



JCT Series

Jet Coolant-Through Holders



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

NEW *New Holder Styles Available!*

Turning
Double-Clamp JCT



Shallow Grooving
KGBA-JCT



Grooving / Cut-off
KGD-JCT



Threading
KTN-JCT



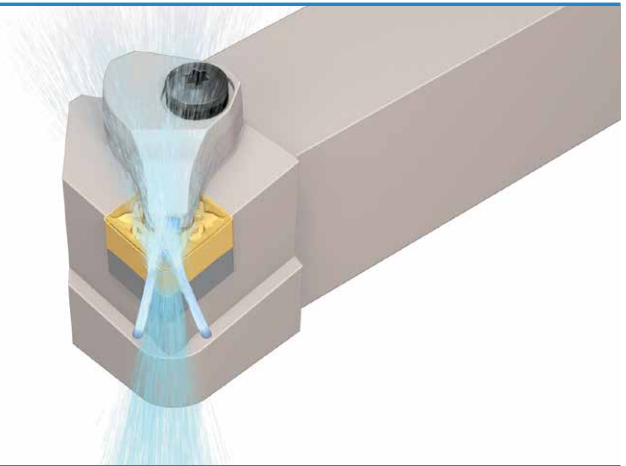
Unique Coolant System for Various Machining Applications

Turning Double-Clamp-JCT Page 6

- **Three Coolant Holes**

Coolant is directed towards the rake surface for chip control and also towards the flank face of the insert to keep the cutting edge cool for longer tool life

- **Lineup**
DCLN-JCT
DDJN-JCT
DV_N-JCT
DTGN-JCT
DWLN-JCT



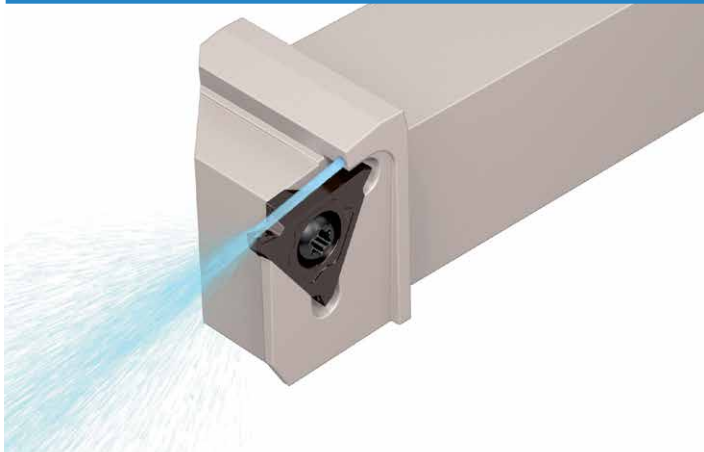
External Grooving KGBA-JCT Page 12

- **Provides Coolant towards the Rake Surface of Insert**

- **Lineup**

Edge Width: 0.031" - 0.188" / 0.33mm - 4.80mm

Maximum Depth: 0.079" - 0.197" / 0.80mm - 5.00mm



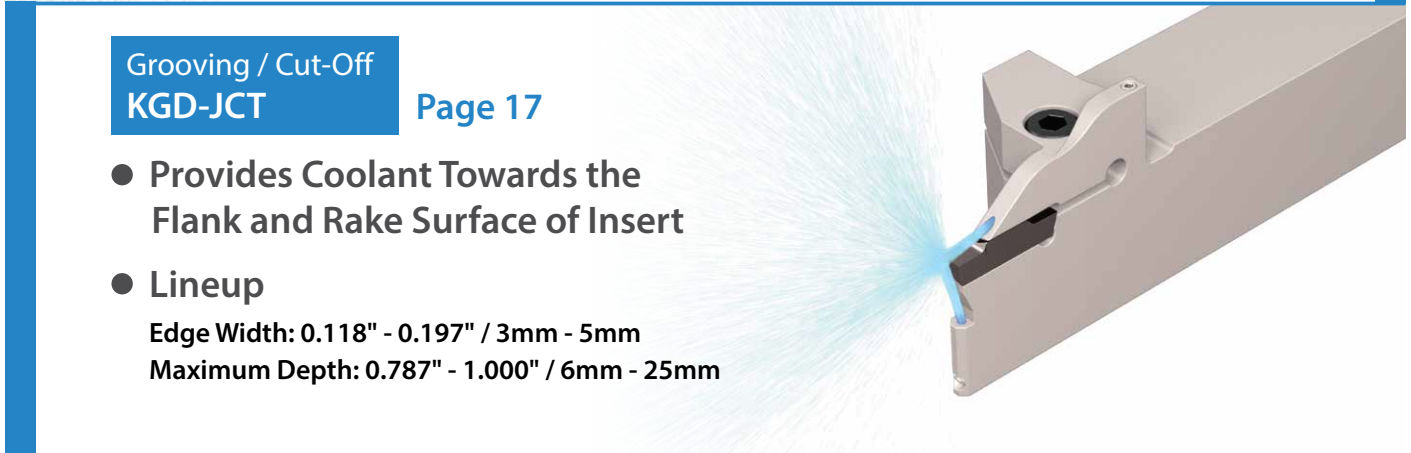
Grooving / Cut-Off KGD-JCT Page 17

- **Provides Coolant Towards the Flank and Rake Surface of Insert**

- **Lineup**

Edge Width: 0.118" - 0.197" / 3mm - 5mm

Maximum Depth: 0.787" - 1.000" / 6mm - 25mm



Threading KTN-JCT Page 24

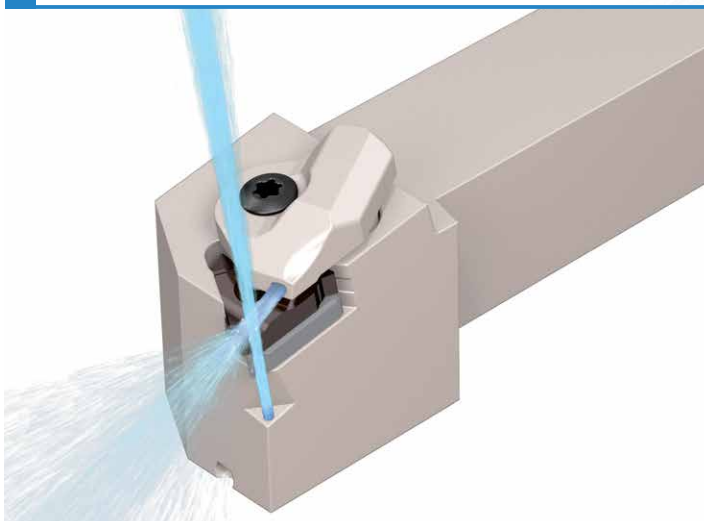
- **Double Coolant Holes Reduce Defects and Lengthen Tool Life**

(Two holes toward the rake face and one hole towards the flank face of the insert)

- **Lineup**

TQ Molded Chipbreakers

When combined with KTN-JCT holders, the TQ chipbreaker improves chip control for greater productivity



JCT Series

Coolant-Through Holders



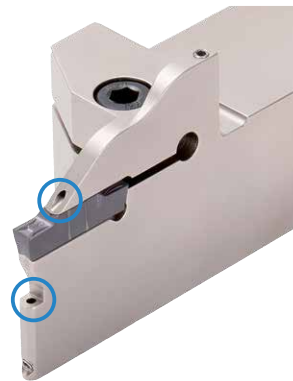
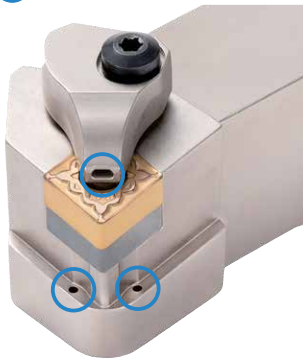
Excellent Chip Control and Long Tool Life with High Pressure Coolant

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: [↔ Page 6](#)
Double-Clamp-JCT

External Shallow Grooving: [↔ Page 12](#)
KGBA-JCT

External Grooving: [↔ Page 17](#)
KGD-JCT

Threading: [↔ Page 24](#)
KTN-JCT

Advantages of Internal Coolant

Discharges Coolant towards the Cutting Edge

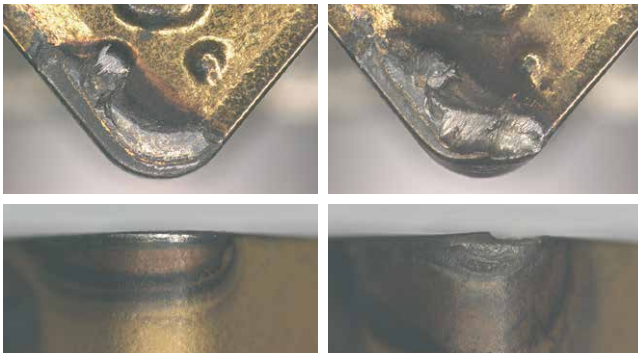
Internal Coolant Provides Longer Tool Life and Excellent Chip Control

Extended Tool Life

Wear Resistance Comparison (Internal Evaluation)

Internal Coolant (1,015 psi)

External Coolant (58 psi)



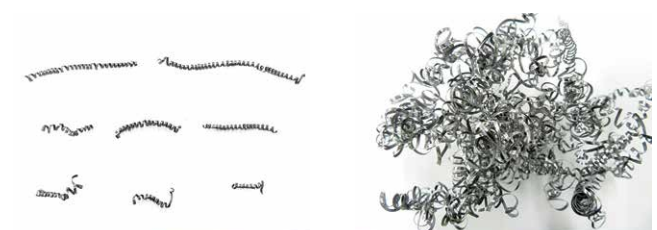
Cutting Conditions: $V_c = 820$ sfm, $f = 0.079$ ipr, D.O.C. = 0.079"; Wet
CNMG432 Insert Workpiece: 4137
External Turning After Machining 42.2 min

Improved Chip Control

Chip Control Comparison (Internal Evaluation)

Internal Coolant (1,015 psi)

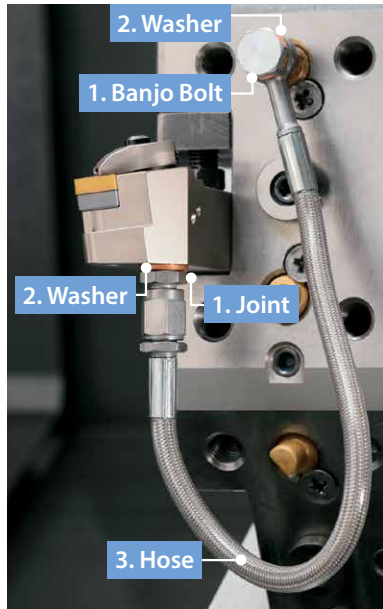
External Coolant (58 psi)



Cutting Conditions: $V_c = 660$ sfm, $f = 0.002$ ipr, D.O.C. = 0.020"; Wet
DNMG432 Insert Workpiece: 4131 External Turning

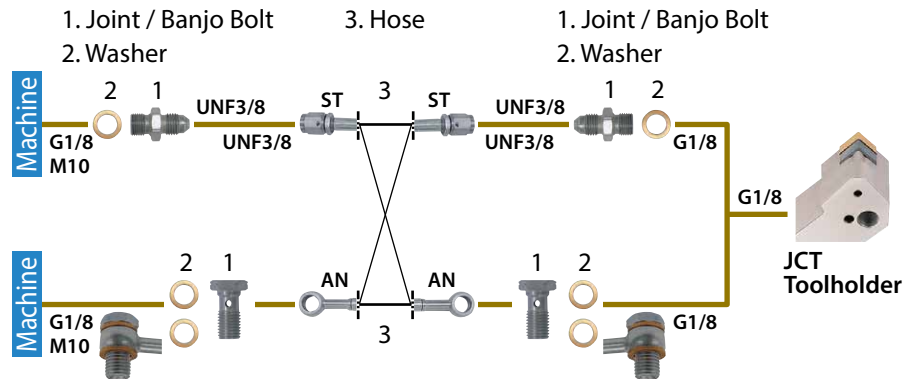
Easy Coolant Connections

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 and can be used in a variety of machines

Piping Installation Guide




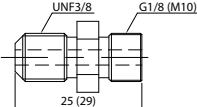

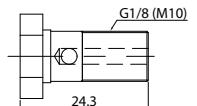
Piping Parts

Optional Piping Parts Available

Choose from parts below to match your machine specifications

1. Joint / Banjo Bolt

Pressure Resistance: up to 4,350 psi

Shape	Part Number	Stock	Thread Standard
 	J-G1/8-UNF3/8	●	G1/8
	J-M10X1.5-UNF3/8	●	M10X1.5
 	BB-G1/8	●	G1/8
	BB-M10X1.5	●	M10X1.5


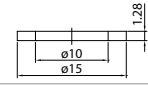
1. Joint / Banjo bolt × 2

2. Washer × 2-4

3. Hose × 1

2. Washer


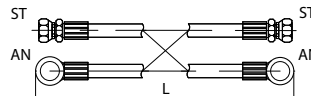

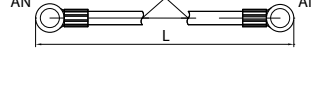


Pressure Resistance: up to 4,350 psi

Shape	Part Number	Stock
 	WS-10	●

* Use 2 washers for a banjo bolt

3. Hose

Pressure Resistance: up to 4,350 psi

Shape	Part Number	Stock	Thread Standard		Dimensions (mm)
					L
 	HS-ST-ST-200	●	UNF3/8	UNF3/8	200
	HS-ST-ST-250	●			250
 	HS-ST-AN-200	●	UNF3/8	-	200
	HS-ST-AN-250	●			(Banjo Bolt)
 	HS-AN-AN-200	●	-	-	200
	HS-AN-AN-250	●	(Banjo Bolt)	(Banjo Bolt)	250

Precautions

● : Standard Item

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 the same. Check the pressure resistance before use.
6. Regularly changing the coolant filter is recommended.

