

Linear Modules with Intermediate Positions

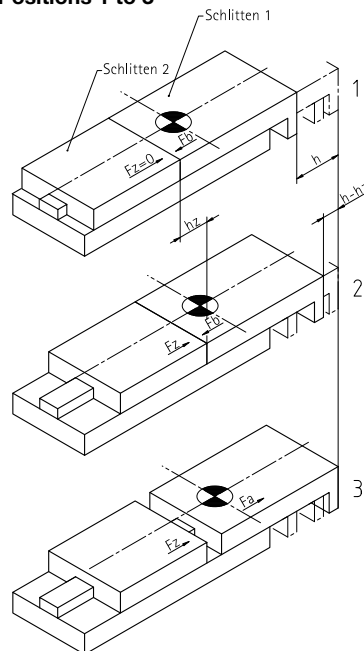
Technical Data – Summary FZ and F-ZA Series

| | | LM with Intermediate Position | | | | | | | | |
|---|-----------|-------------------------------|-------|-------|-------|-------|--------|---------|---------|---------|
| | | LM 4 | | LM 5 | | LM 6 | | LM 8 | | |
| | | FZ-30 | FZ-60 | FZ-60 | FZ-90 | FZ-60 | FZ-120 | F-120ZA | F-240ZA | F-360ZA |
| Stroke lengths [mm] h: | 0-30 | ● | | | | | | | | |
| | 0-60 | | ● | ● | | ● | | | | |
| | 0-90 | | | | ● | | | | | |
| | 0-120 | | | | | | ● | ● | | |
| | 0-180 | | | | | | | | | |
| | 0-240 | | | | | | | | ● | |
| | 0-360 | | | | | | | | | ● |
| Max. permissible mass [kg]: | 0,8 | ● | ● | | | | | | | |
| | 2,5 | | | ● | ● | | | | | |
| | 5 | | | | | ● | ● | | | |
| | 8 | | | | | | | ● | ● | ● |
| Slide 1 Theor. force (bei 5bar) [N]: Fa/Fb | 50/38 | ● | ● | | | | | | | |
| | 113/85 | | | ● | ● | | | | | |
| | 201/173 | | | | | ● | ● | | | |
| | 394/346 | | | | | | | ● | ● | ● |
| Cylinder diameter [mm]: | 2xØ8 | ● | ● | | | | | | | |
| | 2xØ12 | | | ● | ● | | | | | |
| | 2xØ16 | | | | | ● | ● | | | |
| | 1xØ32 | | | | | | | ● | ● | ● |
| Slide 2 Theor. force (bei 5bar) [N]: Fz | 66 | ● | ● | | | | | | | |
| | 173 | | | ● | ● | | | | | |
| | 364 | | | | | ● | ● | | | |
| Cylinder diameter [mm]: | 2xØ10 | ● | ● | | | | | | | |
| | 2xØ16 | | | ● | ● | | | | | |
| | 2xØ20 | | | | | ● | ● | | | |
| Air consumption per cycle at 5 bar and nominal stroke [Nl]: | | 0,09 | 0,11 | 0,42 | 0,63 | 0,68 | 1,36 | 0,58 | 1,13 | 1,68 |
| Weight [kg]: | | 0,51 | 0,83 | 1,50 | 2,00 | 2,40 | 3,40 | 5,90 | 7,90 | 10,10 |
| Point of application of force for all torques [mm]: | M | 71,0 | 101,0 | 102,0 | 143,6 | 119,0 | 190,0 | 138,0 | 138,0 | 138,0 |
| Maximale statische Torques [Nm]: | Ma | 13,6 | 13,6 | 19,2 | 64,0 | 40,0 | 96,0 | 386,4 | 386,4 | 386,4 |
| | Mb | 13,6 | 13,6 | 20,8 | 64,0 | 32,0 | 88,0 | 783,8 | 783,8 | 783,8 |
| | Mc | 13,6 | 13,6 | 21,6 | 23,2 | 56,0 | 64,0 | 336,0 | 336,0 | 336,0 |

