

Cut-Off

H1~H30

Product Lineup **H2**

Guide for Cut-Off **H3**

Summary of Cut-Off **H4~H5**

Cut-Off Toolholders (for small diameter cut-off) **H6~H11**

KTKF Lateral side screw clamp toolholder **H8**

KTKFS (for sub spindle tooling) Lateral side screw clamp toolholder **H10**

Cut-Off Toolholders (for 2-edge insert , KGD) **H12~H19**

KGD (for automatic lathe) Integral Toolholder **H14**

KGDS (for sub spindle tooling) Integral Toolholder **H15**

KGD Integral Toolholder **H16**

KGD-S Separate Toolholder **H17**

Cut-Off Toolholders (for 2-edge insert , KGM) **H20~H24**

KGM (for automatic lathe) Integral Toolholder **H22**

KGM Integral Toolholder **H22**

KGM-T Integral Toolholder **H23**

Cut-Off Toolholders (for 1-edge insert) **H25~H28**

KTKB-SS / KTKB-S Blade **H26**

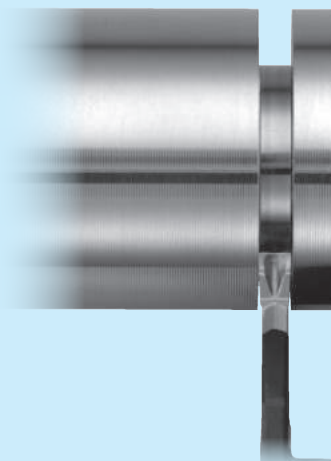
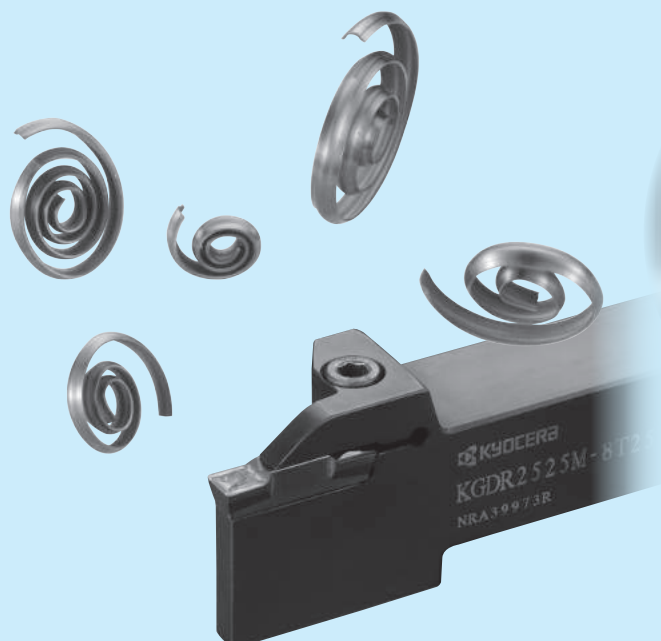
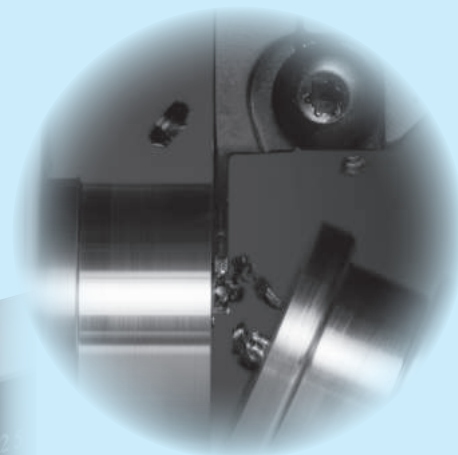
KTKTB / KTKTBF Toolblock **H27**

KTKH-S Integral Toolholder **H28**

Technical Information **H29**

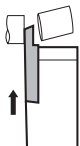
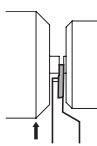
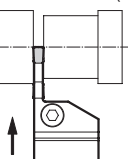
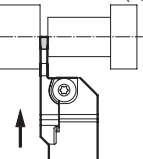
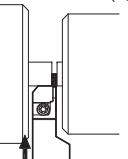
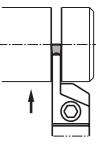
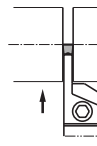
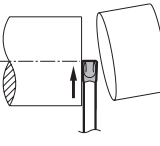
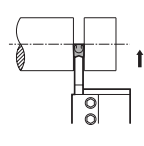
Recommended Cutting Conditions **H29**

Alternative Toolholder Reference Table for Cut-off Toolholder **H30**



Product Lineup

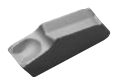
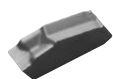
Product Lineup

For Small Diameter Cut-Off	For Automatic Lathe Cut-off Dia. φ5~φ12 ~φ6	KTKF (H8)  Edge Width:0.5~2.0mm		For sub spindle tooling Cut-off Dia. φ6~φ12 φ14~φ16	KTKFS (H10)  Edge Width:1.0~2.0mm
KGD	Bolt Clamp Cut-off Dia. φ12~φ50	KGD (H14)  Edge Width:1.3~4.0mm	KGD-S (H17)  Edge Width:2.0~4.0mm	For sub spindle tooling Cut-off Dia. ~φ24	KGDS (H15)  Edge Width:1.3~3.0mm
KGM	Bolt Clamp Cut-off Dia. φ18~φ60	KGM (H22)  Edge Width:1.5~4.0mm,3~8mm	KGM-T (H23)  Edge Width:2.0~6.0mm		
KTKB KTKH (1-edge)	Toolholder Type Cut-off Dia. φ30~φ79	KTKH-S (H28)  Edge Width:2.2~5.1mm		Blade type Cut-off Dia. φ32~φ120	KTKB-S(S) (H26)  Edge Width:1.6~9.6mm

H

Cut-off

Cut-Off Tools

Series Name	Shape	Advantage	Applications
For Small Diameter Cut-Off		1) Insert clamp is side screw type from lateral side 2) 2-edge insert 3) Max. Cut-off Dia. : φ16	1) For cut-off and grooving of small workpieces 2) For automatic lathe, small machine
KGD		1) Insert is clamped from top side 2) 1-edge and 2-edge inserts available 3) Integral type and separate type are available 4) Max. Cut-off Dia. : φ50	1) PM Chipbreaker ... For Cut-Off 2) PH Chipbreaker ... For Cut-Off (High Feed Rate) For Grooving 3) PG Chipbreaker ... For Cut-Off (for automatic lathe) Sharp-Cutting Oriented 4) PF Chipbreaker ... For Cut-Off (for automatic lathe) Low feed 5) PQ Chipbreaker ... For Cut-Off (for automatic lathe) Medium feed
KGM		1) Insert is clamped from top side 2) 1-edge and 2-edge inserts available 3) Max. Cut-off Dia. : φ60	1) For cut-off and grooving of small workpieces 2) For automatic lathe, small machine 3) TMR-Chipbreaker provides stable chip control up to high feed rate ranges
KTKB KTKH		1) Self-Clamping System Tap the insert lightly with a plastic hammer to set it in the pocket 2) 1-edge insert 3) Blade type and Integral Shank type 4) Max. Cut-off Dia. : φ120	1) For cut-off and deep grooving 2) Standard chipbreaker is general cut-off type Feed rate: over 0.1mm/rev P-Chipbreaker is for cut-off at low feed rates Feed rate: 0.03~0.08mm/rev  

Guide for Cut-Off

Tool Selection

		For Small Diameter Cut-Off	KGD	KGM	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 TKFS...S	GDM GDMS	GMM	TKN
	3. Use an angled insert to reduce the size of the remaining boss.	TKF...DR	GDM- R/L (● Fig. 2)	GMM- R/L (● Fig. 2)	TK R/L (● Fig. 1)
	4. Use a sharp-cornered lead-angled insert to make the remaining boss much smaller when machining small parts and thin parts.	TKF...DR	-	GMM- R/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 (θ) insert can reduce the burr size when cutting off. · When using a larger lead angle (θ), cutting force becomes smaller, but the feed rate should be reduced.		

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

Fig.1

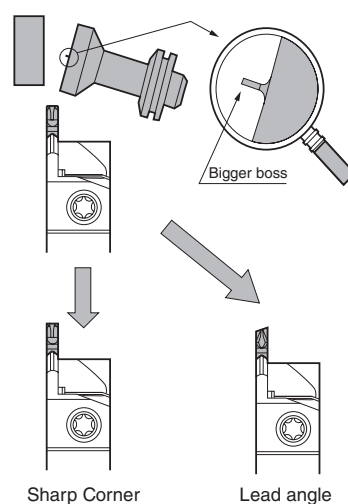


Fig.2



Caution

1. For TKN and TK R/L , set the cutting edge height 0.1~0.2mm 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.

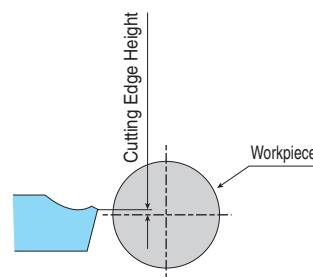
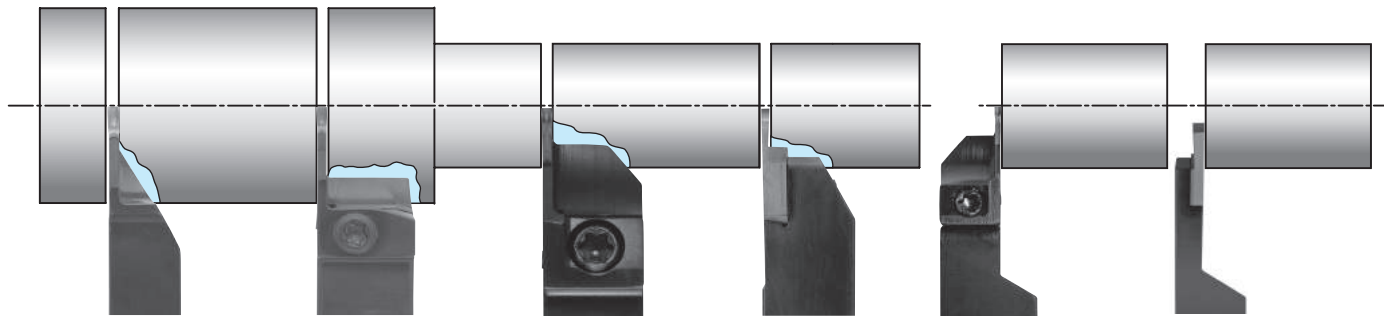


Fig.3 (TKN, TK R/L)

Summary of Cut-Off

Small Dia Cut-Off ~φ45

Small Shank



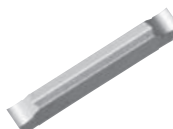
KTKH-S	KGM	KGD	KTKF	KGDS	KTKFS
Cut-off Dia.:~φ45 Shank:□10~25 Edge Width:2.2~4.1 Self Clamp	Cut-off Dia.:~φ32 Shank:□10~16 Edge Width:1.5~4.0 Top Clamp	Cut-off Dia.:~φ42 Shank:□10~20 Edge Width:1.3~4.0 Top Clamp	Cut-off Dia.:~φ16 Shank:□10~20 Edge Width:0.5~2.0 Lateral Side Clamp	Cut-off Dia.:~φ24 Shank:□16 Edge Width:1.3~3.0 Top Clamp	Cut-off Dia.:~φ16 Shank:□10~12 Edge Width:1.0~2.0 Lateral Side Clamp



Chipbreaker for General Cut-Off

Chipbreaker for Low Feed Cut-Off

2-edge



Sharp Cutting PG Chipbreaker



Low Feed PF Chipbreaker



Medium Feed PQ Chipbreaker



(15° Lead Angle)



(15° Lead Angle)



(15° Lead Angle)

Chipbreaker edge shape	Cut-off (Self Clamp) H25		
	General Cut-Off		Low Feed Cut-Off
	Chamfer + Honed	Sharp Edge	R honed



KTKH-S H28
(Self Clamp)

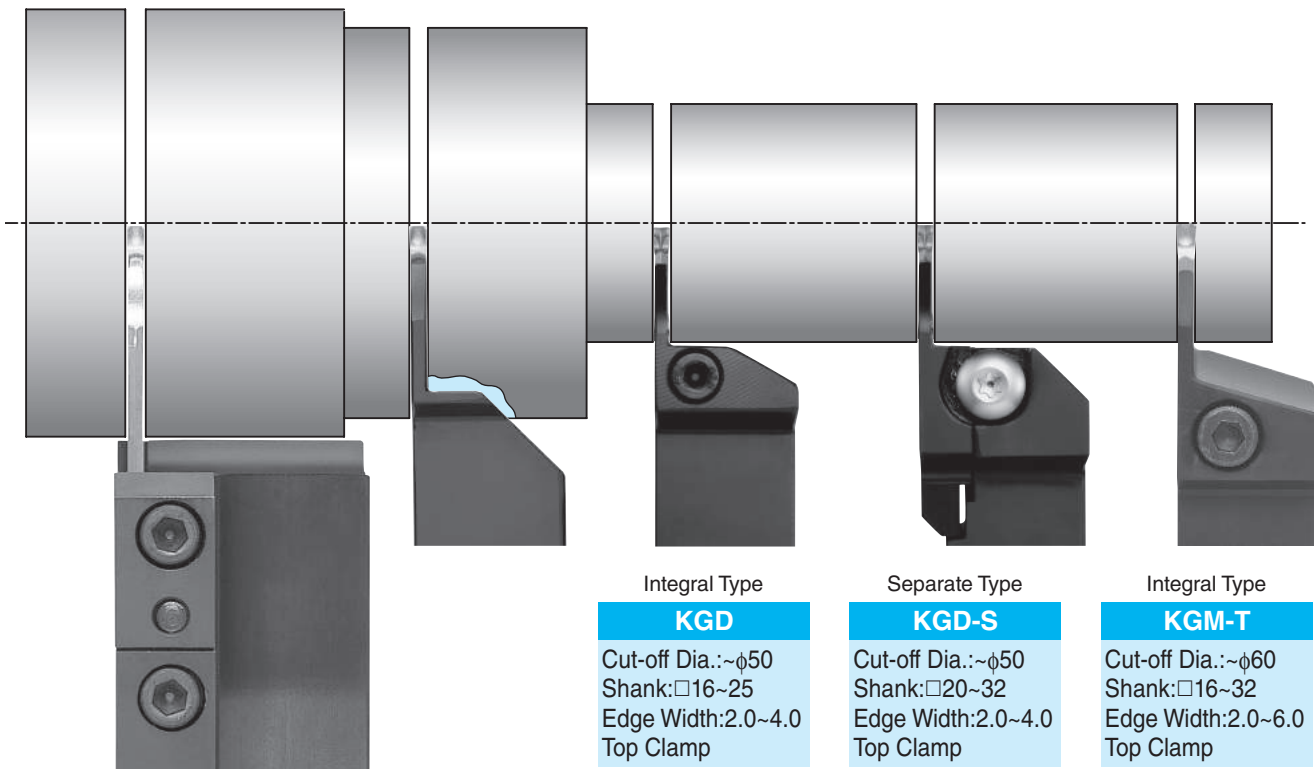


KGD H14
(Top Clamp)



KTKF H8
(Lateral Side Clamp)

■ **General Cut-Off** ~ $\phi 120$



Blade
+
Toolblock

KTKB

Cut-off Dia.: $\sim \phi 120$
Shank: $\square 16 \sim 32$
Edge Width: 1.6~9.6
Self Clamp

