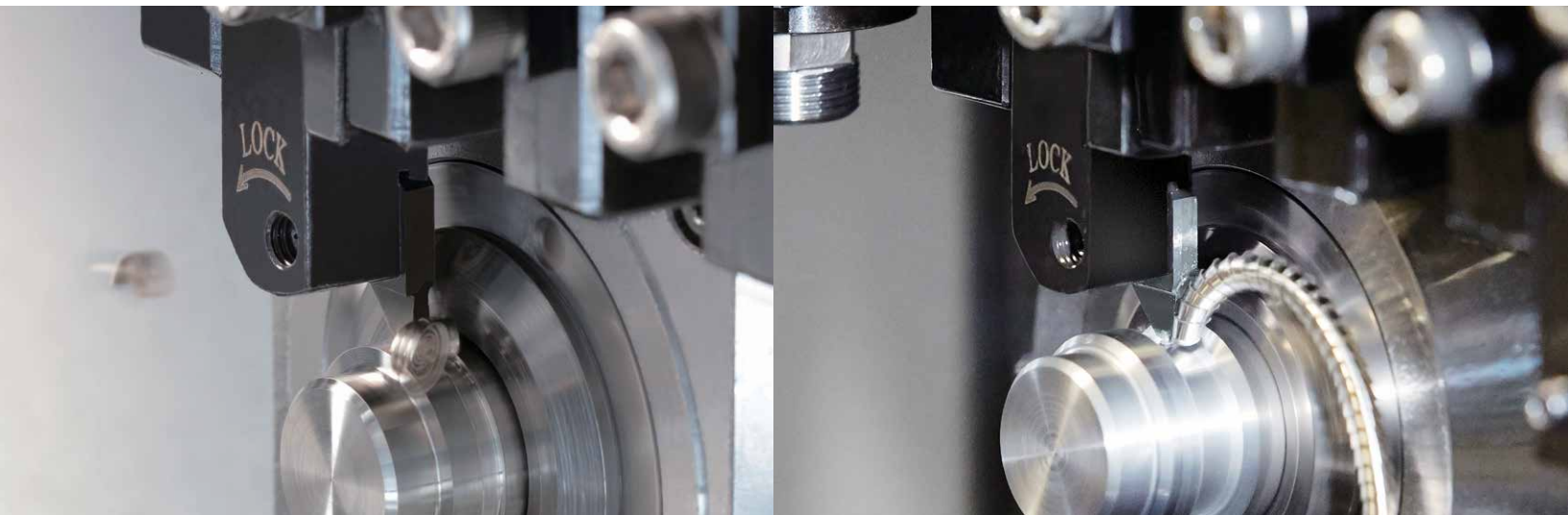




KTKF Series

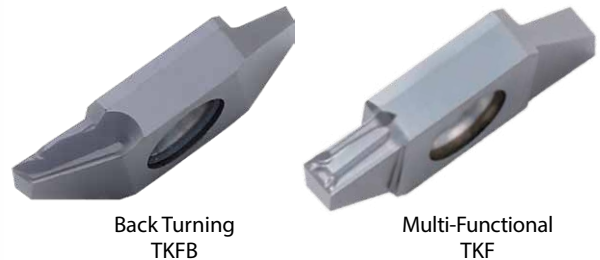
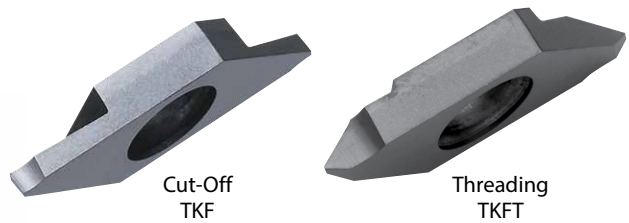
for Small Parts Machining



Multi-Functional, Cut-Off, Back Turning, and Threading Tools

Large variety of applications available

Featuring Kyocera's high-performance insert grades



NEW JCTM Expansion
3/8" / 10mm Shank Sizes Added

KTKF Series for Small Parts Machining

Small Diameter Cut-Off, Grooving, Traversing, Back Turning, and Threading
Exceptional Chip Control and Tool Life

1 Large Tooling Lineup for Various Small Part Machining Operations

Insert Selection

Cut-Off : TKF ▶▶ P12

- Available for small and ultra-small diameter workpieces
- Standardized minimum cut-off width of 0.020", 0.5mm (TKF12 type)
- Low cutting resistance S chipbreaker enables sharp Cut-Off
- Tough edge T chipbreaker for increased feed rate and interrupted cut-off
- Corner R (RE) = 0mm (no chipbreaker)
- Available with 16° and 20° lead angles
- Cutting Diameter : Max \varnothing 5mm - \varnothing 12mm (TKF12), Max \varnothing 16mm (TKF16)
- Edge Width : 0.020" - 0.079", 0.5mm - 2.0mm (TKF12) | 0.059" / 0.079", 1.5mm / 2.0mm (TKF16)



Back Turning : TKFB ▶▶ P16

- Low cutting force design improves dimensional accuracy
- Good chip control
- Excellent surface finish with optimized angle of wiper edge
- Molded chipbreaker inserts (GQ) are also available



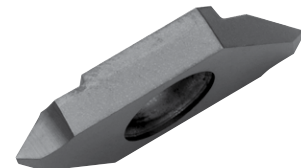
Multi-Functional : TKF ▶▶ P16~17

- GTP Chipbreaker Reduce cycle time with grooving and turning capabilities
- AGT Chipbreaker Improved chip control for various aluminum alloy machining applications



Threading : TKFT ▶▶ P20

- Thread Type : Metric (M) / Unified (UN)
Parallel pipe [G(PF)]
Taper pipe [R(PT) (BSPT)]
- Profile Type : Partial profile
- Multiple cutting edge types for various workpiece shapes
(Cutting Edge Position : A/B/N Type)



Toolholder Selection

KTKF General Purpose Multi-Functional (Cut-Off / Back Turning / Threading) ▶▶ P22

- Shank : □0.375"-0.625", □10-25mm
- Side Screw Clamp



KTKF-S Sub Spindle Tooling (Cut-Off) ▶▶ P32

- Shank : □10-12mm
- Side Screw Clamp



KTKFR-Y Y-axis Toolholder (Cut-Off / Back Turning / Threading) ▶▶ P23

- Shank : 12×16mm, □16mm
- Side Screw Clamp



KTKF-JCTM Holder for High Pressure Coolant (Cut-Off) ▶▶ P28

- Inch Shank :
(Right-hand) 0.500"×0.709", 0.625"×1.000"
□0.375", □0.500", □0.625", □0.750"
(Left-hand) 0.625"×1.000"
□0.625", □0.750"



- Metric Shank :
(Right-hand) 12×18mm, 16×25mm, 20×25mm
□10mm, □12mm, □16mm, □20mm
(Left-hand) 16×25mm, 20×25mm
□16mm, □20mm

- Side Screw Clamp

KTKFL Goose-neck Holder (Cut-Off / Back Turning / Threading) ▶▶ P23

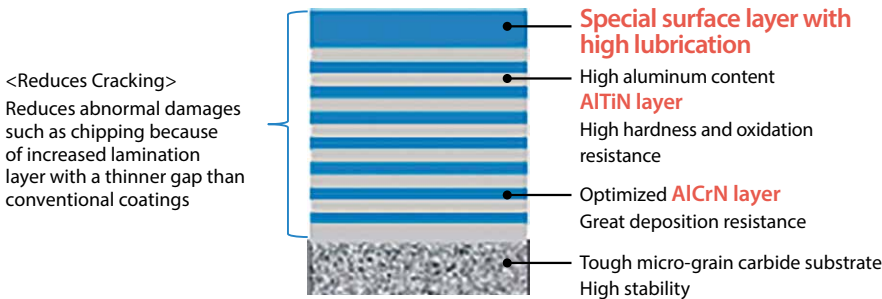
- Inch Shank : 0.500"×0.625", 0.625"×0.750"
- Metric Shank : 12×16mm, 16×20mm
- Side Screw Clamp

2

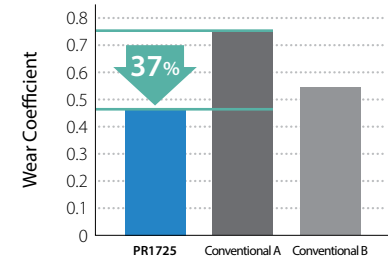
Kyocera's High-performance Insert Grade Technology

PR1725 1st Recommendation for steel machining with excellent surface finish and long tool life

MEGACOAT NANO PLUS AITiN/AICrN Nano laminated film with superior wear resistance and adhesion resistance



Wear Coefficient Comparison (Internal evaluation)

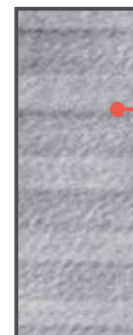


PR1535 The combination of a high-toughness base material and a special nano layer coating maintains long tool life and stable machining of stainless steel

MEGACOAT NANO

- 1 An increase in cobalt content yields a substrate with greater toughness *In comparison to our conventional material grade
- 2 Improved stability by optimization and homogenization of grains in the base material
- 3 MEGACOAT NANO coating technology for long tool life and stable machining

↑ 23%
Fracture Toughness *



MEGACOAT Base Layer Structure

PR1535 shows superior performance in steel machining under unstable conditions

Cracking Comparison by Diamond Indenter (Internal evaluation)

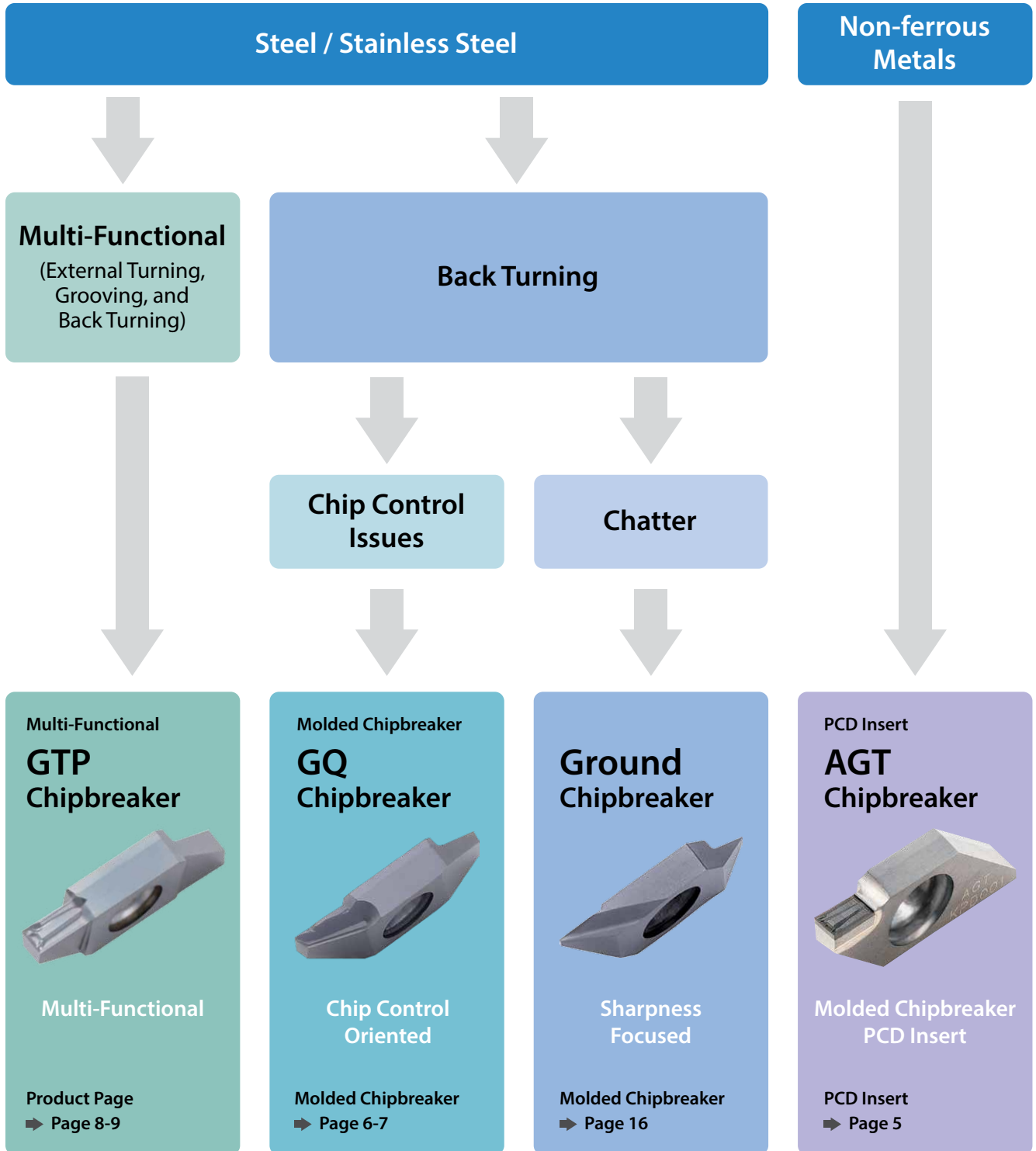


Long Cracks

Short Cracks

↑ Impact Resistance

Back Turning Insert
**Guidelines for
 Chipbreaker Selection**



Molded PCD Chipbreaker

AGT Chipbreaker

Improved Chip Control for Various Aluminum Alloy Machining Applications

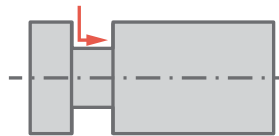
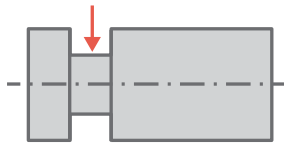


Improved Chip Control

Multi-Functional PCD Chipbreaker for Grooving and Turning

1 Stable Machining for a Wide Range of Applications

Chip control and surface finish comparison with grooving and turning

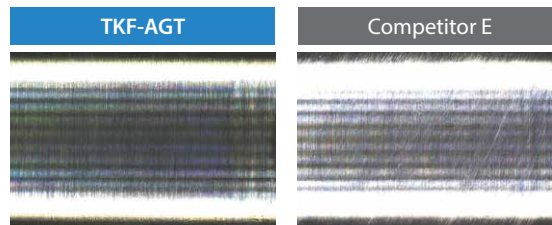


Chip Control Comparison (Grooving) (Internal Evaluation)



Cutting Conditions : $V_c = 820$ sfm, D.O.C. = 0.079"; Wet Workpiece : Aluminum Alloy

Surface Finish Comparison (Turning) (Internal Evaluation)



Cutting Conditions : $V_c = 820$ sfm, D.O.C. = 0.002"; Wet Workpiece : Aluminum Alloy

AGT Chipbreaker showed better chip control when grooving compared to competitor

It also showed superior surface finish with less scratching when turning

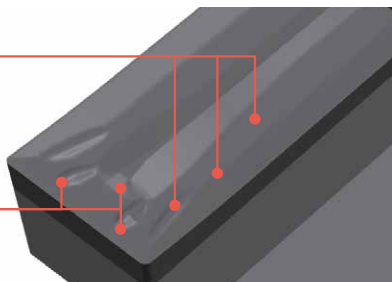
2 Unique Chipbreaker Provides Excellent Chip Control



Dot Formation

Turning

Reduces chip clogging by adjusting the width of the chipbreaker to the D.O.C. Dots around cutting edge for small D.O.C



Grooving

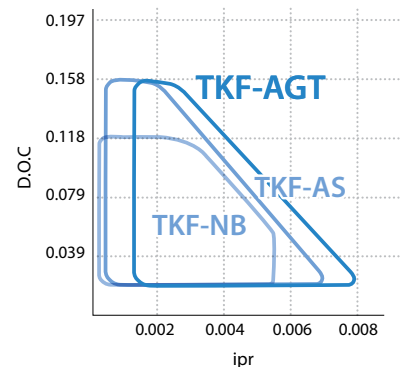
Stable machining with three chipbreaker dots

