

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

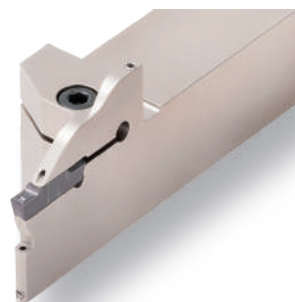
Turning
Double Clamp-JCT



Shallow Grooving
KGBA-JCT



Grooving / Cut-off
KGD-JCT



Threading
KTN-JCT



Great for High Pressure Coolant

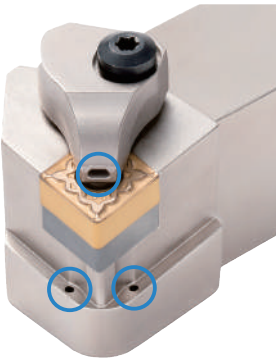
JCT Series

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

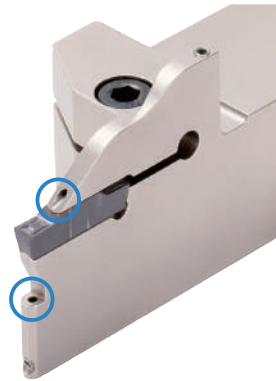
○ : Coolant Hole



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

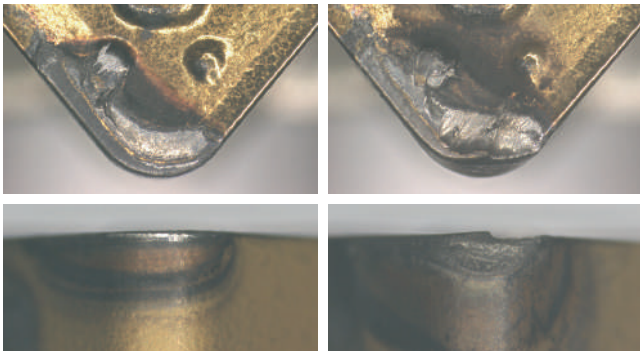
Discharges Coolant towards the Cutting Edge
Internal Coolant Provides Longer Tool Life and Excellent Chip Control

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

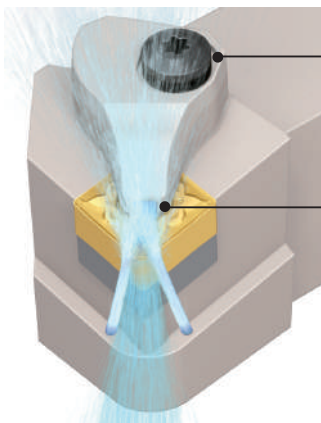
Great for High Pressure Coolant, Toolholder for Turning

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

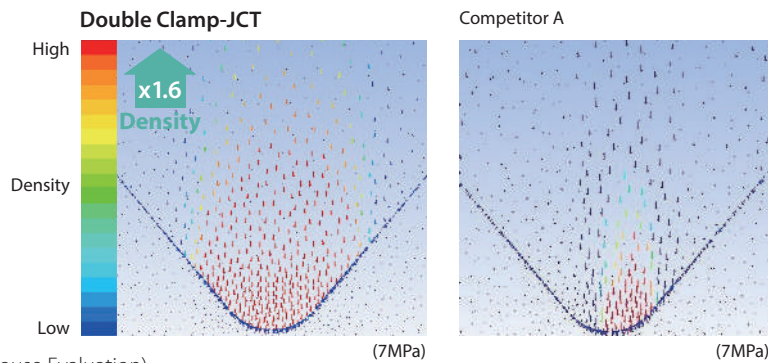
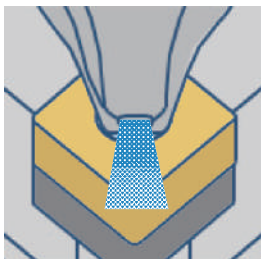
Firm insert clamp and easy to use in single operations
High-density coolant supply close to the cutting edge

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

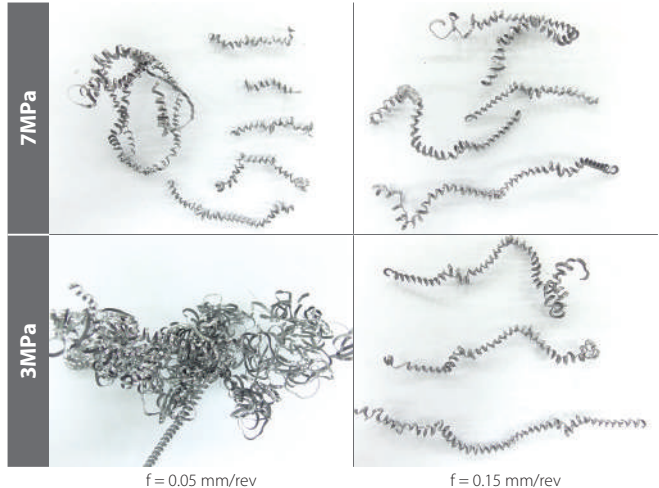


Chip Control Comparison (In-house Evaluation)

Double Clamp-JCT



Competitor A



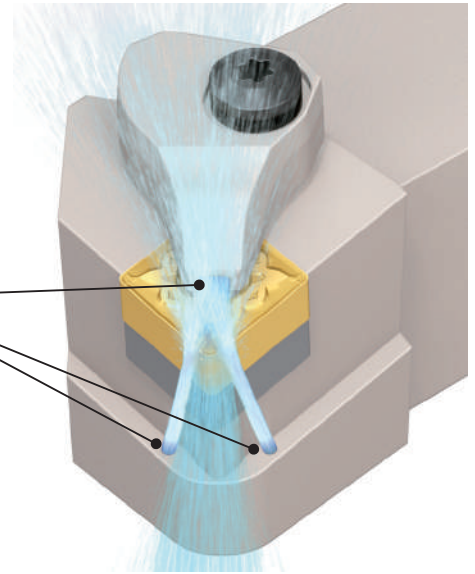
Cutting Conditions: $V_c = 150 \text{ m/min}$, $a_p = 0.5 \text{ mm}$, Wet, CNMG120408 Type Workpiece: SCM415 External Turning

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

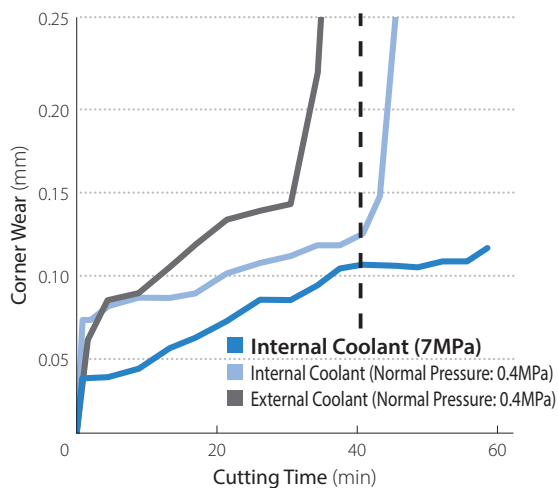
Longer tool life and high-speed machining with improved wear resistance

