

# CUT DUO Series

Parting-off | CNC automatic lathe



**New**

Expanded lineup for 2.5 mm width insert parting-off toolholders  
Internal coolant supply ensures efficient cutting edge cooling and extend tool life

*CERtainly* | but not only | *CERamics*  
Outstanding solutions for demanding applications

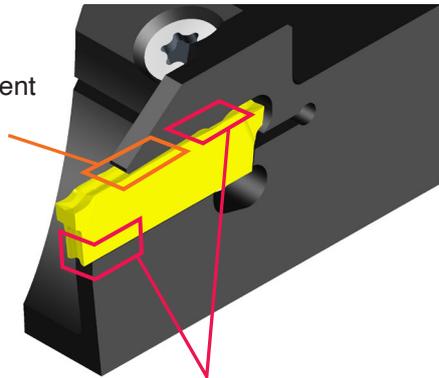


## | Features

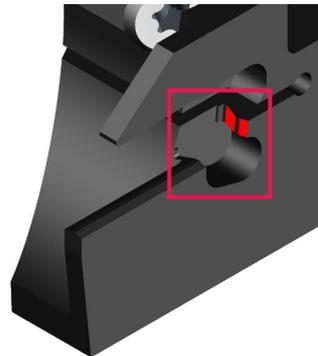
- Achieve stable machining with the combination of mold chipbreaker and high-rigidity toolholder
- Enhanced cutting performance with polished insert relief surfaces
- Extended tool life and improved chip control using internal coolant supply

## | Toolholder Design and Structure

Pull-in structure to prevent insert dislodgement

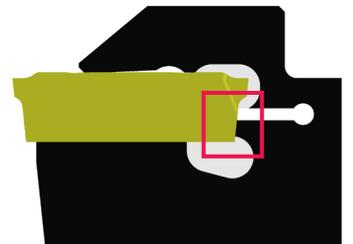


Effortless insertion with precision guide design



Reliable clamping for lead-angle inserts  
— thanks to convex-surface restraint!

Delivers stable performance even under high-feed conditions



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Parting-off | CNC automatic lathe

## Expanded lineup

- Toolholder designed for a maximum parting-off diameter of  $\phi 25.4$  mm, offering two insert widths (2.0 / 2.5 mm)
- Optimized design delivers higher rigidity (maximum parting-off diameter  $\phi 34.0$  mm)

### Toolholder lineup expanded for insert width of 2.5mm

**New**



Max. Parting-off Dia.	$\phi 25.4$ mm		$\phi 34$ mm
Insert width	2.0mm	2.5mm	2.5mm
Shank			
16x16mm	●	●	●