Sloped Cutting Edge

Reduces chattering with low cutting force design Good surface finish with excellent chip evacuation



Applicable chipbreaker range



GQ Chipbreaker

Excellent Chip Control and Surface Finish with Molded Chipbreaker
 Reduced Cycle Time by Increasing Depth of Cut Capabilities


1 Excellent Chip Evacuation with Molded Chipbreaker

Unique Molded Chipbreaker Two-Feature Combination


Grooving Good Surface Finish

Prevents Chip Crunching

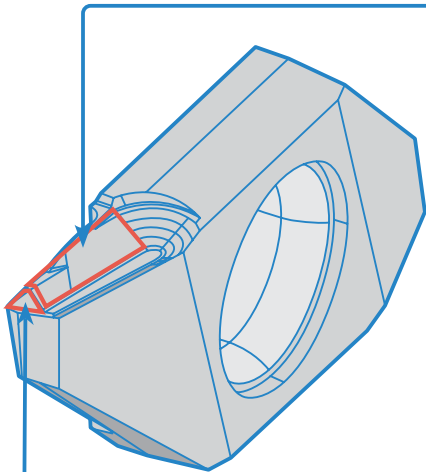
GQ Chipbreaker



Competitor A (Ground)




(Internal Evaluation)




Turning Stable Chip Control

Prevents Chip Entanglement

GQ Chipbreaker



Competitor B (Ground)



(Internal Evaluation)

Chip Control Comparison (Turning) Prevents Entanglement with Tightly Curled Chips
 (Internal Evaluation)

Stable Chip Control Over Wide Range of Cutting Conditions

1045

		GQ Chipbreaker			Competitor C (Molded)		
(D.O.C.)	(f)	0.0012 ipr	0.0020 ipr	0.0028 ipr	0.0012 ipr	0.0020 ipr	0.0028 ipr
Competitor (0.138")	0.158"						✗ Chip Clogging
0.118"							
0.079"							△ Unstable Chip Control

304

		GQ Chipbreaker			Competitor D (Molded)		
(D.O.C.)	(f)	0.0008 ipr	0.0016 ipr	0.0024 ipr	0.0008 ipr	0.0016 ipr	0.0024 ipr
Competitor (0.138")	0.158"						✗ Insert Fracture
0.118"							✗ Chip Clogging
0.079"							△ Unstable Chip Control

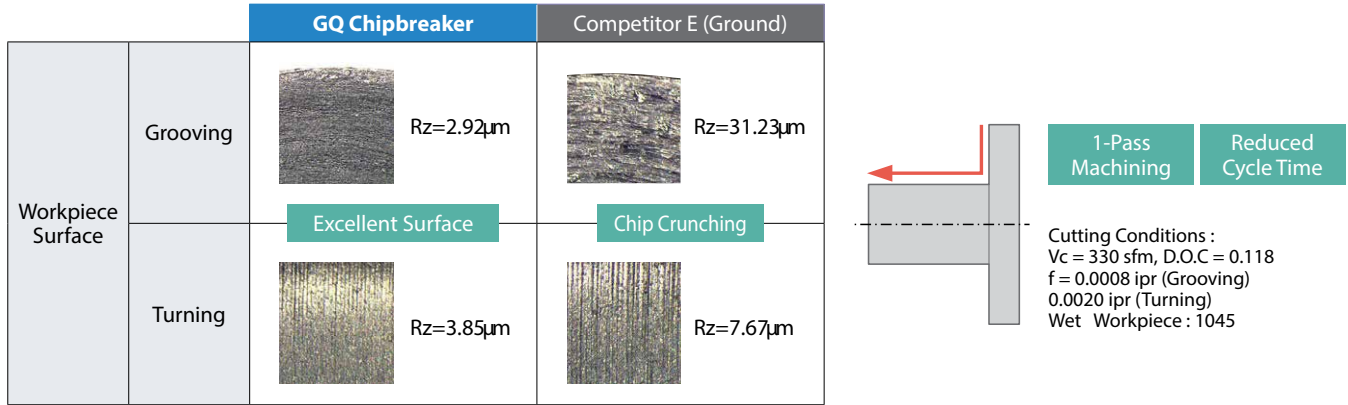
Cutting Conditions : Vc = 330 sfm, Wet

Cutting Conditions : Vc = 260 sfm, Wet

2 Excellent Surface Finish by Preventing Chip Crunching and Clogging

Reduced Cycle Time with GQ Chipbreaker by Increasing Depth of Cut Capabilities

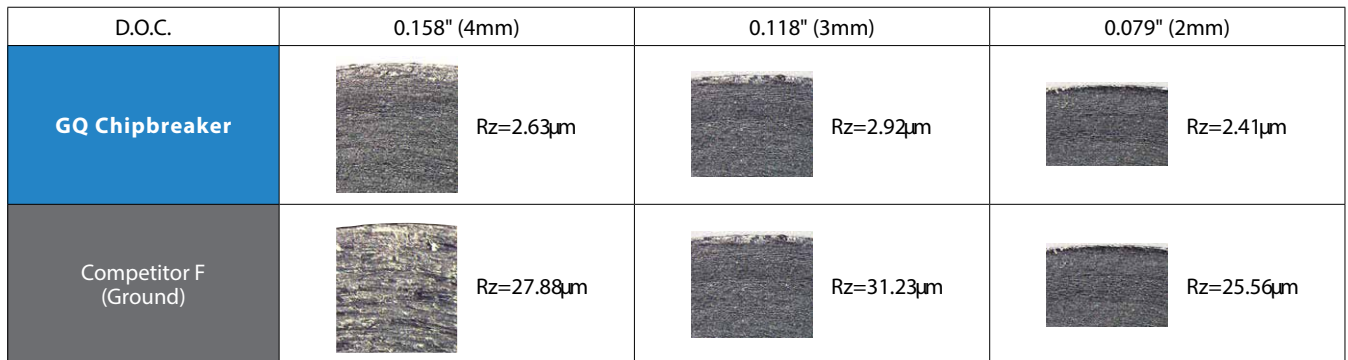
Surface Finish Comparison (Internal Evaluation)



Surface Finish Comparison (Internal Evaluation)

Grooving : Excellent Surface Finish at Large Depths of Cut

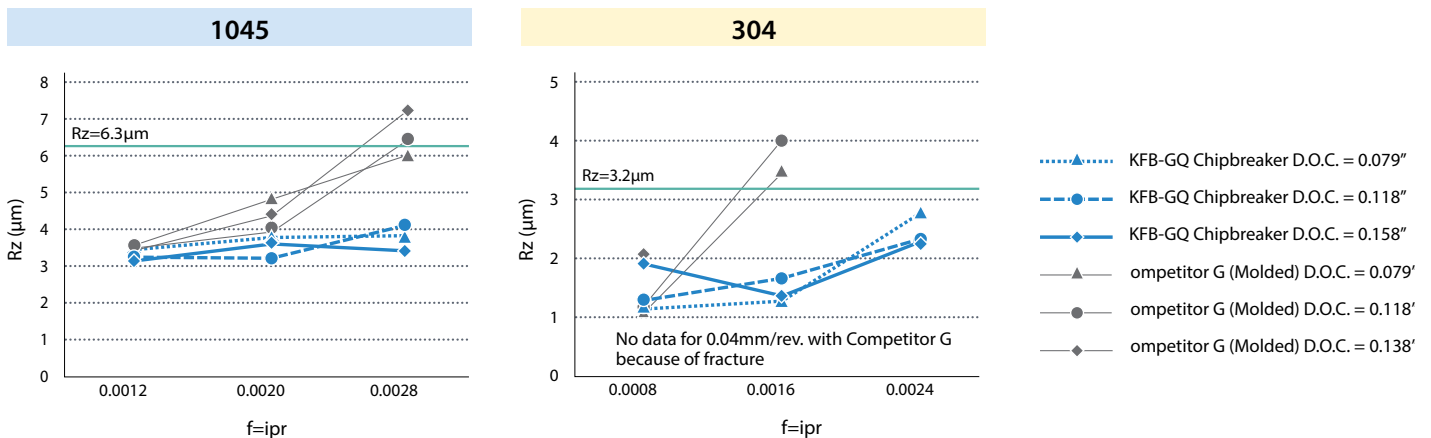
Flange Finish



Cutting Conditions : $V_c = 330$ sfm, $f = 0.0008$ ipr, Wet Workpiece : 1045

Turning : Prevents Chip Clogging and Entanglement at High Feed Rates

Surface Finish During External Turning (Internal Evaluation)



Cutting Conditions : $V_c = 330$ sfm (1045), 260 sfm (304) $f = 0.0012$ - 0.0028 ipr (1045), 0.0008 - 0.0024 ipr (304) Wet

GTP Chipbreaker

Reduce Cycle Time with Grooving and Turning Capabilities

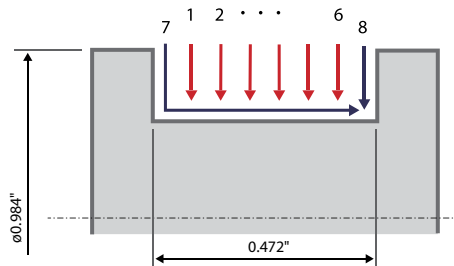


1 Grooving and Turning Available

Cutting Time Comparison (Internal Evaluation)

Competitor A

Multiple Grooves and a Finishing Pass
Workpiece : 1045 ($\phi 0.984$ ")

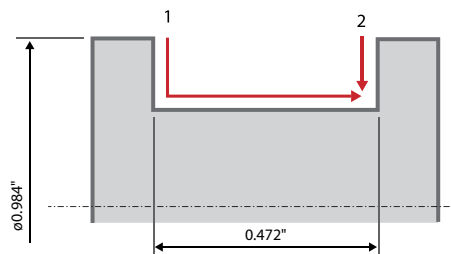


Cutting Conditions: Multiple Grooves
Vc = 330 sfm
D.O.C. = 0.138", f = 0.004 ipr

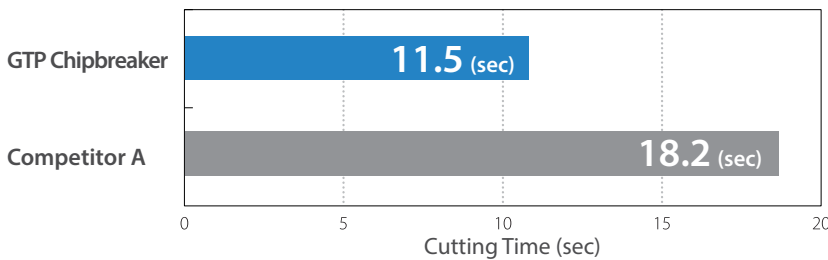
Cutting Conditions: Finishing
Vc = 330 sfm
D.O.C. = 0.020", f = 0.002 ipr

TKF12R200-GTP

Grooving and Turning
Workpiece : 1045 ($\phi 0.984$ ")



Cutting Conditions: Grooving and Turning
Vc = 330 sfm
D.O.C. = 0.158", f = 0.002 ipr



GTP chipbreaker required fewer machining paths than competitor



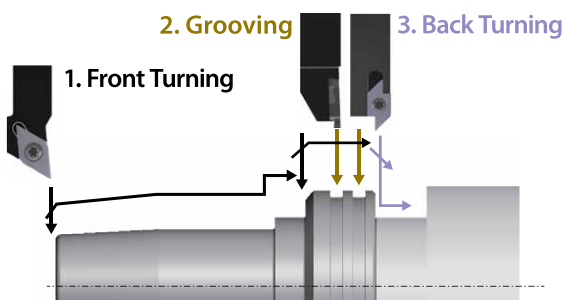
Cutting Time Reduction

Integrated Tooling Solution

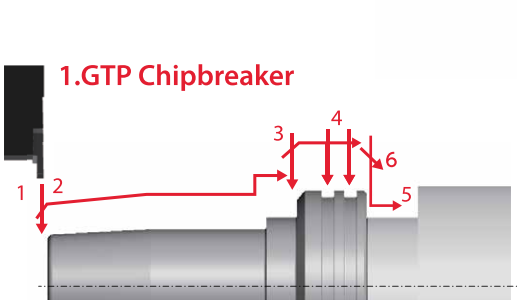
The GTP chipbreaker can be used for external turning, grooving, and back turning operations



Conventional Tools



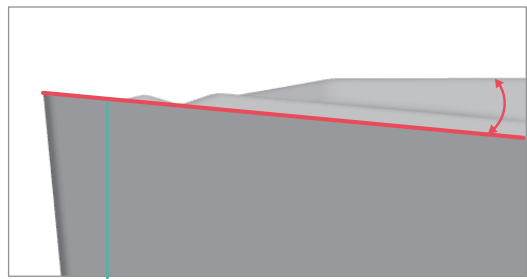
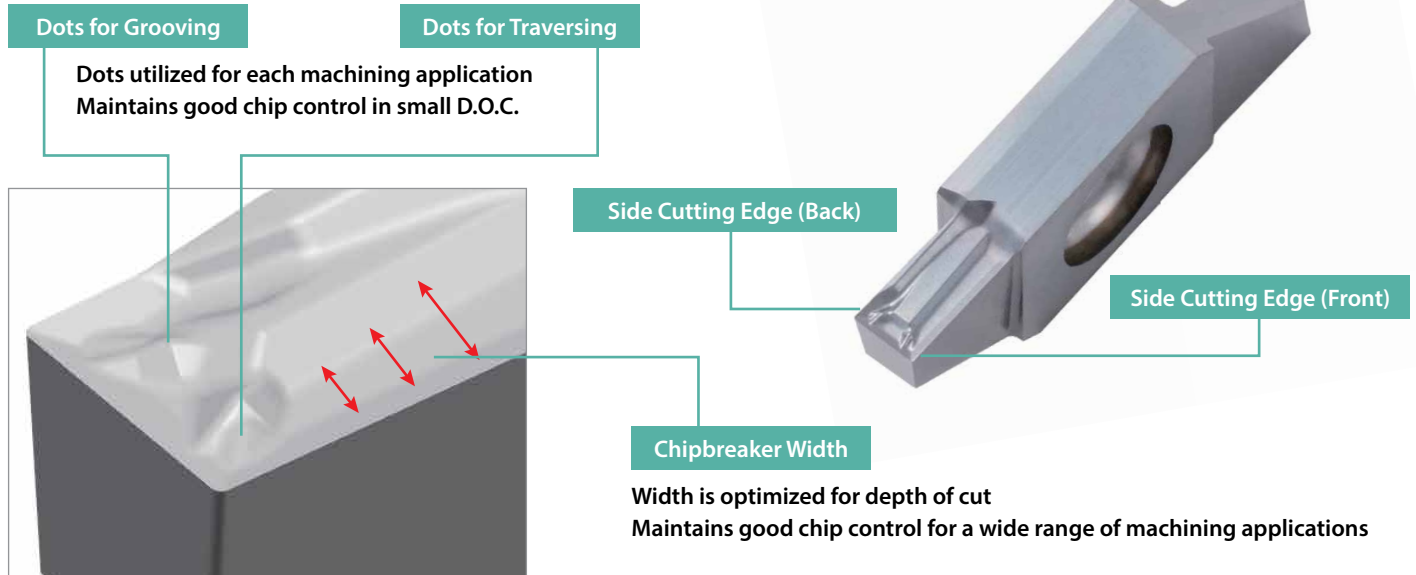
GTP Chipbreaker



* Max. Grooving Width / Max. D.O.C. = TKF12R200-GTP (2.0mm / 4.0mm), TKF16R300-GTP (3.0mm / 5.5mm)

