Attention!

All dimensions are in European-Standard.
Please convert all in US-Standard.

Conversion Table

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<th>Multiply</th>
<th>By</th>
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HOERBIGER-ORIGA Corporation • 100 West Lake Drive • IL-Glendale Heights, Illinois •
Tel. 630-871-8300 • Fax 630-871-1515 • e-mail: info-hous-market@hoerbiger.com
Internet http://www.hoerbigeroriga.com
Custom Solutions with

ORIGA SYSTEM PLUS is a basis for providing custom solutions for particular applications and end user requirements.

Clean Room Pneumatic Cylinders
Especially adapted for use in clean room environments, the Clean Room series incorporates wear resistant components and an in-built vacuum system which practically eliminates particle emissions from the actuator.

Thermal
Designed for extreme temperature applications (glass and steel foundaries, bakeries, etc) Generally, rodless cylinders have a maximum operating temperature of approximately 150 degrees F. Hoerbiger-Origa Corporation has designed a rodless pneumatic cylinder capable of reaching temperatures up to 500 degrees F.

Door Drive Systems
Pneumatic and electric door drive systems for commercial, industrial and transportation applications. Features may include:
- Extended end of stroke cushioning
- Obstruction detection and auto-reverse capability
- Specialist control requirements
- Electronic interface

Bi-Parting Actuators
Unique Electric Belt Drive systems providing bi-parting actuation from a single axis.
For applications in transportation systems, materials handling, machine guards and automatic door operation.
<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
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<tr>
<td>Basic Linear Drive – Standard Version</td>
<td>13</td>
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<tr>
<td>Air Connection on the End-face</td>
<td>16</td>
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<tr>
<td>Single End Porting</td>
<td>17</td>
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<td>Basic Linear Drive – Clean Room Cylinder</td>
<td>20</td>
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<tr>
<td>Clevis Mounting</td>
<td>53</td>
</tr>
<tr>
<td>Mid Section Support</td>
<td>55</td>
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<tr>
<td>Inversion Mounting</td>
<td>59</td>
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<tr>
<td>Linear Guides – SLIDELINE</td>
<td>25</td>
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<tr>
<td>Linear Guides – POWERSLIDE</td>
<td>27</td>
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<tr>
<td>Linear Guides – GUIDELINE</td>
<td>31</td>
</tr>
<tr>
<td>Linear Guides – PROLINE</td>
<td>35</td>
</tr>
<tr>
<td>Brakes</td>
<td>37</td>
</tr>
<tr>
<td>Proximity Sensors</td>
<td>66</td>
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## Modular Components - Overview

### Linear Drives

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<thead>
<tr>
<th>Model</th>
<th>OSP-P16</th>
<th>OSP-P25</th>
<th>OSP-P32</th>
<th>OSP-P40</th>
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</thead>
<tbody>
<tr>
<td>Theoretical force / Effective force at 6bar [N]</td>
<td>47 / 32</td>
<td>120 / 78</td>
<td>259 / 250</td>
<td>483 / 420</td>
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<tr>
<td>Velocity v [m/s]</td>
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<td>&gt; 0.005</td>
<td>&gt; 0.005</td>
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<tr>
<td>Lubrication - Prelubricated</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
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<tr>
<td>Multiple air ports [x 90°]</td>
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<td>Air connection on the End-face</td>
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<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Cushion length [mm]</td>
<td>&lt; 60</td>
<td>1</td>
<td>17</td>
<td>30</td>
</tr>
<tr>
<td>Brake length [mm]</td>
<td>1 - 6000</td>
<td>1 - 6000</td>
<td>1 - 6000</td>
<td>1 - 6000</td>
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<tr>
<td>Pressure range [bar]</td>
<td>0.0 - 8.0</td>
<td>0.0 - 8.0</td>
<td>0.0 - 8.0</td>
<td>0.0 - 8.0</td>
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<tr>
<td>Viton / chemical resistance</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Stainless steel parts</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Slow speed lubrication</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Duplex Connection / Multiplex Connection</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Stroke length [mm]</td>
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<td>1 - 6000</td>
<td>1 - 6000</td>
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### Slideline

<table>
<thead>
<tr>
<th>Model</th>
<th>Linear</th>
<th>MS</th>
<th>MV</th>
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</thead>
<tbody>
<tr>
<td>L [N]</td>
<td>220</td>
<td>90</td>
<td>45</td>
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<td>M [Nm]</td>
<td>6</td>
<td>2.5</td>
<td>1.5</td>
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<tr>
<td>MS [Nm]</td>
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### Proline

<table>
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<td>M [Nm]</td>
<td>14</td>
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<td>60</td>
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<tr>
<td>MS [Nm]</td>
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### Powerslide

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<th>MV</th>
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</thead>
<tbody>
<tr>
<td>L [N]</td>
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<td>90</td>
<td>65</td>
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<tr>
<td>M [Nm]</td>
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<td>25</td>
<td>50</td>
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<tr>
<td>MS [Nm]</td>
<td>3</td>
<td>15</td>
<td>30</td>
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### Guideline