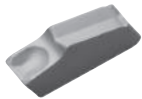
Integral Type

KTKH-S

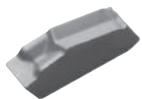
Cut-off Dia.: $\sim \phi 79$
Shank: $\square 20 \sim 25$
Edge Width: 3.1~5.1
Self Clamp

➡ **H26**

H28



Chipbreaker for General Cut-Off



Chipbreaker for Low Feed Cut-Off

 H16

 H17

H23

2-edge
Good chip control

1-edge
Good chip control

2-edge
High feed rate

1-edge
High feed rate



PM Chipbreaker



PM Chipbreaker



PH Chipbreaker



PH Chipbreaker

2-edge



Chipbreaker
for Sharp Cutting

2-edge



Chipbreaker
for Stability

1-edge



Chipbreaker
for Stability

Blade + Toolblock	Separate Type	Integral Type		
 KTKB H26	 KGD-S H17	 KTKH-S H28	 KGD H16	 KGM H22, H23

Cut-Off Inserts (for small diameter)

TKF

● Applicable Inserts (TKF12)

Classification of usage								P	Carbon steel / Alloy steel										
:Continuous-Light Interruption / 1st Choice :Continuous-Light Interruption / 2nd Choice :Continuous / 1st Choice :Continuous / 2nd Choice								M	Stainless Steel										
								K	Cast Iron										
								N	Non-ferrous Metals										
Description		Dimension (mm)						Angle	MEGACOAT NANO		MEGACOAT	PVD Coated Carbide	DLC Coated Carbide	Carbide					
		W	φD max	rε	T	H	φd	θ	PR1425 R L	PR1535 R L	PR1225 R L	PR1025 R L	PDL025 R L	KW10 R L					
2 ⁵ /L	050-S-16DR	0.5	5	0.03	3	8.7	5	16°											
	070-S-16DR	0.7	8																
	100-S-16DR	1.0	12																
	125-S-16DR	1.25																	
	150-S-16DR	1.5																	
	200-S-16DR	2.0																	
	2 ⁵ /L	050-S							0.5	5	0.03	3	8.7	5	0°				
070-S	0.7	8																	
100-S	1.0	12																	
125-S	1.25																		
150-S	1.5																		
200-S	2.0																		
2 ⁵ /L	100-T-16DR		1.0	12	0.08	3	8.7	5	16°										
150-T-16DR	1.5																		
200-T-16DR	2.0																		
2 ⁵ /L	100-T	1.0	12	0.08	3	8.7	5	0°											
	150-T	1.5																	
	200-T	2.0																	
2 ⁵ /L	050-NB-20DR	0.5	5	0	3	8.7	5	20°											
	070-NB-20DR	0.7	8																
	100-NB-20DR	1.0	12																
	150-NB-20DR	1.5																	
	200-NB-20DR	2.0																	
2 ⁵ /L	050-NB	0.5	5	0	3	8.7	5	0°											
	070-NB	0.7	8																
	100-NB	1.0	12																
	150-NB	1.5																	
	200-NB	2.0																	

Ref. to Page for Applicable Toolholders

H8

- Lead angle shows the angle when installed in toolholder.

· As Fig.1 of **H8** shows, the cut-off diameter of the insert is indicated when the top of the cut-off edge progresses 1mm from the center.

◆ Inserts Identification System (Ref. to Table.1)

TKF 12 R 050—S—16D R

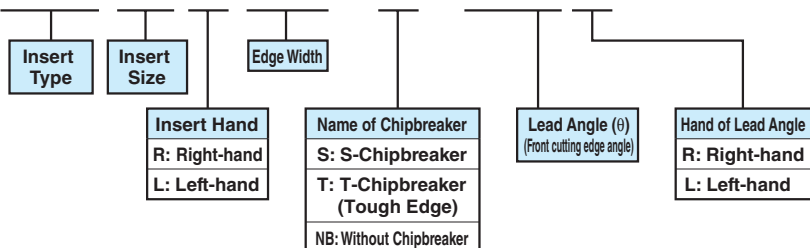


Table 1

Toolholder	Right-hand	Toolholder	Left-hand
Insert	Right-hand	Insert	Left-hand
Lead Angle	Right-hand	Lead Angle	Right-hand

● : Std. Item
□ : Deleted from the next catalogue

Classification of usage		P	Carbon steel / Alloy steel						
:Continuous-Light Interruption / 1st Choice :Continuous-Light Interruption / 2nd Choice	M	Stainless Steel							
:Continuous / 1st Choice :Continuous / 2nd Choice	K	Cast Iron							
	N	Non-ferrous Metals							

H
Cut-off

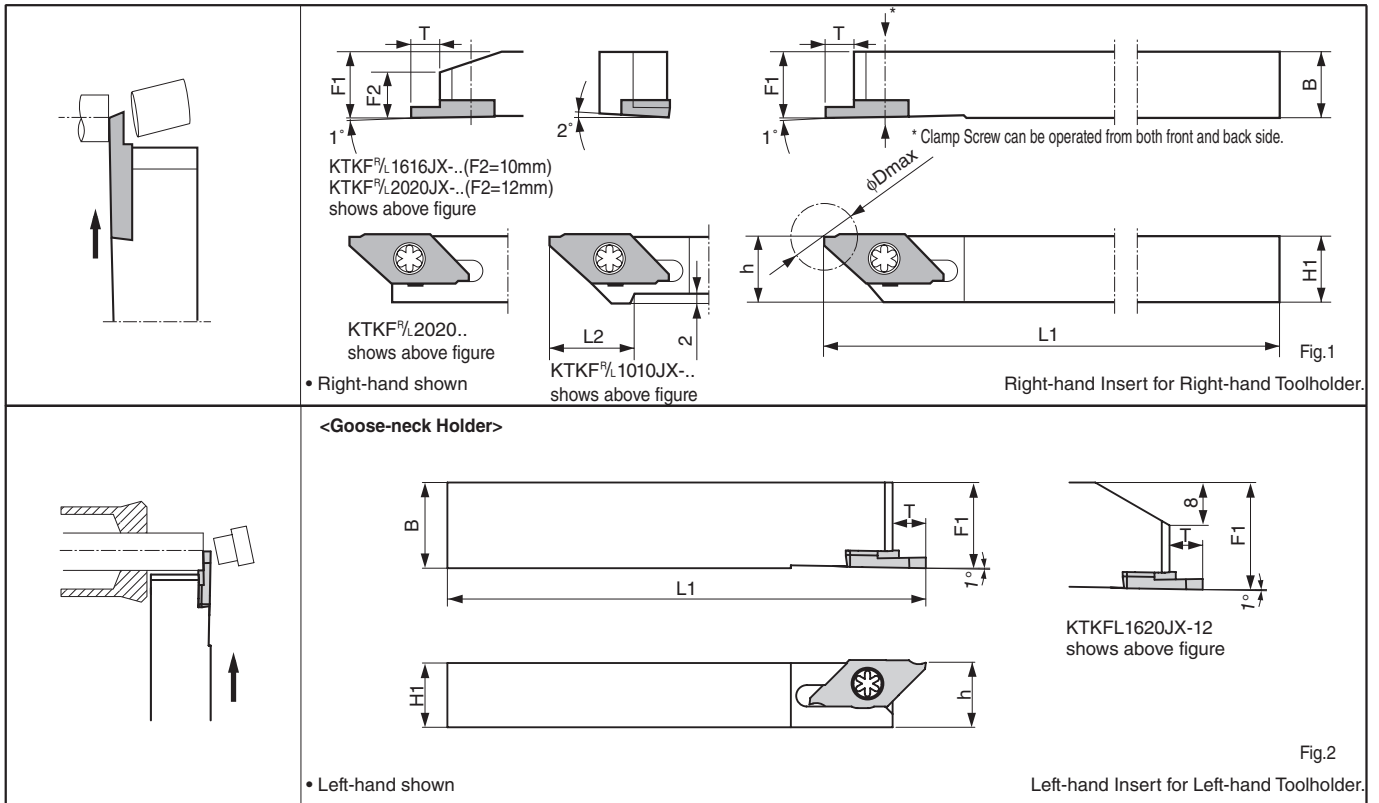
· As Fig.1 of **H8** shows, the cut-off diameter of the insert is indicated when the top of the cut-off edge progresses 1mm from the center.

● : Std. Item

H7

Cut-Off Toolholders (for small diameter)

KTGF (For small diameter cut-off)



Toolholder Dimensions

Description		Std.		Dimension (mm)						Drawing	Spare Parts		Applicable Inserts ➡ H6,H7
		R	L	H1=h	B	L1	L2	F1	T		Clamp Screw	Wrench	
													
KTKF ^{R/L} 	1010JX-12	●	●	10	10	120	15	10	6	Fig.1	SB-4590TRWN	LTW-10S	TKF12 ^{R/L} ...
	1212JX-12	●	●	12	12		12						
	1616JX-12	●	●	16	16		16						
	2020JX-12	●	●	20	20		20						
KTKF ^{R/L} 	1010JX-16	●	●	10	10	120	20	10	8		SB-4590TRWN	LTW-10S	TKF16 ^{R/L} ...
	1212JX-16	●	●	12	12		12						
	1616JX-16	●	●	16	16		16						
	2020JX-16	●	●	20	20		20						
KTKF ^{R/L}	1212F-12	●	●	12	12	85	-	12	6	Fig.2	SB-4590TRWN	LTW-10S	TKF12 ^{R/L} ...
	1212F-16	●	●						8				TKF16 ^{R/L} ...
KTKFL	1216JX-12		●	12	16	120	-	16	6		SB-4590TRWN	LTW-10S	TKF12L...
	1620JX-12		●	16	20			20					

Dimension T shows the distance from the Toolholder to the cutting edge. H6,H7 for the actual cut-off diameter.

Note: Cut-off diameter of -12 type toolholder (ϕD_{max}) depends on the insert width.

Recommended Cutting Conditions H29

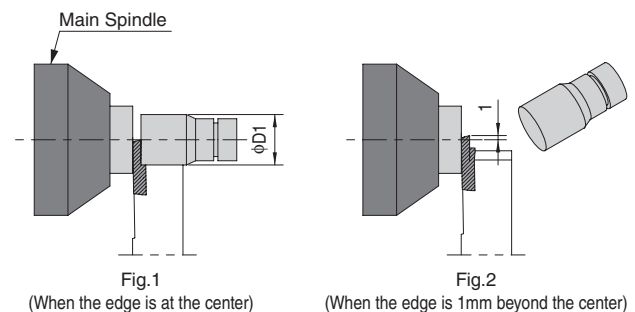
How to Use

1) When using Main Spindle only

Workpiece maximum $\phi D1$ (Fig.1)= ϕD_{max}

Even if the cutting edge runs beyond the center line, the insert does not contact the workpiece, since the workpiece falls off.

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



● : Std. Item

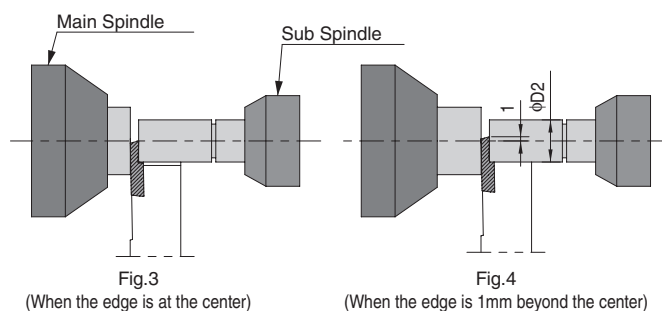
2) When using both Main and Sub spindles

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.

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

Workpiece maximum, $\phi D2$ (Fig.4) [$\phi D_{\max} - 1\text{mm} \times 2$] (mm)

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



Tough Edge, T-Chipbreaker

Fracture resistance comparison (Interruption)

Cutting Edge (Front Relief Surface)

T-Chipbreaker (PR1225) 3,000 passes	Competitor C 700 passes	Competitor D 3,000 passes
	 Fracture of corner	 Fracture of corner

	1,000 passes	2,000 passes	3,000 passes
Tough Edge, T-Chipbreaker (PR1225)			
Competitor C			
Competitor D			

<Cutting Conditions>

·Vc=80m/min
·f=0.05mm/rev
(At Cut-off: 0.015mm/rev)
·Wet
·Workpiece material: SK4



Workpiece (with flat cuts on two sides)
·TKF12R200-T-16DR (PR1225)

Compared to Comp. C and D, Tough Edge "T-Chipbreaker" achieves superior fracture resistance in interrupted machining.

How to select edge prep.

Troubleshooting

Problems	Countermeasures	Countermeasures						
		Lead Angle (θ)		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		

H

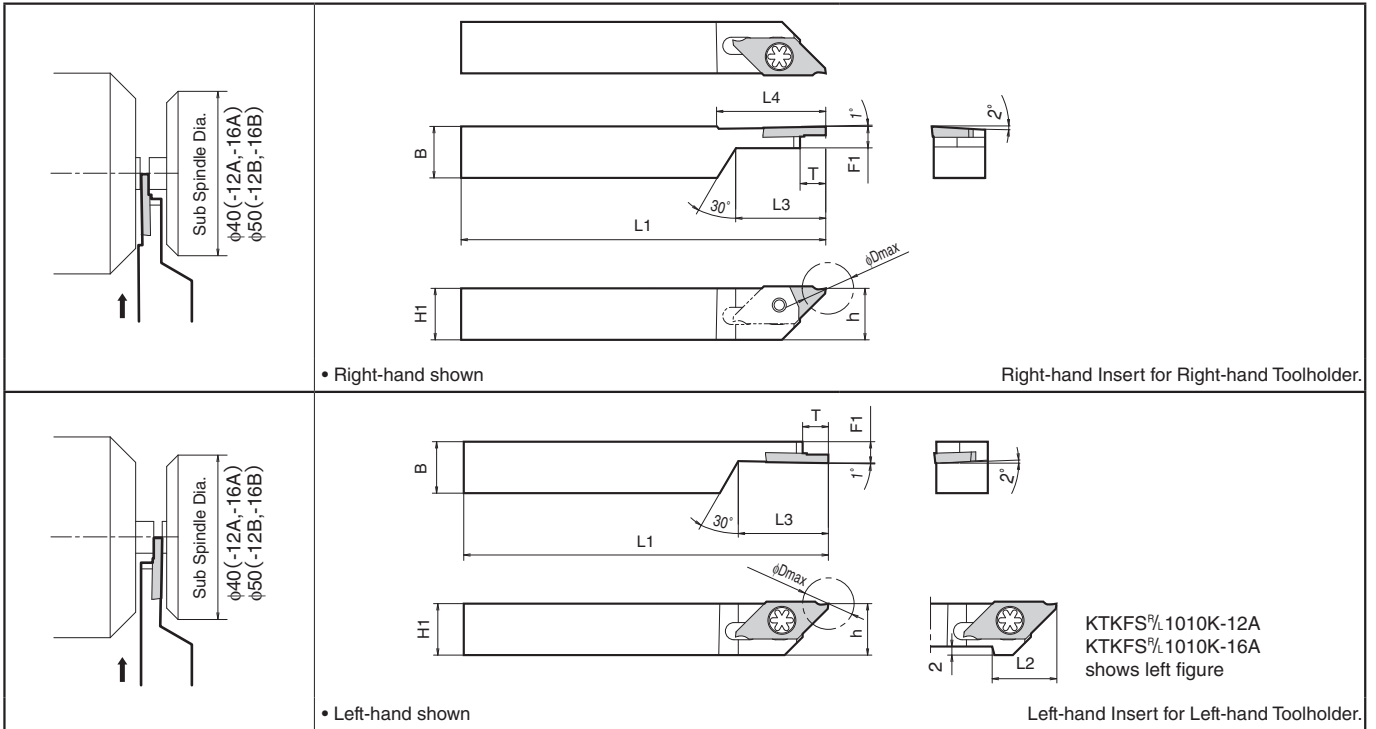


Cut-off



Cut-Off Toolholders (for sub spindle tooling)

KTKFS (for sub spindle tooling)



Toolholder Dimensions

Description		Std.		Cut-off Dia. φDmax	Dimension (mm)								Spare Parts		Applicable Inserts ⓘH11
		R	L		H1=h	B	L1	L2	L3	*L4	F1	T	Clamp Screw	Wrench	
															
KTKFS ^{R/L}	1010K-12A	●	●	6~12	10	10	120	15	22	26	5	6	SB-4050TRN	LTW-10S	TKFS12 ^{R/L}
	1212F-12A	●	●		12	12	85	-							
	1212K-12B	●	●												
KTKFS ^{R/L}	1010K-16A	●	●	14~16	10	10	120	20	22	30	5	8	SB-4050TRN	LTW-10S	TKFS16 ^{R/L}
	1212F-16A	●	●		12	12	85	-							
	1212K-16B	●	●												

Dimension T shows the distance from the Toolholder to the cutting edge. H10 for the actual cut-off diameter.

