

THE NEW VALUE FRONTIER



Great for High Pressure Coolant | **JCT Series**

Great for High Pressure Coolant

# JCT Series



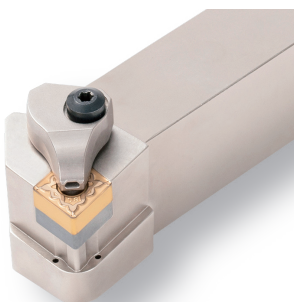
**Excellent Chip Control and Long Tool Life with High Pressure Coolant**

Large Holder Lineup for Turning, External Grooving, Cut-off and Threading

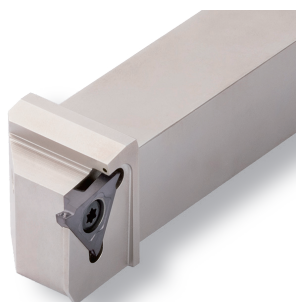
Easy Connection with High Pressure Hose and Joint

Internal Coolant Provides Longer Tool Life and Excellent Chip Control

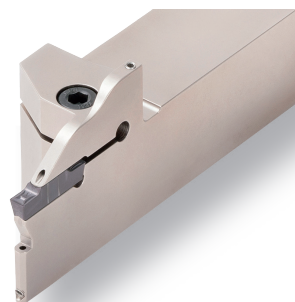
Turning  
Double Clamp-JCT



Shallow Grooving  
KGBA-JCT



Grooving / Cut-off  
KGD-JCT



Threading  
KTN-JCT



Great for High Pressure Coolant

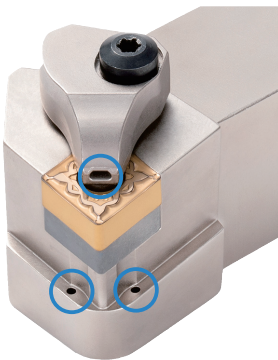
# JCT Series

Excellent Chip Control and Long Tool Life with High Pressure Coolant  
 Large Holder Lineup for Turning, External Grooving, Cut-off and Threading

## Special Coolant Hole Design

### Unique Coolant System for Various Machining Applications

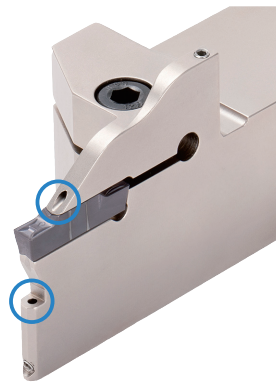
○ : Coolant Hole



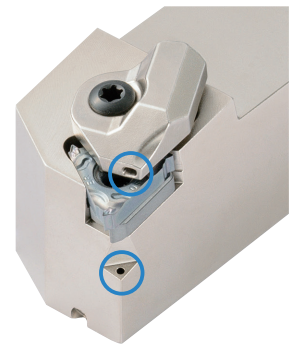
Turning:  $\rightarrow$ P.3  
 Double Clamp-JCT



External Shallow Grooving:  $\rightarrow$ P.7  
 KGBA-JCT



External Grooving:  $\rightarrow$ P.11  
 KGD-JCT



Threading:  $\rightarrow$ P.15  
 KTN-JCT

## Advantages of Internal Coolant

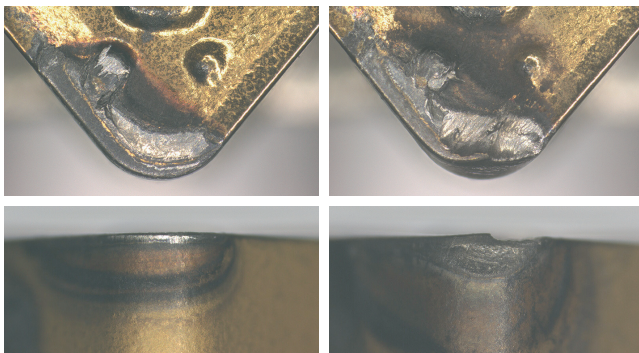
Discharges Coolant towards the Cutting Edge  
 Internal Coolant Provides Longer Tool Life and Excellent Chip Control

### Extended Tool Life

**Wear Resistance Comparison** (In-house Evaluation)

Internal Coolant (7MPa)

External Coolant (0.4MPa)



Cutting Conditions:  $V_c = 250$  m/min,  $f = 0.3$  mm/rev,  $a_p = 2$  mm, Wet  
 CNMG120408 Type Workpiece: SCM435  
 External Turning After Machining 42.2 min

### Improved Chip Control

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

Internal Coolant (7MPa)

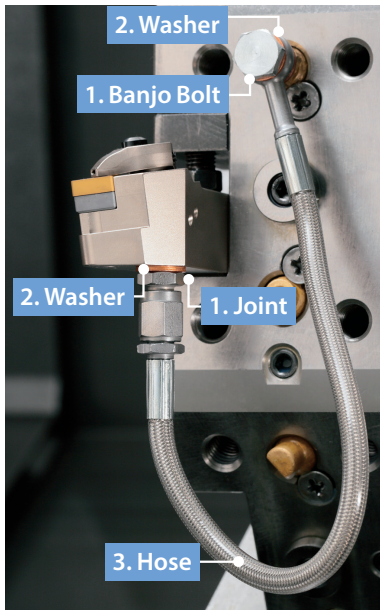
External Coolant (0.4MPa)



Cutting Conditions:  $V_c = 200$  m/min,  $f = 0.05$  mm/rev,  $a_p = 0.5$  mm, Wet  
 DNMG150408 Type Workpiece: SCM415 External Turning

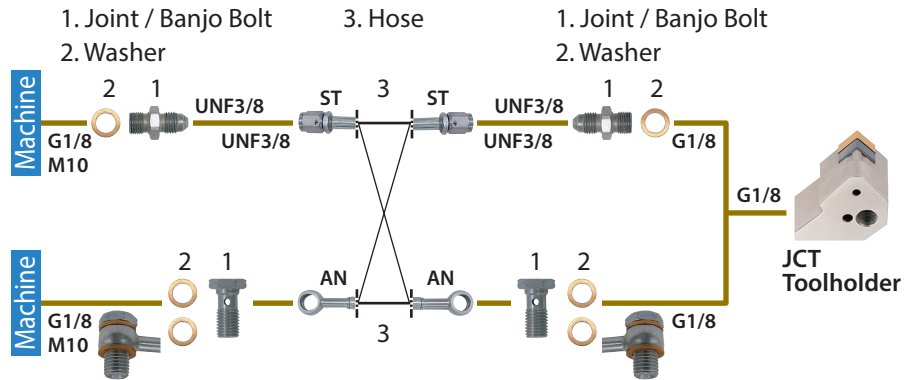
# Easy Coolant Connections

## Easy Connection with High Pressure Hose and Joint



- Even without a high pressure pump, internal coolant can be used at a normal pressure
- Banjo bolt available for angled hose connection  
Can be used in a variety of machines

### <Piping Installation Guide>



## Piping Parts

### Optional Piping Parts Available

Choose from parts below to match your machine specifications

1. Joint / Banjo bolt × 2 2. Washer × 2-4 3. Hose × 1

#### 1. Joint / Banjo Bolt

Pressure Resistance: ~ 30MPa

Shape	Description	Stock	Thread Standard	
			Thread connection to the machine	
	J-G1/8-UNF3/8	●	G1/8	
	J-M10X1.5-UNF3/8	●	M10X1.5	
Banjo Bolt (For the angle hose)	BB-G1/8	●	G1/8	
	BB-M10X1.5	●	M10X1.5	

#### 2. Washer

Pressure Resistance: ~ 30MPa

Shape	Description	Stock
	WS-10	●

\* Use 2 washers for a banjo bolt

#### 3. Hose

Pressure Resistance: ~ 30MPa

Shape	Description	Stock	Thread Standard		Dimensions (mm)
					L
Straight / Straight	HS-ST-ST-200	●	UNF3/8	UNF3/8	200
	HS-ST-ST-250	●			250
Straight / Angle	HS-ST-AN-200	●	UNF3/8	(Banjo bolt)	200
	HS-ST-AN-250	●			250
Angle / Angle	HS-AN-AN-200	●	(Banjo bolt)	(Banjo bolt)	200
	HS-AN-AN-250	●			250

### Precautions

1. Make sure machine door is completely closed before use of these parts.
2. Use appropriate seal for the male thread of the piping parts and make sure the connection is secure.  
Use plugs to seal off unused coolant holes.
3. Connect and fasten the coolant hose firmly.
4. The use of copper washers may cause leakage but will have no effect on the performance.
5. Commercial piping parts can be used if the thread standards are same. Check the pressure resistance before use.
6. Regularly changing the coolant filter is recommended.



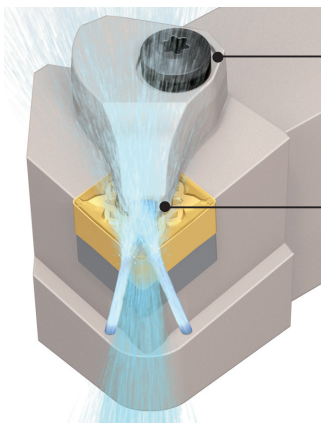
Great for High Pressure Coolant, Toolholder for Turning

# Double Clamp-JCT

Discharges Coolant in Three Directions. Improved Chip Control and Longer Tool Life for a Wide Variety of Workpieces including Steel, Hardened Material and Difficult-to-Cut Material

## 1 Superior Chip Control Performance

Special coolant-through structure designed by careful simulation and analysis technology



### Double-Clamp

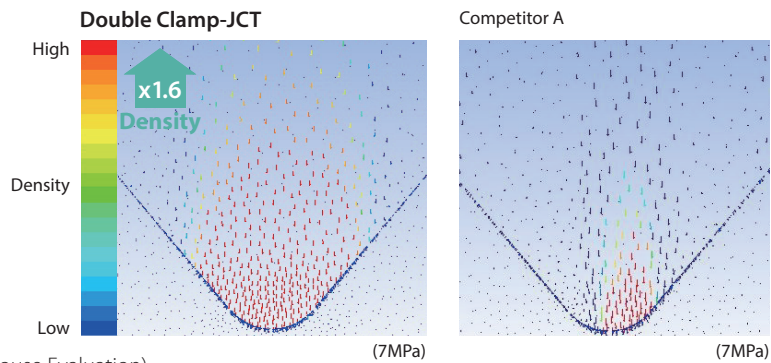
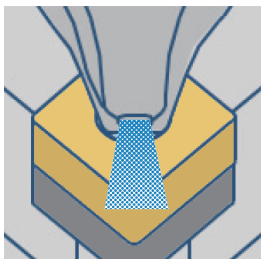
Firm insert clamp and easy to use in single operations  
High-density coolant supply close to the cutting edge

### Unique Nozzle Shape

Provides coolant to a wide area of the insert surface

### Coolant Supply Simulation Comparison (In-house Evaluation)

Discharges a wide stream of high-density coolant towards the rake surface of the insert