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<tr>
<td>L [N]</td>
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<td>M [Nm]</td>
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<td>MS [Nm]</td>
<td>8</td>
<td>90</td>
<td>115</td>
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</table>

### Passive-Brake Multibrake

<table>
<thead>
<tr>
<th>Brake force in pressure, Brake surface dry [N]</th>
<th>SL/PL</th>
<th>SL/PL</th>
<th>SL/PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brake force at 6 bar, Brake surface dry [N]</td>
<td>350</td>
<td>590</td>
<td>960</td>
</tr>
</tbody>
</table>

### Accessories

- **Proximity Sensors**
  - RS (contact, open) / ES (PNP, NPN)
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
- **Displacement measuring systems**
  - SFI - incremental
  - SFA - absolute
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
- **Integrated valves 3/2 WV NO NOE**
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
- **Motor package (stepper/servo)**
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
- **Mountings**
  - End Cap Mounting / Mid-Section support
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
  - Shock absorber for intermediate position
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |

### Special Cylinders

- **Cleanroom - class 10**
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
  - High speed to 30 m/s
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |

### Proximity Sensor - Options

- **Linear Actuator with ball screw**
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
- **Linear Actuator with toothed belt**
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
- **Linear Actuator with ball screw**
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
- **Rodless Pneumatic Cylinder according to Series P 210 other Temperature ranges on request**
  - ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |

---

**Note:**
- ✗ = Standard version
- ✗ = Option
- ✗ = other Temperature ranges on request
## Modular Components - Overview

<table>
<thead>
<tr>
<th>OSP-P50</th>
<th>OSP-P63</th>
<th>OSP-P80</th>
<th>OSP-E25-B</th>
<th>OSP-E32-B</th>
<th>OSP-E50-B</th>
<th>OSP-E25-S</th>
<th>OSP-E32-S</th>
<th>OSP-E50-S</th>
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<tr>
<td>1178 / 1000</td>
<td>1870 / 1550</td>
<td>3010 / 2600</td>
<td>500 / 425</td>
<td>250 / 600</td>
<td>1500 / 600</td>
<td>250 / 600</td>
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<td>250 / 600</td>
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<tr>
<td>&gt; 0,005</td>
<td>&gt; 0,005</td>
<td>&gt; 0,005</td>
<td>&gt; 0,005</td>
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<td>0,05 - 5,0</td>
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<td>0,01 - 1,25</td>
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### Specifications

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<td>Length</td>
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<tr>
<td>Diameter</td>
<td>55</td>
</tr>
<tr>
<td>SL/PL</td>
<td>1200</td>
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</table>

### Notes
- on request
- on request
- on request
- on request
Control for an end-of-stroke application. A 5/2-way valve controls the cylinder. The speed can be controlled separately for both directions.

If a 5/3-way valve (with pressurized middle position) is used to control the cylinder, it is possible to stop at intermediate positions.

The optional integrated VOE Valves offer optimal control, and allow accurate positioning of intermediate positions with the lowest possible equal speeds.

The combination of an OSP cylinder with the passive MULTIBRAKE as shown here, allows accurate positioning and safety in case of loss of pneumatic air pressure.
The high load capacity of the piston can cope with high bending moments without additional guides.

The mechanical design of the OSP-P allows synchronized movement of two cylinders.

When using external guides, the clevis mounting is used to compensate for deviations in parallelism.

Integrated guides offer optimal guidance for applications requiring high performance, easy assembly and maintenance free operation.

Optimal system performance by combining multi-axis cylinder combinations.

For further information and assembly instructions, please contact your local HOERBIGER-ORIGA dealer.
PNEUMATIC GROUP

OSP-P
ORIGA SYSTEM PLUS

RODLESS PNEUMATIC CYLINDERS

HOERBIGER
**ORIGA SYSTEM PLUS – INNOVATION FROM A PROVEN DESIGN**

A completely new generation of linear drives which can be simply and neatly integrated into any machine layout.

**A NEW MODULAR LINEAR DRIVE SYSTEM**

With this second generation linear drive HOERBIGER-ORIGA offers design engineers complete flexibility. The well known ORIGA cylinder has been further developed into a combined linear actuator, guidance and control package. It forms the basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

All additional functions are designed into modular system components which replace the previous series of cylinders. The modular system concept forms an ideal basis for additional customer-specific functions.

**MOUNTING RAILS ON 3 SIDES**

Mounting rails on 3 sides of the cylinder enable modular components such as linear guides, brakes, valves, sensors etc. to be fitted to the cylinder itself. This solves many installation problems, especially where space is limited.

Combined clamping for inner and outer sealing band with dust cover.

Stainless steel outer sealing band and robust wiper system on the carrier for use in aggressive environments.

Adjustable end cushioning at both ends are standard.

End cap can be rotated to any one of the four positions (before or after delivery) so that the air connection can be in any desired position.

Proven stainless steel inner sealing band for optimum sealing and extremely low friction.

Stainless steel screws optional.
PNEUMATIC LINEAR ACTUATOR WITH NEW MODULAR SYSTEM

MINIMUM TRAVEL
30 Million linear feet of travel

The Components

SLIDELINE
Combination with linear guides provides for heavier loads.

