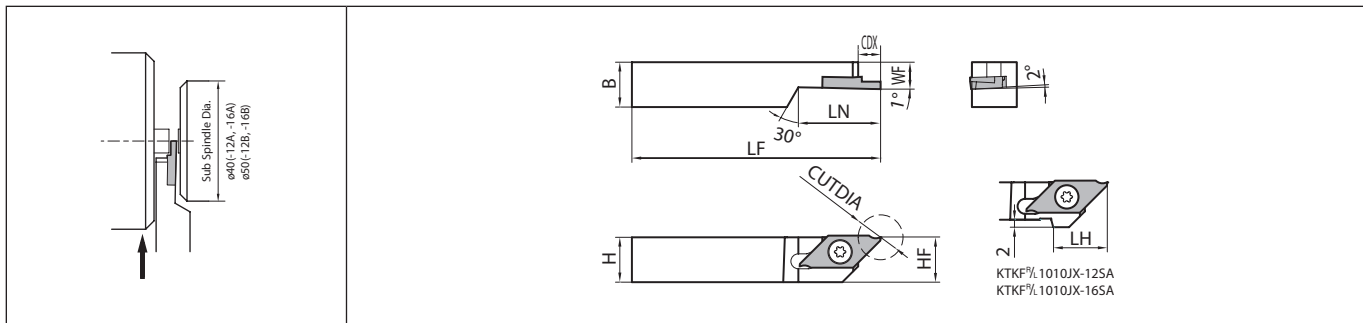




**KTKF-S** (Cut-off / for sub spindle tooling)



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



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



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 1212F-12SA	●	●	6	10	10	15	10	120	22	26	7.2	SB-4570TRN	FT-10	TKF12%L...	
KTKF%L 1212JX-12SB	●	●		12	12	-	12	120							26
KTKF%L 1010JX-16SA 1212F-16SA	●	●	8	10	10	20	10	120	22	30	7.2	SB-4570TRN	FT-10	TKF16%L...	
KTKF%L 1212JX-16SB	●	●		12	12	-	12	120							26

CDX shows the distance from the toolholder to the cutting edge.  
Cut-off diameter (CUTDIA) depends on the insert edge width.  
Only Right-hand is available for LN2 dimension.

Recommended cutting conditions H19

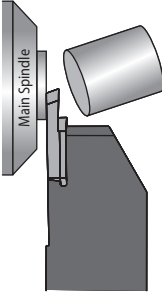
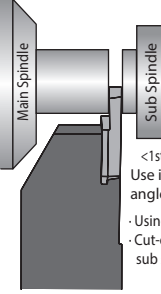
● : Standard item

**H18**

KTKF / KTKF-S Selection Reference

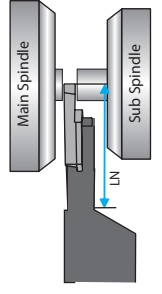
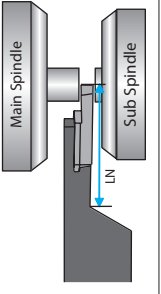
**KTKF**

- 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)
 <p>&lt;1st. Recommendation&gt; Use insert with lead angle to remove boss. · Not using sub spindle · Cut-off operation near main spindle side</p>	 <p>&lt;1st. Recommendation&gt; Use insert without lead angle. · Using sub spindle · Cut-off operation near sub spindle side</p>

**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)
 <p>&lt;How to select&gt; <b>Hand of Toolholder</b> · Long workpiece and more rigidity · Cut-off operation near main spindle side  &lt;How to select&gt; <b>LN dimension</b> · Sub Spindle Dia. ø40→22 (SA type) ø50→26 (SB type)</p>	 <p>&lt;How to select&gt; <b>Hand of Toolholder</b> · Short workpiece and less rigidity · Cut-off operation near sub spindle side  &lt;How to select&gt; <b>LN dimension</b> · Sub Spindle Dia. ø40→22 (SA type) ø50→26 (SB type)</p>

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

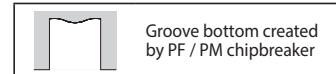


Cut-Off

GDM/GDMS/GDG

		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 H22, H24, H27 H28, H29, H31					
			CW	S	RE	INSL		PSIR%	CW min.	CW max.	DLC	PVD	-						
													PRI215					PRI225	PRI535
 Low feed	GDM 1316N-003PF 1316N-015PF	2	1.3	3.7	0.03 0.15	16	-	-0.04	+0.04	●	●	●	●	KGD <sup>β</sup> L...-1.3(D16) KGD <sup>β</sup> L...-1.3B					
	GDM 1516N-003PF 1516N-015PF		1.5		0.03 0.15					●	●	●	●	KGD <sup>β</sup> L...-1.5(D16) KGD <sup>β</sup> L...-1.5B					
	GDM 2020N-003PF 2020N-015PF	2	0.03 0.15	●	●	●				●	KGD <sup>β</sup> L...-2(...) KGD <sup>β</sup> L...-2B								
	GDM 2520N-003PF 2520N-015PF	2.5	4.3	0.03 0.15	20	●				●	●	●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-2B						
	GDM 3020N-003PF 3020N-015PF	3	0.03 0.15	●	●	●				●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-3(...), KGD <sup>β</sup> L...-2B								
 Low feed	GDM 1316R-003PF-15D 1316L-003PF-15D	2	1.3	3.7	0.03	16	15	-0.04	+0.04	●	●	●	●	KGD <sup>β</sup> L...-1.3(D16) KGD <sup>β</sup> L...-1.3B					
	GDM 1516R-003PF-15D 1516L-003PF-15D 1516R-015PF-15D		1.5		0.03 0.03 0.15					●	●	●	●	KGD <sup>β</sup> L...-1.5(D16) KGD <sup>β</sup> L...-1.5B					
	GDM 2020R-003PF-15D 2020L-003PF-15D 2020R-015PF-15D	2	0.03 0.03 0.15	20	●	●				●	●	KGD <sup>β</sup> L...-2(...) KGD <sup>β</sup> L...-2B							
	GDM 2520R-003PF-15D 2520L-003PF-15D 2520R-015PF-15D	2.5	4.3	0.03 0.03 0.15	20	●				●	●	●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-2B						
	GDM 3020R-003PF-15D 3020L-003PF-15D 3020R-015PF-15D	3	0.03 0.03 0.15	●	●	●				●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-3(...), KGD <sup>β</sup> L...-2B								
 Medium feed	GDM 2020N-010PQ	2	2	4.3	0.1	20	-	-0.03	+0.03	●	●	●	●	KGD <sup>β</sup> L...-2(...) KGD <sup>β</sup> L...-2B					
	GDM 2520N-010PQ		2.5							0.03 0.15	20	●	●	●	●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-2B			
	GDM 3020N-010PQ		3							0.03 0.15	●	●	●	●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-3(...), KGD <sup>β</sup> L...-2B				
 Medium feed	GDM 2020R-010PQ-15D	2	2	4.3	0.1	20	15	-0.03	+0.03	●	●	●	●	KGD <sup>β</sup> L...-2(...) KGD <sup>β</sup> L...-2B					
	GDM 2520R-010PQ-15D		2.5							0.03 0.15	20	●	●	●	●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-2B			
	GDM 3020R-010PQ-15D		3							0.03 0.15	●	●	●	●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-3(...), KGD <sup>β</sup> L...-2B				
 Low cutting force	GDG 2020N-005PG	2	2	4.3	0.05	20	-	-0.02	+0.02	●	●	●	●	KGD <sup>β</sup> L...-2(...) KGD <sup>β</sup> L...-2B					
	GDG 2520N-005PG		2.5							0.03 0.15	20	●	●	●	●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-2B			
	GDG 3020N-005PG		3							0.03 0.15	●	●	●	●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-3(...), KGD <sup>β</sup> L...-2B				
 Low cutting force	GDG 2020R-005PG-15D	2	2	4.3	0.05	20	15	-0.02	+0.02	●	●	●	●	KGD <sup>β</sup> L...-2(...) KGD <sup>β</sup> L...-2B					
	GDG 2520R-005PG-15D		2.5							0.03 0.15	20	●	●	●	●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-2B			
	GDG 3020R-005PG-15D		3							0.03 0.15	●	●	●	●	KGD <sup>β</sup> L...-2(...), KGD <sup>β</sup> L...-2.4(...) KGD <sup>β</sup> L...-3(...), KGD <sup>β</sup> 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

H20

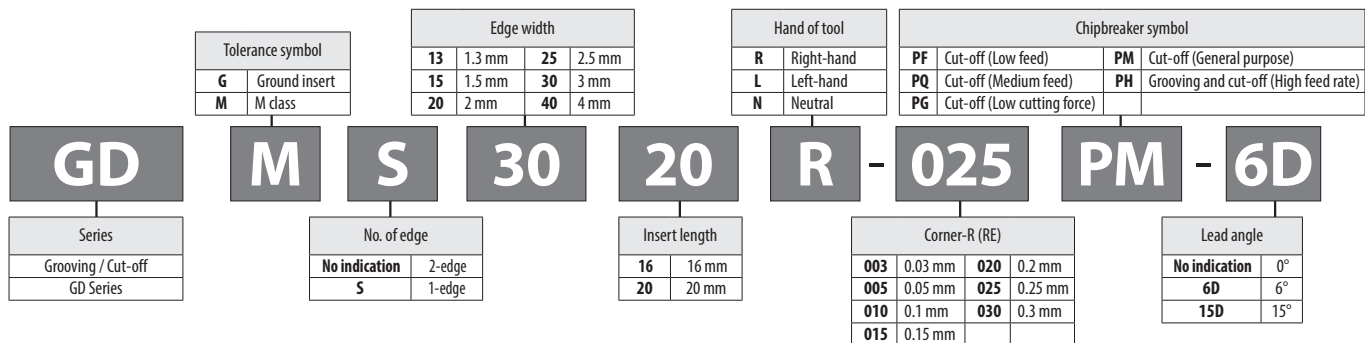
GDM/GDMS/GDG

Insert		Description	No. of edges	Dimension (mm)					Angle (°)	Tolerance (mm)		Carbide			Applicable toolholder H22, H27~H29, H31
				CW	S	RE	INSL	PSIR%L		CW min.	CW max.	PVD	PRI215	PRI225	
		Carbon steel / Alloy steel													P
		Stainless steel													M
		Cast iron													K
		Non-ferrous metals													N
	General purpose	GDM 2020N-020PM	2			0.2									KGD <sup>®</sup> /L...-2(...) KGD <sup>®</sup> /L...-2B
		GDM 2520N-020PM	2	2.5	4.3		20	-	-0.03	+0.03					KGD <sup>®</sup> /L...-2(...), KGD <sup>®</sup> /L...-2.4(...) KGD <sup>®</sup> /L...-2B
		GDM 3020N-025PM	2	3		0.25									KGD <sup>®</sup> /L...-2(...), KGD <sup>®</sup> /L...-2.4(...) KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-2B
		GDM 4020N-030PM	2	4		0.3									KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-3... KGD <sup>®</sup> /L...-4T...
	General purpose	GDM 2020R-020PM-6D	2			0.2								KGD <sup>®</sup> /L...-2(...) KGD <sup>®</sup> /L...-2B	
		GDM 2520R-020PM-6D	2	2.5	4.3		20	6	-0.03	+0.03				KGD <sup>®</sup> /L...-2(...), KGD <sup>®</sup> /L...-2.4(...) KGD <sup>®</sup> /L...-2B	
		GDM 3020R-025PM-6D	2	3		0.25									KGD <sup>®</sup> /L...-2(...), KGD <sup>®</sup> /L...-2.4(...) KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-2B
	General purpose	GDMS 2020N-020PM	1	2	4.3	0.2	20	-	-0.03	+0.03				KGD <sup>®</sup> /L...-2(...) KGD <sup>®</sup> /L...-2B	
		GDMS 3020N-025PM	1	3		0.25								KGD <sup>®</sup> /L...-2(...), KGD <sup>®</sup> /L...-2.4(...) KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-2B	
		GDMS 4020N-030PM	1	4		0.3								KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-3... KGD <sup>®</sup> /L...-4T...	
	General purpose	GDMS 2020R-020PM-6D	1	2	4.3	0.2	20	6	-0.03	+0.03				KGD <sup>®</sup> /L...-2(...) KGD <sup>®</sup> /L...-2B	
		GDMS 3020R-025PM-6D	1	3		0.25								KGD <sup>®</sup> /L...-2(...), KGD <sup>®</sup> /L...-2.4(...) KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-2B	
		GDMS 4020R-030PM-6D	1	4		0.3								KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-3... KGD <sup>®</sup> /L...-4T...	
	High feed	GDM 2020N-020PH	2			0.2								KGD <sup>®</sup> /L...-2(...) KGD <sup>®</sup> /L...-2B	
		GDM 3020N-030PH	2	3	4.3	0.3	20	-	-0.03	+0.03				KGD <sup>®</sup> /L...-2(...), KGD <sup>®</sup> /L...-2.4(...) KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-2B	
		GDM 4020N-030PH	2	4		0.3								KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-3... KGD <sup>®</sup> /L...-4T...	
	1-edge / High feed	GDMS 2020N-020PH	1	2	4.3	0.2	20	-	-0.03	+0.03				KGD <sup>®</sup> /L...-2(...) KGD <sup>®</sup> /L...-2B	
		GDMS 3020N-030PH	1	3		0.3								KGD <sup>®</sup> /L...-2(...), KGD <sup>®</sup> /L...-2.4(...) KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-2B	
		GDMS 4020N-030PH	1	4		0.3								KGD <sup>®</sup> /L...-3(...), KGD <sup>®</sup> /L...-3... KGD <sup>®</sup> /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).

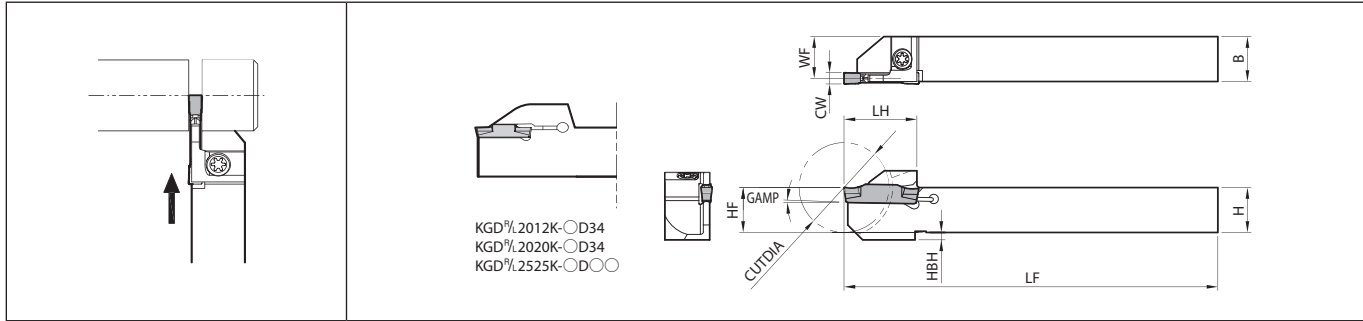


Inserts identification system



● : Standard item

**KGD** (for Automatic Lathe)



Right-hand shown

**Toolholder dimensions**

Description	Availability		Dimension (mm)											Angle	Spare parts					Applicable inserts H20, H21							
															Clamp bolt	Screw	Screw	Wrench	Wrench								
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						85	11.9																	
	●	●	16						120	11.5																	
	●	●	24	12	12	19.5	12		85	11.5																	
	●	●	24						120	11.5																	
	●	●	24						120	11.5																	
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	11.7																	
	●	●	16						120	11.4																	
	●	●	24	12	12	19.5	12		85	11.4																	
	●	●	24						120	11.4																	
	●	●	24						120	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																	
	●	●	32	16	16	24.5	16		120	15.2																	
	●	●	34	20	20	32.5	20		11.2	11.2																	
	●	●	34	20	20	32.5	20		125	19.2	0		HH5X16	-	LW-4	-											
	●	●	25	25	25	25			24.2	24.2																	
	●	●	20	10	10	18	10	2	120	9																	
	●	●	24	12	12	19.5	12	2	85	11																	
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																	
	●	●	32	16	16	24.5	16		120	15																	
	●	●	34	20	20	32.5	20		11	11																	
	●	●	34	20	20	32.5	20		125	19	0		HH5X16	-	LW-4	-											
	●	●	25	25	25	25			24	24																	
	●	●	24	12	12	19.5	12	2	120	10.8									3	3	1	-	SB-40120TR	-	-	LTW-15S	GDG3020..., GDM3020... GDMS3020...
	●	●	32	16	16	24.5	16		120	14.8																	
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			31			10.8	10.8	0		HH5X16	-	SE-50125TR	-	LW-4	-									
	●	●	51	20	12	36	20		120	18.8																	
	●	●	42			31			120	18.8																	
	●	●	51	20	20	36	20		125	23.8																	

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%...-3D38, KGD%...-3D42 and KGD%...-3D51 toolholders, please use 1-edge inserts.

