

THE NEW VALUE FRONTIER



Great for high pressure coolant,
toolholder for turning

Double clamp-JCT

Double clamp-JCT



Excellent chip control and long tool life with high pressure coolant

Easy connection with high pressure hose and joint

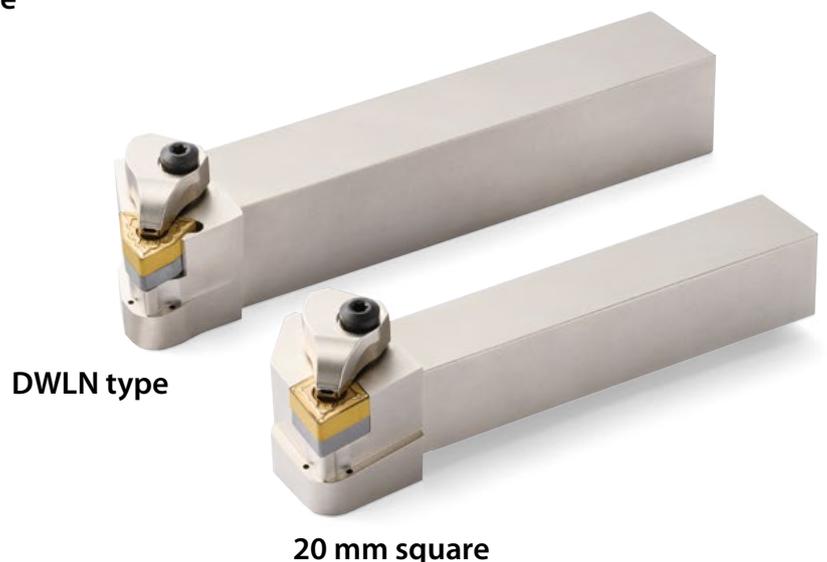
Long tool life and excellent chip control with unique coolant system

Internal coolant provides longer tool life

Lineup Expansion:



- 20 mm square
- DWLN type



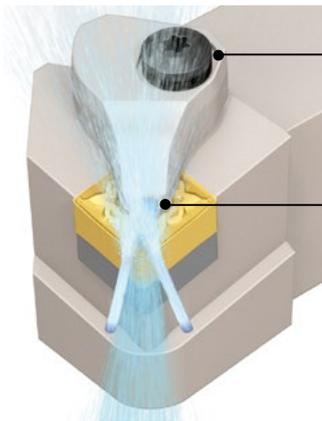
Great for high pressure coolant, toolholder for turning

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 simulation analysis technology



Double-clamp

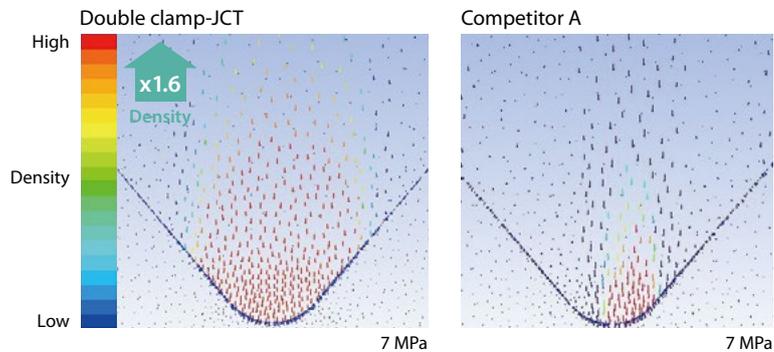
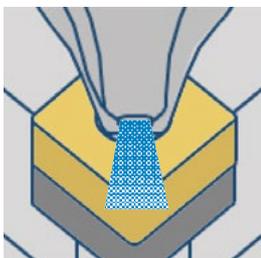
Firm insert clamp and easy to use in single operations
High-density coolant supply close to the cutting edge

Unique nozzle shape

Provides coolant to a wide area of the cutting point

Coolant supply simulation comparison (In-house evaluation)