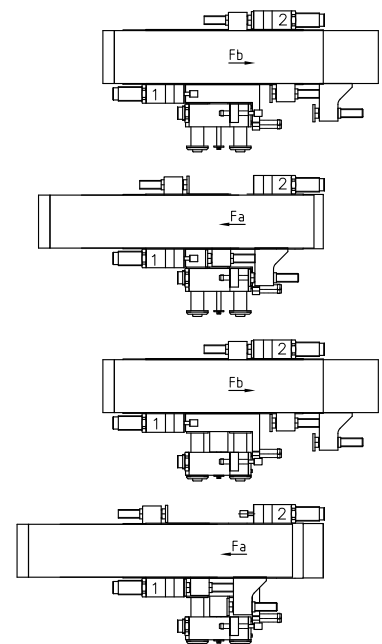
For all modules

| | |
|---------------------------|---------|
| Operating pressure [bar]: | 3-7 |
| Temperature range [°C]: | 0-60 |
| Repeat accuracy [mm]: | +/-0,01 |

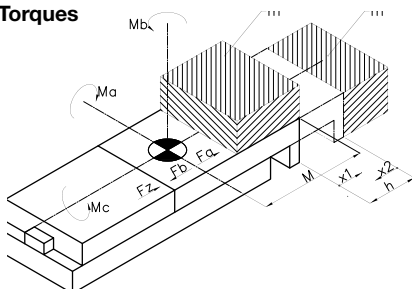
Travel diagram LM FZ: Positions 1 to 3



Travel diagram LM F-ZA



Torques



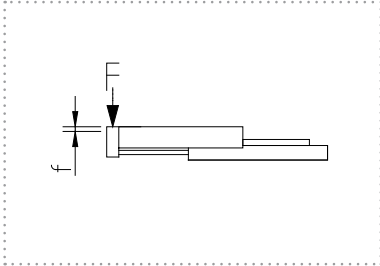
Load Diagrams LM8 F-ZA see page 45

Linear Modules with Intermediate Positions

Load Diagrams

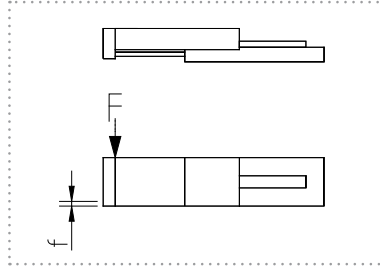
Axial Load

The graph shows the deflection f of the slide under the effect of the force F . The deflection is independent of the stroke.



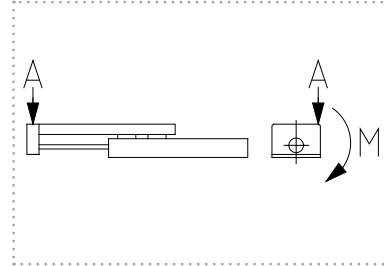
Transverse Load

The graph shows the deflection f of the slide under the effect of the force F . The deflection is independent of the stroke.

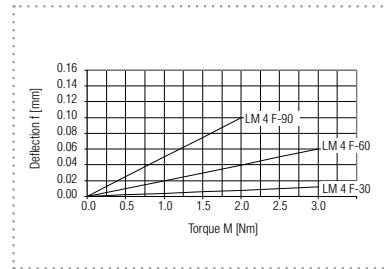
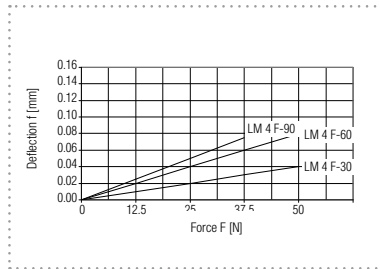
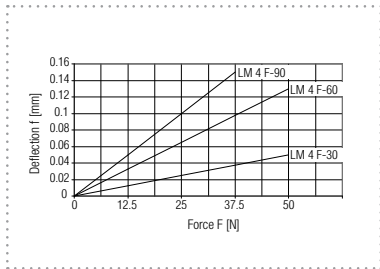


Lateral Load

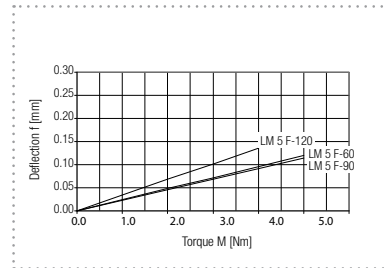
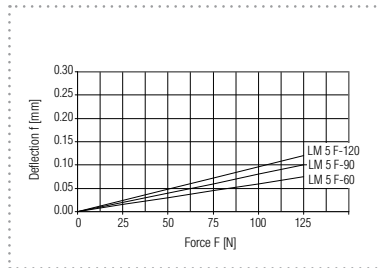
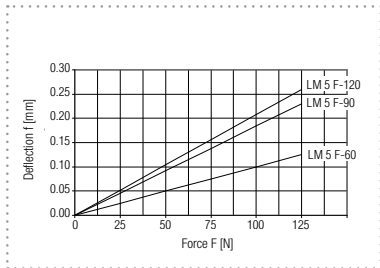
The graph shows the deflection f of the slide at point A under the effect of the torque. The deflection is independent of the stroke.