Discharges Coolant in Three Directions
The Cutting Edge Stays Cool

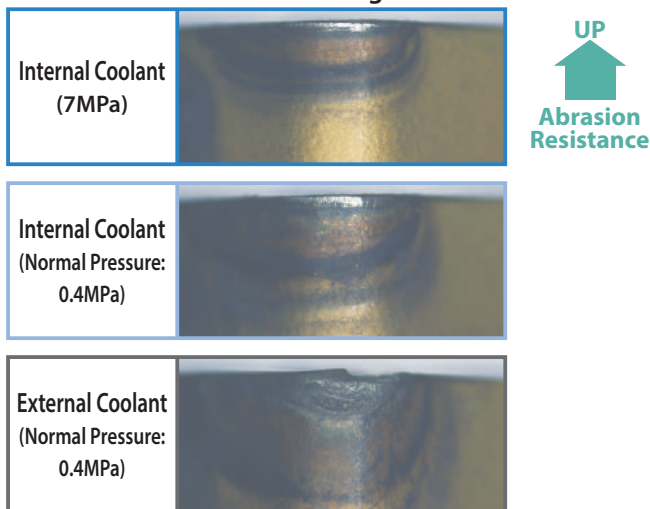


Wear Resistance Comparison (In-house Evaluation)

Alloy Steel (SCM435)

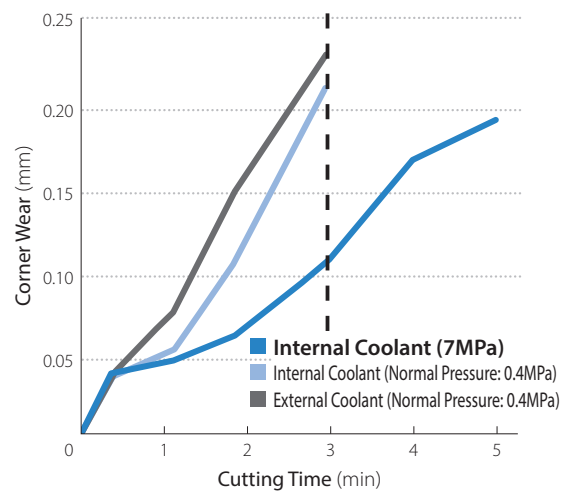


After Machining 42.2 min

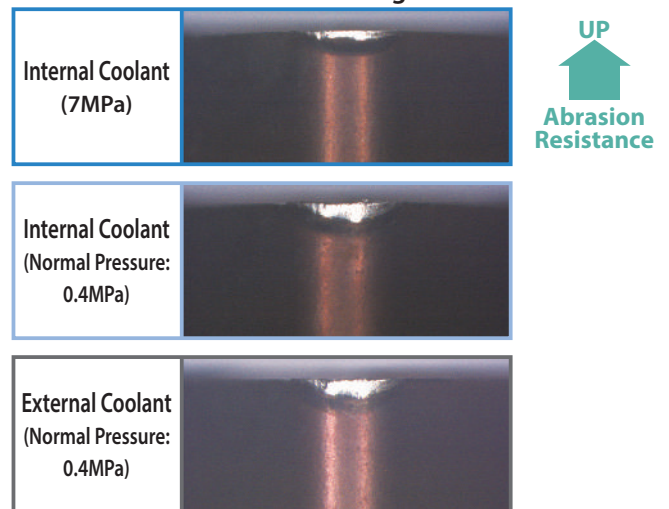


Cutting Conditions: $V_c = 250$ m/min, $f = 0.3$ mm/rev, $a_p = 2$ mm, Wet CNMG120408 Type External Turning

Heat-resistant Alloys (Inconel®718)



After Machining 3 min



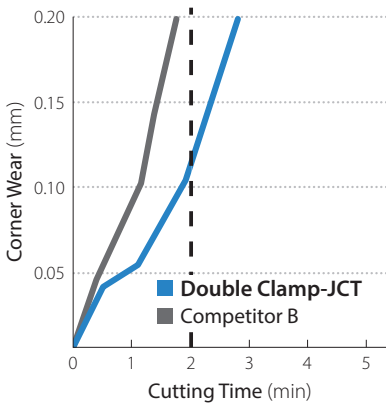
Cutting Conditions: $V_c = 80$ m/min, $f = 0.15$ mm/rev, $a_p = 0.5$ mm, Wet CNMG120408 Type External Turning

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

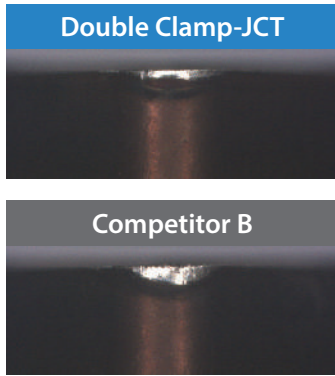
Wear Resistance Comparison (In-house Evaluation)

Double Clamp-JCT maintains better wear resistance than competitors

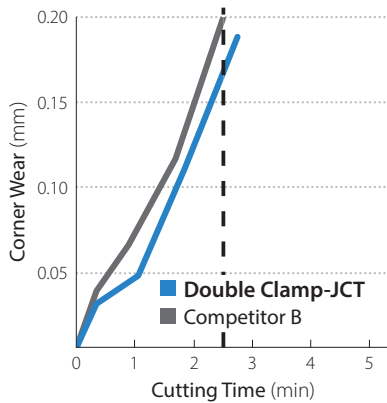
Internal Coolant (Normal Pressure: 0.4MPa)



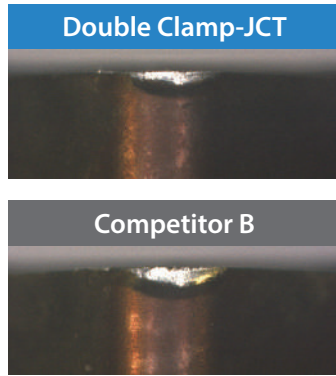
After Machining 2 min



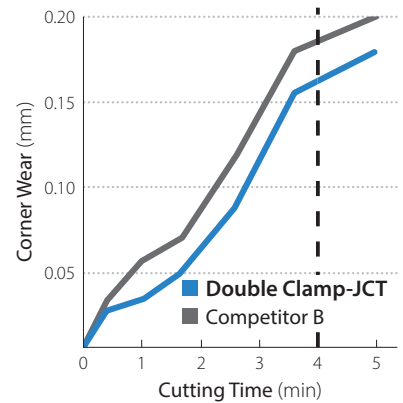
Internal Coolant (4MPa)



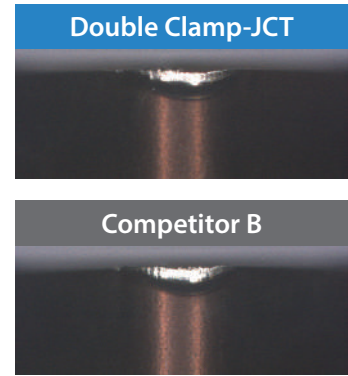
After Machining 2.5 min



Internal Coolant (7MPa)



After Machining 4 min

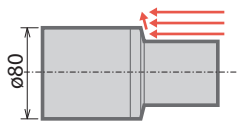


Cutting Conditions: $V_c = 80$ m/min, $f = 0.15$ mm/rev, $a_p = 0.5$ mm, Wet, CNMG120408 Type Workpiece: Inconel*718-equivalent External Turning

