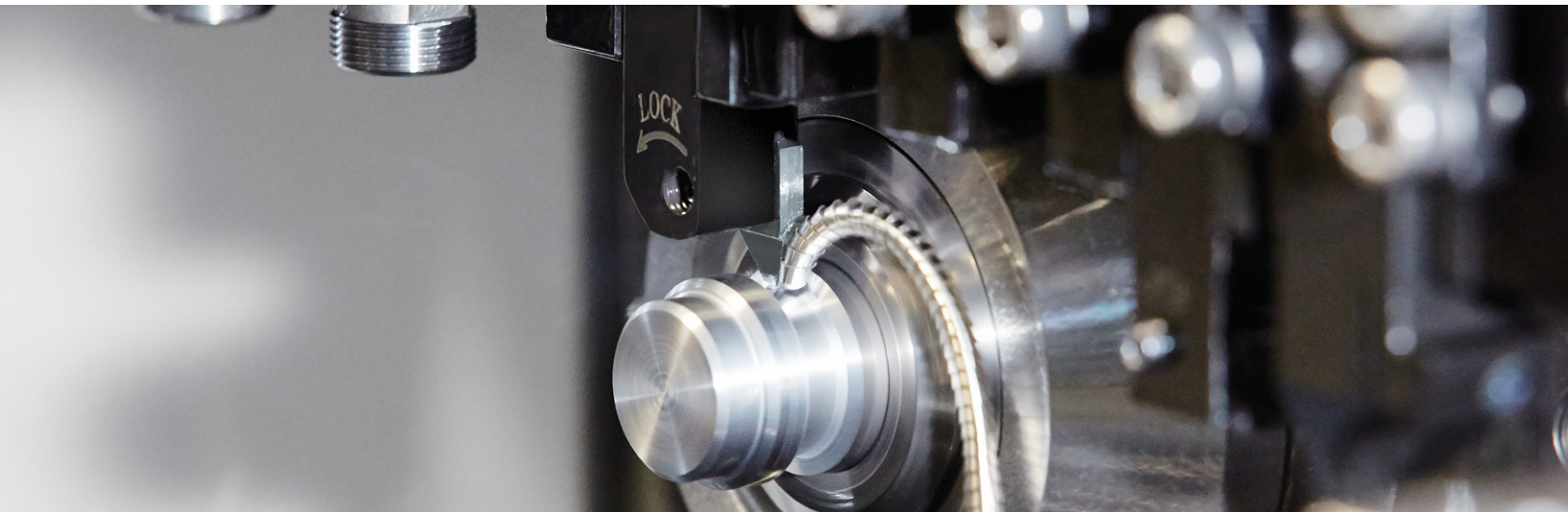




# TKFB-GQ

Back Turning with Molded Chipbreaker



Good Chip Evacuation and Excellent Surface Finish with Molded Chipbreaker

Reduced Cycle Time by Increasing Depth of Cut Capabilities

PR1535 Extends Tool Life in Stainless Steel Machining



# TKFB-GQ Chipbreaker

Back Turning with Molded Chipbreaker

Good Chip Evacuation and Excellent Surface Finish with Molded Chipbreaker

Reduced Cycle Time by Increasing Depth of Cut Capabilities


## 1 Good Chip Evacuation with Molded Chipbreaker

Original 3D Molded Chipbreaker with Two Functions


**Grooving** Good Surface Finish

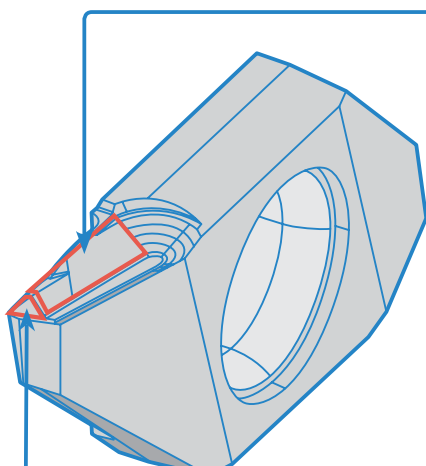
**Prevents Chip Crunching**

**GQ Chipbreaker**



Competitor A (Ground)

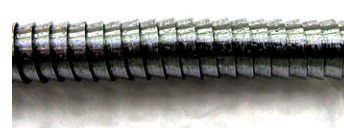





**Turning** Stable Chip Control

**Prevents Chip Entanglement**

**GQ Chipbreaker**



Competitor B (Ground)