Double-Clamp-JCT

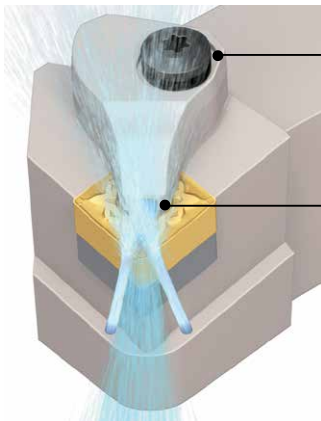
Turning

Coolant-Through Holders for Turning

Discharges Coolant in Three Directions to Improve Chip Control and Lengthen 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

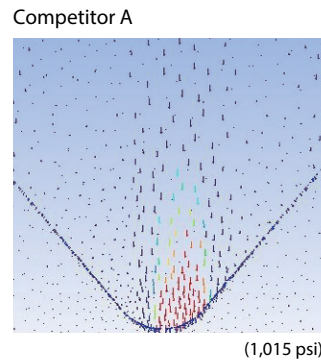
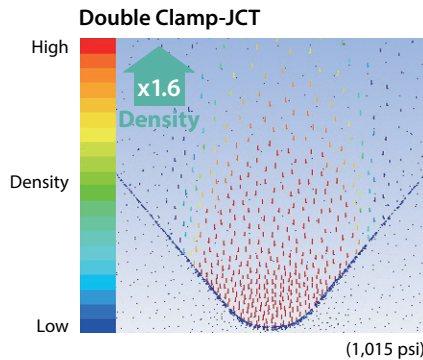
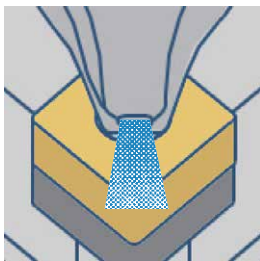
Firm insert clamp and easy to use in single operations
High-density coolant supply close to the cutting edge

Unique Nozzle Shape

Provides coolant to a wide area of the insert surface

Coolant Supply Simulation Comparison (Internal Evaluation)

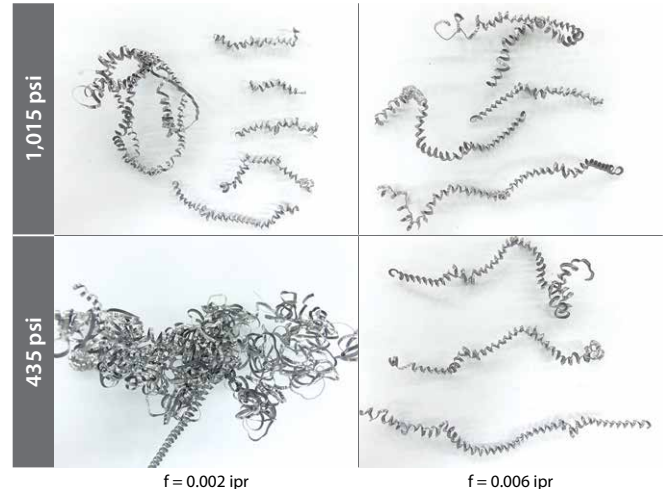
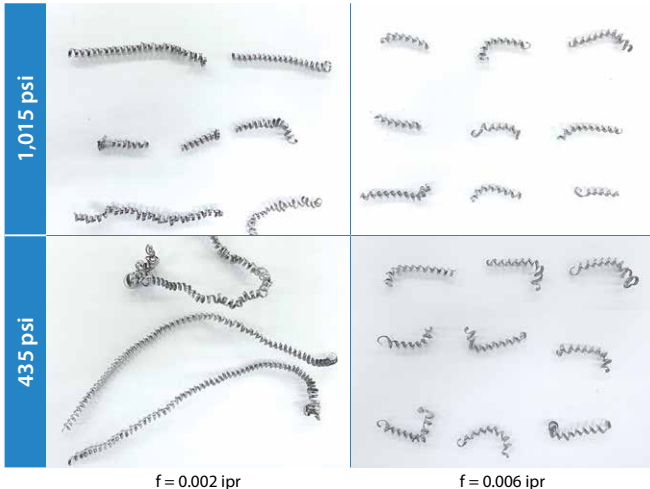
Discharges a wide stream of high-density coolant towards the rake surface of the insert



Chip Control Comparison (Internal Evaluation)

Double-Clamp JCT

Competitor A



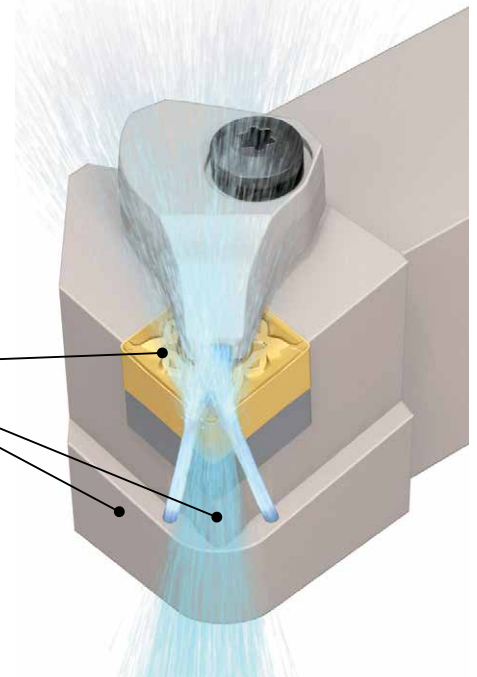
Cutting Conditions: $V_c = 490$ sfm, D.O.C. = 0.020", Wet, CNMG432 Insert Workpiece: 4131 External Turning

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

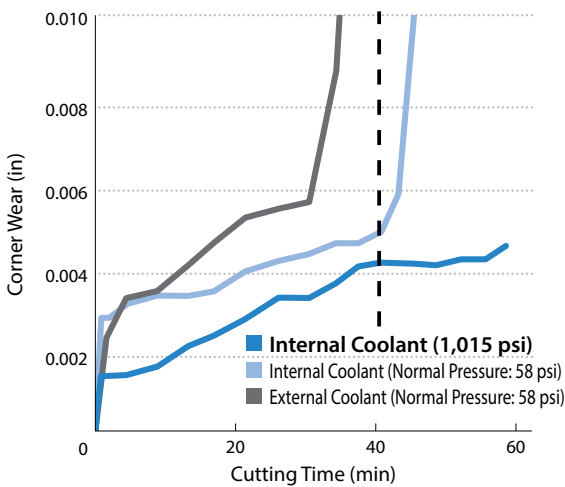
Longer tool life and high-speed machining with improved wear resistance

Discharges Coolant in Three Directions
The Cutting Edge Stays Cool

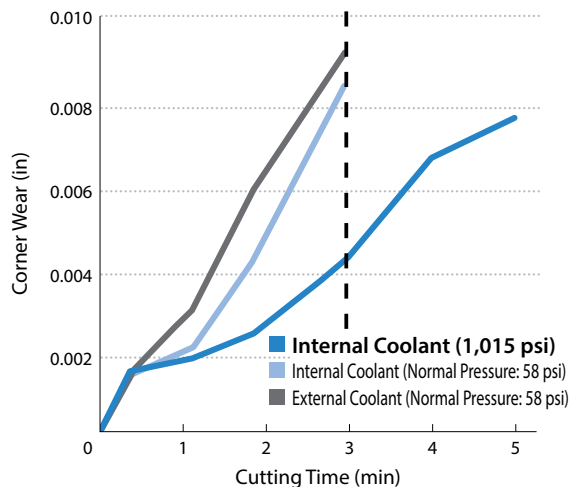


Wear Resistance Comparison (Internal Evaluation)

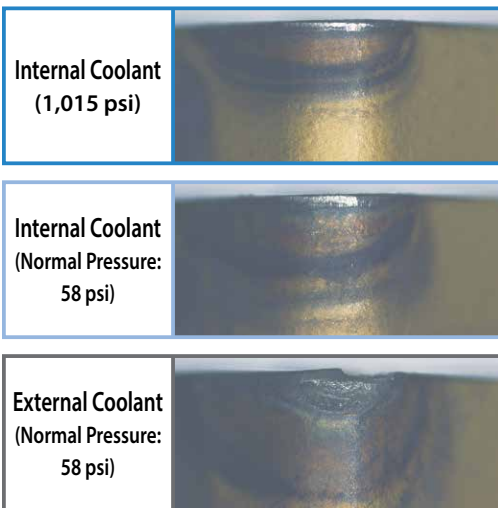
Alloy Steel (4137)



Heat-resistant Alloys (Inconel®718)

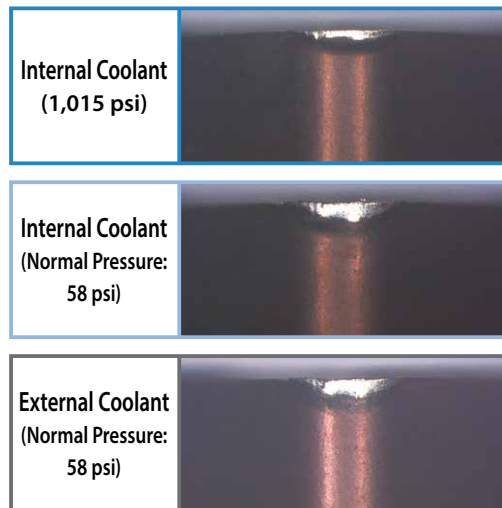


After Machining 42.2 min



↑
Abrasion Resistance

After Machining 3 min



↑
Abrasion Resistance

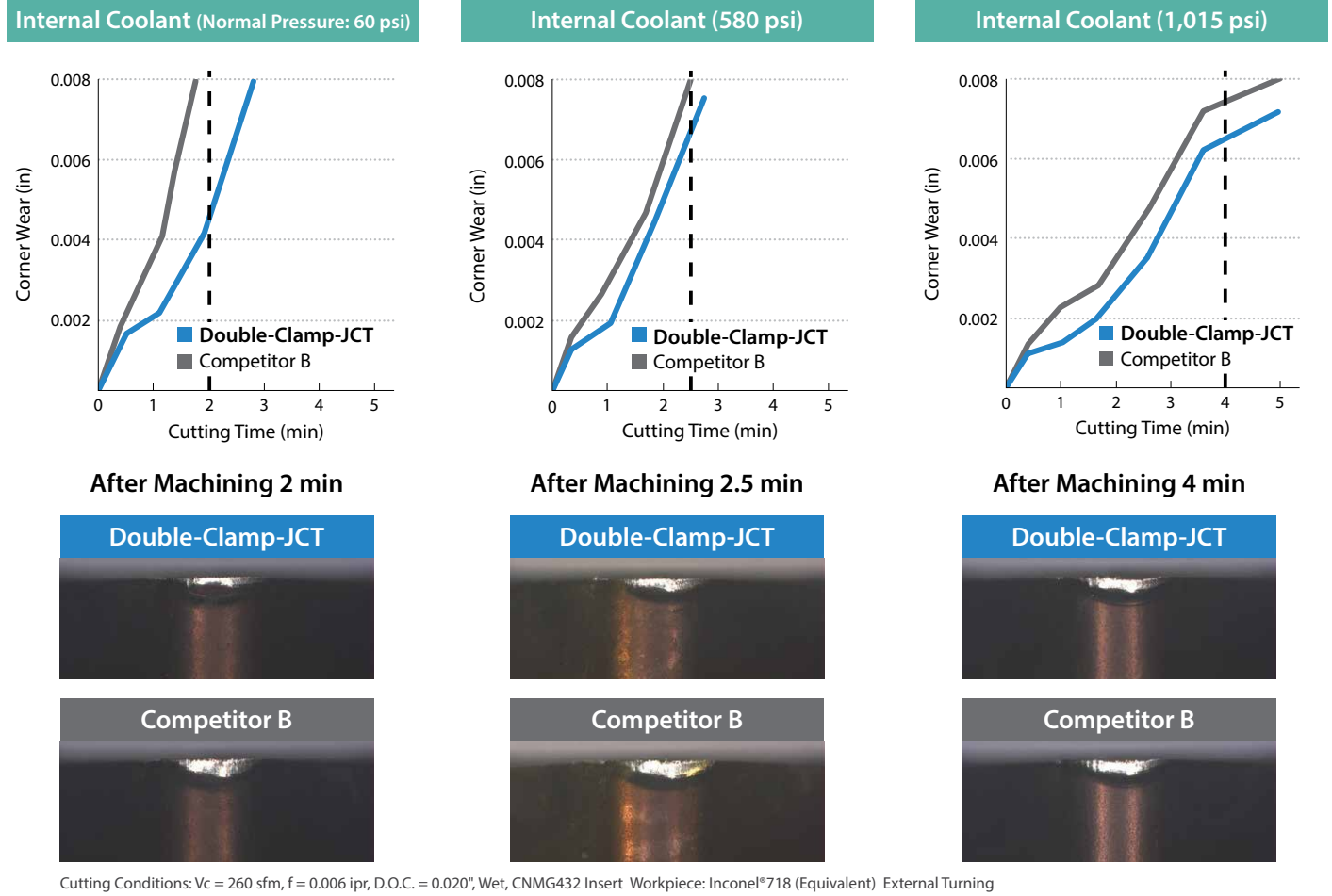
Cutting Conditions: $V_c = 820$ sfm, $f = 0.012$ ipr, D.O.C. = 0.079° , Wet CNMG432 Insert External Turning

Cutting Conditions: $V_c = 260$ sfm, $f = 0.006$ ipr, D.O.C. = 0.020° , Wet CNMG432 Insert External Turning

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

Wear Resistance Comparison (Internal Evaluation)

Double-Clamp JCT maintains better wear resistance than competitors



Case Studies

Mechanical Parts - Carbon Steel

$V_c = 820$ sfm
D.O.C. = 0.118°
 $f = 0.014$ ipr
Wet (Water Soluble)
DCLNR2525M-12JCT
CNMG432PT Insert (CA510)