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

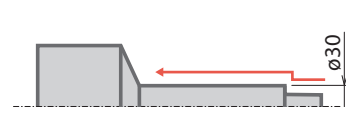
DCLN-JCT Toolholder (Internal Coolant: 4MPa) **100 pcs / edge** **x1.25**

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 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



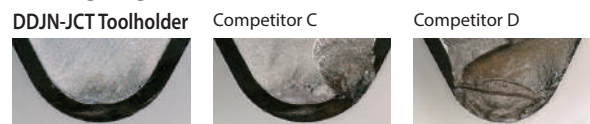
Tool Life

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

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

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

Cutting Edge

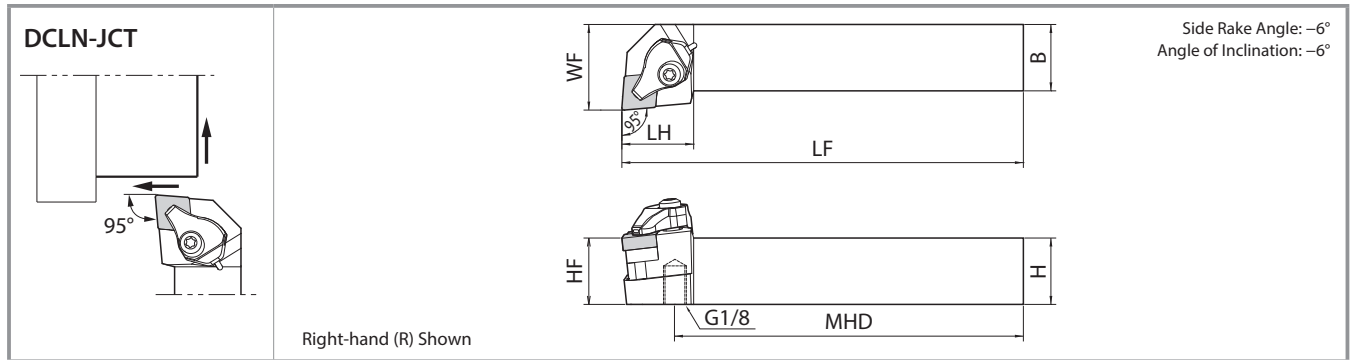


The DDJN-JCT toolholder reduced sudden fracturing and defects with stable machining and maintained 1.4 times longer tool life

(User evaluation)

(User evaluation)

Double Clamp-JCT (Turning)

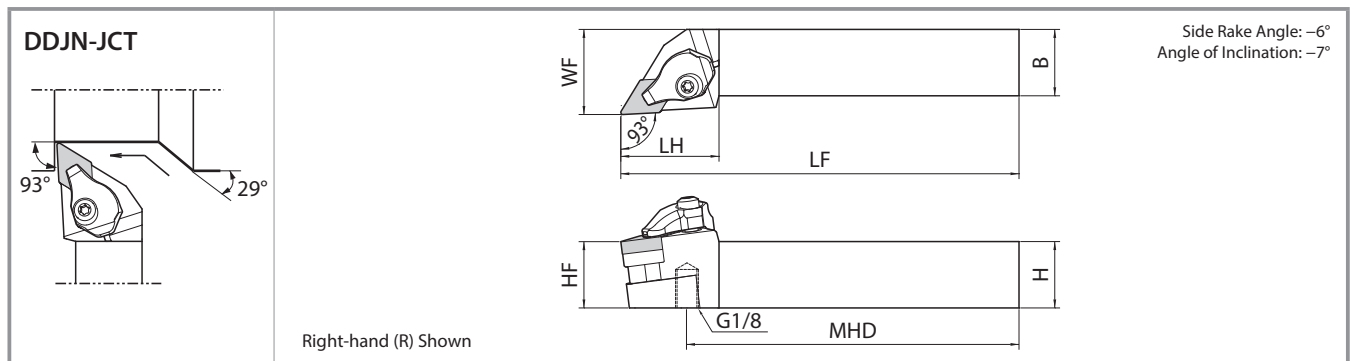


Toolholder Dimensions

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)

● : Standard Stock

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)

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

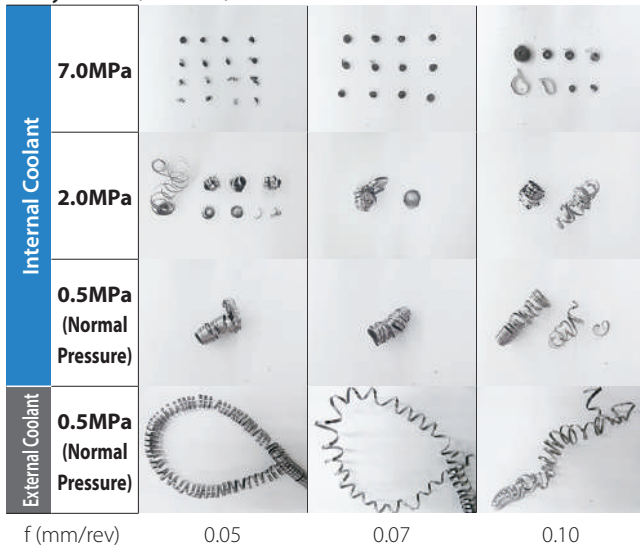
1 Excellent Chip Control

Ground Chipbreaker

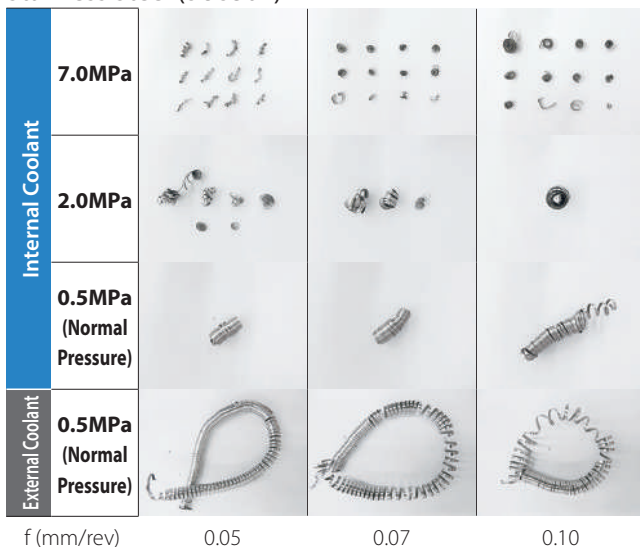
Chip Control Comparison (In-house Evaluation)

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

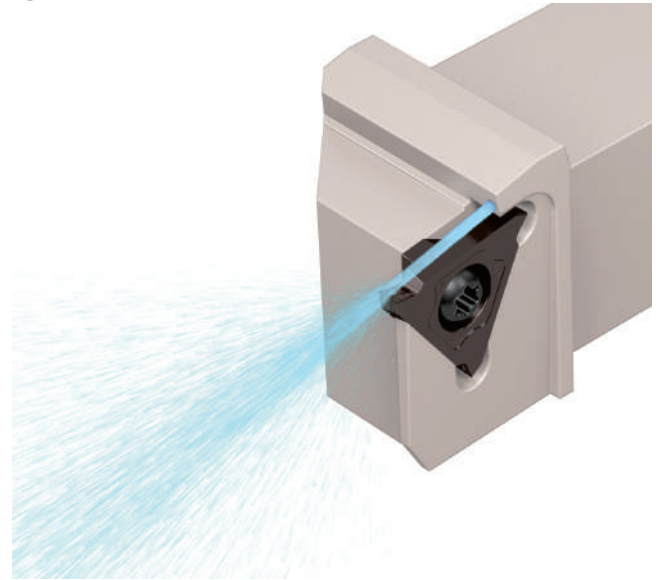
Alloy Steel (SCr420)