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

● : Standard item

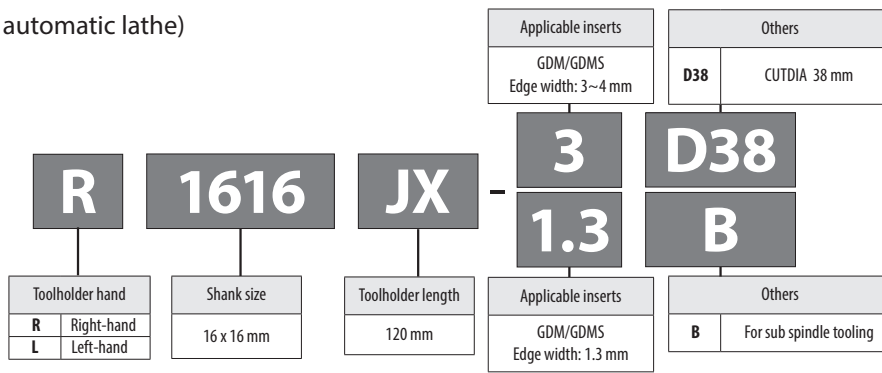
Recommended cutting conditions H32, H33

**H22**

Toolholder identification system

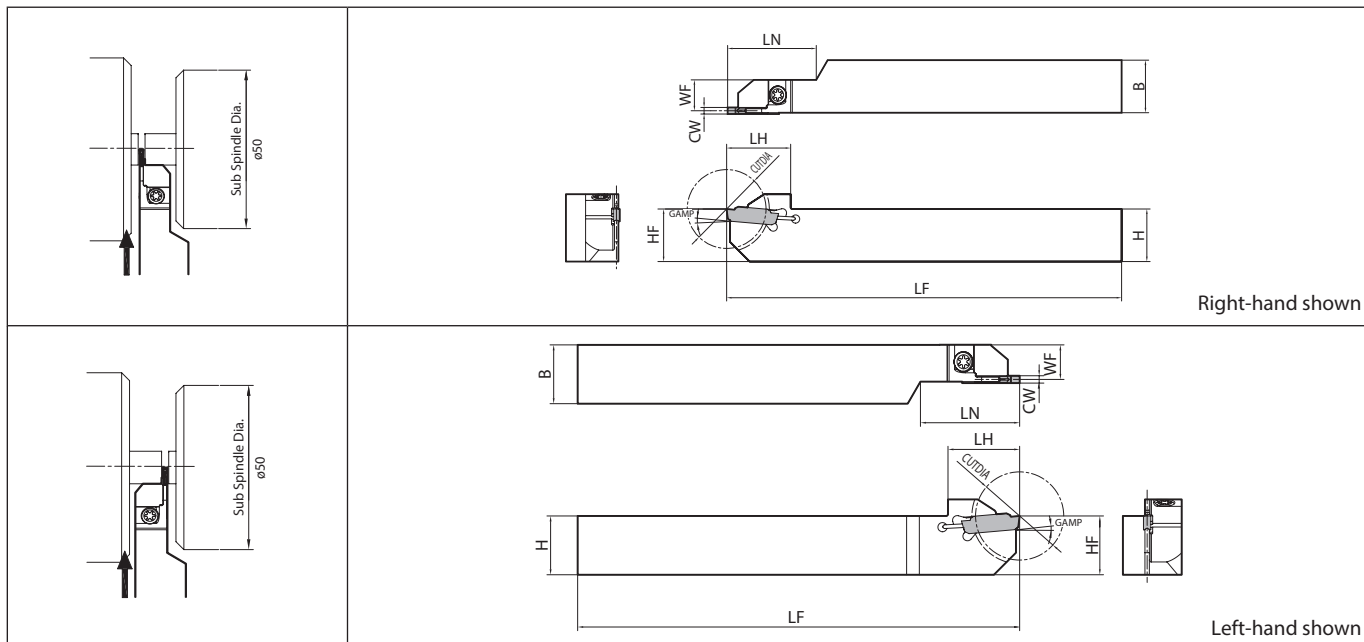
KGD / KGDS (for automatic lathe)

**KGD**  
**KGDS**



Cut-Off

**KGDS** (Cut-off / for sub spindle tooling)



Cut-Off

Toolholder dimensions

Description	Availability		Dimension (mm)											Angle	Spare parts		Applicable inserts ➔ H20, H21
															Screw	Wrench	
	R	L	CUTDIA	H	B	LH	HF	LF	LN	WF	CW min.	CW max.	GAMP (°)				
KGDS%L 1616JX-1.3B	●	●									9.5	1.3	1.3	5	SB-40120TR	LTW-15S	GDM1316...
1616JX-1.5B	●	●	24	16	16	19.5	16	120	27	9.4	1.5	1.5	GDM1516...				
1616JX-2B	●	●								9.2	2	3	1				GDG2020..., GDM2020..., GDMS2020..., GDG2520..., GDM2520..., GDG3020..., GDM3020..., GDMS3020...

Recommended cutting conditions ➔ H32, H33

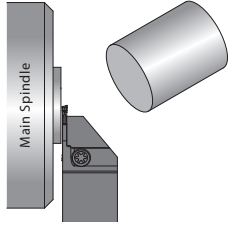
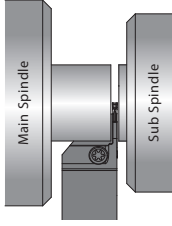
● : Standard item

**H24**

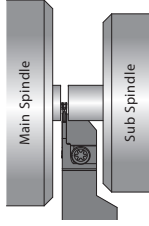
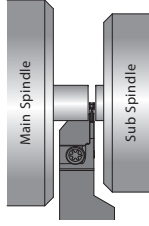


KGD / KGDS Selection Reference

**KGD**

Standard type	
<ul style="list-style-type: none"> <li>· Both Right-hand and Left-hand types are applicable to gang tool post.</li> <li>· Basically Left-hand type is used for cut-off operation using a sub spindle.</li> </ul>	
KGDR (Right-hand toolholder)	KGDL (Left-hand toolholder)
	
<p>&lt;1st. Recommendation&gt; Use insert with lead angle to remove boss.</p> <ul style="list-style-type: none"> <li>· Not using sub spindle</li> <li>· Cut-off operation near main spindle side</li> </ul>	<p>&lt;1st. Recommendation&gt; Use insert without lead angle.</p> <ul style="list-style-type: none"> <li>· Using sub spindle</li> <li>· Cut-off operation near sub spindle side</li> </ul>

**KGDS**

Sub spindle type	
<ul style="list-style-type: none"> <li>· When machining workpiece with small diameter, use KGDS to reduce overhang distance from the main spindle.</li> </ul>	
KGDSR (Right-hand toolholder)	KGDSL (Left-hand toolholder)
	
<ul style="list-style-type: none"> <li>· Long workpiece and more rigidity</li> <li>· Cut-off operation near main spindle side</li> </ul>	<ul style="list-style-type: none"> <li>· Short workpiece and less rigidity</li> <li>· Cut-off operation near sub spindle side</li> </ul>

H



Cut-Off

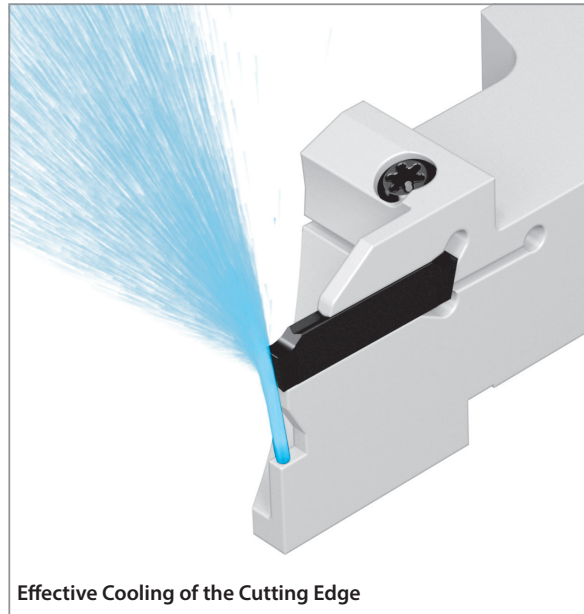
Direct coolant cut-off toolholders for automatic lathe

# 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.



Effective Cooling of the Cutting Edge

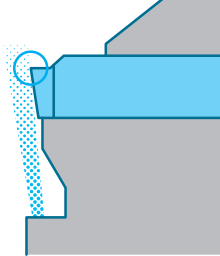
H



Cut-Off

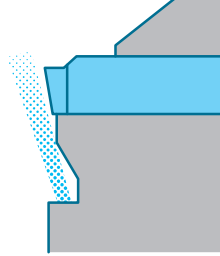
Coolant discharging

KGD-JCTM



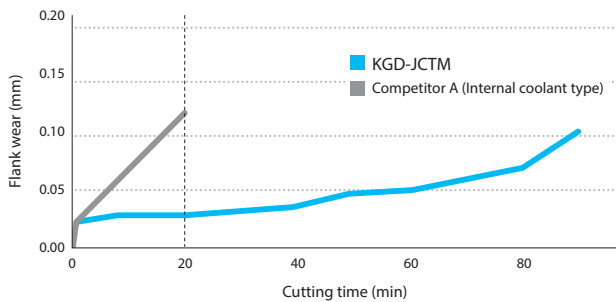
Sufficient cooling towards the cutting edge

Competitor A



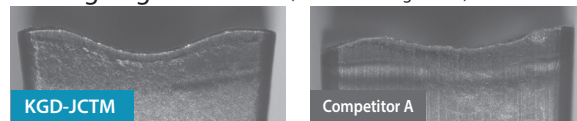
Coolant does not flow directly towards the cutting edge

### Wear resistance comparison (Internal evaluation)



Cutting conditions:  $V_c = 80$  m/min,  $f = 0.06$  mm/rev (~2 mm :  $f = 0.02$  mm/rev),  
 KGD1625JX-2JCTM, GDM2020N-015PF PR1535 (CW: 2.0 mm)  
 Workpiece material : SUS304 (ø25) Internal coolant (1.5MPa) Cut-off

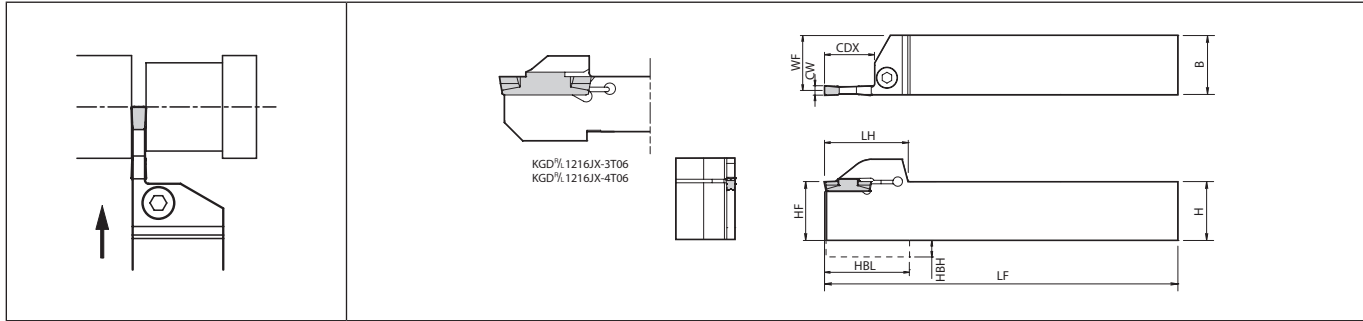
### Cutting edge condition (after machining 20min)



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



**KGD** (Integral type)



Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)													Spare parts				Applicable inserts H20, H21
			R	L	CDX	H	B	LH	HF	HBH	HBL	LF	WF	CW min.	CW max.	Clamp bolt	Screw	Wrench	Wrench	
	KGD% 1616H-2T06 1616H-2T10 1616H-2T17 2012K-2T17 2020K-2T06 2020K-2T10 2020K-2T17 2525M-2T06 2525M-2T10 2525M-2T17	●	●	6	16	16	27.7 30.2 31.2	16	4	28 30.5 31.5	100	15.2	2	3	HH5X16	-	LW-4	-	GDG2020... GDM2020... GDMS2020... GDG2520... GDM2520... GDG3020... GDM3020... GDMS3020...	
KGD% 2012K-2.4T17 2020K-2.4T17	●	●	17	20	12 20	32.5	20	-	-	125	11 19	2.4	3	HH5X16	-	LW-4	-	GDG2520..., GDM2520..., GDG3020... GDM3020..., GDMS3020...		
KGD% 1216JX-3T06 1616H-3T06 1616H-3T10 1616H-3T20 2012K-3T20 2020K-3T06 2020K-3T10 2020K-3T20 2525M-3T06 2525M-3T10 2525M-3T20	●	●	6	12	16	19.5 27.7 30.2 34.2	12	2	19 28 30.5 34.5	120	14.8	3	4	HH5X16	SE-50125TR	LW-4	LTW-20	GDG3020... GDM3020... GDMS3020... GDM4020... GDMS4020...		
KGD% 1216JX-4T06 2020K-4T10 2020K-4T20 2525M-4T10 2525M-4T20 2525M-4T25	●	●	6	12	16	19.5 30.5 34.5	12	2	19	120	14.3	4	5	HH5X16 HH5X25	SE-50125TR	LW-4	LTW-20	GDM4020... GDMS4020...		

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 (HH5X16), 8.0N·m (HH6X25), 2.5N·m (SE-50125TR)

Above toolholders are applicable to external grooving, too.

Recommended cutting conditions H32, H33

Toolholder identification system

KGD (Integral type)

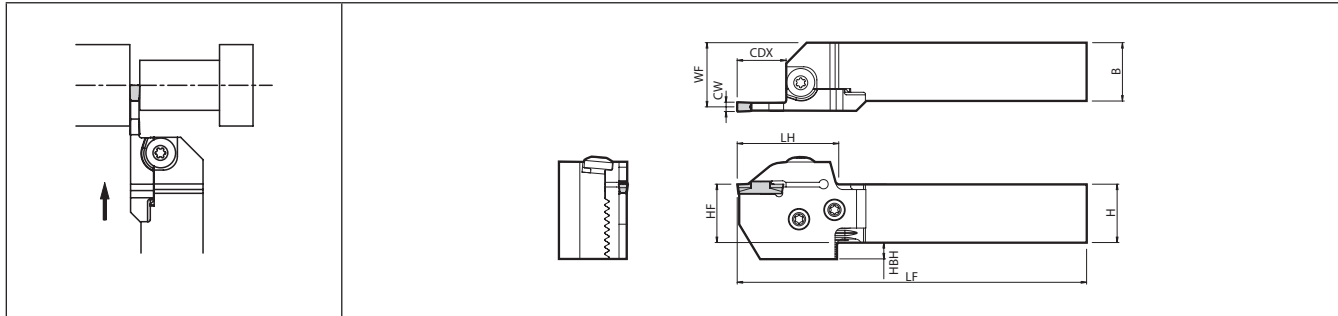
**KGD** **R** **1616** **H** - **2** **T** **06**

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

**H28**

**KGD-S** (0° separate type)



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

**Toolholder dimensions (Blade and toolholder)**

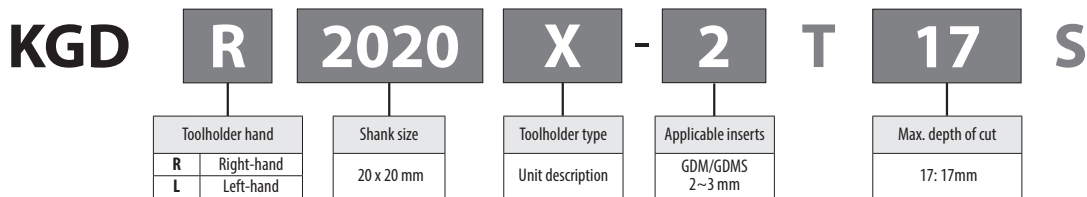
Shank angle	Width (mm)	Max. depth of cut (mm)	Shank size (mm)	Unit description	Availability		Blade description G42	Toolholder description G42	Dimension (mm)										Spare parts		
					R	L			CDX	H	B	LH	HF	HBH	LF	WF	CW min.	CW max.	Clamp bolt (for insert clamp)	Screw (for blade)	Wrench
0°	2	17	□20	KGD% 2020X-2T17S	●		KGD%L-2T17-C	KGD% 2020-C KGD% 2525-C KGD% 3232-C	20	20		20	12	122	23.4	2	3	BH6X10TR	SB-60120TR	LTW-25	
			□25	2525X-2T17S	●	●			25	25	40	25	7	147	28.4						
			No unit description ⇔								32	32		32	-						167
	3	10		□20	KGD% 2020X-3T10S	●		KGD%L-3T10-C	KGD% 2020-C KGD% 2525-C KGD% 3232-C	20	20		20	12	115	23	3				4
				□25	2525X-3T10S	●	●			25	25	33	25	7	140	28					
				No unit description ⇔								32	32		32	-					
	4	20		□20	KGD% 2020X-3T20S	●	●	KGD%L-3T20-C	KGD% 2020-C KGD% 2525-C KGD% 3232-C	20	20		20	12	125	23	4				5
				□25	2525X-3T20S	●	●			25	25	43	25	7	150	28					
				□32	3232X-3T20S	●				32	32		32	-	170	35					
	4	10		□20	KGD% 2020X-4T10S	●		KGD%L-4T10-C	KGD% 2020-C KGD% 2525-C KGD% 3232-C	20	20		20	12	115	22.5	4				5
				□25	2525X-4T10S	●	●			25	25	33	25	7	140	27.5					
				No unit description ⇔								32	32		32	-					
4	20		□20	KGD% 2020X-4T20S	●		KGD%L-4T20-C	KGD% 2020-C KGD% 2525-C KGD% 3232-C	20	20		20	12	125	22.5	4	5				
			□25	2525X-4T20S	●	●			25	25	43	25	7	150	27.5						
			□32	3232X-4T20S	●				32	32		32	-	170	34.5						
4	25		□20	KGD% 2020X-4T25S	●	●	KGD%L-4T25-C	KGD% 2020-C KGD% 2525-C KGD% 3232-C	20	20		20	12	130	22.5	4	5				
			□25	2525X-4T25S	●	●			25	25	48	25	7	155	27.5						
			□32	3232X-4T25S	●				32	32		32	-	175	34.5						

- When using the toolholder in normal mounting position, the lower jaw of toolholder may interfere with the tool presetter.
- 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.
- When the unit description is not available (No unit description) and/or stock status is "", please purchase toolholder and blade separately.
- 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 for insert : 6.5N·m (Groove width 2 ~ 4mm)
- Above toolholders are applicable to external grooving, too.