Tool Life

DCLN-JCT Toolholder (Internal Coolant: 580 psi) **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

Shaft - 5120 (Hardened Steel Over 55HRC)

$V_c = 590$ sfm
D.O.C. = 0.004°
 $f = 0.0028$ ipr
Wet
DDJNR2525M-15JCT
DNGA432 Insert (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)

(User Evaluation)

Double-Clamp-JCT (Turning)

DCLN-JCT

Right-hand (R) Shown

Side Rake Angle: -6°
Angle of Inclination: -6°

Coolant Supply:
3 Directions

Recommended
tightening torque
3.9Nm

Toolholder Dimensions

Pressure Resistance: up to 4,350 psi

Part Number	Stock		Unit	Dimensions									Standard Corner-R (RE)	Drawing	Spare Parts							Applicable Inserts
	R	L		H	HF	HBH	B	HBKW	LF	LH	WF	MHD			Clamp	Pipe Connection (*1 with O-Ring)	Screw	Spring	Shim	Shim Screw	Wrench	
DCLN% 12-4BJCT	●	●	inch	0.750	0.750	0.234	0.750	0.260	4.500	1.063	1.000	3.870	1/32	Fig.1	CP-3D- $\frac{P}{L}$ -JCT	FP-12	CS-3D-TR	SP-3D	*2 DC-44 *3 DC-44-C	SB-4085TR	FT-15	CN..43...
16-4DJCT	●	●		1.000	1.000	-	1.000	-	6.000	1.063	1.250	5.370										
DCLN% 2020K-12JCT	●	●	mm	25	25	5	20	7	125	27	25	109	0.8	Fig.1	CP-3D- $\frac{P}{L}$ -JCT	FP-12	CS-3D-TR	SP-3D	*2 DC-44 *3 DC-44-C	SB-4085TR	FT-15	
2525M-12JCT	●	●		25	25	-	25	-	150	27	32	134										

*1. O-ring (SS-035) is available to order separately

*2. When using inserts with a corner-R (RE) greater than 1/16", additional modifications to the shim are necessary in order to prevent workpiece and shim interference

*3. SX chipbreaker inserts require a different shim (sold separately)

See [Page 5](#) for piping parts

● : Standard Item

DDJN-JCT

Right-hand (R) Shown

Side Rake Angle: -6°
Angle of Inclination: -7°

Coolant Supply:
3 Directions

Recommended
tightening torque
3.9Nm

Toolholder Dimensions

Pressure Resistance: up to 4,350 psi

Part Number	Stock		Unit	Dimensions									Standard Corner-R (RE)	Drawing	Spare Parts							Applicable Inserts
	R	L		H	HF	HBH	B	HBKW	LF	LH	WF	MHD			Clamp	Pipe Connection (*1 with O-Ring)	Screw	Spring	Shim	Shim Screw	Wrench	
DDJN% 12-4BJCT	●	●	inch	0.750	0.750	0.234	0.750	0.260	4.500	1.456	1.000	3.555	1/32	Fig.1	CP-3D- $\frac{P}{L}$ -JCT	FP-12	CS-3D-TR	SP-3D	*2 DD-44 (DD-43)	SB-4085TR	FT-15	DN..43... (DN..44...)
16-4DJCT	●	●		1.000	1.000	-	1.000	-	6.000	1.456	1.250	5.055										
DDJN% 2020K-15JCT	●	●	mm	20	20	5	20	7	125	37	25	101	0.8	Fig.1	CP-3D- $\frac{P}{L}$ -JCT	FP-12	CS-3D-TR	SP-3D	*2 DD-44 (DD-43)	SB-4085TR	FT-15	
2525M-15JCT	●	●		25	25	-	25	-	150	37	32	126										

Shims in () are not included with the holder. Please purchase separately when a change in insert thickness is needed.

*1. O-ring (SS-035) is available to order separately

*2. When using inserts with a corner-R (RE) greater than 1/16", additional modifications to the shim are necessary in order to prevent workpiece and shim from interfering with each other.

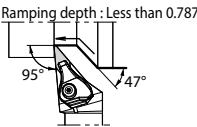
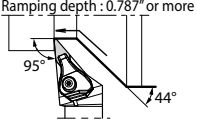
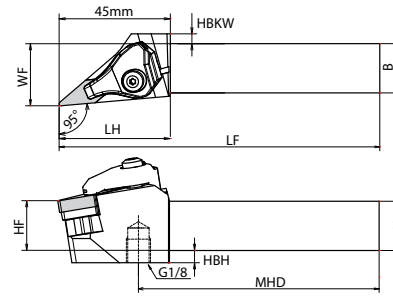
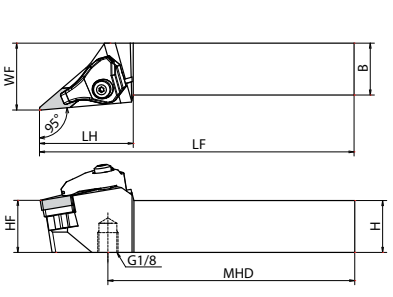
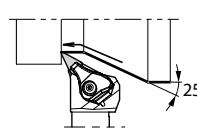
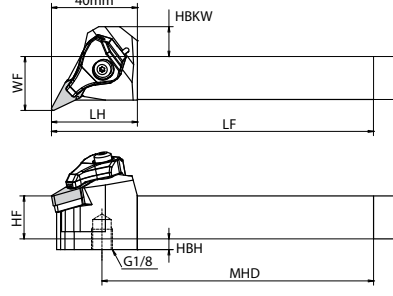
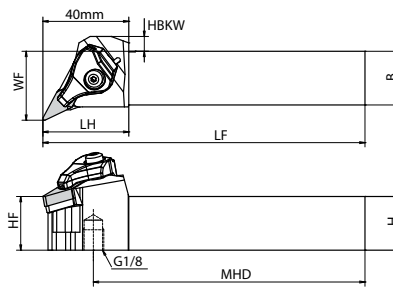
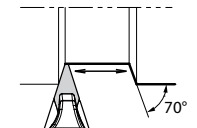
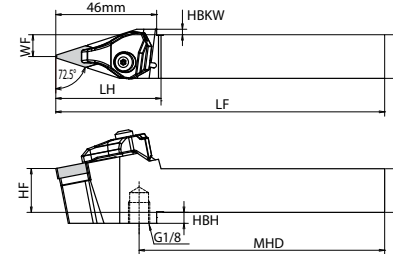
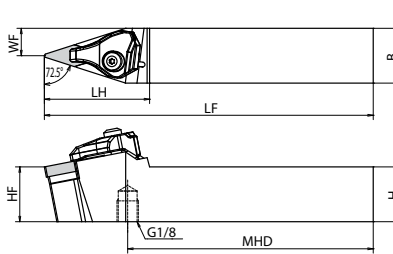
See [Page 5](#) for piping parts

● : Standard Item

Internal Coolant Advantages (Reference) Internal coolant under low pressure provides improved performance and stable machining

Coolant Pressure (psi)	Tool Life	Chip Control	Advantages
Normal Pressure ~290 (Low Pressure)	Good	-	Longer tool life under 145 psi
290~1,015 (Medium Pressure)	Excellent	Good	Longer tool life and excellent chip control
1,015~2,175 (High Pressure)	Excellent	Excellent	Fine chip breaking
2,175~4,350 (Extra-high Pressure)	Excellent	Excellent	Fine chip breaking and high speed machining for heat-resistant alloys

Double-Clamp-JCT (Turning)

<p>DVLN-JCT NEW</p> <p>External Turning/Copying</p> <p>Ramping depth : Less than 0.787"</p>  <p>Ramping depth : 0.787" or more</p> 	 <p>Fig.1</p>	 <p>Fig.2</p>	<p>Side Rake Angle: -6° Angle of Inclination: -9°</p> <p>Coolant Supply: 2 Directions</p> <p>Recommended tightening torque 3.9Nm</p>
<p>DVPN-JCT NEW</p> <p>External/Facing Copying/Undercutting</p> 	 <p>Fig.3</p>	 <p>Fig.4</p>	<p>Side Rake Angle: -13° Angle of Inclination: -10°</p> <p>Coolant Supply: 2 Directions</p> <p>Recommended tightening torque 3.9Nm</p>
<p>DVVN-JCT NEW</p> <p>External Turning/Copying</p> 	 <p>Fig.5</p>	 <p>Fig.6</p>	<p>Back Rake Angle: -11°</p> <p>Coolant Supply: 1 Direction</p> <p>Recommended tightening torque 3.9Nm</p>

Toolholder Dimensions

Pressure Resistance: up to 4,350 psi

Part Number	Stock			Dimensions									Standard Corner-R (RE)	Drawing	Spare Parts							Applicable Inserts
	R	N	L	H	HF	HBH	B	HBKW	LF	LH	WF	MHD			Clamp	Pipe Connection (*1 with O-Ring)	Screw	Spring	Shim	Shim Screw	Wrench	
DVLNR 12-3BJCT	●			0.750	0.750	0.234	0.750	0.142	4.500	1.771	1.000	3.220	1/32	Fig.1	CP-5D-JCT	FP-12	CS-3D-TR	SP-3D	*2 DV-33	SB-4085TR	FT-15	VN.33...
16-3DJCT	●			1.000	1.000	-	1.000	-	6.000	1.771	1.250	4.720										
DVLNL 12-3BJCT			●	0.750	0.750	0.234	0.750	0.142	4.500	1.771	1.000	3.060	1/32	Fig.1	CP-5D-JCT	FP-12	CS-3D-TR	SP-3D	*2 DV-33	SB-4085TR	FT-15	VN.33...
16-3DJCT			●	1.000	1.000	-	1.000	-	6.000	1.771	1.250	4.560										
DVLNR 2020K-16JCT	●			20	20	5	20	4	125	45	25	92.5	0.8	Fig.1	CP-5D-JCT	FP-12	CS-3D-TR	SP-3D	*2 DV-33	SB-4085TR	FT-15	VN.33...
2525M-16JCT	●			25	25	-	25	-	150		32	117.5										
DVLNL 2020K-16JCT			●	20	20	5	20	4	125	45	25	88.5	0.8	Fig.1	CP-5D-JCT	FP-12	CS-3D-TR	SP-3D	*2 DV-33	SB-4085TR	FT-15	VN.33...
2525M-16JCT			●	25	25	-	25	-	150		32	113.5										
DVPNR 2020K-16JCT	●			20	20	5	20	14	125	40	25	101.5	0.8	Fig.3	CP-5D-JCT	FP-12	CS-3D-TR	SP-3D	*2 DV-33	SB-4085TR	FT-15	VN.33...
2525M-16JCT	●			25	25	-	25	7	150		32	126.5										
DVPNL 2020K-16JCT			●	20	20	5	20	14	125	40	25	93.5	0.8	Fig.4	CP-5D-JCT	FP-12	CS-3D-TR	SP-3D	*2 DV-33	SB-4085TR	FT-15	VN.33...
2525M-16JCT			●	25	25	-	25	7	150		32	118.5										
DVVNR 2020K-16JCT	●			20	20	5	20	2.5	125	48	10	87.0	0.8	Fig.5	CP-5D-JCT	FP-12	CS-3D-TR	SP-3D	*2 DV-33	SB-4085TR	FT-15	VN.33...
2525M-16JCT	●			25	25	-	25	-	150		12.5	112.0										

*1. O-ring (SS-035) is available to order separately

*2. When using inserts with a corner-R (RE) greater than 1/16", additional modifications to the shim are necessary in order to prevent workpiece and shim interference
See [Page 5](#) for piping parts

● : Standard Item

Double-Clamp-JCT (Turning)

DTGN-JCT NEW

External Turning

Fig.1 Fig.2

Side Rake Angle: -6°
Angle of Inclination: -6°

Coolant Supply:
2 Directions

Recommended
tightening torque
3.9Nm

Right-hand (R) Shown

Toolholder Dimensions

Pressure Resistance: up to 4,350 psi

Part Number	Stock		Unit	Dimensions										Standard Corner-R (RE)	Drawing	Spare Parts							Applicable Inserts
	R	L		H	HF	HBH	B	HBKW	LF	LH	WF	MHD	Clamp			Pipe Connection (*1 with O-Ring)	Screw	Spring	Shim	Shim Screw	Wrench	Wrench (Sold Separately)	
DTGN% 2020K-16JCT	●	●	mm	20	20	5	20	2	125	27	25	104	0.8	Fig.1	CP-2D-%L-JCT	FP-12	CS-3D-TR	SP-3D	*2 DT-32	SB-3080TR	FT-15	FT-10	TN..33...
2525M-16JCT	●	●		25	25	-	25	-	150		32	129											

*1. O-ring (SS-035) is available to order separately

When using WF chipbreaker (Wiper insert), the cutting edge position or machining program needs to be corrected.