## Chip control performance

- Chips are curled compactly to prevent chip problems

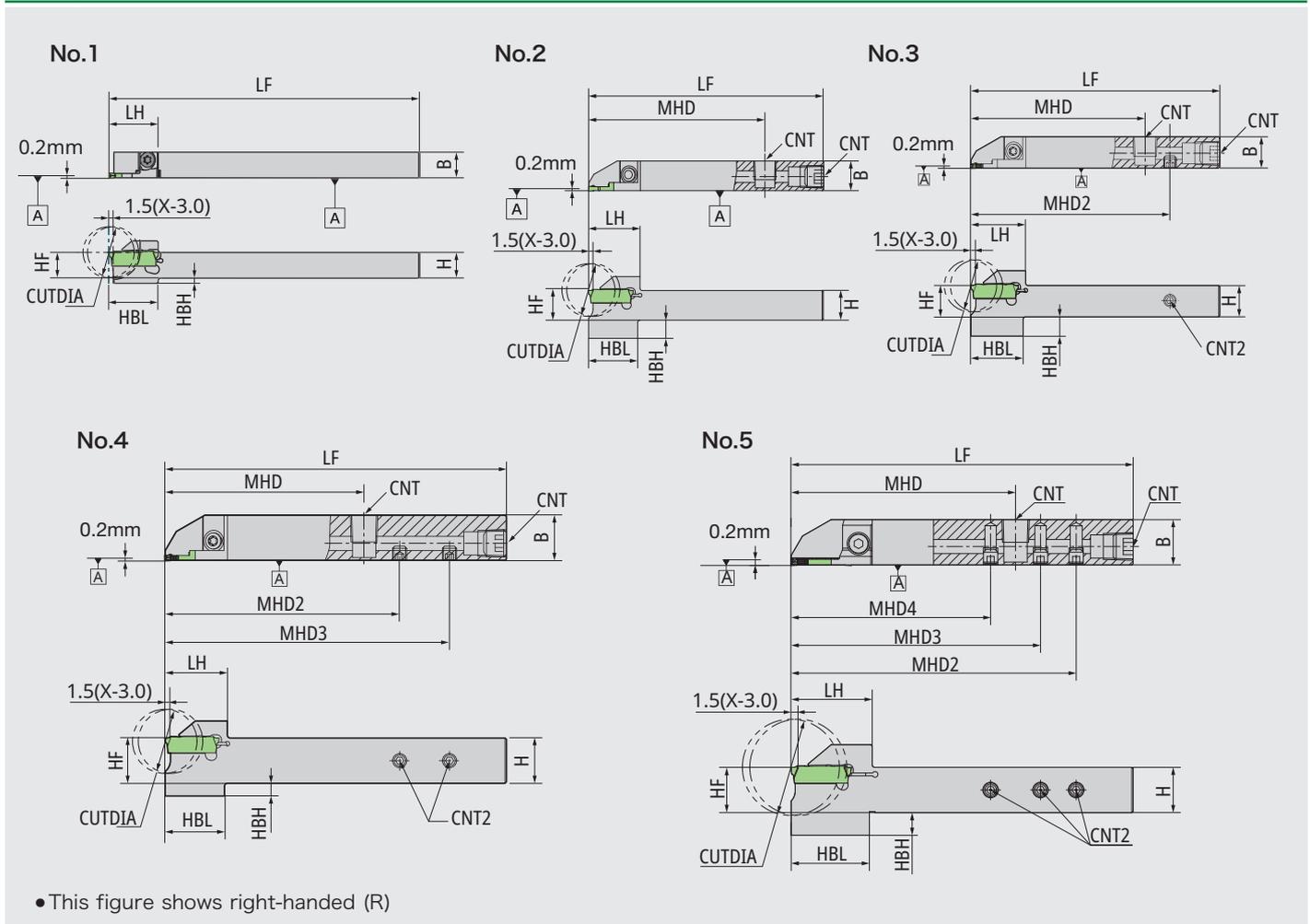
$v_c=80$ m/min

被削材 $f$	0.05mm/rev	0.08mm/rev	0.12mm/rev
<b>P</b> SCM435			
<b>M</b> SUS304			

## Recommended cutting condition

ISO Classification		<b>P</b>		<b>M</b>		<b>S</b>	
Workpiece material		Alloy steel	Carbon steel	Difficult-to-cut Stainless steel	Free-cutting Stainless steel	HRSA	Titanium (Alloy)
Representative workpiece material		SCM435 SCr420	S10C S45C	SUS316L 17-4PH SUS304	SUS303 SUS430F	Inco718 Hastelloy MP35N	Ti-6Al-4V
Grade	1st choice	<b>QM3</b>		<b>ST4</b>		<b>DM4</b>	
	2nd choice	<b>TM4</b>		<b>DM4</b>		<b>QM3</b>	
Cutting speed (m/min)		30 - <b>60</b> - 90		30 - <b>60</b> - 90		30 - <b>50</b> - 70	
Feed (mm/rev)		0.04 - <b>0.08</b> - 0.12		0.03 - <b>0.08</b> - 0.12		0.03 - <b>0.05</b> - 0.08	