• Cut-off diameter (φDmax) depends on the insert width.

* Only Right-hand is available for L4 dimension.

Recommended Cutting Conditions H11

TKFS (for small diameter cut-off)

Insert Handed insert shows Left-Hand	Description	Dimension (mm)	
		W	φDmax
	TKFS12 ^{R/L} 100-S	1.0	6
	150-S	1.5	9
	200-S	2.0	12
	TKFS16 ^{R/L} 150-S	1.5	14
	200-S	2.0	16

Notes) As Fig.2 shows, the cut-off diameter of the insert is indicated when the top of the cutting edge progresses 1mm from the center.

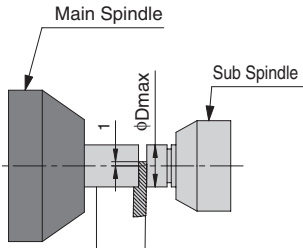


Fig.1

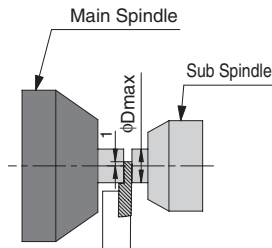


Fig.2

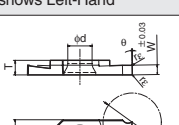
● As Fig.1 shows, use KTKFL (Left-hand) for the distance between main spindle and sub spindle.

● As Fig.2 shows, KTKFS is recommended for small diameters and for the short distance between the main spindle and sub spindle.

● : Std. Item

● Applicable Inserts

Classification of usage	P	Carbon steel / Alloy steel	●	☺	☺	☺	☺	
☺:Continuous-Light Interruption / 1st Choice	M	Stainless Steel	☺	●	☺	☺		
☺:Continuous-Light Interruption / 2nd Choice	K	Cast Iron						●
●:Continuous / 1st Choice	N	Non-ferrous Metals						●
○:Continuous / 2nd Choice								

Insert		Description	Dimension (mm)							Angle	MEGACOAT NANO		MEGACOAT		PVD Coated Carbide		Carbide					
			W	φD max	rε	T	H	φd	θ		PR1425		PR1535		PR1225		PR1025		KW10			
											R	L	R	L	R	L	R	L	R	L		
 	TKFS12 ^{R/L}	100-S	1.0	6	0.05	2.2	8.7	4.4	0°	●	●	●	●	●	●	●	●	●	●			
		150-S	1.5	9						●	●	●	●	●	●	●	●	●	●	●	●	●
		200-S	2.0	12						●	●	●	●	●	●	●	●	●	●	●	●	●
	TKFS16 ^{R/L}	150-S	1.5	14	0.05	2.2	9.5	4.4	0°	●	●	●	●	●	●	●	●	●	●			
		200-S	2.0	16						●	●	●	●	●	●	●	●	●	●	●	●	
										●	●	●	●	●	●	●	●	●	●	●	●	

· As Fig.2 (H10) of shows, the cut-off diameter of the insert is indicated when the top of the cutting edge progresses 1mm from the center.

· Lead angle shows the angle when installed in toolholder.

◆ Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)					TKFS12			TKFS16		Remarks
	MEGACOAT NANO		MEGACOAT	PVD Coated Carbide	Carbide	Edge Width (mm)			Edge Width (mm)		
						1.0	1.5	2.0	1.5	2.0	
	PR1425	PR1535	PR1225	PR1025	KW10	f (mm/rev)			f (mm/rev)		
Carbon Steel	★ 70~170	☆ 70~150	☆ 70~150	☆ 60~130	-	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	Coolant
Alloy Steel	★ 70~170	☆ 70~150	☆ 70~150	☆ 60~130	-	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	
Stainless Steel	☆ 60~140	★ 60~120	☆ 60~120	☆ 50~100	-	0.01~0.02	0.01~0.02	0.01~0.03	0.01~0.02	0.01~0.03	
Cast Iron	-	-	-	-	★ 50~100	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	
Aluminum	-	-	-	-	★ 200~450	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	0.01~0.03	
Brass	-	-	-	-	★ 100~200	0.01~0.04	0.01~0.04	0.01~0.04	0.01~0.04	0.01~0.04	

★ : 1st Recommendation ☆: 2nd Recommendation

■ KTKF / KTKFS Selection Reference

● KTKF

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

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

● KTKFS

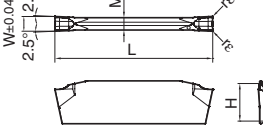
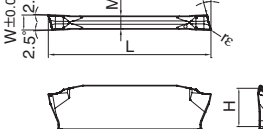
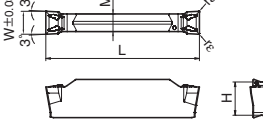
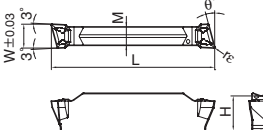
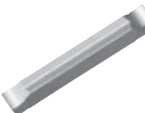
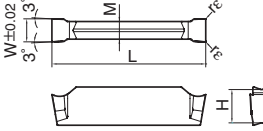
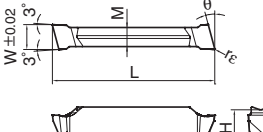
- When machining workpiece with small diameter, use KTKFS to reduce overhang distance from the main spindle.

KTKFSR (Right-hand toolholder)	KTKFSL (Left-hand toolholder)
<How to select> Hand of Toolholder •Long workpiece and more rigidity •Cut-off operation near main spindle side <How to select> L3 dimension •Sub Spindle Dia. φ40→22(A type) φ50→26(B type)	<How to select> Hand of Toolholder •Short workpiece and less rigidity •Cut-off operation near sub spindle side <How to select> L3 dimension •Sub Spindle Dia. φ40→22(A type) φ50→26(B type)

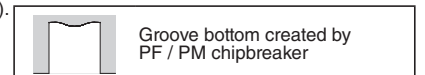
Cut-Off Inserts

GDM / GDG

Classification of usage	P	Carbon steel / Alloy steel				
● : Continuous-Light Interruption / 1st Choice	M	Stainless Steel	●	○	○	
○ : Continuous-Light Interruption / 2nd Choice						
● : Continuous / 1st Choice	N	Non-ferrous Metals				●
○ : Continuous / 2nd Choice						○

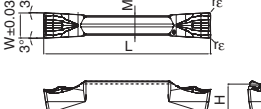
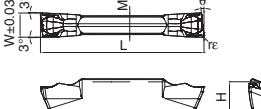
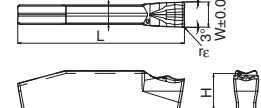
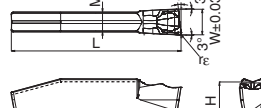
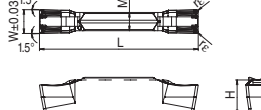
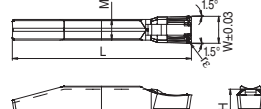
Insert			Description	Dimension (mm)					Angle	MEGACOAT NANO	MEGACOAT	DLC Coated Carbide	Carbide	Ref. to Page for Applicable			
				Edge Width(W)	Tolerance	re	M	L	H	θ	PR1535	PR1225	PR1215		PDL025	GW15	
Handed Insert shows Right-hand																	
Cut-Off / Low Feed			GDM 1316N-003PF	1.3	±0.04	0.03	1.0	16	3.7	-	●	●	●			H14 H15	
			1316N-015PF	1.3		0.15											
			1516N-003PF	1.5		0.03	1.2	20	4.3		●	●	●			H14 H15 H16 H17	
			1516N-015PF	1.5		0.15											
			2020N-003PF	2.0		0.03	1.7	20	4.3		●	●	●			H14 H15 H16 H17	
			2020N-015PF	2.0		0.15											
			2520N-003PF	2.5		0.03	2.1	20	4.3		●	●	●			H14 H15 H16 H17	
			2520N-015PF	2.5		0.15											
			3020N-003PF	3.0		0.03	2.3	20	4.3		●	●	●			H14 H15 H16 H17	
			3020N-015PF	3.0		0.15											
15° Lead Angle			GDM 1316%-003PF-15D	1.3	±0.04	0.03	1.0	16	3.7	15°	●	●	●			H14 H15	
			1516%-003PF-15D	1.5		0.15											
			1516R-015PF-15D	1.5		0.15	1.2	20	4.3		R	R	R			H14 H15 H16 H17	
			2020%-003PF-15D	2.0		0.03					●	●	●				
			2020R-015PF-15D	2.0		0.15	R	R	R								
			2520%-003PF-15D	2.5		0.03	2.1	20	4.3		●	●	●			H14 H15 H16 H17	
			2520R-015PF-15D	2.5		0.15					R	R	R				
			3020%-003PF-15D	3.0		0.03	2.3	20	4.3		●	●	●			H14 H15 H16 H17	
			3020R-015PF-15D	3.0		0.15					R	R	R				
			Cut-Off / Medium Feed				GDM 2020N-010PQ	2.0	±0.03		0.1	1.7	20	4.3	-	●	●
2520N-010PQ	2.5	2.1			●		●	●									
3020N-010PQ	3.0	2.3			●		●	●									
15° Lead Angle			GDM 2020R-010PQ-15D	2.0	±0.03	0.1	1.7	20	4.3	15°	R	R	R			H14 H15 H16 H17	
			2520R-010PQ-15D	2.5			2.1				R	R	R				
			3020R-010PQ-15D	3.0			2.3				R	R	R				
Cut-Off / Low Cutting Force			GDG 2020N-005PG	2.0	±0.02	0.05	1.7	20	4.3	-	●	●		●	●	H14 H15 H16 H17	
			2520N-005PG	2.5			2.1				●	●		●	●		
			3020N-005PG	3.0			2.3				●	●		●	●		
	15° Lead Angle			GDG 2020R-005PG-15D	2.0	±0.02	0.05	1.7	20	4.3	15°	R	R		R	R	H14 H15 H16 H17
				2520R-005PG-15D	2.5			2.1				R	R		R	R	
				3020R-005PG-15D	3.0			2.3				R	R		R	R	

Note) 1. Using the PF / PM chipbreaker (for cut-off) for grooving cannot create a flat bottom (Ref. to the right figure).



GDM / GDMS

Classification of usage	P	Carbon steel / Alloy steel			
● : Continuous-Light Interruption / 1st Choice	M	Stainless Steel	●	○	○
○ : Continuous-Light Interruption / 2nd Choice					
● : Continuous / 1st Choice	N	Non-ferrous Metals			
○ : Continuous / 2nd Choice					

Insert			Description	Dimension (mm)					Angle	MEGACOAT NANO			MEGACOAT			Ref. to Page for Application
				Edge Width(W)	rε	M	L	H	θ	PR1535	PR1225	PR1215				
													Tolerance			
Handed Insert shows Right-hand																
Cut-Off / General Purpose	  	GDM 2020N-020PM	2.0	±0.03	0.2	1.5	20	4.3	-	●	●	●	H14 H15 H16 H17			
		2520N-020PM	2.5			1.95				●	●	●				
		3020N-025PM	3.0		0.25	2.3	●	●		●						
		4020N-030PM	4.0		0.3	3.3	●	●		●	H14 H16 H17					
	   6° Lead Angle	GDM 2020R-020PM-6D	2.0	±0.03	0.2	1.5	20	4.3	6°	R	R	R	H14 H15 H16 H17			
		2520R-020PM-6D	2.5			1.95				R	R	R				
		3020R-025PM-6D	3.0		0.25	2.3				R	R	R				
	   1-edge	GDMS 2020N-020PM	2.0	±0.03	0.2	1.5	20	4.3	-	●	●	●		H14 H15 H16 H17		
		3020N-025PM	3.0			0.25				2.3	●	●	●			
		4020N-030PM	4.0		0.3	3.3				●	●	●	H14 H16 H17			
	   6° Lead Angle 1-edge	GDMS 2020R-020PM-6D	2.0	±0.03	0.2	1.5	20	4.3	6°	R	R	R	H14 H15 H16 H17			
		3020R-025PM-6D	3.0			0.25				2.3	R	R		R		
4020R-030PM-6D		4.0	0.3		3.3	R				R	R	H14 H16 H17				
Grooving and Cut-off / High feed rate	  	GDM 2020N-020PH	2.0	±0.03	0.2	1.5	20	4.3	-	●	●	●		H14 H15 H16 H17		
		3020N-030PH	3.0			0.3				2.3	●	●	●			
		4020N-030PH	4.0		0.3	3.3				●	●	●	H14 H16 H17			
	   1-edge	GDMS 2020N-020PH	2.0	±0.03	0.2	1.5	20	4.3	-	●	●	●	H14 H15 H16 H17			
		3020N-030PH	3.0			0.3				2.3	●	●		●		
		4020N-030PH	4.0		0.3	3.3				●	●	●		H14 H16 H17		

Note) 1. Using the PF / PM chipbreaker (for cut-off) for grooving cannot create a flat bottom (Ref. to the right figure). Recommended Cutting Conditions  H18,H19

Inserts Identification System

(2) Tolerance Symbol		(4) Edge Width		(6) Hand of Tool		(8) Chipbreaker Symbol	
G: Ground Insert M: M Class		13:1.3mm 25:2.5mm 15:1.5mm 30:3mm 20:2mm 40:4mm		R: Right-hand L: Left-hand N: Neutral		PF:Cut-Off / (Low Feed) PM:Cut-Off / (General Purpose) PQ:Cut-Off / (Medium Feed) PH:Grooving and Cut-off PG:Cut-Off / (Low Cutting Force) / (High feed rate)	
G D		M S		30 20		R - 025 PM - 6D	
(1) Series		(3) No. of edge		(5) Insert Length		(7) Corner-R (re)	
Grooving / Cut-Off GD Series		Without Indication:2-edge S: 1-edge		16:16mm 20:20mm		003:0.03mm 020:0.2mm 005:0.05mm 025:0.25mm 010:0.1mm 030:0.3mm 015:0.15mm	
						(9) Lead Angle	
						Without Indication:0° 6D:6° 15D:15°	

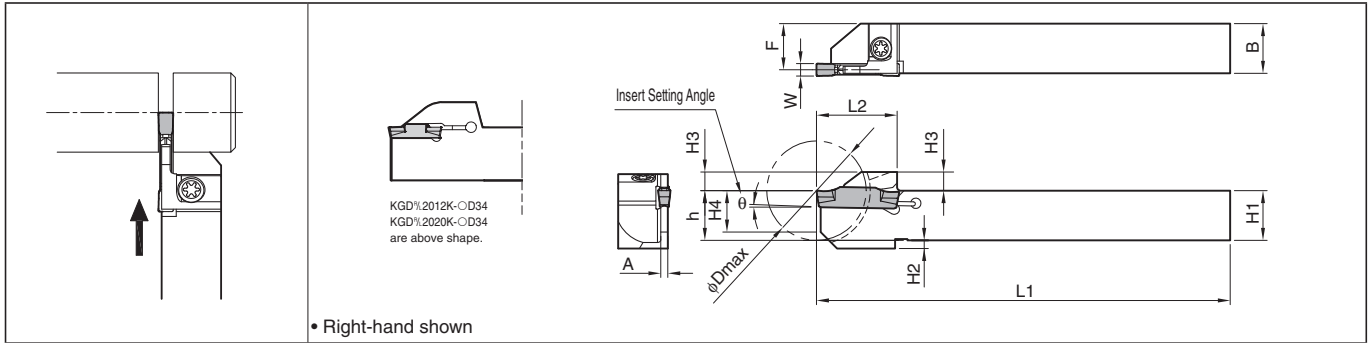
● : Std. Item
R : Std. Item (Right-hand Only)

Inserts are sold in 10 piece boxes.

