

# Hydro chuck for CNC lathe ST-M-PHC



# High precision Hydro Chuck for CNC Lathe machines to improve machining quality + tool life.

- Hydro's anti-vibration effect suppresses chattering during machining.
- Both ① and ② are are hydraulically operated.
  Repeatability accuracy of 2μm or less
- Suppresses misalignment during cutter mounting

Reduce hole variance and chattering in drilling and boring applications!

# Advantages of Hydraulic System

• Highly accurate tool clamping due to contraction of the inside diameter!

Reduces misalignment and self centers by expansion of the shank for retention!

: Hydraulic chamber

#### **Combination list** Hydro chuck for CNC lathe Tool Holder for Turret Ø20mm ST · M-PHC Drill \*Boring holders, U-drill holders, etc. Straight Collet PHS·H Sealed coolant sleeve stops leakage from the flat Ø6 - Ø16mm part of the boring bar and supplies coolant to the Drill cutting edge without loss! See reverse side for details **Coolant Bit Sleeve** ST · H-CBS Ø6 - Ø12mm Boring Bar

# **NT TOOL CORPORATION**

# Hydro Chuck for CNC Lathe ST-M-PHC



## **Anti-vibration effect**

## Special oil chamber around the chucking sleeve absorbs cutting vibrations.



# Improvement example (1)

Coolant

Center-through (water soluble)



Machining not possible due to long L/D

Ra:0.95

# Realized Ra: 1.048µm in L/D:4.75 finishing!

Workpiece material	S45C	Depth of cut	0.5mm
Tool used	Steel ø12 boring bar	Cutting feed	0.1mm /rev
Insert	TPMT110304*	Circumferential speed	200m/min
Machining diameter	ø15mm	Coolant	Center-through (water soluble

#### Hydro Chuck for CNC Lathe ST-M-PHC with Coolant bit Sleeve





#### L D (Ø12) Ø Ø Ø Ø Ø Ø Ø Ø Ø

Side lock holder

#### **Machining result** Boring bar protrusion L/D 3.75 4 4.75 5.5 5.75 Judgment $\checkmark$ Х Х Х 1.007 10.888 Ra(µm) 6.100 66.995 Rz(µm) Chattering None Yes noise

## Collet with stopper pin for PHS•H

# Coolant compatible collets for ST-M-PHC.



### OH type : For cutter with oil hole

Code	Model	Dı	D2	Lī	L <sub>2</sub>	d
2584 300520※※	PHS20H - <b>d</b> - OH	20	41	60	4	6, 8, 10, 12, 16

#### C type : For collet through coolant

Code	Model	<b>D</b> 1	D <sub>2</sub>	Lı	L2	d
2584 300620※※	PHS20H - <b>d</b> - C	20	41	60	4	6, 8, 10, 12, 16

The %% in the code is followed by the inner diameter d.

Min. Clamping length of cutter										
Collet I.D. d 6, 8 10, 12 16 20 25										
Min. Clamping length      29      40      45      50      55										

Ordering Exa	mple	
PHC20H	- 10 -	OH
Shank size	LD.	Type





## Prevents coolant leakage from tool shank! Efficient coolant supply to I.D. of the workpiece!



 $l_3 \rightarrow l_4 \rightarrow -2G$ Min. insertion length  $l_1 \rightarrow l_1 \rightarrow l_2$ Max. insertion length  $l_2 \rightarrow l_2$ 

Code		Model	d	D1	D2	D3	L1	L2	L3	<b>l</b> 1	<b>l</b> 2	<i>l</i> 3	<b>l</b> 4	G
0484 02006	000	ST20H - CBS06R	6	20	41	27	60	25	13.5	26	76	5	15	M5
0484 02008	000	- CBS08R	8	20	41	27	60	25	13.5	26	76	5	15	M6
0484 02010	000	- CBS10R	10	20	41	27	60	25	13.5	26	76	5	15	M6
0484 02012	000	- CBS12R	12	20	41	27	60	25	13.5	26	76	5	15	M6

- Supported holders : Hydro Chuck for CNC Lathe ST·M-PHC
- · Supported tool : Boring bar only
- Cutters must be inserted at least the minimum insertion length.

If the minimum insertion length is not met, the seal stopper will not function and coolant will leak.

#### Ordering Example



# **NT TOOL CORPORATION**

2023.09.

**TECHNO MAIL** technomail@nttool.co.jp For techical question, please contact us by technomail.

NT TOOL CORPORATION (HEAD OFFICE) : en.nttool.com NT USA CORPORATION (OFFICE) : www.nttoolusa.com NT TOOL EUROPE GmbH (OFFICE) : www.nttooleurope.com NT TOOL NT TOOL THAI CO., LTD. (OFFICE) : nttoolthai.com

NT TOOL DE MEXICO S.A. DE C.V. (OFFICE) : www.nttool.com.mx