PROLINE
The compact aluminium roller guide for high loads and velocities.

INTEGRATED VOE VALVES
The complete compact solution for optimal cylinder control.

POWERSLIDE
Roller bearing precision guidance for smooth travel and high dynamic or static loads.

GUIDELINE
Linear guides for heavy duty applications.

INTEGRAL DOVETAIL RAILS
Integral dovetail rails on three sides provide many adaptation possibilities (linear guides, sensors, etc.).

SENSOFLEX SFI
Incremental measuring system with 1mm resolution.

SENSOFLEX SFA
Analogue measuring system. Simple and robust for high accuracy applications.

NEW LOW PROFILE PISTON/Carrier design.

Optimized cylinder profile for maximum stiffness and minimum weight. Integral air passages enable both air connections to be positioned at one end, if desired.

Install the OSP-P System to simplify design work! The files are compatible with all popular CAD systems and package hardware.

Passive pneumatic brake reacts automatically to pressure failure.

Modular system components are simply clamped on.

Active pneumatic brake for secure, positive stopping at any position.
OPTIONS AND ACCESSORIES
FOR SYSTEM VERSATILITY

SERIES OSP-P
STANDARD VERSIONS
OSP-P16 to P80
Page 13
Standard Carrier with integral guidance. End cap can be rotated 4x90° to position air connection on any side.
Magnetic piston as standard. Dovetail profile for mounting of accessories and the cylinder itself.

BASIC CYLINDER OPTIONS
STAINLESS VERSION
For use in constantly damp or wet environments. All screws are A2 quality stainless steel (material no. 1.4301 / 1.4303).
SLOW SPEED OPTIONS
Specially formulated grease lubrication facilitates slow, smooth and uniform piston travel in the speed range from 0.005 to 0.2 m/s. Minimum achievable speeds are dependent on several factors. Please consult our technical department. Slow speed lubrication in combination with Viton® on demand. Oil free operation preferred.

VITON® VERSION
For use in an environment with high temperatures or in chemically aggressive areas. All seals are made of Viton®. Sealing bands: Stainless steel.
CORROSION RESISTANCE COATING
FDA Approved Xylan® Coating
Good for food applications, caustic washdown, salt spray, dionized water and chemical resistance.
END-FACE AIR CONNECTION
Page 16
To solve special installation problems.
BOTH AIR CONNECTIONS AT ONE END
Page 17
For simplified tubing connections and space saving.
INTEGRATED VOE VALVES
Page 18
The complete compact solution for optimal cylinder control.
ACCESSORIES
PROXIMITY SENSORS
TYPE RS AND ES
Page 66
For electrical sensing of end and intermediate piston positions.

MOUNTINGS FOR OSP-P16 to P80
CLEVIS MOUNTING
Page 53
Carrier with tolerance and parallelism compensation for driving loads supported by external linear guides.
END CAP MOUNTING
Page 54
For end-mounting of the cylinder.
MID-SECTION SUPPORT
Page 55
For supporting long cylinders or mounting the cylinder by its dovetail rails.
INVERSION MOUNTING
Page 59
The inversion mounting, transfers the driving force to the opposite side, e.g. for dirty environments.

ACCESSORIES
FOR SYSTEM VERSATILITY

The right to introduce technical modifications is reserved.
Rodless Pneumatic Cylinder
Ø 16-80 mm

Series OSP-P...

Standard Versions:
• Double-acting with adjustable end cushioning
• With magnetic piston for position sensing

Special Versions:
• Stainless steel screws
• Slow speed lubrication
• Viton seals
• Both air connections on one end
• Air connection on the end-face
• Integrated Valves

Series OSP-P...

Characteristics according to VDI 3292

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Symbol</th>
<th>Unit</th>
<th>Description</th>
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<tbody>
<tr>
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<td></td>
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<tr>
<td>Type</td>
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<td>Rodless cylinder</td>
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<tr>
<td>Series</td>
<td>OSP-P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System</td>
<td>Double-acting, with cushioning, position sensing capability</td>
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<td></td>
</tr>
<tr>
<td>Mounting</td>
<td>See drawings</td>
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<td></td>
</tr>
<tr>
<td>Air Connection</td>
<td>Threaded</td>
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<tr>
<td>Ambient temperature range</td>
<td>$0_{\text{min}}$, $0_{\text{max}}$ °C</td>
<td>-10, +80</td>
<td>Other temperature ranges on request</td>
</tr>
<tr>
<td>Weight (mass)</td>
<td>kg</td>
<td></td>
<td>See table below</td>
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<tr>
<td>Installation</td>
<td>In any position</td>
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<td></td>
</tr>
<tr>
<td>Medium</td>
<td>Filtered, un lubricated compressed air (other media on request)</td>
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<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Permanent grease lubrication (additional oil mist lubrication not required) Option: special slow speed grease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylinder Profile</td>
<td>Anodized aluminium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrier (piston)</td>
<td>Anodized aluminium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>End caps</td>
<td>Aluminium, lacquered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sealing bands</td>
<td>Stainless steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seals</td>
<td>NBR (Option: Viton®)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screws</td>
<td>Galvanized steel Option: stainless steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dust covers, wipers</td>
<td>Plastic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. operating pressure $p_{\text{max}}$ bar</td>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Weight (mass) kg