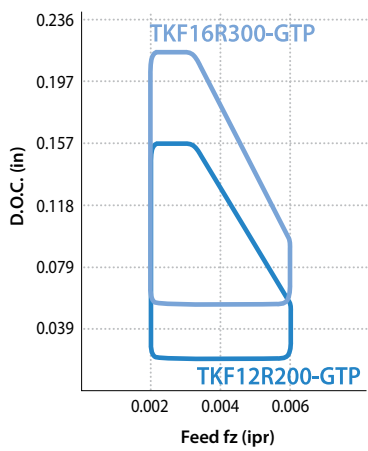
2 Stable Chip Control and Superior Surface Finish Quality for a Wide Range of Machining Applications

Chipbreaker Features

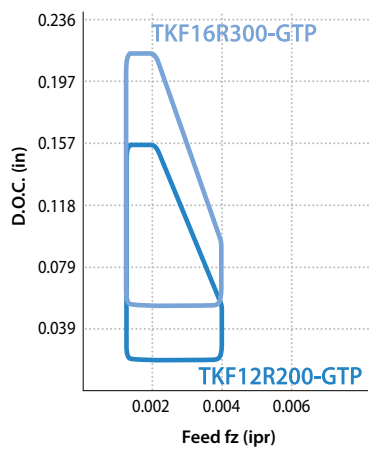


Sloped Cutting Edge
Sloped cutting edge reduces radial force
Great chatter resistance

Chipbreaker Range (Steel)



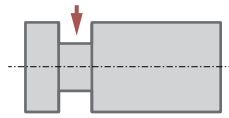
Chipbreaker Range (Stainless Steel)



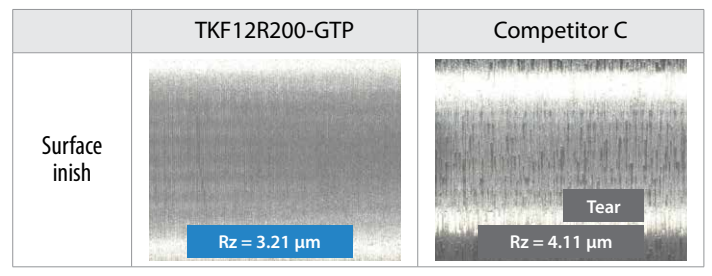
Chip Control Comparison - Grooving (Internal Evaluation)

f (ipr)	0.002	0.003	0.004
TKF12R 200-GTP			
Competitor B			

Cutting Conditions : $V_c = 330$ sfm, D.O.C. = 0.158"
Workpiece : 1045 ($\varnothing 0.984$ ")

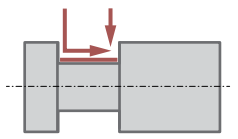


Surface Finish Comparison - Turning (Internal Evaluation)



Cutting Conditions : $V_c = 330$ sfm, D.O.C. = 0.158", 0.002 ipr, Wet
Workpiece : 1045 ($\varnothing 0.984$ ")

GTP Chipbreaker showed superior chip control and surface finish when compared to Competitor C



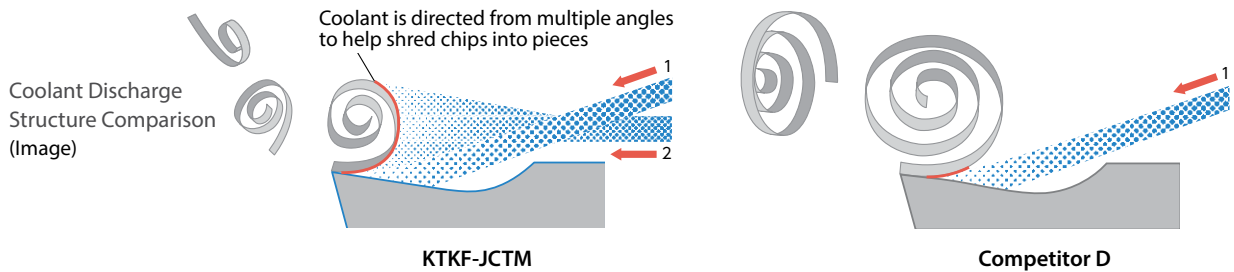
Direct Coolant Holders for Small Parts Machining

JCTM Series

Applicable to Different Supply Styles

Supports Internal Coolant with or without Piping System

1 Using Internal Coolant to Enhance Tool Performance



2 Applicable to Different Supply Styles Supports Internal Coolant with/without Piping System

Internal Coolant without Piping

*When the tool plate supports direct coolant

Coolant is supplied directly from the tool plate into the holder without the need to install piping

Applicable to Wide Range of Machines

CITIZEN MACHINERY CO., LTD.

(L12(2M), L20(2M/3M), L32(2M), D25, M32(5M))

STAR MICRONICS CO., LTD.

(SB Series, SD Series, SP Series)

TSUGAMI CORPORATION

(B026/032-III Series, BW269/329ZJ, SS267/327-III Series, S205/206-II, S205A/206A-II)

Compatible with various machine including the above Toolholders can be customized as well

(Random order)

Based on Kyocera Survey in January 2021



Optimized Coolant Supply

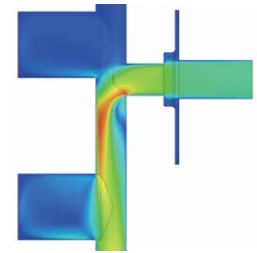
Supply hole designed to reduce energy loss based on extensive flow analysis

Analysis Image (Internal evaluation)

High

Low

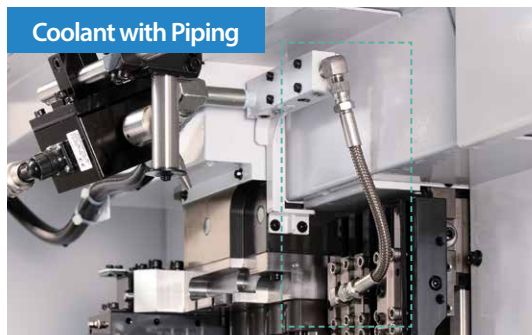
Flow velocity



The tool plate is optional. Please contact our company sales representative for details.

Internal Coolant with Piping

*Piping parts : See pages 30 and 31



Compatible with internal coolant on any machine with standard piping parts

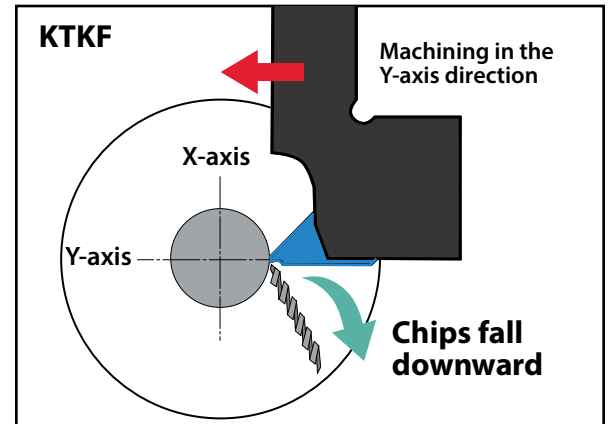
Commercial piping parts are available when using at normal pressure

Improved Chip Control

Y-Axis Toolholder

Toolholder Designs for Better Chip Evacuation in Small Parts Machining

1 Controlled Chip Evacuation for Stable Machining



The Y-axis machining direction allows the chips to fall down and away from the workpiece, improving chip evacuation.

Cut-Off Tool Holders for Automatic Lathe Available for Sub-spindle Operations

KTKF-S

1 Recommended for Cut-Off with Small Clearance Between Main and Sub-spindle

Thin holder head is applicable when minimal clearance exists between the main spindle and sub spindle

2 Tools for Micro and Small Diameters Available

Compatible with TKF inserts

TKF12 : Max. Dia. ϕ 5mm – ϕ 12mm

TKF16 : Max. Dia. ϕ 16mm

3 Provide with Wide Selection of Inserts

Available Chipbreakers : Right lead angle, S Chipbreaker, T Chipbreaker and Without Chipbreaker

Available Insert Grades : PR1725 for Steel Machining, PR1535 for Stainless Steel Machining and PDL025 for Aluminum Machining




		Carbon Steel / Alloy Steel											G	C	N	P			
		Stainless Steel											G	●	C	M			
		Cast Iron													●	K			
		Non-Ferrous Metals											●			C	N		
Insert	Part Number	No. of Edges	Dimensions (mm)						Angle (°)	Tolerance (mm)		Carbide					Applicable Toolholder Page: 22~23 28~29 32		
			CW		S	D1	RE	W1		CUTDIA	PSIRR	CW min.	CW max.	DLC	PVD			KW10	
			in	mm											PR1225	PR1535			PR1725
	TKF12R 050-S	2	0.020	0.5	8.7	5	0.03	3	5	0	-0.03	+0.03	●	●	●	●	●	KTKFR...-12 KTKFR...-12-Y KTKFR...-12JCTM KTKFR...-12SA KTKFR...-12SB	
	070-S		0.028	0.7									8	●	●	●	●		●
	100-S		0.039	1									12	●	●	●	●		●
	125-S		0.049	1.25									12	●	●	●	●		●
	150-S		0.059	1.5									12	●	●	●	●		●
	200-S		0.079	2									12	●	●	●	●		●
	TKF12L 050-S	2	0.020	0.5	8.7	5	0.03	3	5	0	-0.03	+0.03	●	●	●	●	●	KTKFL...-12 KTKFL...-12JCTM KTKFL...-12SA KTKFL...-12SB	
	070-S		0.028	0.7									8	●	●	●	●		●
	100-S		0.039	1									12	●	●	●	●		●
	125-S		0.049	1.25									12	●	●	●	●		●
	150-S		0.059	1.5									12	●	●	●	●		●
	200-S		0.079	2									12	●	●	●	●		●
	TKF12R 100-T	2	0.039	1	8.7	5	0.08	3	12	0	-0.03	+0.03	●	●	●	●	●	KTKFR...-12 KTKFR...-12-Y KTKFR...-12JCTM KTKFR...-12SA KTKFR...-12SB	
	150-T		0.059	1.5									●	●	●	●	●		
	200-T		0.079	2									●	●	●	●	●		
	TKF12L 100-T Tough edge		100-T	0.039									1	●	●	●	●		●
			150-T	0.059									1.5	●	●	●	●		●
			200-T	0.079									2	●	●	●	●		●
	TKF12R 050-S-16DR	2	0.020	0.5	8.7	5	0.03	3	5	16	-0.03	+0.03	●	●	●	●	●	KTKFR...-12 KTKFR...-12-Y KTKFR...-12JCTM KTKFR...-12SA KTKFR...-12SB	
	070-S-16DR		0.028	0.7									8	●	●	●	●		●
	100-S-16DR		0.039	1									12	●	●	●	●		●
	125-S-16DR		0.049	1.25									12	●	●	●	●		●
	150-S-16DR		0.059	1.5									12	●	●	●	●		●
	200-S-16DR		0.079	2									12	●	●	●	●		●
	TKF12L 050-S-16DR	2	0.020	0.5	8.7	5	0.03	3	5	16	-0.03	+0.03	●	●	●	●	●	KTKFL...-12 KTKFL...-12JCTM KTKFL...-12SA KTKFL...-12SB	
	070-S-16DR		0.028	0.7									8	●	●	●	●		●
	100-S-16DR		0.039	1									12	●	●	●	●		●
	125-S-16DR		0.049	1.25									12	●	●	●	●		●
	150-S-16DR		0.059	1.5									12	●	●	●	●		●
	200-S-16DR		0.079	2									12	●	●	●	●		●
	TKF12R 100-T-16DR	2	0.039	1	8.7	5	0.08	3	12	16	-0.03	+0.03	●	●	●	●	●	KTKFR...-12 KTKFR...-12-Y KTKFR...-12JCTM KTKFR...-12SA KTKFR...-12SB	
	150-T-16DR		0.059	1.5									●	●	●	●	●		
	200-T-16DR		0.079	2									●	●	●	●	●		
	TKF12L 100-T-16DR Tough edge		100-T-16DR	0.039									1	●	●	●	●		●
			150-T-16DR	0.059									1.5	●	●	●	●		●
			200-T-16DR	0.079									2	●	●	●	●		●
	TKF12R 050-NB	2	0.020	0.5	8.7	5	0	3	5	0	-0.03	+0.03	●	●	●	●	●	KTKFR...-12 KTKFR...-12-Y KTKFR...-12JCTM KTKFR...-12SA KTKFR...-12SB	
	070-NB		0.028	0.7									8	●	●	●	●		●
	100-NB		0.039	1									12	●	●	●	●		●
	150-NB		0.059	1.5									12	●	●	●	●		●
	200-NB		0.079	2									12	●	●	●	●		●
	TKF12L 050-NB Without Chipbreaker		050-NB	0.020									0.5	5	●	●	●		●
070-NB		0.028	0.7	8	●	●	●	●	●										
100-NB		0.039	1	12	●	●	●	●	●										
150-NB		0.059	1.5	12	●	●	●	●	●										
200-NB		0.079	2	12	●	●	●	●	●										

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

The cut-off diameter of the insert (CUTDIA) is indicated when the top of the cut-off edge progresses 0.039" (1mm) from the center.

Right-hand shown

● : Standard Item

Insert		Part Number		No. of Edges		Dimensions (mm)						Angle (°)	Tolerance (mm)		Carbide			Applicable Toolholder Page: 22~23 28~29 32		
						CW		S	D1	RE	W1		CUTDIA	PSIRR	CW min.	CW max.	PVD		-	
						in	mm												PR1535	PR1725
 Without Chipbreaker	TKF12R	050-NB-20DR	0.020	0.5	8.7	5	0	3	5	20	-0.03	+0.03	●	●	●	KTKFR...-12 KTKFL...-12-Y KTKFR...-12JCTM KTKFR...-12SA KTKFR...-12SB				
		070-NB-20DR	0.028	0.7					8				●	●	●					
		100-NB-20DR	0.039	1					12				●	●	●					
		150-NB-20DR	0.059	1.5					12				●	●	●					
		200-NB-20DR	0.079	2					12				●	●	●					
	TKF12L	050-NB-20DR	0.020	0.5					5				●	●	●		KTKFL...-12 KTKFL...-12JCTM KTKFL...-12SA KTKFL...-12SB			
		070-NB-20DR	0.028	0.7					8				●	●	●					
		100-NB-20DR	0.039	1					12				●	●	●					
		150-NB-20DR	0.059	1.5					12				●	●	●					
		200-NB-20DR	0.079	2					12				●	●	●					

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

The cut-off diameter of the insert (CUTDIA) is indicated when the top of the cut-off edge progresses 0.039" (1mm) from the center.