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

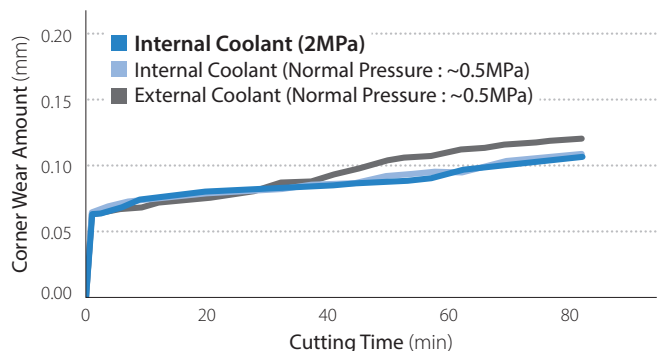
Coolant Direction

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

2 Superior Cooling Action Improves Tool Life

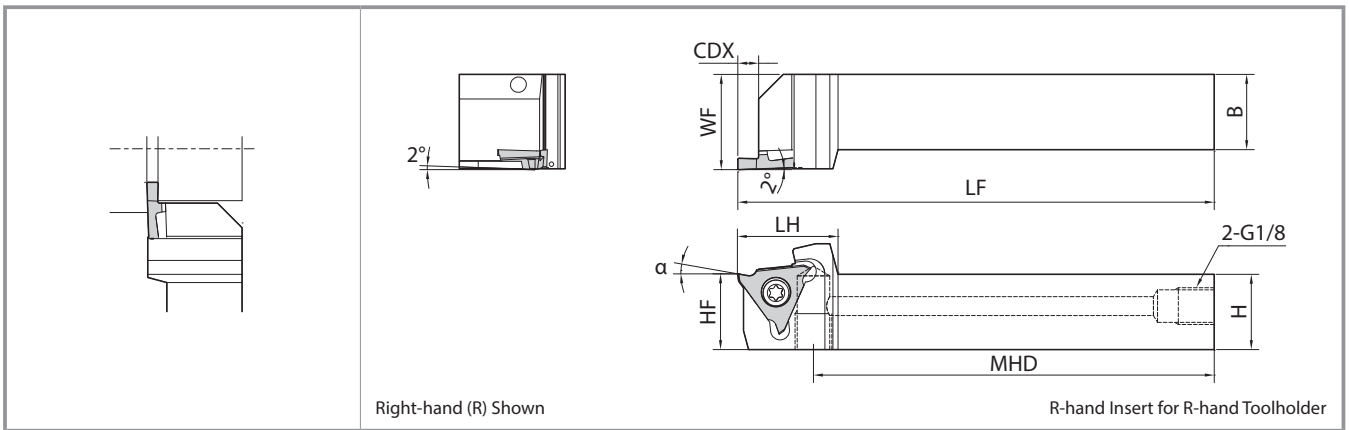
Internal Coolant Provides Better Corner Wear Resistance

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)



Toolholder Dimensions

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

Please see P.2 for piping parts. ● : Standard Stock
 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

Recommended Grade for Steel

General Purpose : PR1215

(Surface Finish Oriented) : TN620

for Stable Machining : PR1625

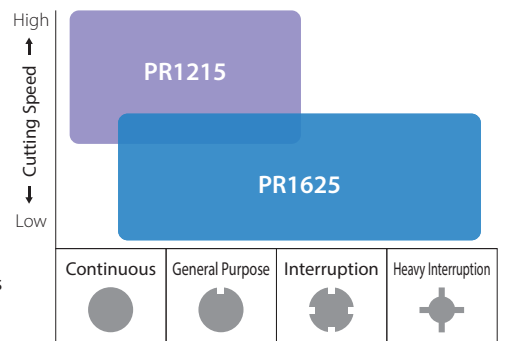
PR1625

NEW



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

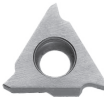
Long tool life is achieved in the interrupted grooving including drum and shaft of transmission engine parts.

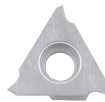


KGBA-JCT Applicable Inserts

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)			MEGACOAT Cermet	Cermets		MEGACOAT		PVD Coated Carbide			Carbide	Applicable Toolholders
	CW	CDX	RE		TC40N	TN90	PR1215	PR1625	PR1115	PR905	PR930	KW10	
	Edge Width (W)	Available Grooving Depth	Corner-R										
GBA32 R/L	033-005	0.33	0.8										
	050-005	0.50	1.0										
	050-005	0.50	1.2										
	075-005	0.75	0.05										
	095-005	0.95	0.05										
	100-005	1.00	2.0										
	110-005	1.10	2.0										
	120-005	1.20	2.0										
	125-020	1.25	0.05										
	130-020	1.30	0.05										
	140-020	1.40	2.5										
	145-020	1.45	2.0										
	150-020	1.50	2.0										
	160-020	1.60	2.5										
	170-020	1.70	0.2										
	175-020	1.75	2.0										
	200-020	2.00	2.5										
	225-020	2.25	0.2										
	250-020	2.50	0.2										
	300-020	3.00	0.2										
GBA43 R/L	125-010	1.25	2.0										
	125-020	1.25	0.1										
	140-020	1.40	3.5										
	145-020	1.45	2.0										
	150-010	1.50	0.1										
	150-020	1.50	0.2										
	170-020	1.70	0.2										
	175-020	1.75	3.5										
	185-020	1.85	0.2										
	195-020	1.95	0.2										
	200-010	2.00	0.1										
	200-020	2.00	0.2										
	225-020	2.25	0.2										
	230-020	2.30	0.2										
	250-010	2.50	5.0										
	250-030	2.50	4.0										
	265-030	2.65	5.0										
	280-030	2.80	4.0										
	300-010	3.00	5.0										
	300-030	3.00	4.0										
325-030	3.25	0.3											
330-030	3.30	0.3											
350-010	3.50	0.1											
350-030	3.50	0.3											
400-010	4.00	0.1											
400-040	4.00	0.4											
430-040	4.30	0.4											
450-040	4.50	0.4											
480-040	4.80	0.4											

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)			MEGACOAT Cermet	Cermets		MEGACOAT		PVD Coated Carbide			Carbide	Applicable Toolholders
	CW	CDX	RE		TC40N	TN90	PR1215	PR1625	PR1115	PR905	PR930	KW10	
	Edge Width (W)	Available Grooving Depth	Corner-R										
GBA32 R/L	050-005F	0.50	1.0										
	075-005F	0.75	0.05										
	095-005F	0.95	0.05										
	100-005F	1.00	2.0										
	125-020F	1.25	0.2										
	145-020F	1.45	0.2										
	150-020F	1.50	0.2										
	175-020F	1.75	0.2										
	200-020F	2.00	2.5										
	250-020F	2.50	2.5										
	GBA43 R/L	125-020F	1.25	2.0									
		145-020F	1.45	0.2									
150-020F		1.50	0.2										
175-020F		1.75	0.2										
185-020F		1.85	3.5										
200-020F		2.00	0.3										
230-020F		2.30	0.3										
250-030F		2.50	0.3										
265-030F		2.65	0.3										
280-030F		2.80	4.0										
300-030F		3.00	0.4										
330-030F		3.30	0.4										
350-030F	3.50	0.4											
400-040F	4.00	0.4											
430-040F	4.30	0.4											
450-040F	4.50	0.4											
480-040F	4.80	0.4											