<table>
<thead>
<tr>
<th>Cylinder series (Basic cylinder)</th>
<th>Weight (mass) at 0 mm stroke $m_0$ kg</th>
<th>Weight (mass) per 100 mm stroke $m_{100}$ kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSP-P16</td>
<td>0.22</td>
<td>0.1</td>
</tr>
<tr>
<td>OSP-P25</td>
<td>0.65</td>
<td>0.197</td>
</tr>
<tr>
<td>OSP-P32</td>
<td>1.44</td>
<td>0.354</td>
</tr>
<tr>
<td>OSP-P40</td>
<td>1.95</td>
<td>0.415</td>
</tr>
<tr>
<td>OSP-P50</td>
<td>3.53</td>
<td>0.566</td>
</tr>
<tr>
<td>OSP-P63</td>
<td>6.41</td>
<td>0.925</td>
</tr>
<tr>
<td>OSP-P80</td>
<td>12.46</td>
<td>1.262</td>
</tr>
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</table>

Size Comparison

<table>
<thead>
<tr>
<th>P16</th>
<th>P25</th>
<th>P32</th>
<th>P40</th>
<th>P50</th>
<th>P63</th>
<th>P80</th>
</tr>
</thead>
</table>

Characteristics Symbol Unit Description

Material

Rodless Pneumatic Cylinder

Weight (mass) kg

9

Pressures quoted as gauge pressure

Right to introduce technical modifications reserved

Material

13

End cap can be rotated 4 x 90° to position air connection as desired

Free choice of stroke length up to 6000 mm (longer strokes on request)
Loads, Forces and Moments

Choice of cylinder is decided by:

• Permissible loads, forces and moments
• Performance of the pneumatic end cushions. The main factors here are the mass to be cushioned and the piston speed at start of cushioning (unless external cushioning is used, e.g., hydraulic shock absorbers).

The adjacent table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation. Load and moment data are based on speeds \( v \leq 0.5 \text{ m/s} \).

Cushioning Diagram

Work out your expected moving mass and read off the maximum permissible speed at start of cushioning. Alternatively, take your desired speed and expected mass and find the cylinder size required. Please note that piston speed at start of cushioning is typically 50% higher than the average speed, and that it is this higher speed which determines the choice of cylinder. If these maximum permissible values are exceeded, additional shock absorbers must be used.

Please ask for info on the optional adaptable cushioning system.

Mid-Section Supports

To avoid excessive bending and oscillation of the cylinder, mid-section supports are required dependent on specified stroke lengths and applied loads.

\[ M = F \cdot r. \]

Bending moments are calculated from the centre of the linear actuator and \( F \) indicates actual force.

The diagram shows the maximum possible unsupported length dependent on the load. Deformation of 0.5 mm maximum between supports is permissible.

Mid-section supports are clamped on to the dovetail profile of the cylinder. They can also withstand axial forces.

For types and dimensions see Page 55.
Cylinder Stroke and Dead Length A
- Free choice of stroke length up to 6000 mm in 1 mm steps.
- Longer strokes on request.

Tandem Cylinder
Two pistons are fitted: dimension “CL” is optional. (Please note minimum distance “CL”).
- Free choice of stroke length up to 6000 mm in 1 mm steps.
- Longer strokes on request.
- Stroke length to order is stroke + dimension “CL”

Please note:
To avoid multiple actuation of sensors, the second piston is not equipped with magnets.

Dimensions of Basic Cylinder OSP-P

Dimension Table (mm)