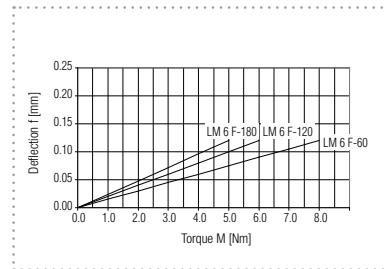
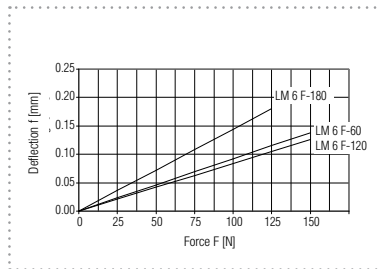
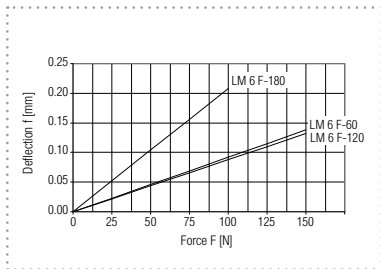
LM 4 FZ



LM 5 FZ



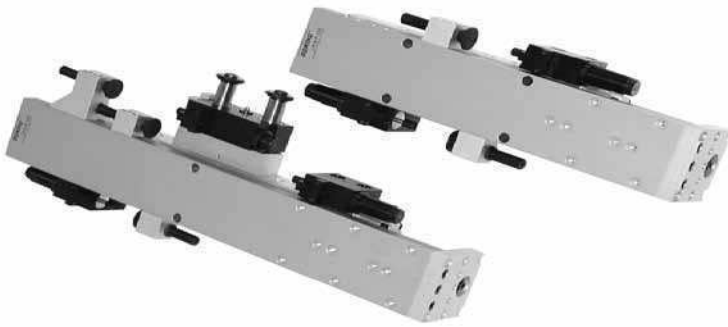
LM 6 FZ



Linear Modules with Intermediate Positions

LM 8 F-ZA – Pneumatic Linear Module with Intermediate Stop

LM 8 F-ZA



Technical data, stroke-independent

| | | |
|--|----|---|
| Cylinder diameter | | Ø32 mm |
| Theor. force (at 5 bar) | Fa | 394 N |
| | Fb | 346 N |
| Max. speed | | 0,7 m/s |
| Pneumatic connections | | Linear module: G 1/8" |
| | | Intermediate position: M5 |
| Medium | | Compressed-air filtered, oiled or non-oiled |
| Operating pressure range | | 3 to 7 bar |
| Temperature range | | 0 – 60° C |
| Repeat accuracy | | +/-0.01 mm |
| Max. permissible mass | | 8 kg |
| Air consumption ZA per cycle at 5 bar and nominal stroke [NI] | | 0,03 l |
| Weight ZA | | 0,5 kg |

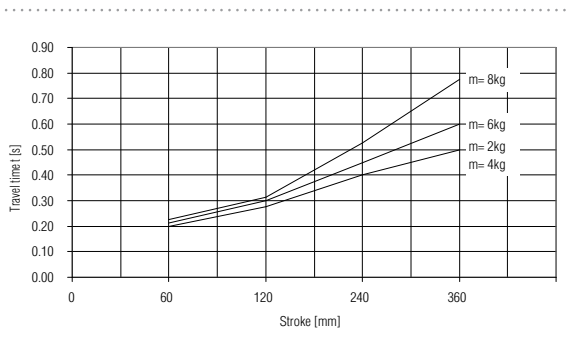
Technical data, stroke-dependent

See page 76

Permissible travel time t relative to the stroke length and the additional mass m

The travel time t determined from the diagram may not be undershot.

Recommendation: When selecting the module, the travel time t should be assumed as being 20% more.