Applicable inserts ● H20, H21  
Recommended cutting conditions ● H32, H33

**Toolholder identification system**

KGD (Separate type / Unit description)



● : 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

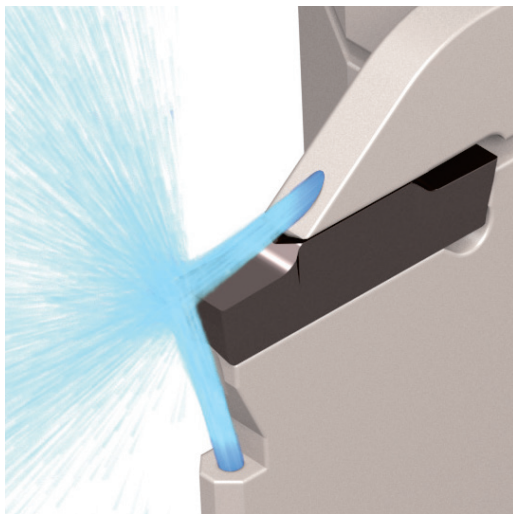
Chip Control Comparison (Internal evaluation)

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

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



Cut-Off



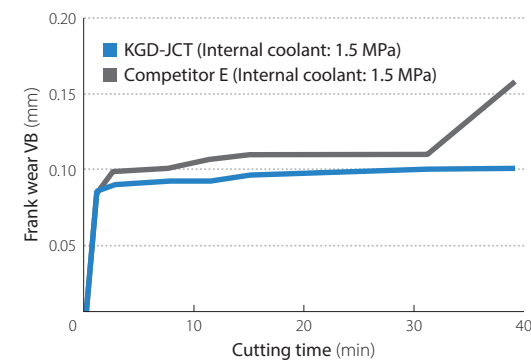
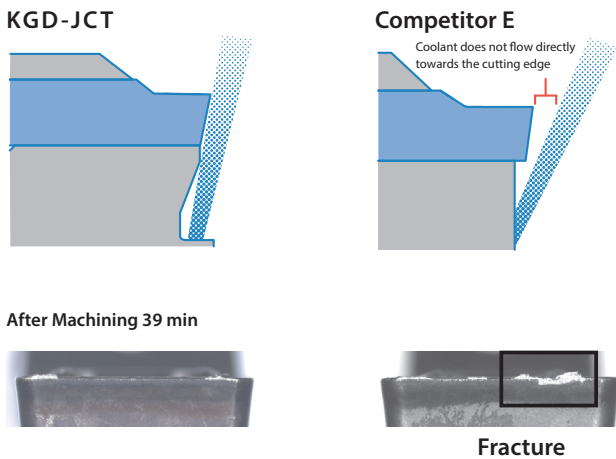
Cutting Conditions :  $V_c = 150 \text{ m/min}$ ,  $d = 8 \text{ mm}$ ,  $f = 0.05 \text{ mm/rev}$ , Wet Edge Width 4 mm Workpiece Material : SCM415 Grooving

## 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

Wear Resistance Comparison (Internal evaluation)

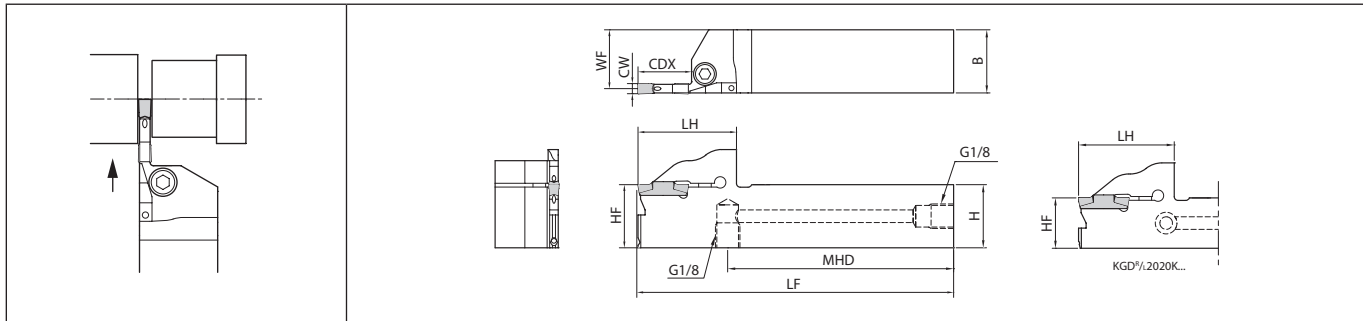


Cutting Conditions :  $V_c = 180 \text{ m/min}$ ,  $d = 9 \text{ mm}$ ,  $f = 0.15 \text{ mm/rev}$ , Wet Edge Width 4 mm Workpiece Material : SCM415 Grooving

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

### H30

**KGD-JCT** (Coolant-through holders)



Right-hand shown | Pressure Resistance : ~15MPa

**Toolholder dimensions**

Description	Availability		Dimension (mm)											Spare parts			Applicable inserts H20, H21
														Clamp bolt	Plug	Wrench	
	R	L	CDX	H	B	LH	HF	LF	WF	MHD	CW min.	CW max.					
KGD%L 2020K-3T06JCT 2020K-3T10JCT 2020K-3T20JCT 2525K-3T06JCT 2525K-3T10JCT 2525K-3T20JCT	●	●	6	20	20	31.5	20	125	18.8	96.2	3	4	HH5X16	HSG1/8X8.0	LW-4	GDG3020... GDM3020... GDMS3020... GDM4020... GDMS4020...	
	●	●	10			34											20
	●	●	20	38	90.2												
	●	●	6	31.5	96.5												
	●	●	10	34	25	23.8	94.5										
	●	●	20	39	89.5												
KGD%L 2020K-4T10JCT 2020K-4T20JCT 2525K-4T10JCT 2525K-4T20JCT 2525K-4T25JCT	●	●	10	20	20	34	20	125	18.3	94.2	4	5	HH5X16	HSG1/8X8.0	LW-4	GDM4020... GDMS4020...	
	●	●	20			38											90.2
	●	●	10	34	94.5												
	●	●	20	39	25	23.3	89.5										
	●	●	25	44	84.5												

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

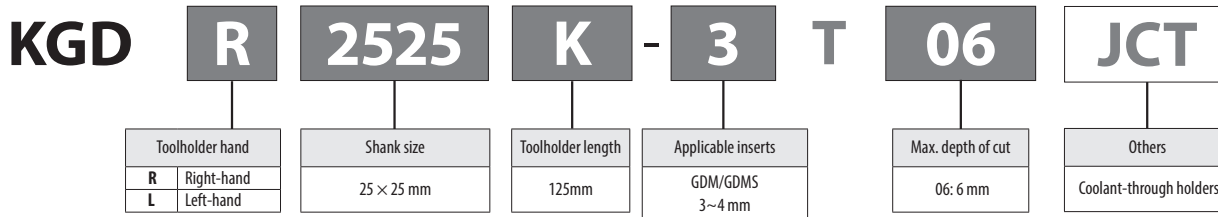
Recommended cutting conditions H32, H33



Cut-Off

**Toolholder identification system**

KGD (Integral type)



● : Standard item

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

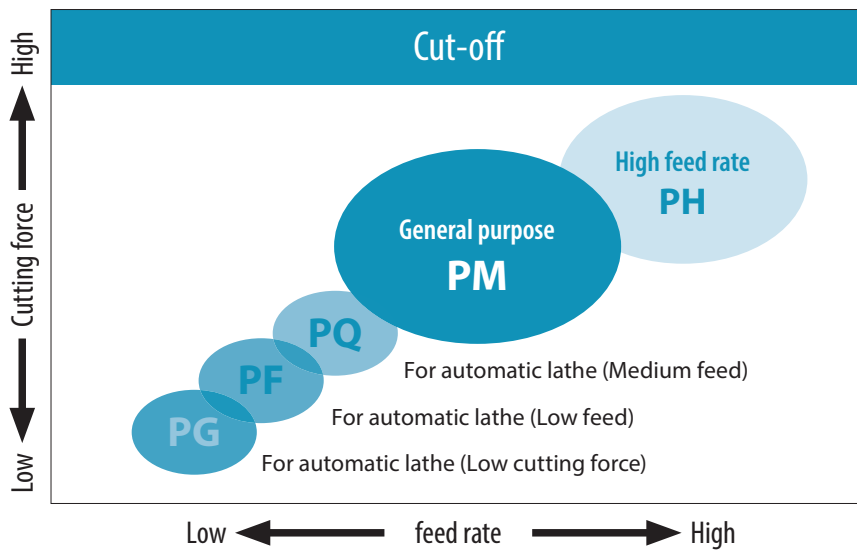
Workpiece material	Recommended insert grades (Vc: m/min)			f (mm/rev)						Remarks
				PF (RE = 0.03 mm)			PF (RE = 0.15 mm)			
	MEGACOAT NANO	MEGACOAT		Edge width CW (mm)						
PR1535	PR1225	PR1215	1.3 / 1.5	2.0	2.5 / 3.0	1.3 / 1.5	2.0	2.5 / 3.0		
Carbon steel	☆ 70 ~ 150	★ 70 ~ 150	☆ 70 ~ 180	0.01 ~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

★: 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	
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



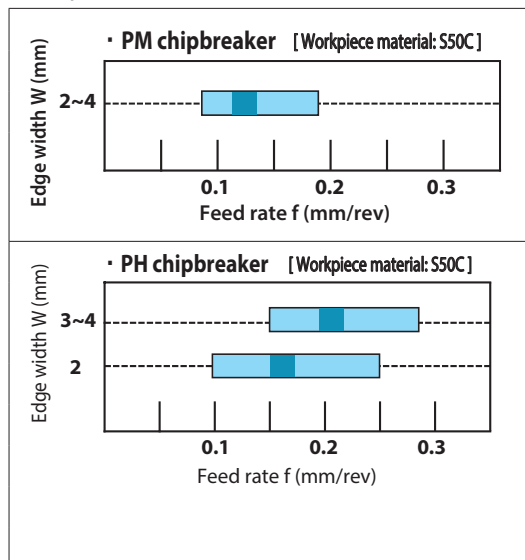


KGD recommended cutting conditions (PM / PH chipbreaker)

Workpiece material	Recommended insert grades (Vc: m/min)			f (mm/rev)			Remarks
	MEGACOAT NANO	MEGACOAT		PM	PH		
		PR1535	PR1225	PR1215	Edge width CW (mm)		
				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)]



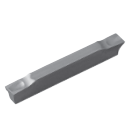
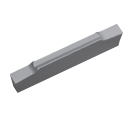



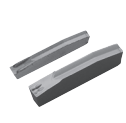
**Caution (Cut-off)**

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.



Cut-Off

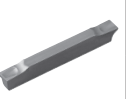

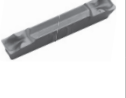


GM/GMM/GMN/GM<sup>R/L</sup>

		Carbon steel / Alloy steel		Stainless steel		Cast iron		Non-ferrous metals		P		M		K		N		
Insert	Description	No. of edges	Dimension (mm)				Tolerance (mm)		Carbide					Applicable toolholder H38~H40				
			CW	S	RE	INSL	CW min.	CW max.	CVD		PVD				Cermet			
									CR9025	PR915	PR930	PR1115	KW10			TN90		
	GMM 1520-MT	2	1.5	4.3	0 0.05	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-1.5(-85)
	GMM 2020-MT	2	2	4.3	0 0.05	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-1.5(-85) KGM <sup>R/L</sup> ...-2(...)
	GMM 2520-MT	2	2.5	4.3	0 0.05	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...) KGM <sup>R/L</sup> ...-2.5(-85)
	GMM 3020-MT	2	3	4.3	0 0.05	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...), KGM <sup>R/L</sup> ...-2.5(-85) KGM <sup>R/L</sup> ...-3(T20)
	GMM 1520-NB	2	1.5	4.3	0	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-1.5(-85)
	GMM 2020-NB	2	2	4.3	0	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-1.5(-85) KGM <sup>R/L</sup> ...-2(...)
	GMM 2520-NB	2	2.5	4.3	0	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...) KGM <sup>R/L</sup> ...-2.5(-85)
	GMM 3020-NB	2	3	4.3	0	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...), KGM <sup>R/L</sup> ...-2.5(-85) KGM <sup>R/L</sup> ...-3(T20)
	GMM 2020-TK	2	2	4.3	0.2	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-1.5(-85) KGM <sup>R/L</sup> ...-2(...)
	GMM 2520-TK	2	2.5	4.3	0.2	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...) KGM <sup>R/L</sup> ...-2.5(-85)
	GMM 3020-TK	2	3	4.3	0.25	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...), KGM <sup>R/L</sup> ...-2.5(-85) KGM <sup>R/L</sup> ...-3(T20)
	GMM 2020-TMR	2	2	4.3	0.2	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-1.5(-85) KGM <sup>R/L</sup> ...-2(...)
	GMM 2520-TMR	2	2.5	4.3	0.2	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...) KGM <sup>R/L</sup> ...-2.5(-85)
	GMM 3020-TMR	2	3	4.3	0.25	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...), KGM <sup>R/L</sup> ...-2.5(-85) KGM <sup>R/L</sup> ...-3(T20)
	GMN 2-TK	1	2	4.3	0.2	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-1.5(-85) KGM <sup>R/L</sup> ...-2(...)
	GMN 3-TK	1	3	4.3	0.25	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...), KGM <sup>R/L</sup> ...-2.5(-85) KGM <sup>R/L</sup> ...-3(T20)
	GMN 4-TK	1	4	4.3	0.3	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-3(T20), KGM <sup>R/L</sup> ...-4(T.)
	GMN 2.2	1	2.2	4.3	0.17	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...)
	GMN 3	1	3	4.3	0.2	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-2(...), KGM <sup>R/L</sup> ...-2.5(-85) KGM <sup>R/L</sup> ...-3(T20)
	GMN 4	1	4	4.3	0.25	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-3(T20), KGM <sup>R/L</sup> ...-4(T.)
	GMN 5	1	5	4.3	0.8	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-4(T.), KGM <sup>R/L</sup> ...-5(T25)
	GMN 6	1	6	4.3	0.8	20	-0.05	+0.05										KGM <sup>R/L</sup> ...-5(T25), KGM <sup>R/L</sup> ...-6T30