<table>
<thead>
<tr>
<th>Cylinder Series</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>M</th>
<th>O</th>
<th>S</th>
<th>V</th>
<th>X</th>
<th>Y</th>
<th>CL</th>
<th>BW</th>
<th>EX</th>
<th>BY</th>
<th>CF</th>
<th>ER</th>
<th>FB</th>
<th>PH</th>
<th>ZZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSP-P16</td>
<td>15</td>
<td>30</td>
<td>20</td>
<td>18</td>
<td>8</td>
<td>8</td>
<td>3.5</td>
<td>10</td>
<td>14</td>
<td>10</td>
<td>6</td>
<td>15</td>
<td>126</td>
<td>170</td>
<td>20.5</td>
<td>3.5</td>
<td>44</td>
<td>66.5</td>
<td>5.5</td>
<td>52</td>
<td>41.7</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSP-P25</td>
<td>20</td>
<td>44</td>
<td>21</td>
<td>27</td>
<td>11</td>
<td>12</td>
<td>7.5</td>
<td>14</td>
<td>18</td>
<td>14</td>
<td>10</td>
<td>15</td>
<td>34</td>
<td>38</td>
<td>127</td>
<td>19.5</td>
<td>3.5</td>
<td>44</td>
<td>66.5</td>
<td>5.5</td>
<td>52</td>
<td>41.7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>OSP-P32</td>
<td>25</td>
<td>55</td>
<td>26</td>
<td>36</td>
<td>15</td>
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<td>10</td>
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<td>41</td>
<td>42</td>
<td>137</td>
<td>24</td>
<td>3.5</td>
<td>44</td>
<td>66.5</td>
<td>5.5</td>
<td>52</td>
<td>41.7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>OSP-P40</td>
<td>30</td>
<td>69</td>
<td>31</td>
<td>45</td>
<td>19</td>
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<td>28</td>
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<td>25</td>
<td>48</td>
<td>54</td>
<td>160</td>
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<td>44</td>
<td>66.5</td>
<td>5.5</td>
<td>52</td>
<td>41.7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>OSP-P50</td>
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<td>83</td>
<td>36</td>
<td>55</td>
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<td>30</td>
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<td>34</td>
<td>24</td>
<td>16</td>
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<td>66.5</td>
<td>5.5</td>
<td>52</td>
<td>41.7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>OSP-P63</td>
<td>40</td>
<td>98</td>
<td>41</td>
<td>69</td>
<td>27</td>
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<td>17.5</td>
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<td>66.5</td>
<td>5.5</td>
<td>52</td>
<td>41.7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>OSP-P80</td>
<td>45</td>
<td>114</td>
<td>46</td>
<td>87</td>
<td>30</td>
<td>42</td>
<td>20</td>
<td>42</td>
<td>50</td>
<td>36</td>
<td>24</td>
<td>40</td>
<td>73</td>
<td>86</td>
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<td>66.5</td>
<td>5.5</td>
<td>52</td>
<td>41.7</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Carrier Series OSP-P16 to P80
Air Connection on the End-face Position #5

In some situations it is necessary or desirable to fit a special end cap with the air connection on the end-face instead of the standard end cap with the air connection on the side. The special end cap can also be rotated 4 x 90° to locate the cushion adjustment screw as desired. Supplied in pairs.

Note: Position #2 is the standard location.
Single End Porting

A special end cap with both air connections on one side is available for situations where shortage of space, simplicity of installation or the nature of the process make it desirable.

Air supply to the other end is via internal air passages (OSP-P25 to P80) or via a hollow aluminium profile fitted externally (OSP-P16).

In this case the end caps cannot be rotated.

Please note:

When combining the OSP-P16 single end porting with inversion mountings, RS switches can only be mounted directly opposite to the external air-supply profile.

Dimension Table (mm)

| Cylinder Series | B  | C  | D  | E  | G  | H  | I1 | I2 | BX  | EN  | EN  | FA  | FB  | FC  | FE  | FG  | FL  | FN  |
|-----------------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| OSP-P16         | 14 | 30 | 90 | 19 | 62 | 9  | 5.5| 10 | 18.8| 3   | –   | 14  | 4   | 27  | 27  | 16  |
| OSP-P25         | 22 | 41 | 118| 27 | 86 | 15 | 9  | 2.2| 13.5| 3.6 | 3.9 | –   | –   | –   | –   | –   | –   |
| OSP-P32         | 25.5| 54 | 138| 36 | 128| 15 | 10.5| –  | 20.5| –   | –   | –   | –   | –   | –   | –   | –   |
| OSP-P40         | 28 | 59 | 158| 54 | 128| 15 | 12 | –  | 21  | –   | –   | –   | –   | –   | –   | –   | –   |
| OSP-P50         | 32 | 67 | 178| 54 | 128| 15 | 14.5| 14.5| –   | –   | –   | –   | –   | –   | –   | –   | –   |
| OSP-P63         | 38 | 106| 198| 78 | 217| 21 | 15.5| 13.5| –   | –   | –   | –   | –   | –   | –   | –   | –   |
| OSP-P80         | 47 | 132| 218| 98 | 290| 25 | 17 | –  | 37.5| –   | –   | –   | –   | –   | –   | –   | –   | 34.5|
Integrated 3/2 Way Valves VOE

For optimal control of the OSP-P cylinder, 3/2 way valves integrated into the cylinder’s end caps can be used as a compact and complete solution. They allow for easy positioning of the cylinder, smooth operation at the lowest speeds and fast response, making them ideally suited for the direct control of production and automation processes.

Characteristics:
- Complete compact solution
- Various connection possibilities: Free choice of air connection with rotating end caps with VOE valves, Air connection can be rotated 4x90°, Solenoid can be rotated 4x90°, Pilot valve can be rotated 180°
- High piston velocities can be achieved with max. 3 exhaust ports
- Minimal installation requirements
- Requires just one air connection per valve
- Optimal control of the OSP-P cylinder
- Excellent positioning characteristics
- Integrated operation indicator,
- Integrated exhaust throttle valve
- Manual override - indexed
- Adjustable end cushioning
- Easily retrofitted – please note the increase in the overall length of the cylinder!

