THE NEW VALUE FRONTIER

KYOCERA

Cut-off Holder for Small Parts Machining
Great for High Pressure Coolant

KTKF-JCT

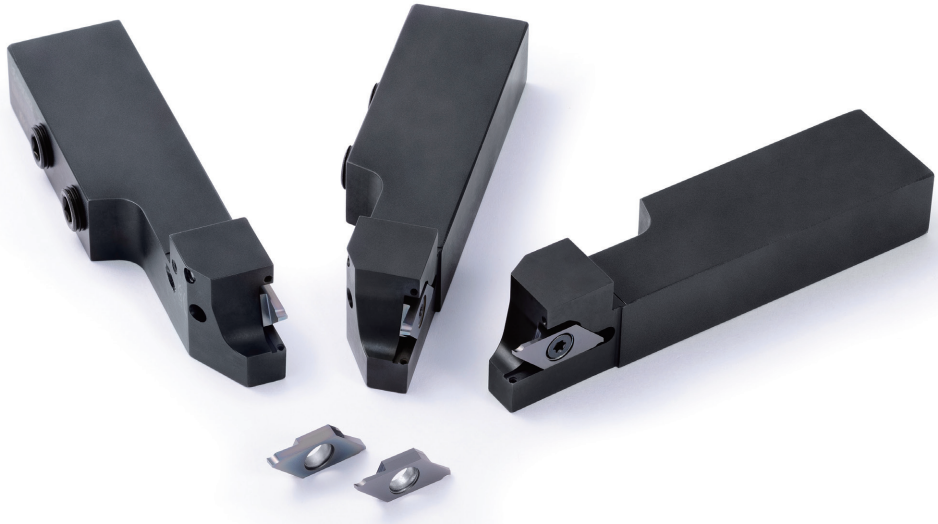
Cut-off Holder for Small Parts Machining Great for High Pressure Coolant

KTKF-JCT

Finely Breaks Chips into Small Pieces. Superior Cooling Action Improves Tool Life

Discharges Coolant in Two Directions Towards Rake Surface of Insert

Superior Chip Control Performance under Pump Pressures of 1 to 3 MPa



Cut-off Holder for Small Parts Machining Great for High Pressure Coolant

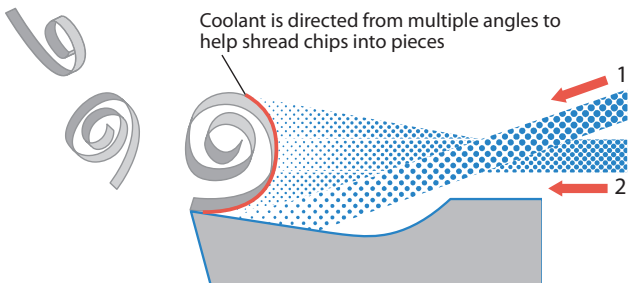
KTKF-JCT

Finely Breaks Chips into Small Pieces. Excellent Chip Control Performance When Machining Difficult-to-Cut Material and Stainless Steel. Superior Cooling Action Improves Tool Life

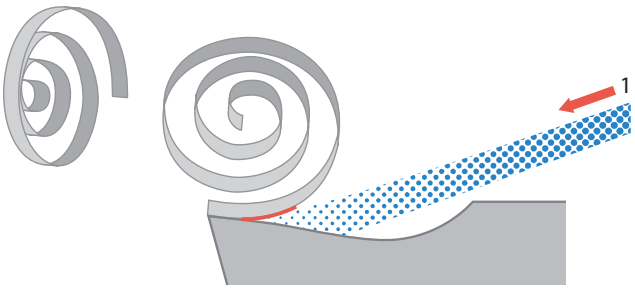
1 Superior Chip Control Performance

Discharges Coolant in Two Directions toward Rake Surface of Insert. Finely Breaks Chips into Small Pieces

Coolant Discharge Structure Comparison



KTKF-JCT



Competitor A

Chip Control Comparison (In-house Evaluation)

SUS304

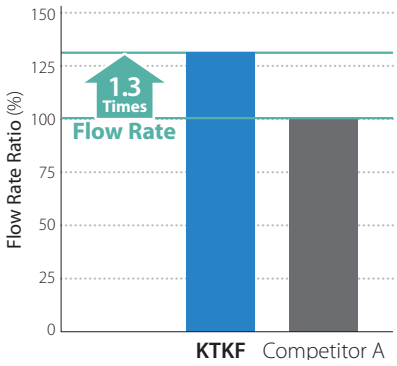
f (mm/rev)	0.01	0.02	0.03
KTKF -JCT			
Competitor A			