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

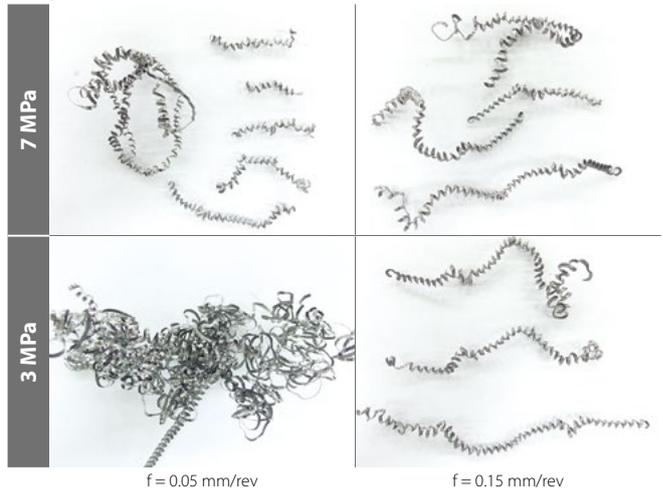


Chip control comparison (In-house evaluation)

Double clamp-JCT



Competitor A



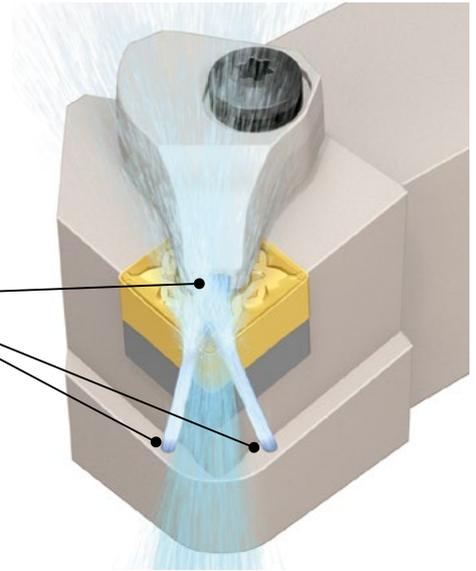
Cutting conditions: $V_c = 150$ m/min, $a_p = 0.5$ mm, wet, CNMG120408 type, workpiece: 15CrMo4, external turning

2 Longer tool life and high speed machining

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

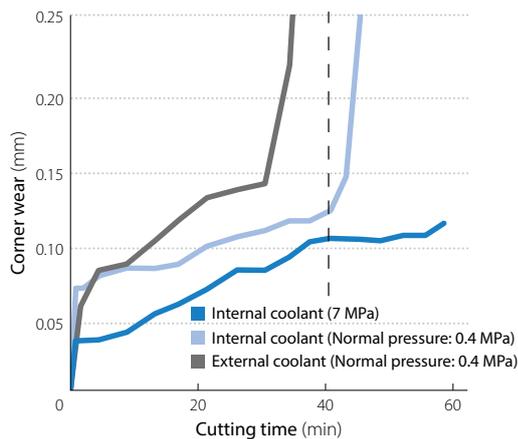
Longer tool life and high-speed machining with improved wear resistance

Discharges coolant in three directions:
The cutting edge stays cool.

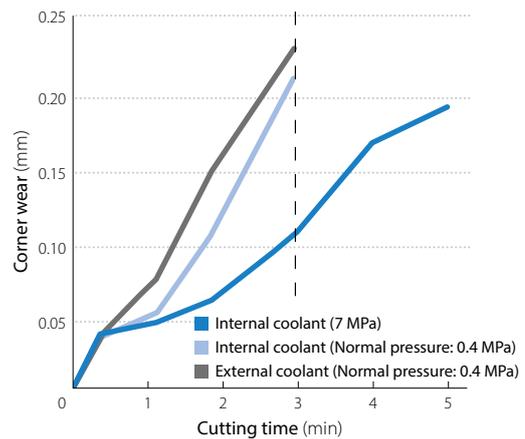


Wear resistance comparison (In-house evaluation)