Chip Control Comparison (Turning)  
(In-house Evaluation)

Prevents Entanglement with Tightly Curled Chips

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
0.158" Competitor (0.138")							<span style="color: red;">✗</span> Chip Clogging
0.118"							
0.079							<span style="color: red;">⚠</span> Unstable Chip Control

Cutting Conditions: Vc = 330 sfm, Wet

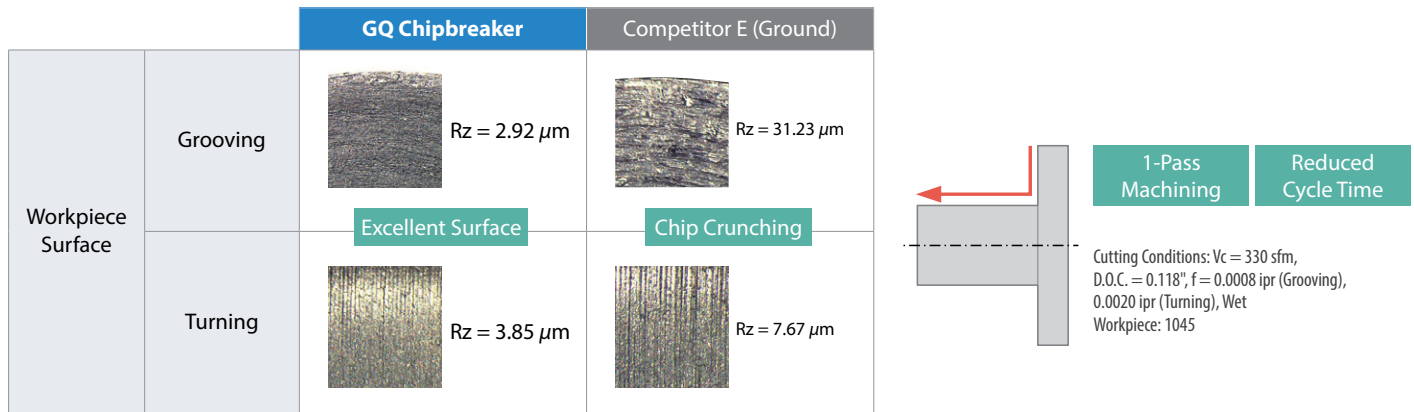
		304					
		GQ Chipbreaker			Competitor D (Molded)		
(D.O.C.)	(f)	0.0008 ipr	0.0016 ipr	0.0024 ipr	0.0008 ipr	0.0016 ipr	0.0024 ipr
0.158" Competitor (0.138")							<span style="color: red;">✗</span> Insert Fracture
0.118"							<span style="color: red;">✗</span> Chip Clogging
0.079							<span style="color: red;">⚠</span> Unstable Chip Control

Cutting Conditions: Vc = 260 sfm, Wet

# 2 Excellent Surface Finish by Preventing Chip Crunching and Clogging

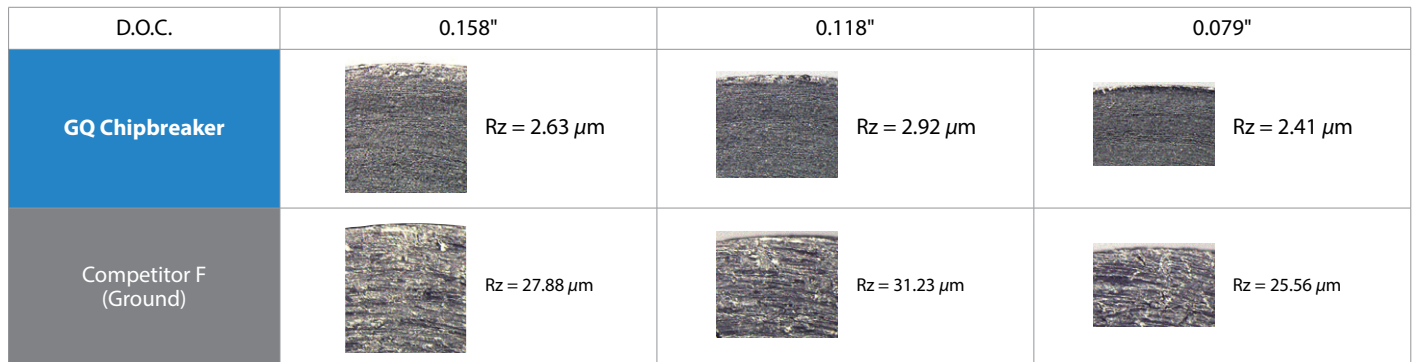
## Reduced Cycle Time with GQ Chipbreaker by Increasing Depth of Cut Capabilities