○ : Check availability

H34

GM/GMM/GMN/GM<sup>R/L</sup>

		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 H38~H40	
			CW	S	RE	INSL	PSIR <sup>°</sup> L		CW min.	CW max.	CVD		PVD				Cermet
										CR9025	PR905	PR915	PR930	PR1115	KW10	TN90	
	GMM 1520R-MT-15D	2	1.5	4.3	0 0.05	20	15	-0.05	+0.05								KGM <sup>°</sup> 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 <sup>°</sup> L...-1.5(-85) KGM <sup>°</sup> L...-2(...)
	GMM 2520R-MT-15D	2	2.5	4.3	0 0.05	20	15	-0.05	+0.05								KGM <sup>°</sup> L...-2(...) KGM <sup>°</sup> 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 <sup>°</sup> L...-2(...), KGM <sup>°</sup> L...-2.5(-85) KGM <sup>°</sup> L...-3(T20)
	GMM 2020R-TK-8D	2	2	4.3	0.2	20	8	-0.05	+0.05								KGM <sup>°</sup> L...-1.5(-85) KGM <sup>°</sup> L...-2(...)
	GMM 2520R-TK-8D	2	2.5	4.3	0.2	20	8	-0.05	+0.05								KGM <sup>°</sup> L...-2(...) KGM <sup>°</sup> L...-2.5(-85)
	GMM 3020R-TK-8D	2	3	4.3	0.25	20	8	-0.05	+0.05								KGM <sup>°</sup> L...-2(...), KGM <sup>°</sup> L...-2.5(-85) KGM <sup>°</sup> L...-3(T20)
	GMM 2020R-TMR-6D	2	2	4.3	0.2	20	6	-0.05	+0.05								KGM <sup>°</sup> L...-1.5(-85) KGM <sup>°</sup> L...-2(...)
	GMM 2520R-TMR-6D	2	2.5	4.3	0.2	20	6	-0.05	+0.05								KGM <sup>°</sup> L...-2(...) KGM <sup>°</sup> L...-2.5(-85)
	GMM 3020R-TMR-6D	2	3	4.3	0.25	20	6	-0.05	+0.05								KGM <sup>°</sup> L...-2(...), KGM <sup>°</sup> L...-2.5(-85) KGM <sup>°</sup> L...-3(T20)
	GMR 2-TK-8D	1	2	4.3	0.2	20	8	-0.05	+0.05								KGM <sup>°</sup> L...-1.5(-85) KGM <sup>°</sup> L...-2(...)
	GMR 3-TK-8D	1	3	4.3	0.25	20	8	-0.05	+0.05								KGM <sup>°</sup> L...-2(...), KGM <sup>°</sup> L...-2.5(-85) KGM <sup>°</sup> L...-3(T20)
	GMR 4-TK-8D	1	4	4.3	0.3	20	8	-0.05	+0.05								KGM <sup>°</sup> L...-3(T20), KGM <sup>°</sup> L...-4(T.)
	GMR 2.2-8D GML 2.2-8D	1	2.2	4.3	0.17	20	8	-0.05	+0.05								KGM <sup>°</sup> L...-2(...)
	GMR 2.2-15D	1	2.2	4.3	0	20	15	-0.05	+0.05								KGM <sup>°</sup> L...-2(...)
	GMR 3-4D GML 3-4D	1	3	4.3	0.2	20	4	-0.05	+0.05								KGM <sup>°</sup> L...-2(...), KGM <sup>°</sup> L...-2.5(-85) KGM <sup>°</sup> L...-3(T20)
	GMR 4-4D GML 4-4D	1	4	4.3	0.25	20	4	-0.05	+0.05								KGM <sup>°</sup> L...-3(T20), KGM <sup>°</sup> L...-4(T.)








Handed insert shows Right-hand

○ : Check availability



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.

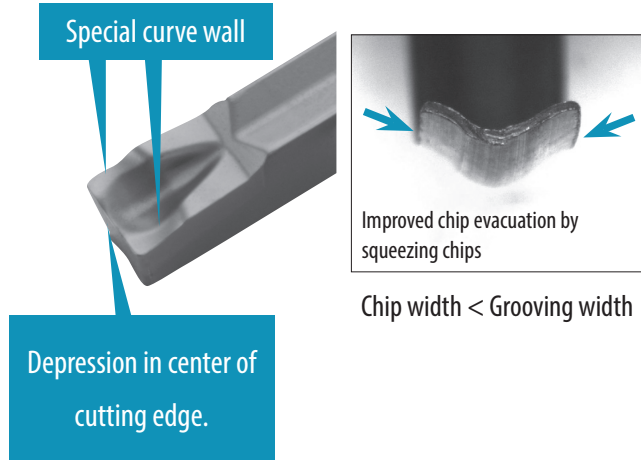
Series	Advantage
GMM-MT	Specific chipbreaker for cut-off operations requiring sharp cutting performance. Minimizes the boss.
GMM-NB	Cutting edge is flat with non-chipbreaker. It works well for brass, etc.
GMM-TK	Stable design with chipbreaker for cut-off. Large corner-R. 2-edge for economical performance.
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.



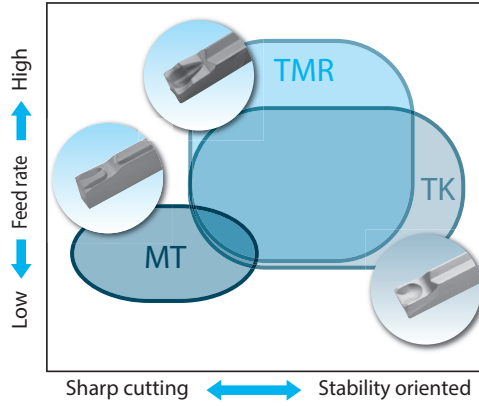
Cut-Off

### TMR-chipbreaker

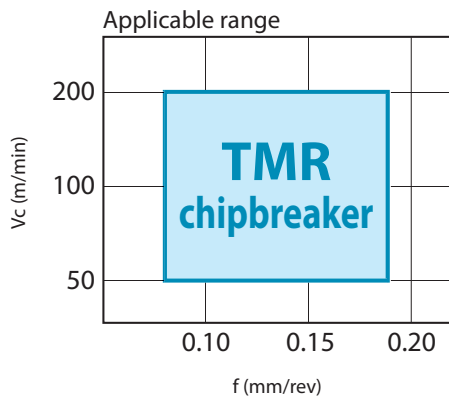
#### Advantages



### 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, ø30, constant spindle revolution)

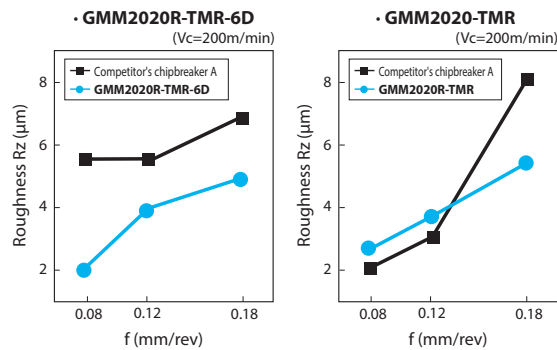
Description	n=1,060min <sup>-1</sup> (Vc=100m/min)		n=2,123min <sup>-1</sup> (Vc=200m/min)	
	f=0.12mm/rev	f=0.18mm/rev	f=0.12mm/rev	f=0.18mm/rev
GMM 3020-TMR (Neutral)				
GMM 3020R-TMR-6D (Lead angle)				

### Recommended Cutting Conditions

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

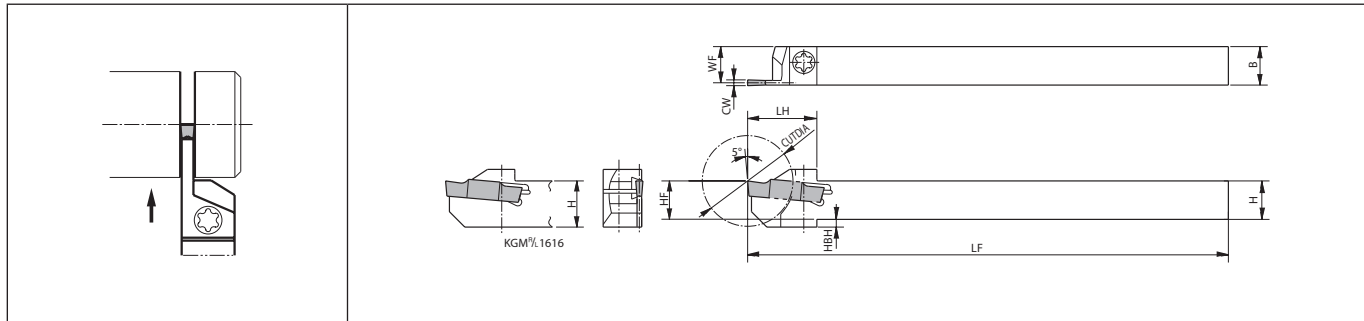
### Workpiece Surface Roughness

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





Cut-Off

**KGM** (for Automatic Lathe)



Right-hand shown

**Toolholder dimensions**

Description	Availability		Dimension (mm)											Spare parts		Applicable inserts ➔ H34, H35
														Screw	Wrench	
	R	L	CUTDIA	H	B	LH	HF	HBH	LF	WF	CW min.	CW max.				
KGM%L 1010JX-1.5 1212F-1.5-85 1212JX-1.5	<input type="radio"/>	<input type="radio"/>	18	10	10	18	10	2	120	9.4	1.5	2	SE-40120TR	LTW-15S	GMM1520... GMM2020... GM_2-TK(-8D)	
	<input type="radio"/>	<input type="radio"/>	23	12	12	19	12		85	11.4						
	<input type="radio"/>	<input type="radio"/>							120							
KGM%L 1010JX-2 1212F-2-85 1212JX-2 1616JX-2	<input type="radio"/>	<input type="radio"/>	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(...)	
	<input type="radio"/>	<input type="radio"/>	23	12	12	19	12		85	11.15						
	<input type="radio"/>	<input type="radio"/>							120							
	<input type="radio"/>	<input type="radio"/>	30	16	16	24.5	16		-	15.15			SE-50125TR	LTW-20		
KGM%L 1212F-2.5-85 1212JX-2.5 1616JX-2.5	<input type="radio"/>	<input type="radio"/>	23	12	12	19	12	2	85	11	2.4	3	SE-40120TR	LTW-15S	GMM2520... GMM3020... GM_3(...)	
	<input type="radio"/>	<input type="radio"/>							120	15						
	<input type="radio"/>	<input type="radio"/>	30	16	16	24.5	16		-					SE-50125TR		LTW-20
KGM%L 1616JX-3	<input type="radio"/>	<input type="radio"/>	30	16	16	24.5	16	-	120	14.8	3	4	SE-50125TR	LTW-20	GMM3020..., GM_3(...), GM_4(...)	

KGM will be switched to KGD=> H22

Recommended cutting conditions ➔ H43

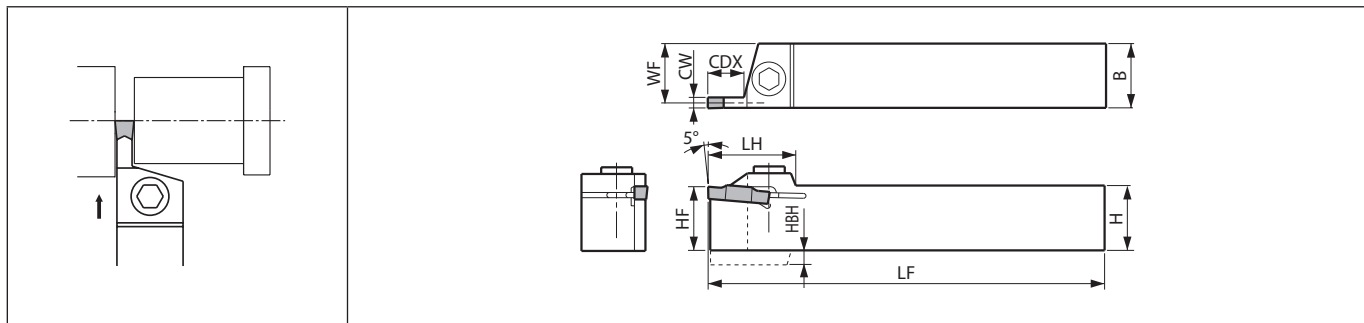
H

Cut-Off

○ : Check availability

**H38**

KGM



Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)										Spare parts				Applicable inserts H34, H35
													Clamp bolt	Screw	Wrench	Wrench	
	R	L	CDX	H	B	LH	HF	HBH	LF	WF	CW min.	CW max.					
KGM% 1212H-3 1616H-3 2020K-3 2525M-3	<input type="radio"/>	<input type="radio"/>	9	12	12	27	12	4	100	10.8	3	-	SB-5TR	-	LTW-20	GMG3020..., GM_3(...)	
	<input type="radio"/>	<input type="radio"/>		16	16		16	14.8	4	HH5X16		-	LW-4	-	GMG3020..., GM_3(...), GM_4(...)		
	<input type="radio"/>	<input type="radio"/>		20	20		20	18.8		HH5X25		-	LW-4	-	GM_4(...) GMN5		
	<input type="radio"/>	<input type="radio"/>		25	25		25	23.8	HH5X25	-		LW-4	-	GMN5 GMN6			
KGM% 2020K-4 2525M-4	<input type="radio"/>	<input type="radio"/>	10	20	20	27	20	-	125	18.3	4	5	HH5X16	-	LW-4	-	GM_4(...) GMN5
	<input type="radio"/>	<input type="radio"/>		25	25		25	23.3	5	HH5X25		-	LW-4	-	GMN5 GMN6		
KGM 2020K-5 2525M-5	<input type="radio"/>	<input type="radio"/>	10	20	20	27	20	-	125	17.8	5	6	HH5X16	-	LW-4	-	GMN5 GMN6
	<input type="radio"/>	<input type="radio"/>		25	25		25	22.8	6	HH5X25		-	LW-4	-	GMN5 GMN6		
KGM% 2525M-8	<input type="radio"/>	<input type="radio"/>	25	25	25	40	25	7.5	150	22	8	8	HH6X25	-	LW-5	-	G48~G50 GM_8030..., GMGA8030...R

CDX shows available grooving depth.

4mm width Insert can be installed in KGM% 1212H-3, but is not recommended due to the toolholder's rigidity.

KGM will be switched to KGD=> H28

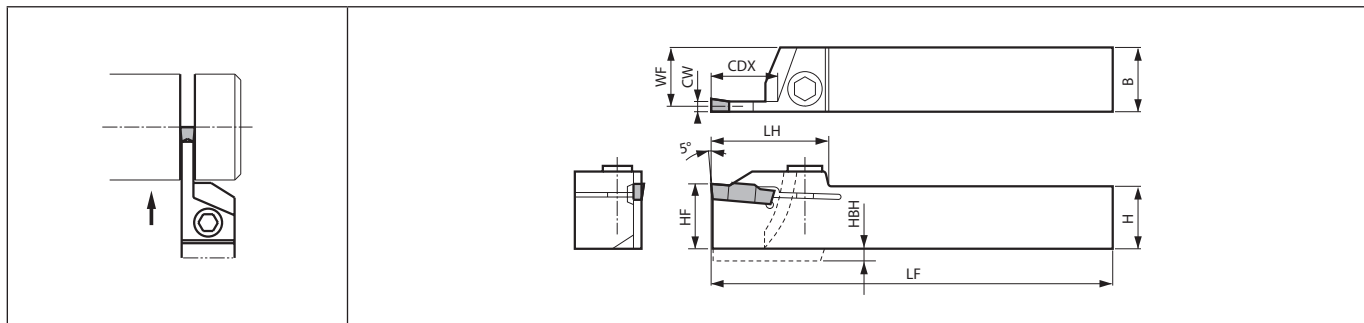
Recommended cutting conditions H43



Cut-Off

: Check availability

**KGM-T** (Deep grooving)



Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)											Spare parts				Applicable inserts ➔ H34, H35
														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	<input type="radio"/>	<input type="radio"/>	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(...)		
	<input type="radio"/>	<input type="radio"/>		20	20				19.15			HH5X16	-	LW-4	-			
	<input type="radio"/>	<input type="radio"/>		25	25	24.15	HH5X25	-	LW-4	-								
KGM%L 1616H-3T20 2012K-3T20 2020K-3T20 2525M-3T20	<input type="radio"/>	<input type="radio"/>	20	16	16	36	20	100	14.8	3	4	HH5X16	-	LW-4	-	GMG3020... GM_3(...) GM_4(...)		
	<input type="radio"/>	<input type="radio"/>		20	12				10.8			-	SB-STR	-	LTW-20			
	<input type="radio"/>	<input type="radio"/>		20	20	18.8	HH5X16	-	LW-4	-								
	<input type="radio"/>	<input type="radio"/>		25	25	23.8	HH5X25	-	LW-4	-								
KGM%L 2020K-4T20 2525M-4T20 2525M-4T25	<input type="radio"/>	<input type="radio"/>	20	20	20	36	20	125	18.3	4	5	HH5X16	-	LW-4	-	GM_4(...) GMN5		
	<input type="radio"/>	<input type="radio"/>		25	25				23.3			HH5X25	-	LW-4	-			
	<input type="radio"/>	<input type="radio"/>		25	25	25	150	23.3	HH5X25	-	LW-4	-						
KGM%L 2525M-5T25 3232P-5T25	<input type="radio"/>	<input type="radio"/>	25	25	25	42	32	150	22.8	5	6	HH5X25	-	LW-4	-	GMN5 GMN6		
	<input type="radio"/>	<input type="radio"/>		32	32				29.8			HH5X25	-	LW-4	-			
KGMR 2525M-6T30	<input type="radio"/>	<input type="radio"/>	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 (H42) 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=> H28