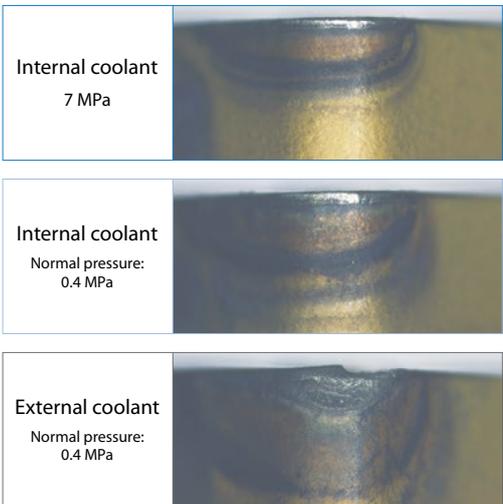
Alloy steel (34CrMo4)



Heat-resistant alloys (Inconel®718)

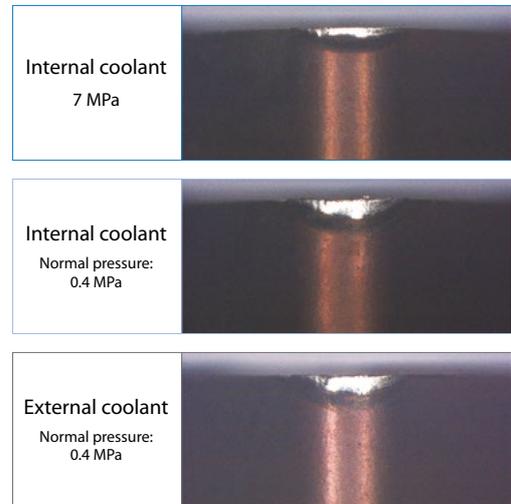


After machining 42.2 min



↑
Wear resistance

After machining 3 min



↑
Wear resistance

Cutting conditions: $V_c = 250$ m/min, $f = 0.3$ mm/rev, $a_p = 2$ mm, wet CNMG120408 type, external turning

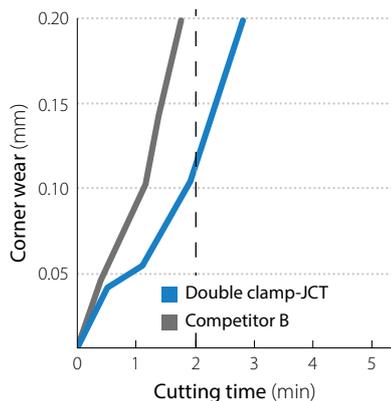
Cutting conditions: $V_c = 80$ m/min, $f = 0.15$ mm/rev, $a_p = 0.5$ mm, wet CNMG120408 type, external turning

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

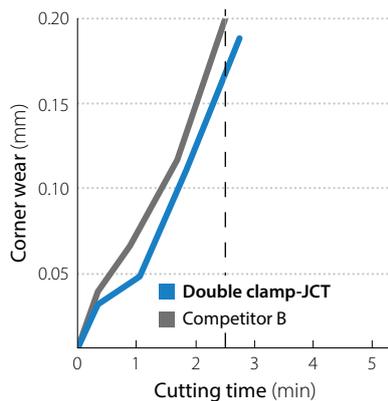
Wear resistance comparison (In-house evaluation)

Double clamp-JCT maintains better wear resistance than competitors

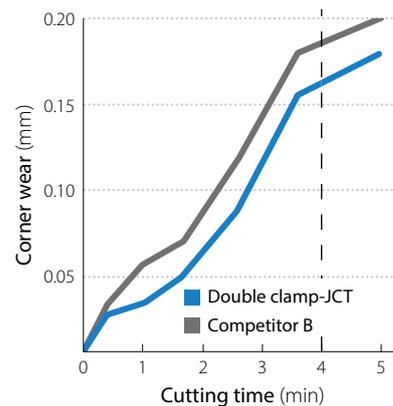
Internal coolant (Normal pressure: 0.4 MPa)



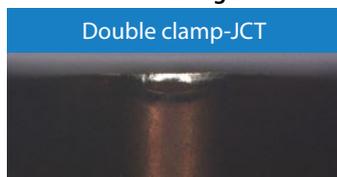
Internal coolant (4 MPa)