Surface Finish Comparison (In-house Evaluation)



### Grooving • Excellent Surface Finish at Large Depths of Cut

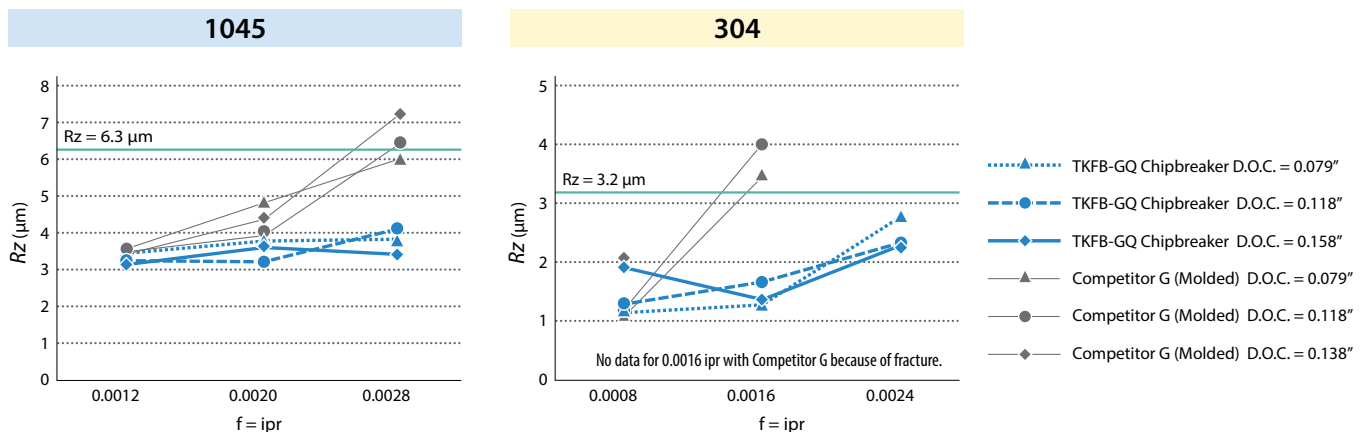
Flange Finish



Cutting Conditions:  $V_c = 330 \text{ sfm}$ ,  $f = 0.0008 \text{ ipr}$ , Wet Workpiece: 1045

### Turning • Prevents Chip Clogging and Entanglement at High Feed Rates

Surface Finish During External Turning (In-house Evaluation)



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

# PR1535 MEGACOAT NANO

Combination of tough substrate and special nano layer coating enables long tool life and stable machining of stainless steel.

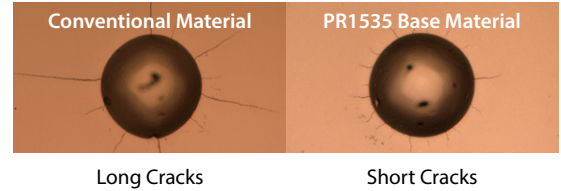
- 1 Toughening with a New Cobalt Mixing Ratio**  
\* Comparison with our Conventional Grade
- 2 Improved Stability by Optimization and Homogenization of the Particle Matrix**
- 3 Long Tool Life and Stable Machining with MEGACOAT NANO**

**23%**  
Fracture Toughness\*

## Cracking Comparison by Diamond Indentor

(In-house Evaluation)