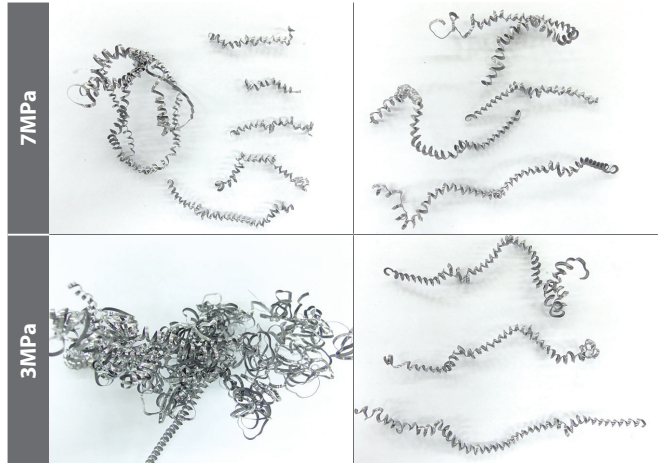


### Chip Control Comparison (In-house Evaluation)

#### Double Clamp-JCT



#### Competitor A



f = 0.05 mm/rev

f = 0.15 mm/rev

f = 0.05 mm/rev

f = 0.15 mm/rev

Cutting Conditions:  $V_c = 150$  m/min,  $a_p = 0.5$  mm, Wet, CNMG120408 Type Workpiece: SCM415 External Turning

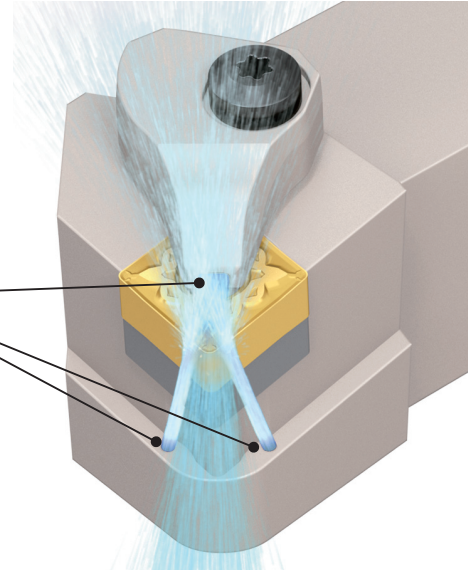


## 2 Longer Tool Life and High Speed Machining

Coolant is also directed from two directions towards the flank face of the insert to ensure even cooling action

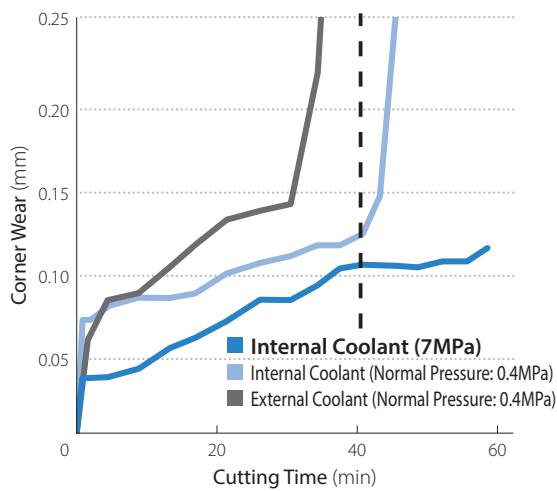
Longer tool life and high-speed machining with improved wear resistance

Discharges Coolant in Three Directions  
The Cutting Edge Stays Cool

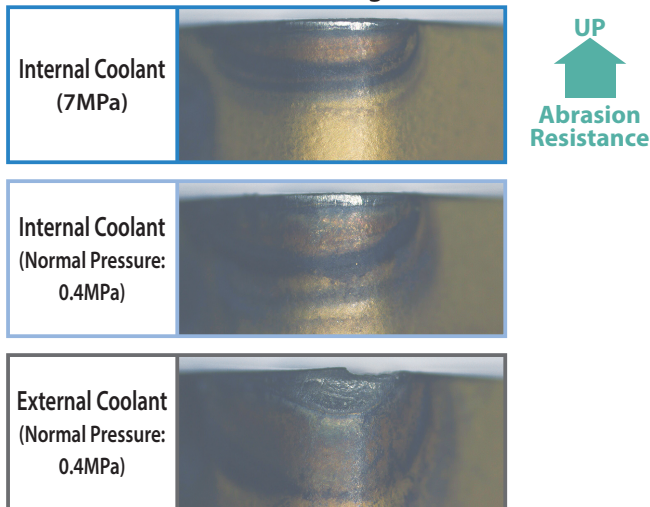


### Wear Resistance Comparison (In-house Evaluation)

#### Alloy Steel (SCM435)

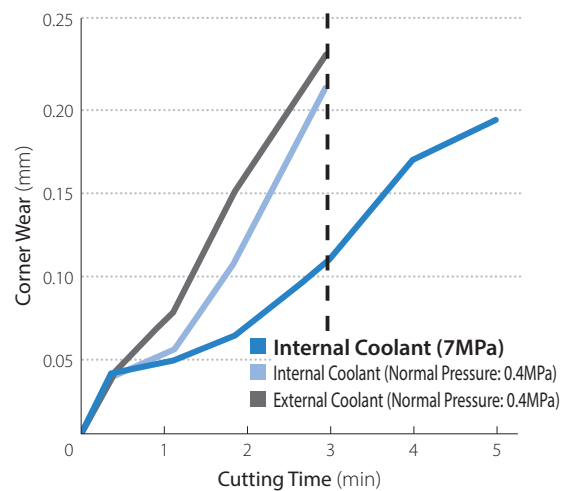


After Machining 42.2 min

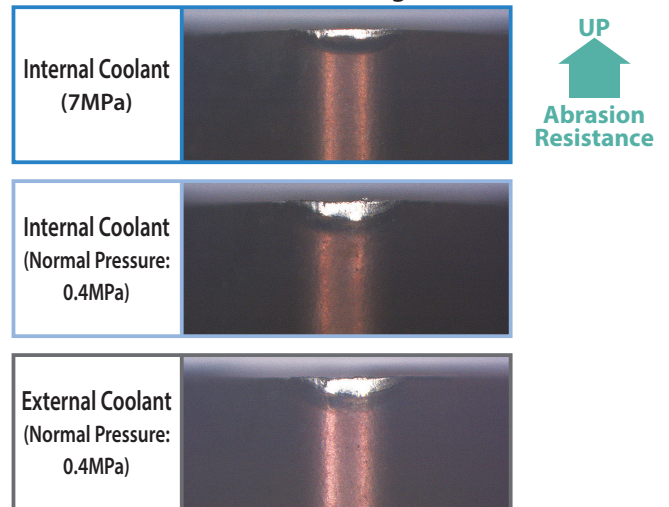


Cutting Conditions:  $V_c = 250$  m/min,  $f = 0.3$  mm/rev,  $a_p = 2$  mm, Wet CNMG120408 Type External Turning

#### Heat-resistant Alloys (Inconel®718)



After Machining 3 min

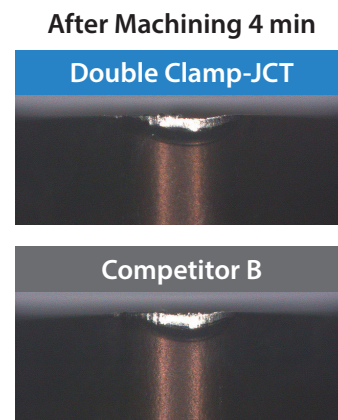
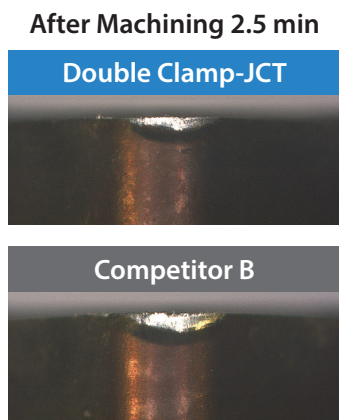
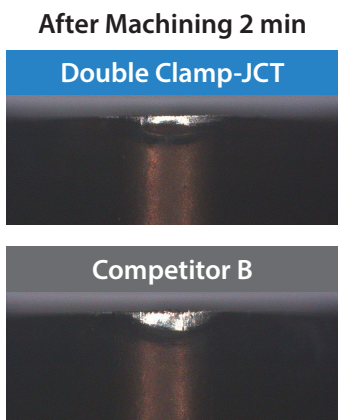
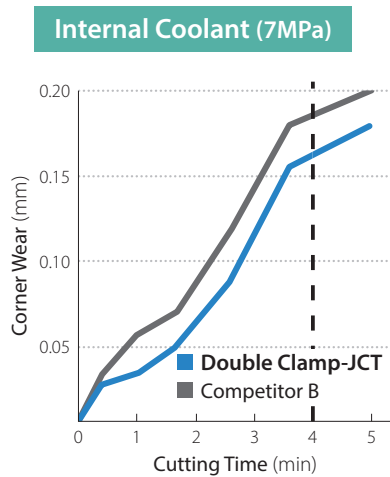
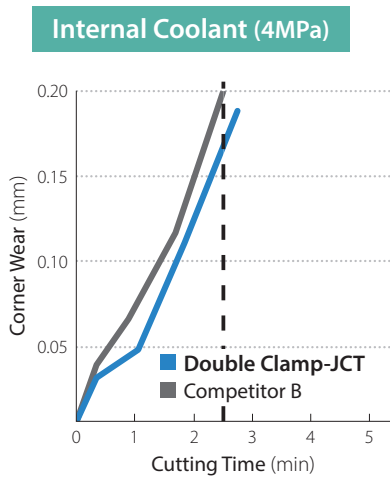
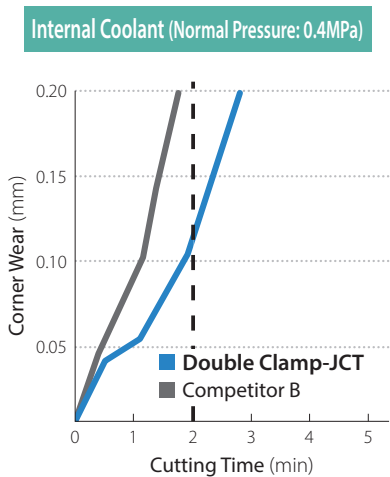


Cutting Conditions:  $V_c = 80$  m/min,  $f = 0.15$  mm/rev,  $a_p = 0.5$  mm, Wet CNMG120408 Type External Turning

Using internal coolant improves wear-resistance in alloy steel and heat-treated steel  
High-pressure coolant is more effective

**Wear Resistance Comparison** (In-house Evaluation)

**Double Clamp-JCT maintains better wear resistance than competitors**

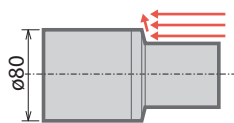


Cutting Conditions:  $V_c = 80$  m/min,  $f = 0.15$  mm/rev,  $a_p = 0.5$  mm, Wet, CNMG120408 Type Workpiece: Inconel\*718-equivalent External Turning