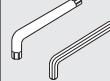
Cut-Off Toolholders

KGD (for automatic lathe)

Edge Width:1.3~4.0mm



Toolholder Dimensions

Description		Std.		Cut-off Dia.	Dimension (mm)									Angle	Edge Width W(mm)		Spare Parts													
		R	L		φDmax	H1=h	H2	H3	H4	B	L1	L2	F		A	θ	MIN.	MAX.	Clamp Screw		Wrench									
																														
KGD [®] / _L	1010JX-1.3D16	●	●	16	10	2	5.5	8	10	120	18	9.9	1.0	5°	1.3	1.3	SB-40120TR	LTW-15S												
	1010JX-1.3	●	●	20								9.5																		
	1212F-1.3D16	●	●	16	12							10							12	85	19.5	11.9								
	1212JX-1.3D16	●	●																	120		11.5								
	1212F-1.3	●	●	85																										
	1212JX-1.3	●	●	120																										
KGD [®] / _L	1010JX-1.5D16	●	●	16		10	2	5.5	8	10	120		18	9.7	1.2	1°	1.5	1.5		SB-40120TR		LTW-15S								
	1010JX-1.5	●	●	20										9.4																
	1212F-1.5D16	●	●	16	12	10						12		85					19.5		11.7									
	1212JX-1.5D16	●	●											120							11.4									
	1212F-1.5	●	●	85																										
	1212JX-1.5	●	●	120																										
KGD [®] / _L	1010JX-2	●	●	20			10	2	5.5	8	10		120	18	9.2	1.6	1°	2.0		3.0	SB-40120TR	LTW-15S								
	1212F-2	●	●	24			12								10								85	19.5	11.2					
	1212JX-2	●	●		120	15.2																								
	1616JX-2	●	●	32	16	24.5						15.2							0°				HH5X16		LW-4					
	2012K-2D34	●	●	34	20	9.5						20														12	125	32.5	11.2	
	2020K-2D34	●	●																							20			19.2	
KGD [®] / _L	1010JX-2.4	●	●	20				10	2	5.5	8		10	120		18	9	2.0		1°	2.4	3.0				SB-40120TR			LTW-15S	
	1212F-2.4	●	●	24			12	10							85		19.5		11											
	1212JX-2.4	●	●												120				15											
	1616JX-2.4	●	●	32											16				24.5				15	0°	HH5X16					LW-4
	2012K-2.4D34	●	●	34	20	9.5						20			12				125				32.5				11			
	2020K-2.4D34	●	●												20												19			
KGD [®] / _L	1212JX-3	●	●	24					12	2	5.5		8	10	12	120		19.5		2.4	1°	3.0				4.0	SB-40120TR	LTW-15S		
	1616JX-3	●	●	32			16	8	13								13	125						24.5	11.8					
	1616JX-3D38	●	●	38																				29						
	1913K-3D38	●	●	19			8.5																	14					12	120
	2012JX-3D42	●	●		42	36																								
	2012JX-3D51	●	●	51	8	20						31							18.8											
	2020JX-3D42	●	●	42																										
	2020JX-3D51	●	●	51	8.5																									

Note) 1. 4mm width Insert can be installed in KGD% 1212JX-3, but is not recommended due to the toolholder's rigidity.

Recommended Cutting Conditions H18, H19

2. Recommended tightening torque of clamp screw

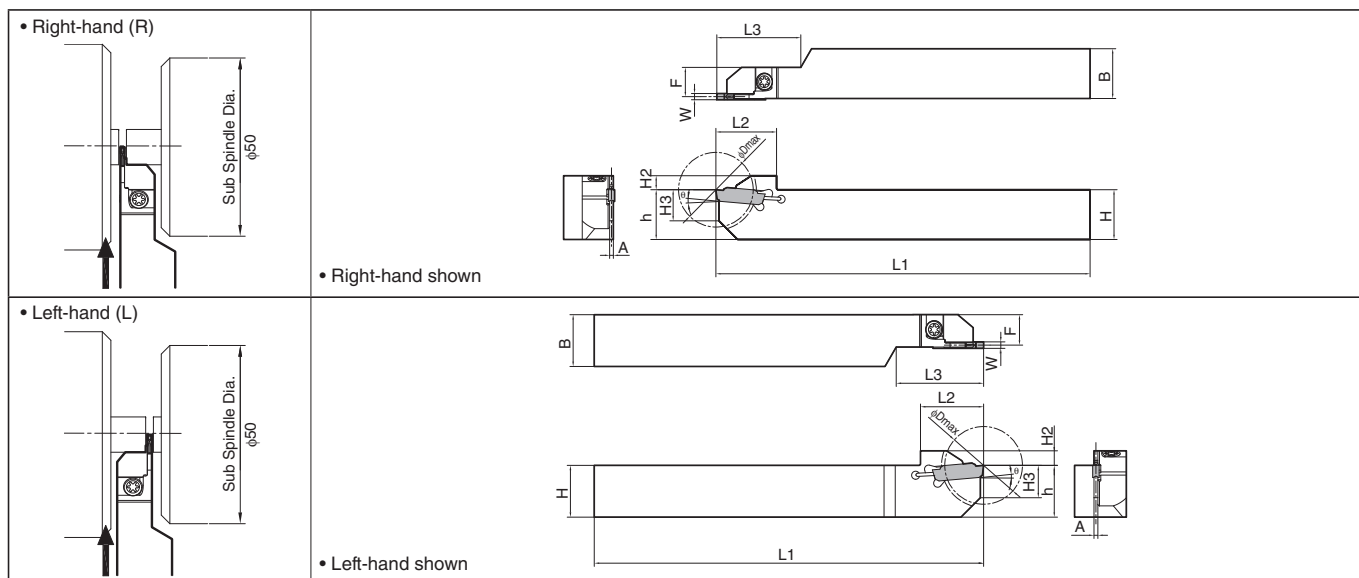
2.0N·m(SB-40120TR), 2.5N·m(SE-50125TR), 6.5N·m(HH5X16)

3. When machining the material greater than $\phi 36$ mm with KGD%...-3D38, KGD%...-3D42 and KGD%...-3D51 toolholders, please use 1-edge inserts.

Maximum workpiece diameter for 2-edge inserts is $\phi 36$ mm.

● : Std. Item

KGDS (for sub spindle tooling)



Toolholder Dimensions

Description	Std.		Cut-off Dia.	Dimension (mm)								Angle	Edge Width W (mm)		Spare Parts			
	R	L		H=h	H2	H3	B	L1	L2	L3	F		A	θ	MIN.	MAX.	Clamp Screw	Wrench
	KGDS [®] /L	1616JX-1.3B	●	●	24	16	5.5	10	16	120	19.5	27	9.50	1.0	5°	1.3	1.3	
	1616JX-1.5B	●	● <td>9.40</td> <td>1.2</td> <td>1.5</td> <td>1.5</td>	9.40									1.2	1.5		1.5		
	1616JX-2B	●	● <td>9.20</td> <td>1.6</td> <td>1°</td> <td>2.0</td> <td>3.0</td>	9.20									1.6	1°	2.0	3.0		

Recommended Cutting Conditions ● H18, H19

KG D / KGDS Selection Reference

KG D

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

KGDS

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

Toolholder Identification System (for automatic lathe)

K G D
KGDS

R

Toolholder Hand
R: Right-hand
L: Left-hand

1616

Shank Size
16×16mm

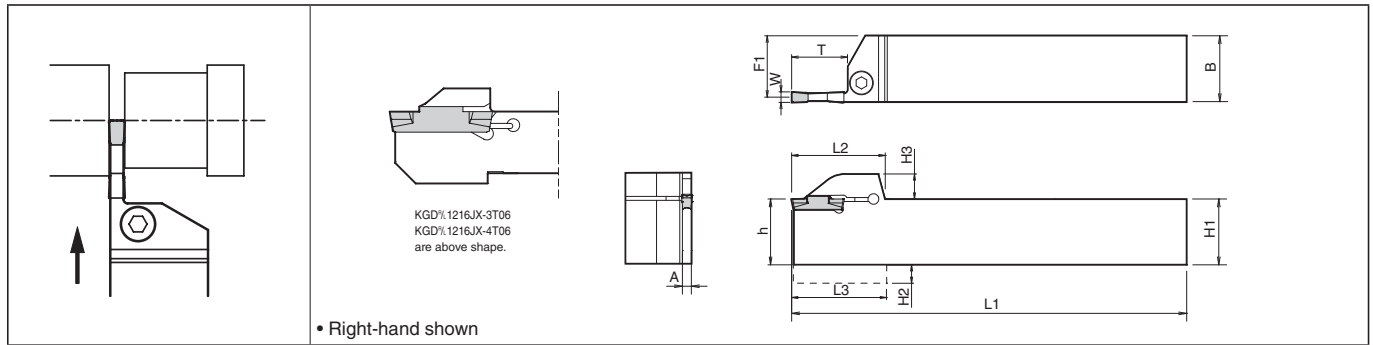
JX

Toolholder Length
120mm

Applicable Inserts	Others
GDM / GDMS Edge Width: 3~4mm	D38: ϕD_{max} 38mm
3	D38
1.3	B
Applicable Inserts	Others
GDM / GDMS Edge Width: 1.3mm	B: For sub spindle tooling

Grooving / Cut-Off Toolholders

KGD (Integral Type)



Toolholder Dimensions

Width (mm)	Max. depth of cut (mm)	Description		Std.		Dimension (mm)										Edge Width W(mm)		Spare Parts						
				R	L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T	MIN.	MAX.	Clamp Bolt		Wrench				
																								
2	6		1616H-2T06			16	4.0	9.5	16	100	27.7	28.0	15.2	1.7	6	2.0	3.0	HH5X16	LW-4					
			2020K-2T06			20	-		20	125	28.0	-	19.2					HH5X25						
			2525M-2T06			25	-		25	150	28.0	-	24.2					HH5X25						
	10		1616H-2T10			16	4.0		16	100	30.2	30.5	15.2		10			17		HH5X16				
			2020K-2T10			20	-		20	125	30.5	-	19.2							HH5X25				
			2525M-2T10			25	-		25	150	30.5	-	24.2							HH5X25				
	17		1616H-2T17			16	4.0		16	100	31.2	31.5	15.2		17			17		HH5X16				
			2012K-2T17			20	-		12	125	-	-	11.2							HH5X25				
			2020K-2T17			20	-		20	125	32.5	-	19.2							HH5X25				
			2525M-2T17			25	-		25	150	-	-	24.2							HH5X25				
	2.4	17		2012K-2.4T17			20		-	12	125	32.5	-		11.0			2.0		17	2.4	3.0	HH5X16	LW-4
				2020K-2.4T17			20		-	20	125	-	-		19.0								HH5X25	
3	6		1216JX-3T06			12	2.0	9.5	16	120	19.5	19	14.8	2.4	6	3.0	4.0	SE-50125TR	LW-4					
			1616H-3T06			16	4.0		16	100	27.7	28.0	14.8					HH5X16						
			2020K-3T06			20	-		20	125	28.0	-	18.8					HH5X25						
			2525M-3T06			25	-		25	150	28.0	-	23.8					HH5X25						
	10		1616H-3T10			16	4.0		16	100	30.2	30.5	14.8	10	20			HH5X16						
			2020K-3T10			20	-		20	125	30.5	-	18.8					HH5X25						
			2525M-3T10			25	-		25	150	30.5	-	23.8					HH5X25						
	20		1616H-3T20			16	4.0		16	100	34.2	34.5	14.8	20	20			HH5X16						
			2012K-3T20			20	-		12	125	34.5	-	10.8					HH5X25						
			2020K-3T20			20	-		20	125	-	-	18.8					HH5X25						
			2525M-3T20			25	-		25	150	35.5	-	23.8					HH5X25						
	4	6		1216JX-4T06			12		2.0	9.5	16	120	19.5	19	14.3			3.4		6	4.0	5.0	SE-50125TR	LW-4
10		2020K-4T10				20	-	20	125		30.5	-	18.3	10	HH5X16									
		2525M-4T10				25	-	25	150		-	-	23.3		HH5X25									
		20		2020K-4T20			20	-	20		125	34.5	-		18.3	20	HH5X16							
2525M-4T20						25	-	25	150		35.5	-	23.3	HH5X25										
25		2525M-4T25				25	-	25	150		40.5	-	23.3	25	HH5X25									

Note) 1. Dimension T : Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum groove-depth of groove made by the 2-edge insert will be 18 mm.)
 2. Recommended tightening torque of clamp bolt : 6.5N·m(HH5X○○), 2.5N·m(SE-50125TR)
 3. Above toolholders are applicable to external grooving, too.