*2. When using inserts with a corner-R (RE) greater than 1/16", additional modifications to the shim are necessary in order to prevent workpiece and shim interference

See [Page 5](#) for piping parts

● : Standard Item

DWLN-JCT

Fig.1 Fig.2

Side Rake Angle: -6°
Angle of Inclination: -6°

Coolant Supply:
3 Directions

Recommended
tightening torque
3.9Nm

Right-hand (R) Shown

Toolholder Dimensions

Pressure Resistance: up to 4,350 psi

Part Number	Stock		Unit	Dimensions										Standard Corner-R (RE)	Drawing	Spare Parts							Applicable Inserts
	R	L		H	HF	HBH	B	HBKW	LF	LH	WF	MHD	Clamp			Pipe Connection (*1 with O-Ring)	Screw	Spring	Shim	Shim Screw	Wrench		
DWLN% 12-4BJCT	●	●	in	0.750	0.750	0.234	0.750	0.260	4.500	1.063	1.000	3.882	1/32	Fig.1	CP-3D-%L-JCT	FP-12	CS-3D-TR	SP-3D	DW-44	SB-4085TR	FT-15	WN..43...	
16-4DJCT	●	●		1.000	1.000	-	1.000	-	6.000	1.063	1.250	5.382											Fig.2
DWLN% 2020K-08JCT	●	●	mm	20	20	5	20	7	125	27	25	109	0.8	Fig.1	CP-3D-%L-JCT	FP-12	CS-3D-TR	SP-3D	DW-44	SB-4085TR	FT-15	WN..43...	
2525M-08JCT	●	●		25	25	-	25	-	150		27	134											Fig.2

*1. O-ring (SS-035) is available to order separately

See [Page 5](#) for piping parts

● : Standard Item

KGBA-JCT

External Grooving

Coolant-Through Holders for External Shallow Grooving

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 (Internal Evaluation)

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

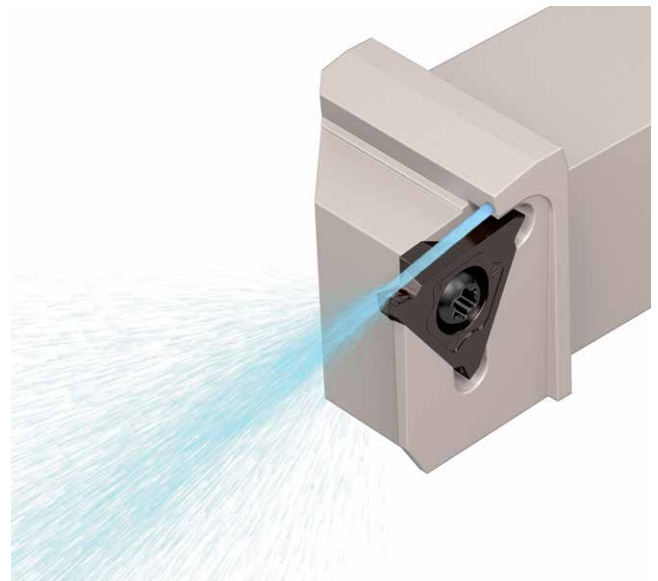
Alloy Steel (5120)

Internal Coolant	1,015 psi			
	290 psi			
	72 psi (Normal Pressure)			
External Coolant	72 psi (Normal Pressure)			
	f (ipr)	0.002	0.003	0.004

Stainless Steel (304)

Internal Coolant	1,015 psi			
	290 psi			
	72 psi (Normal Pressure)			
External Coolant	72 psi (Normal Pressure)			
	f (ipr)	0.002	0.003	0.004

Cutting Conditions: $V_c = 490$ sfm (Alloy Steel) / 330 sfm (Stainless Steel),
f = 0.002–0.004 ipr, Groove Depth = 0.079" (2mm), Wet
KGBAR2525K22-15JCT, GBA43R200-020 (PR1215)



Coolant Hole

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

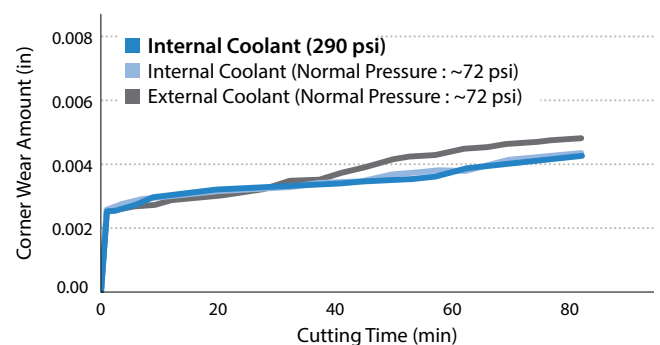
Coolant Direction

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

2 Superior Cooling Action Improves Tool Life

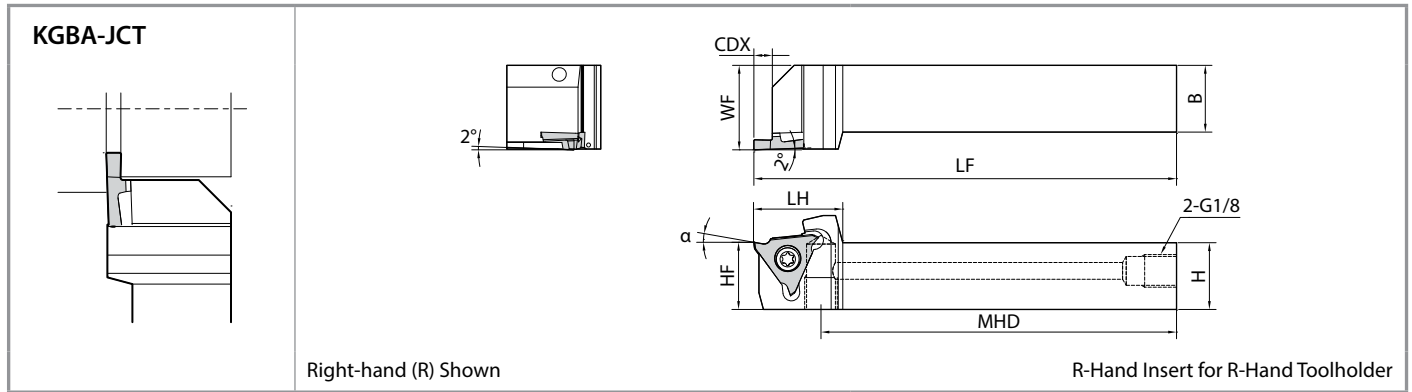
Internal Coolant Provides Better
Corner Wear Resistance

Wear Resistance Comparison (Internal Evaluation)



Cutting Conditions: $V_c = 490$ sfm, f = 0.003 ipr, Groove Depth = 0.079" (2mm), Wet
KGBAR2525K22-15JCT, GBA43R200-020 (PR1215) Workpiece: 4137

KGBA-JCT (Shallow Grooving)



Toolholder Dimensions

Pressure Resistance: up to 4,350 psi

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

See [Page 5](#) for piping parts

● : Standard Item

CDX shows the distance from the toolholder to the cutting edge. For available groove depth, see "CDX" dimension of Insert.

KGBA-JCT Toolholder is Screw Clamp Type

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

Recommended Grade for Steel

General Purpose : PR1215

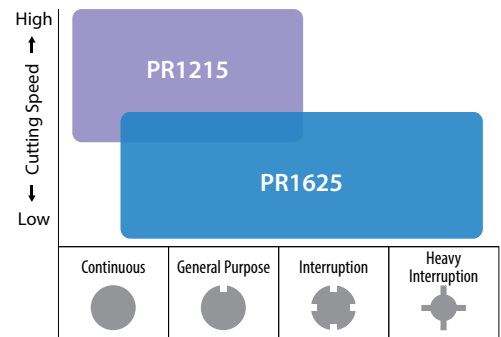
(Surface Finish Oriented) : TN620

for Stable Machining : PR1625

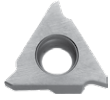
PR1625

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 interrupted grooving applications like drums and shafts of transmission engine parts.

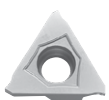


Ground Chipbreaker

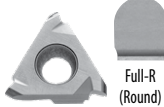
Ground Chipbreaker 	P	Carbon Steel / Alloy Steel	●	●			
	M	Stainless Steel				●	
	K	Cast Iron					
	N	Non-ferrous Material					
S	Titanium Alloy					●	
H	Hardened Material (~40HRC)					●	
Part Number	Dimensions (in)			MEGACOAT Cemet		Applicable Toolholders	
	CW	CDX	RE	PV7040	PR1215		
	Edge Width (W)	Available Grooving Depth	Corner-R				
GBA32% 031N	0.031	0.079	0.002	●	●	1	
	0.041	0.079	0.002	●	●		
	0.047	0.079	0.008	●	●		
	0.058	0.079	0.008	●	●		
	0.062	0.079	0.008	●	●		
	0.078	0.098	0.008	●	●		
	0.094	0.098	0.008	●	●		
GBA43% 031N	0.031	0.079	0.002 0.008	●	●	2	
	0.047	0.079	0.008	●	●		
	0.062	0.138	0.008	●	●		
	0.072	0.138	0.008	●	●		
	0.078	0.138	0.008	●	●		
	0.088	0.138	0.008	●	●		
	0.094	0.157	0.012	●	●		
	0.097	0.157	0.012	●	●		
	0.105	0.157	0.012	●	●		3
	0.109	0.157	0.012		●		
	0.110	0.157	0.012	●	●		
0.125	0.157	0.012	●	●			
0.141	0.197	0.012		●	4		
0.142	0.197	0.012	●	●			
0.156	0.197	0.016	●	●			
0.172	0.197	0.016		●			
0.178	0.197	0.016	●	●			
0.188	0.197	0.016		●			

※1 : Corner Radius (RE) for GBA43% 031N is different based on the grade

Molded Chipbreaker

Molded MY Chipbreaker 	P	Carbon Steel / Alloy Steel	●		
	M	Stainless Steel			●
	S	Titanium Alloy			●
	H	Hardened Material (~40HRC)			●
Part Number	Dimensions (in)			MEGACOAT	
	CW	CDX	RE	PR1215	Applicable Toolholders
	Edge Width (W)	Available Grooving Depth	Corner-R		
GBA43% 078MYN	0.078	0.138	0.008	●	2
	0.094	0.157	0.012	●	3
	0.125	0.157	0.012	●	
	0.156	0.197	0.016	●	4

Full-R

Full-R 	P	Carbon Steel / Alloy Steel	●		
	M	Stainless Steel			●
	S	Titanium Alloy			●
	H	Hardened Material (~40HRC)			●
Part Number	Dimensions (in)			MEGACOAT	
	CW	CDX	RE	PR1215	Applicable Toolholders
	Edge Width (W)	Available Grooving Depth	Corner-R		
GBA32R 031R	0.062	0.079	0.031	●	1
	0.094	0.098	0.047	●	
GBA43% 031R	0.062	0.138	0.031	●	2
	0.094	0.157	0.047	●	3
	0.125	0.157	0.062	●	
078R	0.156	0.197	0.078	●	4
	0.188	0.197	0.094	●	

Applicable JCT Toolholders

- 1: KGBAR ...16 JCT Type
- 2: KGBA %L ...22-15 JCT Type
- 3: KGBA %L ...22-25 JCT Type
- 4: KGBA %L ...22-35 JCT Type

For more details on cutting conditions, please see the KYOCERA General Product Catalog or GBA brochure

● : Standard Item ● : Right-Hand Only

Ground Chipbreaker

Ground Chipbreaker	Material		Applicable Toolholders												
	P	M	MEGACOAT Cermet			Cermet			MEGACOAT NANO			PVD Coated Carbide			Carbide
	Carbon Steel / Alloy Steel	Stainless Steel	Cast Iron	Non-ferrous Material	Titanium Alloy	Hardened Material (~40HRC)	MEGACOAT	MEGACOAT	MEGACOAT	MEGACOAT	MEGACOAT	MEGACOAT	MEGACOAT	MEGACOAT	MEGACOAT
Part Number	Dimensions (mm)			Applicable Toolholders											
	CW	CDX	RE												
	Edge Width (W)	Available Grooving Depth	Corner-R												
GBA32% 033-005	0.33	0.8	0.05	●											
050-005	0.50	1.0	0.05	●											
075-005	0.75	2.0	0.05	●											
095-005	0.95	2.0	0.05	●											
100-005	1.00	2.0	0.05	●											
110-005	1.10	2.0	0.05	●											
120-005	1.20	2.0	0.05	●											
125-020	1.25	2.0	0.2	●											
130-020	1.30	2.0	0.2	●											
140-020	1.40	2.5	0.2	●											
145-020	1.45	2.0	0.2	●											
150-020	1.50	2.0	0.2	●											
160-020	1.60	2.5	0.2	●											
170-020	1.70	2.5	0.2	●											
175-020	1.75	2.0	0.2	●											
200-020	2.00	2.5	0.2	●											
225-020	2.25	2.5	0.2	●											
250-020	2.50	2.5	0.2	●											
300-020	3.00	2.5	0.2	●											
GBA43% 125-010	1.25	2.0	0.1	●											
125-020	1.25	2.0	0.2	●											
140-020	1.40	3.5	0.2	●											
145-020	1.45	2.0	0.2	●											
150-010	1.50	3.5	0.1	●											
150-020	1.50	3.5	0.2	●											
170-020	1.70	3.5	0.2	●											
175-020	1.75	3.5	0.2	●											
185-020	1.85	3.5	0.2	●											
200-010	2.00	3.5	0.1	●											
200-020	2.00	3.5	0.2	●											
225-020	2.25	3.5	0.2	●											
230-020	2.30	3.5	0.2	●											
250-010	2.50	5.0	0.1	●											
250-030	2.50	4.0	0.3	●											
265-030	2.65	4.0	0.3	●											
280-030	2.80	4.0	0.3	●											
300-010	3.00	5.0	0.1	●											
300-030	3.00	4.0	0.3	●											
325-030	3.25	5.0	0.3	●											
330-030	3.30	4.0	0.3	●											
350-010	3.50	5.0	0.1	●											
350-030	3.50	5.0	0.3	●											
400-010	4.00	5.0	0.1	●											
400-040	4.00	5.0	0.4	●											
430-040	4.30	5.0	0.4	●											
450-040	4.50	5.0	0.4	●											
480-040	4.80	5.0	0.4	●											

※1: The edge width tolerance of GBA32% 033-005: 0.33^{+0.02}
 ※2: The edge width tolerance of GBA32% 050-005: 0.50^{+0.05}
 ※3: Available grooving depth is different based on grade