**Case Studies**

**Mechanical Parts Carbon Steel**

$V_c = 250$  m/min  
 $a_p = 3$  mm  
 $f = 0.36$  mm/rev  
 Wet  
 DCLNR2525M-12JCT  
 CNMG120408PT CA510



**Tool Life**

**DCLN-JCT Toolholder (Internal Coolant: 4MPa)** **100 pcs / edge** ↑ x1.25 **Tool Life**

Conventional Toolholder (External Coolant) **80 pcs / edge**

The DCLN-JCT internal coolant improved tool life by 1.5 times when compared to using external coolant

(User evaluation)

**Shaft SCr420 (Hardened Steel Over 55HRC)**

$V_c = 180$  m/min  
 $a_p = 0.1$  mm  
 $f = 0.07$  mm/rev  
 Wet  
 DDJNR2525M-15JCT  
 DNGA150408 Type CBN



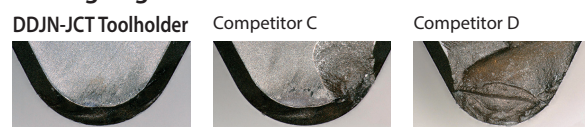
**Tool Life**

**DDJN-JCT Toolholder (Internal Coolant)** **100 pcs / edge** ↑ x1.4 **Tool Life**

Competitor C (Internal Coolant) **70 pcs / edge (Unstable)**

Competitor D (External Coolant) **60 pcs / edge (Unstable)**

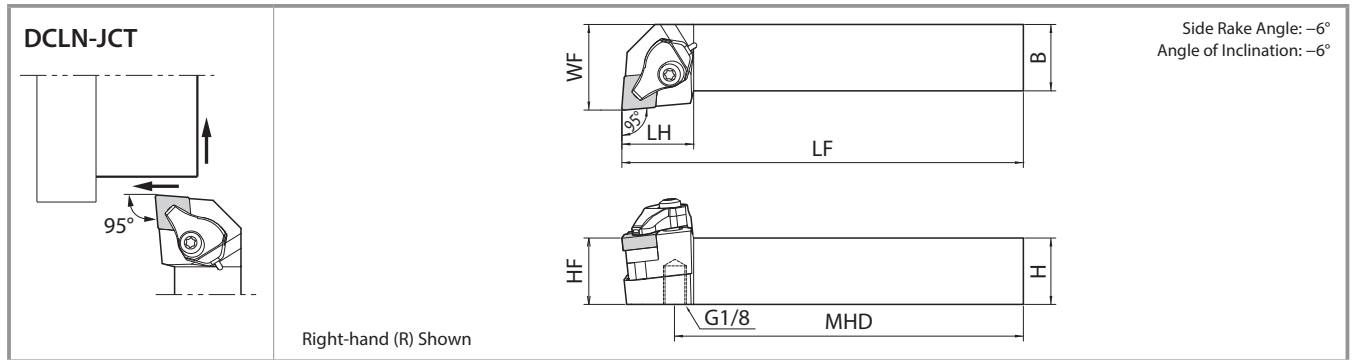
**Cutting Edge**



The DDJN-JCT toolholder reduced sudden fracturing and defects with stable machining and maintained 1.4 times longer tool life

(User evaluation)

## Double Clamp-JCT (Turning)

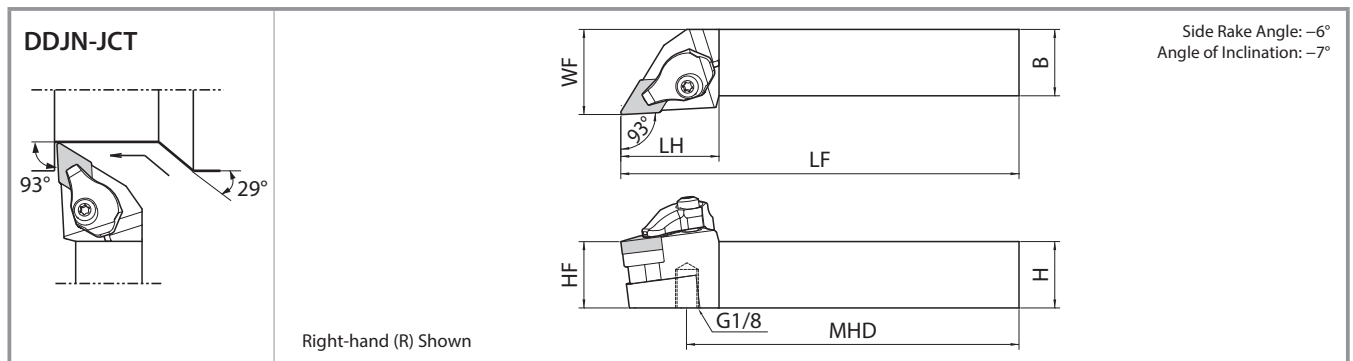


### Toolholder Dimensions

Pressure Resistance: ~ 30MPa

Description	Stock		Dimension (mm)						Std. Corner-R(RE)	Spare Parts							Applicable Inserts
	R	L	H=HF	B	LF	LH	WF	MHD		Clamp	Pipe Connection (with O-ring)	Screw	Spring	Wrench	Shim	Shim Screw	
DCLN R/L 2525M-12JCT	●	●	25	25	150	27	32	135.2	0.8	CP-3D-R/L-JCT	FP-12	CS-3D-TR	SP-3D	FT-15	*1 DC-44 *2 DC-44-C	SB-4085TR	CN**1204

● : Standard Stock



### Toolholder Dimensions

Pressure Resistance: ~ 30MPa

Description	Stock		Dimension (mm)						Std. Corner-R(RE)	Spare Parts							Applicable Inserts
	R	L	H=HF	B	LF	LH	WF	MHD		Clamp	Pipe Connection (with O-ring)	Screw	Spring	Wrench	Shim	Shim Screw	
DDJN R/L 2525M-15JCT	●	●	25	25	150	37	32	126	0.8	CP-4D-R/L-JCT	FP-12	CS-3D-TR	SP-3D	FT-15	*1 DD-44 (DD-43)	SB-4085TR	DN**1504(06)

Please see P.2 for piping parts

DD-43 is not included with the holder. Please purchase separately when a change in insert thickness is needed.

• O-ring (SS-035) is available to order

\*1. When using inserts whose corner-R(RE) is greater than 1.6 mm, additional modifications to the shim are necessary in order to prevent workpiece and shim from interfering each other.

\*2. SX chipbreaker inserts require a different shim (optional)

● : Standard Stock

## Internal Coolant Advantages (Reference)

Coolant Pressure (MPa)	Tool Life	Chip Control	Notes
Normal Pressure ~ 2 (Low Pressure)	Good	–	Longer tool life under 1MPa.
2-7 (Medium Pressure)	Excellent	Good	Longer tool life and excellent chip control
7-15 (High Pressure)	Excellent	Excellent	Fine chip breaking
15-30 (Extra-high Pressure)	Excellent	Excellent	Fine chip breaking. High speed machining for heat-resistant alloys

Internal coolant under low pressure provides improved performance and stable machining



Great for High Pressure Coolant, Toolholder for Shallow Grooving

# KGBA-JCT

KGBA-JCT can direct coolant closer to the cutting edge from the top of the insert  
Excellent Chip Control and Longer Tool Life

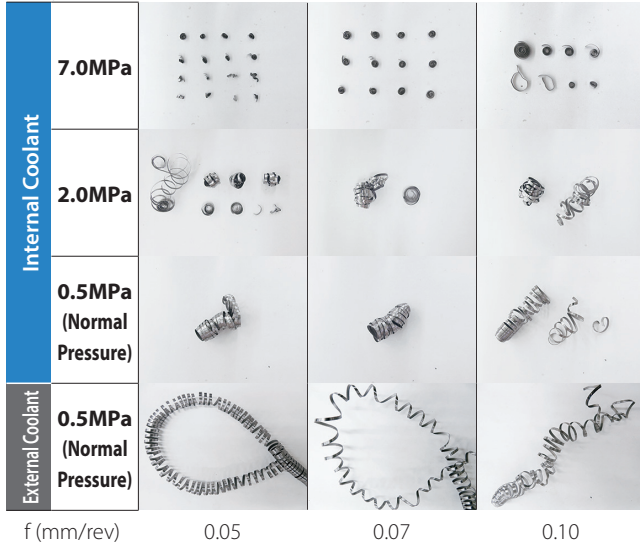
## 1 Excellent Chip Control

Ground Chipbreaker

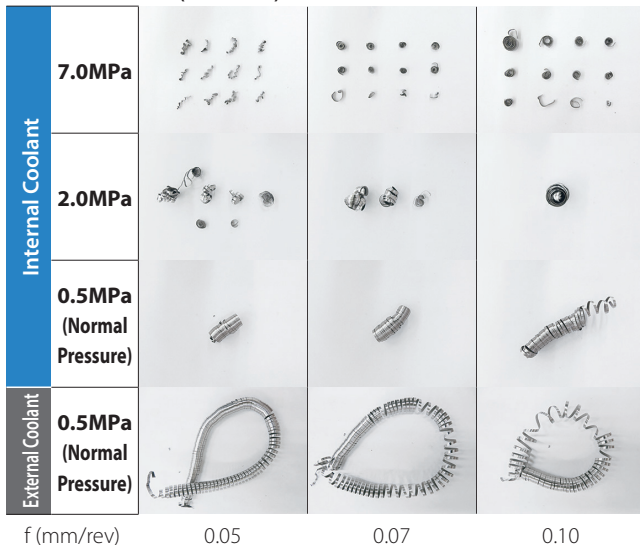
Chip Control Comparison (In-house Evaluation)

Internal Coolant Provides Excellent Chip Control  
High-pressure coolant is more effective

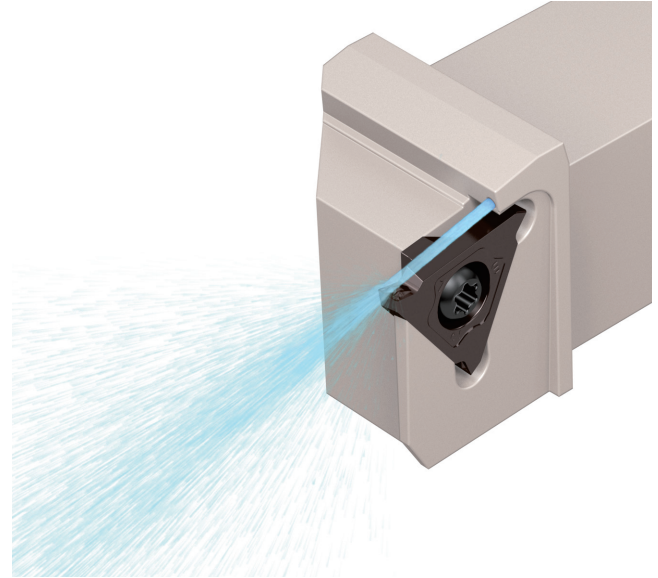
Alloy Steel (SCr420)



Stainless Steel (SUS304)



