

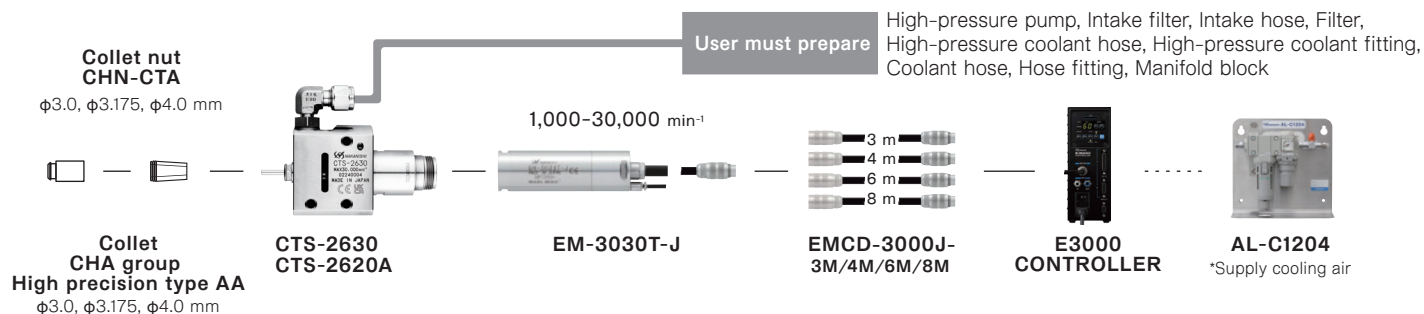
Coolant through spindle

# CTS-2630

# CTS-2620A



## Small Diameter ( $\leq \phi 3.0$ ) + Deep Hole (L/D=20) + No Pecking



## Problem solved by CTS-2630/CTS-2620A

High coolant pressure is required when using a small-diameter oil hole drill. However, there was no high-speed spindle capable of high-pressure coolant flow.

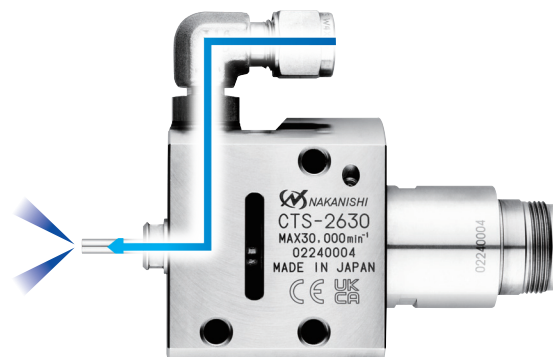


**CTS-2630/CTS-2620A are capable of 20 MPa high-pressure coolant.**

## Result achieved by CTS-2630/CTS-2620A

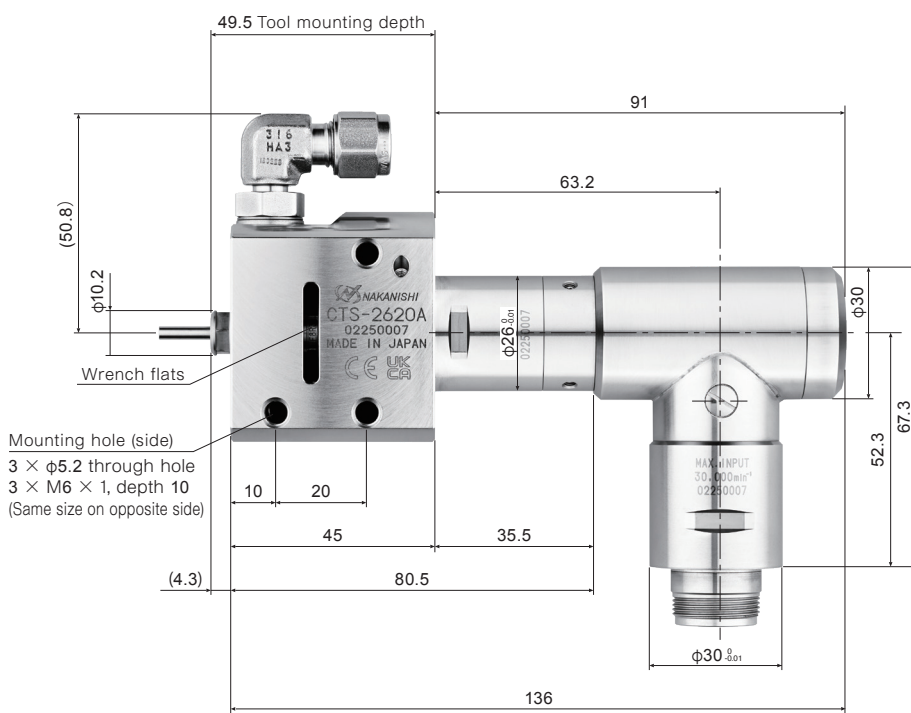
By utilizing high-pressure coolant of 20 MPa, it is now possible to perform non-peck drilling with a diameter of 3.0 mm or less and L/D=20.

In addition, the coolant can be discharged even with a minimum diameter of 0.5 mm, which was previously impossible!