Ground Chipbreaker Sharp Edge	Material		Applicable Toolholders			
	P	M	Cermet		Carbide	
	Carbon Steel / Alloy Steel	Stainless Steel	Cast Iron	Non-ferrous Material	Titanium Alloy	Hardened Material (~40HRC)
Part Number	Dimensions (mm)			Applicable Toolholders		
	CW	CDX	RE			
	Edge Width (W)	Available Grooving Depth	Corner-R			
GBA32% 050-005F	0.50	1.0	0.05	●		
075-005F	0.75	2.0	0.05	●		
095-005F	0.95	2.0	0.05	●		
100-005F	1.00	2.0	0.05	●		
125-020F	1.25	2.0	0.2	●		
145-020F	1.45	2.0	0.2	●		
150-020F	1.50	2.0	0.2	●		
175-020F	1.75	2.0	0.2	●		
200-020F	2.00	2.5	0.2	●		
250-020F	2.50	2.5	0.2	●		
GBA43% 125-020F	1.25	2.0	0.2	●		
145-020F	1.45	2.0	0.2	●		
150-020F	1.50	3.5	0.2	●		
175-020F	1.75	3.5	0.2	●		
185-020F	1.85	3.5	0.2	●		
200-020F	2.00	3.5	0.2	●		
230-020F	2.30	3.5	0.2	●		
250-030F	2.50	4.0	0.3	●		
265-030F	2.65	4.0	0.3	●		
280-030F	2.80	4.0	0.3	●		
300-030F	3.00	4.0	0.3	●		
330-030F	3.30	4.0	0.3	●		
350-030F	3.50	5.0	0.3	●		
400-040F	4.00	5.0	0.4	●		
430-040F	4.30	5.0	0.4	●		
450-040F	4.50	5.0	0.4	●		
480-040F	4.80	5.0	0.4	●		

※1: The edge width tolerance of GBA32% 033-005: 0.50^{+0.25}_{-0.00}

Applicable JCT 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 Item R : Standard Item (Right-Hand Only) L : Standard Item (Left-Hand Only)

Molded Chipbreaker

Molded GM Chipbreaker	P		Carbon Steel / Alloy Steel	●	●	●				Applicable Toolholders
	M		Stainless Steel		●	●				
	K		Cast Iron		●					
	N		Non-ferrous Material							
S		Titanium Alloy								
H		Hardened Material (~40HRC)		●						
Part Number	Dimensions (mm)			Cermet	MEGACOAT	MEGACOAT NANO				
	CW	CDX	RE	TN620	PR1215	PR1625	Applicable Toolholders			
	Edge Width (W)	Available Grooving Depth	Corner-R							
GBA43% 140-010GM	1.40	3.5	0.1	●	●		2			
	150-020GM	1.50	3.5	0.2	●	●				
175-020GM	1.75	3.5	0.2	●	●		3			
185-020GM	1.85	3.5	0.2	●	●	●				
200-020GM	2.00	3.5	0.2	●	●	●	4			
230-020GM	2.30	3.5	0.2	●	●	●				
250-030GM	2.50	5.0	0.3	●	●	●	3			
265-030GM	2.65	5.0	0.3	●	●	●				
300-030GM	3.00	5.0	0.3	●	●	●	2			
330-030GM	3.30	5.0	0.3	●	●	●				
350-030GM	3.50	5.0	0.3	●	●	●	3			
400-040GM	4.00	5.0	0.4	●	●	●				

Molded MY Chipbreaker	P		Carbon Steel / Alloy Steel	○	●	○				Applicable Toolholders
	M		Stainless Steel		●	○				
	K		Cast Iron		●					
	N		Non-ferrous Material							
S		Titanium Alloy								
H		Hardened Material (~40HRC)		●		○				
Part Number	Dimensions (mm)			Cermet	MEGACOAT	PVD Coated Carbide				
	CW	CDX	RE	TN6020	PR1215	PR930	Applicable Toolholders			
	Edge Width (W)	Available Grooving Depth	Corner-R							
GBA43% 175-020MY	1.75	3.5	0.2	●	●	●	2			
	185-020MY	1.85	3.5	0.2	●	●				
200-020MY	2.00	3.5	0.2	●	●	●	3			
230-020MY	2.30	3.5	0.2	●	●	●				
250-030MY ※3	2.50	4.0	0.3	Ⓜ			3			
	2.50	5.0	0.3		●	●				
265-030MY ※3	2.65	4.0	0.3	●			4			
	2.65	5.0	0.3		●	Ⓜ				
300-030MY ※3	3.00	4.0	0.3	●		●	2			
	3.00	5.0	0.3		●	●				
330-030MY ※3	3.30	4.0	0.3	Ⓜ			3			
	3.30	5.0	0.3		●	Ⓜ				
350-030MY	3.50	5.0	0.3	●	●	●	4			
400-040MY	4.00	5.0	0.4	●	●	●				

※3 : Available grooving depth is different based on grade

Full-R

Full-R (Round)	P		Carbon Steel / Alloy Steel	●	○	●	●	○	○				Applicable Toolholders			
	M		Stainless Steel			●	●	○	○							
	K		Cast Iron					●	○							
	N		Non-ferrous Material						●							
S		Titanium Alloy							●							
H		Hardened Material (~40HRC)								○	○					
Part Number	Dimensions (mm)			MEGACOAT Cermet	Cermet	MEGACOAT NANO	PVD Coated Carbide	Carbide								
	CW	CDX	RE	PV7040	TN620	TN90	PR1625	PR1215	PR1115	PR905	PR930	KW10	Applicable Toolholders			
	Edge Width (W)	Available Grooving Depth	Corner-R													
GBA32R 200-100R	2.00	2.5	1.00				●	●					1			
	300-150R	3.00	2.5	1.50			●	●	●							
GBA43% 100-050R	1.00	2.0	0.50	●			●	●			Ⓜ		2			
	150-075R	1.50	3.5	0.75	●	Ⓜ	●	●		Ⓜ	Ⓜ					
	200-100R	2.00	3.5	1.00	●		●	●		●			3			
	250-125R	2.50	4.0	1.25			●	●								
	300-150R	3.00	4.0	1.50		●	●	●		●	●	●	4			
	400-200R	4.00	5.0	2.00				●								
GBA43% 100-050RF	1.00	2.0	0.50				●	●					2			
	150-075RF	1.50	3.5	0.75			●	●								
	200-100RF	2.00	3.5	1.00			●	●					3			
	250-125RF	2.50	4.0	1.25			●	●								
	300-150RF	3.00	4.0	1.50			●	●					4			
	400-200RF	4.00	5.0	2.00		Ⓜ										

GBA43% ...RF: Sharp Edge Type

CBN / PCD

1-Edge (CBN / PCD)	P		Carbon Steel / Alloy Steel							Applicable Toolholders	
	M		Stainless Steel								
	K		Cast Iron								
	N		Non-ferrous Material				●				
S		Titanium Alloy					●				
H		Hardened Material (~40HRC)						○	●		
Part Number	Dimensions (mm)			CBN		PCD					
	CW	CDX	RE	KBN510	KBN525	KPD001	KPD010	Applicable Toolholders			
	Edge Width (W)	Available Grooving Depth	Corner-R								
GBA32R 125-010	1.25	2.0	0.1					1			
	150-010	1.50	2.0	0.1			●				
GBA43% 125-020	1.25	2.0	0.1					2			
	125-020	1.25	2.0	0.2	Ⓜ	Ⓜ					
	150-010	1.50	3.5	0.1			●	●	3		
	150-020	1.50	3.5	0.2	●	Ⓜ					
	200-010	2.00	3.5	0.1			●	●	3		
	200-020	2.00	3.5	0.2	●	●					
250-010	2.50	4.0	0.1				●	●	3		
300-010	3.00	4.0	0.1				●	●			
300-020	3.00	4.0	0.2		Ⓜ						

Applicable JCT Toolholders

- 1: KGBAR ...16 JCT Type
- 2: KGBA %L ...22-15 JCT Type
- 3: KGBA %L ...22-25 JCT Type
- 4: KGBA %L ...22-35 JCT Type

For more details on cutting conditions, please see the KYOCERA General Product Catalog or GBA brochure

● : Standard Item Ⓜ : Standard Item (Right-Hand Only) Ⓛ : Standard Item (Left-Hand Only)

KGD-JCT

Grooving / Cut-Off

Coolant-Through Holders for External Grooving and Cut-Off

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 Cut-off

Discharges Coolant in Two Directions

Discharges coolant in two directions toward both the rake surface and the flank face of the insert

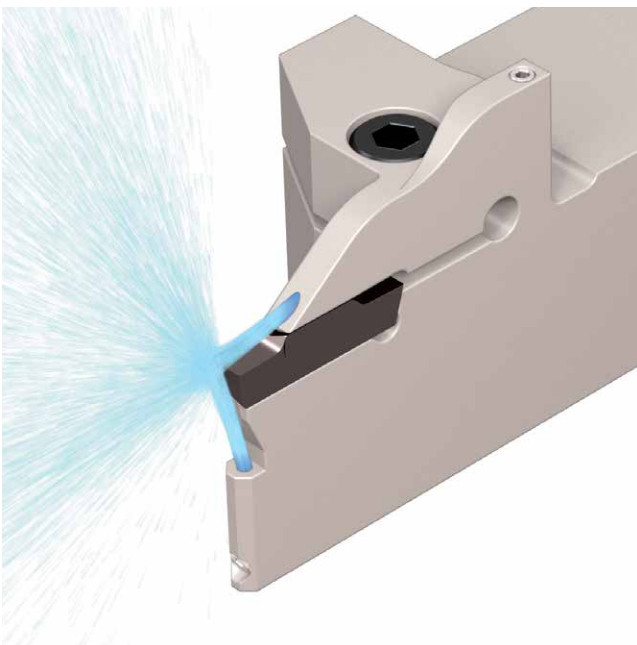
Excellent Chip Control and Long Tool Life



1 Superior Chip Control Performance

Coolant towards the rake face

Coolant hole position and angle improve chip control



Chip Control Comparison (Internal Evaluation)

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

$f = 0.002$ ipr (218 psi)

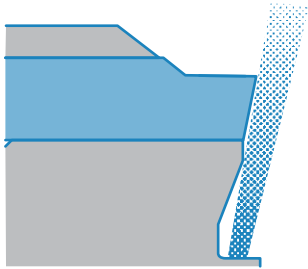


Cutting Conditions: $V_c = 490$ sfm, $f = 0.002$ ipr, $d = 0.315$ " Wet
Edge Width 4 mm (0.157") Workpiece: 4131 Grooving

2 Keeping the Cutting Edge Cool 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

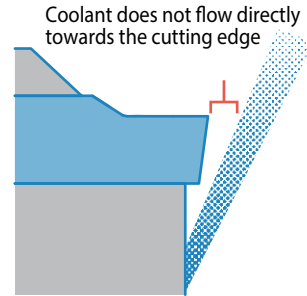
KGD-JCT



After Machining 39 min

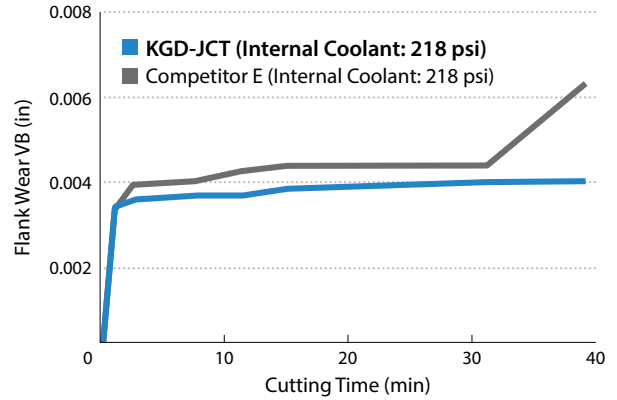


Competitor E



Defect

Wear Resistance Comparison (Internal Evaluation)



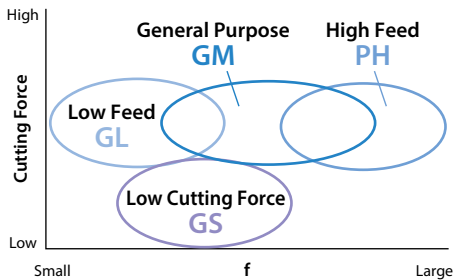
Cutting Conditions: $V_c = 590$ sfm, $f = 0.006$ ipr, $d = 0.354$ ", Wet
Edge Width 0.158" Workpiece: 4131 Grooving

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

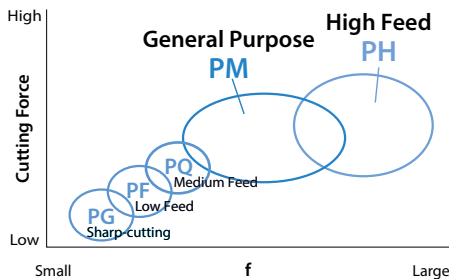
3 Large Chipbreaker Lineup for Various Machining Applications