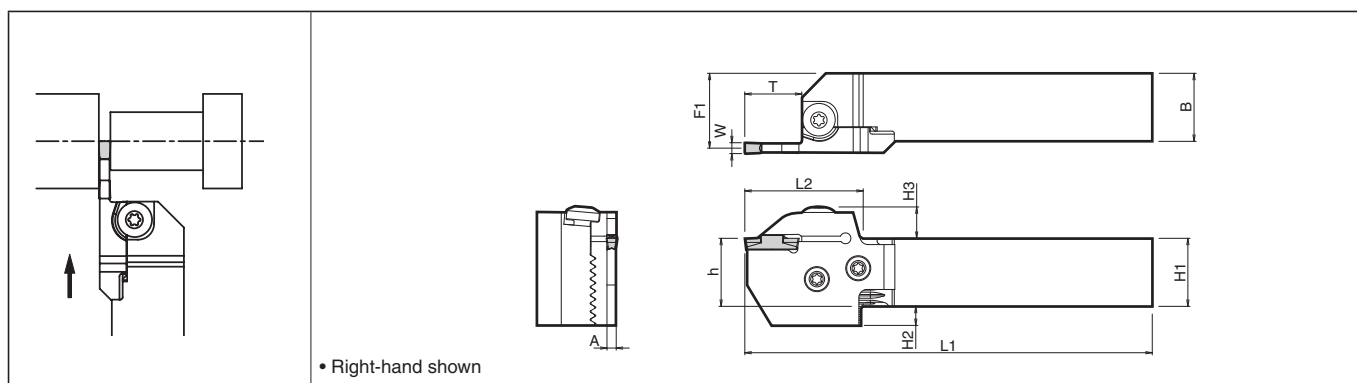
Recommended Cutting Conditions H18,H19

Toolholder Identification System (Integral Type)

K G D	R	1616	H	-	2	T	06
Toolholder Hand R: Right-hand L: Left-hand		Shank Size 16×16mm	Toolholder Length 100mm	Applicable Inserts GDM/GDMS 2~3mm		Max. depth of cut 06.6mm	

● : Std. Item

KGD-S (0° separate type)



Toolholder Dimensions (Blade + Toolholder)

Shank Angle	Width (mm)	Max. depth of cut (mm)	Shank Size (mm)	Unit Description (Standard Stock Description)		Std.		Blade Description G25	Toolholder Description G25	Dimension (mm)											Edge Width W(mm)	
						R	L			H1=h	H2	H3	B	L1	L2	L3	F1	A	T	MIN.	MAX.	
0°	2	17	□20	KGD ^{R/L} 2020X-2T17S	●	●	KGD ^{R/L} -2T17-C	KGD ^{R/L} 2020-C	20	12	11.6	20	122	40		23.4	1.7	17	2.0	3.0		
			□25	2525X-2T17S	●	●		KGD ^{R/L} 2525-C	25	7		25	147			28.4						
			□32	No unit description →				KGD ^{R/L} 3232-C	32	-		32	167			35.4						
	3	10	□20	KGD ^{R/L} 2020X-3T10S	●	●	KGD ^{R/L} -3T10-C	KGD ^{R/L} 2020-C	20	12		20	115	33		23.0	2.4	10	3.0	4.0		
			□25	2525X-3T10S	●	●		KGD ^{R/L} 2525-C	25	7		25	140			28.0						
			□32	3232X-3T10S	●	●		KGD ^{R/L} 3232-C	32	-		32	160			35.0						
		20	□20	KGD ^{R/L} 2020X-3T20S	●	●	KGD ^{R/L} -3T20-C	KGD ^{R/L} 2020-C	20	12		20	125	43		23.0		20				
			□25	2525X-3T20S	●	●		KGD ^{R/L} 2525-C	25	7		25	150			28.0						
			□32	3232X-3T20S	●	●		KGD ^{R/L} 3232-C	32	-		32	170			35.0						
	4	10	□20	KGD ^{R/L} 2020X-4T10S	●	●	KGD ^{R/L} -4T10-C	KGD ^{R/L} 2020-C	20	12		20	115	33		22.5		10	4.0	5.0		
			□25	2525X-4T10S	●	●		KGD ^{R/L} 2525-C	25	7		25	140			27.5						
			□32	3232X-4T10S	●	●		KGD ^{R/L} 3232-C	32	-		32	160			34.5						
		20	□20	KGD ^{R/L} 2020X-4T20S	●	●	KGD ^{R/L} -4T20-C	KGD ^{R/L} 2020-C	20	12		20	125	43		22.5	3.4	20				
			□25	2525X-4T20S	●	●		KGD ^{R/L} 2525-C	25	7		25	150			27.5						
			□32	3232X-4T20S	●	●		KGD ^{R/L} 3232-C	32	-		32	170			34.5						
		25	□20	KGD ^{R/L} 2020X-4T25S	●	●	KGD ^{R/L} -4T25-C	KGD ^{R/L} 2020-C	20	12		20	130	48		22.5		25				
			□25	2525X-4T25S	●	●		KGD ^{R/L} 2525-C	25	7		25	155			27.5						
			□32	3232X-4T25S	●	●		KGD ^{R/L} 3232-C	32	-		32	175			34.5						

Recommended Cutting Conditions **H18,H19**

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

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

KGD-S: Right-hand Blade for Right-hand Toolholder, Left-hand Blade for Left-hand Toolholder.

The toolholder is applicable for all blade with suitable hand.

3. In case the unit description is not available (No unit description), please purchase toolholder and blade separately.

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

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

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

Toolholder Identification System (Separate type / Unit Description)

K	G	D	R	2020	X	-	2	T	17	S
Toolholder Hand			Shank Size	Toolholder Type		Applicable Inserts		Max. depth of cut		
R: Right-hand L: Left-hand			20x20mm	Unit Description		GDM/GDMS 2~3mm		17 : 17mm		

Spare Parts (Common with separate types)

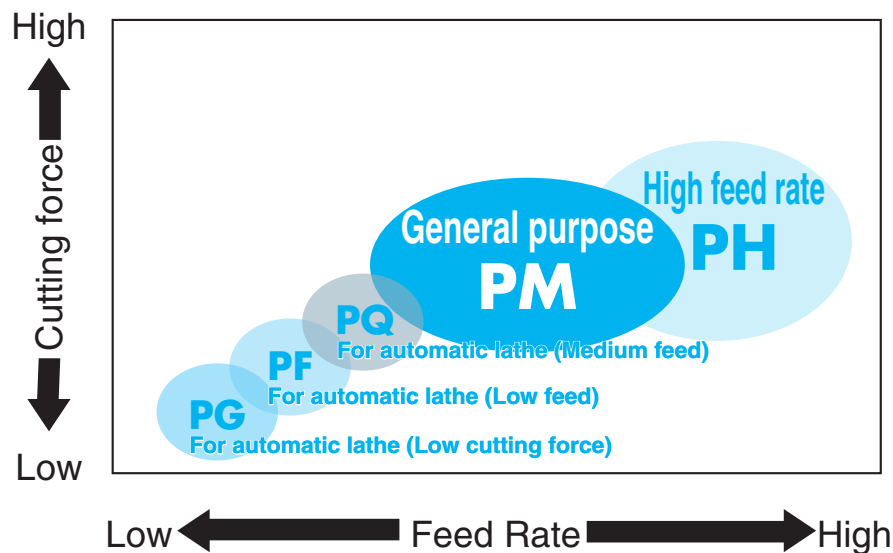
* The parts are included in the toolholder and unit.

Unit Description	Spare Parts		
	Clamp Bolt (for Insert Clamp)	Clamp Screw (for Blade)	Wrench
			
KGD ^{R/L}S	BH6X10TR	SB-60120TR	LTW-25

KGD Recommended Cutting Conditions

Application Map

Cut-Off



H

Recommended Cutting Conditions (PF / PQ / PG Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)			f (mm/rev)						Remarks
				PF (rε=0.03)			PF (rε=0.15)			
	MEGACOAT NANO	MEGACOAT		Edge Width W (mm)			Edge Width W (mm)			
PR1535	PR1225	PR1215	1.3/1.5	2.0	2.5/3.0	1.5	2.0	2.5/3.0		
Carbon Steel	☆ 70~150	★ 70~150	☆ 70~180	0.01~0.04	0.02~0.06	0.02~0.08	0.01~0.05	0.03~0.08	0.04~0.10	Coolant
Alloy Steel	☆ 70~150	★ 70~150	☆ 70~180							
Stainless Steel	★ 60~120	☆ 60~120	☆ 60~150	0.01~0.03	0.01~0.04	0.01~0.05	0.01~0.04	0.03~0.07	0.04~0.08	
Cast Iron	-	-	★ 80~200	0.01~0.05	0.02~0.07	0.03~0.08	0.01~0.06	0.03~0.09	0.04~0.10	

★: 1st Recommendation ☆: 2nd Recommendation

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)					f (mm/rev)				Remarks
						PQ		PG		
	MEGACOAT NANO	MEGACOAT		DLC Coated Carbide	Carbide	Edge Width W (mm)		Edge Width W (mm)		
		PR1535	PR1225			PR1215	PDL025	GW15	2.0	
Carbon Steel	☆ 70~150	★ 70~150	☆ 70~180	-	-	0.03~0.1	0.04~0.12	0.01~0.04	0.01~0.05	Coolant
Alloy Steel	☆ 70~150	★ 70~150	☆ 70~180	-	-					
Stainless Steel	★ 60~120	☆ 60~120	☆ 60~150	-	-	0.02~0.07	0.02~0.08	0.01~0.03	0.01~0.04	
Cast Iron	-	-	★ 80~200	-	☆ 50~100	0.04~0.1	0.04~0.12	0.01~0.04	0.01~0.05	
Aluminum	-	-	-	★ 200~500	☆ 200~450	-	-	0.01~0.05	0.01~0.06	
Brass	-	-	-	-	★ 100~200	-	-	0.01~0.07	0.01~0.08	

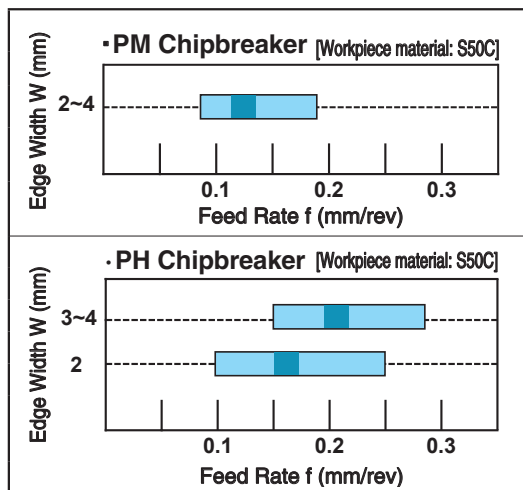
★: 1st Recommendation ☆: 2nd Recommendation

● Recommended Cutting Conditions (PM / PH Chipbreaker)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)			f (mm/rev)			Remarks
				PM	PH		
	MEGACOAT NANO	MEGACOAT		Edge Width W (mm)	Edge Width W (mm)		
	PR1535	PR1225	PR1215	2~4	2	3~4	
Carbon Steel	☆ 80~200	★ 80~200	☆ 100~200	0.08~0.18	0.10~0.25	0.15~0.28	Coolant
Alloy Steel	☆ 70~180	★ 70~180	☆ 80~180				
Stainless Steel	★ 60~150	☆ 60~150	☆ 60~150	0.06~0.12	0.05~0.12	0.08~0.15	
Cast Iron	-	-	★ 100~200	0.08~0.18	0.10~0.25	0.15~0.28	

★: 1st Recommendation ☆: 2nd Recommendation

◆ Example of feed



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

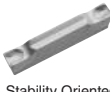
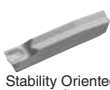
◆ Caution (Cut-Off)

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

Cut-Off Inserts

GMM / GMN / GM^{R/L}

Classification of usage	P	Carbon steel / Alloy steel						
● : Continuous-Light Interruption / 1st Choice	M	Stainless Steel						
○ : Continuous-Light Interruption / 2nd Choice	K	Cast Iron						
● : Continuous / 1st Choice	N	Non-ferrous Metals						
○ : Continuous / 2nd Choice								

Insert			Description	Dimension (mm)					Angle	CVD Coated Carbide						Carbide	Ref. to Page Applicable To	
				W	r _e	L	H	M	θ	TN90	CR9025	PR915	PR930	PR1115	KW10			
Handed Insert shows Right-hand																		
Neutral	 Sharp-Cutting 2-edge	GMM 1520-MT	1.5	0.05	20	4.3	1.2	-								H22		
		2020-MT	2.0	0.05			1.5									H22 H23		
		2520-MT	2.5	0.05			1.9											
		3020-MT	3.0	0.05			2.3											
	 Sharp-Cutting 2-edge Without Chipbreaker	GMM 1520-NB	1.5	0.05	20	4.3	1.2	-								H22		
		2020-NB	2.0	0.05			1.5										H22 H23	
		2520-NB	2.5	0.05			1.9											
		3020-NB	3.0	0.05			2.3											
	 Stability Oriented 2-edge	GMM 2020-TK	2.0	0.20	20	4.3	1.5	-									H22 H23	
		2520-TK	2.5	0.20			1.9											
		3020-TK	3.0	0.25			2.3											
	 High Feed Rate 2-edge	GMM 2020-TMR	2.0	0.20	20	4.3	1.5	-										H22 H23
		2520-TMR	2.5	0.20			1.9											
		3020-TMR	3.0	0.25			2.3											
	 Stability Oriented 1-edge	GMN 2-TK	2.0	0.20	20	4.3	1.5	-									H22 H23	
		3-TK	3.0	0.25			2.3											
		4-TK	4.0	0.30			3.3											
	 Shows GMN2.2 Sharp-Cutting 1-edge	GMN 2.2	2.2	0.17	20	4.3	1.8	-										H22 H23
		3	3.0	0.20			2.3											
		4	4.0	0.25			3.3											
		5	5.0	0.80			4.2											
		6	6.0	0.80			5.2											
	Lead Angle	 Sharp-Cutting 2-edge	GMM 1520 ^{R/L} -MT-15D	1.5	0.05	20	4.3	1.2	15°									H22
			2020 ^{R/L} -MT-15D	2.0	0.05			1.5										
2520 ^{R/L} -MT-15D			2.5	0.05	1.9													
3020 ^{R/L} -MT-15D			3.0	0.05	2.3													
 Stability Oriented 2-edge		GMM 2020R-TK-8D	2.0	0.20	20	4.3	1.5	8°									H22 H23	
		2520R-TK-8D	2.5	0.20			1.9											
		3020R-TK-8D	3.0	0.25			2.3											
 High Feed Rate 2-edge		GMM 2020R-TMR-6D	2.0	0.20	20	4.3	1.5	6°										H22 H23
		2520R-TMR-6D	2.5	0.20			1.9											
		3020R-TMR-6D	3.0	0.25			2.3											
 Stability Oriented 1-edge		GMR 2-TK-8D	2.0	0.20	20	4.3	1.5	8°									H22 H23	
		3-TK-8D	3.0	0.25			2.3											
		4-TK-8D	4.0	0.30			3.3											
 Shows GMR2.2-8D / 15D Sharp-Cutting 1-edge		GM ^{R/L} 2.2-8D	2.2	0.17	20	4.3	1.8	8°										H22 H23
		2.2-15D	2.2	0.00			1.8											
		3-4D	3.0	0.20			2.3											
		4-4D	4.0	0.25			3.3											

● : Std. Item

Edge Preparation

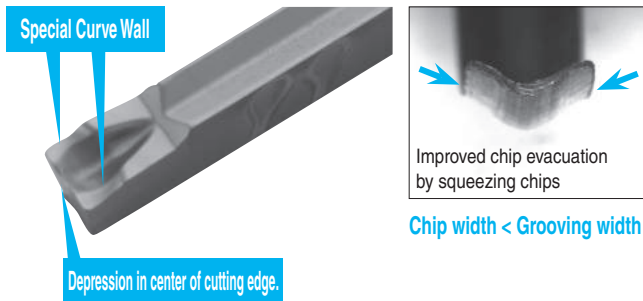
Series	MT-Chipbreaker		TK-Chipbreaker		TMR-Chipbreaker	Without Chipbreaker (NB)	
Edge Prep.	Chamfer + Honed	Chamfer + Honed	Chamfer + Honed	Sharp Edge	Chamfer + Honed	R honed	Sharp Edge
	Corner-R (r _e) = 0.05	Sharp Corner	Corner-R (r _e) = 0.2~0.3	Corner-R (r _e) = 0.2~0.3	Corner-R (r _e) = 0.2	Corner-R (r _e) = 0.05	Sharp Corner
							
	CR9025/PR915	PR930/KW10	CR9025/PR915	PR930/KW10	PR1115	CR9025	PR930/KW10

• Sharp Edge Spec. can reduce cutting force by 40% less than that of chamfer edge.

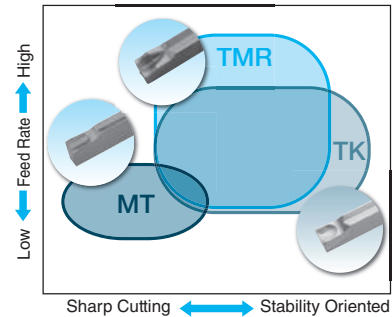
Series	Advantage
GMM-MT	Specific chipbreaker for cut-off operations requiring sharp cutting performance. Minimizes the Boss.
GMM-NB	Cutting edge is flat with non-chipbreaker. It works well for brass, etc.
GMM-TK	Stable design with chipbreaker for cut-off. Large corner-R. 2-edge for economical performance.
GMN-TK	Same chipbreaker geometry as GMM-TK. 1-edge. Wide application range.
GMN (Std.) (Without 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.