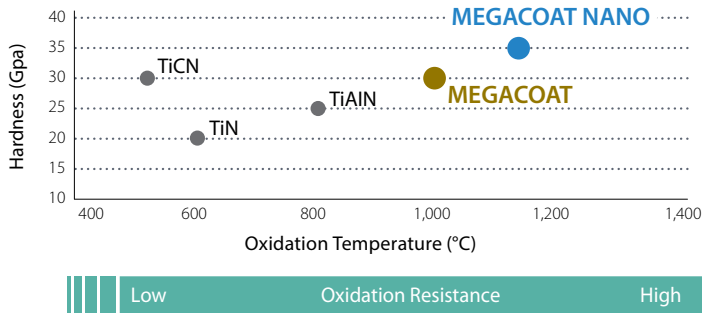
Shock Resistance



Long Cracks

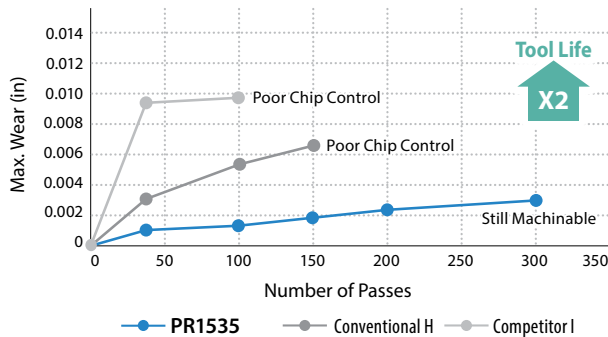
Short Cracks

## Coating Film Property



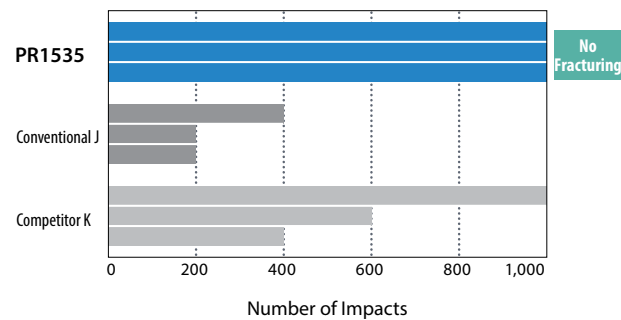
Layer Structure of MEGACOAT  
PR1535 is a good solution for unstable conditions such as early fracturing and variable tool life during steel machining.

## Wear Resistance Evaluation (In-house Evaluation)



Cutting Conditions:  $n = 1,273 \text{ min}^{-1}$  ( $V_c = 260 \text{ sfm}$ ),  $f = 0.0010 \text{ ipr}$ , Wet (Oil Base)  
Workpiece: 304 ( $\text{Ø}0.787''$ )

## Fracture Resistance Comparison (In-house Evaluation)

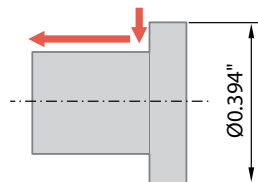


Cutting Conditions:  $V_c = 260 \text{ sfm}$ ,  $f = 0.005 \text{ ipr}$ , Wet (Water Soluble)  
Workpiece: 304 ( $\text{Ø}1.969, 0.394''$  4 slots)

## Case Studies

### Bolt SUM23

$V_c = 300 \text{ sfm}$   
 $D.O.C. = 0.079$   
 $f = 0.0010 \text{ ipr}$  (Grooving)  
 $f = 0.0016 \text{ ipr}$  (Turning)  
Wet  
TKFB12R28015-GQ PR1225



Number of Workpieces

**PR1225 5,000 pcs/edge**

Tool Life  
**X2**

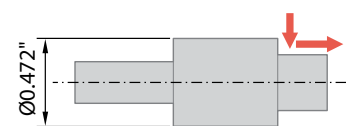
Competitor L **2,500 pcs/edge**

TKFB-GQ Chipbreaker (PR1225) showed 2 times longer tool life compared to Competitor L. Stable machining with minimal deflection was achieved.

(User Evaluation)

### Shaft SUJ2

$V_c = 160 \text{ sfm}$   
 $D.O.C. = 0.079$   
 $f = 0.0012 \text{ ipr}$  (Grooving)  
 $f = 0.0020 \text{ ipr}$  (Turning)  
Wet  
TKFB12R28015-GQ PR1225