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)

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

KGD-JCT

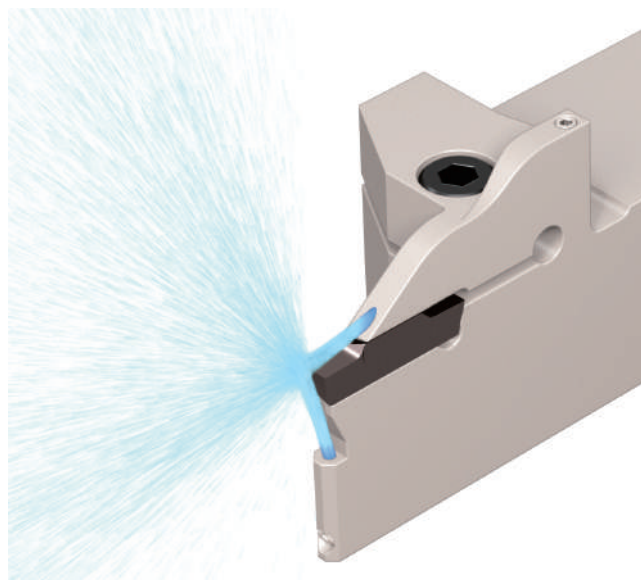
Coolant is Directed from the Rake Surface and the Flank Face of the Insert

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

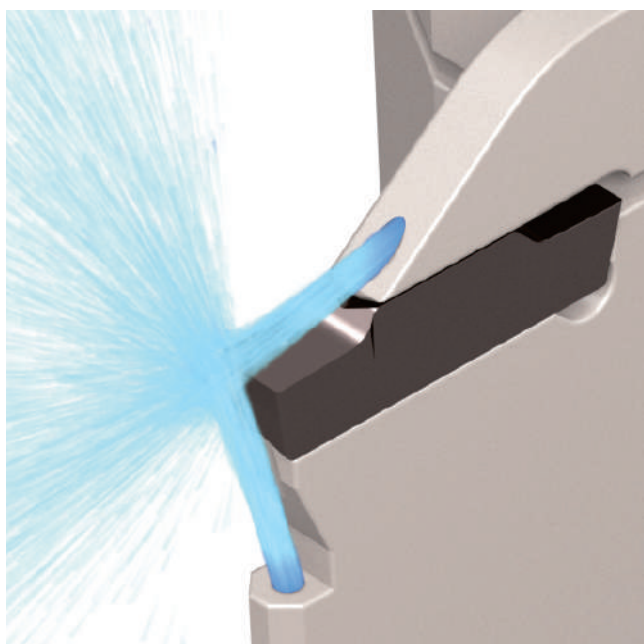
Excellent Chip Control and Long Tool Life



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)

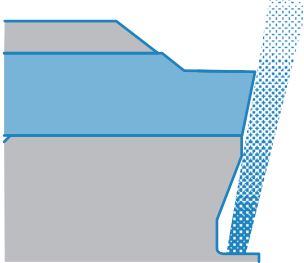


Cutting Conditions: $V_c = 150 \text{ m/min}$, $f = 0.05 \text{ mm/rev}$, $d = 8 \text{ mm}$, Wet
Edge Width 4 mm Workpiece: SCM415 Grooving

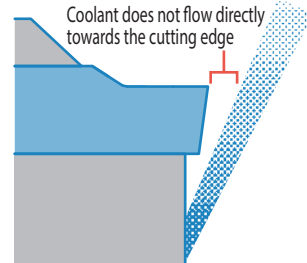
2 Cooling the Cutting Edge Leads to Longer Tool Life

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

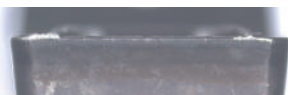
KGD-JCT



Competitor E

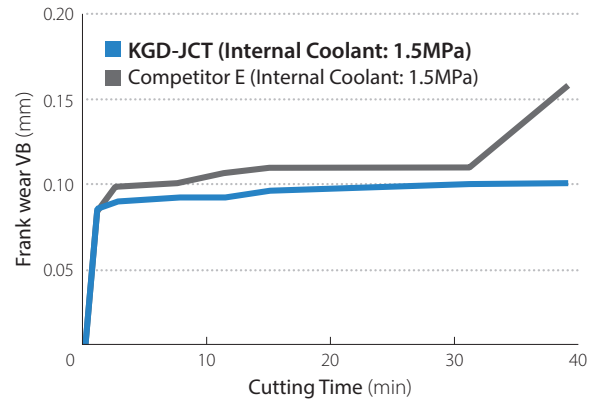


After Machining 39 min



Defect

Wear Resistance Comparison (In-house Evaluation)



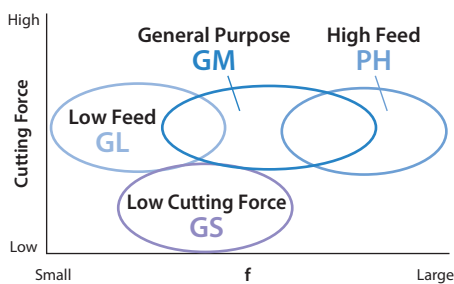
Cutting Conditions: $V_c = 180$ m/min, $f = 0.15$ mm/rev, $d = 9$ mm, Wet Edge Width 4 mm Workpiece: SCM415 Grooving

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

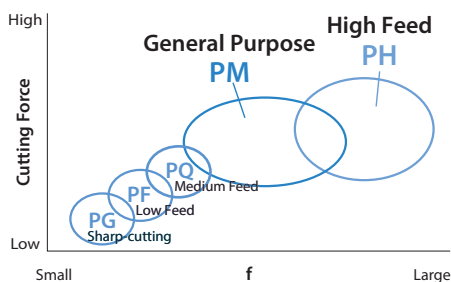
3 Large Chipbreaker Lineup for Various Machining Applications