Integrated 3/2 Way Valves VOE Series OSP-P25, P32, P40 and P50

Pneumatic diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>VOE-25</th>
<th>VOE-32</th>
<th>VOE-40</th>
<th>VOE-50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuation</td>
<td>electrical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic position</td>
<td>P → A open, R closed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Poppet valve, non overlapping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting</td>
<td>integrated in end cap</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation</td>
<td>in any position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size</td>
<td>G 1/8</td>
<td>G 1/4</td>
<td>G 3/8</td>
<td>G 3/8</td>
</tr>
<tr>
<td>Temperature</td>
<td>-10°C to +50°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating pressure</td>
<td>2-8 bar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal voltage</td>
<td>24 V DC / 230 V AC, 50 Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption</td>
<td>2.5 W / 6 VA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duty cycle</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Protection</td>
<td>IP 65, DIN 40050</td>
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</tr>
</tbody>
</table>

* other temperature ranges on request
### Dimensions VOE Valves OSP-P40 and P50

#### Dimension Table (mm)

<table>
<thead>
<tr>
<th>Cylinder Series</th>
<th>AV</th>
<th>BV</th>
<th>C</th>
<th>CV</th>
<th>DV</th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>V4</th>
<th>V5</th>
<th>V6</th>
<th>V7</th>
<th>V8</th>
<th>V9</th>
<th>V10</th>
<th>V11</th>
<th>V12</th>
<th>V13</th>
<th>V14</th>
<th>V15</th>
<th>V16</th>
<th>V17</th>
<th>V18</th>
<th>V19</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSP-P40</td>
<td>170</td>
<td>48</td>
<td>67</td>
<td>32</td>
<td>33</td>
<td>6.5</td>
<td>8</td>
<td>4.5</td>
<td>24</td>
<td>32</td>
<td>35</td>
<td>42</td>
<td>42</td>
<td>7.5</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
<td>24</td>
<td>22</td>
<td>20.5</td>
<td>20.5</td>
<td>20.5</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>OSP-P50</td>
<td>190</td>
<td>48</td>
<td>67</td>
<td>32</td>
<td>33</td>
<td>6.5</td>
<td>8</td>
<td>4.5</td>
<td>24</td>
<td>32</td>
<td>35</td>
<td>42</td>
<td>42</td>
<td>7.5</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
<td>24</td>
<td>22</td>
<td>20.5</td>
<td>20.5</td>
<td>20.5</td>
<td>5</td>
<td>18</td>
</tr>
</tbody>
</table>

*End cap can be rotated 4x90°*
Rodless Pneumatic Clean Room Cylinder ø 16-32 mm

Standard Versions:
- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing
- Stainless steel screws

Special Versions:
- Slow speed lubrication
- Viton® seals

### Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Symbol</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td></td>
<td></td>
<td>Rodless cylinder</td>
</tr>
<tr>
<td>Series</td>
<td></td>
<td></td>
<td>OSP-P</td>
</tr>
<tr>
<td>System</td>
<td></td>
<td></td>
<td>Double-acting, with cushioning, position sensing capability</td>
</tr>
<tr>
<td>Mounting</td>
<td></td>
<td></td>
<td>See drawings</td>
</tr>
<tr>
<td>Air Connection</td>
<td></td>
<td></td>
<td>Threaded</td>
</tr>
<tr>
<td>Ambient temperature range</td>
<td>( \theta_{\text{min}} )</td>
<td>°C</td>
<td>-10</td>
</tr>
<tr>
<td>Weight (mass)</td>
<td>kg</td>
<td></td>
<td>See table below</td>
</tr>
<tr>
<td>Weight (mass)</td>
<td>kg</td>
<td>per 100 mm stroke</td>
<td></td>
</tr>
</tbody>
</table>

### Material

- Cylinder Profile: Anodized aluminium
- Carrier (piston): Anodized aluminium
- End caps: Aluminium, lacquered
- Sealing bands: Corrosion resistant steel
- Seals: NBR (Option: Viton®)
- Screws: Stainless steel
- Covers: Anodized aluminium

### Max. operating pressure

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Symbol</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure</td>
<td>( p_{\text{max}} )</td>
<td>bar</td>
<td>8</td>
</tr>
</tbody>
</table>

### Weight (mass) kg

<table>
<thead>
<tr>
<th>Cylinder series (Basic cylinder)</th>
<th>At 0 mm stroke</th>
<th>Weight (Mass) kg per 100 mm stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSP-P16</td>
<td>0.22</td>
<td>0.1</td>
</tr>
<tr>
<td>OSP-P25</td>
<td>0.65</td>
<td>0.197</td>
</tr>
<tr>
<td>OSP-P32</td>
<td>1.44</td>
<td>0.354</td>
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</table>

### Size Comparison

<table>
<thead>
<tr>
<th></th>
<th>P16</th>
<th>P25</th>
<th>P32</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
</tbody>
</table>

Characteristics pressures quoted as gauge pressure.
Dimensions (mm)