TAB6400 (Ti-6Al-4V)

f (mm/rev)	0.01	0.02	0.03
KTKF -JCT			
Competitor A			

Cutting Conditions: Vc = 80 m/min, Wet (Oil-based) Lubricating Pressure: 1.5 MPa (Internal)
Workpiece : ø12

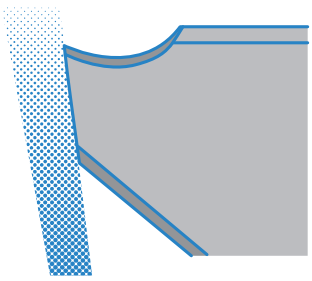
Coolant Flow Rate Comparison (In-house Evaluation)



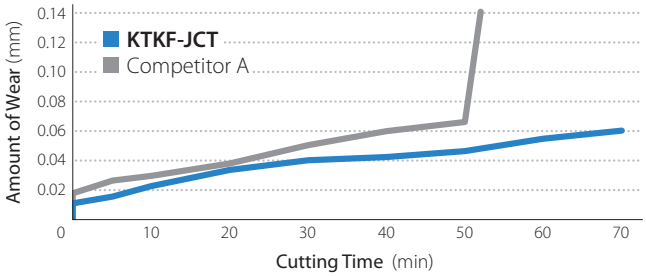
Lubricating Pressure: 1.5 MPa (Internal)

2 Superior cooling action improves tool life

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



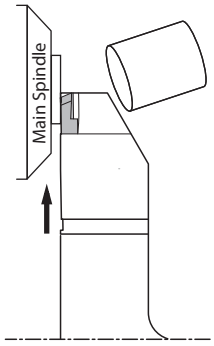
Wear Resistance Comparison (In-house Evaluation)

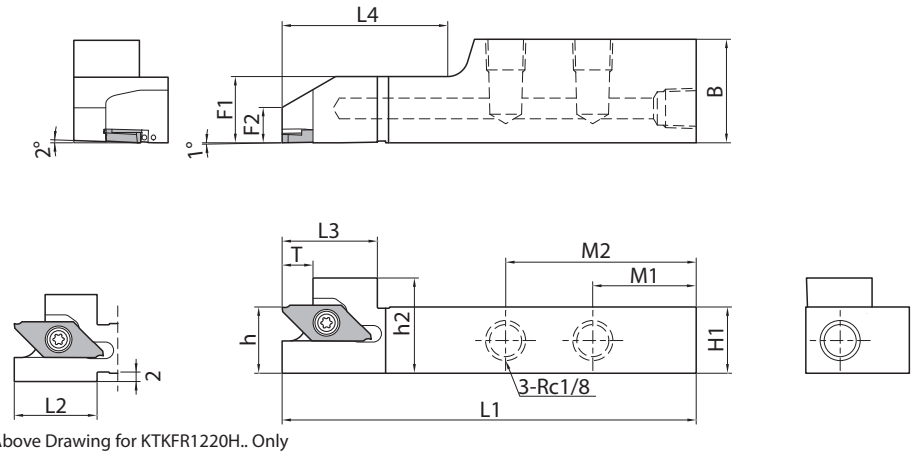


Cutting Conditions: Vc = 100 m/min, f = 0.02 mm/rev, Wet (Oil-based)
Lubricating Pressure: 1.5 MPa (Internal) Workpiece: TAB6400 (Ti-6Al-4v) ø12

Standard Stock Items Description

Right-hand (R)