Application Maps

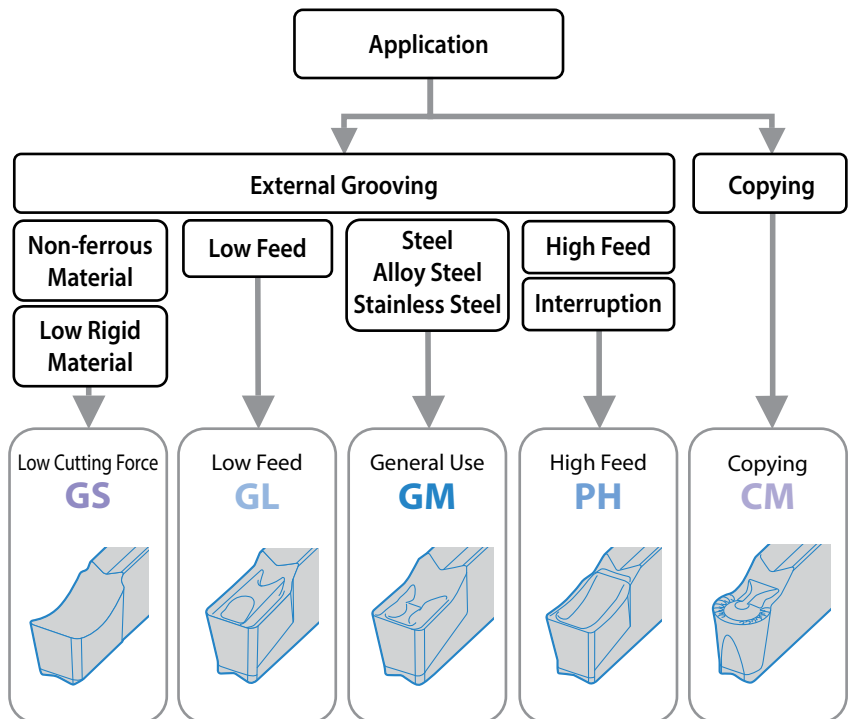
External Grooving and Traversing



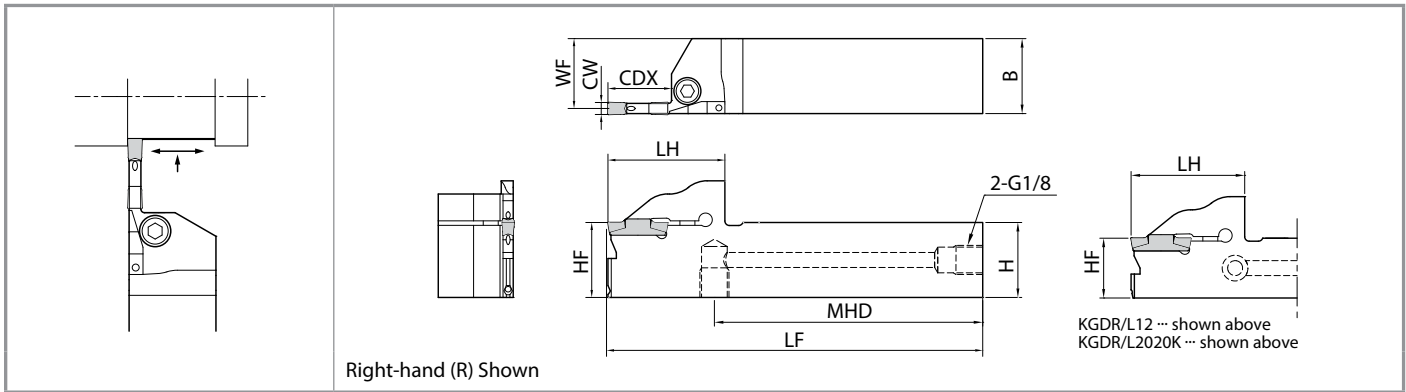
Cut-Off



Chipbreaker Selection (External)



KGD-JCT (External Grooving / Cut-Off)



Toolholder Dimensions (Inch Size)

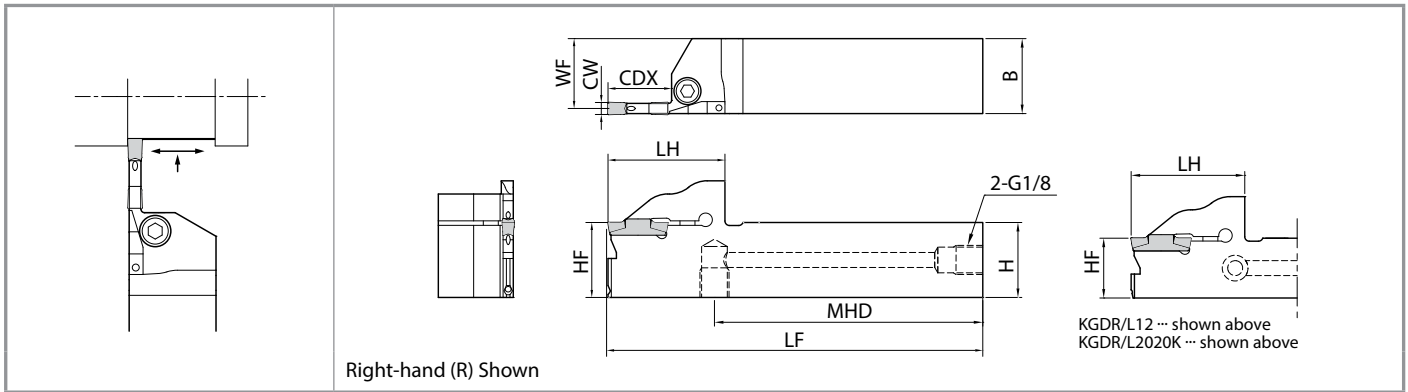
Pressure Resistance: up to 2,175 psi

Groove Width (in)	Max Grooving Depth (in)	Part Number	Stock		Dimensions (in)							Edge Width CW (mm)		Spare Parts		
			R	L	H=HF	B	LF	LH	WF	CDX	MHD	MIN	MAX	Clamp Screw	Wrench	Plug
0.118 (3mm)	0.787 (20mm)	KGD [®] L 12-3T20JCT	●	●	0.750	0.750	5.000	1.496	0.702	0.787 (20mm)	3.590	0.118 (3mm)	0.157 (4mm)	HH5X16	LW-4	HSG1/8X8.0
		16-3T20JCT	●	●	1.000	1.000	5.000	1.535	0.952		3.551			HH5X25	LW-4	HSG1/8X8.0
0.157 (4mm)	0.787 (20mm)	KGD [®] L 12-4T20JCT	●		0.750	0.750	5.000	1.496	0.683	0.787 (20mm)	3.590	0.157 (4mm)	0.197 (5mm)	HH5X16	LW-4	HSG1/8X8.0
		16-4T20JCT	●	●	1.000	1.000	5.000	1.535	0.933		3.551			HH5X25	LW-4	HSG1/8X8.0
	1.000 (25.4mm)	KGD [®] L 16-4T25.4JCT	●	●	1.000	1.000	5.000	1.732	0.933	1.000 (25.4mm)	3.354			HH5X25	LW-4	HSG1/8X8.0

Choose an insert with a width that falls within the MIN and MAX parameters shown in table above.
Applicable Inserts See [Page 23](#)

● : Standard Item

KGD-JCT (External Grooving / Cut-Off)



Toolholder Dimensions (Metric Size)

Pressure Resistance: up to 2,175 psi

Groove Width (mm)	Max Grooving Depth (mm)	Part Number	Stock		Dimensions (mm)							Edge Width CW (mm)		Spare Parts		
			R	L	H=HF	B	LF	LH	WF	CDX	MHD	MIN	MAX	Clamp Screw	Wrench	Plug
3	6	KGD % 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		
	10	KGD % 2020K-3T10JCT	●	●	20	20		34.0	18.8	10	94.2			HH5X16		
		2525K-3T10JCT	●	●	25	25		23.8	94.5		HH5X25					
	20	KGD % 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 % 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		
	20	KGD % 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 % 2525K-4T25JCT	●	●	25	25		44.0	23.3	25	84.5			HH5X25		

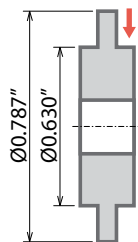
Choose an insert with a width that falls within the MIN and MAX parameters shown in table above.
Applicable Inserts See [Page 23](#)

● : Standard Item

Case Studies

Ring - 5120 (Equivalent)

Vc = 525 sfm
(n = 3,200 rpm)
D.O.C. = 0.098"
f = 0.0028 ipr
Wet (Water Soluble), Normal Pressure
KGDR2020K-3T10JCT
GDM3020M-025PM PR1225



Tool Life

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

Tool Life
x1.5

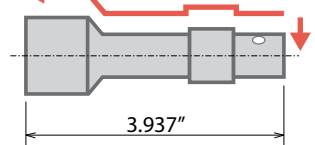
Competitor H
(External Coolant) **6,000 pcs / edge**

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

(User Evaluation)

Valve - Free Cutting Steel

Vc = 525 sfm
D.O.C. = 0.551"
f = 0.0047-0.0059 ipr
Wet (Water Soluble), Normal Pressure
KGDR2525K-3T20JCT
GDM3020M-040GM PR1535



Tool Life

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

Chip Control
Surface Finish
Good 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				●	○	●	○	
		K	Cast Iron				●	○	●	○	
		N	Non-ferrous Material						●	○	
		S	Titanium Alloy				●			○	
		H	Hardened Material (~40HRC)					○			
			Hardened Material (40HRC~)								
Shape	Part Number	Dimensions (in)			RE	CERMET	MEGA COAT NANO	MEGACOAT	DLC Coated Carbide	Carbide	
		Edge Width CW									
		inch	mm	Tolerance							
External Grooving & Traversing	General Purpose	GDM 2420N-020GM	0.094	2.4	±0.0012	0.008	●	●	●	●	
			3020N-020GM	0.118		3	0.008	●	●	●	●
		3020N-040GM	0.016				●	●	●	●	
		4020N-020GM	0.157	4		0.008	●	●	●	●	
		4020N-040GM				0.016	●	●	●	●	
		4020N-080GM	0.197	5		0.016	●	●	●	●	
	5020N-040GM	0.031			●	●	●	●			
	General Purpose 1-Edge	GDG 3120N-020GM	0.125	3.18	±0.0008	0.008	●	●	●	●	
			GDMS 2220N-020GM	0.087	2.2	±0.0012	0.008	●	●	●	●
		3020N-040GM	0.118	3	±0.0012	0.016	●	●	●	●	
		4020N-040GM	0.157	4	±0.0016	0.016	●	●	●	●	
	Low Feed	GDM 2420N-020GL	0.094	2.4	±0.0016	0.008	●	●	●	●	
3020N-020GL			0.118	3		0.008	●	●	●	●	
3020N-040GL		0.016				●	●	●	●		
4020N-020GL		0.157	4	0.008		●	●	●	●		
4020N-040GL				0.016		●	●	●	●		
5020N-040GL		0.197	5	±0.0016		0.016	●	●	●	●	
Grooving	Wiper Edge	GDG 2520N-020GS	0.098	2.5	±0.0008	0.008	●	●	●	●	
		3020N-020GS	0.118	3		0.008	●	●	●	●	
		3520N-020GS	0.138	3.5		0.008	●	●	●	●	
		4020N-040GS	0.157	4		0.016	●	●	●	●	
		5020N-040GS	0.197	5		0.016	●	●	●	●	
Full-R / Copying	Full-R / Copying	GDM 3020N-150R-CM	0.118	3	±0.0012	0.059	●	●	●	●	
		4020N-200R-CM	0.157	4	±0.0016	0.079	●	●	●	●	
		5020N-250R-CM	0.197	5	±0.0016	0.098	●	●	●	●	
Grooving & Cut-Off (High Feed)	1-Edge	GDM 2020N-020PH	0.079	2	±0.0012	0.008	●	●	●	●	
		3020N-030PH	0.118	3		0.012	●	●	●	●	
		4020N-030PH	0.157	4		0.012	●	●	●	●	
	GDMS 2020N-020PH	0.079	2	0.008		●	●	●	●	●	
		3020N-030PH	0.118	3		0.012	●	●	●	●	
		4020N-030PH	0.157	4		0.012	●	●	●	●	

CBN / PCD

Usage Classification		N	Non-ferrous Material				●		
		S	Titanium Alloy				●		
		H	Hardened Material (~40HRC)				●		
			Hardened Material (40HRC~)		●				
		-	Powdered Steel			●			
Shape	Part Number	Dimensions (in)			RE	MEGA COAT CBN	CBN	PCD	
		Edge Width CW							
		inch	mm	Tolerance					
Grooving	1-Edge	GDGS 2020N-020NB	0.079	2	±0.0012	0.008	●	●	●
		3020N-020NB	0.118	3		0.008	●	●	●
		3020N-040NB				0.016	●	●	●
		4020N-020NB	0.157	4		0.008	●	●	●
		4020N-040NB				0.016	●	●	●
		5020N-020NB	0.197	5		0.008	●	●	●
		5020N-040NB				0.016	●	●	●

CBN and PCD inserts sold in 1 piece boxes

Cut-Off

Usage Classification		P	Carbon Steel / Alloy Steel		●	○	●	○	●	○	
		M	Stainless Steel		●	○	●	○	●	○	
		N	Non-ferrous Material				●	○			
Shape	Part Number	Dimensions (in)			RE	MEGA COAT NANO	MEGACOAT	DLC Coated Carbide	Carbide		
		Edge Width CW									
		inch	mm	Tolerance							
Cut-Off	6° Lead Angle	GDM 2020N-020PM	0.079	2	±0.0012	0.008	●	●	●		
			2520N-020PM	0.098		2.5	0.008	●	●	●	
		3020N-025PM	0.118	3		0.010	●	●	●		
		4020N-030PM	0.157	4		0.012	●	●	●		
	1-Edge	GDM 2020R-020PM-6D	0.079	2	±0.0012	0.008	●	●	●		
			2520R-020PM-6D	0.098		2.5	0.008	●	●	●	
		3020R-025PM-6D	0.118	3		0.010	●	●	●		
	6° Lead Angle 1-Edge	GDMS 2020N-020PM	0.079	2	±0.0012	0.008	●	●	●		
			3020N-025PM	0.118		3	0.010	●	●	●	
	Cut-Off (Low Feed)	15° Lead Angle	GDM 2020N-003PF	0.079	2	±0.0016	0.001	●	●	●	
				2020N-015PF	0.098		2.5	0.006	●	●	●
			2520N-003PF	0.001				●	●	●	
2520N-015PF		0.118	3	0.006	●		●	●			
3020N-003PF				0.001	●		●	●			
3020N-015PF		0.006	●	●	●						
15° Lead Angle		GDM 2020 ^{R/L} -003PF-15D	0.079	2	±0.0016	0.001	●	●	●		
			2020R-015PF-15D	0.098		2.5	0.006	●	●	●	
		2520 ^{R/L} -003PF-15D	0.001				●	●	●		
15° Lead Angle		2520R-015PF-15D	0.098	2.5	±0.0016	0.006	●	●	●		
			3020 ^{R/L} -003PF-15D	0.118		3	0.001	●	●	●	
		3020R-015PF-15D	0.006				●	●	●		
15° Lead Angle	GDM 2020N-010PQ	0.079	2	±0.0012	0.004	●	●	●			
		2520N-010PQ	0.098		2.5	0.004	●	●	●		
	3020N-010PQ	0.118	3		0.004	●	●	●			
15° Lead Angle	GDM 2020R-010PQ-15D	0.079	2	±0.0012	0.004	●	●	●			
		2520R-010PQ-15D	0.098		2.5	0.004	●	●	●		
	3020R-010PQ-15D	0.118	3		0.004	●	●	●			
15° Lead Angle	GDG 2020N-005PG	0.079	2	±0.0008	0.002	●	●	●	●		
		2520N-005PG	0.098		2.5	0.002	●	●	●	●	
	3020N-005PG	0.118	3		0.002	●	●	●	●		
15° Lead Angle	GDG 2020R-005PG-15D	0.079	2	±0.0008	0.002	●	●	●	●		
		2520R-005PG-15D	0.098		2.5	0.002	●	●	●	●	
3020R-005PG-15D	0.118	3	0.002	●	●	●	●				