Right-hand shown

● : Standard Item

Recommended Cutting Conditions [Page 15](#)

Inserts Identification System

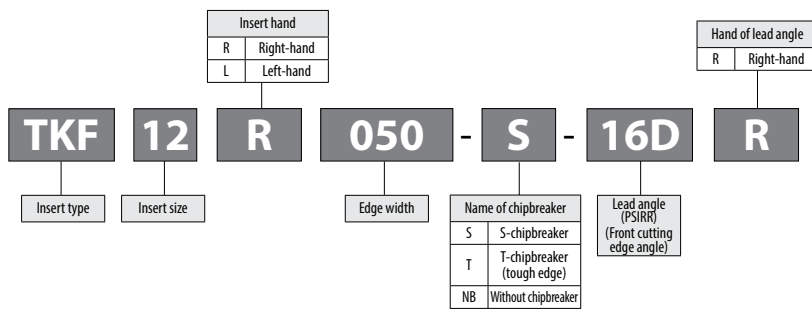
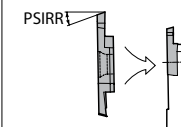
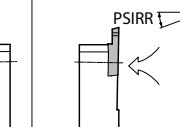
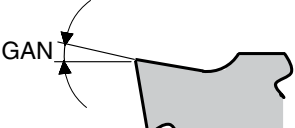
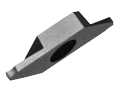







Table 1

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	Part Number	GAN	Part Number	GAN	Part Number
	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				

Insert		Part Number		No. of Edges		Dimensions (mm)							Angle (°)	Tolerance (mm)		Carbide					Applicable Toolholder Page: 22 28~29 32		
						CW		S	D1	RE	W1	CUTDIA		PSIRR	CW min.	CW max.	DLC	PVD					
						in	mm											PR1025	PR1225	PR1535		PR1725	KW10
		TKF16R 150-S	200-S	2	0.059	1.5	9.5	5	0.05	4	16	0	-0.03	+0.03	●	●	●	●	●	KTKFR...-16 KTKFR...-16JCTM KTKFR...-16SA KTKFR...-16SB			
		TKF16L 150-S	200-S	2	0.059	1.5									0.079	2	●	●	●		●	●	KTKFL...-16 KTKFL...-16JCTM KTKFL...-16SA KTKFL...-16SB
		TKF16R 150-T	200-T	2	0.059	1.5	9.5	5	0.08	4	16	0	-0.03	+0.03	●	●	●	●	●	KTKFR...-16 KTKFR...-16JCTM KTKFR...-16SA KTKFR...-16SB			
		TKF16L 150-T	200-T	2	0.059	1.5									0.079	2	●	●	●		●	●	KTKFL...-16 KTKFL...-16JCTM KTKFL...-16SA KTKFL...-16SB
		TKF16R 150-S-16DR	200-S-16DR	2	0.059	1.5	9.5	5	0.05	4	16	16	-0.03	+0.03	●	●	●	●	●	KTKFR...-16 KTKFR...-16JCTM KTKFR...-16SA KTKFR...-16SB			
		TKF16L 150-S-16DR	200-S-16DR	2	0.059	1.5									0.079	2	●	●	●		●	●	KTKFL...-16 KTKFL...-16JCTM KTKFL...-16SA KTKFL...-16SB
		TKF16R 150-T-16DR	200-T-16DR	2	0.059	1.5	9.5	5	0.08	4	16	16	-0.03	+0.03	●	●	●	●	●	KTKFR...-16 KTKFR...-16JCTM KTKFR...-16SA KTKFR...-16SB			
		TKF16L 150-T-16DR	200-T-16DR	2	0.059	1.5									0.079	2	●	●	●		●	●	KTKFL...-16 KTKFL...-16JCTM KTKFL...-16SA KTKFL...-16SB
		TKF16R 150-NB	200-NB	2	0.059	1.5	9.5	5	0	4	16	0	-0.03	+0.03	●	●	●	●	●	KTKFR...-16 KTKFR...-16JCTM KTKFR...-16SA KTKFR...-16SB			
		TKF16L 150-NB	200-NB	2	0.059	1.5									0.079	2	●	●	●		●	●	KTKFL...-16 KTKFL...-16JCTM KTKFL...-16SA KTKFL...-16SB
		TKF16R 150-NB-20DR	200-NB-20DR	2	0.059	1.5	9.5	5	0	4	16	20	-0.03	+0.03	●	●	●	●	●	KTKFR...-16 KTKFR...-16JCTM KTKFR...-16SA KTKFR...-16SB			
		TKF16L 150-NB-20DR	200-NB-20DR	2	0.059	1.5									0.079	2	●	●	●		●	●	KTKFL...-16 KTKFL...-16JCTM KTKFL...-16SA KTKFL...-16SB

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

The cut-off diameter of the insert (CUTDIA) is indicated when the top of the cut-off edge progresses 0.039" (1mm) from the center. Right-hand shown

● : Standard Item

Recommended Cutting Conditions [Page 15](#)

TKF12

Workpiece Material	Recommended Insert Grade (Cutting Speed Vc: sfm)					TKF12						Notes
						Width (CW)						
	MEGACOAT NANO		MEGACOAT	DLC	Carbide	0.020" (0.50mm)	0.028" (0.70mm)	0.039" (1.00mm)	0.049" (1.25mm)	0.059" (1.50mm)	0.079" (2.00mm)	
	PR1725	PR1535	PR1225	PDL025	KW10	Feed Rate (ipr)						
Carbon Steel	★ 230~560 (160~460)	☆ 230~500 (160~400)	☆ 225~500 (175~400)	-	-	0.0004~0.0008	0.0004~0.0012	0.0004~0.0016 (0.0004~0.0020)	0.0004~0.0016	0.0004~0.0016 (0.0008~0.0039)	0.0004~0.0016 (0.0008~0.0039)	Coolant
Alloy Steel	★ 230~560 (160~460)	☆ 230~500 (160~400)	☆ 225~500 (175~400)	-	-	0.0004~0.0008	0.0004~0.0012	0.0004~0.0016 (0.0004~0.0020)	0.0004~0.0016	0.0004~0.0016 (0.0008~0.0039)	0.0004~0.0016 (0.0008~0.0039)	
Stainless Steel	☆ 200~460 (130~390)	★ 200~400 (130~330)	☆ 200~400 (125~325)	-	-	0.0002~0.0006	0.0004~0.0008	0.0004~0.0008 (0.0004~0.0012)	0.0004~0.0008	0.0004~0.0008 (0.0004~0.0020)	0.0004~0.0008 (0.0004~0.0020)	
Cast Iron	-	-	-	-	★ 175~325	0.0004~0.0012	0.0004~0.0016	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	
Aluminum Alloy	-	-	-	★ 660~1640	☆ 650~1475	0.0004~0.0012	0.0004~0.0016	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	
Brass	-	-	-	-	★ 325~650	0.0004~0.0012	0.0004~0.0016	0.0004~0.0024	0.0004~0.0024	0.0004~0.0024	0.0004~0.0024	

Values in parentheses () are cutting conditions for tough edge inserts style TKF..T.

★:1st Recommendation ☆:2nd Recommendation

TKF16

Workpiece Material	Recommended Insert Grade (Cutting Speed Vc: sfm)					TKF16		Notes
						Width (CW)		
	MEGACOAT NANO		MEGACOAT	DLC	Carbide	0.059" (1.50mm)	0.079" (2.00mm)	
	PR1725	PR1535	PR1225	PDL025	KW10	Feed Rate f (ipr)		
Carbon Steel	★ 230~560 (160~460)	☆ 230~500 (160~400)	☆ 225~500 (175~400)	-	-	0.0008~0.0028 (0.0008~0.0039)	0.0008~0.0028 (0.0008~0.0039)	Coolant
Alloy Steel	★ 230~560 (160~460)	☆ 230~500 (160~400)	☆ 225~500 (175~400)	-	-	0.0008~0.0028 (0.0008~0.0039)	0.0008~0.0028 (0.0008~0.0039)	
Stainless Steel	☆ 200~460 (130~390)	★ 200~400 (130~330)	☆ 200~400 (125~325)	-	-	0.0004~0.0016 (0.0004~0.0020)	0.0004~0.0016 (0.0004~0.0020)	
Cast Iron	-	-	-	-	★ 175~325	0.0008~0.0032	0.0008~0.0032	
Aluminum Alloy	-	-	-	★ 660~1640	☆ 650~1475	0.0008~0.0032	0.0008~0.0032	
Brass	-	-	-	-	★ 325~650	0.0008~0.0039	0.0008~0.0039	

Values in parentheses () are cutting conditions for tough edge inserts style TKF..T.

★:1st Recommendation ☆:2nd Recommendation

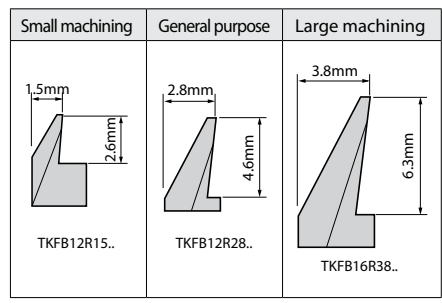
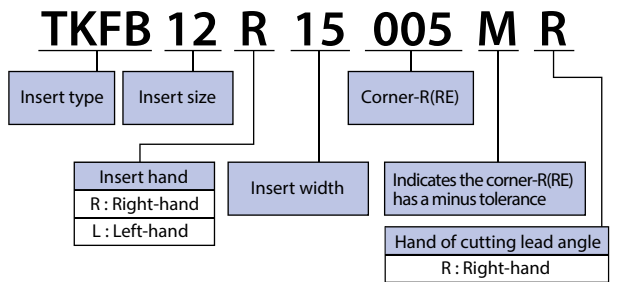
		Carbon Steel / Alloy Steel											P							
		Stainless Steel											M							
		Cast Iron											K							
		Non-ferrous metals											N							
Insert	Part Number	No. of Edges	Dimension (mm)									Angle (°)		Carbide				Applicable Toolholder Page: 22~23 32		
			CW		CDX	S	D1	RE	W1	a	PSIR%	θ	PVD		-					
			in	mm									PR1725	PR1535		PR1725	KW10			
	TKFB 12R15005M	2	0.059	1.5	2.6	8.7	5.2	< 0.05	3	0.25	-	-	●	●	●	●	KTKFR...-12 KTKFR...-12-Y			
	12R28005M		0.110	2.8	4.6								< 0.05	0.3	●	●		●	●	
	12R28010M		0.110	2.8	4.6								< 0.1	0.3	●	●		●	●	
	TKFB 16R38005M	2	0.150	3.8	6.3	9.5	5.2	< 0.05 < 0.1	4	0.3	-	-	●	●	●	●	KTKFR...-16			
	16R38010M		0.150	3.8	6.3								< 0.1	0.3	●	●		●	●	
	TKFB 12L28005MR	2	0.110	2.8	4.6	8.7	5.2	< 0.05 < 0.1	3	0.3	-	-	●	●	●	●	KTKFL...-12			
	12L28010MR		0.110	2.8	4.6								< 0.1	0.3	●	●		●	●	
	TKFB 16L38005MR	2	0.150	3.8	6.3	9.5	5.2	< 0.05 < 0.1	4	0.3	-	-	●	●	●	●	KTKFL...-16			
	16L38010MR		0.150	3.8	6.3								< 0.1	0.3	●	●		●	●	
	TKFB 12R28005P-GQ	2	0.110	2.8	4.6	8.7	5.2	0.05 0.15	3	1.5	-	74	●	●	●	●	KTKFR...-12 KTKFR...-12-Y			
	12R28015P-GQ		0.110	2.8	4.6								0.15	1.5	74	●		●	●	●
	TKFB 16R38005P-GQ	2	0.150	3.8	6.3	9.5	5.2	0.05 0.15	4	1.8	-	72	●	●	●	●	KTKFR...-16			
	16R38015P-GQ		0.150	3.8	6.3								0.15	1.8	72	●		●	●	●
	TKFB 12R28005-GQ	2	0.110	2.8	4.6	8.7	5.2	0.05 0.15	3	1.5	-	74	●	●	●	●	KTKFR...-12 KTKFR...-12-Y			
	12R28015-GQ		0.110	2.8	4.6								0.15	1.5	74	●		●	●	●
	TKFB 16R38005-GQ	2	0.150	3.8	6.3	9.5	5.2	0.05 0.15	4	1.8	-	72	●	●	●	●	KTKFR...-16			
	16R38015-GQ		0.150	3.8	6.3								0.15	1.8	72	●		●	●	●
	TKF 12R200-GTP	2	0.079	2	4.3	8.7	5	0.08	3	-	0	-	●	●	●	●	KTKFR...-12 KTKFR...-12-Y			
	16R300-GTP		0.118	3	5.8								9.5	5	0.08	4		-	0	-

Inserts with corner-R (RE) dimension expressed with less than sign (e.g. <0.002, <0.004, <0.008 etc.) indicate models with minus tolerance for corner-R (RE).

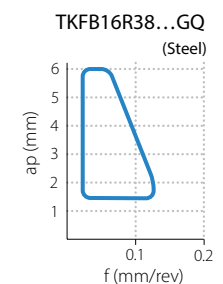
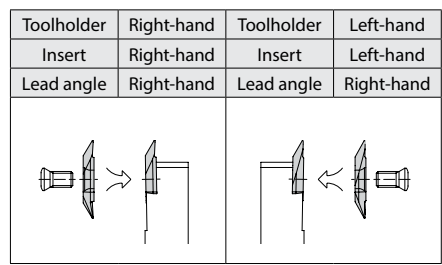
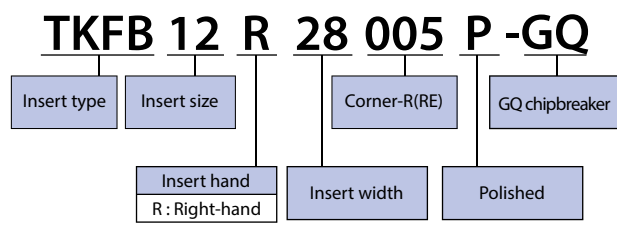
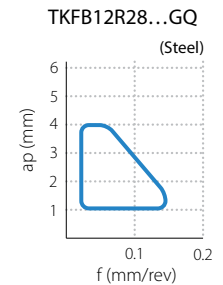
Recommended Cutting Conditions **Page 19**

● : Standard Item

Inserts Identification System

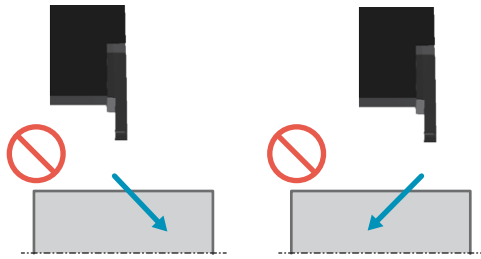


Applicable Chipbreaker Range



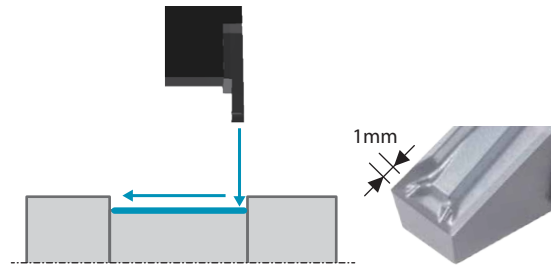
Caution when Using GTP Chipbreaker Inserts

Ramping



Ramping is not recommended if the workpiece is not pre-machined as shown in the right figures

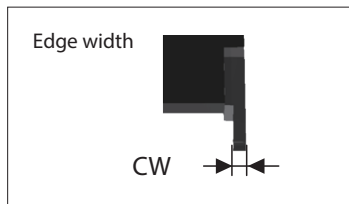
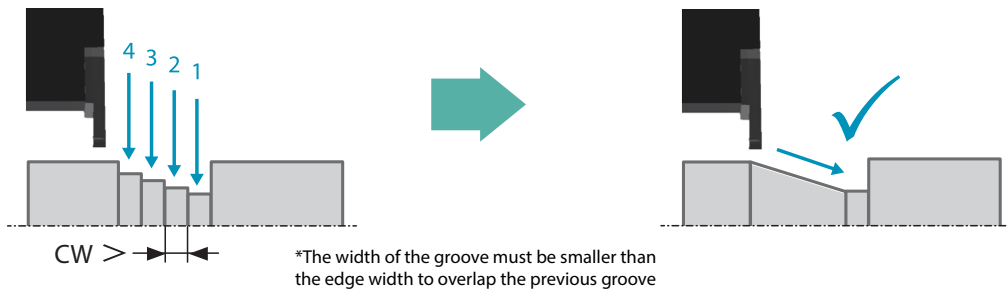
Back Turning



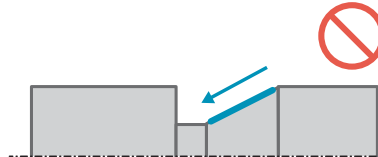
When back turning is used for finishing, make sure that the side cutting edge (back) of the tool is within 1mm

Tips for Ramping

Step grooving is required before ramping. (Refer to the figure below)



Back turning is not recommended on the tapered surfaces



Case Studies

Spool Valves 4131

GTP Chipbreaker

Vc = 390 sfm, D.O.C. = 0.098"
f = 0.001 ipr, Wet
TKF12R200-GTP (PR1535)

GTP Chipbreaker (Edge Width : 2mm)



Shown good chip control without entanglement. Further machining is possible.