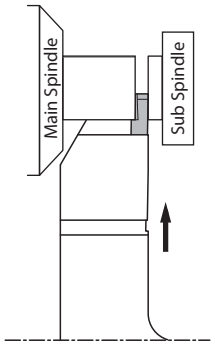


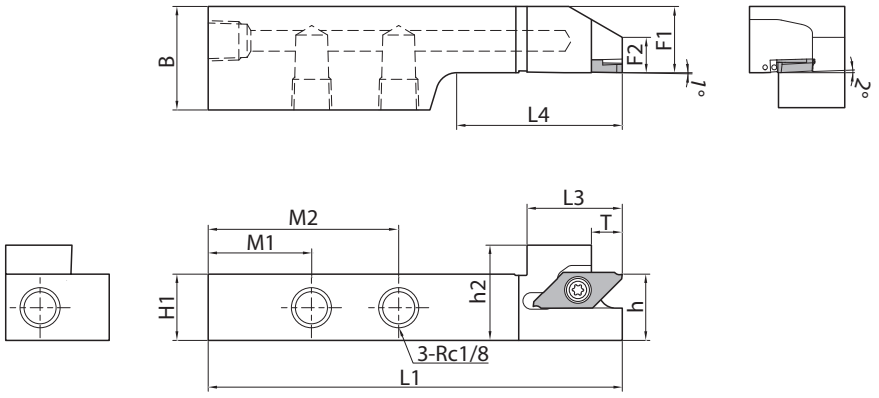
Above Drawing for KTKFR1220H.. Only

Right-hand (R) Shown

R-hand Insert (R) for R-hand (R) Toolholder

Left-hand (L)





Left-hand (L) Shown

L-hand Insert (L) for L-hand (L) Toolholder

Toolholder Dimensions

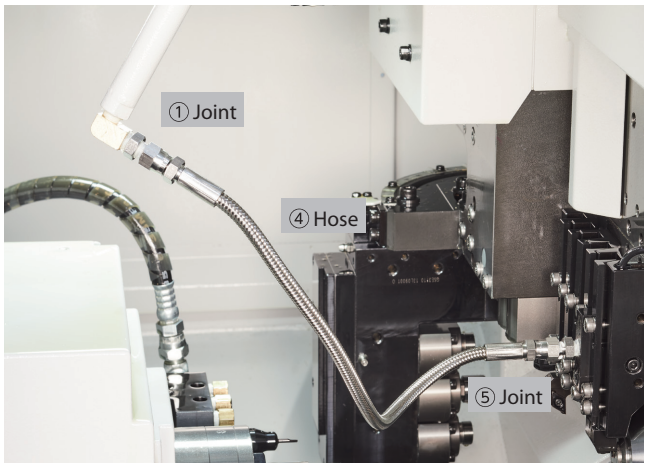
Description	Stock		Dimensions (mm)												Parts		
															Clamp Screw	Wrench	Plug
	R	L	H1=h	h2	B	L1	L2	L3	L4	F1	F2	T	M1	M2			
KTKFR 1220H-12JCT	●		12	19	20	100	20	20	28	12	6.4	7.5	35	—	SB-4590TRWN	FT-10	GP-1
KTKFR/L 1625H-12JCT	●		16	23	25		—	23	40	16	8.5		25	46			
		●															
KTKFR/L 2025H-12JCT	●		20	27	25					20	12.5						
		●															
KTKFR/L 1625H-16JCT	●		16	23	25	100	—	23	40	16	8.5	9.6	25	46	SB-4590TRWN	FT-10	GP-1
		●															
KTKFR/L 2025H-16JCT	●		20	27	25				41	20	12.5						
		●															

● : Standard stock

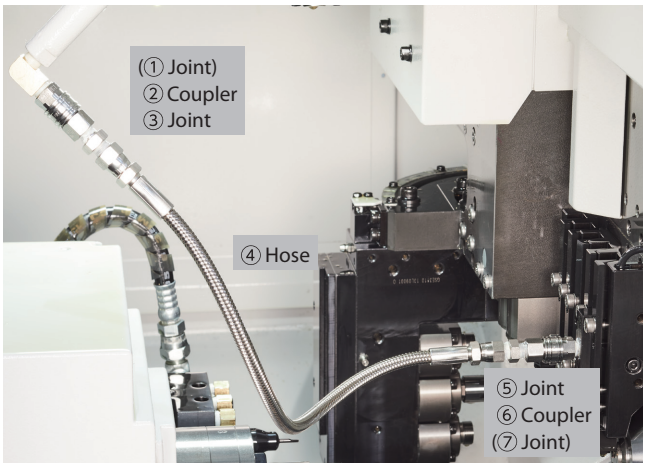
Pipe parts will be required separately if internal coolant is used

Pump Pressure: Up to 20 MPa. Pump Pressure: Up to 7.5 MPa if couplers are used

Without Coupler (Pump Pressure: Up to 20 MPa)