Inserts sold in 10 piece boxes

● : Standard Item

KTN-JCT

Coolant-Through Holders for Threading

Double Coolant Holes Reduce Defects and Lengthen Tool Life

Threading

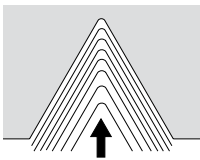


1 Improved Tool Life Lowers Machining Costs

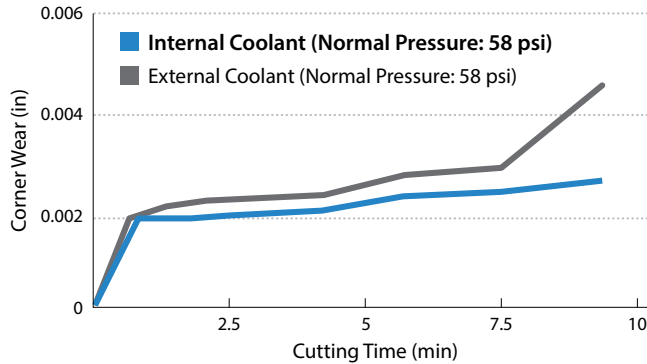
Coolant flows from the top of the clamp and provides efficient cooling of the cutting edge to prevent wear

Wear Resistance Comparison of Internal vs. External Coolant (Internal Evaluation)

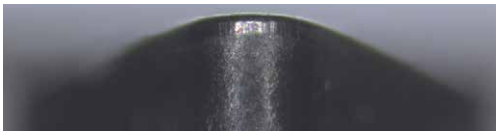
Radial Infeed



Cutting Conditions: $V_c = 490$ sfm
16ER150ISO-TQ (PR1215)
Workpiece: 4137



Internal Coolant (Normal Pressure: 0.4MPa)



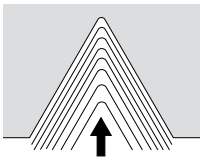
External Coolant (Normal Pressure: 0.4MPa)



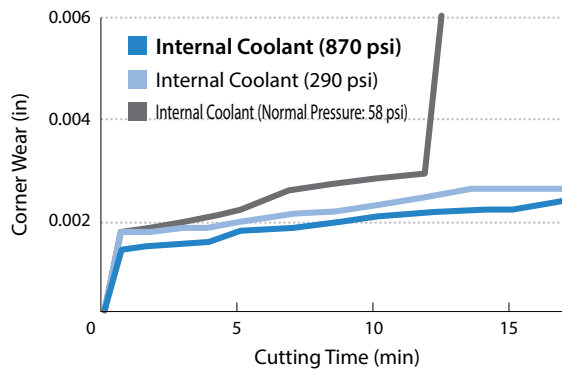
Switching to the KTN-JCT with internal coolant lengthens tool life

Wear Resistance Comparison at Different Pressures (Internal Evaluation)

Radial Infeed



Cutting Conditions: $V_c = 490$ sfm
16ER150ISO-TQ (PR1215)
Workpiece: 4137

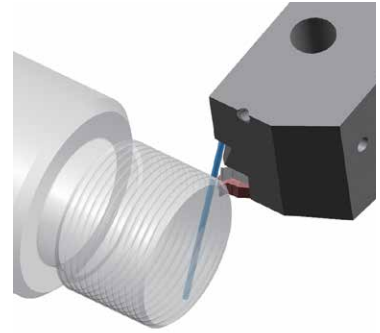


The higher the coolant pressure, the more efficient the wear resistance will be

2 Prevents Chip Recutting

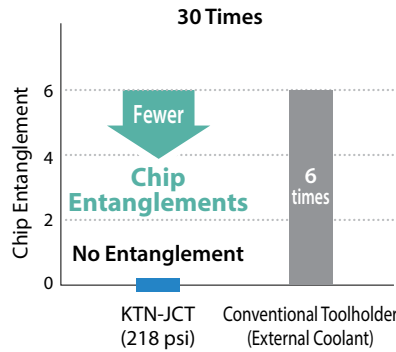
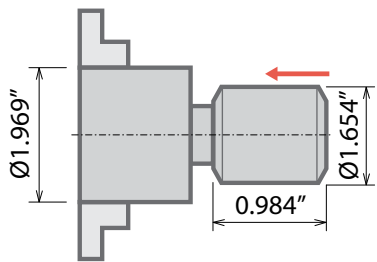
Coolant from the flank face of the insert smoothly evacuates chips away from the cutting edge and reduces chip clogging

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



Chip Evacuation Comparison (Internal Evaluation)

Cutting Conditions: $V_c = 490$ sfm 16ER150ISO Type (PR1215) Workpiece: 4137, 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 Internal Coolant
Tool Life	Steel	Better Wear Resistance
	Stainless Steel	Lower Cutting Resistance
Chip Evacuation	Steel	Prevents chip entanglement with 218 psi or higher
Chip Control	Steel	Breaks chips with 870 psi or higher
	Stainless Steel	

* To prevent chip entanglement, 218 psi or higher is recommended. (Steel)

* For chip breaking, high pressure coolant is recommended. (870 psi or higher for Steel and Stainless Steel)

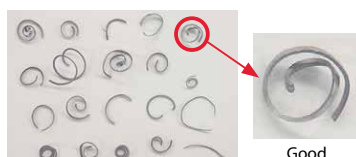
Case Studies

Arbor Bolt Free Cutting Steel

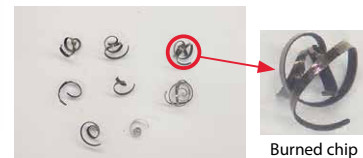
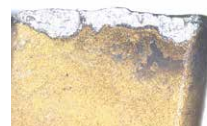
$n = 2,700$ rpm ($V_c = 480$ sfm)
 Number of pass: 7, Radial Infeed, Wet (Water Soluble)
 KTNR2020K-16-JCT, 16ER150ISO Type

Tool Life (1,250 pcs/edge)

KTN-JCT Toolholder (Internal Coolant: Normal Pressure)



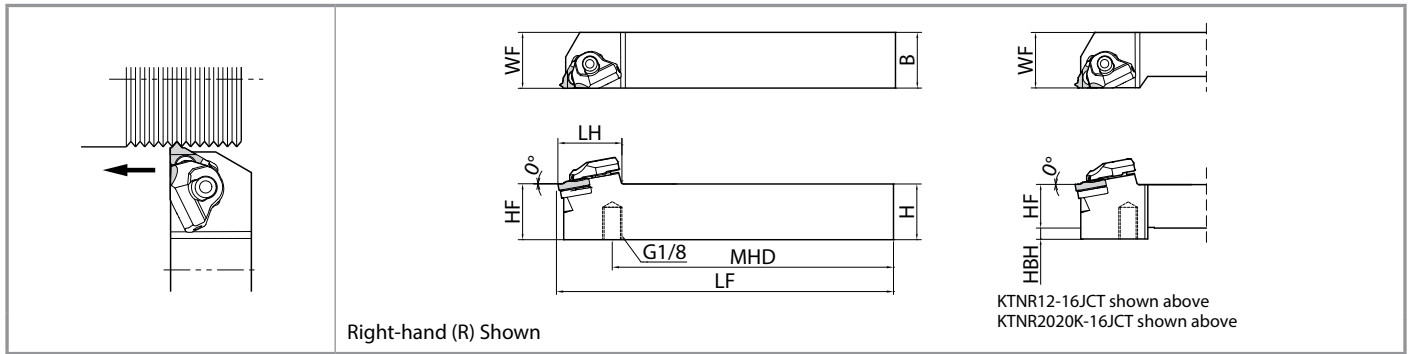
Competitor Toolholder J (External Coolant: Normal Pressure)



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: up to 2,175 psi

Part Number	Stock	Unit	Dimensions							Spare Parts					Applicable Inserts Page 26-27
			H=HF	HBH	B	WF	LF	LH	MHD	Clamp Set	Pipe Connection (*1 with O-Ring)	Wrench	Shim	Shim Screw	
KTNR 12-16JCT	●	in	0.750	0.234	0.750	0.875	5.000	1.122	4.042	CPS-5S-R-JCT	FP-12	FT-15	TN-32	SP3X8	16ER...
16-16JCT	●		1.000	-	1.000	1.000	6.000	1.122	5.042	CPS-5S-R-JCT	FP-12	FT-15	TN-32	SP3X8	16ER...
KTNR 2020K-16JCT	●	mm	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	CPS-5S-R-JCT	FP-12	FT-15	TN-32	SP3X8	16ER...

*1. O-ring (SS-035) is available to order separately
See [Page 5](#) for piping parts

● : Standard Item

TQ Chipbreaker

Molded Threading Chipbreaker

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

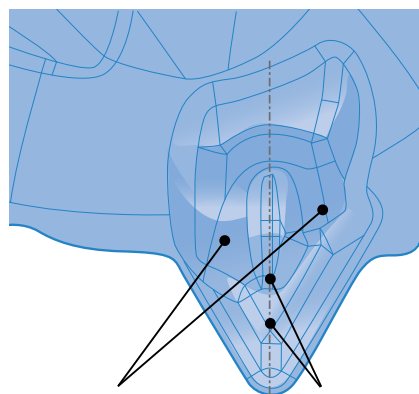


Stable Chip Control

Stable Chip Control with Asymmetric Chipbreaker Design

Chipbreaker Geometry

Stable chip control regardless of cutting direction

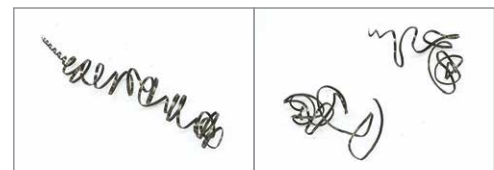
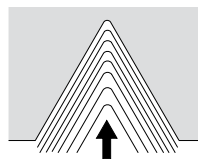


For Radial Infeed
Asymmetric dot design
controls chip-flow
direction

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

Cutting Force Comparison (Internal Evaluation)

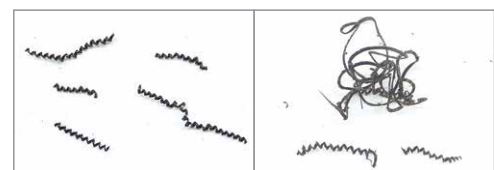
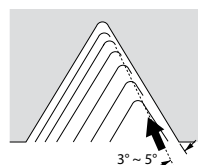
Radial Infeed



TQ Chipbreaker

Competitor K

Flank Compound Infeed



TQ Chipbreaker

Competitor K

Cutting Conditions: $V_c = 490$ sfm, D.O.C. = 0.005" (4th Pass), $L = 0.984$ " Wet, 16ER150ISO Insert
M45 x P1.5 Workpiece: 4131

Full Profile

Metric (M) 60° Full Profile

Usage Classification	P	Carbon Steel / Alloy Steel		●							
	M	Stainless Steel			●		○				
	K	Cast Iron								●	
○: 2nd Choice	N	Non-ferrous Material								●	
Part Number	Applicable Thread	Pitch		Cermet	MEGACOAT / MEGACOAT NANO			PVD Coated Carbide		Carbide	
		mm	TPI		TC60	PR1215	PR1515	PR1535	PR1115		GW15
		R	R	R	R	R	L	R			
16ER 100ISO-TF	M	1.00							●		
		1.25							●		
		1.50								●	
		1.75								●	
		2.00								●	
		2.50								●	
		3.00								●	
		16E% 050ISO	0.50							●	●
075ISO	0.75							●	●	●	
100ISO	1.00								●	●	
125ISO	1.25							●	●	●	
150ISO	1.50								●	●	
200ISO	2.00								●	●	
250ISO	2.50									●	
16ER 100ISO-TQ	M	1.00			●	●	●				
		1.25			●	●	●				
		1.50			●	●	●				
		2.00			●	●	●				

Unified (UN) 60° Full Profile

Usage Classification	P	Carbon Steel / Alloy Steel		●								
	M	Stainless Steel			●		○					
	K	Cast Iron								●		
○: 2nd Choice	N	Non-ferrous Material								●		
Part Number	Applicable Thread	Pitch		Cermet	MEGACOAT / MEGACOAT NANO			PVD Coated Carbide		Carbide		
		mm	TPI		TC60	PR1215	PR1515	PR1535	PR1115		GW15	
		R	R	R	R	R	L	R				
16ER 24UN-TF	UN	24								●		
		20								●		
		18									●	
		16									●	
		14									●	
		13									●	
		12									●	
		10									●	
		8									●	
		16ER 16UN	16			●						
		16ER 24UN-TQ	UNF	24			●	●	●			
				20			●	●	●			
				18			●	●	●			
				16			●	●	●			
				14			●	●	●			
				13			●	●	●			
12					●	●	●					
10					●	●	●					
8			●	●	●							