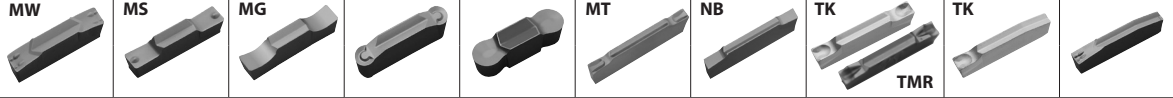
Recommended cutting conditions ➔ H43


○ : Check availability

**H40**



Applicable Inserts

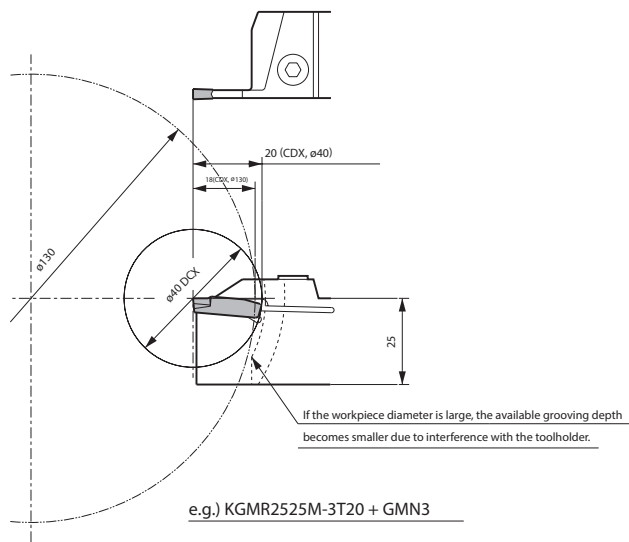
Applications See Page	G48	G48	G49	G49	G50	H34, H35	H34	H34, H35	H34, H35	H34, H35
Insert	MW	MS	MG			MT	NB	TK	TK	
Toolholder Description										
KGM <sup>®</sup> /L...1.5	-	-	-	-	-	GMM1520..MT GMM2020..MT GMM1520 <sup>°</sup> /L...MT GMM2020 <sup>°</sup> /L...MT	GMM1520..NB GMM2020..NB	GMM2020..T GMM2020R..T	GMM2..TK GMR2..TK	-
KGM <sup>®</sup> /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 <sup>°</sup> /L...MT GMM2520 <sup>°</sup> /L...MT GMM3020 <sup>°</sup> /L...MT	GMM2020..NB GMM2520..NB GMM3020..NB	GMM2020..T GMM2520..T GMM3020..T GMM2020R..T GMM2520R..T GMM3020R..T	GMM2..TK GMM3..TK GMR2..TK GMR3..TK	GMM2.2 GMM3 GM <sup>®</sup> /L 2.2 GM <sup>®</sup> /L 3
KGM <sup>®</sup> /L...2.5	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMG3020..MG	GMG3020..R GMM3020..R	-	GMM2520..MT GMM3020..MT GMM2520 <sup>°</sup> /L...MT GMM3020 <sup>°</sup> /L...MT	GMM2520..NB GMM3020..NB	GMM2520..T GMM3020..T GMM2520R..T GMM3020R..T	GMM3..TK GMR3..TK	GMM3 GM <sup>®</sup> /L 3
KGM <sup>®</sup> /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 <sup>°</sup> /L...MT	GMM3020..NB	GMM3020..T GMM3020R..T	GMM3..TK GMM4..TK GMR3..TK GMR4..TK	GMM3 GMM4 GM <sup>®</sup> /L 3 GM <sup>®</sup> /L 4
KGM <sup>®</sup> /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	-	-	-	-	GMM4..TK GMR4..TK	GMM4 GMM5 GM <sup>®</sup> /L 4
KGM <sup>®</sup> /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	-	-	-	-	GMM5 GMM6
KGM <sup>®</sup> /L...6T	GMM6020..MW	GMG6020..MS GMM6020..MS	GMG6020..MG	GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMM6
KGM <sup>®</sup> /L...8	GMM8030..MW	-	GMG8030..MG	-	GMGA8030..R	-	-	-	-	-

Recommended Cutting Conditions  H43



Cut-Off

Possible cutting diameter of KGM / KGM-T type



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



Cut-Off

KGM (for automatic lathe) Possible Cutting Diameter and Available Grooving Depth Table

Toolholder Description		DCX (Cutting Dia.)																
KGM <sup>R/L</sup>	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...	30	37	47	68	89	131	∞	∞	∞								
Available Grooving Depth CDX (mm)	15	14	13	12	11.5	11	10	9	8					7	6	5	4	3

KGM-T Possible Cutting Diameter and Available Grooving Depth Table (GMN, GM<sup>R/L</sup> when using 1-edge insert)

Toolholder Description		DCX (Cutting Dia.)																	
KGM <sup>R/L</sup>	2012K-2T17	-	-	-	-	-	-	-	-	-	66	80	130	260	∞				
	2020K-2T17	-	-	-	-	-	-	-	-	-	66	80	130	260					
	2525M-2T17	-	-	-	-	-	-	-	-	-	66	80	130	260					
	1616H-3T20	-	-	-	-	-	40	54	70	100	180	∞							
	2012K-3T20	-	-	-	-	-	40	54	70	100	180								
	2020K-3T20	-	-	-	-	-	40	54	70	100	180	∞							
	2525M-3T20	-	-	-	-	-	40	90	130	240									
	2020K-4T20	-	-	-	-	-	40	90	130	240	∞								
	2525M-4T20	-	-	-	-	-	40	90	130	240									
	2525M-4T25	-	-	-	50	140	240	∞				∞							
	2525M-5T25	-	-	50	140	240													
	3232P-5T25	-	-	50	140	240	∞				∞								
	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		



Cut-Off

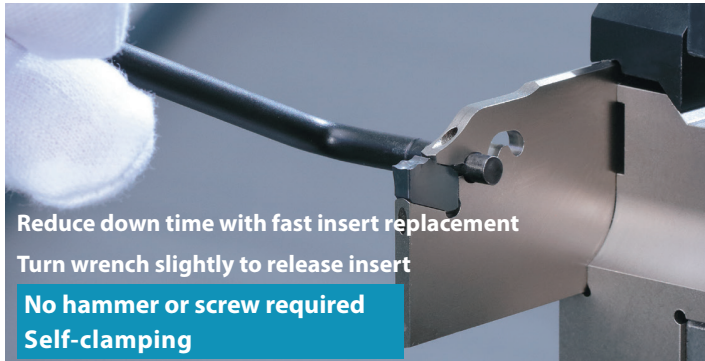
High-Performance Cut-Off Solutions

# KPK Series

Easy Insert Replacement Reduces Downtime

High Performance, Long Tool Life and Stable Machining with Strong Clamping Mechanism

## 1 Easy Insert Replacement



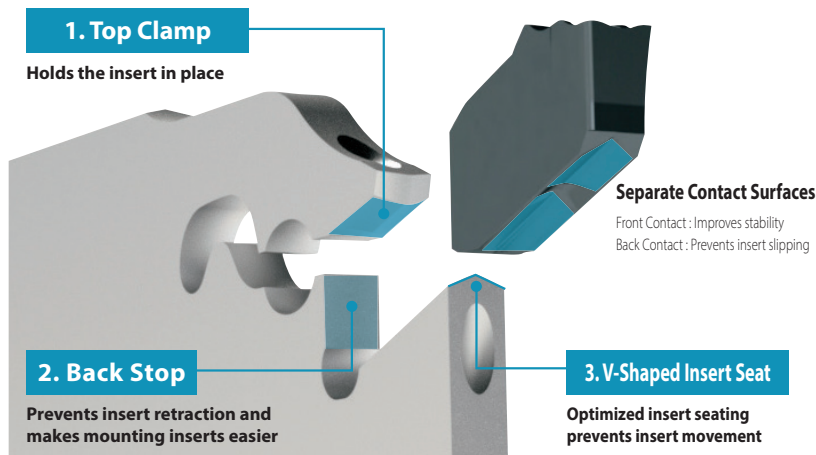
H



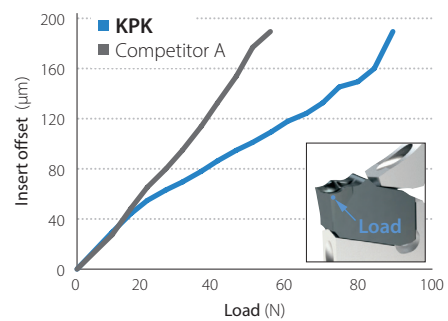
Cut-Off

## 2 Firm Insert Clamp Ensures Added Safety and Security

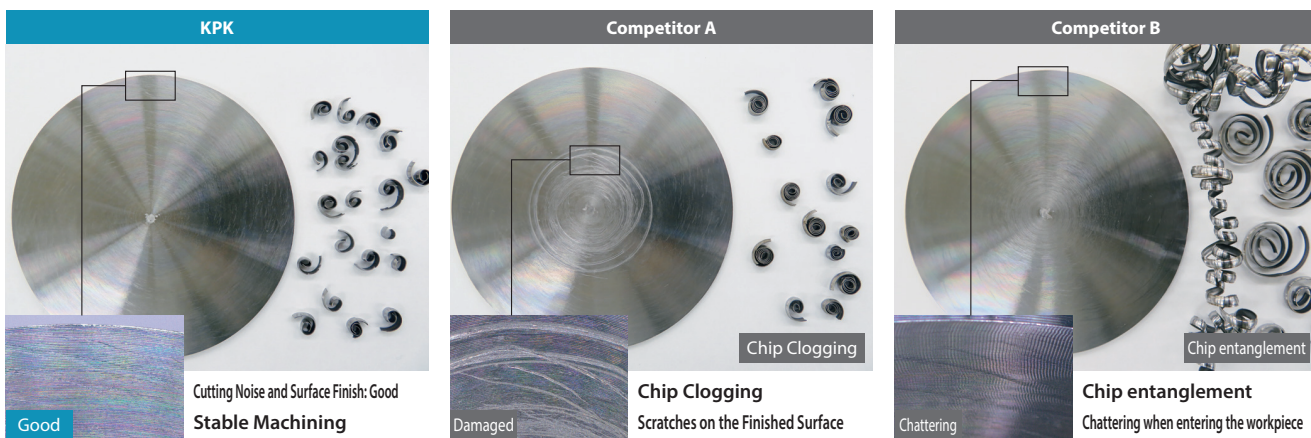
The firmly secured insert uses three contact surfaces to eliminate sliding or chattering



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

H44

### 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**

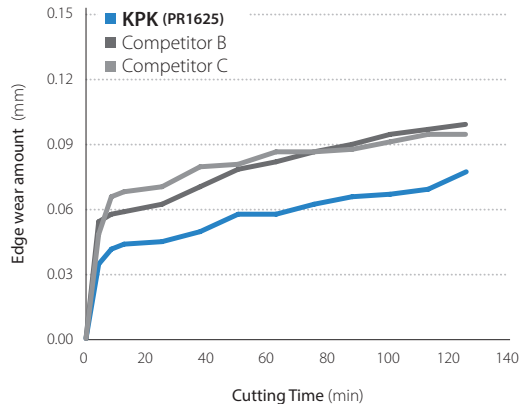
**Insert grade**  
 For Steel : PR1625  
 For Stainless steel : PR1535  
 For Cast Iron and Aluminum : GW15



**For Tough edge and High-feed machining  
PH Chipbreaker**

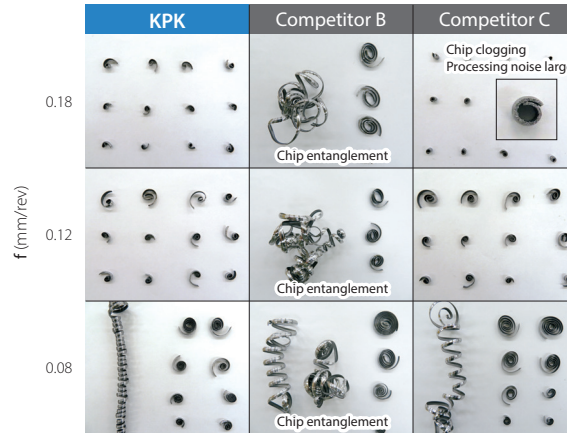
**Insert grade**  
 For Steel : PR1625  
 For Stainless steel : PR1535

**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)



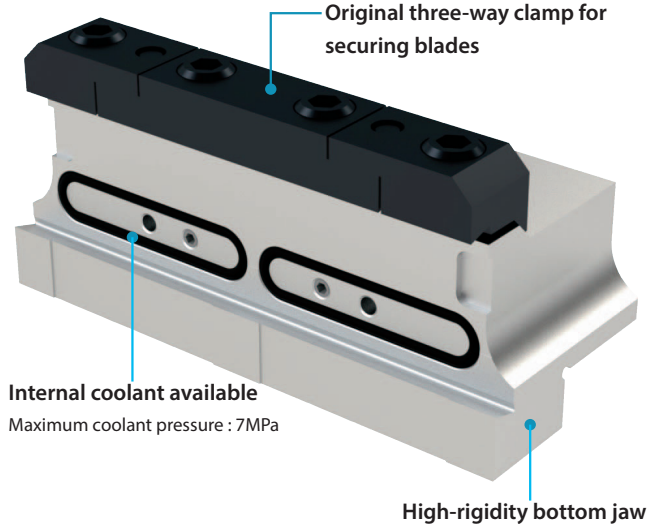
Cutting Conditions :  $n = 780 \text{ min}^{-1}$  (constant),  $V_c \sim 120 \text{ m/min}$ , Wet (External coolant)  
 Workpiece Material : SCM415 ( $\phi 50$ ) Edge Width : 3 mm (PM Chipbreaker)



Cut-Off

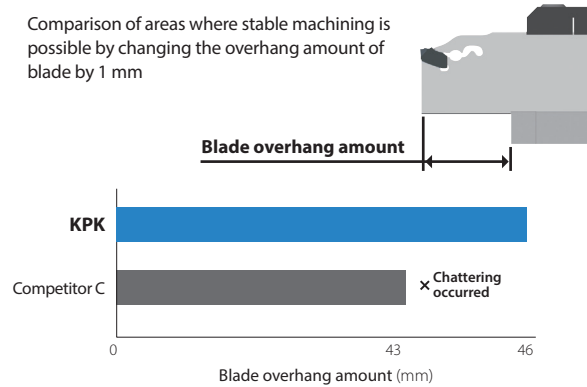
### 4 Rigid Toolblock Prevents Chattering and Provides Internal Coolant

#### 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


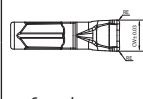

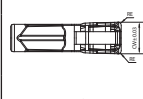

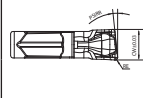


Cutting Conditions :  $n = 650 \text{ min}^{-1}$  (constant),  $V_c \sim 100 \text{ m/min}$ ,  $f = 0.12 \text{ mm/rev}$   
 Wet (Internal Coolant : Normal pressure) Workpiece Material : SCM435( $\phi 50$ ),  
 Edge Width : 3 mm (PM Chipbreaker)

**Check** KTKTB type is compatible with internal coolant with an optional internal connector. (~ 1 MPa)

\*Refer to page H56 for the supply method (Type C).

PKM

Insert		Description	No. of edges	Dimension (mm)		Angle (°)	Tolerance (mm)		Carbide			Applicable toolholder ● H48, H49, H55, H56
				CW	RE	PSIR%	CW min.	CW max.	PVD	-		
									PR1535	PR1625	GW15	
									●	●	●	P
									●	●	●	M
									●	●	●	K
									●	●	●	N
 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	1	2	0.2	-	-0.03	+0.03	●	●	●	KPKB19-2, KPKB26-2(JCT) KPKB32-2(JCT), KPKH%L...2020K-2(JCT)
		PKM 24N-020PM	1	2.4	0.2	-	-0.03	+0.03	●	●	●	KPKB19-2, KPKB26-2(JCT) KPKB32-2(JCT), KPKH%L...2020K-2(JCT)
		PKM 30N-025PM	1	3	0.25	-	-0.03	+0.03	●	●	●	KPKB26-3(JCT), KPKB32-3(JCT) KPKH%L...-3(JCT), KPKH%L...-3D45
		PKM 40N-030PM	1	4	0.3	-	-0.03	+0.03	●	●	●	KPKB26-4(JCT), KPKB32-4(JCT) KPKH%L...-4(JCT), KPKH%L...-4D45
		PKM 48N-030PM	1	4.8	0.3	-	-0.03	+0.03	●	●	●	KPKB26-5(JCT), KPKB32-5(JCT) KPKH%L...2525M-5
		PKM 50N-030PM	1	5	0.3	-	-0.03	+0.03	●	●	●	KPKB26-5(JCT), KPKB32-5(JCT) KPKH%L...2525M-5
		PKM 60N-035PM	1	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%L...2020K-2(JCT)
		PKM 30N-030PH	1	3	0.3	-	-0.03	+0.03	●	●	●	KPKB26-3(JCT), KPKB32-3(JCT) KPKH%L...-3(JCT), KPKH%L...-3D45
		PKM 40N-030PH	1	4	0.3	-	-0.03	+0.03	●	●	●	KPKB26-4(JCT), KPKB32-4(JCT) KPKH%L...-4(JCT), KPKH%L...-4D45
		PKM 50N-030PH	1	5	0.3	-	-0.03	+0.03	●	●	●	KPKB26-5(JCT), KPKB32-5(JCT) KPKH%L...2525M-5
		PKM 60N-040PH	1	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	1	2	0.2	6	-0.03	+0.03	●	●	●	KPKB19-2, KPKB26-2(JCT) KPKB32-2(JCT), KPKH%L...2020K-2(JCT)
		PKM 24R-020PM-6D 24L-020PM-6D	1	2.4	0.2	6	-0.03	+0.03	●	●	●	KPKB19-2, KPKB26-2(JCT) KPKB32-2(JCT), KPKH%L...2020K-2(JCT)
		PKM 30R-025PM-6D 30L-025PM-6D	1	3	0.25	6	-0.03	+0.03	●	●	●	KPKB26-3(JCT), KPKB32-3(JCT) KPKH%L...-3(JCT), KPKH%L...-3D45
		PKM 40R-030PM-6D 40L-030PM-6D	1	4	0.3	6	-0.03	+0.03	●	●	●	KPKB26-4(JCT), KPKB32-4(JCT) KPKH%L...-4(JCT), KPKH%L...-4D45
		PKM 50R-030PM-6D 50L-030PM-6D	1	5	0.3	6	-0.03	+0.03	●	●	●	KPKB26-5(JCT), KPKB32-5(JCT) KPKH%L...2525M-5

Handed insert shows Right-hand

● : Standard item

H46

### Lead Angle Direction and Usage

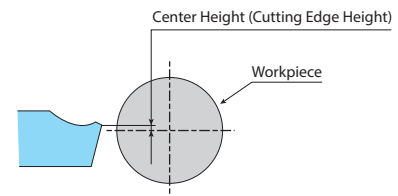
1. If there is no restriction on the finished shape, use an insert without lead angle.
2. Insert with lead angle is recommended to prevent remaining boss.
3. If you want to make the remaining boss smaller when machining small or thin parts, use insert with lead angle.