With Coupler (Pump Pressure: Up to 7.5 MPa)



Combination Part Description (Example)

Part	Description
① Joint	J-ST-R1/8-G1/8
④ Hose	HS-G1/8-G1/8-500
⑤ Joint	J-ST-R1/8-G1/8

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

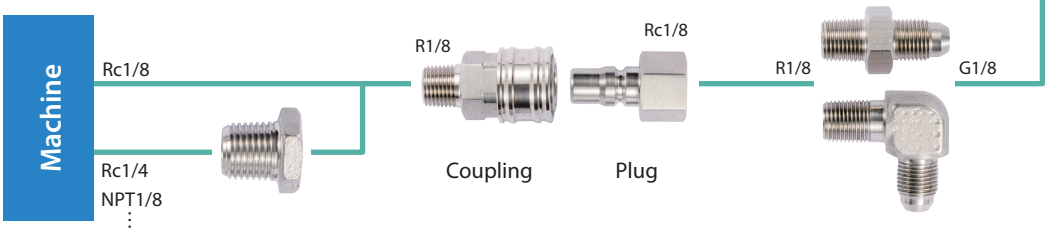
Combination Part Description (Example)

Part	Description
(① Joint)	–
② Coupler	CP-ST-R1/8, P-ST-RC1/8
③ Joint	J-ST-R1/8-G1/8
④ Hose	HS-G1/8-G1/8-500
⑤ Joint	J-ST-R1/8-G1/8
⑥ 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.

Without Coupler (Pump Pressure: Up to 20 MPa)

With Coupler (Pump Pressure: Up to 7.5 MPa)



① Joint ② Coupler ③ Joint ④ Hose

Piping Installation Parts Description

Joint (①③⑤⑦)

Pressure Resistance: Up to 20.0 MPa

Exterior	Description	Thread Standard	Stock
	J-ST-R1/4-G1/8	R1/4 ⇔ G1/8	●
	J-ST-NPT1/8-G1/8	NPT1/8 ⇔ G1/8	●
	J-ST-R1/8-G1/8	R1/8 ⇔ G1/8	●
	J-AN-R1/8-G1/8		●
	J-ST-R1/4-RC1/8	R1/4 ⇔ Rc1/8	●
	J-ST-NPT1/8-RC1/8	NPT1/8 ⇔ Rc1/8	●
	J-ST-R1/8-RC1/8	Rc1/8 ⇔ R1/8 (Extension Joint)	●

● : Standard Stock

Coupler (②⑥)

Pressure Resistance: Up to 7.5 MPa

Exterior	Description	Thread Standard	Stock
	CP-ST-R1/8	R1/8	●
	P-ST-RC1/8	Rc1/8	●