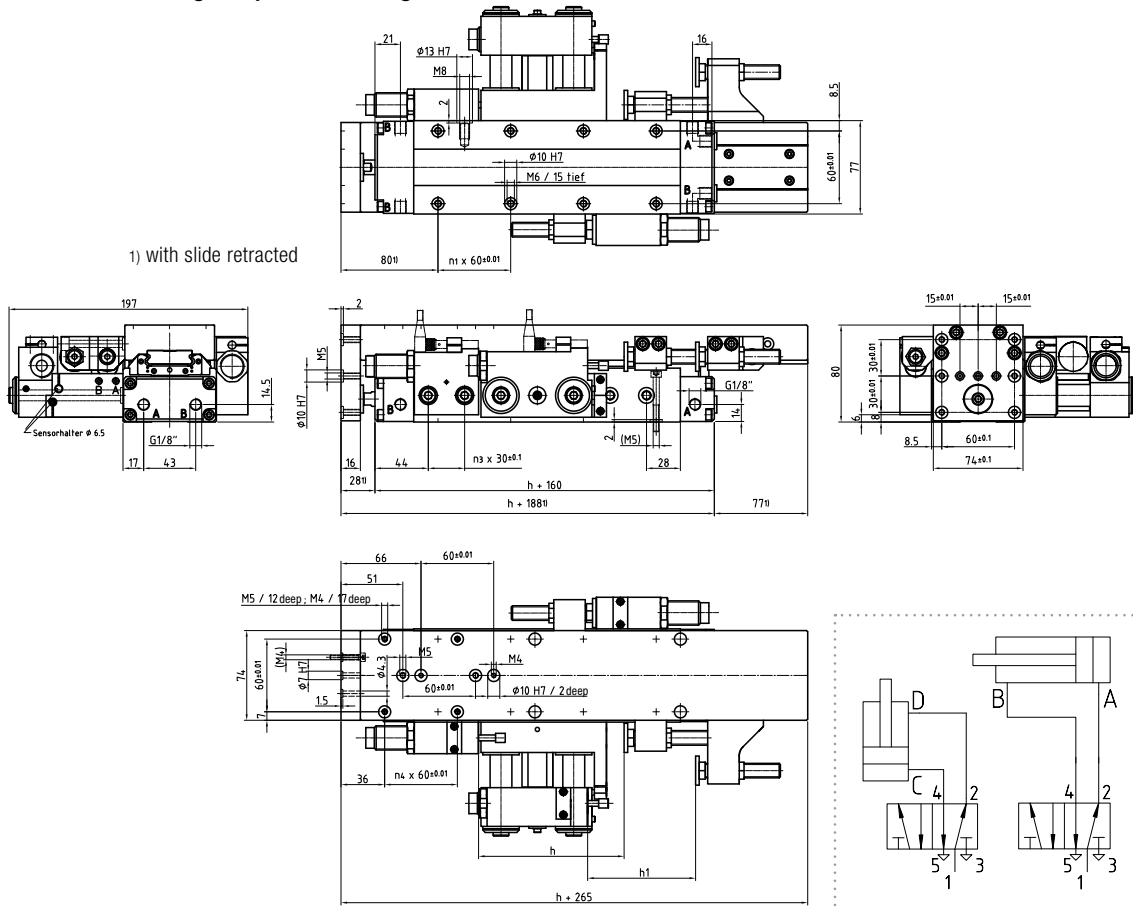


Permissible travel time t = travel time without valve switching time, at nominal pressure 6 bar.

Linear Modules with Intermediate Positions

LM 8 F-ZA – Pneumatics Linearmodul mit Intermediate stop ZA

Dimensional drawing and pneumatic diagram



| Designation | h | h1 | n1 | n2 | n3 | n4 |
|---------------|-----|-----|----|----|----|----|
| LM 8 F-120 ZA | 120 | 60 | 3 | 3 | 6 | 12 |
| LM 8 F-240 ZA | 240 | 180 | 5 | 7 | 10 | 2 |
| LM 8 F-360 ZA | 360 | 300 | 7 | 11 | 14 | 4 |

| Designation | Order number |
|------------------|--------------|
| LM 8 F-120 ZA-Vo | 300 8836 |
| LM 8 F-240 ZA-Vo | 300 8834 |
| LM 8 F-360 ZA-Vo | 300 8831 |
| LM 8 F-120 ZA-Ru | 300 8878 |
| LM 8 F-240 ZA-Ru | 300 8879 |
| LM 8 F-360 ZA-Ru | 300 8880 |

incl. hydraulic shock absorber and 4 centering rings Ø10

Anbauvarianten Intermediate stop ZA 8F an LM 8 F See page 74

Accessories

| | |
|---------------------|----------|
| Centering ring Ø 10 | 300 1522 |
| Limit switch Ø 6,5 | 300 1845 |
| Shock absorber | 300 9320 |

See chapter Accessories

Overview

Linear Axes
pneum. / electr.