Number of Workpieces

**PR1225 1,500 pcs/edge**

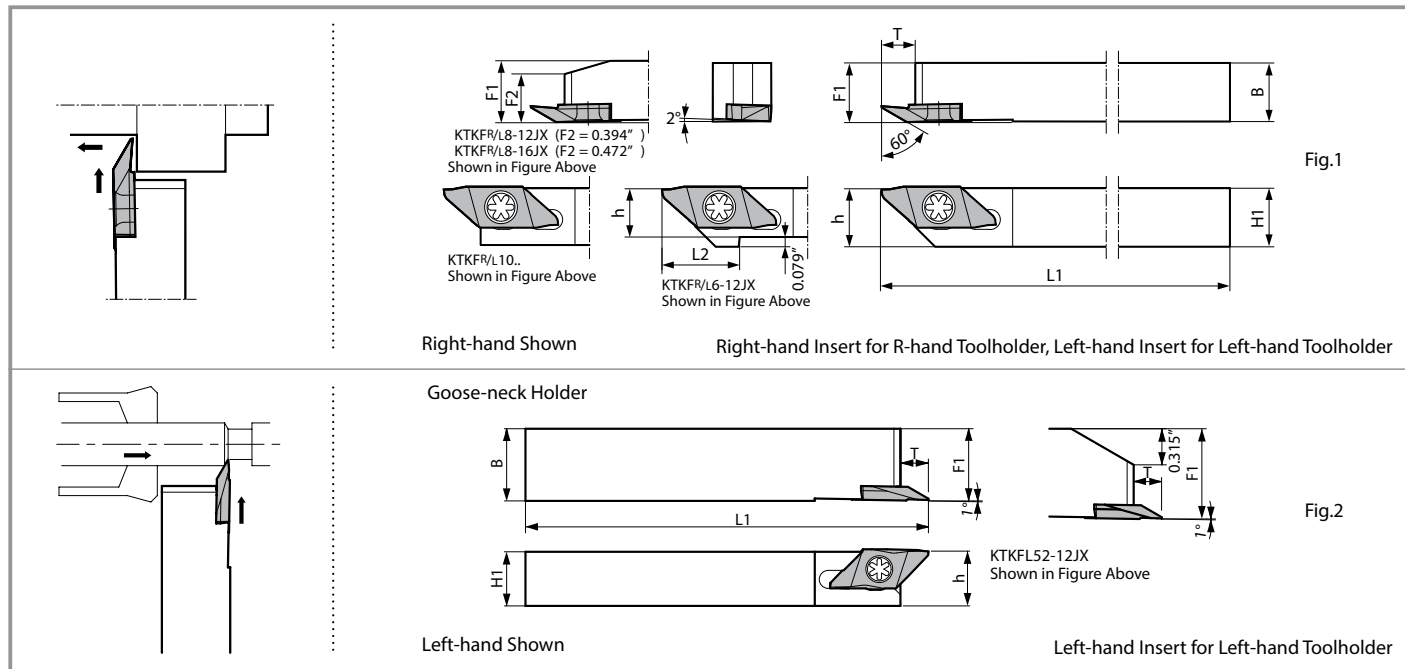


Competitor M **1,500 pcs/edge**



TKFB-GQ Chipbreaker (PR1225) maintained smoother chip control compared to Competitor M.

(User Evaluation)