Cutting Conditions: Vc = 150 m/min (Alloy Steel) / 100 m/min (Stainless Steel),  
f = 0.05~0.1 mm/rev, Groove depth = 2 mm, Wet  
KGBAR2525K22-15JCT, GBA43R200-020 (PR1215)



### Coolant Hole

Coolant is discharged to the cutting edge  
Prevents coolant stream spreading which slows the coolant flow

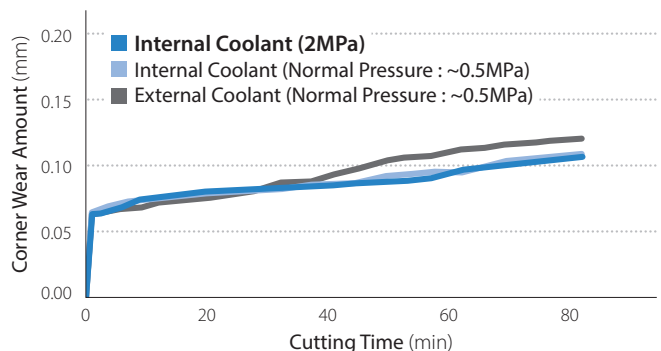
### Coolant Direction

Sufficient coolant between the chipbreaker and the chips  
Stable chip curls and sufficient cooling of the insert

## 2 Superior Cooling Action Improves Tool Life

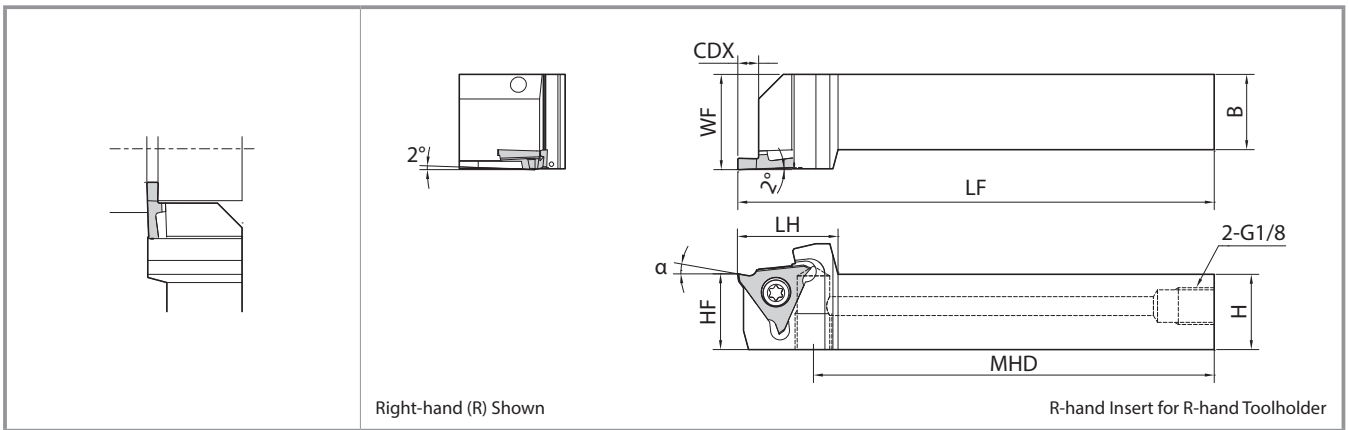
Internal Coolant Provides Better Corner Wear Resistance

Wear Resistance Comparison (In-house Evaluation)



Cutting Conditions: Vc = 150 m/min, f = 0.07 mm/rev, Groove depth = 2 mm, Wet  
KGBAR2525K22-15JCT, GBA43R200-020 (PR1215) Workpiece: SCM435

# KGBA-JCT (Toolholder for Shallow Grooving)



Right-hand (R) Shown

R-hand Insert for R-hand Toolholder

## Toolholder Dimensions

Description	Stock		Dimensions (mm)									Spare Parts			Applicable Inserts		
												Clamp Screw	Wrench			Plug	
	R	L	H	HF	B	LF	LH	WF	CDX	MHD							
KGBA <sup>R/L</sup> 2020K-16JCT	●	●	20	20	20	125	24.0	25	2.5	107.5	SB-4085TR	FT-15	-	HSG1/8x8.0	GBA32 <sup>R/L</sup> Type		
2525K-16JCT	●	●	25	25	25			30									
2020K22-15JCT	●	●	20	20	20		26.5	25	4		105	SB-5085TR	-			LTW-20	GBA43 <sup>R/L</sup> Type
2525K22-15JCT	●	●	25	25	25			30									
2020K22-25JCT	●	●	20	20	20		26.5	25	5.5		105	SB-5085TR	-			LTW-20	GBA43 <sup>R/L</sup> Type
2525K22-25JCT	●	●	25	25	25			30									
2020K22-35JCT	●	●	20	20	20		26.5	25	5.5		105	SB-5085TR	-			LTW-20	GBA43 <sup>R/L</sup> Type
2525K22-35JCT	●	●	25	25	25			30									

Please see P.2 for piping parts.

CDX shows the distance from the toolholder to the cutting edge. Available Groove Depth : "CDX" of Insert.

KGBA-JCT Toolholder is Screw Clamp Type

Regarding Rake Angle after Installment of GBA (α), please see the KYOCERA general product catalog or GBA brochure

● : Standard Stock

## Recommended Grade for Steel

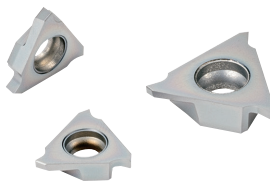
General Purpose : PR1215

(Surface Finish Oriented) : TN620

for Stable Machining : PR1625

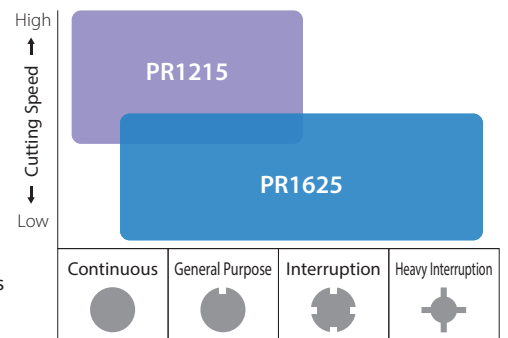
**PR1625**

**NEW**



Cemented carbide grade with high stability and MEGACOAT NANO with excellent adhesion resistance provides high toughness and high hardness

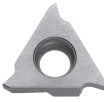
Long tool life is achieved in the interrupted grooving including drum and shaft of transmission engine parts.

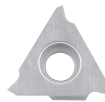


# KGBA-JCT Applicable Inserts

## Ground Chipbreaker

NEW

Ground Chipbreaker 	Material		Applicable Toolholders										
	P	M	MEGACOAT Cermet		Cermets		MEGACOAT		PVD Coated Carbide			Carbide	
	Carbon Steel / Alloy Steel	Stainless Steel	PI7040	TC40N	TN90	PR1215	PR1625	PR1115	PR905	PR930	KW10		
Description	Dimensions (mm)			Applicable Toolholders									
	CW	CDX	RE	PI7040	TC40N	TN90	PR1215	PR1625	PR1115	PR905	PR930	KW10	
GBA32 R/L	033-005	0.33	0.8						●	●			
	050-005	0.50	1.0			R						●	
GBA43 R/L	125-010	1.25	2.0	●	●	●	●	●	R	●	●		
	125-020	1.40	3.5	●	●	●	●	●	R	●	●		

Ground Chipbreaker Sharp Edge Type 	Material		Applicable Toolholders										
	P	M	MEGACOAT Cermet		Cermets		MEGACOAT		PVD Coated Carbide			Carbide	
	Carbon Steel / Alloy Steel	Stainless Steel	PI7040	TC40N	TN90	PR1215	PR1625	PR1115	PR905	PR930	KW10		
Description	Dimensions (mm)			Applicable Toolholders									
	CW	CDX	RE	PI7040	TC40N	TN90	PR1215	PR1625	PR1115	PR905	PR930	KW10	
GBA32 R/L	050-005F	0.50	1.0										
	075-005F	0.75	0.05										
GBA43 R/L	125-020F	1.25	2.0	●	●	●	●	●	R	●	●		
	145-020F	1.45	0.2	●	●	●	●	●	R	●	●		

**Applicable Toolholders**  
 1: KGBAR ... 16 JCT Type  
 2: KGBA R/L ... 22-15 JCT Type  
 3: KGBA R/L ... 22-25 JCT Type  
 4: KGBA R/L ... 22-35 JCT Type

For more details on cutting conditions, please see the KYOCERA general product catalog or GBA brochure  
 ●: Standard Stock R: Standard Stock (Right-hand Only)



# KGBA-JCT Applicable Inserts

## Molded Chipbreaker

NEW

Description		Dimensions (mm)			Applicable Toolholders			
		CW	CDX	RE	Cermet	MEGACOAT	MEGACOAT NANO	
		Edge Width (W)	Available Grooving Depth	Corner-R	TN620	PR1215	PR1625	
Molded Chipbreaker GM Chipbreaker	P Carbon Steel / Alloy Steel	●	○	●	●	●	●	
	M Stainless Steel				●	●	●	
	K Cast Iron				●			
	N Non-ferrous Material							
	S Titanium Alloy							
	H Hardened Material (~40HRC)				●			
	GBA43 <sup>R/L</sup>	140-010GM	1.40	3.5	0.1	●	●	
		150-020GM	1.50			●	●	●
		175-020GM	1.75			●	●	
		185-020GM	1.85			●	●	
		200-020GM	2.00			●	●	●
		230-020GM	2.30			●	●	
		250-030GM	2.50	5.0	0.2	●	●	●
		265-030GM	2.65			●	●	
	300-030GM	3.00			●	●	●	
	330-030GM	3.30			●	●		
	350-030GM	3.50			●	●		
	400-040GM	4.00			●	●	●	
			0.3					
			0.4					

Description		Dimensions (mm)			Applicable Toolholders			
		CW	CDX	RE	Cermet	MEGACOAT	PVD Coated Carbide	
		Edge Width (W)	Available Grooving Depth	Corner-R	TN620	PR1215	PR930	
Molded Chipbreaker MY Chipbreaker	P Carbon Steel / Alloy Steel				○	●	○	
	M Stainless Steel					●	○	
	K Cast Iron					●		
	N Non-ferrous Material							
	S Titanium Alloy							
	H Hardened Material (~40HRC)					●	○	
	GBA43 <sup>R/L</sup>	175-020MY	1.75	3.5	0.2	●	●	●
		185-020MY	1.85			●	●	●
		200-020MY	2.00			●	●	●
		230-020MY	2.30			●	●	●
		250-030MY	2.50			●		
		250-030MY	2.50		4.0			
		265-030MY	2.65	5.0		●	●	
		265-030MY	2.65	5.0		●	R	
		300-030MY	3.00	4.0		●	●	
		300-030MY	3.00	5.0				
		330-030MY	3.30	4.0		R		
		330-030MY	3.30	5.0			R	
	350-030MY	3.50	5.0		●	●	●	
	400-040MY	4.00	5.0	0.4	●	●	●	