# Lineup: Toolholder



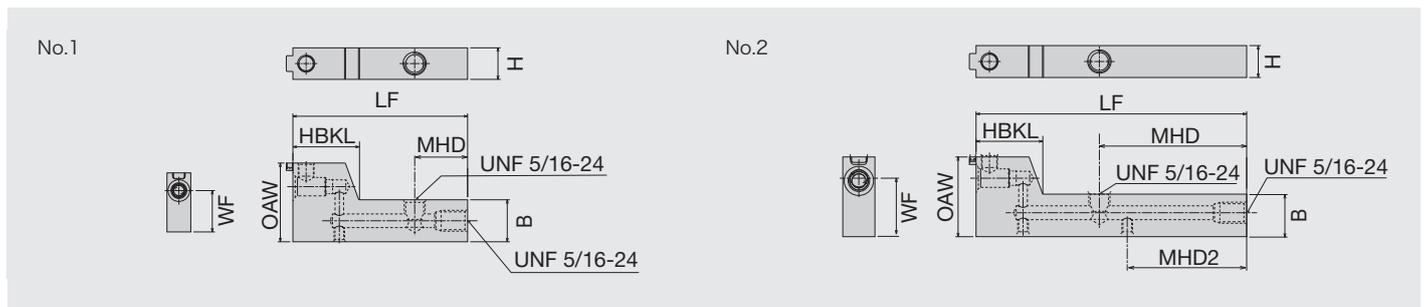
Internal coolant NEW

Designation	Hand		CUTDIA mm	B mm	H mm	HF mm	LF mm	LH mm	HBH mm	HBL mm	CNT	CNT2	MHD mm	MHD2 mm	MHD3 mm	MHD4 mm	Insert	Figure	
	R	L																	
CTDP <sup>R</sup> <sub>L</sub> 10-20D20	●	●	20	10	10	10	120	19	2	19	-	-	-	-	-	-	-	CTDP20..	1
CTDP <sup>R</sup> <sub>L</sub> 12-20D20	●	●	20	12	12	12	120	19	-	-	-	-	-	-	-	-	-	CTDP20..	1
CTDP <sup>R</sup> <sub>L</sub> 12-20D25	●	●	25.4	12	12	12	120	22	-	-	-	-	-	-	-	-	-	CTDP20..	1
CTDP <sup>R</sup> <sub>L</sub> 12-20D25-OH	●	●	25.4	12	12	12	100	22	8.5	21	Rc1/8	-	75	-	-	-	-	CTDP20..	2
CTDP <sup>R</sup> <sub>L</sub> 12-20D25-OH2	●	●	25.4	12	12	12	100	22	8.5	21	Rc1/8	M5	70	80	-	-	-	CTDP20..	3
CTDP <sup>R</sup> <sub>L</sub> 16-20D25	●	●	25.4	16	16	16	120	22	-	-	-	-	-	-	-	-	-	CTDP20..	1
CTDP <sup>R</sup> <sub>L</sub> 16-25D25	●	●	25.4	16	16	15.5	120	28.5	-	-	-	-	-	-	-	-	-	CTDP25..	1
CTDP <sup>R</sup> <sub>L</sub> 16-20D25-OH	●	●	25.4	16	16	16	100	22	4.5	21	Rc1/8	-	75	-	-	-	-	CTDP20..	2
CTDP <sup>R</sup> <sub>L</sub> 16-20D25-OH2	●	●	25.4	16	16	16	120	22	4.5	21	Rc1/8	M5	70	82.5	100	-	-	CTDP20..	4
CTDP <sup>R</sup> <sub>L</sub> 16-20D25-OH3	●	●	25.4	16	16	15.5	120	22	4.5	21	Rc1/8	M5	78.75	100	87.5	70	-	CTDP20..	5
CTDP <sup>R</sup> <sub>L</sub> 16-25D25-OH3	●	●	25.4	16	16	15.5	120	28.5	8	27.5	Rc1/8	M5	78.8	100	87.5	70	-	CTDP25..	5
CTDP <sup>R</sup> <sub>L</sub> 16-20D32A	●	●	32	16	16	16	120	27.5	-	-	-	-	-	-	-	-	-	CTDP20..	1
CTDP <sup>R</sup> <sub>L</sub> 2012-20D32A	●	●	32	12	20	20	120	29.5	-	-	-	-	-	-	-	-	-	CTDP20..	1
CTDP <sup>R</sup> <sub>L</sub> 20-20D32A	●	●	32	20	20	20	120	29.5	-	-	-	-	-	-	-	-	-	CTDP20..	1
CTDP <sup>R</sup> <sub>L</sub> 16-25D34A	●	●	34	16	16	16	120	28.5	-	-	-	-	-	-	-	-	-	CTDP25..	1
CTDP <sup>R</sup> <sub>L</sub> 16-25D34A-OH3	●	●	34	16	16	16	120	28.5	8	27.5	Rc1/8	M5	78.8	100	87.5	70	-	CTDP25..	5
CTDP <sup>R</sup> <sub>L</sub> 2012-25D34A	●	●	34	12	20	20	120	29.5	-	-	-	-	-	-	-	-	-	CTDP25..	1
CTDP <sup>R</sup> <sub>L</sub> 20-25D34A	●	●	34	20	20	20	120	29.5	-	-	-	-	-	-	-	-	-	CTDP25..	1
CTDP <sup>R</sup> <sub>L</sub> 20-25D34A-OH2	●	●	34	20	20	20	120	28.5	4	27.5	Rc1/8	M5	75	100	-	-	-	CTDP25..	3