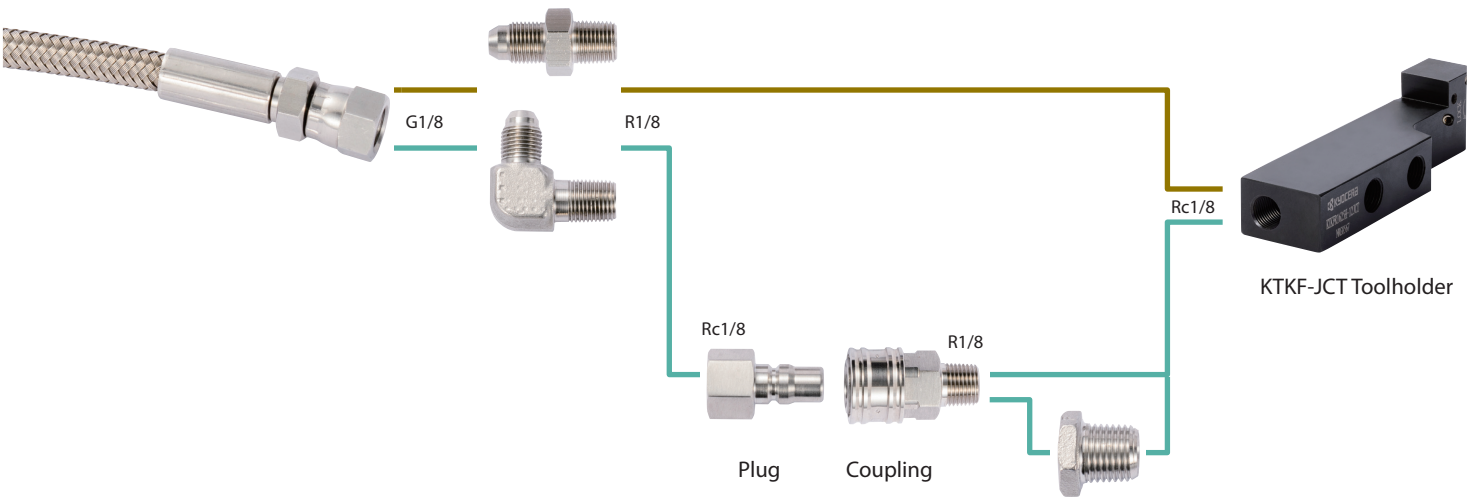
● : Standard Stock

Hose (④)

Pressure Resistance: Up to 20.0 MPa

Exterior	Description	Thread Standard	Total Length (mm)	Stock
	HS-G1/8-G1/8-200	G1/8	200	●
	HS-G1/8-G1/8-300		300	●
	HS-G1/8-G1/8-400		400	●
	HS-G1/8-G1/8-500		500	●
	HS-G1/8-G1/8-600		600	●
	HS-G1/8-G1/8-800		800	●

● : Standard Stock

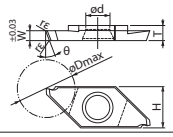
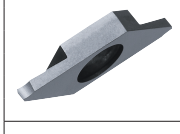
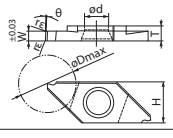
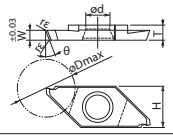
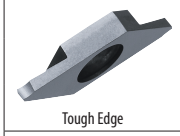
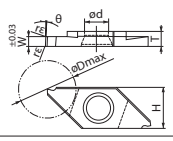
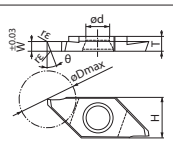
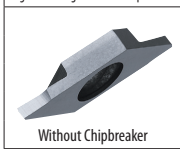
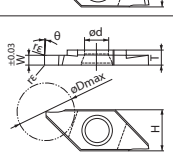
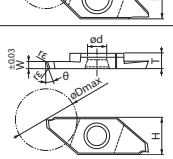
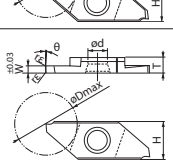
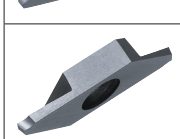
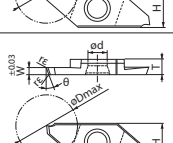
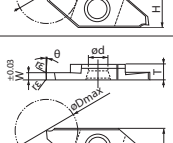
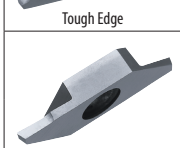
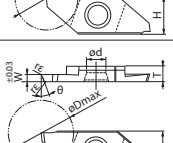
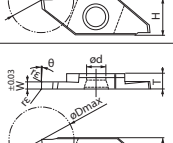


④ Hose ⑤ Joint ⑥ Coupler ⑦ Joint (Extension Joint)

Cut-off Inserts

Applicable Inserts (TKF12/TKF16)

Usage Classification			
● : Continuous ~ Light Interruption / 1st Choice	P	Carbon Steel & Alloy Steel	●
◔ : Continuous ~ Light Interruption / 2nd Choice	M	Stainless Steel	◔
● : Continuous / 1st Choice	K	Cast Iron	●
○ : Continuous / 2nd Choice	N	Non-ferrous Metals	◔