## Full-R

NEW

Description		Dimensions (mm)			Applicable Toolholders								
		CW	CDX	RE	MEGACOAT Cermet	Cermet	PVD Coated Carbide						
		Edge Width (W)	Available Grooving Depth	Corner-R	PV7040	TN620	TN90	PR1215	PR1625	PR1115	PR905	PR930	KW10
Full-R	P Carbon Steel / Alloy Steel	●	○										
	M Stainless Steel						●	●	○				
	K Cast Iron										○	○	
	N Non-ferrous Material											●	
	S Titanium Alloy											●	
	H Hardened Material (~40HRC)							●				○	
GBA32R	200-100R	2.00	2.5	1.00				R		R			
	300-150R	3.00		1.50				R		R			
Full-R (Round)	GBA43 <sup>R/L</sup>	100-050R	1.00	2.0	0.50	●		●	●			●	●
		150-075R	1.50	3.5	0.75	●		●	●		R	●	●
		200-100R	2.00	5.0	1.00	●		●	●			●	●
		250-125R	2.50	4.0	1.25			●	●			●	●
		300-150R	3.00	5.0	1.50			●	●		●	●	●
		400-200R	4.00	5.0	2.00			R	●			●	●
Full-R (Sharp Edge Type)	GBA43 <sup>R/L</sup>	100-050RF	1.00	2.0	0.50		●						
		150-075RF	1.50	3.5	0.75		●						
		200-100RF	2.00	5.0	1.00								
		250-125RF	2.50	4.0	1.25		●						
		300-150RF	3.00	5.0	1.50		●						
		400-200RF	4.00	5.0	2.00			R					

GBA43 <sup>R/L</sup> ...RF: Sharp Edge Type

## CBN / PCD

Description		Dimensions (mm)			Applicable Toolholders		
		CW	CDX	RE	CBN	PCD	
		Edge Width (W)	Available Grooving Depth	Corner-R	KBN510	KBN525	KPD001
1-Edge (CBN / PCD)	P Carbon Steel / Alloy Steel						
	M Stainless Steel						
	K Cast Iron						
	N Non-ferrous Material					●	
	S Titanium Alloy					●	
	H Hardened Material (~40HRC)				○	●	
GBA32R	125-010	1.25	2.0	0.1			R
	150-010	1.50		0.1			R
GBA43 <sup>R/L</sup>	125-010	1.25	2.0	0.1			●
	125-020			0.2	R	●	
	150-010	1.50	3.5	0.1			●
	150-020			0.2	●	●	
	200-010	2.00		0.1			●
	200-020			0.2	●	●	
	250-010	2.50	4.0	0.1			●
	250-020			0.2	●	●	
	300-010	3.00		0.1			●
	300-020			0.2	●	●	

- Applicable Toolholders**
- 1: KGBAR ... 16 JCT Type
  - 2: KGBA <sup>R/L</sup> ... 22-15 JCT Type
  - 3: KGBA <sup>R/L</sup> ... 22-25 JCT Type
  - 4: KGBA <sup>R/L</sup> ... 22-35 JCT Type

For more details on cutting conditions, please see the KYOCERA general product catalog or GBA brochure  
 ● : Standard Stock R: Standard Stock (Right-hand Only)

Great for High Pressure Coolant, Toolholder for External Grooving and Cut-off

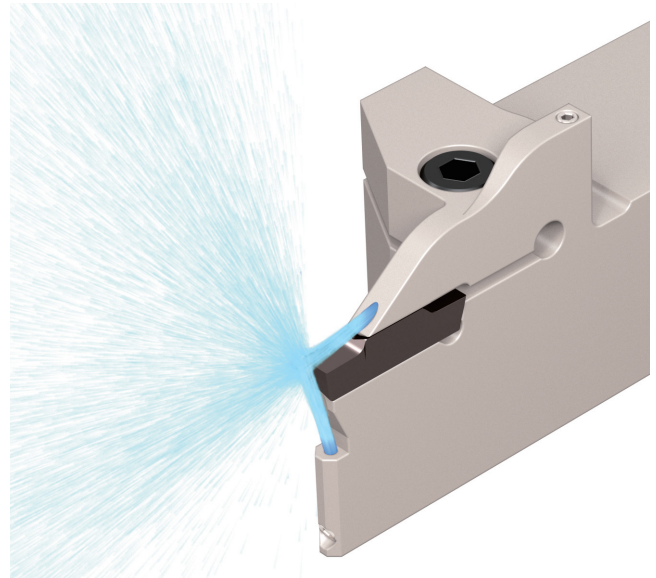
# KGD-JCT

Coolant is Directed from the Rake Surface and the Flank Face of the Insert

Improved Chip Control and Longer Tool Life for External Grooving and Cutting-off

## Discharges Coolant in Two Directions

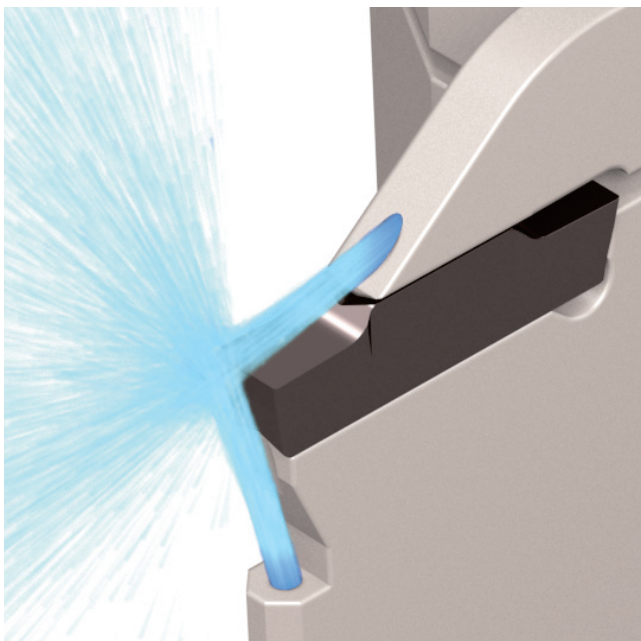
Discharges coolant in two directions toward both the rake surface and the flank face of the insert  
Excellent Chip Control and Long Tool Life



## 1 Superior Chip Control Performance

Coolant towards the rake face

Coolant hole position and angle improve chip control



Chip Control Comparison (In-house Evaluation)

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

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

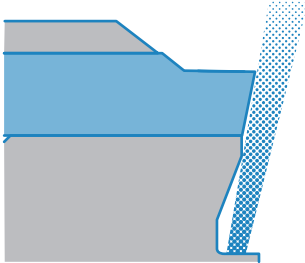


Cutting Conditions:  $V_c = 150 \text{ m/min}$ ,  $f = 0.05 \text{ mm/rev}$ ,  $d = 8 \text{ mm}$ , Wet  
Edge Width 4 mm Workpiece: SCM415 Grooving

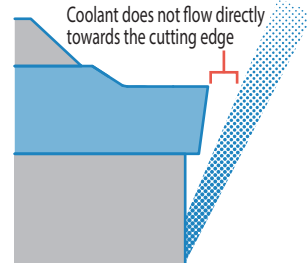
## 2 Cooling the Cutting Edge Leads to Longer Tool Life

Coolant towards the rake surface and the flank face of the insert  
Directing coolant towards the cutting edge lengthens tool life

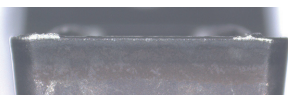
KGD-JCT



Competitor E

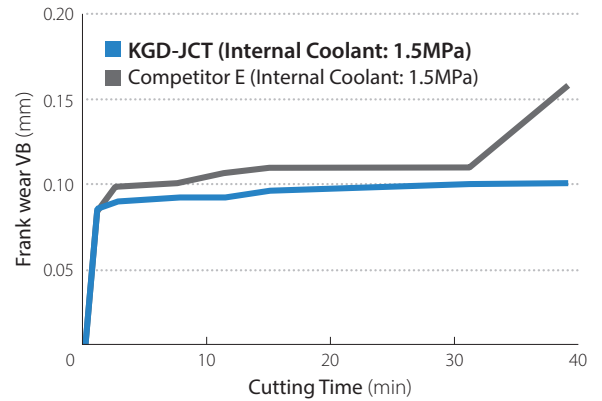


After Machining 39 min



Defect

Wear Resistance Comparison (In-house Evaluation)



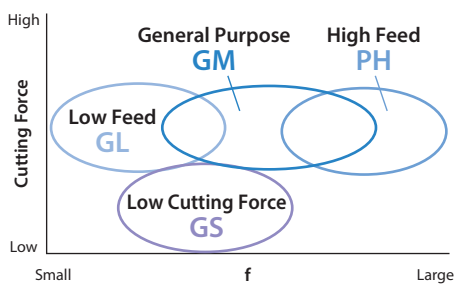
Cutting Conditions:  $V_c = 180$  m/min,  $f = 0.15$  mm/rev,  $d = 9$  mm, Wet Edge Width 4 mm Workpiece: SCM415 Grooving

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

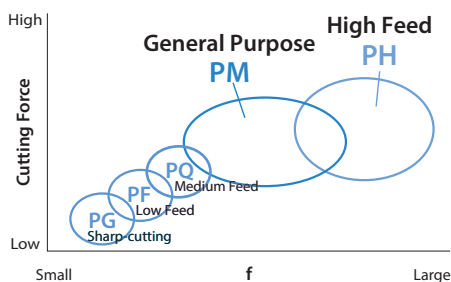
## 3 Large Chipbreaker Lineup for Various Machining Applications