# KTKF / KTKF Goose-neck Holder (Inch Sizes)



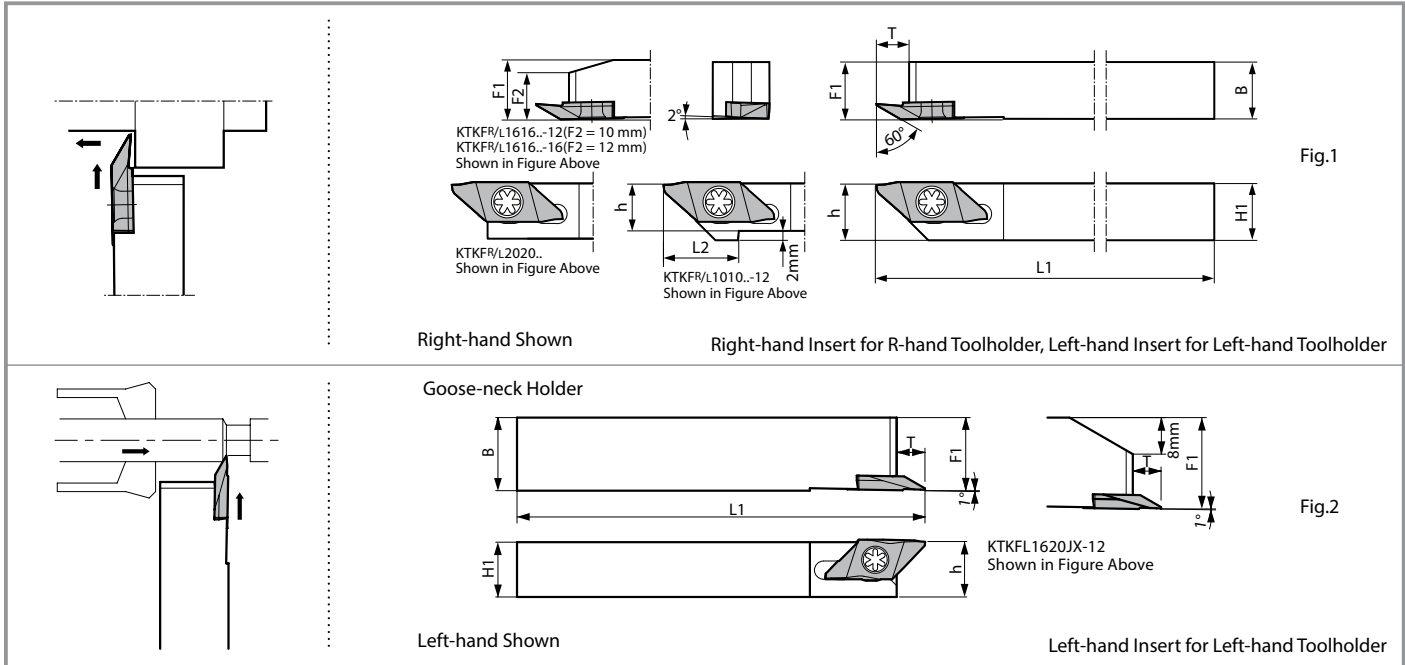
## Toolholder Dimensions

Part Number	Stock		Dimensions (in)						Drawing	Spare Parts		Applicable Inserts (Page 7)			
	R	L	H1 = h	B	L1	L2	F1	T		Clamp Screw	Wrench				
															
<b>KTKF</b> $\frac{8}{16}$ 6-12JX	●	●	0.375	0.375	4.750	0.590	0.375	0.236	Fig.1	SB-4590TRWN	LTW-10S	TKFB12 $\frac{8}{16}$ ...			
8-12JX	●	●	0.500	0.500	4.750	-	0.500	0.236							
10-12JX	●	●	0.625	0.625	4.750	-	0.625	0.236							
<b>KTKF</b> $\frac{8}{16}$ 6-16JX	●	●	0.375	0.375	4.750	0.787	0.375	0.315				Fig.2	SB-4590TRWN	LTW-10S	TKFB16 $\frac{8}{16}$ ...
8-16JX	●	●	0.500	0.500	4.750	-	0.500	0.315							
10-16JX	●	●	0.625	0.625	4.750	-	0.625	0.315							
<b>KTKFL</b> 52-12JX		●	0.500	0.625	4.750	-	0.625	0.236	Fig.2	SB-4590TRWN	LTW-10S	TKFB12L...			
62.5-12JX		●	0.625	0.750	4.750	-	0.750	0.236							

Dimension T shows the distance from the toolholder to the cutting edge.  
 TKFB...GQ inserts are right-hand and are only available for KTKFR right-hand holders.

● : U.S. Stock

# KTKF / KTKF Goose-neck Holder (Metric Sizes)



## Toolholder Dimensions

Part Number	Stock		Dimensions (mm)						Drawing	Spare Parts		Applicable Inserts (Page 7)			
	R	L	H1 = h	B	L1	L2	F1	T		Clamp Screw	Wrench				
<b>KTKF</b> $\frac{R}{L}$ <b>1010JX-12</b>	●	○	10	10	120	15	10	6	Fig. 1	SB-4590TRWN	LTW-10S	TKFB12 $\frac{R}{L}$ ...			
<b>1212JX-12</b>	●	○	12	12	120	—	12	6							
<b>1616JX-12</b>	●	○	16	16	120	—	16	6							
<b>2020JX-12</b>	○		20	20	120	—	20	6							
<b>KTKF</b> $\frac{R}{L}$ <b>1010JX-16</b>	○	○	10	10	120	20	10	8				Fig. 2	SB-4590TRWN	LTW-10S	TKFB16 $\frac{R}{L}$ ...
<b>1212JX-16</b>	○	○	12	12	120	—	12	8							
<b>1616JX-16</b>	○	○	16	16	120	—	16	8							
<b>2020JX-16</b>	○		20	20	120	—	20	8							
<b>KTKF</b> $\frac{R}{L}$ <b>1212F-12</b>	○		12	12	85	—	12	6	Fig. 2	SB-4590TRWN	LTW-10S	TKFB12 $\frac{R}{L}$ ...			
<b>1212F-16</b>	○		12	12	85	—	12	8				TKFB16 $\frac{R}{L}$ ...			
<b>KTKFL</b> <b>1216JX-12</b>		○	12	16	120	—	16	6	Fig. 2	SB-4590TRWN	LTW-10S	TKFB12L ...			
<b>1620JX-12</b>		○	16	20	120	—	20	6							