Application Maps

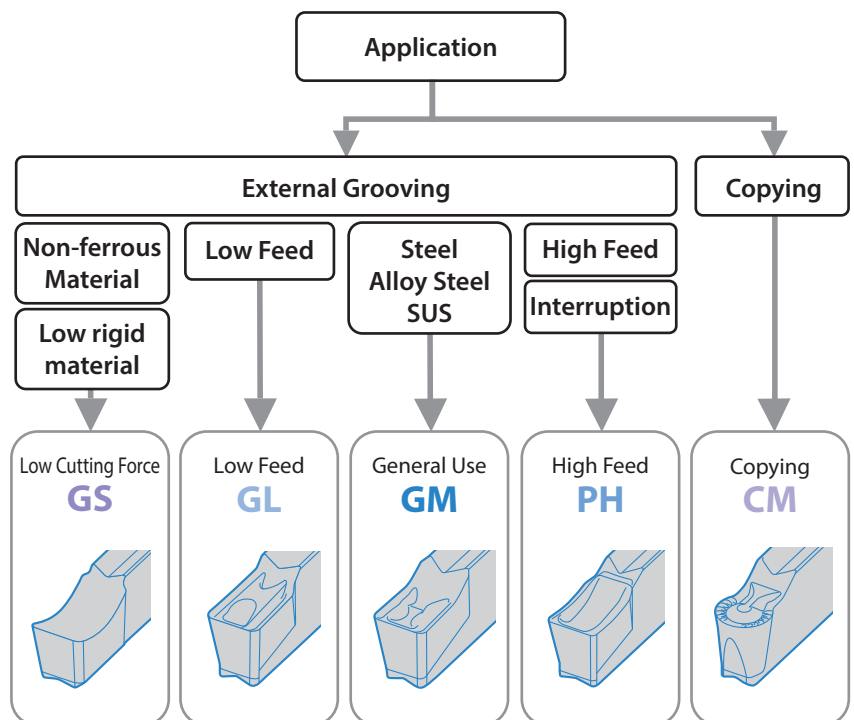
External Grooving and Traversing



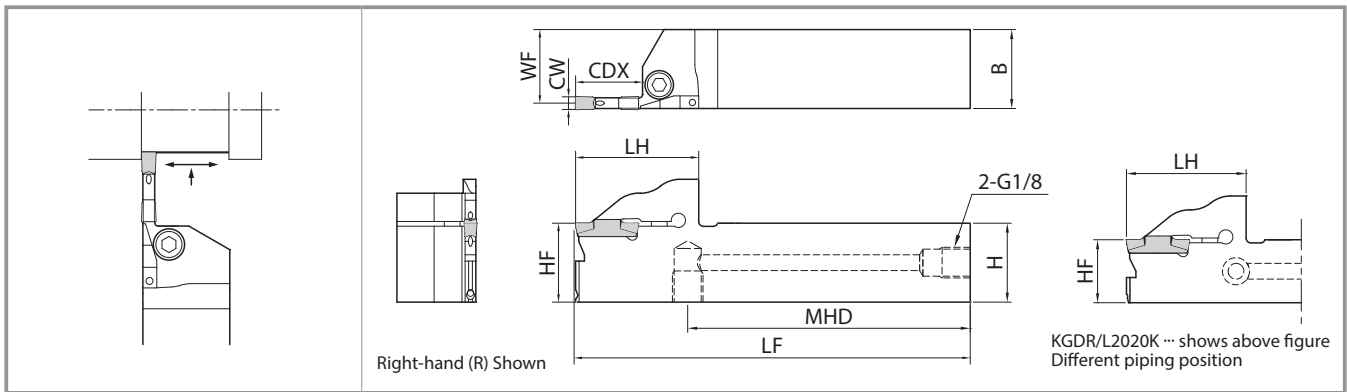
Cut-off



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			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			23.3		89.5			HH5X25		
	25	KGD R/L 2525K-4T25JCT	●	●	25	25		44.0	23.3	25	84.5			HH5X25		

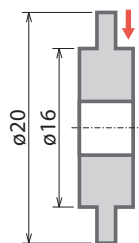
Please see P.2 for piping parts.

● : Standard Stock

Case Studies

Ring SCr415-equivalent

Vc = 160 m/min
 (n = 3,200 min⁻¹)
 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

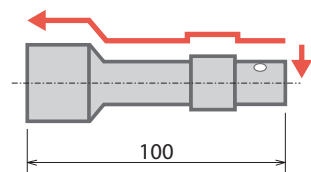
Competitor H
 (External Coolant) **6,000 pcs / edge**

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						☻
H	S	Titanium Alloy			☉			☉
	Hardened Material (~ 40HRC)				○			
Shape	Description	Dimensions (mm)		Cermet	MEGA COAT NANO	MEGACOAT	Carbide	
		Edge Width (CW)	re					
General Purpose	GDM 3020N-020GM 3020N-040GM 4020N-020GM 4020N-040GM 4020N-080GM 5020N-040GM 5020N-080GM	3.0	±0.03	0.2	●	●	●	●
General Use 1-edge	GDMS 3020N-040GM 4020N-040GM 5020N-080GM	3.0	±0.03	0.4	●	●	●	●
Low Feed	GDM 3020N-020GL 3020N-040GL 4020N-020GL 4020N-040GL 5020N-040GL	3.0	±0.03	0.2	●	●	●	●
Grooving Wiper Edge	GDG 3020N-020GS 3520N-020GS 4020N-040GS 5020N-040GS	3.0	±0.02	0.2	●	●	●	●
Full-R / Copying	GDM 3020N-150R-CM 4020N-200R-CM 5020N-250R-CM	3.0	±0.03	1.5	●	●	●	●
Grooving and Cut-Off (High Feed)	GDM 3020N-030PH 4020N-030PH	3.0	±0.03	0.3		●	●	●
1-edge	GDMS 3020N-030PH 4020N-030PH	3.0	±0.03	0.3		●	●	●

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				☉	☉	
	Hardened Material (~ 40HRC)					○		
Shape	Description	Dimensions (mm)		MEGA COAT NANO	MEGACOAT	DLC Coated Carbide	Carbide	
		Edge Width (CW)	re					
Handed Insert shows Right-hand			Tolerance	re				
Cut-off	GDM 3020N-025PM 4020N-030PM	3.0	±0.03	0.25	●	●	●	
		4.0		0.3	●	●	●	
	6° Lead Angle GDM 3020R-025PM-6D	3.0	±0.03	0.25	R	R	R	
		4.0		0.3	R	R	R	
	1-edge GDMS 3020N-025PM	3.0	±0.03	0.25	●	●	●	
		4.0		0.3	●	●	●	
6° Lead Angle 1-edge GDMS 3020R-025PM-6D	3.0	±0.03	0.25	R	R	R		
	4.0		0.3	R	R	R		
Cut-off (Low Feed)	GDM 3020N-003PF 3020N-015PF	3.0	±0.04	0.03	●	●	●	
				0.15	●	●	●	
15° Lead Angle GDM 3020 ^{R/L} -003PF-15D 3020R-015PF-15D	3.0	±0.04	0.03	●	●	●		
			0.15	R	R	R		
Cut-off (Medium Feed)	GDM 3020N-010PQ	3.0	±0.03	0.1	●	●	●	
15° Lead Angle GDM 3020R-010PQ-15D	3.0	±0.03	0.1	R	R	R		
Cut-off (Low Cutting Force)	GDG 3020N-005PG 3020R-005PG-15D	3.0	±0.02	0.05	●	●	●	●
					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			
Grooving 1-edge	GDGS 3020N-020NB 3020N-040NB 4020N-020NB 4020N-040NB 5020N-020NB 5020N-040NB	3.0	±0.03	0.2	●	●
		4.0		0.2	●	●
		5.0		0.2	●	●

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

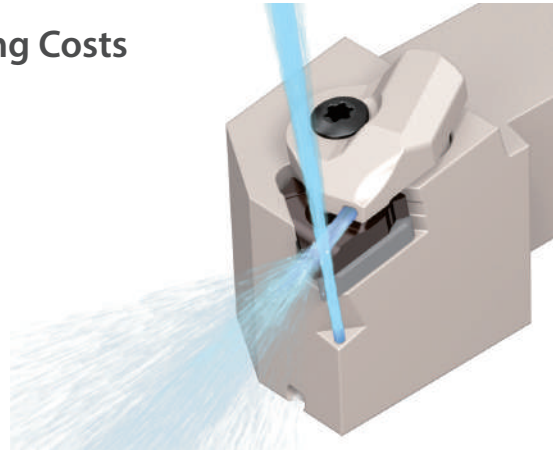
KTN-JCT

New Threading Toolholder

Double Coolant Holes Reduces Defects and Lengthens Tool Life

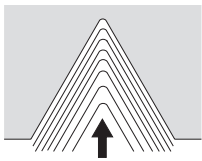
1 Improved Tool Life Lowers Machining Costs