Attention : Tightening the screw without the insert in place may deform the slit section, potentially preventing it from returning to its original shape even after the screw is properly fastened.



## QC-1216-OH/OH2 15mm Shift Shank



Designation	Internal coolant	H mm	B mm	LF mm	OAW mm	WF mm	HBKL mm	MHD mm	MHD2 mm	Torque <sup>(2)</sup> N·m	Coupling size	Figure
QC-1216F-F15-OH		12	16	65	30	21	25	(20)	-	3	QC12-..	1
QC-1216X-F15-OH2 <sup>(1)</sup>		12	16	100	30	21	25	(55)	(43.5)	3	QC12-..	2

**Shift Shank** : By shifting the cutting edge position, machining can be performed without the workpiece detaching from the guide bush. This makes it easier for coolant to reach the cutting point, improving chip control.

<sup>(1)</sup> **OH2** :Compatible with direct coolant supply from the machine's tool post to the tool.

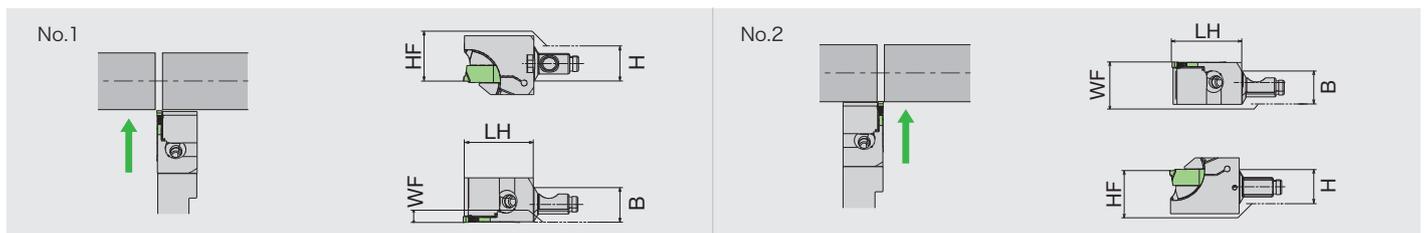
<sup>(2)</sup> **Torque** : Recommended clamping torque (N·m)

### Spare parts

Designation	Screw	Screw	Screw	Wrench	Wrench	Wrench
QC-1216F-F15-OH	M6*0.5-TSC	-	5/16UNF-TSC	-	TR-3	TR-4
QC-1216X-F15-OH2	M6*0.5-TSC	SSM4*6-T	5/16UNF-TSC	TR-2	TR-3	TR-4