Dimension T shows the distance from the toolholder to the cutting edge.  
 TKFB...GQ inserts are right-hand and are only available for KTKFR right-hand holders.

● : U.S. Stock ○ : World Express (Shipping: 7-10 Business Days)

# Applicable Inserts

NEW

Shape	Description	Dimensions (in)								Angle (°)	MEGACOAT NANO PR1425	MEGACOAT NANO PR1535	MEGACOAT PR1225	Applicable Toolholder
		W	a	B	R(ε)	T	H	Ød	θ					
	TKFB 12R28005-GQ	0.110	0.059	0.181	0.002	0.118	0.343	0.205	74°	●	●	●	KTKFR ...12	
	12R28015-GQ	0.110	0.059	0.181	0.006	0.118	0.343	0.205	74°	●	●	●		
	TKFB 16R38005-GQ	0.150	0.071	0.248	0.002	0.158	0.374	0.205	72°	●	●	●	KTKFR ...16	
	16R38015-GQ	0.150	0.071	0.248	0.006	0.158	0.374	0.205	72°	●	●	●		

● : U.S. Stock ○ : World Express (Shipping: 7-10 Business Days)

## Recommended Cutting Conditions ★ 1st Recommendation ☆ 2nd Recommendation

Workpiece		Recommended Insert Grade						Notes
		MEGACOAT NANO				MEGACOAT		
		PR1425		PR1535		PR1225		
		Grooving	Traversing	Grooving	Traversing	Grooving	Traversing	
Carbon Steel / Alloy Steel	Cutting Speed (sfm)	★ 260 – 660		☆ 200 – 490		☆ 200 – 490		Wet
	Feed (ipr)	0.0004 – 0.00016	0.0008 – 0.0059	0.0004 – 0.0016	0.0008 – 0.0059	0.0004 – 0.00016	0.0008 – 0.0059	
Stainless Steel	Cutting Speed (sfm)	☆ 200 – 490		★ 200 – 430		☆ 200 – 430		
	Feed (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	

## Inserts Identification System (See Table 1)

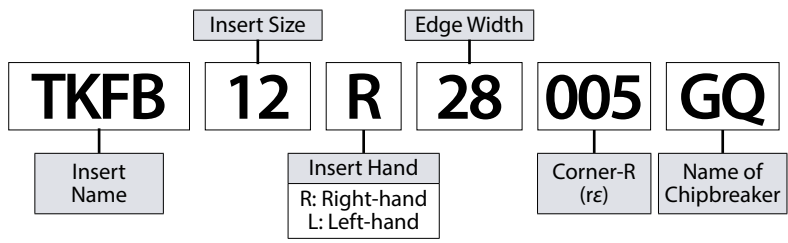
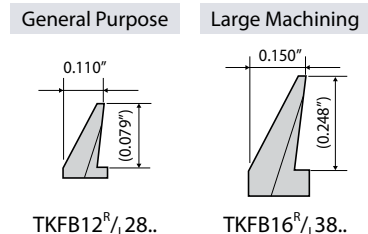
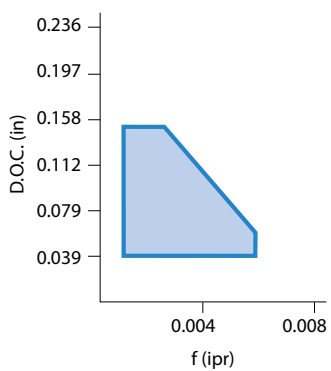


Table 1 (Insert Width)



### Applicable Range (Steel)

TKFB12R280..GQ



TKFB16R380..GQ