Linear Modules
pneum. / electr.

Linear Modules
with Intermediate
Positions

Rotary Modules

Grippers

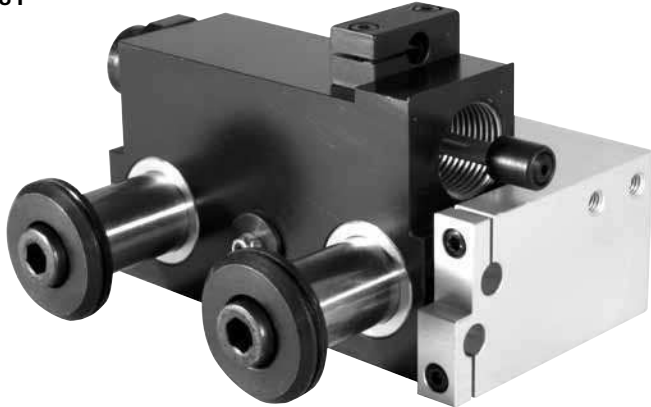
Basic Elements

Accessories

Linear Modules with Intermediate Positions

ZA 8 F – Intermediate Stop for LM 8 F

ZA 8 F



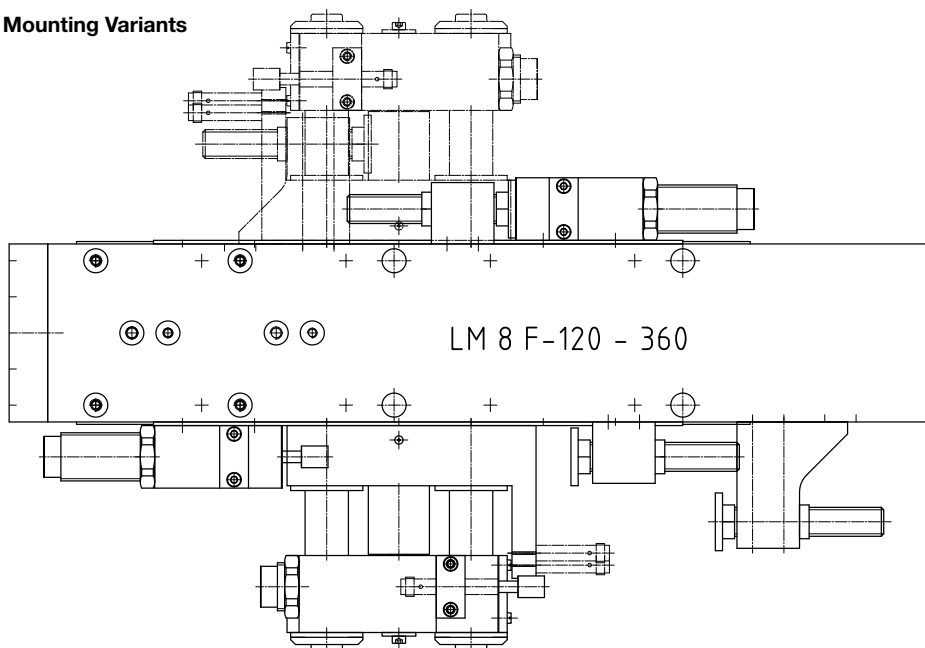
Technical Data

| | |
|---|---|
| Cylinder diameter | Ø25 mm |
| Pneumatic connections | M5 |
| Medium | Compressed-air filtered, oiled or non-oiled |
| Operating pressure range | 3 to 7 bar |
| Temperature range | 0 – 60° C |
| Repeat accuracy | +/-0.01 mm |
| Air consumption per cycle at 5 bar and nominal stroke [NI] | 0,03 l |
| Weight | 0,5 kg |

Subsequent intermediate stop add-on

The ZA 8 F can be installed later on both sides of the Linear Module LM 8 F. As a result, intermediate positions in the forwards and reverse stroke of the module can be traversed.