Application Maps

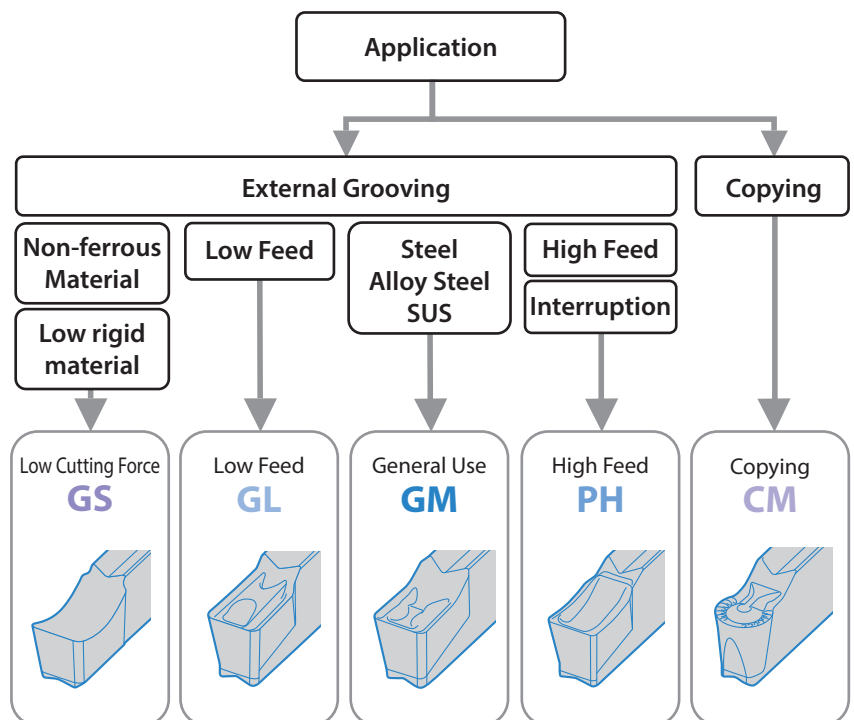
External Grooving and Traversing



Cut-off

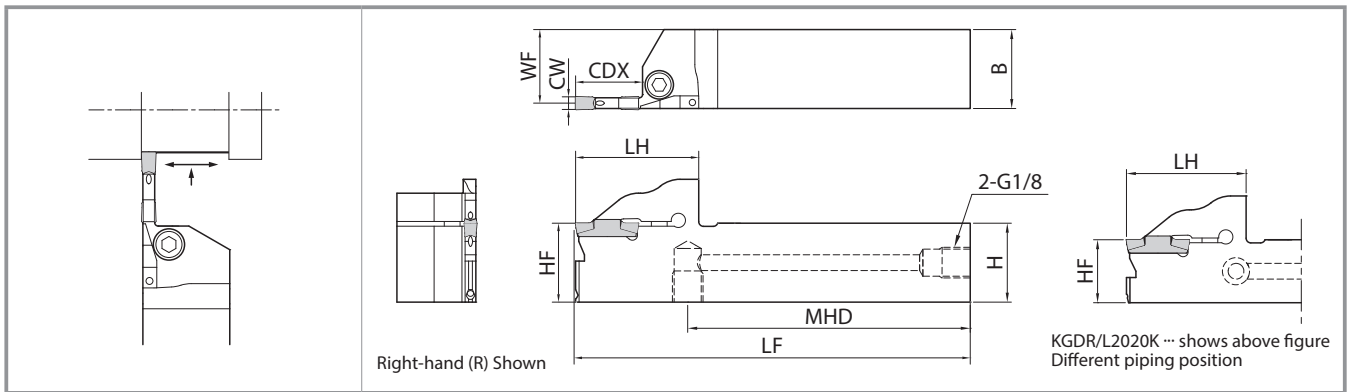


Chipbreaker Selection (External)





# KGD-JCT (External Grooving / Cut-Off)



## Toolholder Dimensions

Pressure Resistance: ~ 15MPa

Groove Widths (mm)	Max. Grooving Depth (mm)	Description	Stock		Dimensions (mm)							Edge Width CW (mm)		Spare Parts		
			R	L	H=HF	B	LF	LH	WF	CDX	MHD	MIN.	MAX.	Arbor Bolt	Wrench	Plug
3	6	KGD R/L 2020K-3T06JCT	●	●	20	20	125	31.5	18.8	6	96.2	3.0	4.0	HH5X16	LW-4	HSG1/8X8.0
		2525K-3T06JCT	●	●	25	25			23.8		96.5			HH5X25		
	10	KGD R/L 2020K-3T10JCT	●	●	20	20		34.0	18.8	10	94.2			HH5X16		
		2525K-3T10JCT	●	●	25	25		23.8	94.5		HH5X25					
	20	KGD R/L 2020K-3T20JCT	●	●	20	20		38.0	18.8	20	90.2			HH5X16		
		2525K-3T20JCT	●	●	25	25		39.0	23.8		89.5			HH5X25		
4	10	KGD R/L 2020K-4T10JCT	●	●	20	20	125	34.0	18.3	10	94.2	4.0	5.0	HH5X16	LW-4	HSG1/8X8.0
		2525K-4T10JCT	●	●	25	25			23.3		94.5			HH5X25		
	20	KGD R/L 2020K-4T20JCT	●	●	20	20		38.0	18.3	20	90.2			HH5X16		
		2525K-4T20JCT	●	●	25	25		39.0	23.3		89.5			HH5X25		
	25	KGD R/L 2525K-4T25JCT	●	●	25	25		44.0	23.3	25	84.5			HH5X25		

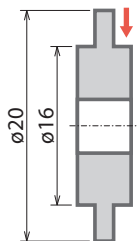
Please see P.2 for piping parts.

● : Standard Stock

## Case Studies

### Ring SCr415-equivalent

Vc = 160 m/min  
 (n = 3,200 min<sup>-1</sup>)  
 ap = 2.5 mm  
 f = 0.07 mm/rev  
 Wet, Normal Pressure  
 KGDR2020K-3T10JCT  
 GDM3020M-025PM PR1225



#### Tool Life

**KGD-JCT**  
 (Internal Coolant) **9,000 pcs / edge**

Tool Life  
**x1.5**

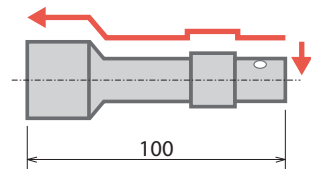
**Competitor H**  
 (External Coolant) **6,000 pcs / edge**

Change to KGD-JCT (internal coolant) from Competitor H (external coolant) extended tool life by 1.5 times.

(User evaluation)

### Valve SUM-equivalent

Vc = 160 m/min  
 ap = 14 mm  
 f = 0.12-0.15 mm/rev  
 Wet, Normal Pressure  
 KGDR2525K-3T20JCT  
 GDM3020M-040GM PR1535



#### Tool Life

**KGD-JCT**  
 (Internal Coolant) **1,000 pcs / edge**

Chip Control  
**Good**

Surface Finish  
**Good**

**Competitor I**  
 (Internal Coolant) **1,000 pcs / edge**

KGD-JCT maintained stable machining for the required number of pieces  
 Better chip control and surface finish.

(User evaluation)

# KGD-JCT Applicable Inserts

## External Grooving / Turning

Usage Classification		P	Carbon Steel / Alloy Steel	●	○	☉	☺			
		M	Stainless Steel			☉	☺			
●: Light Interruption / 1st Choice ☉: Light Interruption / 2nd Choice ●: Continuous / 1st Choice ○: Continuous / 2nd Choice		K	Cast Iron			☉	☺			
		N	Non-ferrous Material					☉		
Shape		Description		Dimensions (mm)		Cermet	MEGA COAT NANO	MEGACOAT	Carbide	
		Edge Width (CW)		re	TN620					TN90
						Tolerance				
External Grooving and Turning	General Purpose	GDM	3020N-020GM	3.0	0.2	●	●	●	●	●
			3020N-040GM	3.0	0.4	●	●	●	●	●
		4020N-020GM	±0.03	0.2	●	●	●	●	●	●
		4020N-040GM		0.4	●	●	●	●	●	
		4020N-080GM	4.0	0.8	●	●	●	●	●	
		5020N-040GM	±0.04	0.4	●	●	●	●	●	●
	5020N-080GM	0.8		●	●	●	●	●		
	General Use 1-edge	GDMS	3020N-040GM	3.0	±0.03	0.4	●	●	●	●
			4020N-040GM	4.0	0.4	●	●	●	●	
			5020N-080GM	5.0	±0.04	0.8	●	●	●	●
Low Feed	GDM	3020N-020GL	3.0	±0.03	0.2	●	●	●	●	
		3020N-040GL			0.4	●	●	●	●	
		4020N-020GL	4.0	0.2	●	●	●	●	●	
		4020N-040GL			0.4	●	●	●	●	
		5020N-040GL	5.0	±0.04	0.4	●	●	●	●	
Grooving	GDG	3020N-020GS	3.0	±0.02	0.2	●	●	●	●	
		3520N-020GS	3.5		0.2	●	●	●	●	
		4020N-040GS	4.0	0.4	●	●	●	●	●	
		5020N-040GS	5.0		●	●	●	●	●	
Full-R / Copying	GDM	3020N-150R-CM	3.0	±0.03	1.5	●	●	●	●	
		4020N-200R-CM	4.0		2.0	●	●	●	●	
		5020N-250R-CM	5.0	±0.04	2.5	●	●	●	●	
Grooving and Cut-Off (High Feed)	GDM	3020N-030PH	3.0	±0.03	0.3		●	●	●	
		4020N-030PH	4.0			●	●	●		
	GDMS	3020N-030PH	3.0	±0.03	0.3		●	●	●	
		4020N-030PH	4.0			●	●	●		

Inserts are sold in 10 piece boxes

## Cut-Off

Usage Classification		P	Carbon Steel / Alloy Steel	☉	●	☺					
		M	Stainless Steel	●	☉	☺					
●: Light Interruption / 1st Choice ☉: Light Interruption / 2nd Choice ●: Continuous / 1st Choice ○: Continuous / 2nd Choice		N	Non-ferrous Material				●	☺			
		Shape		Description		Dimensions (mm)		MEGA COAT NANO	MEGACOAT	DLC Coated Carbide	Carbide
				Edge Width (CW)		re	PRI535	PRI225	PRI215	PDI025	GW15
				Tolerance							
Cut-off	Handed Insert shows Right-hand	GDM	3020N-025PM	3.0	±0.03	0.25	●	●	●		
			4020N-030PM	4.0		0.3	●	●	●		
	6° Lead Angle	GDM	3020R-025PM-6D	3.0	±0.03	0.25	R	R	R		
			GDMS	3020N-025PM	3.0	±0.03	0.25	●	●	●	
	1-edge	GDM	4020N-030PM	4.0	0.3		●	●	●		
			GDMS	3020R-025PM-6D	3.0	±0.03	0.25	R	R	R	
	6° Lead Angle 1-edge	GDM	4020R-030PM-6D	4.0	0.3		R	R	R		
			Cut-Off (Low Feed)	GDM	3020N-003PF	3.0	±0.04	0.03	●	●	●
	3020N-015PF	0.15			●			●	●		
	15° Lead Angle	GDM	3020 <sup>R</sup> /L-003PF-15D	3.0	±0.04	0.03	●	●	●		
3020R-015PF-15D			0.15			R	R	R			
Cut-Off (Medium Feed)	GDM	3020N-010PQ	3.0	±0.03	0.1	●	●	●			
		GDM	3020R-010PQ-15D	3.0	±0.03	0.1	R	R	R		
Cut-Off (Low Cutting Force)	GDG	3020N-005PG	3.0	±0.02	0.05	●	●		●	●	
		GDG	3020R-005PG-15D	3.0	±0.02	0.05	R	R		R	R

Inserts are sold in 10 piece boxes

## (CBN / PCD)

Usage Classification		N	Non-ferrous Material			●		
		S	Titanium Alloy			●		
●: Light Interruption / 1st Choice ☉: Light Interruption / 2nd Choice ●: Continuous / 1st Choice ○: Continuous / 2nd Choice		H	Hardened Material (~ 40HRC)					
			Hardened Material (40HRC ~)	●				
		Sintered Steel			●			
Shape		Description		Dimensions (mm)		MEGA COAT CBN	CBN	PCD
		Edge Width (CW)		re	KBN05M	KBN570	KPD001	
		Tolerance						
Grooving	1-edge	GDGS	3020N-020NB	3.0	±0.03	0.2		●
			3020N-040NB			0.4	●	●
		4020N-020NB	4.0	0.2			●	
		4020N-040NB			0.4	●	●	
		5020N-020NB	5.0	0.2			●	
		5020N-040NB			0.4	●	●	