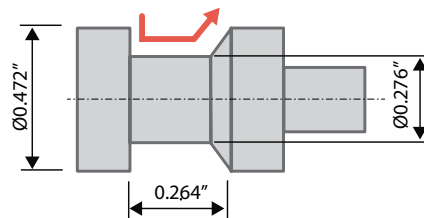
Conventional Tools A

Vc = 390 sfm, D.O.C. = 0.091" : Grooving
D.O.C. = 0.008" : Finishing
f = 0.0016 ipr, Wet

Conventional A (Edge Width : 2mm)



Chip entanglement occurred during traversing (finishing).



GTP Chipbreaker reduces the amount of tool paths and improves chip control

(User Evaluation)

TKFB

Workpiece Material		MEGACOAT NANO PLUS		MEGACOAT NANO		MEGACOAT		Notes
		PR1725		PR1535		PR1225		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon Steel / Alloy Steel	Vc (sfm)	★ 200 ~ 660		☆ 200 ~ 490		☆ 200 ~ 490		Coolant
	f (ipr)	0.0004 ~ 0.0012	0.0008 ~ 0.0059	0.0004 ~ 0.0012	0.0008 ~ 0.0059	0.0004 ~ 0.0012	0.0008 ~ 0.0059	
Stainless Steel	Vc (sfm)	☆ 200 ~ 490		★ 200 ~ 430		☆ 200 ~ 430		
	f (ipr)	0.0004 ~ 0.0008	0.0008 ~ 0.0039	0.0004 ~ 0.0008	0.0008 ~ 0.0039	0.0004 ~ 0.0008	0.0008 ~ 0.0039	

Workpiece Material		Carbide		PCD		Notes
		KW10		KPD001		
		Grooving	Turning	Grooving	Turning	
Cast Iron	Vc (sfm)	160 ~ 330		-		Coolant
	f (ipr)	0.0004 ~ 0.0008	0.0008 ~ 0.0059	-		
Aluminum	Vc (sfm)	660 ~ 1,480		660 ~ 1,640		
	f (ipr)	0.0004 ~ 0.0012	0.0008 ~ 0.0059	0.0004 ~ 0.0012	0.0008 ~ 0.0047	
Brass	Vc (sfm)	330 ~ 660		330 ~ 1,150		
	f (ipr)	0.0004 ~ 0.0020	0.0008 ~ 0.0079	0.0004 ~ 0.0020	0.0008 ~ 0.0059	

TKFB (GQ Chipbreaker)

Workpiece Material		MEGACOAT NANO PLUS		MEGACOAT NANO		MEGACOAT		Notes
		PR1725		PR1535		PR1225		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon Steel / Alloy Steel	Vc (sfm)	★ 200 ~ 200		☆ 200 ~ 490		☆ 200 ~ 490		Coolant
	f (ipr)	0.0004 ~ 0.0016	0.0008 ~ 0.0059	0.0004 ~ 0.0016	0.0008 ~ 0.0059	0.0004 ~ 0.0016	0.0008 ~ 0.0059	
Stainless Steel	Vc (sfm)	☆ 200 ~ 490		★ 200 ~ 430		☆ 200 ~ 430		
	f (ipr)	0.0004 ~ 0.0012	0.0008 ~ 0.0039	0.0004 ~ 0.0012	0.0008 ~ 0.0039	0.0004 ~ 0.0012	0.0008 ~ 0.0039	

TKF (GTP Chipbreaker)

Workpiece Material		MEGACOAT NANO PLUS		MEGACOAT NANO		Notes
		PR1725		PR1535		
		Grooving	Turning	Grooving	Turning	
Carbon Steel / Alloy Steel	Vc (sfm)	★ 200 ~ 660		☆ 200 ~ 490		Coolant
	f (ipr)	0.0012~0.0028	0.0020~0.0059	0.0012~0.0028	0.0020~0.0059	
Stainless Steel	Vc (sfm)	☆ 200 ~ 490		★ 200 ~ 430		
	f (ipr)	0.0008~0.0020	0.0012~0.0039	0.0008~0.0020	0.0012~0.0039	

TKF (AGT Chipbreaker)

Workpiece Material		PCD		Notes
		KPD001		
		Grooving	Turning	
Aluminum	Vc (sfm)	660 ~ 1,640		Coolant
	f (ipr)	0.0012 ~ 0.0059	0.0012 ~ 0.0079	
Brass	Vc (sfm)	330 ~ 1,150		
	f (ipr)	0.0012 ~ 0.0059	0.0012 ~ 0.0079	



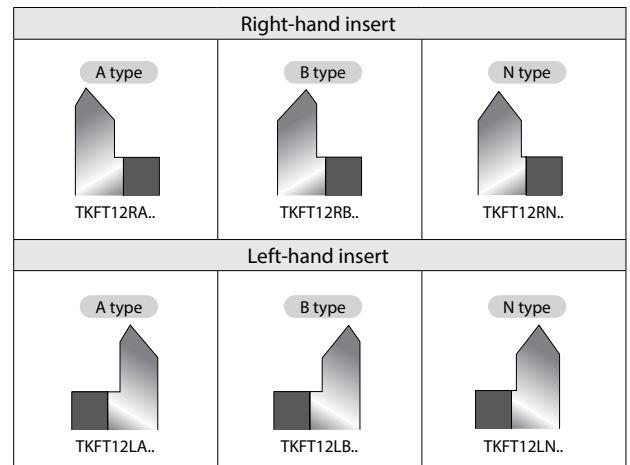
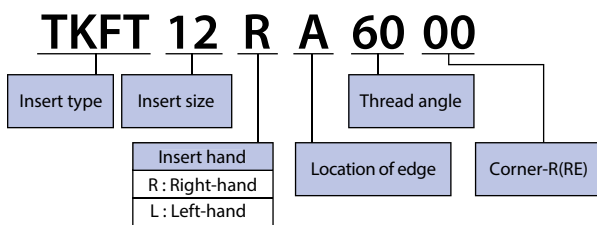
		Carbon Steel / Alloy Steel								○	○	●		P									
		Stainless Steel								○	●	○		M									
		Cast Iron											●	K									
		Non-Ferrous Metals											●	N									
Insert	Part Number	Thread Type	Symbol Thread Type	Pitch				Profile	Thread Angle PNA (°)	Dimensions (in)						Carbide				Applicable Toolholder Page: 22~23			
				M (mm)		UN, G, R, W (TPI)				CW	S	D1	RE	W1	PDX	PDX1	PVD				-		
				min.	max.	min.	max.										PR1225	PR1535	PR1725			KW10	
 Right-hand shown	TKFT12 RA6000	Metric Unified	M UN	mm	0.2	0.6	Inch	64	48	Partial Profile	60	0.098	0.343	0.205	Max. 0.002 or Flat	0.118	0.016	0.083	●	●	●	●	KTKFR...12(-Y)
	TKFT12 RB6000											0.083	0.016	●	●	●	●						
	TKFT12 RA6000S											0.098	0.343	0.205	0.002	0.118	0.031	0.067	●	●	●	●	
	TKFT12 RB6000S											0.067	0.031	●	●	●	●						
	TKFT12 RN6001	1	1.5		24	18	0.098	0.343	0.205		0.004	0.118	0.049	0.049	●	●	●	●					
	TKFT12 RA5500S	Parallel/Tapered Pipe Whitworth	G, R, W		-	-	40	16	55		0.098	0.343	0.205	0.002	0.118	0.031	0.067	●	●	●	●		
	TKFT12 RB5500S				0.067	0.031	●	●	●		●												
	 Left-hand shown	TKFT12 LA6000	Metric Unified		M UN	0.2	0.6	64	48		60	0.098	0.343	0.205	Max. 0.002 or Flat	0.118	0.083	0.016	0.083	●	●	●	
TKFT12 LB6000		0.016		0.083		●	●	●	●														
TKFT12 LA6000S		0.098		0.343		0.205	0.002	0.118	0.067	0.031	●	●	●	●									
TKFT12 LB6000S		0.031		0.067		●	●	●	●														
TKFT12 LN6001		1	1.5	24	18	0.098	0.343	0.205	0.004	0.118	0.049	0.049	●	●	●	●							
TKFT12 LA5500S		Parallel/Tapered Pipe Whitworth	G, R, W	-	-	40	16	55	0.098	0.343	0.205	0.002	0.118	0.067	0.031	●	●	●	●				
TKFT12 LB5500S	0.031			0.067	●	●	●	●															

Photo shows Right-hand

Recommended Cutting Conditions [Page 21](#)
Depth of Cut & Number of Passes [Page 21](#)

● : Standard Item

Threading Insert Identification



TKFT

Workpiece Material	Recommended Insert Grade			
	MEGACOAT NANO PLUS	MEGACOAT NANO	MEGACOAT	Carbide
	PR1725	PR1535	PR1225	KW10
Carbon Steel	Vc = 230~560 sfm			-
	First D.O.C. (Radial): under 0.0079" (0.2mm)			
Alloy Steel	Vc = 230~560 sfm			-
	First D.O.C. (Radial): under 0.0079" (0.2mm)			
Stainless Steel	Vc = 200~330 sfm			-
	First D.O.C. (Radial): under 0.0079" (0.2mm)			
Cast Iron	-			Vc = 330 sfm
	-			First D.O.C. (Radial): under 0.0079" (0.2mm)
Aluminum	-			Vc = 490~1310 sfm
	-			First D.O.C. (Radial): under 0.0079" (0.2mm)
Brass	-			Vc = 490~980 sfm
	-			First D.O.C. (Radial): under 0.0079" (0.2mm)

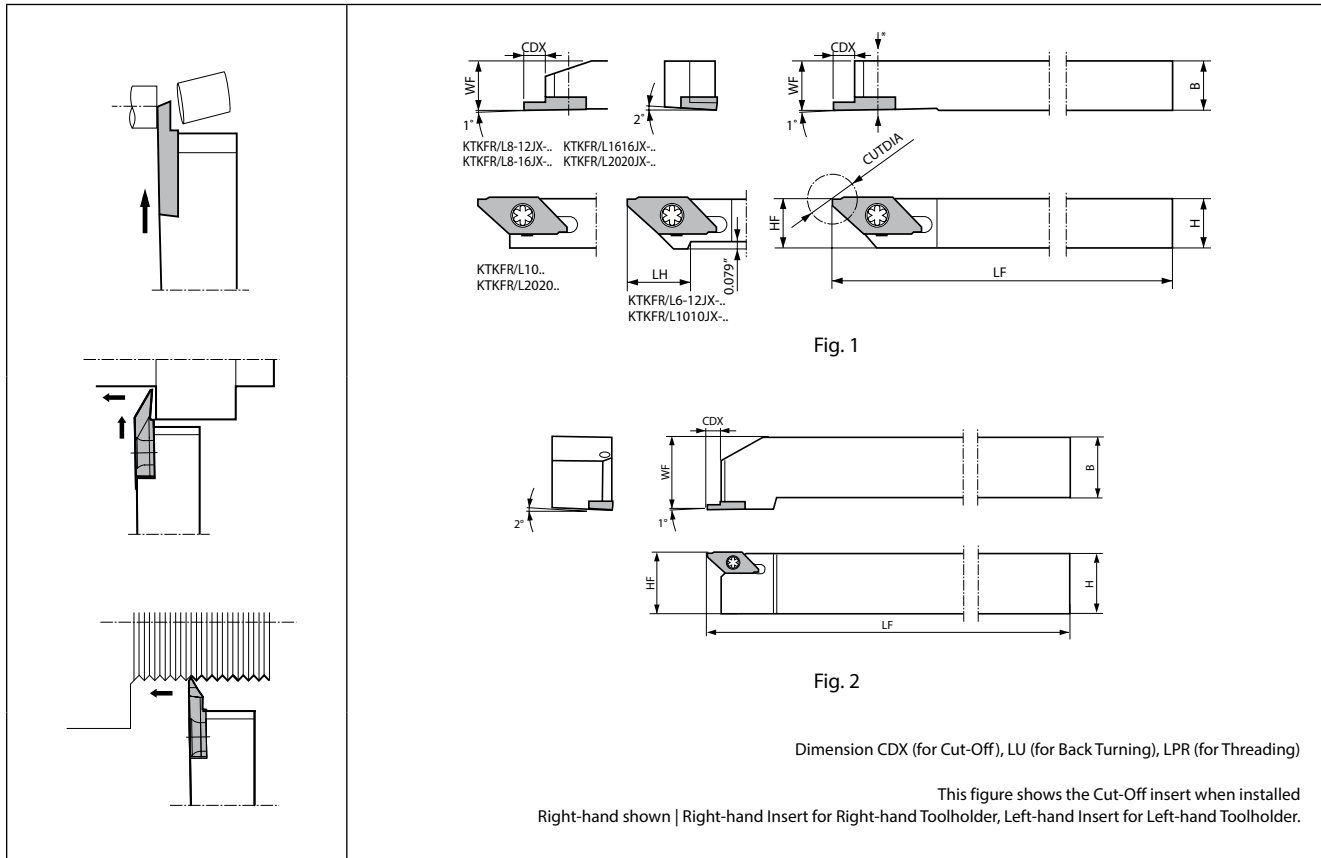
- Coolant is recommended
- When threading stainless steel, set two to three passes more than <D.O.C. - Passes> listed above

D.O.C. & Number of Passes

TKFT 60° / 55° Partial Profile

(D.O.C. shows the value of radial D.O.C.)