	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)	

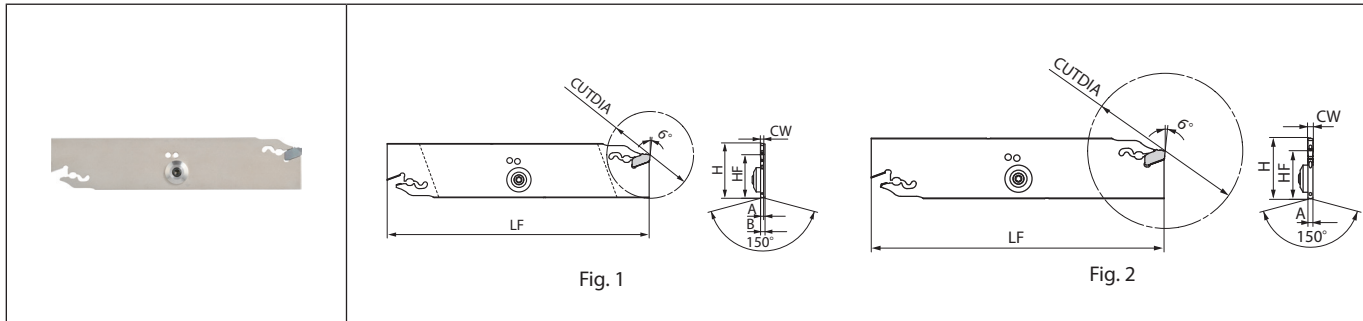
### Caution

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.



Cut-Off

**KPKB-JCT** (Coolant-through blades)



with coolant supply | Applicable Pressure : ~7MPa

**Toolholder dimensions**

Description	Availability	Dimension (mm)							Coolant hole Fig.	Spare parts				Applicable inserts H46	Applicable tool block H50, H51
		CUTDIA	A	B	H	HF	LF	CW		Coolant cap	Releasing wrench	Screw	Wrench		
KPKB 26-1JCT	●	35	1.4	2.6	26	21.4	110	1.6	1	CCP-4	LPW-5	SB-4065TR	FT-15	PKM16...	KPKTB...-26JCT KTKTB...-26
KPKB 26-2JCT	●	50	1.8					2							
KPKB 26-3JCT	●	75	2.6	2.4											
KPKB 26-4JCT	●	80	3.4	4											
KPKB 26-5JCT	●	80	4.2	4.8	5	2	2	CCP-4	LPW-5	SB-4065TR	FT-15	Coolant cap screw Tightening torque 3.0 N-m	PKM48...	PKM50...	
KPKB 32-1JCT	●	35	1.4	2.6	32	25	150	1.6	1	CCP-4	LPW-5	SB-4065TR	FT-15	PKM16...	KPKTB...-32JCT KTKTB...-32 KTKTBF...-32
KPKB 32-2JCT	●	50	1.8					2							
KPKB 32-3JCT	●	100	2.6	2.4											
KPKB 32-4JCT	●	100	3.4	4											
KPKB 32-5JCT	●	120	4.2	4.8	5	2	2	CCP-4	LPW-5	SB-4065TR	FT-15	Coolant cap screw Tightening torque 3.0 N-m	PKM48...	PKM50...	
KPKB 32-6JCT	●	120	5.4	6											

See page H52 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 H57

**Minimum /maximum overhang length while using internal coolant**

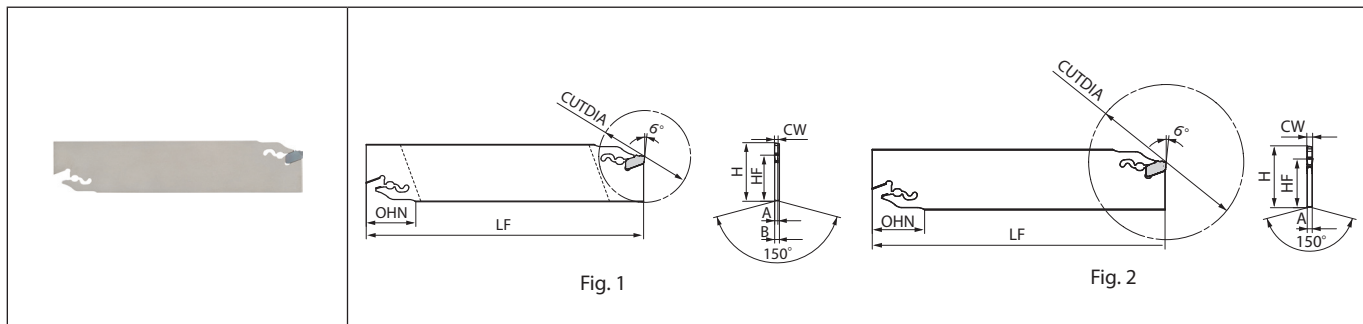
Description	Overhang length		
	min.	max.	
	Blade / Toolblocks		
KPKB26-1JCT	15	34.5	
KPKB26-2/3/4JCT	20	40	
KPKB26-5JCT	23	43	
KPKB32-1JCT	KPKTB20-32JCT	18	49
	KPKTB25-32JCT	13	
	KPKTB32-32JCT		
KPKB32-2/3/4JCT	KPKTB20-32JCT	27.5	59
	KPKTB25-32JCT	22.5	
	KPKTB32-32JCT		
KPKB32-5/6JCT	KPKTB20-32JCT	31.5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

● : Standard item

**H48**



KPKB



Toolholder dimensions

Description	Availability	Dimension (mm)							Coolant hole	Fig.	Spare parts Releasing wrench	Applicable inserts H46	Applicable tool block H50, H51		
		CUTDIA	A	B	H	HF	LF	CW							
KPKB 19-1	●	32	1.4	2.6	19	15.7	86	1.6	No	1	LPW-5	PKM16... PKM20... PKM24...	KTKTB..-19		
	●	40	1.8	-				2						2.4	
KPKB 26-1	●	35	1.4	2.6	26	21.4	110	1.6	No	2	LPW-5	PKM16... PKM20... PKM24... PKM30... PKM40... PKM48... PKM50...	KPKTB..-26JCT KTKTB..-26		
	●	50	1.8	2				2.4							
	●	75	2.6	-				3						4	
	●	80	3.4	-				4						4.8	5
	●	80	4.2	-				4.8						5	
KPKB 32-1	●	35	1.4	2.6	32	25	150	1.6	No	1	LPW-5	PKM16... PKM20... PKM24... PKM30... PKM40... PKM48... PKM50...	KPKTB..-32JCT KTKTB..-32 KTKTBF..-32		
	●	50	1.8					2						2.4	
	●	100	2.6					3						4	
	●	100	3.4					4						4.8	5
	●	120	4.2					4.8						5	
	●	120	5.4					6						6	

See page H52 for insert mounting and removal instructions  
H: Length between virtual vertices

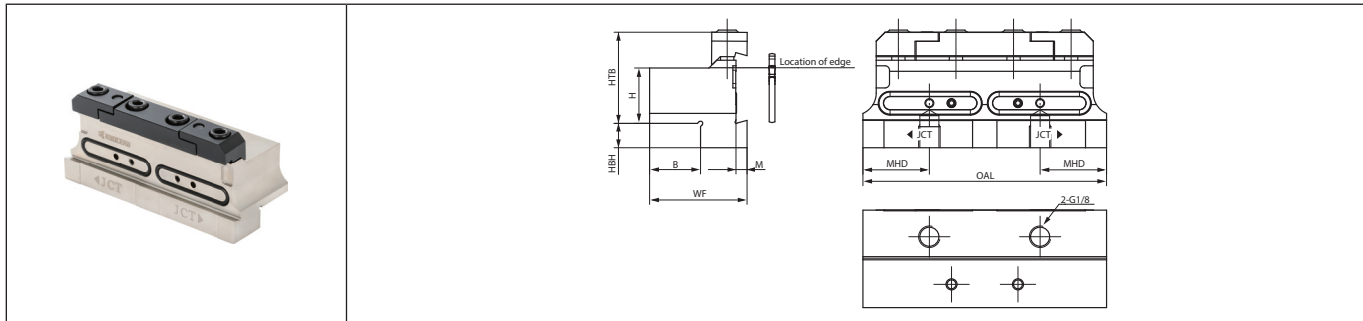
Recommended cutting conditions H57



Cut-Off

● : Standard item

**KPKTB-JCT** (Coolant-through type)



**Toolholder dimensions**

Description	Availability	Dimension (mm)									Coolant hole	Spare parts						Applicable blade ● G140 H48 H49 H60
		H	B	HBH	HTB	M	MHD	OAL	WF	Clamp bolt		Clamp set (separate type)	O-ring	Plug	Screw	Wrench		
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			25	100	40	Yes		BCS-3	GR-026		HS4X4			KPKB32-__JCT, KTKB32-__, KFTB%/L...-4S, KFTB%/L...-5S
25-32JCT	●	25	23	11	41	5	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 H54 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.)

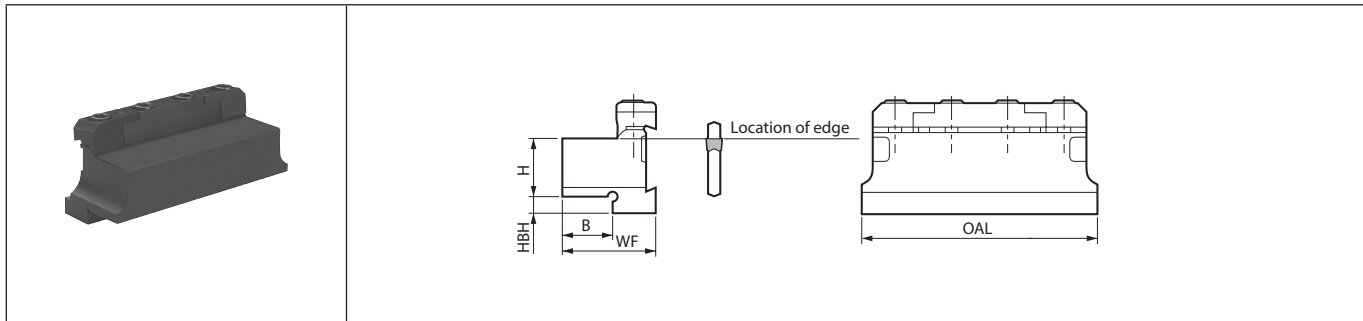


Cut-Off

● : Standard item

**H50**

**KTKTB**



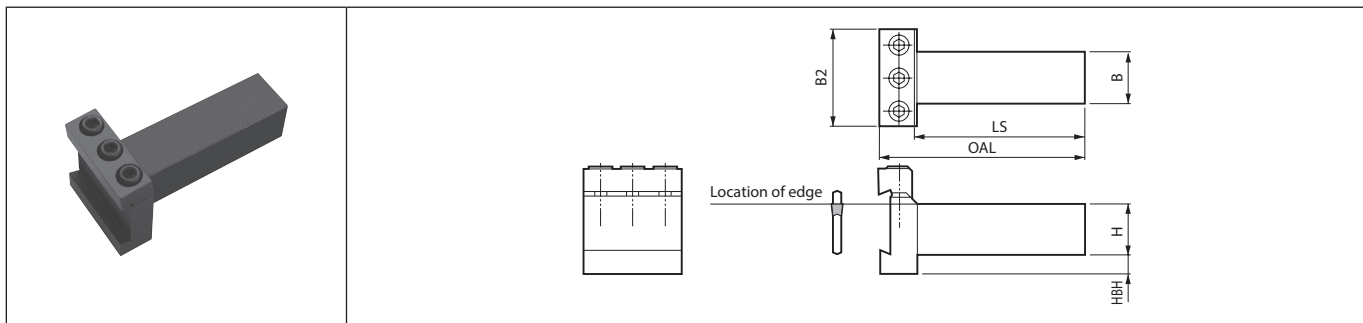
**Toolholder dimensions**

Description	Availability	Dimension (mm)					Spare parts				Applicable blade	
							Clamp bolt	Clamp set (integral type)	Clamp set (separate type)	Wrench	Cut-off	Face grooving
		H	B	HBH	OAL	WF						
KTKTB 16-19	●	16	15.5	4	76	29.5	HH5X25	BCS-1	-	LW-4	KPKB19-_ KTKB19-1SS, KTKB19-2S	-
KTKTB 20-19	●	20	19			34						
KTKTB 16-26	●	16	15.5	13	86	31.5	HH6X30	-	BCS-2	LW-5	KPKB26-_(JCT) KTKB26-1SS, KTKB26-_ _S	-
KTKTB 20-26	●	20	19	9		36						
KTKTB 20-32	●	20	19	13	100	38	HH6X30	-	BCS-3	LW-5	KPKB32-_(JCT) KTKB32-1SS, KTKB32-_ KTKB%L32-_ _S	KFTB%L...-4S KFTB%L...-5S
KTKTB 25-32	●	25	23	8	110	42			BCS-4			
KTKTB 32-32	●	32	29	5		48						



Cut-Off

**KTKTBF**



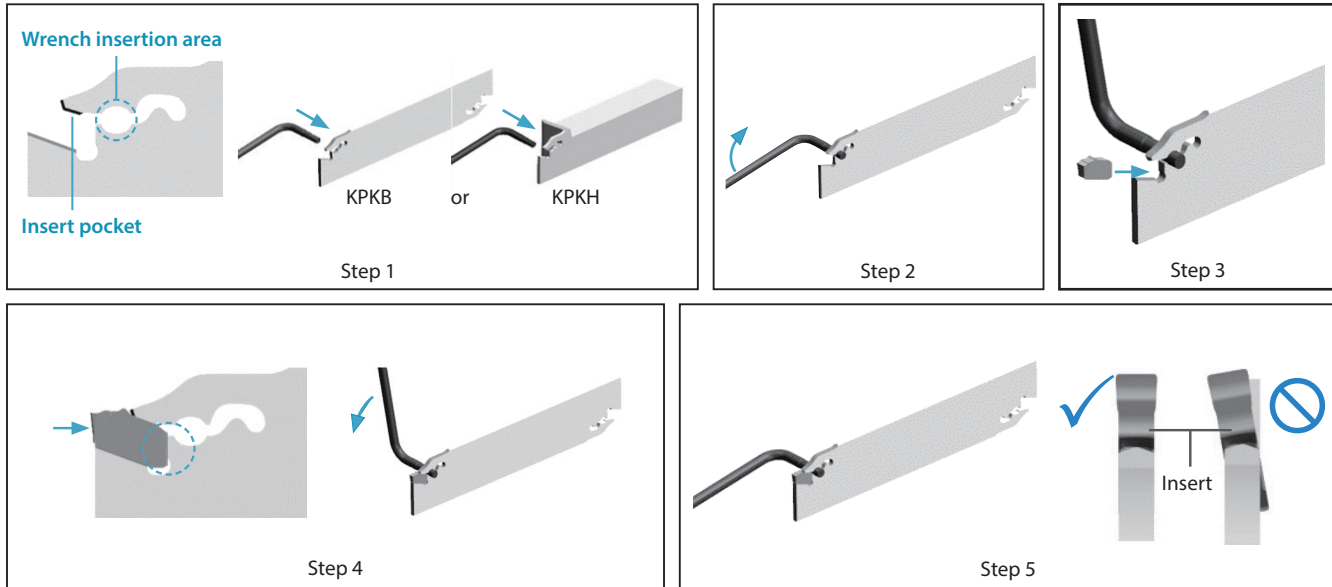
**Toolholder dimensions**

Description	Availability	Dimension (mm)						Spare parts			Applicable blade	
								Clamp bolt	Clamp set (integral type)	Wrench	Cut-off	Face grooving
		H	B	B2	HBH	LS	OAL					
KTKTBF 25-32	●	25	25	48	9.5	84.5	102	HH6X30	BCS-5	LW-5	KPKB32-_(JCT) KTKB32-1SS, KTKB32-_ KTKB%L32-_ _S	KFTB%L...-4S KFTB%L...-5S
KTKTBF 32-32	●	32	32		2.5	99.5	117					

