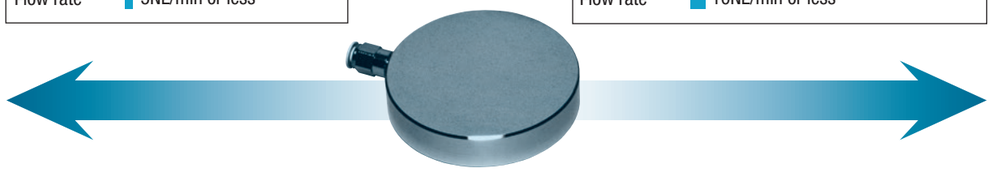
Customization

Performances

The OAB can adjust the flow rate, different from the conventional porous compensations.
It offers customization for high-rigidity, high-speed and other applications according to the use conditions.

Load capacity	100N
Rigidity	50N/μm
Flow rate	5NL/min or less

Load capacity	150N
Rigidity	30N/μm
Flow rate	10NL/min or less

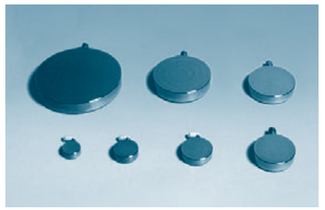


Customizes performances (allowable loads, rigidity and flow rates) in the same dimensions.

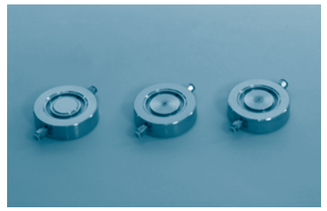
Contact our sales office for details.

Variation of OAB

Straight Bushings and Flange Bushings

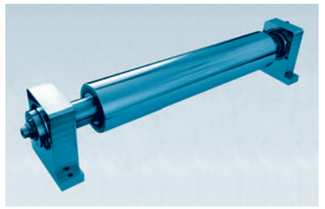


Pads and Plates

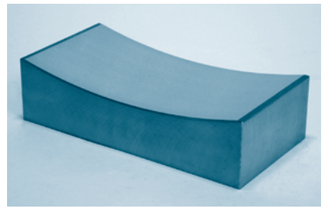


Pressure Vacuum Tools

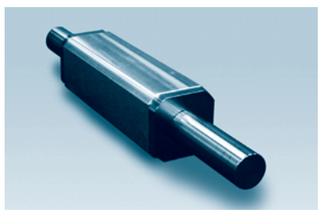
Air Spindles



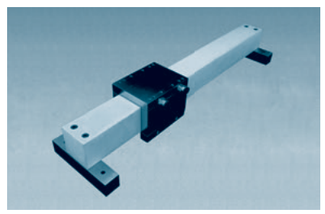
Air bearing roller unit



R pad (Radial Air bearing)



Air guide unit



Air Slide

Available in various shapes as shown above.

Contact our sales office for details.

OAB (OILES Air Bearings) Instruction Manual

OILES air bearings are static pressure air bearings featuring various advantages such as high speed, high accuracy, and ultra-low friction.
Read all the following operating instructions to prevent malfunctions caused by transportation, mounting, or air supply.

1. Transportation and Operating Environment

OILES air bearings are ultra-precise products. Avoid dropping or other impacts, and transportation or use under strong vibrations.
・When a transporter is used, special caution should be exercised not to damage the product with the transporter's metal claws.
・As a guideline for the operating environment, the temperature should be 23°C ± 5°C and humidity 70% or lower.
・Let the product stand at room temperature sufficiently in order to avoid condensation before opening the package.

2. How to Mount

1) Pad and Flange bushing

When screws are used to mount the product, set the target flatness of the mounting surface at 2 μm or less in order to minimize the strain caused by stress.Polish the mounting surface with an oilstone briefly to remove burrs and scratches.

2) Straight bushing

Pay attention not to set the dimension of the housing bore too tight.

3. Control of Supply Air

Many of the malfunctions of air bearings are caused by insufficiently controlled air supply.
The air supply should be equivalent to JIS B 8392-1 compressed-air purity class of 1.6.1 (clean, dry air through a filter of 0.3 μm or smaller in a dry air).

1) Never move the air bearing and the mating material without supplying air.
2) The standard (recommended) supply air pressure is 0.5 MPa (gauge pressure).
3) Ensure that the discharge capacity flow rate of the supply air source is greater than or equal to twice the consumption flow rate.
4) The internal diameters of piping tubes should be ϕ4 or more, unless otherwise specified.

* Recommended equipment for air supply control

Condensation or drain condensate in the air supply is one of the causes of seizure of air bearings.
Especially in high-humidity environments, problems caused by condensation frequently occur. Therefore, it is recommended that the following air pressure auxiliary devices be installed in the air supply piping.

Compressor → Air tank → Refrigerated air dryer → Mist separator → Membrane dryer → Air bearing

4. Interlock Setting

It is recommended that an interlock be set to prevent the bearings from moving without an air supply or under reduced supply air pressure.

5. Precautions for Operation

1) Before installing piping to an air bearing, blow air into the tubes thoroughly to confirm that no drain condensate, fine particles, or oil is trapped.
2) Before restarting operation after a long-term suspension, thoroughly blow air in the same way.
3) Supply clean, dry air to the air bearing for about 30 minutes before using it.
4) In using an air bearing for rotation, mounting of a greatly unbalanced rotating body may lead to contact between the shaft and the bearing during high-speed rotation, resulting in severe damage. In high-speed rotation, correct the dynamic balance in accordance with the rotation speed used. (recommended JIS B 0905 balance quality grade: G0.4)
5) In high-speed rotation use, take risk prevention measures by installing a cover to prevent rotating bodies from shattering.
6) Take measures not to allow heat from heating bodies such as a motor (power source) to have an influence on the air bearing. Strain caused by expansion due to heat may become a cause for malfunction.