<table>
<thead>
<tr>
<th>Cyl.Ø</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>M</th>
<th>O</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>65</td>
<td>14</td>
<td>30</td>
<td>M5</td>
<td>18</td>
<td>M3</td>
<td>9</td>
<td>5.5</td>
<td>69</td>
<td>15</td>
<td>25</td>
<td>31</td>
<td>24</td>
</tr>
<tr>
<td>25</td>
<td>100</td>
<td>22</td>
<td>41</td>
<td>G1/8</td>
<td>27</td>
<td>M5</td>
<td>15</td>
<td>9</td>
<td>117</td>
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<td>33</td>
<td>48.5</td>
<td>35</td>
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<tr>
<td>32</td>
<td>125</td>
<td>25.5</td>
<td>62</td>
<td>G1/4</td>
<td>36</td>
<td>M6</td>
<td>15</td>
<td>11.5</td>
<td>152</td>
<td>28.5</td>
<td>40</td>
<td>53.6</td>
<td>38</td>
</tr>
</tbody>
</table>

Cushioning screw

Vacuum connection
Internal diameter
Cyl. Ø 16 = 4 mm
Cyl. Ø 25 = 6 mm
Cyl. Ø 32 = 6 mm

Note: End caps are not turnable.

Dimension Table (mm)

<table>
<thead>
<tr>
<th>Cyl.Ø</th>
<th>T</th>
<th>V</th>
<th>X</th>
<th>Y</th>
<th>BW</th>
<th>BX</th>
<th>BY</th>
<th>CF</th>
<th>EN</th>
<th>FB</th>
<th>FH</th>
<th>GP</th>
<th>ZZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>29.6</td>
<td>16.5</td>
<td>36</td>
<td>M4</td>
<td>10.8</td>
<td>1.8</td>
<td>28.5</td>
<td>40</td>
<td>3</td>
<td>30</td>
<td>27.2</td>
<td>25.7</td>
<td>7</td>
</tr>
<tr>
<td>25</td>
<td>40.6</td>
<td>25</td>
<td>65</td>
<td>M5</td>
<td>17.5</td>
<td>2.2</td>
<td>40.5</td>
<td>54.5</td>
<td>3.6</td>
<td>40</td>
<td>39.5</td>
<td>41</td>
<td>8</td>
</tr>
<tr>
<td>32</td>
<td>45</td>
<td>27</td>
<td>90</td>
<td>M6</td>
<td>20.5</td>
<td>2.5</td>
<td>47.1</td>
<td>68.5</td>
<td>5.5</td>
<td>52</td>
<td>51.7</td>
<td>46.2</td>
<td>10</td>
</tr>
</tbody>
</table>
Loads, Forces and Moments

\[ M = F \cdot r \]
\[ M_s = F \cdot r \]
\[ M_v = F \cdot r \]

Dimension Table (mm)

<table>
<thead>
<tr>
<th>Series</th>
<th>Cylinder Ø</th>
<th>Force at 6 bar [N]</th>
<th>Cushion length [mm]</th>
<th>Max. allowed Load L [N]</th>
<th>Max. allowed Bending Moment M [Nm]</th>
<th>Max. allowed Torque Mv [Nm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSP-P16</td>
<td>16</td>
<td>78</td>
<td>11</td>
<td>120</td>
<td>4</td>
<td>0.45</td>
</tr>
<tr>
<td>OSP-P25</td>
<td>25</td>
<td>250</td>
<td>17</td>
<td>300</td>
<td>15</td>
<td>1.5</td>
</tr>
<tr>
<td>OSP-P32</td>
<td>32</td>
<td>420</td>
<td>20</td>
<td>450</td>
<td>30</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Load and moment data are based on speeds \( v \leq 0.2 \) m/s.
The adjacent table shows the maximum values for light, shock-free operation which must not be exceeded even in dynamic operation.
LINEAR GUIDES FOR OSP-P
Adaptive modular system
The Origa system plus – OSP – provides a comprehensive range of linear guides for the pneumatic and electric linear drives.

Versions:
Pneumatic linear drive
Series OSP - P
- Piston diameters: 16 - 25 - 32 - 40 - 50 - 63 mm

Advantages:
- Takes high loads and forces
- High precision
- Smooth operation
- Can be retrofitted
- Can be installed in any position

Linear Guides

Pneumatic linear drive
Series OSP - P

SLIDELINE
The cost-effective plain bearing guide for medium loads.
Brake optional.
See page 25

POWERSLIDE
The roller guide for heavy loads.
See page 27

GUIDELINE
The ball bushing guide for the heaviest loads and greatest accuracy.
See page 31

PROLINE
The compact aluminium roller guide for high loads and velocities.
See page 35
Plain Bearing Guide
SLIDELINE

Series SL 16 to 63
- Series OSP-P

Features:
• ANODIZED aluminium guide rail with prism-shaped slideway arrangement
• Adjustable plastic slide elements – optional with integral brake
• Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideways.
• Corrosion resistant version available on request.
• Speeds over 300mm per second, consult factory.

Integral brake (option) for series OSP-P25 to OSP-P63:
• Actuated by pressure
• Released by exhausting and spring return

Technical Data
The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

The load and moment figures apply to speeds \( v < 0.2 \text{ m/s} \).

* Please note:
In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

For further technical data see also linear drives OSP-P (page 13)
Mid-Section Support

Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.