Internal coolant (7 MPa)



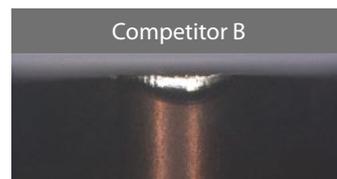
After machining 2 min



After machining 2.5 min



After machining 4 min

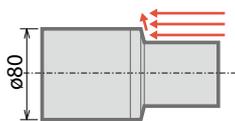


Cutting conditions: $V_c = 80$ m/min, $f = 0.15$ mm/rev, $a_p = 0.5$ mm, wet, CNMG120408 type, workpiece: Inconel®718-equivalent, external turning

Case studies

Mechanical parts - carbon steel

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



Tool life

DCLN-JCT toolholder
 Internal coolant: 4 MPa

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

User evaluation

Shaft - 20CrMo5 (Hardened steel over 55 HRC)

$V_c = 180$ 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

DDJN-JCT toolholder



Competitor C



Competitor D



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

User evaluation

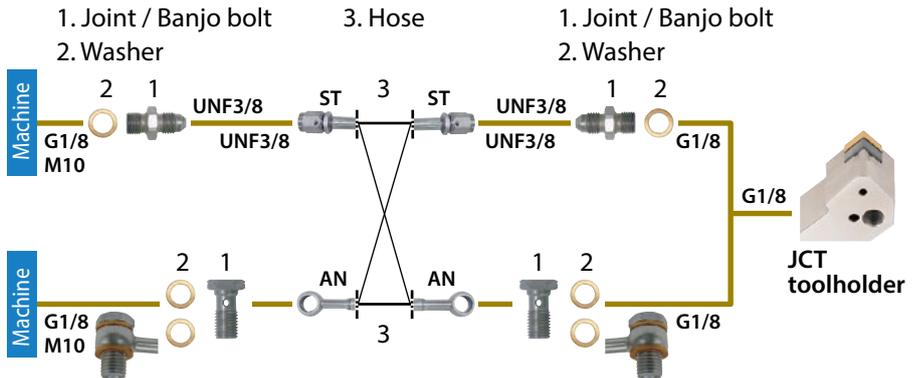
Easy coolant connections

Easy connection with high pressure hose and joint



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

Piping installation guide



Piping parts

Optional piping parts available

Choose from parts below to match your machine specifications

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

1. Joint / Banjo bolt

Applicable pressure: ~ 30 MPa

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

2. Washer

Applicable pressure: ~ 30 MPa

Shape	Description	Available
	WS-10	●

* Use 2 washers for a banjo bolt

3. Hose

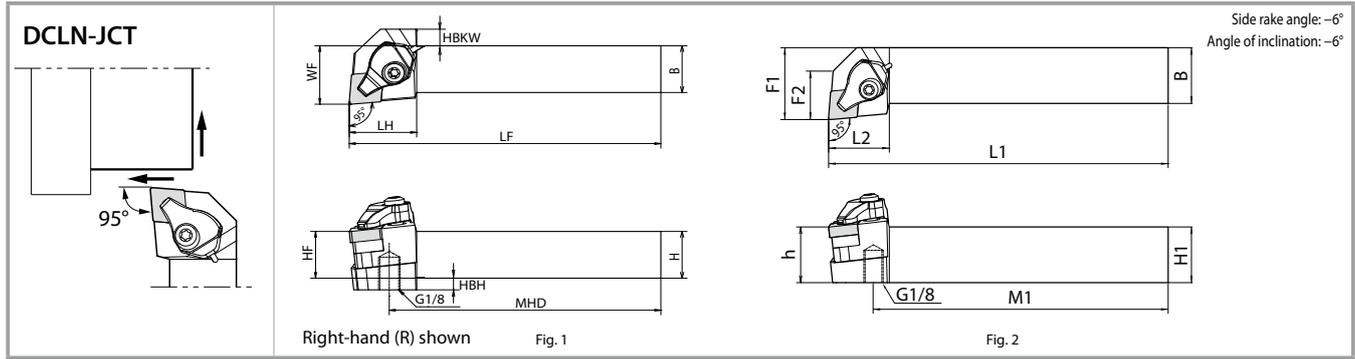
Applicable pressure: ~ 30 MPa

Shape	Description	Available	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	Banjo bolt	200
	HS-ST-AN-250	●			250
	HS-AN-AN-200	●	Banjo bolt	Banjo bolt	200
	HS-AN-AN-250	●			250