Thread Type	Pitch mm / TPI	Part Number	RE	Total D.O.C.	No. of Passes	1	2	3	4	5	6	7	8	9	10	11	12			
						Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass			
Metric	External Threading	TKFT 12R/L A/B6000	Max 0.05 Flat	0.15	4	0.06	0.04	0.03	0.02											
				0.19	4	0.07	0.06	0.04	0.02											
				0.23	4	0.08	0.07	0.06	0.02											
				0.27	5	0.08	0.07	0.06	0.04	0.02										
				0.30	5	0.10	0.08	0.06	0.04	0.02										
				0.34	6	0.10	0.08	0.06	0.04	0.04	0.02									
		0.50mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02								
			12R/L A/B60005	0.05	0.33	5	0.10	0.10	0.07	0.04	0.02									
		0.60mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.45	7	0.10	0.10	0.08	0.06	0.05	0.04	0.02							
			12R/L A/B60005	0.05	0.40	6	0.10	0.10	0.08	0.06	0.04	0.02								
		0.70mm	TKFT 12R/L A/B60005	0.05	0.48	6	0.10	0.10	0.10	0.10	0.06	0.02								
		0.75mm		0.05	0.52	7	0.10	0.10	0.10	0.08	0.07	0.05	0.02							
		0.80mm		0.05	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02							
		1.00mm	TKFT 12R/L A/B60005 12R/L N6001	0.05	0.71	8	0.15	0.15	0.12	0.10	0.08	0.06	0.03	0.02						
0.10	0.66			7	0.18	0.15	0.12	0.10	0.06	0.03	0.02									
0.05	0.90			9	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.05	0.02							
1.25mm	TKFT 12R/L N6001	0.10	0.85	8	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.02								
1.50mm		0.10	1.04	10	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05	0.02						
Parallel Pipe	External Threading	28 TPI	TKFT 12R/L A/B55005	0.0020	0.0264	7	0.007	0.006	0.005	0.004	0.002	0.002	0.001							
		19 TPI		0.0020	0.0398	9	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001					
Whitworth	External Threading	24 TPI	TKFT 12R/L A/B55005	0.0020	0.0311	8	0.007	0.007	0.005	0.004	0.003	0.003	0.002	0.001						
		20 TPI		0.0020	0.0378	9	0.008	0.008	0.006	0.004	0.004	0.003	0.002	0.002	0.001					
		18 TPI		0.0020	0.0421	10	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001				
		16 TPI		0.0020	0.0476	11	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001			



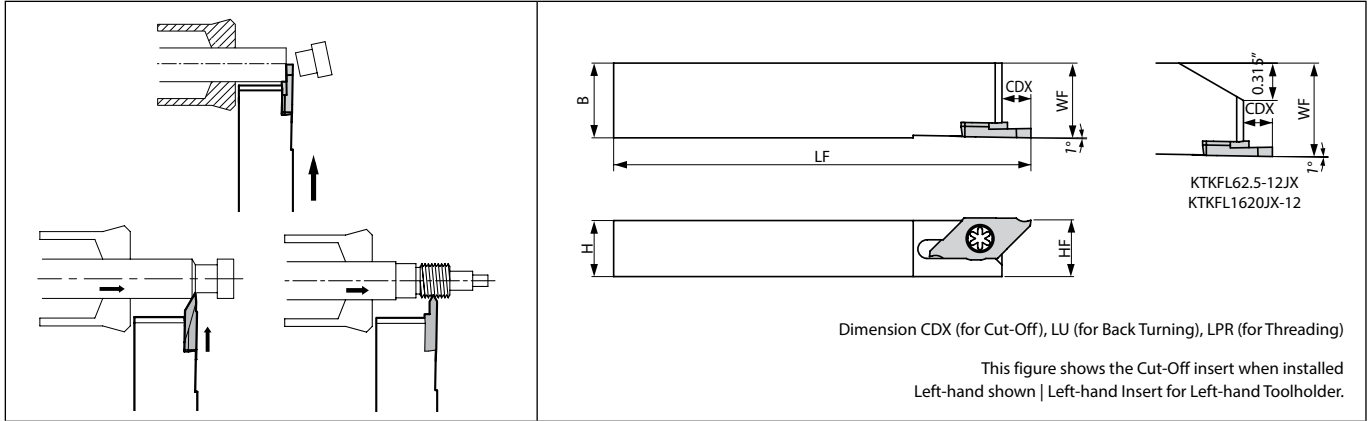
Toolholder Dimensions

Unit	Part Number	Std. Item		Dimensions							Fig.	Spare Parts		Applicable Inserts Page: 12~14 16~17, 20	
		R	L	CDX	H	B	LH	HF	LF	WF		Screw	Wrench		
Inch	KTKF% 6-12JX	●	●	0.236	0.375	0.375	0.590	0.375	4.750	0.375	1	SB-4590TRWN	FT-10	TKF12% ... TKFB12% ... TKFT12% ...	
	8-12JX	●	●		0.500	0.500	-	0.500		0.500					
	10-12JX	●	●		0.625	0.625	-	0.625		0.625					
	KTKF% 6-16JX	●	●	0.315	0.375	0.375	0.787	0.375	4.750	0.375					
	8-16JX	●	●		0.500	0.500	-	0.500		0.500					
	10-16JX	●	●		0.625	0.625	-	0.625		0.625					
mm	KTKF% 1010JX-12	●	●	6	10	10	15	10	120	10	1	SB-4590TRWN	FT-10	TKF12% ... TKFB12% ... TKFT12% ...	
	1212F-12	●	●		12	12	-	12	85	12					
	1212JX-12	●	●		16	16	-	16	120	16					
	1616JX-12	●	●		20	20	-	20	20	20					
	2020JX-12	●	●		25	25	-	25	150	30					2
	2525M-12	●	●		25	25	-	25	150	30					2
	KTKF% 1010JX-16	●	●	8	10	10	20	10	120	10	1	SB-4590TRWN	FT-10	TKF16% ... TKFB16% ...	
	1212F-16	●	●		12	12	-	12	85	12					
	1212JX-16	●	●		16	16	-	16	120	16					
	1616JX-16	●	●		20	20	-	20	20	20					
	2020JX-16	●	●		25	25	-	25	150	30					2
	2525M-16	●	●		25	25	-	25	150	30					2

CDX shows the distance from the toolholder to the cutting edge. Actual Grooving Depth : CUTDIA of Insert
 LU shows the distance from the toolholder to the cutting edge.
 LPR shows the distance from the toolholder to the cutting edge.

● : Standard Item

KTKF (Goose-Neck Holder)



Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions						Spare Parts		Applicable Inserts Page: 12~13 16~17, 20
			L	CDX (LU) (LPR)	H	B	HF	LF	WF	Screw	
Inch	KTKFL 52-12JX 62.5-12JX	●	0.236	0.500	0.625	0.500	4.750	0.625	SB-4590TRWN	FT-10	TKF12L... TKFB12L... TKFT12L...
		●		0.625	0.750	0.625		0.750			
mm	KTKFL 1216JX-12 1620JX-12	●	6	12	16	12	120	16	SB-4590TRWN	FT-10	
		●		16	20	16		20			

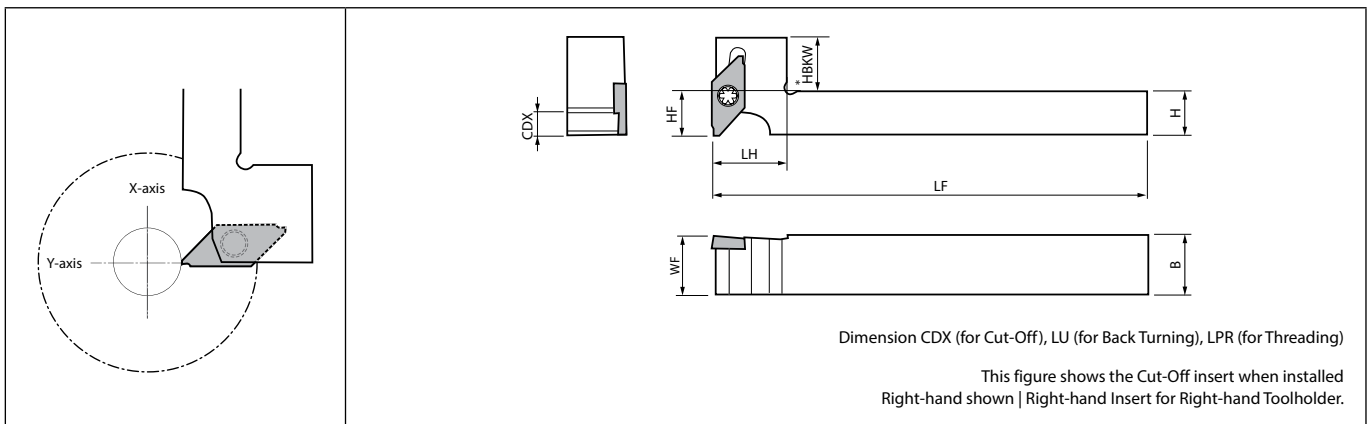
CDX shows the distance from the toolholder to the cutting edge. Actual Grooving Depth : CUTDIA of Insert

● : Standard Item

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

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

KTKF (Y-Axis Holder)



Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions								Spare Parts		Applicable Inserts Page: 12~13
			R	CDX (LU) (LPR)	H	B	LH	HF	HBKW	LF	WF	Screw	
mm	KTKFR 1216JX-12-Y 1616JX-12-Y	●	6	12	16	20	12	15	120	16	SB-4590TRWN	FT-10	TKF12R..., TKFB12R..., TKFT12R...
		●		16		25	16	11					

CDX shows the distance from the toolholder to the cutting edge. Actual Grooving Depth : CUTDIA of Insert

● : Standard Item

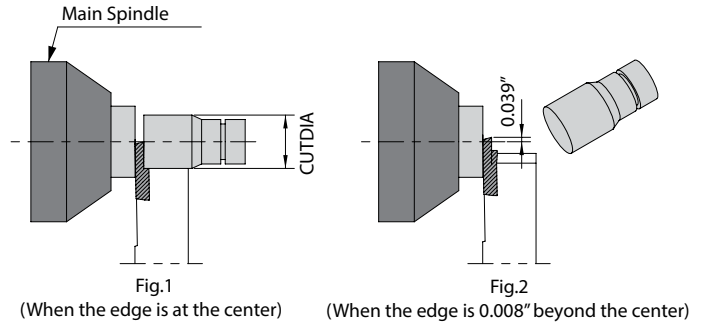
LU shows the distance from the toolholder to the cutting edge.

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

How to Use

1) When using main spindle only

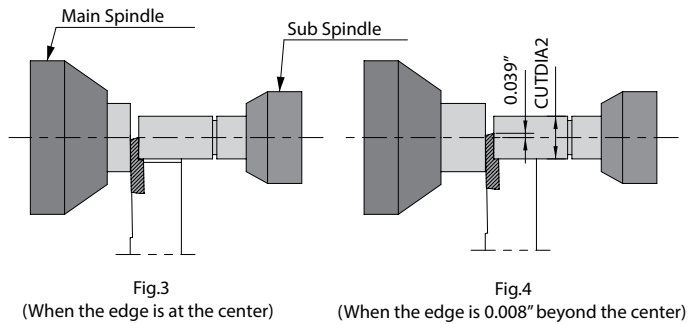
Workpiece maximum CUTDIA (Fig.1) = CUTDIA in toolholder table
 Even if the cutting edge runs beyond the center line (Fig.2), the insert does not contact the workpiece, since the workpiece falls off. (The clearance between the insert and the workpiece is 0.008")



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 - 0.039"x2] (in)
 (The clearance between the insert and the workpiece is 0.008")



How to Select Edge Preparation

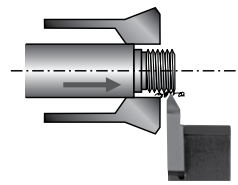
Troubleshooting

Problems	Countermeasures	Countermeasures						
		Lead Angle (PSIRR)		Edge Width		Name of Chipbreaker		
		No (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	Chip Entanglement Prevention	Effective		Effective		Effective		
Large Boss Remains	Small Boss Remains		Effective	Effective		Effective		
Ring Remains (Hollow Workpiece)	Prevention of Ring		Effective	Effective		Effective		
Deformation of thin walled workpiece (pipe)	Preventing Deformation		Effective	Effective		Effective		

Swiss Tool Small Parts Machining (Guide Bush System)

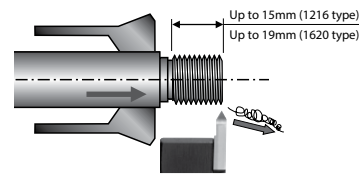
Goose-neck holder is applicable to automatic lathes where toolholder does not move in the longitudinal direction (Z-axis direction).

Conventional tool



Chips may come into the guide bush and scratch the thread surface.

Goose-neck holder

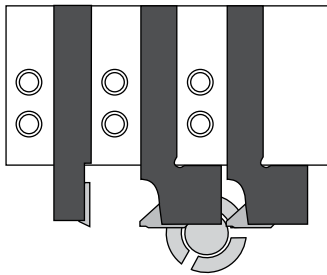


Goose-neck holder is capable of threading without returning the thread part into the guide bush (thread length up to 15mm or 19mm).

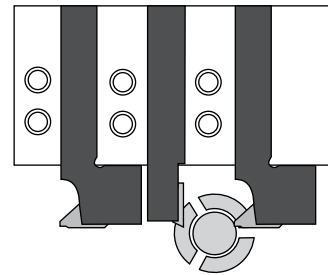
Precautions when Using Y-Axis Toolholders

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

With Interference

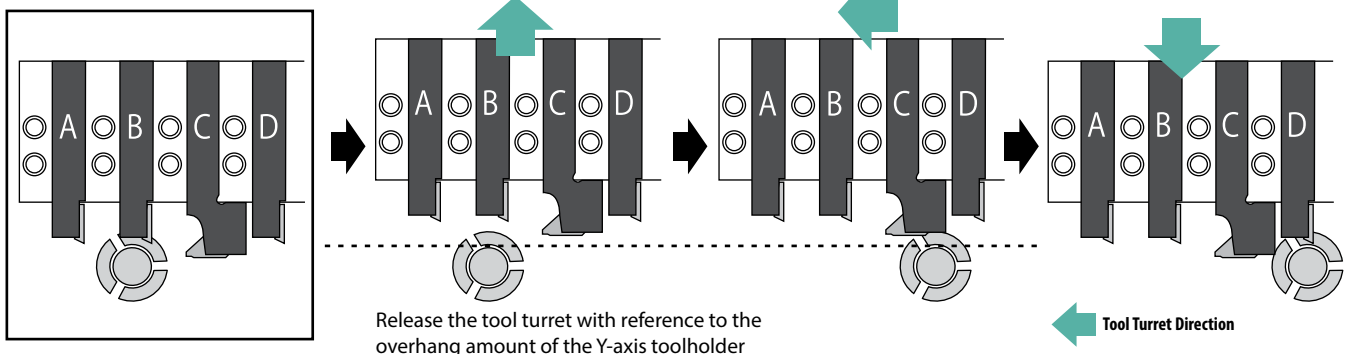


Without Interference



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)



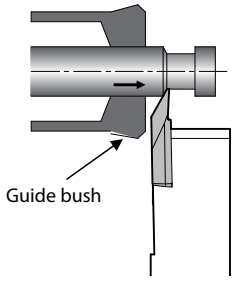
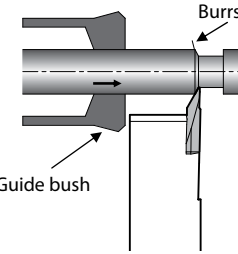
Note that using other toolholder styles together will result in different outside diameters

(Unit: mm)

Y-axis Toolholder Overhang	Examples	Overhang Amount : L			
		Available Outside Cutting Dia. (Ø)	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

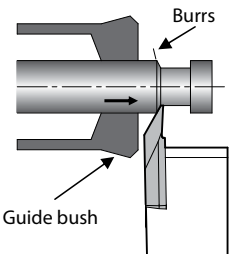
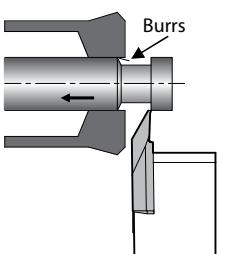
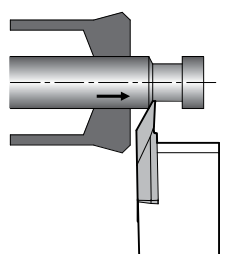
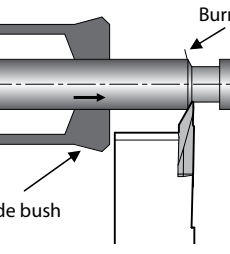
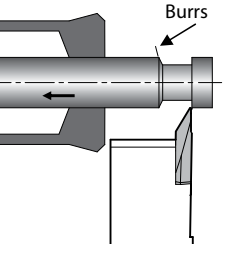
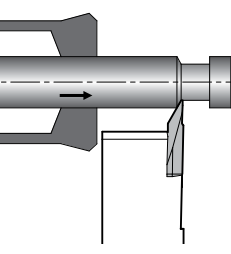
Toolholders for Back Turning - TKFB insert