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

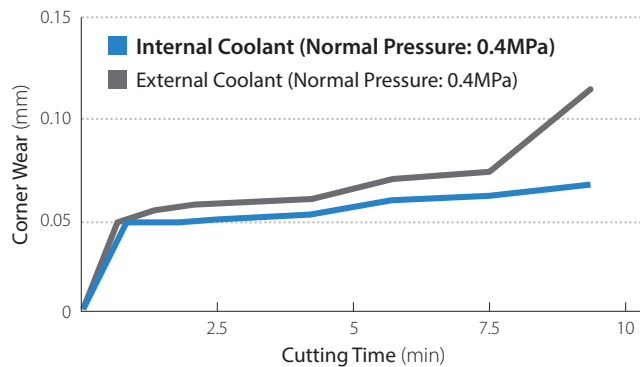


Wear Resistance Comparison of Internal vs. External Coolant (In-house evaluations)

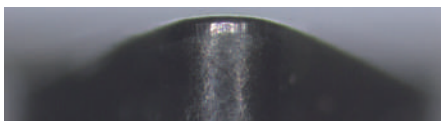
Radial Infeed



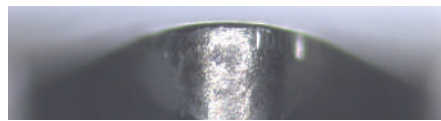
Cutting Conditions: $V_c = 150$ m/min
16ER150ISO-TQ (PR1215)
Workpiece: SCM435



Internal Coolant (Normal Pressure: 0.4MPa)



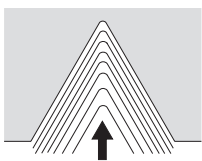
External Coolant (Normal Pressure: 0.4MPa)



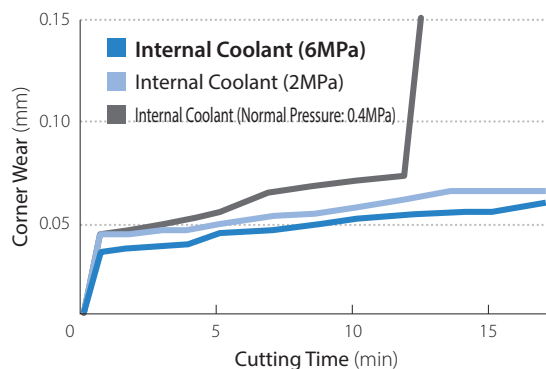
Switching to the KTN-JCT with internal coolant lengthens tool life

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

Radial Infeed



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

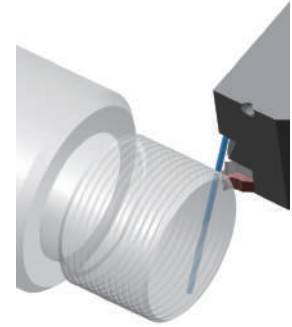


The higher the coolant pressure, the more efficient the wear resistance will be

2 Prevents Chip Recutting

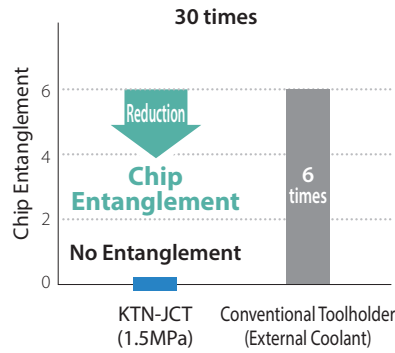
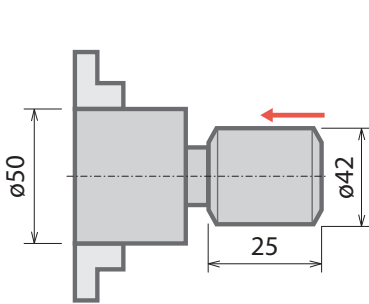
Coolant from the flank face of the insert smoothly evacuates chips away from the cutting edge
Reduced chip clogging

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

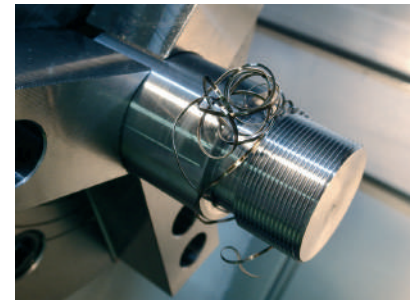


Chip Evacuation Comparison (In-house evaluation)

Cutting Conditions: $V_c = 150$ 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

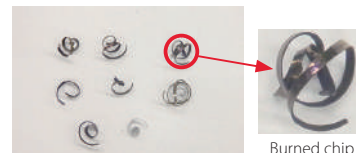
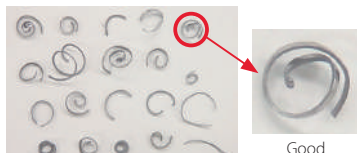
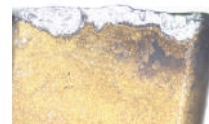
Arbor Bolt Free Cutting Steel

$n = 2,700$ min⁻¹ ($V_c = 145$ 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)

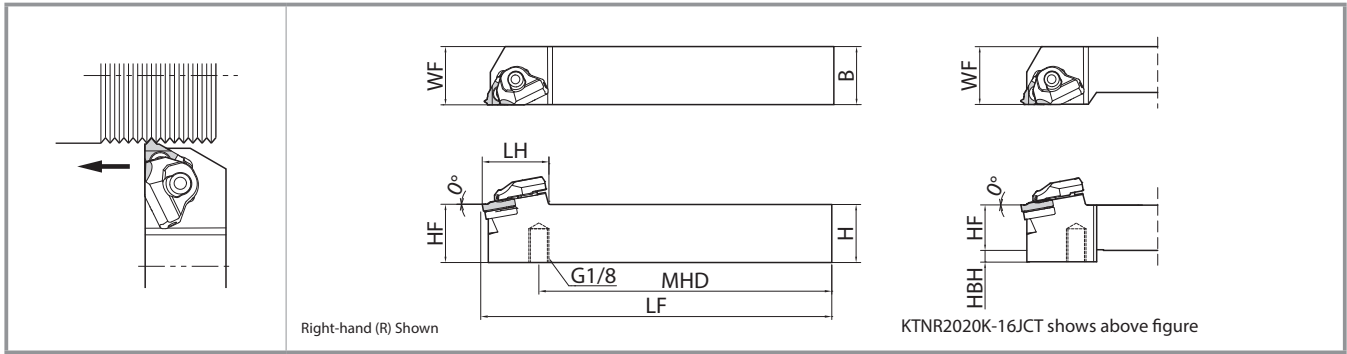
Competitor Toolholder J (External Coolant: Normal Pressure)