Code No.: **7908**

Model: **CTS-2620A**

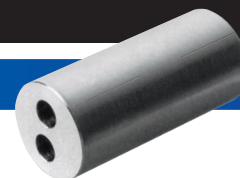


Max. speed at the cutting tool	20,000 min <sup>-1</sup>
Reduction ratio	1/1.5
Max. allowable motor speed	30,000 min <sup>-1</sup>
Spindle accuracy	Within 1 μm
Net weight	1,000 g
Coolant pressure	3.0-20.0 MPa
Coolant filter	Filtration accuracy 5 μm or less
Shank diameter of corresponding tool	3.0, 3.175, 4.0 mm
Standard equipment and accessories	Wrench (8 × 5), (9 × 11), (22 × 27): 1 pc. each
	Allen wrench (1.5 mm): 1 pc.
	Grease dispenser (10 mL): 1 pc.
	Grease nipple: 1 pc.

\*The collet and the collet nut are sold separately.  
Please match the collet and the collet nut size.

## Option (Collet and collet nut)


Shank diameter of corresponding tool	φ3.0 mm	φ3.175 mm	φ4.0 mm
Collet	CHA-3.0AA (Code No. 91494)	CHA-3.175AA (Code No. 91496)	CHA-4.0AA (Code No. 91495)
Collet nut	CHN-CTA-3.0 (Code No. 7798)	CHN-CTA-3.175 (Code No. 7799)	CHN-CTA-4.0 (Code No. 7800)



## Drilling data

### φ2.0 drilling on electromagnetic soft iron

Comparison between conventional drilling and coolant through drilling

Drilling method	Work material	Tool diameter (mm)	Hole depth (mm)	L/D	Cutting speed (m/min)	Rotational speed (min <sup>-1</sup> )	Feed rate (mm/rev)	Feed speed (mm/min)	Coolant	Peck drilling cycle	Processing time (sec)
Conventional drilling (Automatic lathe rotation tool)	ELCH2 (Electromagnetic soft iron)	2.0	19 Through hole	10	40	6,400	0.03	192	External	Front 3.5 mm × 2 times Back 4.0 mm × 3 times	13.0
Coolant through drilling (CTS-2630)		2.0	20 Through hole		188	30,000	0.04	1,200	Internal	<b>No pecking</b>	<b>1.0</b>

92%  
reduced

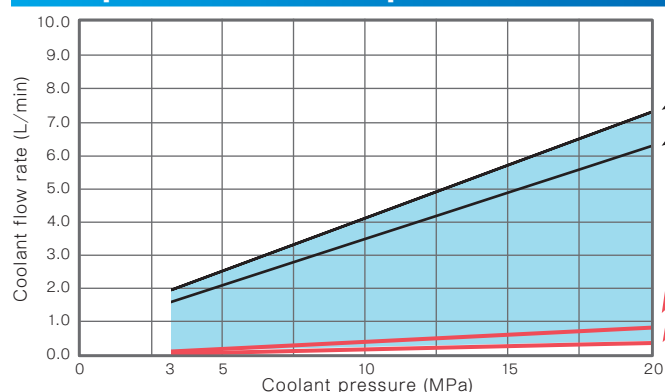
### Drilling on other work materials

Common conditions: No pecking, coolant pressure 20 MPa, coolant viscosity VG 7

Work material	Tool diameter (mm)	Hole depth (mm)	L/D	Cutting speed (m/min)	Rotational speed (min <sup>-1</sup> )	Feed rate (mm/rev)	Feed speed (mm/min)	Processing time (sec)
A6061 (Aluminum)	1.0	20 Through hole	20	94	30,000	0.07	2,100	0.6
	1.5		13	141	30,000	0.06	1,800	0.7
	2.0		10	188	30,000	0.04	1,200	1.0
C2801 (Brass)	1.0	20 Through hole	20	94	30,000	0.03	900	1.3
	1.5		13	141	30,000	0.02	700	1.7
	2.0		10	188	30,000	0.02	700	1.7
S50C/SCM440 (Carbon steel/Alloy Steel)	1.0	20 Through hole	20	94	30,000	0.03	900	1.3
	1.5		13	118	25,000	0.03	850	1.4
	2.0		10	119	19,000	0.03	570	2.1
SUS304 (Stainless)	1.0	20 Through hole	20	60	19,000	0.02	350	3.4
	1.5		13	75	16,000	0.03	400	3.0
	2.0		10	94	15,000	0.03	400	3.0

\*Drilling conditions depend on various factors such as work material, drill length, coolant, and others.

### Graph of coolant pressure vs. flow rate



Coolant pressure and flow rate required for CTS-2630/CTS-2620A (reference value)

φ3 mm drill with water-soluble coolant  
φ1 mm drill with water-soluble coolant

φ3 mm drill with oil-based coolant VG 22  
φ1 mm drill with oil-based coolant VG 22

\*Values for coolant pressure and flow rate vary depending on the drill length, coolant viscosity, and other factors.

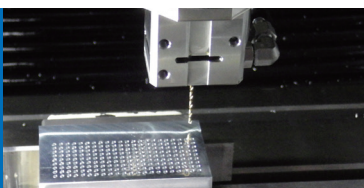
Select a pump according to the operating environment, and use the graph as a guide for processing conditions.

\*Use coolant with an ISO viscosity grade of VG 22 or lower. The lower the coolant viscosity, the higher the flow rate.

\*The spindle supports a coolant pressure of 3.0–20.0 MPa.

#### S50C drilling example

Tool diameter φ2.0  
Depth 20 mm  
No peck



#### Lathe installation image

When connected to the EM-3030T-J motor



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