How to Select Back Turning Toolholder Hand

<p>Right-hand</p>		<ul style="list-style-type: none"> • Machining near the guide bush is possible • Because of narrow width of edge (1.5mm), TKFB12R15005M can set near guide bush <p>→ Optimum for small parts and high precision machining</p>
<p>Left-hand</p>	<p>The workpiece burr does not contact the guide bush.</p> 	<ul style="list-style-type: none"> • Machining with a distance from guide bush • Good chip control due to large space between the guide bush and the tool. <p>→ Excellent chip control in roughing and finishing (several passes) In the case of left hand cut, even if burrs occur at workpiece corners, TKFB insert can be processed without returning to the guide bush, outer diameter dimension becomes stable. Also, damage of guide bush caused by mesh engagement is prevented.</p>


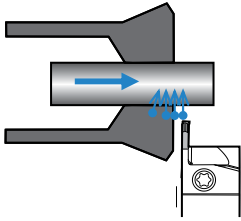
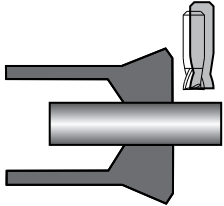
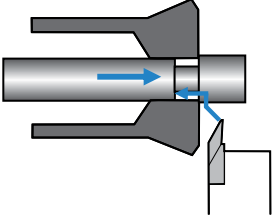
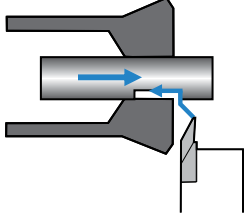
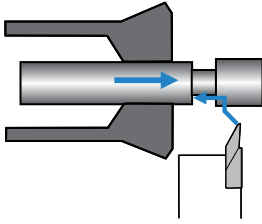
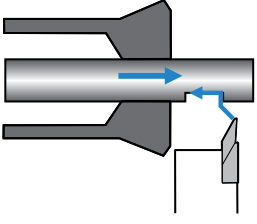
Workpiece Material Motion & How to Select Hand of Tool

When Roughing, Medium, & Finishing

	Roughing	Workpiece position after roughing	Finishing
<p>Right-hand</p>			
<p>Left-hand</p>			

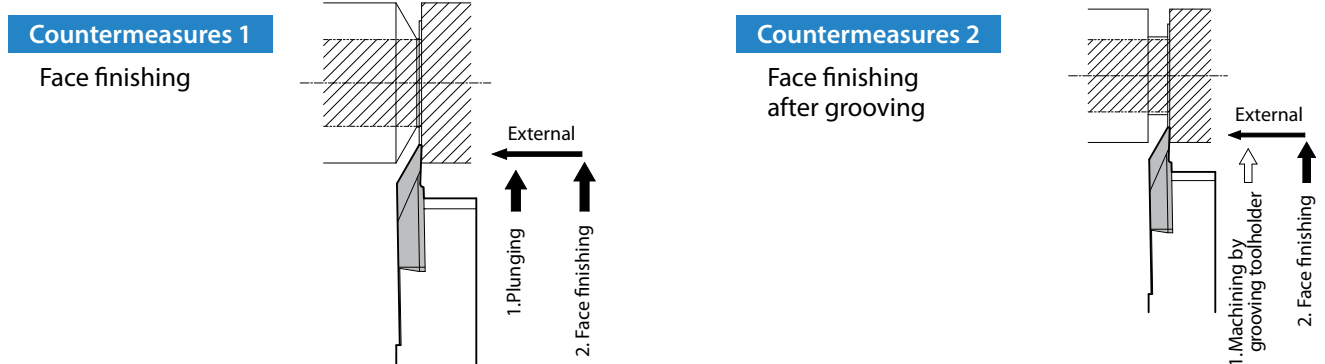
* Good dimensional accuracy: If a Left-hand toolholder is used, burrs on workpiece generated during roughing do not damage the guide bushing during finishing.

Chip Control Improvement when Back Turning

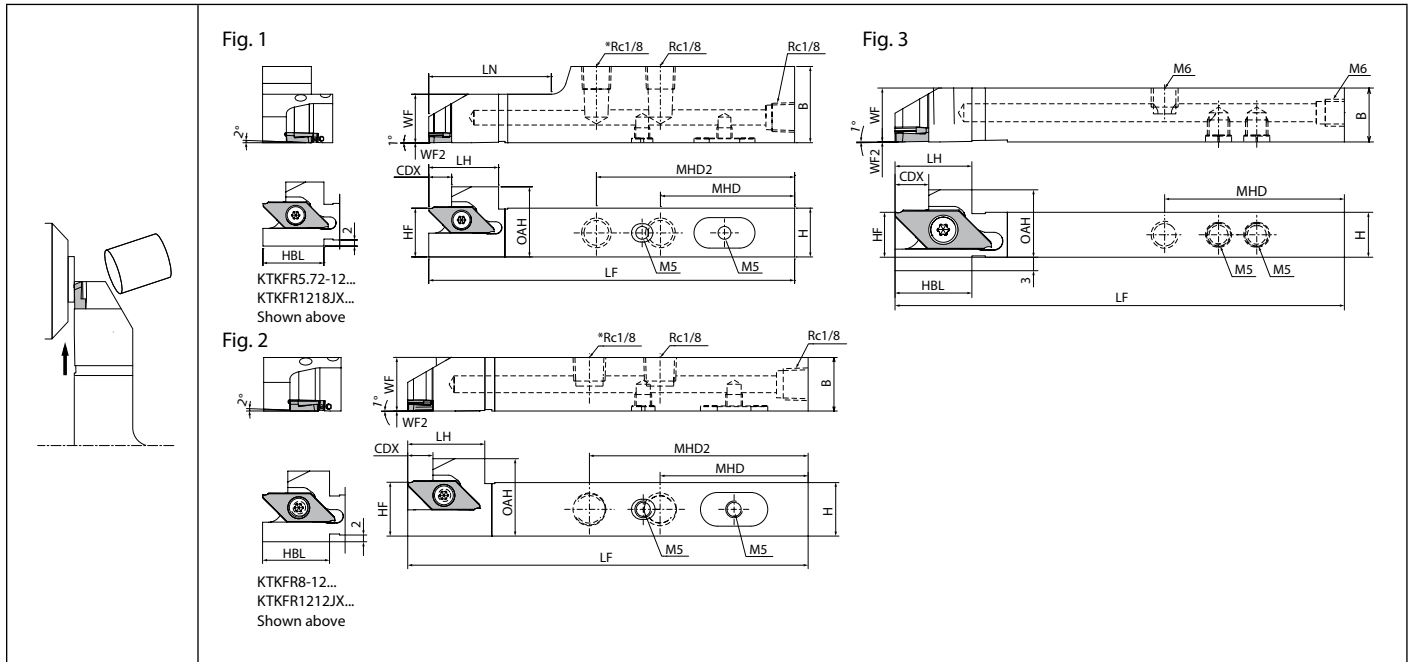
	Chip control improvement by tool pass changes - 1	Chip control improvement by tool pass changes - 2
Roughing 	Roughing with grooving tools 1. GMM2420-020MW (Grooving) 	Pre-Stage machining is processed with solid end mill 1. Solid end mill 
Finishing (Countermeasures 1) Use right-hand toolholder	When using TKFB12R28010M (for back turning / right hand)  Advantages Good surface roughness Disadvantages If a machining pass is long, the guide bush can not support the workpiece.	When using TKFB12R28010M (for back turning / right hand)  Advantages 1. Minimal deflection in long machining passes 2. Chips are broken into small pieces, though the workpiece material is sticky Disadvantages The pre-stage machining may cause fractures, because of interrupted machining
Finishing (Countermeasures 2) Use left-hand toolholder	When using TKFB12L28010M (for back turning / left hand)  Advantages 1. Good surface roughness 2. High precision machining if the machined portion does not contact the guide bush. Disadvantages If a machining pass is long, the guide bush can not support the workpiece.	When using TKFB12L28010M (for back turning / left hand)  Advantages 1. Minimal deflection in long machining passes 2. Chips are broken into small pieces, though the workpiece material is sticky 3. High precision machining if the machined portion does not contact the guide bush. Disadvantages The pre-stage machining may cause fractures, because of interrupted machining

Countermeasure for Peeled Surface when Face Back Turning

When peeled surface occurs on the workpiece face, please apply the countermeasures below.



KTKFR-JCTM (Coolant-Through, Right-Hand)



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

KTKFR5.72-..., KTKFR8-... : 2-Rc1/8

KTKFR1218-..., KTKFR1212-... : 2-Rc1/8

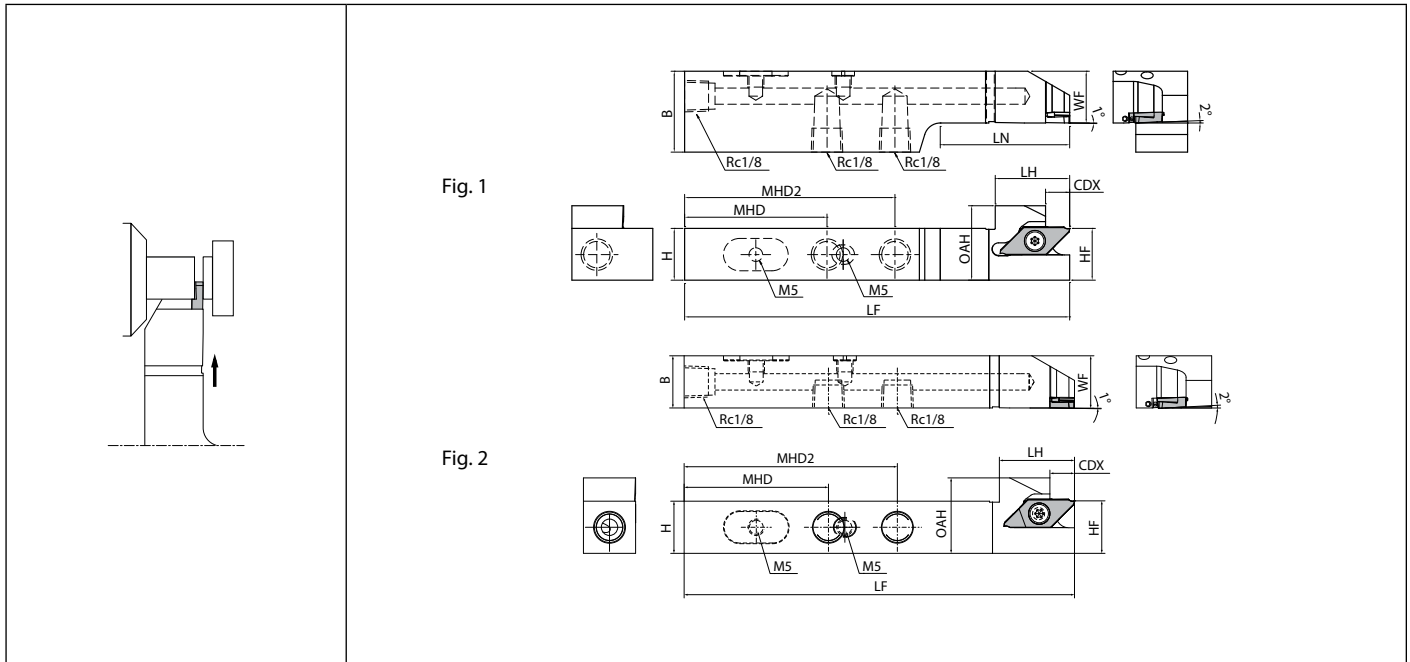
Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions												Fig.	Spare Parts				Applicable Inserts ● Page 12-14			
			R	CDX	H	B	LH	OAH	MHD	MHD2	HF	HBL	LF	LN		WF	Plug	Plug	Screw		Wrench		
Inch	KTKFR 3.815-12HJCTM	●		0.375	0.472	0.673	0.591	1.575	-	0.375	0.673	3.937	-	0.472	3	HS6X6LP							
	KTKFR 5.72-12JCTM	●	0.295	0.500	0.709	0.787	0.776	2.126	-	0.500	0.787		4.750	1.110	0.500	1	GP-1	HSSX4LP	SB-4590TRWN	FT-10	TKF12R...		
	KTKFR 82.5-12JCTM	●		0.625	1.000	0.906	0.901	1.732	2.559	0.625	-		4.750	1.585	0.625						TKF16R...		
	KTKFR 82.5-16JCTM	●	0.378	0.625	1.000	0.906	0.901	1.732	2.559	0.625	-		4.750	1.585	0.625								
	KTKFR 8-12JCTM	●		0.500	0.500	0.787	0.776	2.323	-	0.500	0.787				0.500	2	GP-1	HSSX4LP	SB-4590TRWN	FT-10	TKF12R...		
	KTKFR 10-12JCTM	●	0.295	0.625	0.625	0.906	0.901	1.732	2.559	0.625	-		4.750	-	0.625								
KTKFR 12-12JCTM	●		0.750	0.750	0.906	1.026	1.732	2.559	0.750	-				0.750									
KTKFR 10-16JCTM	●		0.625	0.625	0.906	0.901	1.732	2.559	0.625	-		4.750	-	0.625	1	GP-1	HSSX4LP	SB-4590TRWN	FT-10	TKF16R...			
KTKFR 12-16JCTM	●	0.378	0.750	0.750	0.906	1.026	1.732	2.559	0.750	-				0.750									
mm	KTKFR 1012H-12JCTM	●		10	12	17.1	15	40	-	10	17.1	100	-	12	3	HS6X6LP							
	KTKFR 1218JX-12JCTM	●		12	18	20	19	54	-	12	20			28	12	1	GP-1	HSSX4LP	SB-4590TRWN	FT-10	TKF12R...		
	KTKFR 1625JX-12JCTM	●	7.5		16		23		44	65			20	-	120						40	16	
	KTKFR 2025JX-12JCTM	●			20	25	23		27												40	20	
	KTKFR 1625JX-16JCTM	●	9.6		16		23		27						120						41	16	
	KTKFR 2025JX-16JCTM	●			20	25	23		27							120	20						
	KTKFR 1212JX-12JCTM	●		12	12	20	19	59	-	12	20				12	2	GP-1	HSSX4LP	SB-4590TRWN	FT-10	TKF12R...		
	KTKFR 1616JX-12JCTM	●	7.5		16	16	23		27					120	-						16		
	KTKFR 2020JX-12JCTM	●			20	20	23		27						120						-	20	
	KTKFR 1616JX-16JCTM	●		16	16		23		27						16	1	GP-1	HSSX4LP	SB-4590TRWN	FT-10	TKF16R...		
KTKFR 2020JX-16JCTM	●	9.6		20	20	23		27					20		16								

CDX shows the distance from the toolholder to the cutting edge. Actual Grooving Depth : CUTDIA of Insert
Available Piping Parts see [Pages 30-31](#)

● : Standard Item

KTKFL-JCTM (Coolant-Through, Left-Hand)



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

Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions											Fig.	Spare Parts				Applicable Inserts Page 12-14
			L	CDX	H	B	LH	OAH	MHD	MHD2	HF	LF	LN		WF	Plug	Plug	Screw	
Inch	KTKFL 82.5-12JCTM	●	0.295	0.625	1.000	0.906	0.901	1.732	2.559	0.625	4.750	1.585	0.625	1	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF12L...
	KTKFL 82.5-16JCTM	●	0.378	0.625	1.000	0.906	0.901	1.732	2.559	0.625	4.750	1.585	0.625	1	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF16L...
	KTKFL 10-12JCTM	●	0.295	0.625	0.625	0.906	0.901	1.732	2.559	0.625	4.750	-	0.625	2	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF12L...
	KTKFL 12-12JCTM	●		0.750	0.750		1.026			0.750			0.750						
	KTKFL 10-16JCTM	●	0.378	0.625	0.625	0.906	0.901	1.732	2.559	0.625	4.750	-	0.625	2	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF16L...
KTKFL 12-16JCTM	●	0.750		0.750	1.026		0.750			0.750									
mm	KTKFL 1625JX-12JCTM	●	7.5	16	25	23	23	44	65	16	120	40	16	1	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF12L...
	KTKFL 2025JX-12JCTM	●		20			27			20									
	KTKFL 1625JX-16JCTM	●	9.6	16	25	23	23	44	65	16	120	40	16	1	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF16L...
	KTKFL 2025JX-16JCTM	●		20			27			20			41						
	KTKFL 1616JX-12JCTM	●	7.5	16	16	23	23	44	65	16	120	-	16	2	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF12L...
	KTKFL 2020JX-12JCTM	●		20			20			27			20						
	KTKFL 1616JX-16JCTM	●	9.6	16	16	23	23	44	65	16	120	-	16	2	GP-1	HS5X4LP	SB-4590TRWN	FT-10	TKF16L...
	KTKFL 2020JX-16JCTM	●		20			20			27			20						

CDX shows the distance from the toolholder to the cutting edge. Actual Grooving Depth : CUTDIA of Insert
Available Piping Parts see [Pages 30-31](#)

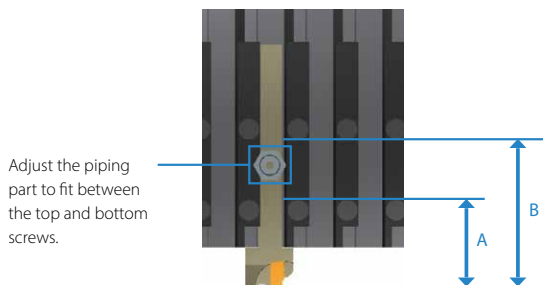
● : Standard Item

Piping part interference avoidance

Rectangular shanks (KTKFR5.72..., KTKFR/L82.5...) are recommended when using piping parts connected to JCTM holders.