Precautions

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

Double clamp-JCT (Turning)

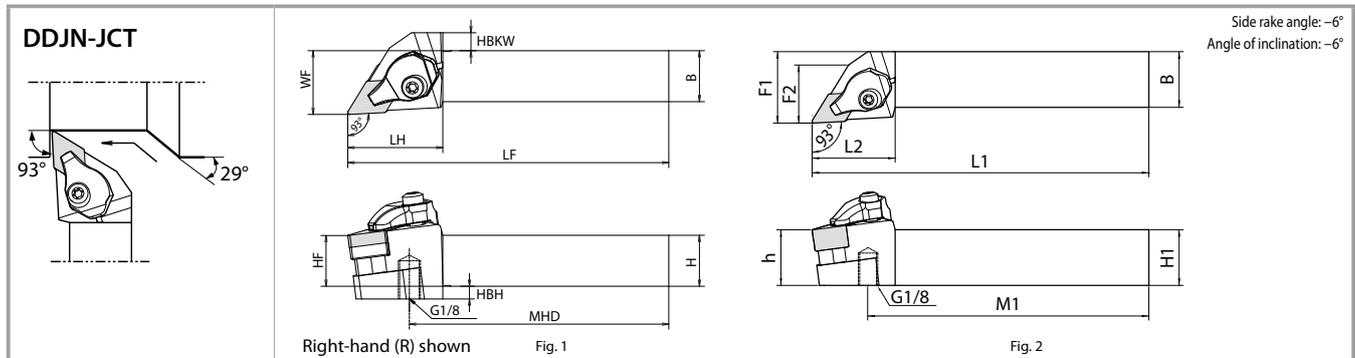


Toolholder dimensions

Pressure resistance: ~ 30MPa

Description	Availability		Dimension (mm)										Std. Corner-R(RE)	Shape	Spare parts							Applicable inserts
	R	L	H	HF	HBH	B	HBKW	LF	LH	WF	MHD	Clamp			Pipe connection (with O-ring)	Screw	Spring	Wrench	Shim	Shim screw		
	DCLN ^{R/L} 2020K-12JCT	●	●	20	20	5	20	7	125	27	25	109			0.8	Fig. 1	CP-3D-R/L-JCT	FP-12	CS-3D-TR	SP-3D	FT-15	
2525M-12JCT	●	●	25	25	-	25	-	150	27	32	134	0.8	Fig. 2									

● : Available



Toolholder dimensions

Pressure resistance: ~ 30MPa

Description	Availability		Dimension (mm)										Std. Corner-R(RE)	Shape	Spare parts							Applicable inserts
	R	L	H	HF	HBH	B	HBKW	LF	LH	WF	MHD	Clamp			Pipe connection (with O-ring)	Screw	Spring	Wrench	Shim	Shim screw		
	DDJN ^{R/L} 2020K-15JCT	●	●	20	20	5	20	7	125	37	25	101			0.8	Fig. 1	CP-4D-R/L-JCT	FP-12	CS-3D-TR	SP-3D	FT-15	
2525M-15JCT	●	●	25	25	-	25	-	150	37	32	126	0.8	Fig. 2									