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

Usage Classification	P	Carbon Steel / Alloy Steel		●						
	M	Stainless Steel			●		○			
	K	Cast Iron								●
○: 2nd Choice	N	Non-ferrous Material								●
Part Number	Applicable Thread	Pitch		Cermet	MEGACOAT / MEGACOAT NANO			PVD Coated Carbide		Carbide
		G(PF)	W		TC60	PR1215	PR1515	PR1535	PR1115	
		TPI	R	R	R	R	L	R		
16ER 19W-TF	G(PF)	19	-							●
		-	16							●
		14	14							●
		11	11							●
16ER 19W-TQ	W	19	-		●	●	●			
		14	14		●	●	●			
		11	11		●	●	●			

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

Usage Classification	P	Carbon Steel / Alloy Steel		●						
	M	Stainless Steel			●		○			
	K	Cast Iron								●
○: 2nd Choice	N	Non-ferrous Material								●
Part Number	Applicable Thread	Pitch		Cermet	MEGACOAT / MEGACOAT NANO			PVD Coated Carbide		Carbide
		mm	TPI		TC60	PR1215	PR1515	PR1535	PR1115	
		R	R	R	R	R	L	R		
16ER 28BSPT-TF	R(PT)	28								●
		19								●
		14								●
		11								●
16ER 28BSPT	(BSPT)	28								●
		19								●
		14								●
		11								●
16ER 19BSPT-TQ	-	19			●	●	●			
		14			●	●	●			
		11			●	●	●			

American National Tapered Pipe (NPT) 60° Full Profile

Usage Classification	P	Carbon Steel / Alloy Steel		●						
	M	Stainless Steel			●		○			
	K	Cast Iron								●
○: 2nd Choice	N	Non-ferrous Material								●
Part Number	Applicable Thread	Pitch		Cermet	MEGACOAT / MEGACOAT NANO			PVD Coated Carbide		Carbide
		mm	TPI		TC60	PR1215	PR1515	PR1535	PR1115	
		R	R	R	R	R	L	R		
16ER 19W-TF	NPT	19	-							●
		-	16							●
		11	11							●

TC60 (Threading) are sold in 10 piece boxes.
Others are sold in 5 piece boxes.

16ER -TQ: With Chipbreaker
-TF: Without Chipbreaker
(TF Cutting Edge)
No Indication: Without Chipbreaker

● : Standard Item

Partial Profile

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

Usage Classification	P	Carbon Steel / Alloy Steel		●								
	M	Stainless Steel			●	○						
	K	Cast Iron							●			
○: 2nd Choice	N	Non-ferrous Material							●			
Part Number	Applicable Thread	Pitch		Cermet	MEGACOAT / MEGACOAT NANO			PVD Coated Carbide	Carbide			
		mm	TPI		TC60	PR1215	PR1515			PR1535	PR1115	GW15
					R	R	R			R	R	R
16ER A60-TF G60-TF AG60-TF	M	0.5 ~ 1.5	48 ~ 16					●				
		1.75 ~ 3	14 ~ 8					●				
		0.5 ~ 3	48 ~ 8					●				
16ER A60 G60 AG60	UN	0.5 ~ 1.5	48 ~ 16						●			
		1.75 ~ 3	14 ~ 8						●			
		0.5 ~ 3	48 ~ 8						●			
16ER A60-TQ G60-TQ AG60-TQ	UNF	0.5 ~ 1.5	48 ~ 16		●	●	●					
		1.75 ~ 3	14 ~ 8		●	●	●					
		0.5 ~ 3	48 ~ 8		●	●	●					

30° Trapezoidal (Tr)
30° Partial Profile

Usage Classification	P	Carbon Steel / Alloy Steel							●			
	M	Stainless Steel							●			
	K	Cast Iron										
○: 2nd Choice	N	Non-ferrous Material										
Part Number	Applicable Thread	Pitch		Cermet	MEGACOAT / MEGACOAT NANO			PVD Coated Carbide	Carbide			
		mm	TPI		TC60	PR1215	PR1515			PR1535	PR1115	GW15
					R	R	R			R	R	R
16ER 200TR 300TR	Tr	2	-						●			
		3	-						●			

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

Usage Classification	P	Carbon Steel / Alloy Steel		●								
	M	Stainless Steel			●	○						
	K	Cast Iron							●			
○: 2nd Choice	N	Non-ferrous Material							●			
Part Number	Applicable Thread	Pitch		Cermet	MEGACOAT / MEGACOAT NANO			PVD Coated Carbide	Carbide			
		G(PF) R(PT)	W		TC60	PR1215	PR1515			PR1535	PR1115	GW15
					R	R	R			R	R	R
		TPI			R	R	R			R	R	R
16ER A55-TF G55-TF AG55-TF	G(PF) R(PT)	28, 19	40 ~ 16						●			
		14, 11	14 ~ 8						●			
		28 ~ 11	40 ~ 8						●			
16ER A55 G55 AG55	W	28, 19	40 ~ 16						●			
		14, 11	14 ~ 8						●			
		28 ~ 11	40 ~ 8						●			

TC60 (Threading) are sold in 10 piece boxes.
Others are sold in 5 piece boxes.

16ER -TQ: With Chipbreaker
 -TF: Without Chipbreaker
 (TF Cutting Edge)
 No Indication: Without Chipbreaker

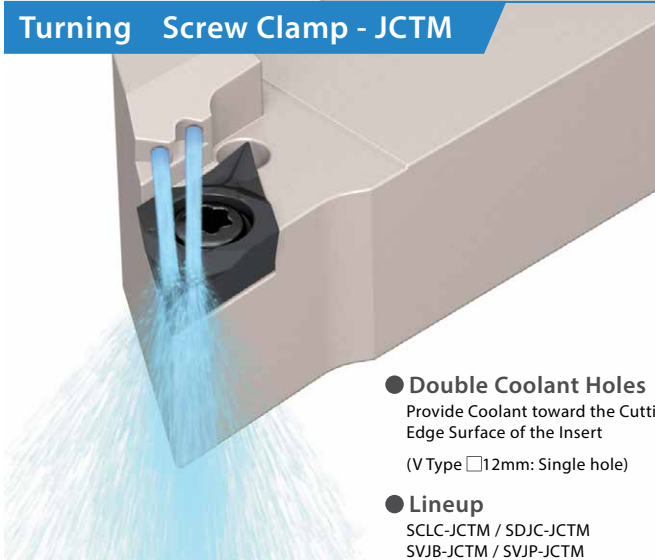
● : Standard Item

JCTM Direct Coolant Series for Small Parts Machining



Large Lineup for Various Tooling Operations

Turning Screw Clamp - JCTM



- **Double Coolant Holes**
Provide Coolant toward the Cutting Edge Surface of the Insert
(V Type □12mm: Single hole)
- **Lineup**
SCLC-JCTM / SDJC-JCTM
SVJB-JCTM / SVJP-JCTM

Coolant Supply Structure Comparison (Internal Evaluation)

(Image)

Screw Clamp - JCTM	Competitor A
Discharges coolant toward the rake surface of insert	Discharges coolant down onto the chip forcing the chip into the part
Chip control performance ✓ Provides stable chip curls	Chip control performance Chip becomes unstable
Cooling effect ✓ The cutting edge stays cool	Cooling effect Chip can cause interference with the workpiece

External Grooving KGBF-JCTM

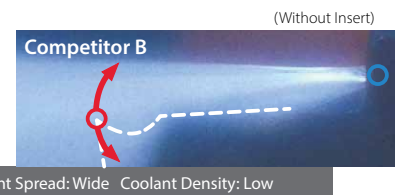
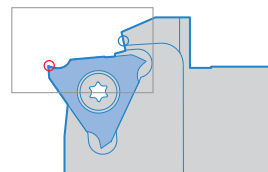


- **Provides Coolant toward the Rake Surface of Insert**
- **Specification**
Edge Width: 0.010" - 0.118" (0.25mm - 3mm)
Ground Chipbreaker / Molded GL Chipbreaker
Maximum groove depth: 0.118" (3mm)

Coolant Discharge Comparison (Internal evaluation)

Small chips and better cooling of the insert leads to longer tool life.

- Cutting Edge
- Coolant Hole



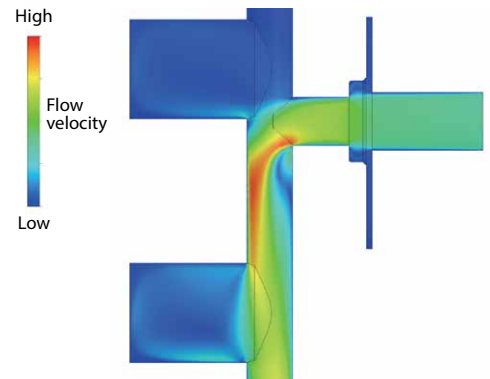
Coolant Channel



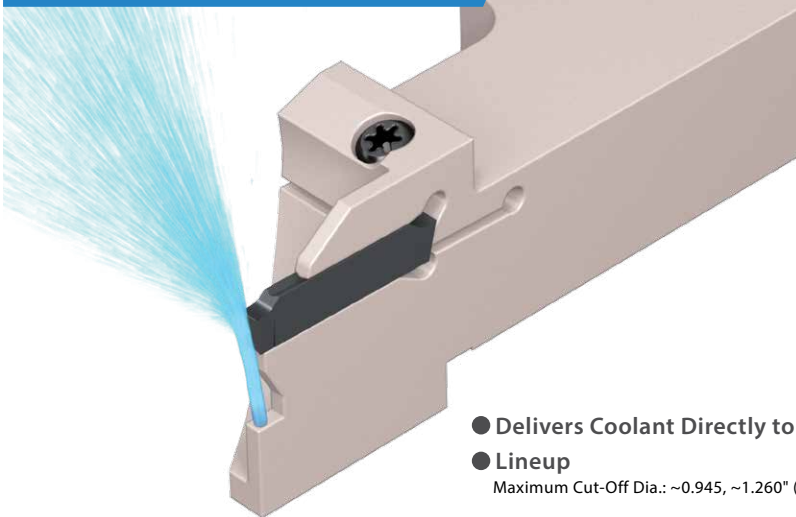
Optimized Coolant Supply

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

Analysis Image (Internal Evaluation)



Cut-Off KGD-JCTM



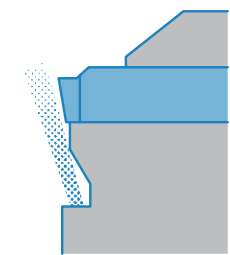
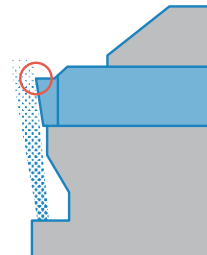
Coolant Discharge Comparison (Image)

KGD-JCTM

Cooling the cutting edge leads to longer tool life

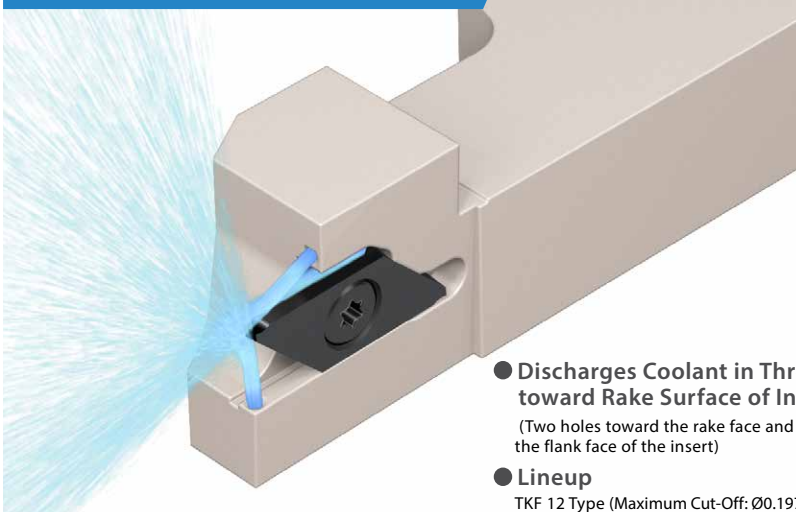
Competitor C

Coolant does not flow directly toward the cutting edge



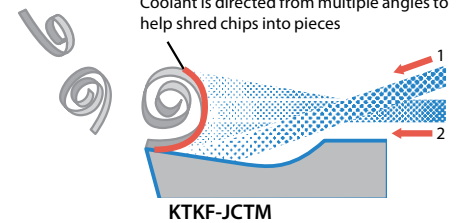
- Delivers Coolant Directly to front Flank Face
- Lineup
Maximum Cut-Off Dia.: ~0.945, ~1.260" (~24mm, ~32mm)

Cut-Off KTKF-JCTM

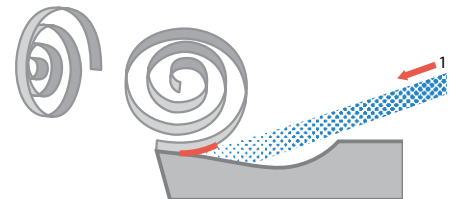


Coolant Discharge Structure Comparison (Image)

Coolant is directed from multiple angles to help shred chips into pieces



KTKF-JCTM



Competitor D

- Discharges Coolant in Three Directions toward Rake Surface of Insert
(Two holes toward the rake face and one hole toward the flank face of the insert)
- Lineup
TKF 12 Type (Maximum Cut-Off: $\varnothing 0.197$ " - $\varnothing 0.472$ " / $\varnothing 5$ mm - $\varnothing 12$ mm)
TKF 16 Type (Maximum Cut-Off: $\varnothing 0.630$ " / $\varnothing 16$ mm)



KYOCERA Precision Tools

102 Industrial Park Road
Hendersonville, NC 28792
Customer Service | 800.823.7284 - Option 1
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