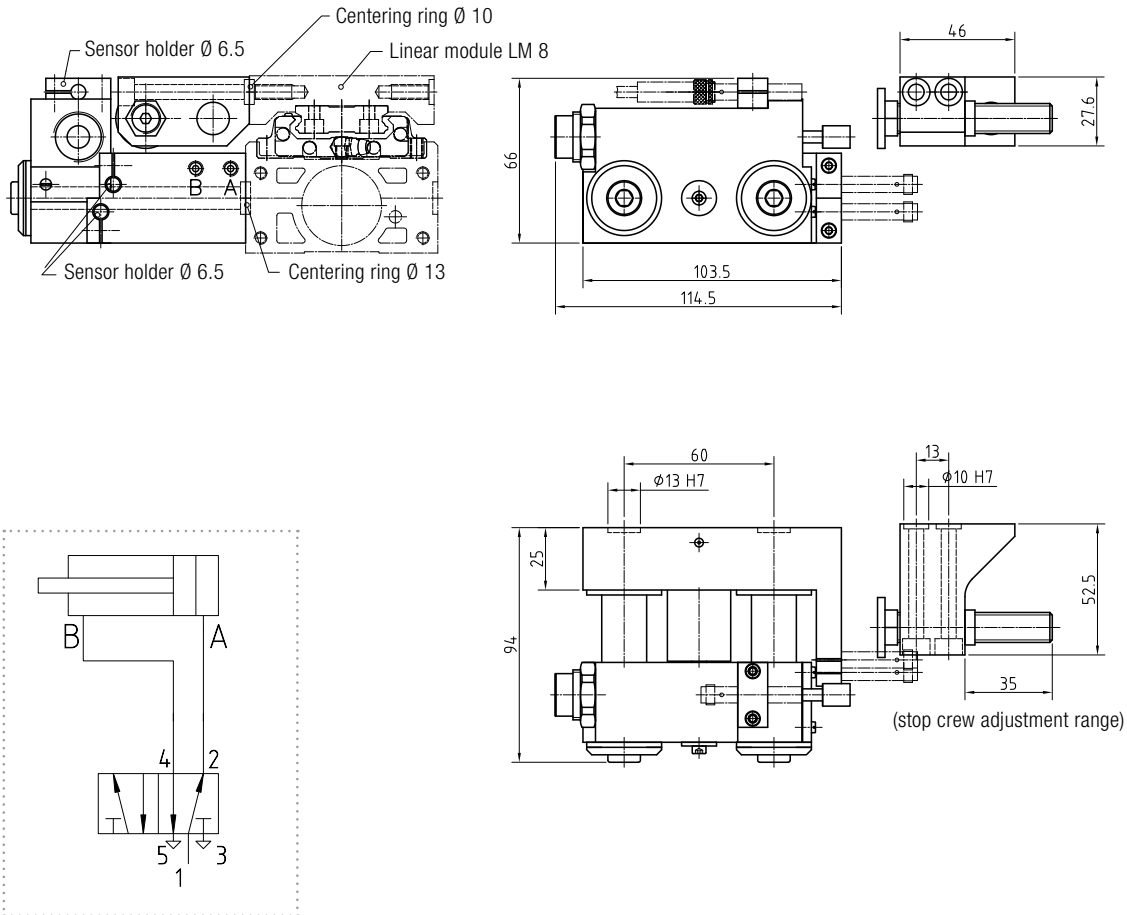
Mounting Variants



Linear Modules with Intermediate Positions

ZA 8 F – Intermediate Stop for LM 8 F

Dimensional drawing and pneumatic diagram



| Designation | Order number |
|-------------|--------------|
|-------------|--------------|

| | |
|--------|----------|
| ZA 8 F | 300 5235 |
|--------|----------|

incl. hydraulic shock absorber,
2 centering rings Ø10 and
2 centering rings Ø13

Accessories

| | |
|---------------------|----------|
| Centering ring Ø 10 | 300 1522 |
| Centering ring Ø 13 | 300 1523 |
| Limit switch Ø 6,5 | 300 1845 |
| Shock absorber | 300 9320 |

See chapter Accessories

Overview

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pneum. / electr.

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Positions

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