Please see P. 5 for piping parts

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

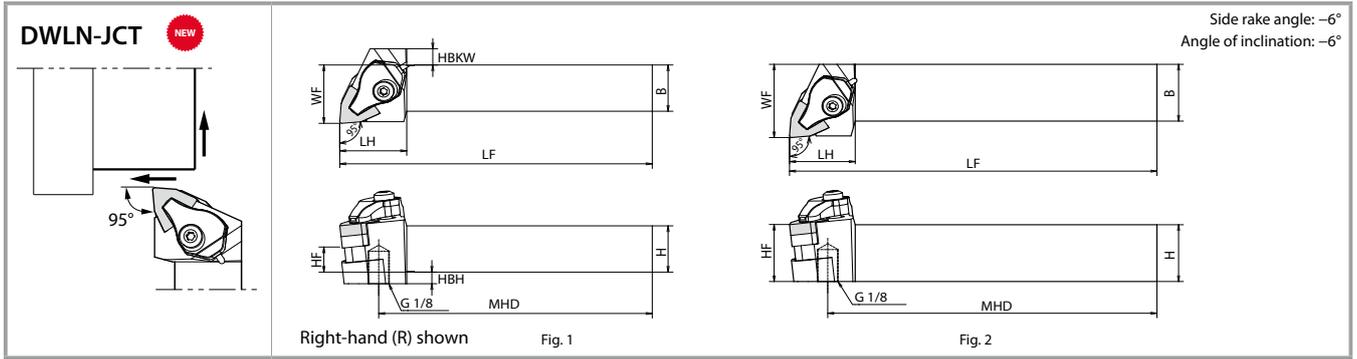
O-ring (SS-035) is available to order

*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)

● : Available

Double clamp-JCT (Turning)



Toolholder dimensions

Pressure resistance: ~ 30MPa

Description	Availability		Dimension (mm)											Std. Corner-R(R/E)	Shape	Spare parts							Applicable inserts
	R	L	H	HF	HBH	B	HBKW	LF	LH	WF	MHD	Clamp	Pipe connection (with O-ring)			Screw	Spring	Wrench	Shim	Shim screw			
DWLNR/L 2020K-08JCT 2525M-08JCT	●	●	20	20	5	20	7	125	27	25	109	0.8	Fig. 1	CP-3D-R/L-JCT	FP-12	CS-3D-TR	SP-3D	FT-15	DW-44	SB-4085TR	WN**0804		
	●	●	25	25	-	25	-	150	27	32	134		Fig. 2										

● : Available

Internal coolant advantages (Reference)

Coolant pressure (MPa)	Tool life	Chip control	Notes
Normal pressure ~ 2 (Low pressure)	Good	—	Longer tool life under 1 MPa
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

Excellent chip control and long tool life with high pressure coolant

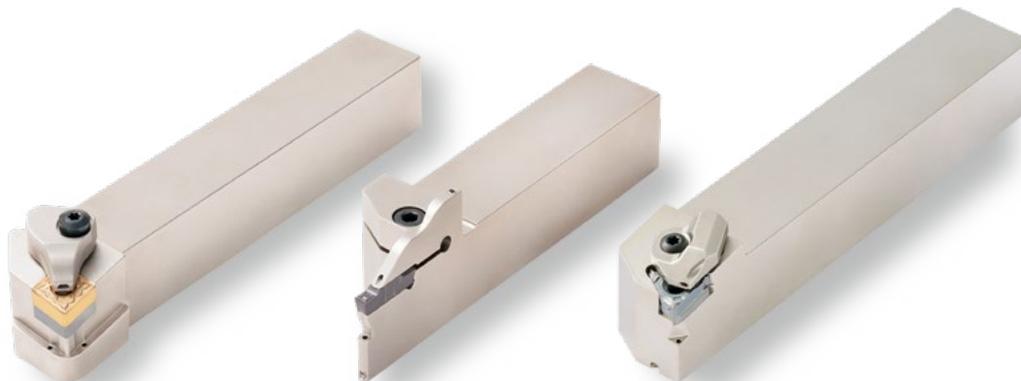
Great for high pressure coolant

JCT series

- 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



JCT brochure



Small tools with internal coolant supply

Provides long tool life and excellent chip control

JCT series

for small parts machining

- Great for high pressure coolant; up to 20 MPa
- Large holder lineup for turning, external grooving and cut-off



JCT small parts machining
brochure