Shape (Right-hand (R) Shown (When Applicable))		Description		Dimensions (mm)						Angle	MEGACOAT NANO				MEGACOAT		PVD Coated Carbide		DLC Coated Carbide		Carbide	
				W	øD max	rε	T	H	ød	θ	PR1425		PR1535		PR1225		PR1025		PDL025		KW10	
											R	L	R	L	R	L	R	L	R	L	R	L
 Right Lead Angle		TKF12 R/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							●	●	●	●	●	●	●	●	●	●	●	●
		TKF12 R/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							●	●	●	●	●	●	●	●	●	●	●	●
 Right Lead Angle / Tough Edge		TKF12 R/L	100-T-16DR	1.0	12	0.08	3	8.7	5	16°	●	●	●	●	●	●						
			150-T-16DR	1.5							●	●	●	●	●	●						
			200-T-16DR	2.0							●	●	●	●	●	●						
 Tough Edge		TKF12 R/L	100-T	1.0	12	0.08	3	8.7	5	0°	●	●	●	●	●	●						
			150-T	1.5							●	●	●	●	●	●						
			200-T	2.0							●	●	●	●	●	●						
 Right Lead Angle Without Chipbreaker		TKF12 R/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							●	●	●	●			●	●			●	●
 Without Chipbreaker		TKF12 R/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							●	●	●	●			●	●			●	●
 Right Lead Angle		TKF16 R/L	150-S-16DR	1.5	16	0.05	4	9.5	5	16°	●	●	●	●	●	●	●	●	●	●	●	●
			200-S-16DR	2.0							●	●	●	●	●	●	●	●	●	●	●	●
		TKF16 R/L	150-S	1.5	16	0.05	4	9.5	5	0°	●	●	●	●	●	●	●	●	●	●	●	●
			200-S	2.0							●	●	●	●	●	●	●	●	●	●	●	●
 Right Lead Angle / Tough Edge		TKF16 R/L	150-T-16DR	1.5	16	0.08	4	9.5	5	16°	●	●	●	●	●	●						
			200-T-16DR	2.0							●	●	●	●	●	●						
 Tough Edge		TKF16 R/L	150-T	1.5	16	0.08	4	9.5	5	0°	●	●	●	●	●	●						
			200-T	2.0							●	●	●	●	●	●						
 Right Lead Angle / Without Chipbreaker		TKF16 R/L	150-NB-20DR	1.5	16	0	4	9.5	5	20°	●	●	●	●			●	●			●	●
			200-NB-20DR	2.0							●	●	●	●			●	●			●	●
 Without Chipbreaker		TKF16 R/L	150-NB	1.5	16	0	4	9.5	5	0°	●	●	●	●			●	●			●	●
			200-NB	2.0							●	●	●	●			●	●			●	●

● : Standard Stock

Lead angle (front cutting edge angle: θ) shows the angle when installed in the toolholder.
Machining diameter of insert (øDmax) indicates the machining diameter when the tool tip has proceeded to the center of workpiece as in Fig. 1 on P.6

How to Read Insert Description (See Table 1)

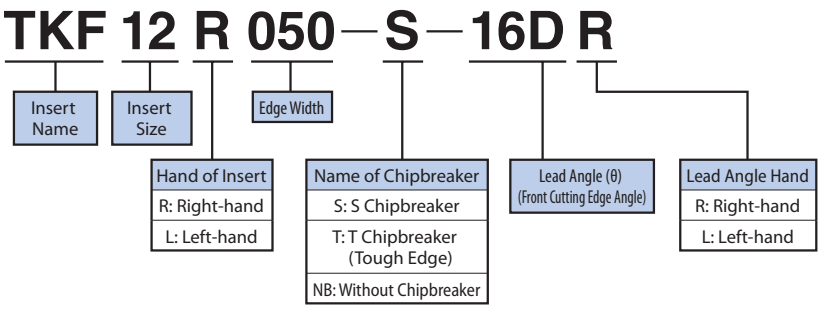
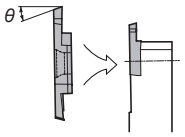
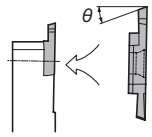


Table 1

Toolholder	Right-hand (R)	Toolholder	Left-hand (L)
Insert	Right-hand (R)	Insert	Left-hand (L)
Lead Angle	Right-hand (R)	Lead Angle	Right-hand (R)
			
Toolholder Hand: R		Toolholder Hand: L	

About øDmax Machinable Diameter of Insert

When Using Main Spindle Only

Maximum machining diameter of workpiece on cut-off side øD1 (Fig. 1) follows øD1 = øDmax
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 maximum machining diameter is kept at 0.2 mm radius)

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.
Ex.) When the cutting edge is programmed to run 1 mm beyond the center of workpiece (Fig. 4) the maximum machining diameter of workpiece on cut-off side øD2 (Fig. 4) = [øDmax – 1mm × 2] (mm)
(The clearance between the insert and the workpiece is 0.2 mm)