TMR-Chipbreaker

Advantages of Chipbreaker



GMM Chipbreaker MAP

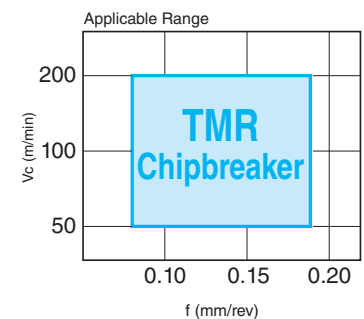


TMR-chipbreaker enables stable chip control also for high feed rates.

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

(Workpiece material: SCM415, φ30, constant spindle revolution)

Description	n=1,060min ⁻¹ (Vc=100m/min)		n=2,123min ⁻¹ (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)				

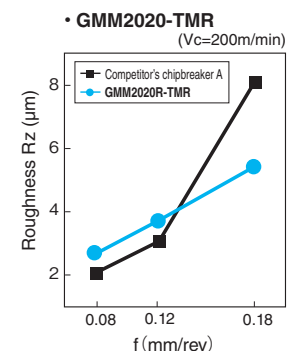
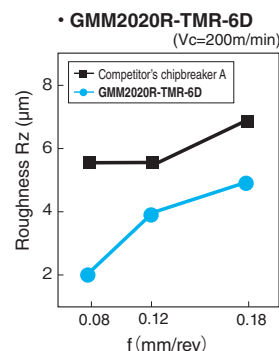


Recommended Cutting Conditions

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

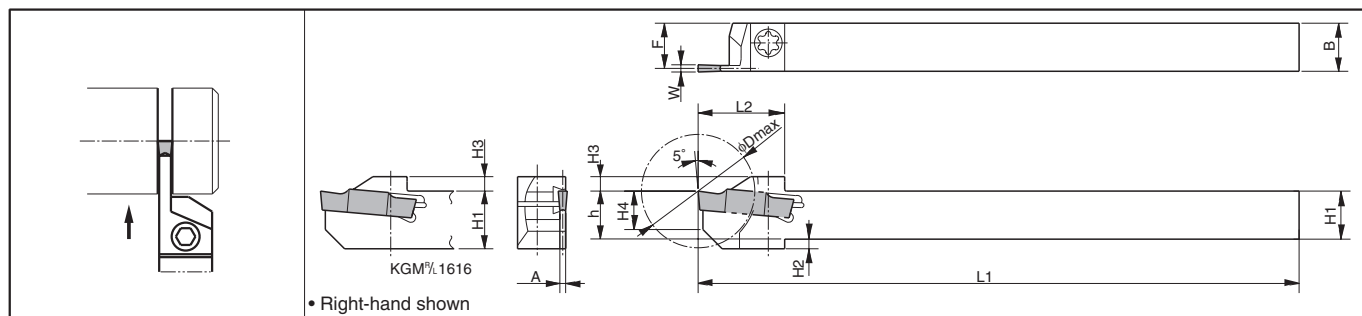
TMR-Chipbreaker provides good surface roughness on the workpiece end face at high feed rate ranges.



Cut-Off Toolholders

KGM (for automatic lathe)

Edge Width:1.5~4.0mm



Toolholder Dimensions

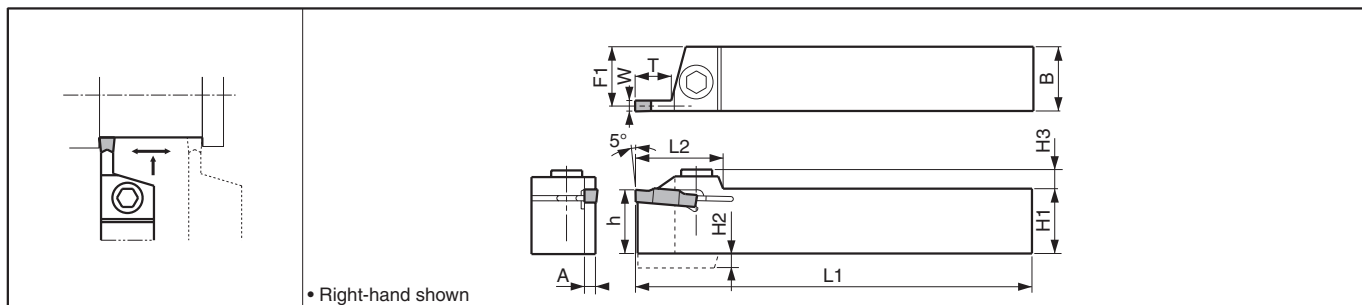
Description	Std.		Cut-off Dia. ϕD_{max}	Dimension (mm)										Edge Width W(mm)		Spare Parts	
	R	L		H1=h	H2	H3	H4	B	L1	L2	F	A	MIN.	MAX.		Screw	Wrench
KGM^{R/L} 1010JX-1.5	●	●	20	10	2	3	8	10	120	18	9.4	1.2	1.5	2.0		SE-40120TR	LTW-15S
1212JX-1.5	●	●	25	12		4	10	12		20.5	11.4						
KGM^{R/L} 1010JX-2	●	●	20	10	2	3	8	10	120	18	9.15	1.7	2.0	3.0		SE-40120TR	LTW-15S
1212JX-2	●	●	25	12		4	10	12		19	11.15						
1616JX-2	●	●	32	16	-		9	16		24.5	15.15					SE-50125TR	LTW-20
KGM^{R/L} 1010JX-2.5	●	●	20	10	2	3	8	10	120	18	9	2.0	2.4	3.0		SE-40120TR	LTW-15S
1212JX-2.5	●	●	25	12		4	10	12		20.5	11						
1616JX-2.5	●	●	32	16	-		9	16		25.5	15					SE-50125TR	LTW-20
KGM^{R/L} 1616JX-3	●	●	32	16	-	4	9	16	120	25.5	14.8	2.4	3.0	4.0		SE-50125TR	LTW-20
KGMR 1212F-1.5-85	●		25	12	2	4	10	12	85	19	11.4	1.2	1.5	2.0		SE-40120TR	LTW-15S
KGM^{R/L} 1212F-2-85	●	●	25	12	2	4	10	12	85	19	11.15	1.7	2.0	3.0		SE-40120TR	LTW-15S
KGM^{R/L} 1212F-2.5-85	●	●	25	12	2	4	10	12	85	19	11	2.0	2.4	3.0		SE-40120TR	LTW-15S

H

Cut-off

KGM

Edge Width:3.0~8.0mm



Toolholder Dimensions

Description	Std.		Dimension (mm)										Edge Width W(mm)		Spare Parts			
	R	L	H1=h	H2	H3	B	L1	L2	F1	A	T		MIN.	MAX.		Screw	Wrench	
KGM^{R/L} 1212H-3	●	●	12	4	6	12	100	27	10.8	2.4	9		3.0	3.0	SB-5TR	-	LTW-20	-
1616H-3	●	●	16		7	16			14.8									
2020K-3	●	●	20	-	7	20	125	27	18.8	3.4	10		3.0	4.0	-	HH5X16	-	LW-4
2525M-3	●	●	25		7	25	150		23.8							HH5X25	-	
KGM^{R/L} 2020K-4	●	●	20	-	7	20	125	27	18.3	3.4	10		4.0	5.0	-	HH5X16	-	LW-4
2525M-4	●	●	25		7	25	150		23.3							HH5X25	-	
KGM^{R/L} 2020K-5	●	●	20	-	7	20	125	27	17.8	4.4	10		5.0	6.0	-	HH5X16	-	LW-4
2525M-5	●	●	25		7	25	150		22.8							HH5X25	-	
3232P-5	●	●	32			32	170		29.8									
KGM^{R/L} 2525M-8	●	●	25	7.5	10.5	25	150	40	22.0	6.0	25		8.0	8.0	-	HH6X25	-	LW-5
3232P-8	●	●	32	-		32	170		29.0									

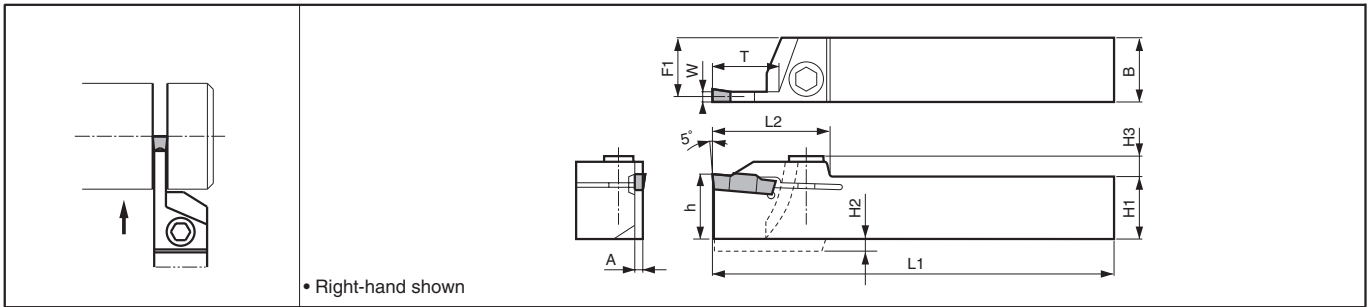
- Dimension T shows available grooving depth.

- 4mm width Insert can be installed in KGM^{R/L} 1212H-3, but is not recommended due to the toolholder's rigidity.

● : Std. Item

KGM-T

Edge Width:2.0~6.0mm



Toolholder Dimensions

Description	Std.		Dimension (mm)											Edge Width W (mm)		Spare Parts			
	R	L	H1=h	H2	H3	B	L1	L2	F1	A	T			MIN.	MAX.				
KGM ^{R/L} 2012K-2T17 2020K-2T17 2525M-2T17	●	●	20	-	7	12	125	33	11.15	1.7	17		2.0	3.0		SB-5TR	-	LTW-20	-
	●	●	20			20	125		19.15							-	HH5X16	-	LW-4
	●	●	25			25	150		24.15							-	HH5X25	-	LW-4
KGM ^{R/L} 1616H-3T20 2012K-3T20 2020K-3T20 2525M-3T20	●	●	16	4	7	16	100	36	14.8	2.4	20		3.0	4.0		SB-5TR	-	LTW-20	-
	●	●	20			12	125		10.8							-	HH5X16	-	LW-4
	●	●	25			20	125		18.8							-	HH5X25	-	LW-4
	●	●	25			25	150		23.8							-	HH5X25	-	LW-4
KGM ^{R/L} 2020K-4T20 2525M-4T20 2525M-4T25	●	●	20	-	7.5	20	125	36	18.3	3.4	20		4.0	5.0		-	HH5X16	-	LW-4
	●	●	25			25	150		23.3							-	HH5X25	-	LW-4
	●	●	25			25	150	41	23.3		25					-	HH5X25	-	LW-4
KGM ^{R/L} 2525M-5T25 3232P-5T25	●	●	25	-	8.5	25	150	42	22.8	4.4	25		5.0	6.0		-	HH5X25	-	LW-4
	●	●	32			32	170		29.8							-	HH5X25	-	LW-4
KGM ^{R/L} 2525M-6T30	●	●	25	-	9.5	25	150	45	22.4	5.2	30		6.0	6.0		-	HH5X25	-	LW-4

• Dimension T shows the distance from the Toolholder to the cutting edge. Ref. to the Table H24 for the relationship between the available Grooving Depth and the Cutting Dia.
• When using GMG / GMM type (2-edge) insert, set the groove depth under 15mm.

Applicable Inserts

Applications Ref. to Page	Grooving / Turning G30	Grooving / Turning G30	Grooving G30	Full-R / Copying G30	Full-R / Copying G31	Cut Off / Deep Grooving H20	Cut Off / Deep Grooving H20	Cut Off / Deep Grooving H20	Cut Off / Deep Grooving H20	Cut Off / Deep Grooving H20
Insert	MW	MS	MG			MT	NB	TK	TK	TMR
Toolholder Description										
KGM ^{R/L} ...1.5	-	-	-	-	-	GMM1520..MT GMM2020..MT GMM1520%L..MT GMM2020%L..MT	GMM1520..NB GMM2020..NB	GMM2020..T GMM2020%L..T	GMN2..TK GM%2..TK	-
KGM ^{R/L} ...2(T)	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMG3020..MG	GMG3020..R GMM3020..R	-	GMM2020..MT GMM2520..MT GMM3020..MT GMM2020%L..MT GMM2520%L..MT GMM3020%L..MT	GMM2020..NB GMM2520..NB GMM3020..NB	GMM2020..T GMM2520..T GMM3020..T GMM2020%L..T GMM2520%L..T GMM3020%L..T	GMN2..TK GMN3..TK GM%2..TK GM%3..TK	GMN2.2 GMN3 GM%2.2 GM%3
KGM ^{R/L} ...2.5	GMM2420..MW GMM3020..MW	GMG3020..MS GMM3020..MS	GMG2520..MG GMG3020..MG	GMG3020..R GMM3020..R	-	GMM2520..MT GMM3020..MT GMM2520%L..MT GMM3020%L..MT	GMM2520..NB GMM3020..NB	GMM2520..T GMM3020..T GMM2520%L..T GMM3020%L..T	GMN3..TK GM%3..TK	GMN3 GM%3
KGM ^{R/L} ...3(T)	GMM3020..MW GMM4020..MW	GMG3020..MS GMM3020..MS GMG4020..MS GMM4020..MS	GMG3020..MG GMG3520..MG GMG4020..MG	GMG3020..R GMM3020..R GMG4020..R GMM4020..R	-	GMM3020..MT GMM3020%L..MT	GMM3020..NB	GMM3020..T GMM3020%L..T	GMN3..TK GMN4..TK GM%3..TK GM%4..TK	GMN3 GMN4 GM%3 GM%4
KGM ^{R/L} ...4(T)	GMM4020..MW GMM5020..MW	GMG4020..MS GMM4020..MS GMG5020..MS GMM5020..MS	GMG4020..MG GMG5020..MG	GMG4020..R GMM4020..R GMG5020..R GMM5020..R	-	-	-	-	GMN4..TK GM%4..TK	GMN4 GMN5 GM%4
KGM ^{R/L} ...5T	GMM5020..MW GMM6020..MW	GMG5020..MS GMM5020..MS GMG6020..MS GMM6020..MS	GMG5020..MG GMG6020..MG	GMG5020..R GMM5020..R GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN5 GMN6
KGM ^{R/L} ...6T	GMM6020..MW	GMG6020..MS GMM6020..MS	GMG6020..MG	GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN6
KGM ^{R/L} ...8	GMM8030..MW	-	GMG8030..MG	-	GMGA8030..R	-	-	-	-	-