CBN & PCD Inserts are sold in 1 piece boxes

For more details on cutting conditions, see the KYOCERA general product catalog or KGD/KGDF brochure

●: Standard Stock R: Standard Stock (Right-hand Only)

Great for High Pressure Coolant, Threading Toolholder

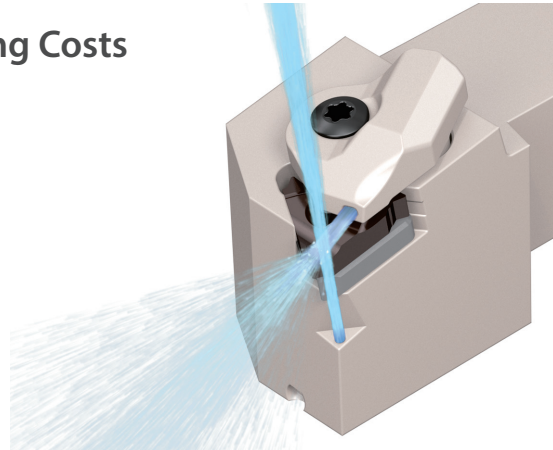
# KTN-JCT

New Threading Toolholder

Double Coolant Holes Reduces Defects and Lengthens Tool Life

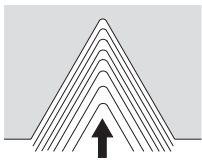
## 1 Improved Tool Life Lowers Machining Costs

Coolant flows from the top of the clamp  
Efficient cooling of the cutting edge prevents wear

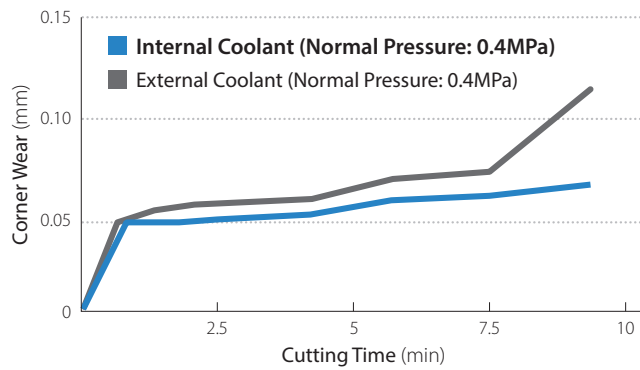


### Wear Resistance Comparison of Internal vs. External Coolant (In-house evaluations)

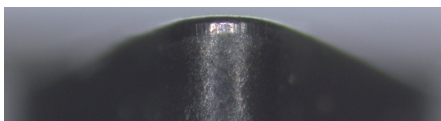
Radial Infeed



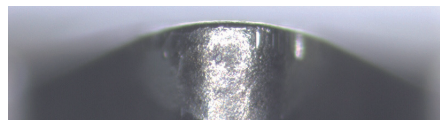
Cutting Conditions:  $V_c = 150$  m/min  
16ER150ISO-TQ (PR1215)  
Workpiece: SCM435



Internal Coolant (Normal Pressure: 0.4MPa)



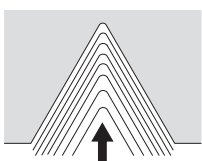
External Coolant (Normal Pressure: 0.4MPa)



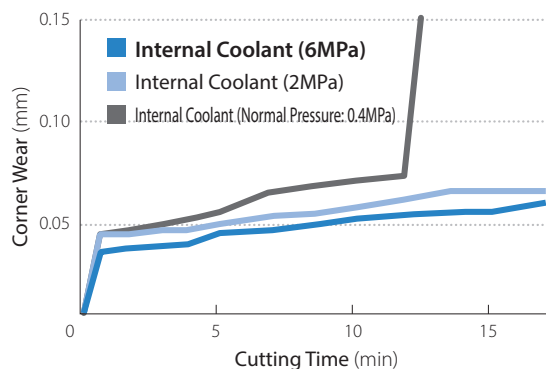
Switching to the KTN-JCT with internal coolant lengthens tool life

### Wear Resistance Comparison at Different Pressures (In-house evaluation)

Radial Infeed



Cutting Conditions:  $V_c = 150$  m/min  
16ER150ISO-TQ (PR1215)  
Workpiece: SCM435



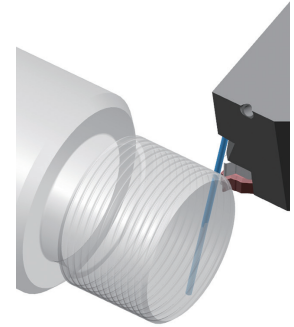
The higher the coolant pressure, the more efficient the wear resistance will be



## 2 Prevents Chip Recutting

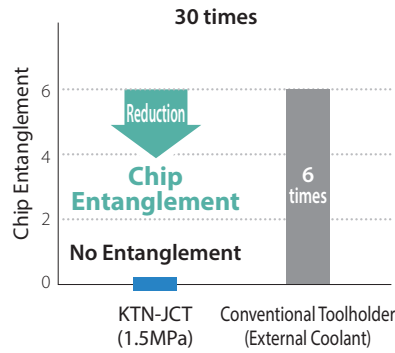
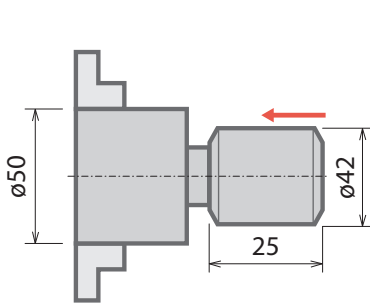
Coolant from the flank face of the insert smoothly evacuates chips away from the cutting edge  
**Reduced chip clogging**

\* Coolant from the flank face does not flow directly to the cutting edge.

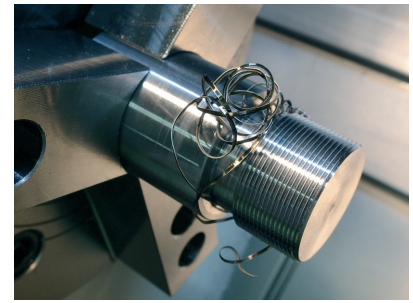


### Chip Evacuation Comparison (In-house evaluation)

Cutting Conditions:  $V_c = 150 \text{ m/min}$  16ER150ISO Type (PR1215) Workpiece: SCM435, Radial Infeed



(Chip Entanglement Example)



KTN-JCT prevents chip entanglement by directing the chips downward

## Internal Coolant Advantages (Reference)

Tool life is increased using internal coolant

Items	Workpiece	Advantages to External Coolant
Tool Life	Steel	Better Wear Resistance
	Stainless Steel	Lower Cutting Resistance
Chip Evacuation	Steel	Prevents chip entanglement with 1.5Mpa or higher
Chip Control	Steel	Breaks chips with 6Mpa or higher
	Stainless Steel	

\* To prevent chip entanglement, 1.5MPa or higher is recommended. (Steel)

\* For chip breaking, high pressure coolant is recommended. (6MPa or higher for Steel and Stainless Steel)

### Case Studies

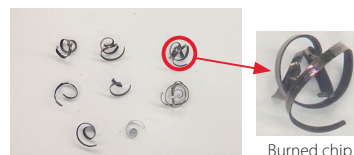
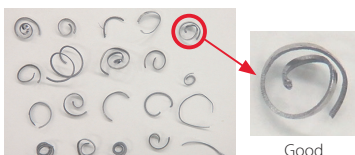
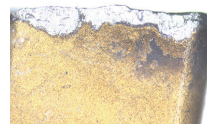
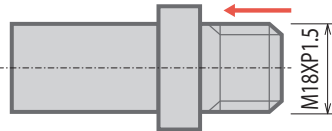
#### Arbor Bolt Free Cutting Steel

$n = 2,700 \text{ min}^{-1}$  ( $V_c = 145 \text{ m/min}$ )  
 Number of pass: 7, Radial Infeed, Wet (Water Soluble)  
 KTNR2020K-16-JCT, 16ER150ISO Type

Tool Life (1,250 pcs/edge)

KTN-JCT Toolholder (Internal Coolant: Normal Pressure)

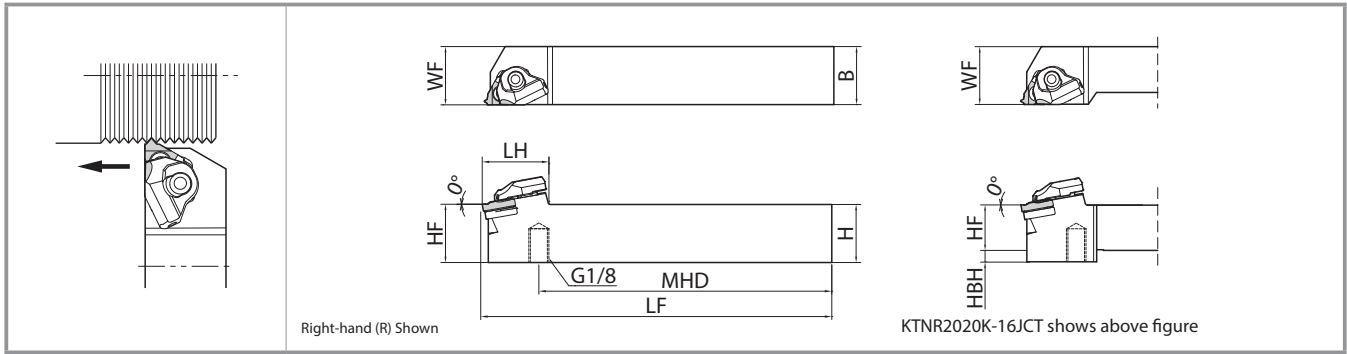
Competitor Toolholder J (External Coolant: Normal Pressure)



KTN-JCT could extend tool life with less wear than competitors. Also improved chip control and reduced fracturing.

