Suitable for small diameter drilling and milling, slitting and grinding with grindstone.

Max. Output Power
30,000 min⁻¹
130 W
**One Piece Type ø25, ø23mm**

- **Air Motor**
- The rotor of the air motor rotates off-center in the cylinder. The vanes are pushed by compressed air and this rotates the rotor.

- **Compressor**

**One Piece Type ø64, ø25, ø44.5mm**

- **Air Turbine**
- The rotor is rotated by the velocity of the air stream making this type of spindle perfect for applications requiring very high speed rotation.

**One Piece Type ø22, ø20, ø19.05mm**

- **Air Motor**
- The rotor of the air motor rotates off-center in the cylinder. The vanes are pushed by compressed air and this rotates the rotor.

- **Air Line Kit**

- **Compressor**

- **80° Angle**

- **Air Motor Spindle**

- **Chuck Nut** K-218

- **Collet Chuck** CH5 Group

- **Special Grindstone Axis for Slots** AX42

- **MS**

- **AMS**

- **HES510**

- **HES800**

- **HTS**

- **SMS**

- **PL**

- **1**

- **ESPERT**

- **E-max**

- **ROTUS**

- **IMPULSE**

- **PRESTO II**

- **SHEENUS**

- **neo**

- **SONIC CUTTER**

- **ECOMO**

- **E3000**

- **E2530**

- **E6040**

- **E800Z**

- **MS**

- **MA**

- **AMX**

- **NR**

- **NRR**

- **ABS**

- **AIR LINE KIT**

- **PARTS**

- **INDEX**

- **PAGE INDEX**

**NOTE:** Do not exceed the maximum motor speed recommendation for the spindles. Excess speed will dramatically reduce bearing life. Please refer to the concerned product introduction page about the details.
"MS SERIES" MOTOR SPINDLE

MS Series

<table>
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<tr>
<th>Feature</th>
<th>Specification</th>
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<td>Outside Diameter</td>
<td>ø25, ø23, ø22, ø20, ø19.05mm</td>
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<tr>
<td>Max. Speed</td>
<td>30,000min⁻¹</td>
</tr>
<tr>
<td>Max. Output Power</td>
<td>130W</td>
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</tbody>
</table>

Spindle Accuracy: Within 2 µm

- Outer Housing Material: Made from stainless steel (SUS416)
- Configuration: 2 Types available, Straight type & 90° Angle type.
- The design of NAKANISHI’s air motors and air turbines gives the highest output power in this small spindle class.

Air Motor

- Rotor: The rotor of the air motor rotates off center in the cylinder. The vanes are pushed by compressed air, and this rotates the rotor. This small air motor produces high torque, making it suitable for small diameter drilling, milling, slitting, and grinding.

- Cylinder: Air Line Kit: AL-0304
- Planetary Gear System: 1/4 · 1/16 : Planetary Gear System
- Inlet Air ø6 mm Exhaust Air ø8 mm

Installation of 90° Angle Type

- MSS: MSST series angle (RA) type drive air and exhaust air pipes can be removed enabling the motor spindle installed through the front of a holder with backside restriction as shown in the illustration.
- Installation:
  1. Remove Inlet and Exhaust Air Pipes from motor spindle.
  2. Insert the straight spindle from the front side of holder and fix it.
  3. Mount the inlet and exhaust air pipes to the spindle fixed on the holder and attach a hose to the quick disconnect joint.
- Urethane hose of 6 x 4 for inlet air and 8 x 5 for exhaust air can be installed.

- The motor speed of 90° Angle air connection type motor / spindles are 10% less than that of the straight type.

- Proper Air Pressure: 0.3 ~ 0.5MPa
- Length of Motor Hose: 5m
- Hose Diameter [R-type]: Air Inlet ø6.7 mm (O.D.) Exhaust Air ø7.3 mm (O.D.)
- Hose Diameter [RA-type]: Air Inlet ø8.6 mm (O.D.) Exhaust Air ø8.2 mm (O.D.)
- Recommended Air Pressure: 0.3 MPa

- Recommended Clamping Area: Two recommended clamp areas are laser-marked on the spindle. Select one of them for clamping, and do not clamp both areas.

- Recommended Clamping Area: Recommended Clamping Area

- MSS Series Torque-Speed Characteristics

24,000min⁻¹ (0.5MPa)

- MSS-25 Series STRAIGHT TYPE (R)
- Torque-Speed Characteristics

6,000min⁻¹ (0.5MPa) 1/4 Speed Reduction

- MSS-25 Series 90° ANGLE TYPE (RA)
- Torque-Speed Characteristics

1,500min⁻¹ (0.5MPa) 1/16 Speed Reduction

- MSS-25 Series Torque-Speed Characteristics

Order by catalogue number. 2-p74
### MS Series Motor Spindle

#### Specifications

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<td>Length of Motor Hose: 2m</td>
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<tr>
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<td>Hose Diameter (RA-type) Air Inlet: ø6.0mm (O.D.)</td>
<td>Hose Diameter (RA-type) Air Inlet: ø6.0mm (O.D.)</td>
</tr>
<tr>
<td>Exhaust Air: ø7.5mm (O.D.)</td>
<td>Exhaust Air: ø7.0mm (O.D.)</td>
</tr>
<tr>
<td>Exhaust Air: ø8.0mm (O.D.)</td>
<td>Exhaust Air: ø8.0mm (O.D.)</td>
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</table>

#### Filters Joint

- MSS-22 Series Torque-Speed Characteristics
- MSST-23 Series Torque-Speed Characteristics

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**Order by catalogue number.**

*Refer to Page 2-p73 for mounting instructions for the 90° Angle Type.*
**“MS SERIES” MOTOR SPINDLE**

### MSS-20 Series

- **Air Motor Spindle**
  - MSS-20 Series
  - Continuous: 30,000 min⁻¹ (0.5MPa)
  - 8,000 min⁻¹ (0.5MPa) / 1/4 Speed Reduction
  - 2,000 min⁻¹ (0.5MPa) / 1/16 Speed Reduction

#### Specifications
- **Proper Air Pressure**: 0.3~0.5MPa
- **Length of Motor Hose**: 2m
- **Hose Diameter (R-type)**: Air Inlet ø6.0 mm (O.D.)
- **Exhaust Air**: ø8.0 mm (O.D.)

#### MSS-20 Series Torque-Speed Characteristics

![Diagram of MSS-20 Series Torque-Speed Characteristics](image)

### MSS-19 Series

- **Air Motor Spindle**
  - MSS-19 Series
  - Continuous: 30,000 min⁻¹ (0.5MPa)
  - 8,000 min⁻¹ (0.5MPa) / 1/4 Speed Reduction
  - 2,000 min⁻¹ (0.5MPa) / 1/16 Speed Reduction

#### Specifications
- **Proper Air Pressure**: 0.3~0.5MPa
- **Length of Motor Hose**: 2m
- **Hose Diameter (RA-type)**: Air Inlet ø6.0 mm (O.D.)
- **Exhaust Air**: ø8.0 mm (O.D.)

#### MSS-19 Series Torque-Speed Characteristics

![Diagram of MSS-19 Series Torque-Speed Characteristics](image)