## Heads

### QC-CTDP-OH

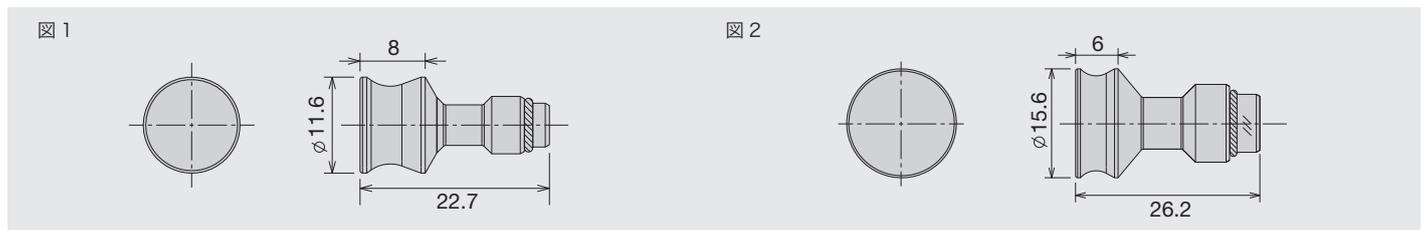


Designation	Internal coolant	CUTDIA mm	H mm	B mm	LH mm	HF mm	WF mm	Insert	Applicable shank size	Figure
QC12-CTDPR-20D20-OH		20	12	12	23.5	12	0.2	CTDP20..	QC-12..	1
QC12-CTDPL-20D20-OH		20	12	12	23.5	12	15.2	CTDP20..	QC-12..	2
QC16-CTDPR-20D32-OH		32	16	16	24.5	16	0.2	CTDP20..	QC-16..	1
QC16-CTDPL-20D32-OH		32	16	16	24.5	16	20.2	CTDP20..	QC-16..	2

### Spare parts

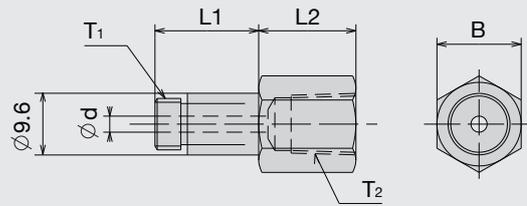
Item Number	O-Rings	Screw	Wrench
QC12-CTDPR-20D20-OH	OR-450*10	LRIS-4*12	LLR-25S
QC12-CTDPL-20D20-OH	OR-450*10	LRIS-4*12	LLR-25S
QC16-CTDPR-20D32-OH	OR-750*10	LRIS-4*12	LLR-25S
QC16-CTDPL-20D32-OH	OR-750*10	LRIS-4*12	LLR-25S

**Stopper** By attaching a stopper to the unused shank, the coupling part is protected, and coolant discharge from the shank is prevented.



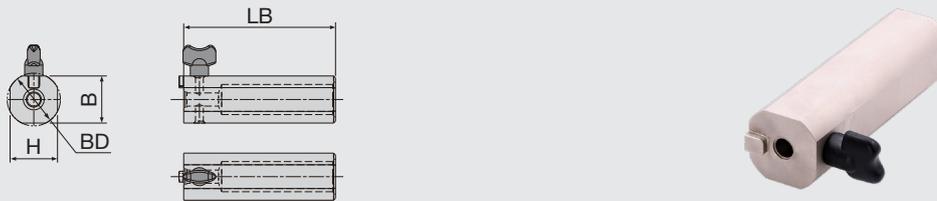
品番	O-Rings	Applicable shank size	Figure
QC12-STOPPER-PLUG	OR-450*10	QC12	1
QC16-STOPPER-PLUG	OR-750*10	QC16	2

**Thread conversion adapter** When using conventional hoses and fittings, please use a threaded adapter.



Designation	T <sub>1</sub> mm	T <sub>2</sub> mm	L1 mm	L2 mm	φd mm	B mm
SCJ-5/16-RC1/8-L	5/16-24UNF	Rc1/8	16.0	15.0	2.5	13.0

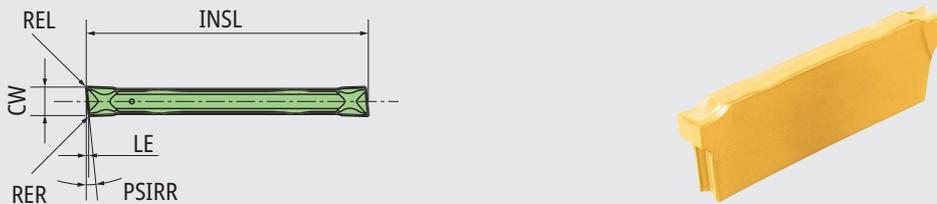
**Accessories** Dedicated accessory for easy replacement of inserts mounted on the modular head.