(User evaluation)

# KTN-JCT (Threading)



## Toolholder Dimensions

Pressure Resistance: ~ 15MPa

Description	Stock		Dimensions (mm)								Spare Parts					Applicable Inserts
	R	L	H=HF	HBH	B	WF	LF	LH	MHD	Clamp Set	Pipe Connection (with O-ring)	Wrench	Shim	Shim Screw		
KTNR 2020K-16JCT	●		20	5	20	25	125	33.3	100.7	CPS-5S-R-JCT	FP-12	FT-15	TN-32	SP3X8	16ER...	
2525M-16JCT	●		25	-	25	25	150	-	125.7							

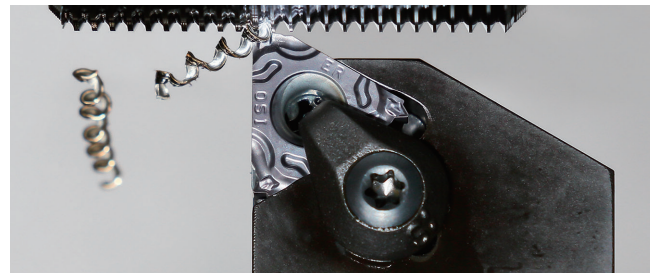
Please see P2 for piping parts  
 - O-ring (SS-035) is available to order

● : Standard Stock

## Threading Insert with Molded Chipbreaker

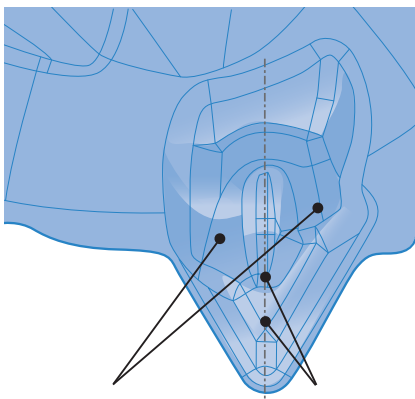
# TQ Chipbreaker

Improved Chip Control with Molded Chipbreaker  
 Combination with KTN-JCT for Greater Productivity



## Chipbreaker Geometry

Stable chip control regardless of cutting direction

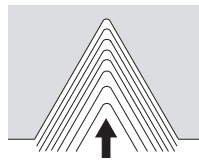


**For Radial Infeed**  
 Asymmetric dot design controls chip-flow direction

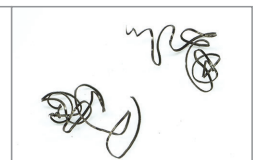
**For Flank Infeed / Flank Compound Infeed**  
 Breaks chips easily with shallow breaker depth

## Chip Control Comparison (In-house Evaluation)

### Radial Infeed

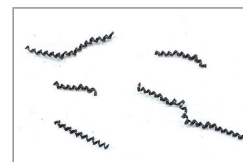
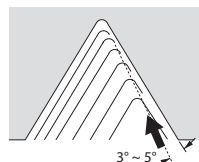


TQ Chipbreaker



Competitor K

### Flank Compound Infeed



TQ Chipbreaker



Competitor K

Cutting Conditions: Vc = 150 m/min, ap = 0.12 mm (4th Pass), L = 25 mm, Wet, 16ER150ISO Type M45 x P1.5 Workpiece: SCM415

# KTN-JCT Applicable Inserts

## Wiper Edge

### Metric (M) 60° Full Profile

Usage Classification ● : 1st Choice ○ : 2nd Choice		P	Carbon Steel / Alloy Steel		●						
		M	Stainless Steel			●	○				
		K	Cast Iron							●	
		N	Non-ferrous Material							●	
Description	Applicable Thread	Pitch		Cermet	MEGACOAT			PVD Coated Carbide	Carbide		
		mm	TPI		TC60M	PR1215	PR1515		PR1535	PR1115	GW15
16ER 100ISO-TF	M	1.0			●	●	●	○			
		1.25			●	●	●	○			
		1.5			●	●	●	○			
		1.75			●	●	●	○			
		2.0			●	●	●	○			
		2.5			●	●	●	○			
		3.0			●	●	●	○			
16E <sup>R/L</sup> 050ISO	M	0.5		●				●	●	●	
		0.75		●				●	●	●	
		1.0		●				●	●	●	
		1.25		●				●	●	●	
		1.5		●				●	●	●	
		1.75		●				●	●	●	
		2.0		●				●	●	●	
16ER 100ISO-TQ	M	1.0			●	●	●				
		1.25			●	●	●				
		1.5			●	●	●				
		1.75			●	●	●				
		2.0			●	●	●				
		2.5			●	●	●				
		3.0			●	●	●				

### Parallel Pipe [G(PF)] Whitworth (W) 55° Full Profile

Usage Classification ● : 1st Choice ○ : 2nd Choice		P	Carbon Steel / Alloy Steel		●						
		M	Stainless Steel			●	○				
		K	Cast Iron								●
		N	Non-ferrous Material							●	
Description	Applicable Thread	Pitch		Cermet	MEGACOAT			PVD Coated Carbide	Carbide		
		G(PF)	W		TC60M	PR1215	PR1515		PR1535	PR1115	GW15
16ER 19W-TF	W	19	-		●	●	●	○			
		-	16		●	●	●	○			
		14	14		●	●	●	○			
		11	11		●	●	●	○			
16ER 19W	G(PF)	19	-	●				●			
		14	14	●				●			
		11	11	●				●			
16ER 19W-TQ	W	19	-		●	●	●				
		-	16		●	●	●				
		14	14		●	●	●				
		11	11		●	●	●				

### American National Tapered Pipe (NPT) Full Profile 60°

Usage Classification ● : 1st Choice ○ : 2nd Choice		P	Carbon Steel / Alloy Steel						●		
		M	Stainless Steel						●		
		K	Cast Iron								●
		N	Non-ferrous Material							●	
Description	Applicable Thread	Pitch		Cermet	MEGACOAT			PVD Coated Carbide	Carbide		
		mm	TPI		TC60M	PR1215	PR1515		PR1535	PR1115	GW15
16ER 18NPT	NPT	18		●				●		●	
		14		●				●		●	
		11.5		●				●		●	

### Unified (UN) 60° Full Profile

Usage Classification ● : 1st Choice ○ : 2nd Choice		P	Carbon Steel / Alloy Steel		●						
		M	Stainless Steel			●	○				
		K	Cast Iron								●
		N	Non-ferrous Material							●	
Description	Applicable Thread	Pitch		Cermet	MEGACOAT			PVD Coated Carbide	Carbide		
		mm	TPI		TC60M	PR1215	PR1515		PR1535	PR1115	GW15
16ER 24UN-TF	UN	24			●	●	●	○			
		20			●	●	●	○			
		18			●	●	●	○			
		16			●	●	●	○			
		14			●	●	●	○			
		13			●	●	●	○			
		12			●	●	●	○			
		10			●	●	●	○			
		8			●	●	●	○			
		16ER 24UN	UN	24		●				●	
20				●				●			
18				●				●			
16				●				●			
14				●				●			
12				●				●			
16ER 24UN-TQ	UN	24			●	●	●				
		20			●	●	●				
		18			●	●	●				
		16			●	●	●				
		14			●	●	●				
		13			●	●	●				
		12			●	●	●				
		10			●	●	●				
		8			●	●	●				

### Tapered Pipe [R(PT), (BSPT)] 55° Full Profile

Usage Classification ● : 1st Choice ○ : 2nd Choice		P	Carbon Steel / Alloy Steel		●						
		M	Stainless Steel			●	○				
		K	Cast Iron								●
		N	Non-ferrous Material							●	
Description	Applicable Thread	Pitch		Cermet	MEGACOAT			PVD Coated Carbide	Carbide		
		mm	TPI		TC60M	PR1215	PR1515		PR1535	PR1115	GW15
16ER 28BSPT-TF	R(PT)	28			●	●	●	○			
		19			●	●	●	○			
		14			●	●	●	○			
16ER 28BSPT	(BSPT)	28		●				●		●	
		19		●				●		●	
		14		●				●		●	
16ER 28BSPT-TQ	R(PT)	28			●	●	●				
		19			●	●	●				
		14			●	●	●				
		11			●	●	●				

TC60M (Threading) are sold in 10 piece boxes.  
Others are sold in 5 piece boxes.

16ER ..... -TQ: With Chipbreaker  
-TF: Without Chipbreaker  
(TF Cutting Edge)  
w/o Indication: Without Chipbreaker

● : Standard Stock  
○ : Check Availability

# KTN-JCT Applicable Inserts

## Partial Profile

60° Type  
Metric (M), Unified (UN)  
60° Partial Profile

Usage Classification ● : 1st Choice ○ : 2nd Choice	P	Carbon Steel / Alloy Steel		●						
	M	Stainless Steel			●	○				
	K	Cast Iron								●
		N	Non-ferrous Material							●
Description	Applicable Thread	Pitch		Cermet	MEGACOAT MEGACOAT NANO			PVD Coated Carbide	Carbide	
		mm	TPI		TC60M	PR1215	PR1515			PR1535
				R	R	R	R	R	R	R
16ER A60-TF	M	0.5 ~ 1.5	48 ~ 16		●	●	●	○		
		1.75 ~ 3	14 ~ 8		●	●	●	○		
		0.5 ~ 3	48 ~ 8		●	●	●	○		
16ER A60	M	0.5 ~ 1.5	48 ~ 16						●	
		1.75 ~ 3	14 ~ 8						●	
		0.5 ~ 3	48 ~ 8						●	
16ER 6001	UNF	1.0 ~ 2.5	24 ~ 11	●						
		1.5 ~ 2.5	16 ~ 11	●						
		0.5 ~ 1.5	48 ~ 16		●	●	●			
16ER A60-TQ	M	0.5 ~ 1.5	48 ~ 16		●	●	●			
		1.75 ~ 3	14 ~ 8		●	●	●			
		0.5 ~ 3	48 ~ 8		●	●	●			

55° Type  
Parallel Pipe [G(PF)], Tapered Pipe [R(PT), (BSPT)],  
Whitworth[(W)] 55° Partial Profile

Usage Classification ● : 1st Choice ○ : 2nd Choice	P	Carbon Steel / Alloy Steel		●						
	M	Stainless Steel			●	○				
	K	Cast Iron								●
		N	Non-ferrous Material							●
Description	Applicable Thread	Pitch		Cermet	MEGACOAT MEGACOAT NANO			PVD Coated Carbide	Carbide	
		G(PF) R(PT)	W		TC60M	PR1215	PR1515			PR1535
			TPI	R	R	R	R	R	R	
16ER A55-TF	M	28, 19	40 ~ 16		●	●	●	○		
		14, 11	14 ~ 8		●	●	●	○		
		28 ~ 11	40 ~ 8		●	●	●	○		
16ER A55	G(PF)	28, 19	40 ~ 16						●	
		14, 11	14 ~ 8						●	
		28 ~ 11	40 ~ 8						●	
16ER 5501	W	28 ~ 11	24 ~ 10	●						
		14, 11	16 ~ 9	●						
		28, 19	40 ~ 16		●	●	●			
16ER A55-TQ	M	14, 11	14 ~ 8		●	●	●			
		28 ~ 11	40 ~ 8		●	●	●			
		28 ~ 11	40 ~ 8		●	●	●			

30° Trapezoidal (Tr)  
Partial Profile 30°

Usage Classification ● : 1st Choice ○ : 2nd Choice	P	Carbon Steel / Alloy Steel							●
	M	Stainless Steel							●
	K	Cast Iron							
		N	Non-ferrous Material						
Description	Applicable Thread	Pitch		Cermet	MEGACOAT MEGACOAT NANO			PVD Coated Carbide	Carbide
		mm	TPI		TC60M	PR1215	PR1515		
				R	R	R	R	R	R
16ER 200TR	Tr	2.0	-	●				●	
		3.0	-	●				●	

TC60M (Threading) are sold in 10 piece boxes.  
Other inserts are sold in 5 piece boxes

16ER ..... -TQ: With Chipbreaker  
-TF: Without Chipbreaker  
(TF Cutting Edge)  
w/o Indication: Without Chipbreaker

For more details on the cutting conditions, see the KYOCERA general product catalog.

● : Standard Stock  
○ : Check Availability