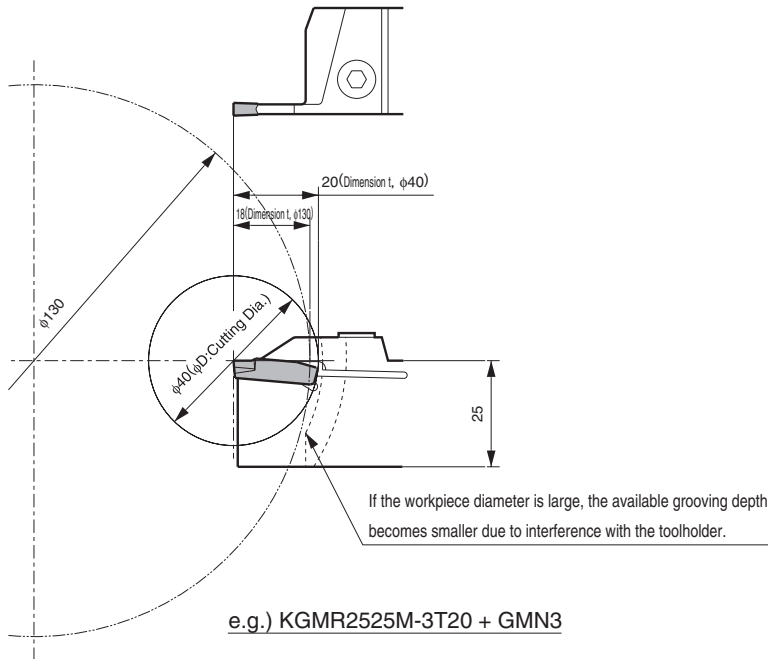
Recommended Cutting Conditions ➡ H29

● : Std. Item

Cut-Off Toolholders

Possible cutting diameter of KGM / KGM-T type

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



H

Cut-off

◆ KGM (for Automatic Lathe) Possible Cutting Dia. Table

Toolholder Description		φD(Cutting Dia.)																				
KGM ^{R/L}	0810K-1.5-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	∞				
	1010□-1.5...	-	-	-	-	-	-	-	20	25	32	40	60									
	1212□-1.5...	-	-	-	-	25	26	28	32	36	40	60	100	∞	∞	∞	∞					
	0810K-2-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32					
	1010□-2...	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞					
	1212□-2...	-	-	-	-	25	26	28	50	∞	∞	∞	∞									
	1616□-2...	32	40	50	60	80	100	∞	∞													
	1010□-2.5...	-	-	-	-	-	-	-	20	25	32	40	60						∞	∞	∞	∞
	1212□-2.5...	-	-	-	-	25	26	28	32	36	40	60	100									
	1616□-2.5...	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞									
1616□-3...	32	40	50	60	80	100																
Available Grooving Depth t (mm)		16	15	14	13	12.5	12	11	10	9	8	7	6	5	4	3	2	1				

◆ KGM-T Possible Cutting Dia. Table (GMN, GM^{R/L} when using 1-edge insert)

Toolholder Description		φD(Cutting Dia.)													
KGM ^{R/L}	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	90	130	240					
	2020K-3T20	-	-	-	-	-	40	90	130	240					
	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	280	600									
	2525M-6T30	100	300	∞	∞	∞									
Available Grooving Depth t (mm)		30	27	25	23	22	20	19	18	17	16	15	14	Under 13	

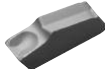
Cut-Off Inserts

TKN / TK^{R/L}

Classification of usage		P	Carbon steel / Alloy steel									Ref. to Page for Applicable Toolholders				
☛ :Continuous-Light Interruption / 1st Choice		M	Stainless Steel			☛	☛		○							
☞ :Continuous-Light Interruption / 2nd Choice		K	Cast Iron								☛					
● :Continuous / 1st Choice		N	Non-ferrous Metals								☛					
○ :Continuous / 2nd Choice																
Description		Dimension (mm)		Angle	Cermet		CVD Coated Carbide	MEGACOAT NANO	PVD Coated Carbide		Carbide					
		W	re	θ	TN620	TN90	CR9025	PR1535	PR660	PR930	KW10					
TKN	1.6	1.6	0.15	-		●	●	○	○	●	●	H26 H28				
	2	2.2	0.20		●	●	●	●	○	●	●					
	2.4	2.4	0.20		●	●	●	●	○	●	●					
	3	3.1	0.25		●	●	●	●	○	●	●					
	4	4.1	0.30		●	●	●	●	○	●	●					
	4.8	4.8	0.30				●	○								
	5	5.1	0.30				●	●	○	●	●					
	6	6.4	0.35				●	○	○		●					
	8	8.0	0.40				●	○	○							
	9	9.6	0.45				●	○	○							
TKN	1.6-P	1.6	0.20	-			●	○	○		●	H26 H28				
	2-P	2.2	0.20		○	●	●	●	○	●	●					
	3-P	3.1	0.25		○		●	●	○	●	●					
					R	L	R	L	R	L	R	L	R	L		
TK ^{R/L}	1.6	1.6	0.15	8°				●		○	○	○	○	●	●	●
	2	2.2	0.20		○		●	●	●	○	○	○	○	●	●	●
	2.4	2.4	0.20				●	●	●	○	○	○	○	●	●	●
	3	3.1	0.25				●	●	●	○	○	○	○	●	●	●
	4	4.1	0.30		○		●	●	●	○	○	○		●	●	●
	5	5.1	0.30				●	●	○	○	○	○		●	●	
TK ^{R/L}	1.6-P	1.6	0.20	8°				●		○	○				●	
	2-P	2.2	0.20				●		●	○	○	○	●	●		
	3-P	3.1	0.25		○		●		○	○	○	○	●	●		

Recommended Cutting Conditions **H29**

Cut-Off Tools

Cutting Range	Chipbreaker	Advantage
General Cut-Off	Standard (Without 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 Prep.

Edge Prep.	Chamfer + Honed	Sharp Edge	R honed
			
Std. Chipbreaker	TN90 CR9025 / PR660	PR1535 PR930 / KW10	-
P-Chipbreaker	-	-	TN620 / TN90 / CR9025 / PR1535 PR660 / PR930 / KW10

* Sharp Edge Spec. can reduce cutting force by 40% less than that of chamfer edge.

Set Up (TKN / TK^{R/L})

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

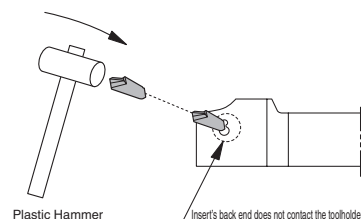


Fig.1 How to attach inserts

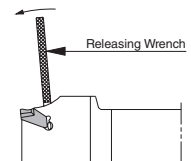


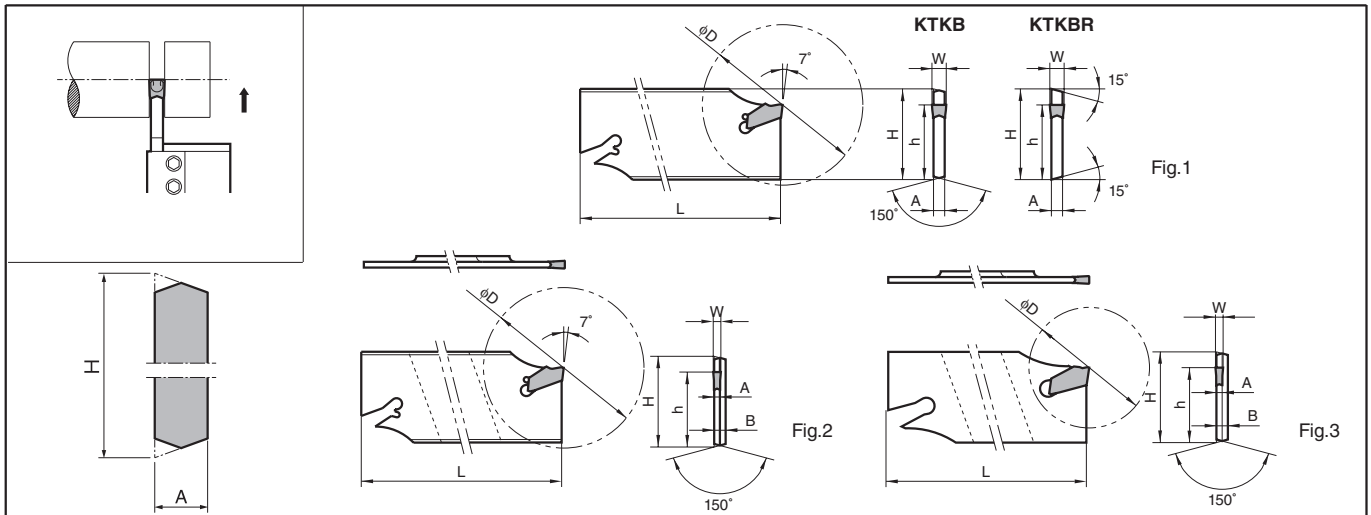
Fig.2 How to detach inserts

- : Std. Item
- : Check Availability

Inserts are sold in 10 piece boxes.

Cut-Off Blades

KTKB-SS / KTKB-S



Blade Dimensions

Description	Std.	Cut-off Dia.	Dimension (mm)						Drawing	Applicable Inserts H25				Applicable Blocks H27
		ϕD_{max}	*H	h	B	L	A	W						
KTKB 19-1SS	●	32	19	15.7	2.4	86	1.2	1.6	Fig.3	TKN1.6	TKN1.6-P	TK ^R /L 1.6	TK ^R /L 1.6-P	KTKTB 16-19 20-19
KTKB 26-1SS	●	35	26	21.4	2.4	110	1.2	1.6	Fig.3	TKN1.6	TKN1.6-P	TK ^R /L 1.6	TK ^R /L 1.6-P	KTKTB 16-26 20-26
KTKB 32-1SS	●	35	32	25	2.4	150	1.2	1.6	Fig.3	TKN1.6	TKN1.6-P	TK ^R /L 1.6	TK ^R /L 1.6-P	KTKTB 20-32 25-32 KTKTBF 25-32 32-32
KTKB 19-2S	●	40	19	15.7	-	86	1.8	2.2 2.4	Fig.1	TKN2 TKN2.4	TKN2-P	TK ^R /L 2 TK ^R /L 2.4	TK ^R /L 2-P	KTKTB 16-19 20-19
KTKB 26-2S	●	50	26	21.4	-	110	1.8	2.2 2.4		TKN2 TKN2.4	TKN2-P	TK ^R /L 2 TK ^R /L 2.4	TK ^R /L 2-P	KTKTB 16-26 20-26
KTKB 26-3S	●	75					2.6	3.1		TKN3	TKN3-P	TK ^R /L 3	TK ^R /L 3-P	
KTKB 26-4S	●	80					3.4	4.1		TKN4	-	TK ^R /L 4	-	
KTKB 26-5S	●	80					4.2	4.8 5.1		TKN4.8 TKN5	-	TK ^R /L 5	-	
KTKB 32-2S	●	50	32	25	2.6	150	1.8	2.2 2.4	Fig.2	TKN2 TKN2.4	TKN2-P	TK ^R /L 2 TK ^R /L 2.4	TK ^R /L 2-P	KTKTB 20-32 25-32 KTKTBF 25-32 32-32
KTKB 32-3S	●	100					2.6	3.1		TKN3	TKN3-P	TK ^R /L 3	TK ^R /L 3-P	
KTKB 32-4S	●	100					3.4	4.1	Fig.1	TKN4	-	TK ^R /L 4	-	
KTKB 32-5S	●	120					4.2	4.8 5.1		TKN4.8 TKN5	-	TK ^R /L 5	-	
KTKB 32-6S	●	120					5.4	6.4		TKN6	-	-	-	
KTKB ^R /L 32-8S	●	120	32	25	-	150	6.8	8.0	Fig.1	TKN8	-	-	-	
KTKB ^R /L 32-9S	R	120					8.0	9.6		TKN9	-	-	-	

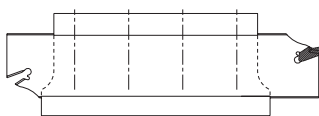
Note) 1. Suffix "-SS" means silver coating.

2. Releasing wrench is "LTK-5".

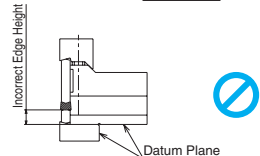
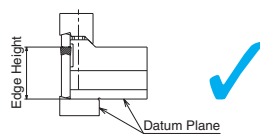
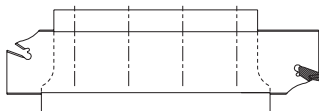
* Dimension H shows virtual apex distance.

How to install toolblock and blade.

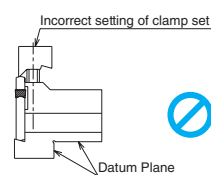
Correct way



Incorrect way



Incorrect setting of clamp set



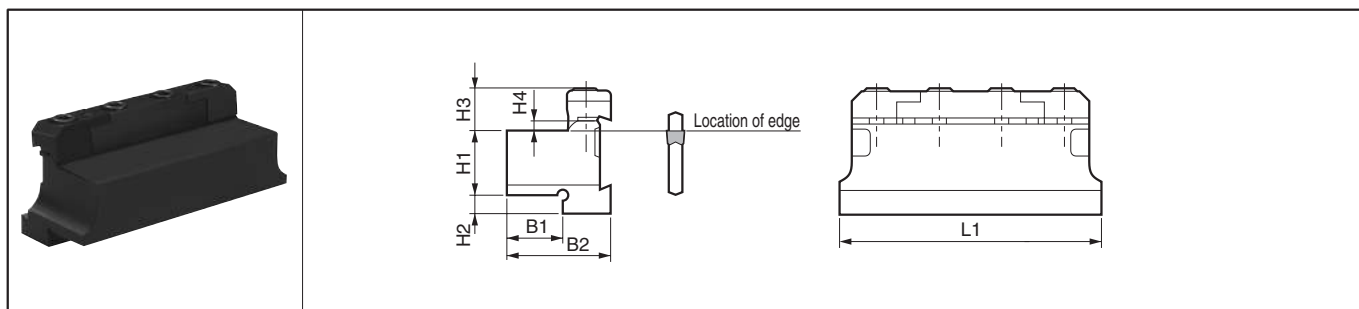
If the clamp set is mounted backward, a large gap will occur between the clamp and the toolblock, and the blade may come off during machining. Be careful when installing the clamp for safety.