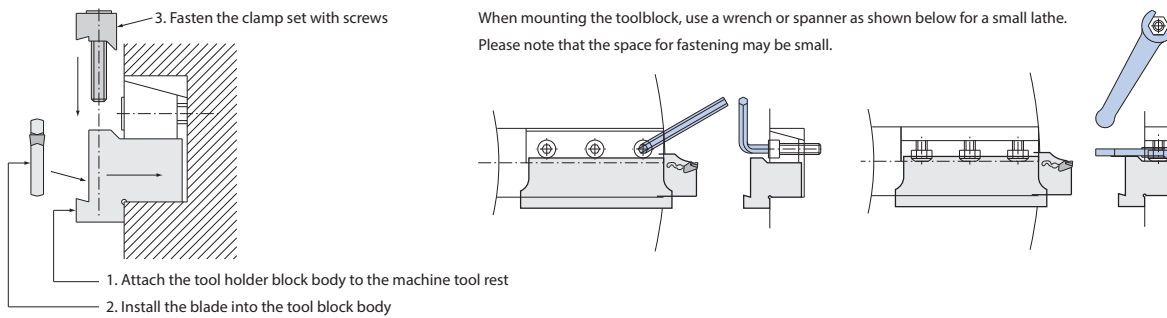
● : Standard item

## 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.

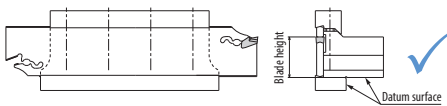


## Installation Guide

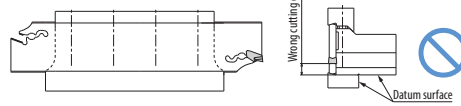


### How to install the tool holder block and blade

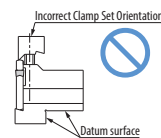
#### Correct blade installation



#### Incorrect blade installation



#### Incorrect Clamp Set Orientation

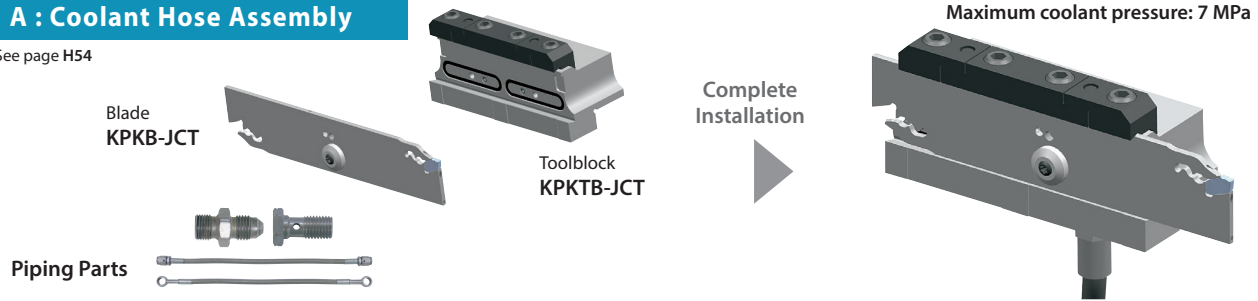


If the clamp set is mounted in the reverse direction, a large gap is created between the tool holder block main body and the clamp set as shown in the left figure. If you continue to use the product, the blade may break off. Reinstall in the correct orientation.

**Internal coolant supply method** Supplies according to machine specifications and requirements

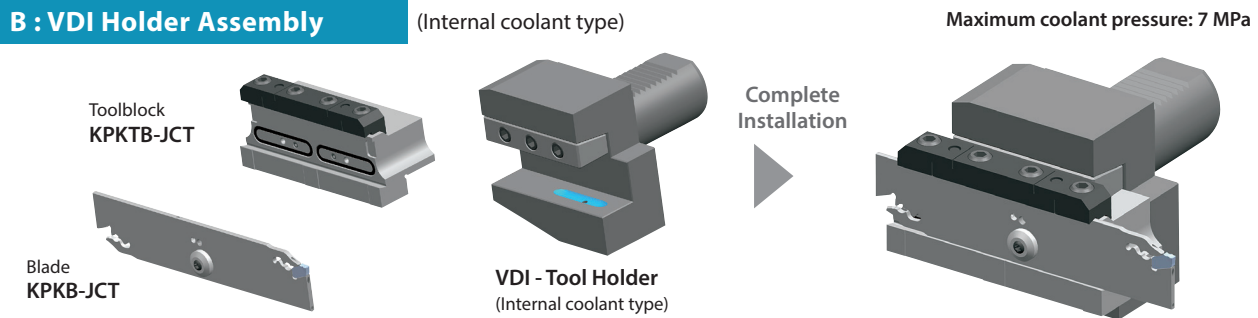
**A : Coolant Hose Assembly**

See page H54



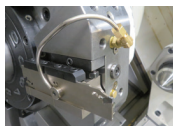
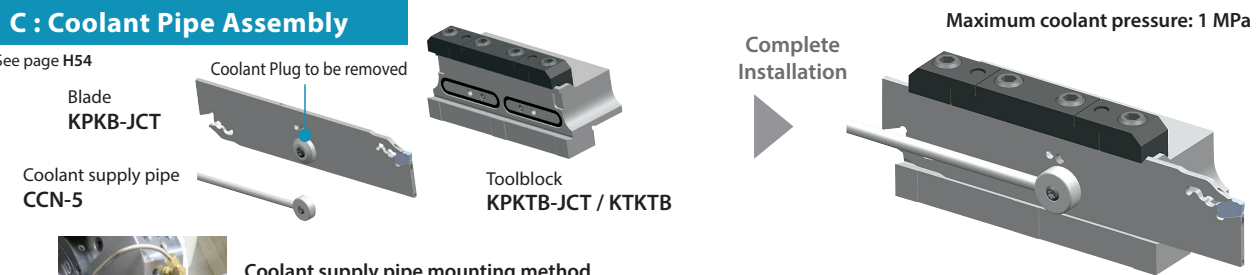
**B : VDI Holder Assembly**

(Internal coolant type)



**C : Coolant Pipe Assembly**

See page H54



**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.

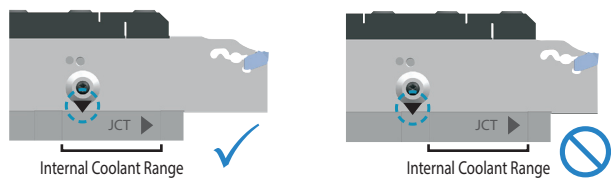


Cut-Off

**Cautions**

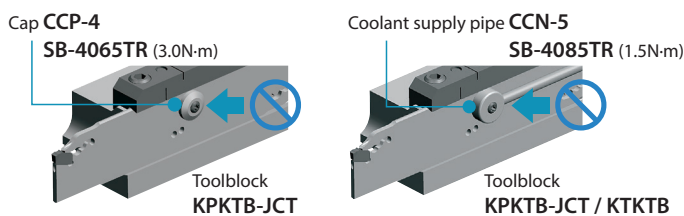
**When mounting KPKB-JCT blade**

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



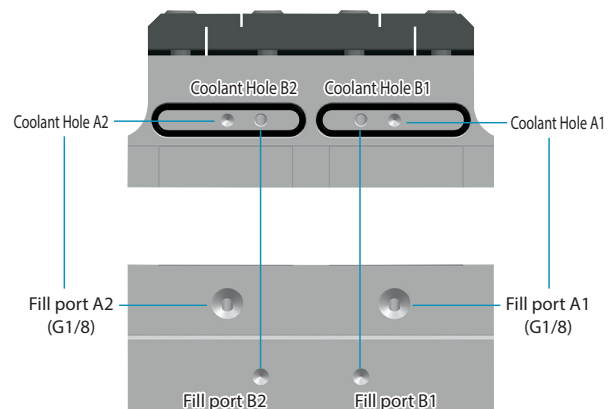
**When the cap and coolant supply pipe are mounted**

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



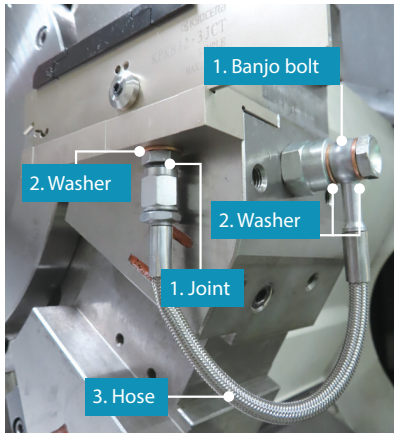
**When using a toolblock**

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).



**A : Coolant Hose Assembly**

**Connection method and piping parts**

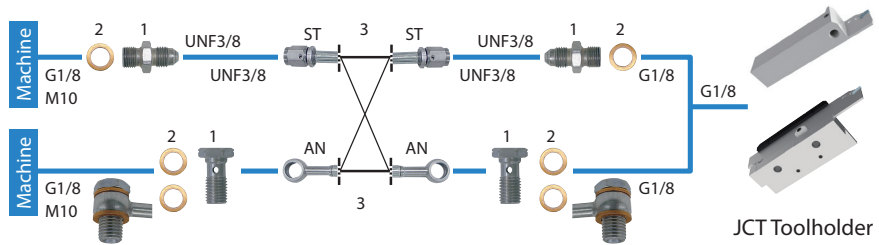


**Easy Connection with High Pressure Hose and Joint**

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**

**H**



Cut-Off

**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	
Banjo bolt (for angled hose)	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
Straight/Straight	HS-ST-ST-200	●	UNF3/8	UNF3/8	200
	HS-ST-ST-250	●			250
Straight/Angled	HS-ST-AN-200	●	UNF3/8	(Banjo bolt)	200
	HS-ST-AN-250	●			250
Angled/Angled	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

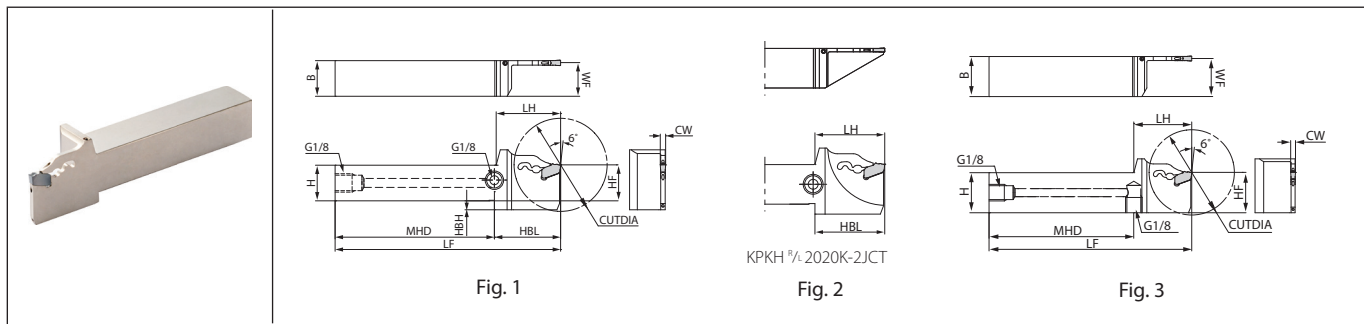
Shape	Description	Stock	Dimension				Parts (Screw)
			A	B	C	D	
	CCN-5	●	190	16	5	6	SB-4085TR

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

● : Standard item



**H54**

**KPKH-JCT** (Coolant-through holders)



Right-hand shown

**Toolholder dimensions**

Description	Availability		Dimension (mm)													Coolant hole	Spare parts		Applicable inserts H46
	R	L	CUTDIA	H	B	LH	MHD	HF	HBH	HBL	LF	WF	CW	Fig.	Plug		Releasing wrench		
																			
KPKH <sup>®</sup> 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 <sup>®</sup> L 2020K-3JCT 2525K-3JCT	●	●	52	20	20	36	88	20	5	37	125	18.75	3	Yes	1	HSG1/8X8.0	LPW-5	PKM30...	
	●	●	53	25	25		89	25	-	-		23.75							
KPKH <sup>®</sup> L 2020K-4JCT 2525K-4JCT	●	●	62	20	20	42.5	83	20	5	42	125	18.35	4	Yes	1	HSG1/8X8.0	LPW-5	PKM40...	
	●	●	68	25	25		82	25	-	-		23.35							

See page H52 for insert mounting and removal instructions  
See page H54 for coolant piping parts.

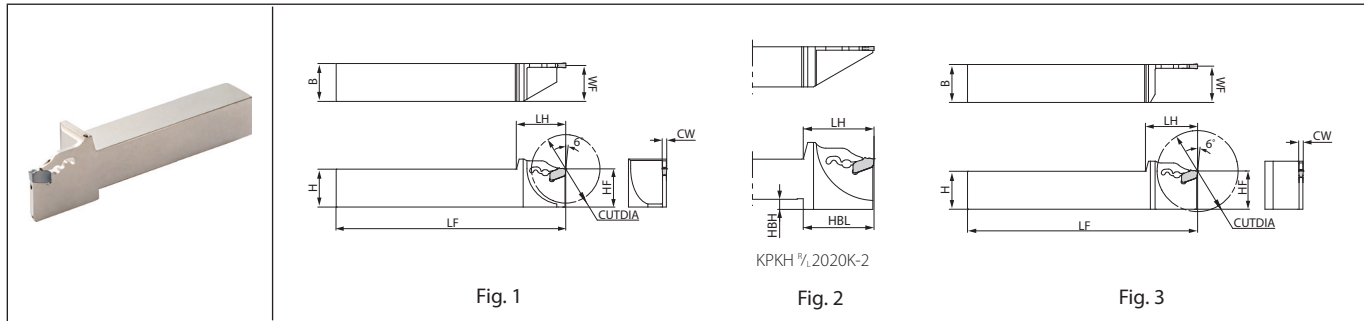
Recommended cutting conditions H57



Cut-Off

● : Standard item

KPKH



Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)											Coolant hole	Fig.	Spare parts		Applicable inserts ● H46
	R	L	CUTDIA	H	B	LH	HF	HBH	HBL	LF	WF	CW	Releasing wrench			Fig.		
																	Fig.	
KPKH%L 2020K-2	●	●	38	20	20	33.1	20	5	33.1	125	19.15	2	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	3		PKM40...		
2525M-4	●	●	68	25	25					150	23.35							
KPKH%L 2525M-5	●	●	79	25	25	45.9	25			150	22.95	4.8	No	5	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	1	LPW-5	PKM40...		
2525M-4D45	●	●	45	25	25					150	23.35							

See page H52 for insert mounting and removal instructions

Recommended cutting conditions ● H57

H



Cut-Off

● : Standard item

H56



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.

