

Improved efficiency for your machining process

Coolant through spindle

BMS - 4020/4040 - MQL

Pressurized coolant entered through the back of the spindle and through the cutting tool at a speed of 40,000 RPM! Through coolant improves chip clearance, accuracy, productivity and extends tool life.

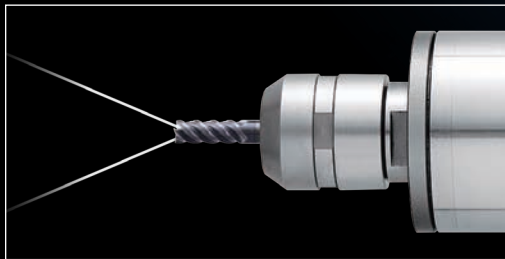
Collet size
φ3.0 - φ10.0mm



Slim type shape is also available.

Coolant through spindle
BMS - 4020/4040 - MQL - CHK

Collet size
φ3.0 - φ6.35 mm



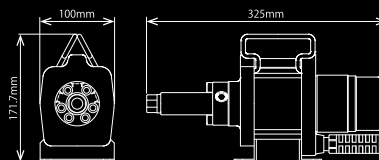
Air driven hydraulic pressure intensifying pump

MHP series

Power in a small package!

- Achieves high pressure and low flow rate
- No electrical wiring necessary

Specifications



Pressure intensification ratio	1:100
Maximum pressure	80 MPa
Air consumption	1.2m ³ /min
Inlet port size	Rc 3/8
Outlet port size	Rc 1/4
Weight	4 kg
Maximum flow rate	2.4L/min

Through coolant spindle system



Installation example 1

Pure iron (ELCH2) $\phi 2.0\text{mm} \times \phi 19\text{mmL}$ drilling example

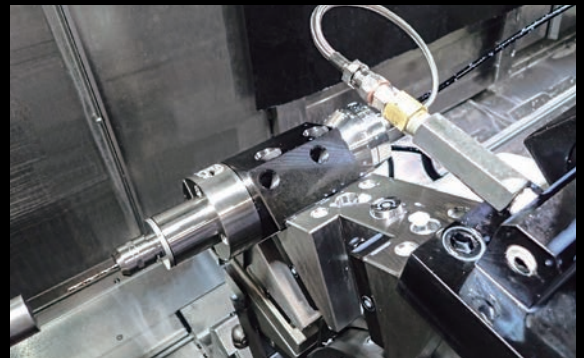
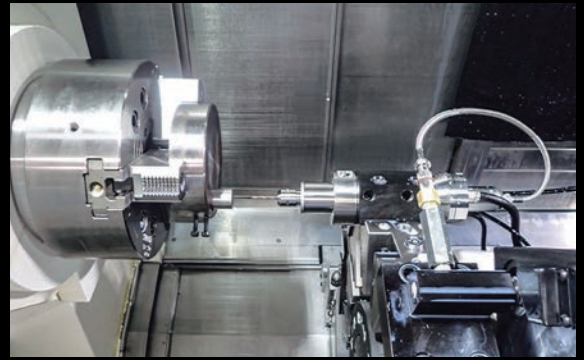
- Motor spindle : BMS-4040-MQL/E4000
- Machine : OKUMA MULTUS U3000
- Tool : Mitsubishi Material MVS0200×120S030
- Work : Pure iron ELCH2
- Drilling : $\phi 2.0 \times 19\text{mmL}$ through hole
- Coolant : Water-soluble cutting oil, 3 MPa internal coolant

12.5 times or more productivity!

Replaced 5 peck drilling cycle with no pecking or dwelling

Comparison of drilling conditions

	Current conditions	Recommendation of NAKANISHI
Cutting speed [m/min]	40	251
Spindle speed [min ⁻¹]	6,400	40,000
Feed rate [mm/rev]	0.03	0.06
Feed [mm/min]	192	2,400
Step	Front : 3.5mm×3 times Back : 4.0mm×2 times	Non-step
E4000 controller Load meter	-	3 lights (continuous duty area)



Installation example 2

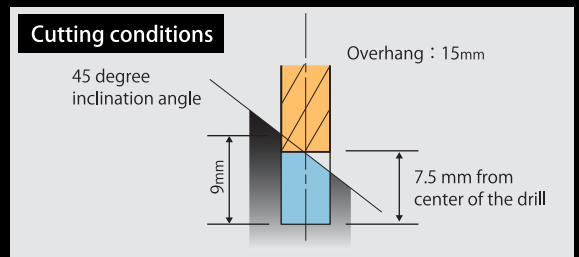
Aluminum alloy (A7075) $\phi 3\text{mm} \times \phi 9\text{mmL}$ drilling example

- Motor spindle : BMS-4020-MQL-CHK
- Machine : Sodick MC (MC430L)
- Tool : NACHI Aqua Drill EX Flat Oil Hole L/D=3 ϕ , 3AQDEXZOH3D0300
- Work : Aluminum alloy (A7075)
- Hole depth : 9mm (L/D=3), blind hole non-step processing
- Coolant : Non water-soluble cutting oil, 1.5 MPa internal coolant

Double productivity!

Comparison of drilling conditions

	Recommendation of NACHI	Recommendation of NAKANISHI
Cutting speed [m/min]	70.7	141.3
Spindle speed [min ⁻¹]	7,400	15,000
Feed rate [mm/rev]	0.071	0.066
Feed [mm/min]	532	1,000



NAKANISHI NAKANISHI INC.

Headquarters · Factory | 700 Shimohinata, Kanuma, Tochigi
322-8666, Japan
TEL +81-289-64-3520 FAX +81-289-62-1135

Specifications and design are subject to change without notice.

