

## Operating Instructions for Air Bearings

### Initial Installation

- Before initial installation, heat air bearing to room temperature to avoid condensation
- Only remove protective cover/bag shortly before installation
- Flush supply line with air before connecting with the air bearing to remove contamination in the hose

### Handling

- Do not touch bearing surface with bare hands: use lint-free gloves
- Operate air bearing only in the specified supply pressure range. Monitoring of compressed air is recommended
- Do not exceed load capacity in spec sheet
- Protect bearing surface from dirt and scratches. Clean bearing if dirty (see cleaning instructions)

### Compressed Air Requirements

- Only supply air bearing with de-oiled and filtered air. Use filter control valve<sup>1</sup>
- Compressed air quality required according to *DIN ISO 8573-1*:

Residual oil content	< 0.01 mg/m <sup>3</sup>	(≙ class 1)
Residual dust size	< 0.1 μm	(≙ class 1)
Residual dust content	< 0.1 mg/m <sup>3</sup>	(≙ class 1)
Residual water DTP	+ 3 °C	(≙ class 4)
Residual water content	< 6 g/m <sup>3</sup>	(≙ class 4)

<sup>1</sup> e.g. FESTO control filter valve with 5μm-filter type LFR-... and matching ultra-fine filter 0,01μm type LFMA-...

## Guiding (mating) Surface Requirements

- Recommended surface finish  $< Ra\ 0.4$  <sup>2</sup>
- Recommended surface flatness  $< 2\ \mu m$  <sup>2,3</sup>
- Clean guiding surface before bearing installation

## Piston Bearing Application

- Caution: only pressurise with air once piston correctly installed

## Cleaning

- Clean bearing surface and guiding surface with lint-free cloth and isopropanol
- Do not touch bearing surface and guiding surface with bare hands. Use lint-free gloves for cleaning
- Supply bearing with air during cleaning process to prevent particles from entering the nozzles
- Wear protective goggles and a mask during cleaning process

## Maintenance

- Do not oil or grease air bearing
- Contact-free when air bearing is operated correctly, and therefore maintenance-free
- Regularly check guiding surface for damage and dirt. If necessary, clean guiding surface

## Notes

- Air bearing properties (bearing gap height, load capacity and stiffness) depend on quality of guiding surface. Depending on material (particularly porosity), evenness and surface finish, properties can deviate from the spec sheet.

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<sup>2</sup> With a bearing gap of 6-10  $\mu m$

<sup>3</sup> If bearing statically determined: relates to size of air bearing surface. If bearing statically over-determined: relates to entire guiding way