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	-	0.05 – 0.12	0.08 – 0.15	0.08 – 0.18	
Cast iron	-	-	-	-	-	-	
Aluminum Alloys	-	-	-	-	-	-	
Brass	-	-	-				

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



Cut-Off

TKN/TK

Insert		Description		Carbon steel / Alloy steel		Stainless steel		Cast iron		Non-ferrous metals		P		M		K		N	
				No. of edges	Dimension (mm)		Angle (°)	Tolerance (mm)		Carbide				Cermet		Applicable toolholder H60, H61			
					CW	RE		PSIR%/L	CW min.	CW max.	CR9025	PR1535	PR930	KW10	TN620				
		TKN 1.6	1.6	0.15	-	-0.05	+0.05	●	●	●	●	●	●	KTKB...-1SS					
		TKN 2	2.2	0.2	-	-0.05	+0.05	●	●	●	●	●	●	KTKB19-2S, KTKB26-2S, KTKB32-2S, KTKH%/L...-2S					
		TKN 2.4	2.4	0.2	-	-0.05	+0.05	●	●	●	●	●	●	KTKB26-3S, KTKB32-3S, KTKH%/L...-3S, KTKH%/L...-3T.S					
		TKN 3	3.1	0.25	-	-0.05	+0.05	●	●	●	●	●	●	KTKB26-4S, KTKB32-4S, KTKH%/L...-4S, KTKH%/L...-4T2S					
		TKN 4	4.1	0.3	-	-0.05	+0.05	●	●	●	●	●	●	KTKB26-5S, KTKB32-5S, KTKH%/L.2525M-5S					
		TKN 4.8	4.8	0.3	-	-0.05	+0.05	●	●	●	●	●	●	KTKB26-5S, KTKB32-5S, KTKH%/L.2525M-5S					
		TKN 5	5.1	0.3	-	-0.05	+0.05	●	●	●	●	●	●	KTKB26-5S, KTKB32-5S, KTKH%/L.2525M-5S					
		TKN 6	6.4	0.35	-	-0.05	+0.05	●	●	●	●	●	●	KTKB32-6S					
		TKN 8	8	0.4	-	-0.05	+0.05	●	●	●	●	●	●	KTKB%/L.32-8S					
TKN 9	9.6	0.45	-	-0.05	+0.05	●	●	●	●	●	●	KTKB%/L.32-9S							
		TKN 1.6-P	1.6	0.2	-	-0.05	+0.05	●	●	●	●	●	KTKB...-1SS						
		TKN 2-P	2.2	0.2	-	-0.05	+0.05	●	●	●	●	●	●	KTKB19-2S, KTKB26-2S, KTKB32-2S, KTKH%/L...-2S					
		TKN 3-P	3.1	0.25	-	-0.05	+0.05	●	●	●	●	●	●	KTKB26-3S, KTKB32-3S, KTKH%/L...-3S, KTKH%/L...-3T.S					
		TKR 1.6	1.6	0.15	8	-0.05	+0.05	●	●	●	●	●	KTKB...-1SS						
		TKL 1.6	1.6	0.15	8	-0.05	+0.05	●	●	●	●	●	KTKB...-1SS						
		TKR 2	2.2	0.2	8	-0.05	+0.05	●	●	●	●	●	●	KTKB19-2S, KTKB26-2S, KTKB32-2S, KTKH%/L...-2S					
		TKL 2	2.2	0.2	8	-0.05	+0.05	●	●	●	●	●	●	KTKB19-2S, KTKB26-2S, KTKB32-2S, KTKH%/L...-2S					
		TKR 2.4	2.4	0.2	8	-0.05	+0.05	●	●	●	●	●	●	KTKB26-3S, KTKB32-3S, KTKH%/L...-3S, KTKH%/L...-3T.S					
		TKL 2.4	2.4	0.2	8	-0.05	+0.05	●	●	●	●	●	●	KTKB26-3S, KTKB32-3S, KTKH%/L...-3S, KTKH%/L...-3T.S					
		TKR 3	3.1	0.25	8	-0.05	+0.05	●	●	●	●	●	●	KTKB26-3S, KTKB32-3S, KTKH%/L...-3S, KTKH%/L...-3T.S					
TKL 3	3.1	0.25	8	-0.05	+0.05	●	●	●	●	●	●	KTKB26-3S, KTKB32-3S, KTKH%/L...-3S, KTKH%/L...-3T.S							
TKR 4	4.1	0.3	8	-0.05	+0.05	●	●	●	●	●	●	KTKB26-4S, KTKB32-4S, KTKH%/L...-4S, KTKH%/L...-4T2S							
TKL 4	4.1	0.3	8	-0.05	+0.05	●	●	●	●	●	●	KTKB26-4S, KTKB32-4S, KTKH%/L...-4S, KTKH%/L...-4T2S							
TKR 5	5.1	0.3	8	-0.05	+0.05	●	●	●	●	●	●	KTKB26-5S, KTKB32-5S, KTKH%/L.2525M-5S							
TKL 5	5.1	0.3	8	-0.05	+0.05	●	●	●	●	●	●	KTKB26-5S, KTKB32-5S, KTKH%/L.2525M-5S							
		TKR 1.6-P	1.6	0.2	8	-0.05	+0.05	●	●	●	●	●	KTKB...-1SS						
		TKL 1.6-P	1.6	0.2	8	-0.05	+0.05	●	●	●	●	●	●	KTKB...-1SS					
		TKR 2-P	2.2	0.2	8	-0.05	+0.05	●	●	●	●	●	●	KTKB19-2S, KTKB26-2S, KTKB32-2S, KTKH%/L...-2S					
		TKL 2-P	2.2	0.2	8	-0.05	+0.05	●	●	●	●	●	●	KTKB19-2S, KTKB26-2S, KTKB32-2S, KTKH%/L...-2S					
		TKR 3-P	3.1	0.25	8	-0.05	+0.05	●	●	●	●	●	KTKB26-3S, KTKB32-3S, KTKH%/L...-3S, KTKH%/L...-3T.S						
		TKL 3-P	3.1	0.25	8	-0.05	+0.05	●	●	●	●	●	●	KTKB26-3S, KTKB32-3S, KTKH%/L...-3S, KTKH%/L...-3T.S					

Handed insert shows Right-hand

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

Inserts edge preparation

Edge preparation	Chamfer + R honed	Sharp edge	R honed
Standard chipbreaker	TN90 / PR1535 / CR9025 / PR660	PR930 / KW10	-
P-chipbreaker	-	-	TN620 / TN90 / CR9025 / PR1535 / PR660 / PR930 / KW10

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

● : Standard item

H58

### 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.

Hand of lead angle	N (Neutral)	R (Right-hand)	L (Left-hand)

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.

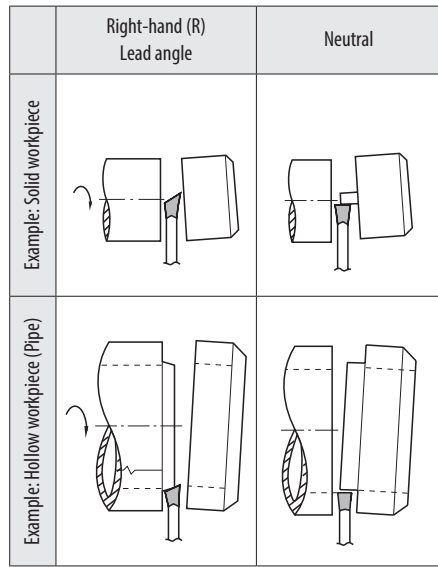


Fig.1

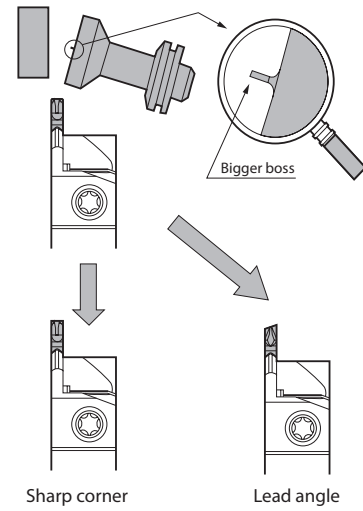


Fig.2

### Caution

1. For TKN and TK<sup>R/L</sup>, 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.

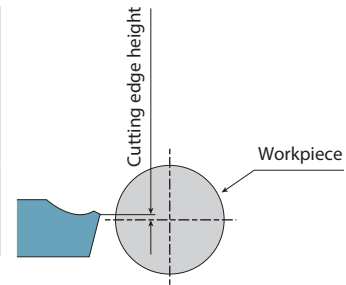


Fig. 3 (TKN, TK<sup>R/L</sup>)

### Set up (TKN / TK<sup>R/L</sup>)

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)

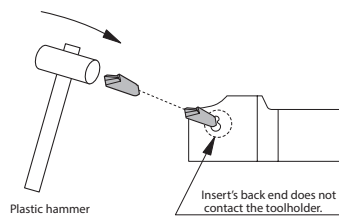


Fig.1: How to attach inserts

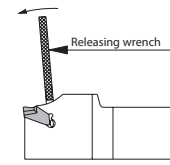
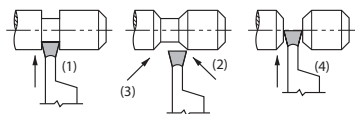


Fig.2: How to detach inserts

### Application example of cut-off

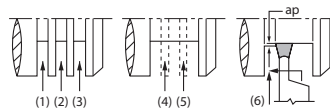
#### 1. Cut-off after chamfering

- (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)

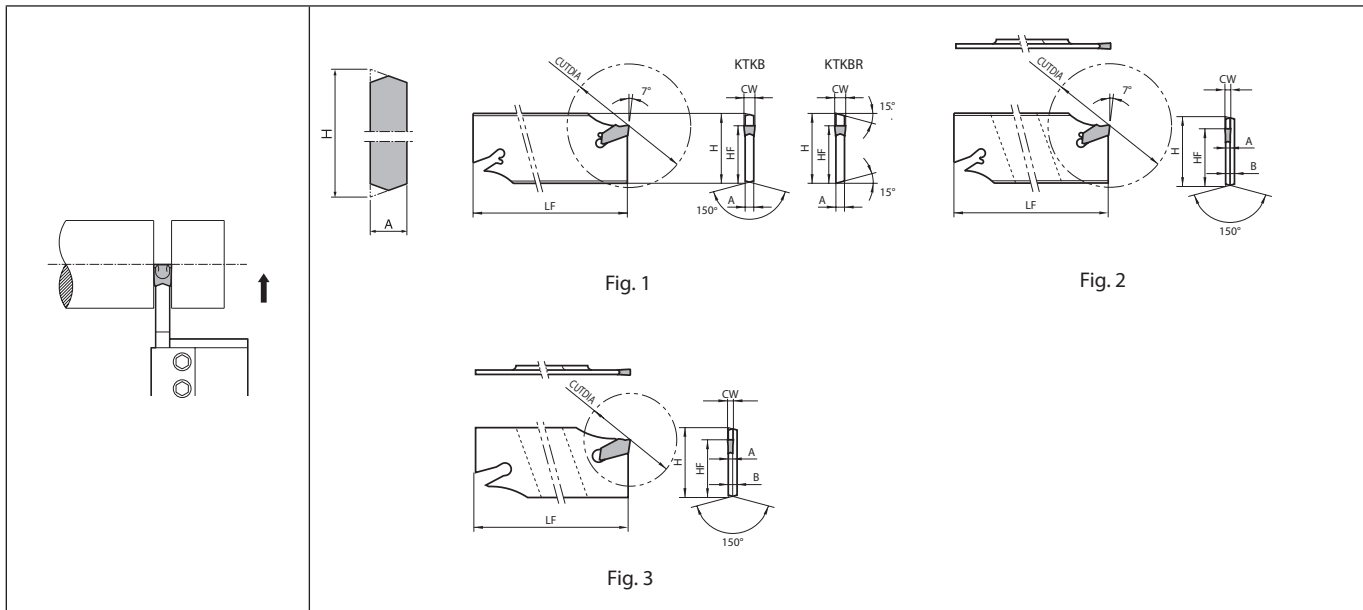


(In order to prevent both corners' unequal wear)




Cut-Off

KTKB



Cut-Off

Toolholder dimensions

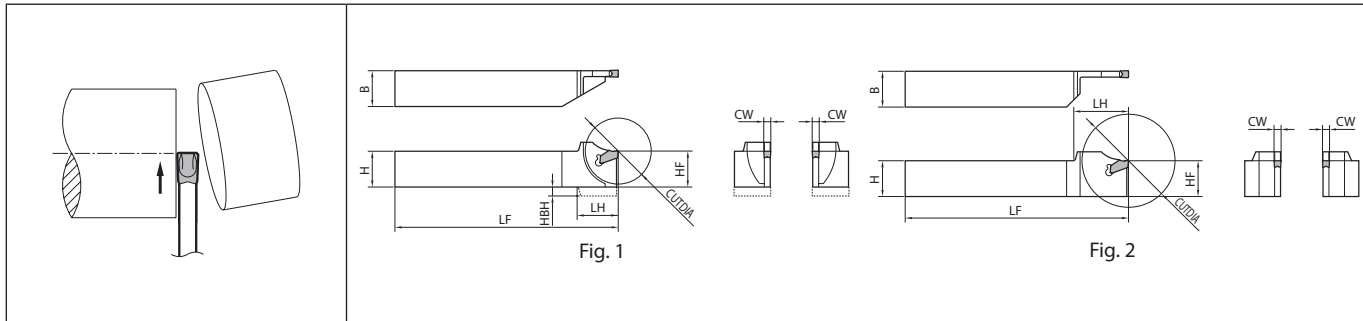
Description	Availability	Dimension (mm)							Fig.	Spare parts Releasing wrench 	Applicable inserts ➔ H58	Applicable tool block ➔ H50, H51	
		CUTD/A	A	B	H	HF	LF	CW					
KTKB 19-1SS 26-1SS 32-1SS	●	32			19	15.7	86		3	LTK-5	TKN1.6, TKN1.6-P TK <sup>°</sup> 1.6, TKR1.6-P	KTKTB16-19, KTKTB20-19 KTKTB16-26, KTKTB20-26, KPCTB20-26JCT KTKTB20-32, KTKTB25-32, KTKTB32-32 KTKTBF25-32, KTKTBF32-32, KPCTB20-32JCT KPCTB25-32JCT, KPCTB32-32JCT	
	●	35	1.2	2.4	26	21.4	110	1.6					
	●	35			32	25	150						
KTKB 19-2S	●	40	1.8	-	19	15.7	86	2.2 2.4	1			TKN2, TKN2-P TK <sup>°</sup> 2, TK <sup>°</sup> 2-P TKN2.4, TK <sup>°</sup> 2.4	KTKTB16-19, KTKTB20-19
KTKB 26-2S	●	50	1.8					2.2 2.4	1		TKN3, TKN3-P, TK <sup>°</sup> 3, TK <sup>°</sup> 3-P TKN4, TK <sup>°</sup> 4 TKN5, TK <sup>°</sup> 5	KTKTB16-26 KTKTB20-26 KPCTB20-26JCT	
KTKB 26-3S	●	75	2.6		26	21.4	110	3.1					
KTKB 26-4S	●	75	3.4					4.1					
KTKB 26-5S	●	80	4.2					4.8 5.1					
KTKB 32-2S	●	50	1.8	2.6				2.2 2.4	2		TKN2, TKN2-P, TK <sup>°</sup> 2, TK <sup>°</sup> 2-P TKN2.4, TK <sup>°</sup> 2.4	KTKTB20-32 KTKTB25-32 KTKTB32-32 KTKTBF25-32 KTKTBF32-32 KPCTB20-32JCT KPCTB25-32JCT KPCTB32-32JCT	
KTKB 32-3S	●	100	2.6		32	25	150	3.1					
KTKB 32-4S	●	100	3.4					4.1					
KTKB 32-5S	●	120	4.2					4.8 5.1					
KTKB 32-6S	●	120	5.4					6.4					
KTKBR 32-8S	R	120	6.8	-	32	25	150	8	1	TKN8			
KTKBL 32-8S	L	120	6.8	-	32	25	150	8					
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 H59.  
Dimension H shows virtual apex distance.

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

H60

KTKH



Right-hand shown

Toolholder dimensions

Description	Availability		Dimension (mm)										Fig.	Spare parts		Applicable inserts H58
			R	L	CUTDIA	H	B	LH	HF	HBH	LF	CW		Releasing wrench	Image of wrench	
KTKH% 1010F-2S 1212H-2S 1612H-2S 1616H-2S 2012K-2S 2020K-2S	●	●	28	10	10	18.6	10	5	80	2.2	2.4	1	LTK-5	TKN2 TKN2-P TK%2 TK%2-P TKN2.4 TK%2.4		
	●	●	31	16	12	19.8	12	4	100							
	●	●	36	20	12	22.8	20	-	125							
	●	●	36	20	12	22.8	20	-	125							
	●	●	36	20	12	22.8	20	-	125							
	●	●	36	20	12	22.8	20	-	125							
KTKH% 1612H-3S 1616H-3S 2012K-3S 2020K-3S 2525M-3S	●	●	35	16	12	21.7	16	4	100	3.1	2	1	LTK-5	TKN3 TKN3-P TK%3 TK%3-P		
	●	●	40	20	12	25.3	20	-	125							
	●	●	51	20	20	31	-	-	150							
	●	●	52	25	25	31.5	25	-	150							
	●	●	52	25	25	31.5	25	-	150							
KTKH% 2012K-4S 2020K-4S 2525M-4S	●	●	43	20	12	26.3	20	-	125	4.1	2	2	LTK-5	TKN4 TK%4		
	●	●	59	20	20	35	-	-	150							
	●	●	66	25	25	38	25	-	150							
KTKH% 2525M-5S	●	●	77	25	25	43.5	25	-	150	5.1	2	2	LTK-5	TKN5 TK%5		
	●	●	77	25	25	43.5	25	-	150							
KTKH% 2020K-3T17S 2525M-3T22S	●	●	33	20	20	21.8	20	-	125	3.1	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	1	1	LTK-5	TKN4 TK%4		
	●	●	44	25	25	26.8	25	-	150							

How to attach inserts, See Page H59.



Cut-Off

● : Standard item

Recommended cutting conditions (TKN, TK<sup>R/L</sup>)

Workpiece material	Recommended insert grades (Vc: m/min)						Edge width CW (mm)					Remarks
	Cermets		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



Cut-Off