● : Std. Item

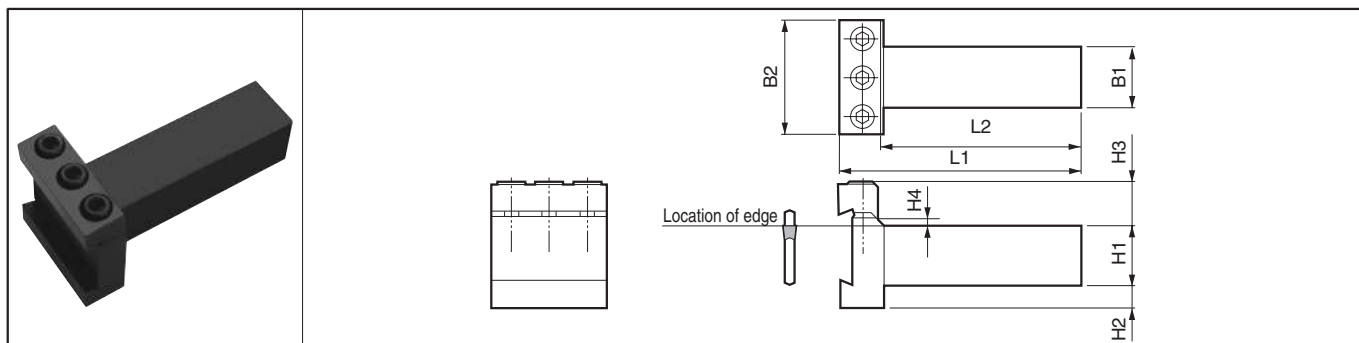
R : Std. Item (Right-hand Only)

Toolblocks (for Holding Blade)

■ KTKTB (Separate type)



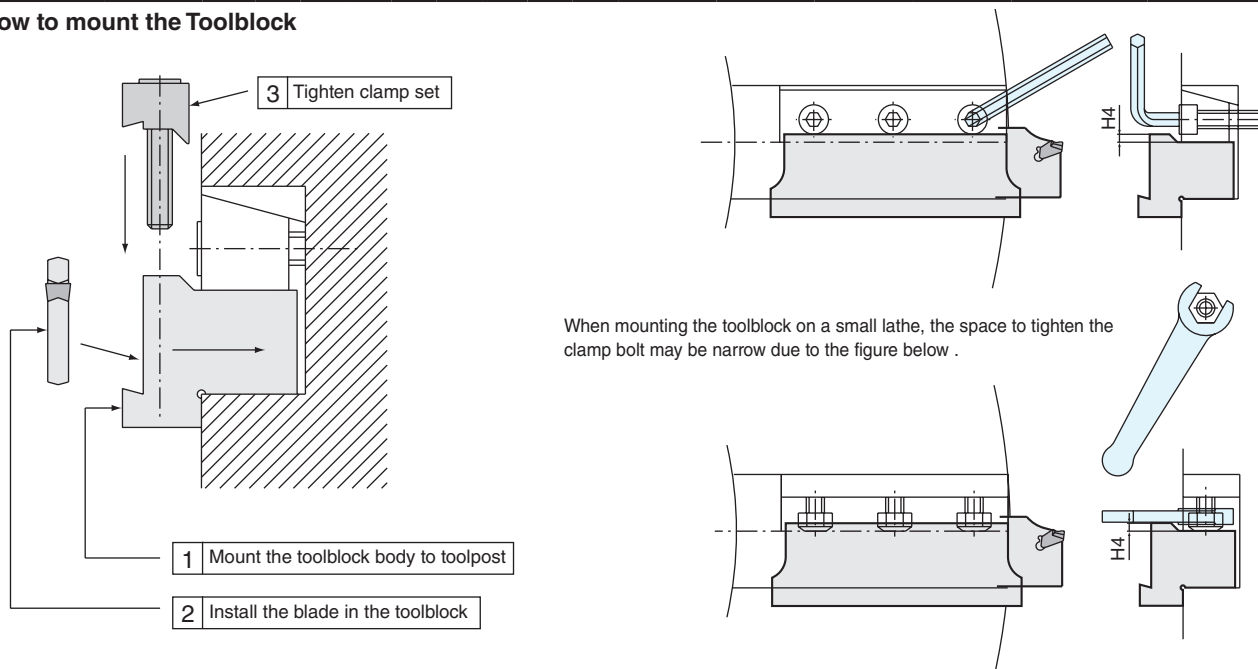
■ KTKTBF (Separate / Perpendicular type)



● Toolblock Dimensions

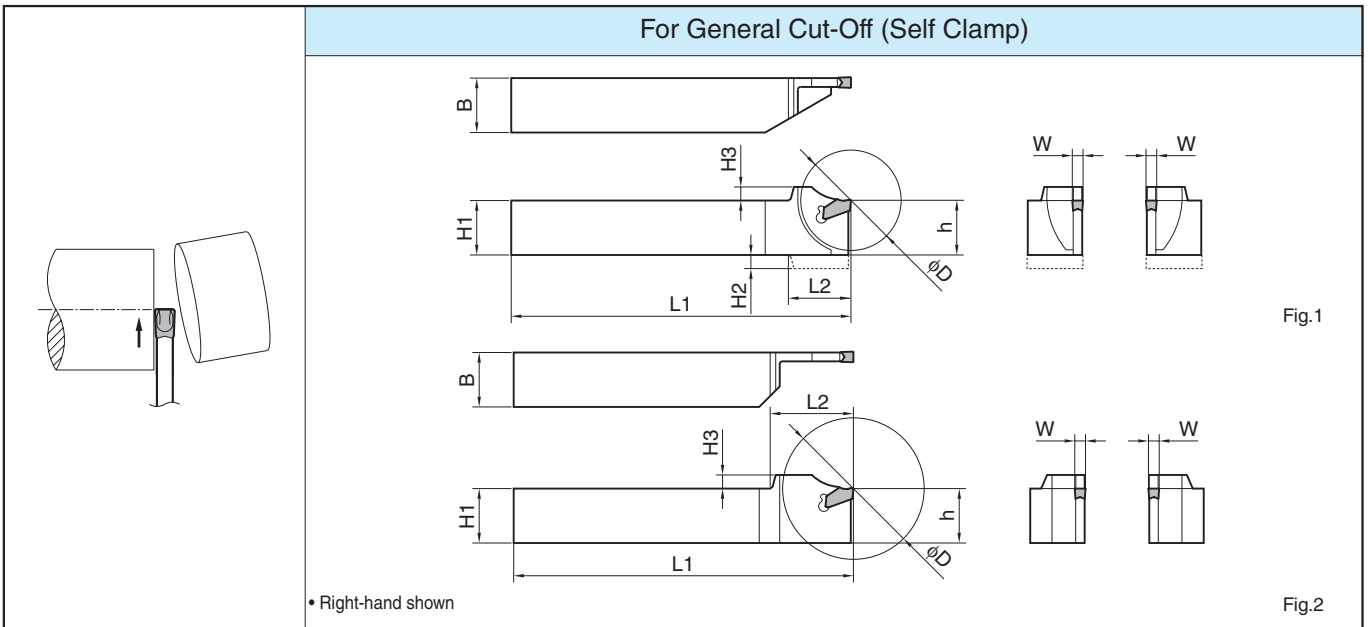
Description	Std.	Dimension (mm)								Spare Parts				Applicable Blade		
										Clamp Set		Screw	Wrench	Cut-Off	Face Grooving	
		H1	H2	H3	H4	B1	B2	L1	L2							
KTKTB	16-19	●	16	4	12	2	15.5	29.5	76	-	-	BCS-1	HH5X25	LW-4	KTKB19-OS KTKB19-1SS	-
	20-19	●	20				19	34							KTKB19-OS KTKB19-1SS	
	16-26	●	16	13	14	2.5	15.5	31.5	86	-	BCS-2	-	HH6X30	LW-5	KTKB26-OS KTKB26-1SS	-
	20-26	●	20	9			19	36							KTKB26-OS KTKB26-1SS	
	20-32	●	20	13	17	3.5	19	38	100	-	BCS-3	-	HH6X30	LW-5	KTKB32-OS KTKB32-1SS	KFTB%.0000-4S KFTB%.0000-5S
	25-32	●	25	8			23	42	110		BCS-4				KTKB%.32-OS	
	32-32	●	32	5			29	48	KTKB%.32-OS							
KTKTBF	25-32	●	25	9.5	17	3.5	25	48	102	84.5	-	BCS-5	HH6X30	LW-5	KTKB32-OS KTKB32-1SS	KFTB%.0000-4S KFTB%.0000-5S
	32-32	●	32	2.5			32	48	117	99.5					KTKB%.32-OS	

◆ How to mount the Toolblock



Cut-Off Toolholders (Integral Type)

KTKH-S



Toolholder Dimensions

Description	Std.		Cut-off Dia. (mm)	Dimension (mm)						Edge Width(mm)	Drawing	Spare Parts	Ref. to Page for Recommended Cutting Conditions
	R	L		φDmax	H1=h	H2	H3	B	L1			L2	
													
KTKH^{R/L} 1010F-2S 1212H-2S 1612H-2S 1616H-2S 2012K-2S 2020K-2S 1612H-3S 1616H-3S 2012K-3S 2020K-3S 2525M-3S 2012K-4S 2020K-4S 2525M-4S 2525M-5S	●	●	30	10	5	4	10	80	18.6	2.2 2.4	Fig.1	LTK-5	H29
	●	●	33	12	4	5	12	100	19.8				
	●	●	33	16	-	3	12	100	19.8				
	●	●	33	16	-	3	16	100	19.8				
	●	●	38	20	-	4	12	125	22.8				
	●	●	38	20	-	4	20	125	22.8				
	●	●	36	16	4	4	12	100	21.7	3.1	Fig.1		
	●	●	36	16	4	4	16	100	21.7		Fig.2		
	●	●	41	20	-	5	12	125	25.3				
	●	●	52	20	-	5	20	125	31.0				
	●	●	53	25	-	5	25	150	31.5	4.1	Fig.1		
	●	●	44	20	-	5	12	125	26.3		Fig.2		
	●	●	62	20	-	5	20	125	35.0				
	●	●	68	25	-	5	25	150	38.0				
	●	●	79	25	-	5	25	150	43.5	4.8,5.1	Fig.2		
KTKH^{R/L} 2020K-3T17S 2525M-3T22S 2020K-4T22S 2525M-4T22S	●	●	35	20	-	5	20	125	21.8	3.1	Fig.1	LTK-5	H29
	●	●	45	25	-	5	25	150	26.8				
	●	●	45	20	-	5	20	125	26.8	4.1			
	●	●	45	25	-	5	25	150	26.8				

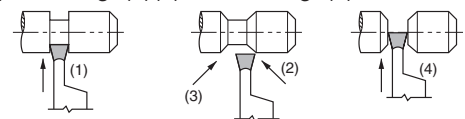
Applicable Inserts

Ref. to Page	H25			
Insert				
Toolholder Description	Low Feed	Lead Angle	Low Feed / Lead Angle	
KTKH^{R/L} ...-2...	TKN2 TKN2.4	TKN2-P	TKR/L2 TKR/L2.4	TKR/L2-P
KTKH^{R/L} ...-3...	TKN3	TKN3-P	TKR/L3	TKR/L3-P
KTKH^{R/L} ...-4...	TKN4	-	TKR/L4	-
KTKH^{R/L} ...-5...	TKN4.8 TKN5	-	TKR/L5	-

Application Example of Cut-Off

1. Cut-Off after Chamfering

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

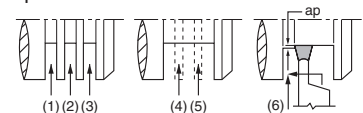


2. Wide Grooving

(1)~(5) Groove Widening

(6) Longitudinal Finishing

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



(In order to prevent both corners' unequal wear)

● : Std. Item

Recommended Cutting Conditions

Recommended Cutting Conditions (In case of using TKF12 / 16 type inserts)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						TKF12						TKF16		Remarks
							Edge Width W (mm)						Edge Width W (mm)		
	MEGACOAT NANO		MEGACOAT	PVD Coated Carbide	DLC Coated Carbide	Carbide	0.5	0.7	1.0	1.25	1.5	2.0	1.5	2.0	
	PR1425	PR1535	PR1225	PR1025	PDL025	KW10	f (mm/rev)						f (mm/rev)		
Carbon Steel	★ 70~170 (50~140)	☆ 70~150 (50~120)	☆ 70~150 (50~120)	☆ 60~130	-	-	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)	☆ 60~130	-	-	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)	☆ 50~100	-	-	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	-	-	-	-	★ 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

Recommended Cutting Conditions (In case of using GMM-MT, GMM-TK, GMM-NB type inserts)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)					Edge Width W (mm)					Remarks
	Cermet	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	-	-	-	-	★ 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 (In case of using TKN, TK^{R/L} type inserts)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)							Edge Width W (mm)					Remarks
	Cermet		CVD Coated Carbide	MEGACOAT NANO	PVD Coated Carbide		Carbide	1.6	2.2 / 2.4	3.1	4.1	4.8~9.6	
	TN620	TN90	CR9025	PR1535	PR660	PR930	KW10	f (mm/rev)					
Carbon Steel	☆ 60~200	☆ 120~200	★ 80~180	☆ 60~150	☆ 60~130	☆ 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	☆ 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	☆ 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	-	-	-	-	-	-	★ 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

Recommended Cutting Conditions (In case of using GMM-TMR type inserts)

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

H



Cut-off

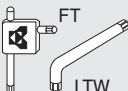
Alternative Toolholder Reference Table for Cut-off Toolholder

Alternative Toolholder Reference Table for Cut-off Toolholder (KTKF / KGM)

Conventional Toolholder					Alternative Toolholder			
Description	Overall length (mm)	Spare Parts			Description	Overall length (mm)	Remarks	Ref. to Page
		Clamp Screw	Wrench					
								
KTKF ^{R/L} 1010K-12	125	SB-4590TRWN	LTW-10S		KTKF ^{R/L} 1010JX-12	120		H8
KTKF ^{R/L} 1212M-12	150				KTKF ^{R/L} 1212JX-12	120		
KTKF ^{R/L} 1616M-12	150				KTKF ^{R/L} 1616JX-12	120		
KTKF ^{R/L} 1010K-16	125				KTKF ^{R/L} 1010JX-16	120		
KTKF ^{R/L} 1212M-16	150				KTKF ^{R/L} 1212JX-16	120		
KTKF ^{R/L} 1616M-16	150				KTKF ^{R/L} 1616JX-16	120		
KGM ^{R/L} 0810K-1.5-125	125	SE-40120TR	LTW-15S		-	-	No replacement	H22
KGM ^{R/L} 1010K-1.5-125	125				KGM ^{R/L} 1010JX-1.5	120		
KGM ^{R/L} 1212M-1.5-150	150				KGM ^{R/L} 1212JX-1.5	120		
KGM ^{R/L} 0810K-2-125	125	SE-40120TR	LTW-15S		-	-	No replacement	
KGM ^{R/L} 1010K-2-125	125				KGM ^{R/L} 1010JX-2	120		
KGM ^{R/L} 1212M-2-150	150				KGM ^{R/L} 1212JX-2	120		
KGM ^{R/L} 1616M-2-150	150	SE-50125TR	LTW-20		KGM ^{R/L} 1616JX-2	120		
KGM ^{R/L} 1010K-2.5-125	125	SE-40120TR	LTW-15S		KGM ^{R/L} 1010JX-2.5	120		
KGM ^{R/L} 1212M-2.5-150	150				KGM ^{R/L} 1212JX-2.5	120		
KGM ^{R/L} 1616M-2.5-150	150	SE-50125TR	LTW-20		KGM ^{R/L} 1616JX-2.5	120		
KGM ^{R/L} 1616M-3-150	150	SE-50125TR	LTW-20		KGM ^{R/L} 1616JX-3	120		

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.

Alternative Toolholder Reference Table for Cut-off Toolholder (KTKH-B / KTKH-S)

Conventional Toolholder					Alternative Toolholder			
Description	Cut-off Dia.	Spare Parts			Description	Cut-off Dia.	Remarks	Ref. to Page
		Releasing Wrench	Clamp Screw	Wrench				
								
KTKH ^{R/L} 0808K-1.6-125B	φ10	-	SE-40120TR	FT-15	-	-	No replacement	H22
KTKH ^{R/L} 1010K-1.6-125B	φ20				KGM ^{R/L} 1010JX-1.5	φ20		
KTKH ^{R/L} 1212M-1.6-150B	φ25				KGM ^{R/L} 1212JX-1.5	φ25		
KTKH ^{R/L} 1414M-1.6-150B	φ26				-	-	No replacement	
KTKH ^{R/L} 1010K-2-125B	φ20	-	SE-40120TR	FT-15	KGM ^{R/L} 1010JX-2	φ20		
KTKH ^{R/L} 1212M-2-150B	φ25				KGM ^{R/L} 1212JX-2	φ25		
KTKH ^{R/L} 1616M-2-150B	φ32				KGM ^{R/L} 1616JX-2	φ32		
KTKH ^{R/L} 1616M-3-150B	φ32	LTK-5	-	-	KGM ^{R/L} 1616JX-3	φ32		
KTKHR 1010K-2-125S	φ30				KGMR 1010JX-2	φ20	Processing dia. is small.	
KTKH ^{R/L} 1212M-2-150S	φ30				KGM ^{R/L} 1212JX-2	φ25	Processing dia. is small.	
KTKH ^{R/L} 1616M-2-150S	φ36				KGM ^{R/L} 1616JX-2	φ32	Processing dia. is small.	
KTKH ^{R/L} 1616M-3-150S	φ45				KGM ^{R/L} 1616JX-3	φ32	Processing dia. is small.	

Note) The corresponding alternative toolholder may be different from the conventional toolholder in processing diameter or insert size.
Make sure of their specifications by referring to the catalog or other documents.