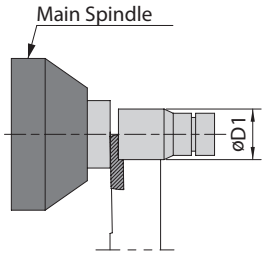


Fig. 1 (When the tool edge is at the center of workpiece)

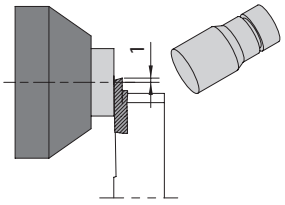


Fig. 2 (When the tool edge has proceeded 1 mm beyond the center of workpiece)

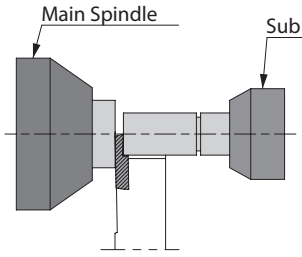


Fig. 3 (When the tool edge is at the center of workpiece)

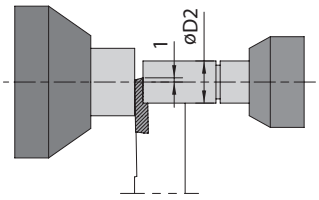
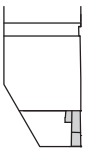
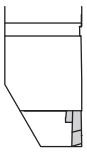
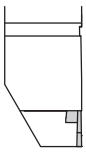
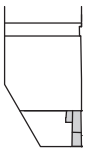
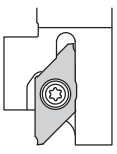
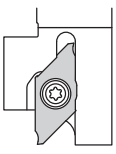
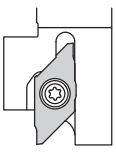


Fig. 4 (When the tool edge has proceeded 1 mm beyond the center of workpiece)

Cut-off Tool Edge Selection Guide

Troubleshooting

Problems	Countermeasures	Countermeasures						
		Lead Angle (θ)		Groove Width (Edge Width)		Chipbreaker Name		
		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
Entagled 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		

MEGACOAT NANO 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

1 **An increase in cobalt content yields a substrate with greater toughness**
*In comparison to our conventional material grade

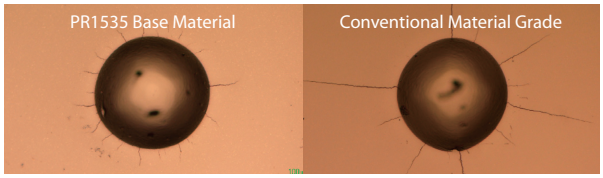
UP 23% Fracture Toughness*

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**

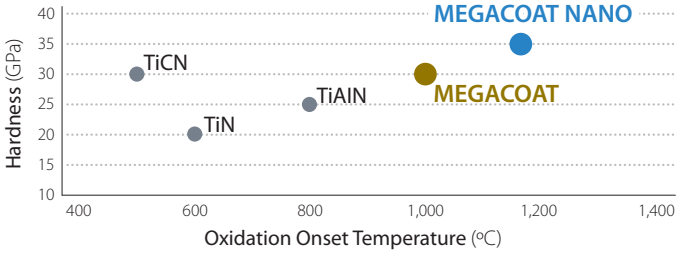
Cracking Comparison by Diamond Indentor
(In-house Evaluation)

UP Impact Resistance

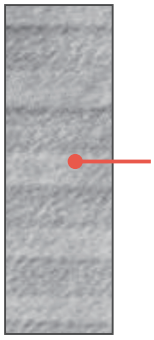


Short Cracks　　Long Cracks

Coating Properties



Low　Oxidation Resistance　High



Note
PR1535 also shows superior performance in steel machining under unstable conditions

Recommended Cutting Conditions
★: 1st Recommendation; ☆: 2nd Recommendation

Workpiece	Recommended Insert Grade (Vc : m/min)						TKF12						TKF16		Notes
							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 (SxxC etc.)	★ 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)	Wet
Alloy Steel (SCM etc.)	★ 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 (SUS304, etc.)	☆ 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 (FC, FCD etc.)	–	–	–	–	–	★ 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	

Recommendations in Parentheses ( ) : Tough Edge Type (TKF..T..)

CP391