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
											Clamp Set	Pipe Connection (with O-ring)	Wrench	Shim	Shim Screw	
	R	L	H=HF	HBH	B	WF	LF	LH	MHD							
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							

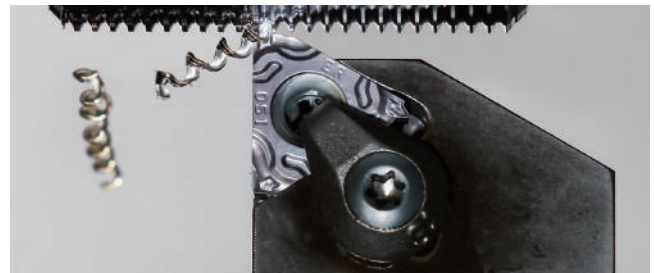
Please see P2 for piping parts
 - O-ring (SS-035) is available to order

● : Standard Stock

Threading Insert with Molded Chipbreaker

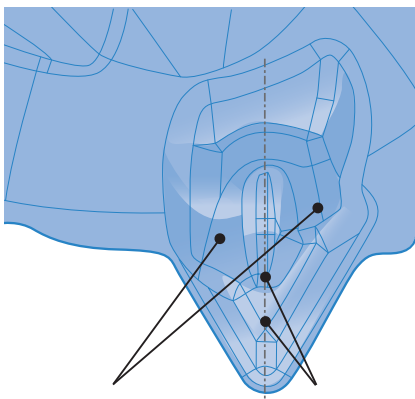
TQ Chipbreaker

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



Chipbreaker Geometry

Stable chip control regardless of cutting direction

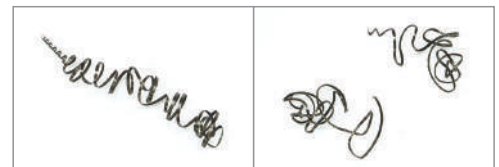
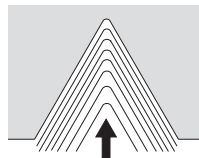


For Radial Infeed
 Asymmetric dot design controls chip-flow direction

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

Chip Control Comparison (In-house Evaluation)

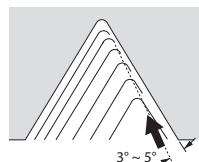
Radial Infeed



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	
				TC60M	PR1215	PR1515	PR1535	PR1115		GW15
				R	R	R	R	R		L
16ER	100ISO-TF	1.0		●	●	●	○			
	125ISO-TF	1.25		●	●	●	○			
	150ISO-TF	1.5		●	●	●	○			
	175ISO-TF	1.75		●	●	●	○			
	200ISO-TF	2.0		●	●	●	○			
	250ISO-TF	2.5		●	●	●	○			
	300ISO-TF	3.0		●	●	●	○			
16E ^{R/L}	050ISO	0.5	●					●	●	
	075ISO	0.75	●					●	●	
	100ISO	1.0	●					●	●	
	125ISO	1.25	●					●	●	
	150ISO	1.5	●					●	●	
	175ISO	1.75	●					●	●	
	200ISO	2.0	●					●	●	
16ER	100ISO-TQ	1.0		●	●	●				
	125ISO-TQ	1.25		●	●	●				
	150ISO-TQ	1.5		●	●	●				
	175ISO-TQ	1.75		●	●	●				
	200ISO-TQ	2.0		●	●	●				
	250ISO-TQ	2.5		●	●	●				
	300ISO-TQ	3.0		●	●	●				

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	
				TC60M	PR1215	PR1515	PR1535	PR1115		GW15
				R	R	R	R	R		L
16ER	24UN-TF	24		●	●	●	○			
	20UN-TF	20		●	●	●	○			
	18UN-TF	18		●	●	●	○			
	16UN-TF	16		●	●	●	○			
	14UN-TF	14		●	●	●	○			
	13UN-TF	13		●	●	●	○			
	12UN-TF	12		●	●	●	○			
	10UN-TF	10		●	●	●	○			
16ER	08UN-TF	8		●	●	●	○			
	24UN	24	●					●		
	20UN	20	●					●		
	18UN	18	●					●		
	16UN	16	●					●		
	14UN	14	●					●		
	12UN	12	●					●		
16ER	24UN-TQ	24		●	●	●				
	20UN-TQ	20		●	●	●				
	18UN-TQ	18		●	●	●				
	16UN-TQ	16		●	●	●				
	14UN-TQ	14		●	●	●				
	13UN-TQ	13		●	●	●				
	12UN-TQ	12		●	●	●				
	10UN-TQ	10		●	●	●				
	08UN-TQ	8		●	●	●				

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	
				TC60M	PR1215	PR1515	PR1535	PR1115		GW15
				R	R	R	R	R		L
16ER	19W-TF	19	-		●	●	●	○		
	16W-TF	-	16		●	●	●	○		
	14W-TF	14	14		●	●	●	○		
	11W-TF	11	11		●	●	●	○		
16ER	19W	19	-	●				●		
	14W	14	14	●				●		
	11W	11	11	●				●		
16ER	19W-TQ	19	-		●	●	●			
	16W-TQ	-	16		●	●	●			
	14W-TQ	14	14		●	●	●			
	11W-TQ	11	11		●	●	●			

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	
				TC60M	PR1215	PR1515	PR1535	PR1115		GW15
				R	R	R	R	R		L
16ER	28BSPT-TF	28		●	●	●	○			
	19BSPT-TF	19		●	●	●	○			
	14BSPT-TF	14		●	●	●	○			
16ER	11BSPT-TF	11		●	●	●	○			
	28BSPT	28	●					●	●	
	19BSPT	19	●					●	●	
16ER	14BSPT	14	●					●	●	
	11BSPT	11	●					●	●	
	28BSPT-TQ	28		●	●	●				
16ER	19BSPT-TQ	19		●	●	●				
	14BSPT-TQ	14		●	●	●				
	11BSPT-TQ	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	
				TC60M	PR1215	PR1515	PR1535	PR1115		GW15
				R	R	R	R	R		L
16ER	18NPT	18		●				●	●	
	14NPT	14		●				●	●	
	11.5NPT	11.5		●				●	●	

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	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	MEGACOAT NANO	PR1115		
		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		●	●	●		
With Chipbreaker 16ER A60-TQ	M	0.5 ~ 1.5	48 ~ 16		●	●	●		
		1.75 ~ 3	14 ~ 8		●	●	●		
		0.5 ~ 3	48 ~ 8		●	●	●		

30° Trapezoidal (Tr)
Partial Profile 30°

Usage Classification	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	MEGACOAT NANO	PR1115		
		R	R	R	R	R	R	R	
16ER 200TR 300TR	Tr	2.0	-	●				●	
		3.0	-	●				●	

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

55° Type
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							●
	N	Non-ferrous Material							●
Description	Applicable Thread	Pitch		Cermet	MEGACOAT			PVD Coated Carbide	Carbide
		G(PF)	W		TC60M	MEGACOAT NANO	PR1115		
		R(PT)	TPI	R	R	R	R	R	
		R(PT)	TPI	R	R	R	R	R	
16ER A55-TF	G(PF)	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	●					
With Chipbreaker 16ER A55-TQ	G(PF)	28, 19	40 ~ 16		●	●	●		
		14, 11	14 ~ 8		●	●	●		
		28 ~ 11	40 ~ 8		●	●	●		

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