Designation	BD mm	LB mm	H mm	B mm	Screw	Coupling size
QC-12D28	28	80	25	25	TAB-5*10	QC12-..
QC-16D28	28	80	25	25	TAB-5*10	QC16-..

For more information on **N-Swiss JOINT**, please see the product brochure and website.

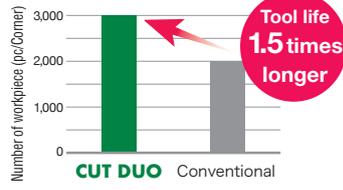
**Lineup: Insert**

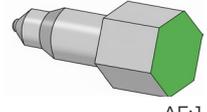


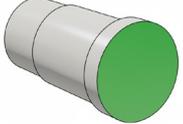
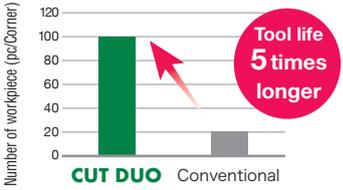
● NEW

Designation	Hand	CW mm	INSL mm	PSIRR °	LE mm	REL mm	RER mm	Carbide PVD Coated Carbide Grade			
								DM4	QM3	ST4	TM4
CTDP20N	N	2.0	19.1	0	0	0.05	0.05	●	●	●	●
CTDP20N02	N	2.0	19.1	0	0	0.20	0.20	●	●	●	●
CTDP20R6	R	2.0	19.1	6	0.24	0.05	0.05	●	●	●	●
CTDP20R15	R	2.0	19.1	15	0.57	0.05	0.05	●	●	●	●
CTDP25N	N	2.5	21.2	0	0	0.05	0.05	●	●		●
CTDP25N02	N	2.5	21.2	0	0	0.20	0.20	●	●	●	●
CTDP25R6	R	2.5	21.2	6	0.29	0.05	0.05	●	●	●	●
CTDP25R15	R	2.5	21.2	15	0.71	0.05	0.05	●	●		●

## Practical examples

		NTK	Conventional
Component		Electronic parts	
Insert		CTDP20R6	Width : 2.2mm
Grade		QM3	PVD Carbide
Workpiece		Alloy steel (SCM435)	
  		$\phi$ 12mm	
Cutting conditions	Cutting speed (m/min)	75	
	Feed (mm/rev)	0.04	
	Coolant	WET	
Results		 <p>The conventional tool suffered from poor cutting performance, leading to burr formation and reduced tool life. In contrast, <b>CUT DUO</b> maintained sharpness and achieved a 1.5x increase in tool life.</p>	

		NTK	Conventional
Component		Automotive parts	
Insert		CTDP20N02	Width : 2.0mm
Grade		ST4	PVD Carbide
Workpiece		SUS316	
  		AF:11.5mm	
Cutting conditions	Cutting speed (m/min)	90	
	Feed (mm/rev)	0.08	
	Coolant	WET	
Results		 <p>The conventional tool lacked sharpness, causing burrs and early failure under interrupt cutting due to edge chipping. <b>CUT DUO</b> suppressed burrs and doubled tool life.</p>	

		NTK	Conventional
Component		Fuel cell parts	
Insert		CTDP20N02	Width : 2.0mm
Grade		DM4	PVD Carbide
Workpiece		Inconel718	
  		$\phi$ 18mm	
Cutting conditions	Cutting speed (m/min)	80	
	Feed (mm/rev)	0.03	
	Coolant	WET	
Results		 <p>The cutting edge of the conventional product wore out after machining 20 pieces, leading to poor machining surface and tool breakage. <b>CUT DUO</b> reduced cutting resistance and achieved 5 times longer tool life.</p>	

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