When connecting the J-**-R1/8-G1/8-L piping parts to the rectangular shank, please check for any potential interference with the machine in advance.

When connecting piping parts to the JCTM square shank, check the lengths of A and B below to avoid interference with the screws of the tool plate.



Shank Size	Square Shank Use
<input type="checkbox"/> 0.500" <input type="checkbox"/> 12mm	"A" shorter than 51.5mm and "B" longer than 68.5mm → Available Other than the above conditions → Use J-**-R1/8-G1/8-L or a rectangular shank
<input type="checkbox"/> 0.625" <input type="checkbox"/> 16mm	Available

Piping Parts

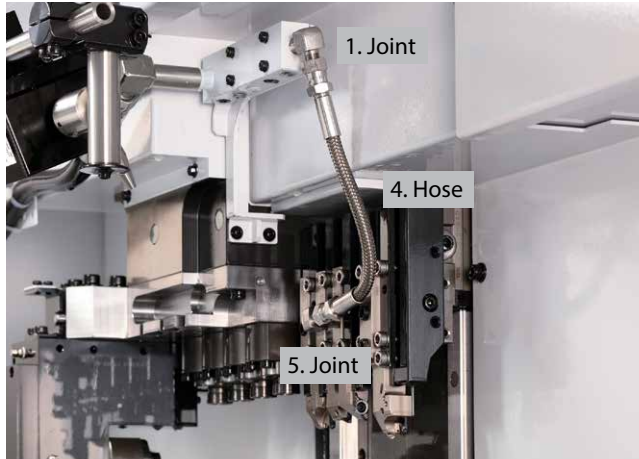
Coolant Piping Parts

Pipe parts will be required separately if internal coolant is used

Pump Pressure: up to 2,900 psi

Pump Pressure: up to 1,090 psi if couplers are used

Without Coupler (Pump Pressure: up to 2,900 psi)



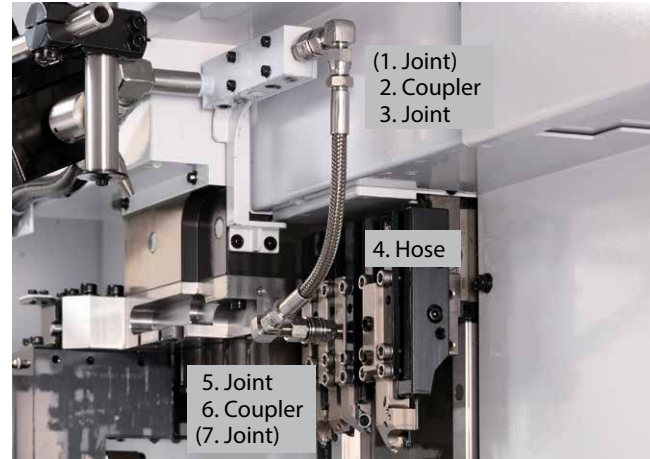
Combination Part Number (Example)

Part	Part Number
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.

With Coupler (Pump Pressure: Up to 1,090 psi)



Combination Part Number (Example)

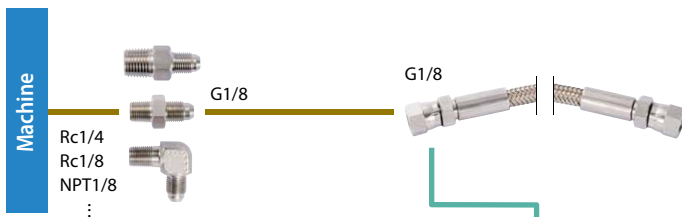
Part	Part Number
(1. Joint)	-
2. Coupler	CP-ST-R1/8, P-ST-RC1/8
3. Joint	J-AN-R1/8-G1/8
4. Hose	HS-G1/8-G1/8-200
5. Joint	J-AN-R1/8-G1/8
6. Coupler	P-ST-RC1/8, CP-ST-R1/8
(7. Joint)	-

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

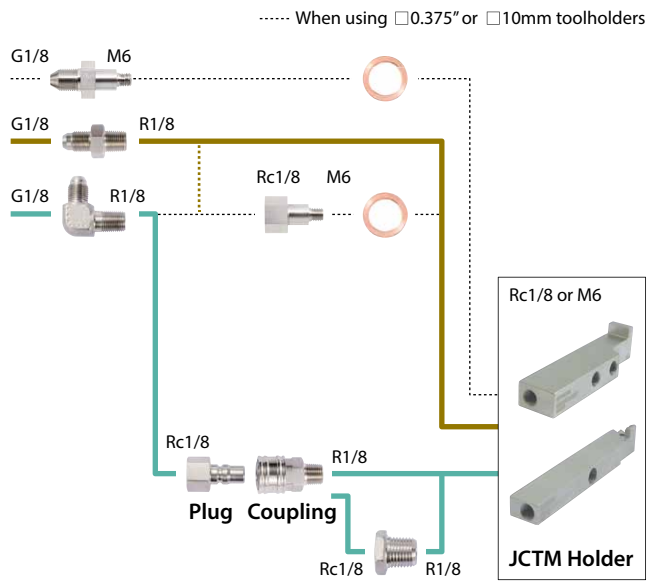
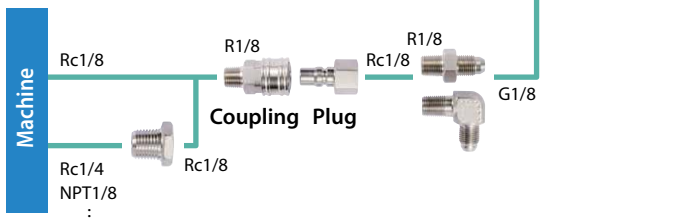
Use sealing agents such as seal tapes when installing piping parts.

Combinations

Without Coupler (Pump Pressure : Up to 2,900 psi)



With Coupler (Pump Pressure : Up to 1,090 psi)



1. Joint 2. Coupler 3. Joint 4. Hose







5. Joint 6. Coupler 7. Joint (Extension Joint)

Piping Parts

Piping Part Dimensions

Joint [(1)(3)(5)(7)] Pressure Resistance: up to 2,900 psi

(Unit: mm)



Shape	Part Number	Std. Item	ød1	ød2	L	L1	L2	T1	T2
	J-ST-R1/4-G1/8	●	5.5	4.0	34	13	13	R1/4	G1/8
	J-ST-NPT1/8-G1/8	●	3.5	3.5	29	10	13	NPT1/8	G1/8
	J-ST-R1/8-G1/8	●	4.0	4.0	29	10	13	R1/8	G1/8
	J-ST-R1/8-G1/8-L	●	4.0	4.0	40	20	14	R1/8	G1/8
	J-ST-M6-G1/8	●	2.5	4.0	34.2	15.2	13	M6	G1/8
	J-AN-R1/8-G1/8	●	4.0	4.0	27	14	13	R1/8	G1/8
	J-AN-R1/8-G1/8-L	●	4.0	4.0	34	20	14	R1/8	G1/8
	J-ST-R1/4-RC1/8	●	-	-	17	12	-	R1/4	Rc1/8
	J-ST-NPT1/8-RC1/8	●	3.5	-	30	10	-	NPT1/8	Rc1/8
	J-ST-R1/8-RC1/8	●	3.5	-	33	13	-	R1/8	Rc1/8
	J-ST-M6-RC1/8	●	2.5	4.0	25.2	15.2	-	M6	Rc1/8

Elbow piping (J-AN-R1/8-G1/8) is recommended.

Caution: Over-tightening may damage the pipe parts.

● : Standard Item

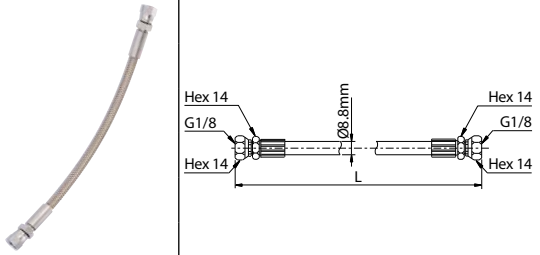
Coupler [(2)(6)] Pressure Resistance: up to 1,090 psi (Unit: mm)

Shape	Part Number	Std. Item
	CP-ST-R1/8	●
	P-ST-RC1/8	●

● : Standard Item

Hose (4) Pressure Resistance: up to 2,900 psi


(Unit: mm)

Shape	Part Number	Std. Item	L
	HS-G1/8-G1/8-200	●	200
	HS-G1/8-G1/8-300	●	300
	HS-G1/8-G1/8-400	●	400
	HS-G1/8-G1/8-500	●	500
	HS-G1/8-G1/8-600	●	600
	HS-G1/8-G1/8-800	●	800

● : Standard Item

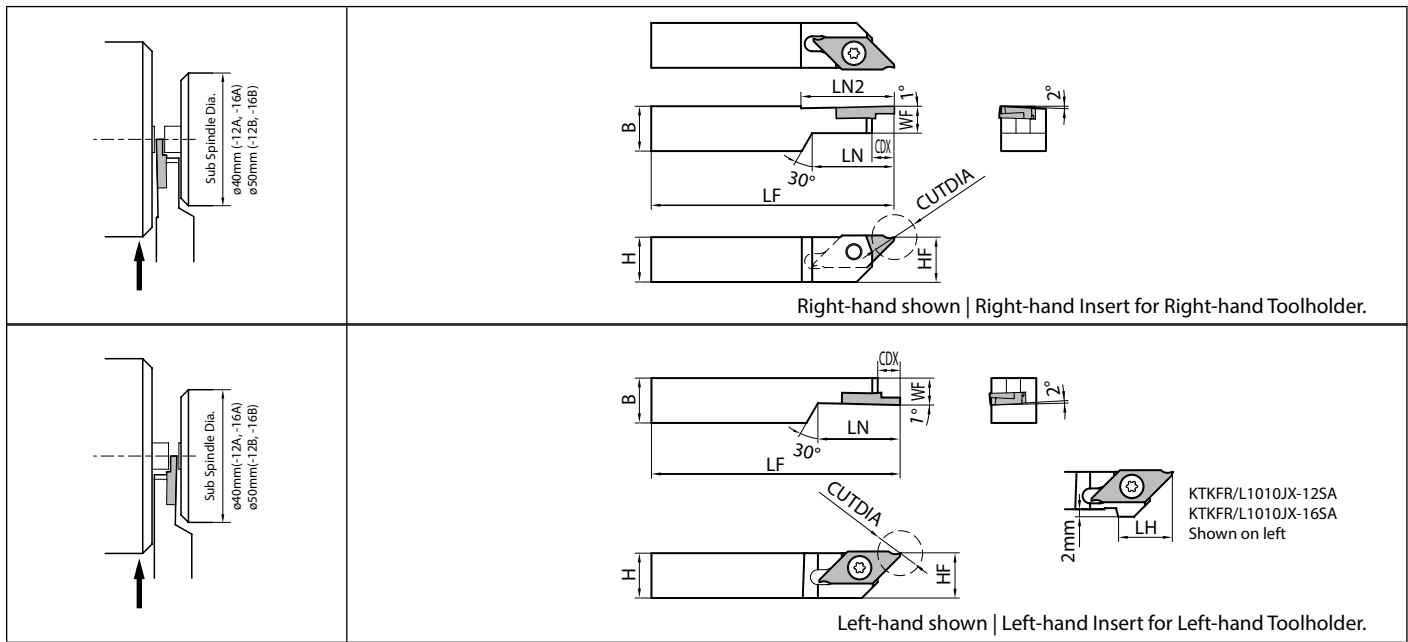
Washer

(Unit: mm)

Shape	Part Number	Std. Item
	WS-6	●

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 hoses.
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.

KTKF-S (Cut-Off / for Sub-Spindle Tooling)



Toolholder Dimensions

Unit	Part Number	Std. Item		Dimensions										Spare Parts		Applicable Inserts Page: 12~14
		R	L	CDX	H	B	LH	HF	LF	LN	LN2	WF	Screw	Wrench		
		●	●													
mm	KTKF%L 1010JX-12SA	●	●	6	10	10	15	10	120	22	26	7.2	SB-4570TRN	FT-10	TKF12%L ...	
	1212F-12SA	●	●		12	12	-	12	85							
	KTKF%L 1212JX-12SB	●	●	8	10	10	20	10	120	22	30	7.2	SB-4570TRN	FT-10		
	KTKF%L 1010JX-16SA	●	●		12	12	-	12	85							
KTKF%L 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								

CDX shows the distance from the toolholder to the cutting edge.
Cut-Off diameter (CUTDIA) depends on the insert edge width.
LN2 dimensions only apply to right-hand toolholders.

● : Standard item

KTKF / KTKF-S Selection

<p>KTKF</p> <ul style="list-style-type: none"> 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. <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>KTKF R (Right-hand toolholder)</p> <p><1st. Recommendation> Use insert with lead angle to remove boss.</p> <ul style="list-style-type: none"> Not using sub spindle Cut-off operation near main spindle side </div> <div style="text-align: center;"> <p>KTKF L (Left-hand toolholder)</p> <p><1st. Recommendation> Use insert without lead angle.</p> <ul style="list-style-type: none"> Using sub spindle Cut-off operation near sub spindle side </div> </div>	<p>KTKF-S</p> <ul style="list-style-type: none"> When machining workpiece with small diameter, use KTKF-S to reduce overhang distance from the main spindle. <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>KTKF R-SA/B (Right-hand toolholder)</p> <p><How to select> · Long workpiece and more rigidity · Cut-off operation near main spindle side</p> <p><How to select> LN dimension · Sub Spindle Dia. ø40→22(SA type) ø50→26(SB type)</p> </div> <div style="text-align: center;"> <p>KTKF L-SA/B (Left-hand toolholder)</p> <p><How to select> · Short workpiece and less rigidity · Cut-off operation near sub spindle side</p> <p><How to select> LN dimension · Sub Spindle Dia. ø40→22(SA type) ø50→26(SB type)</p> </div> </div>
--	--



KYOCERA Precision Tools

238 Marc Drive
Cuyahoga Falls, OH 44223
Customer Service | 800.823.7284 - Option 1
Technical Support | 800.823.7284 - Option 2



Official Website | www.kyoceraprecisiontools.com
Distributor Website | portal.kyoceraprecisiontools.com
Email | ctsales@kyocerapti.com