Note:
For speeds v > 0.5 m/s the distance between supports should not exceed 1 m.
### Roller Guide
**POWERSLIDE**

**Series PS 16 to 50 for Linear-drive**
- **Series OSP-P**

#### Features:
- Anodized aluminium guide carriage with vee rollers having 2 rows of ball bearings
- Hardened steel guide rail
- Several guide sizes can be used on the same drive
- Corrosion resistance version available on request
- Max. speed \( v = 3 \text{ m/s} \)
- Tough roller cover with wiper and grease nipple
- Any length of stroke up to 3500 mm, (longer strokes on request)

#### Technical Data
The Table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions. For further information and technical data see data sheets for linear drives OSP-P (page 13)

*** Please note:**
In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

#### Table: Loads, Forces and Moments

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PS16/25</td>
<td>OSP-P16</td>
<td>50</td>
<td>14</td>
<td>20</td>
<td>4.5</td>
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<tr>
<td>PS25/35</td>
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<td>300</td>
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<tr>
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<td>60</td>
<td>0.8</td>
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<td>OSP-P32</td>
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<td>1.5</td>
</tr>
<tr>
<td>PS40/44</td>
<td>OSP-P40</td>
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</tr>
<tr>
<td>PS40/50</td>
<td>OSP-P50</td>
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<td>60</td>
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<tr>
<td>PS50/76</td>
<td>OSP-P50</td>
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<td>140</td>
<td>400</td>
<td>4.9</td>
</tr>
</tbody>
</table>

*corrosion resistance version available on request (max. loads and moments are 25% lower)
### Dimension Table (mm)

<table>
<thead>
<tr>
<th>Series</th>
<th>A</th>
<th>B</th>
<th>Z</th>
<th>AA</th>
<th>BB</th>
<th>CC</th>
<th>CF</th>
<th>EE</th>
<th>EF</th>
<th>EG</th>
<th>FF</th>
<th>FS</th>
<th>FT</th>
<th>GG</th>
<th>JJ</th>
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</thead>
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<tr>
<td>PS16/25</td>
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<td>12</td>
<td>35</td>
<td>80</td>
<td>21</td>
<td>64</td>
<td>64</td>
<td>100</td>
</tr>
<tr>
<td>PS25/25</td>
<td>100</td>
<td>22</td>
<td>6M6</td>
<td>145</td>
<td>90</td>
<td>47</td>
<td>79.5</td>
<td>53</td>
<td>11</td>
<td>39</td>
<td>80</td>
<td>20</td>
<td>73.5</td>
<td>64</td>
<td>125</td>
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<tr>
<td>PS25/35</td>
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<td>57</td>
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<td>12.5</td>
<td>37.5</td>
<td>95</td>
<td>20.5</td>
<td>73</td>
<td>80</td>
<td>140</td>
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<tr>
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<td>6M8</td>
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<td>73</td>
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<td>15</td>
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<td>116</td>
<td>26</td>
<td>78.5</td>
<td>96</td>
<td>164</td>
</tr>
<tr>
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<td>6M6</td>
<td>156</td>
<td>100</td>
<td>57</td>
<td>95.5</td>
<td>58.5</td>
<td>12.5</td>
<td>43.5</td>
<td>96</td>
<td>21.5</td>
<td>84.5</td>
<td>80</td>
<td>140</td>
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<tr>
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<td>25.5</td>
<td>6M8</td>
<td>190</td>
<td>118</td>
<td>73</td>
<td>107</td>
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<td>116</td>
<td>26</td>
<td>90</td>
<td>96</td>
<td>164</td>
</tr>
<tr>
<td>PS40/44</td>
<td>150</td>
<td>28</td>
<td>6M8</td>
<td>190</td>
<td>118</td>
<td>73</td>
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<td>75</td>
<td>15</td>
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<td>116</td>
<td>26</td>
<td>109.5</td>
<td>96</td>
<td>164</td>
</tr>
<tr>
<td>PS40/60</td>
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<td>28</td>
<td>6M8</td>
<td>240</td>
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<td>89</td>
<td>122.5</td>
<td>74</td>
<td>17</td>
<td>54</td>
<td>135</td>
<td>28.5</td>
<td>108.5</td>
<td>115</td>
<td>216</td>
</tr>
<tr>
<td>PS50/60</td>
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<td>33</td>
<td>6M8</td>
<td>240</td>
<td>167</td>
<td>89</td>
<td>130.5</td>
<td>81</td>
<td>17</td>
<td>61</td>
<td>135</td>
<td>28.5</td>
<td>123.5</td>
<td>115</td>
<td>216</td>
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<tr>
<td>PS50/76</td>
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<td>33</td>
<td>6M10</td>
<td>280</td>
<td>178</td>
<td>119</td>
<td>155.5</td>
<td>93</td>
<td>20</td>
<td>64</td>
<td>185</td>
<td>39</td>
<td>135.5</td>
<td>160</td>
<td>250</td>
</tr>
</tbody>
</table>

### Dimensions

**Series OSP-P**

**Stroke** = 2 x A

**Threaded holes** = Z ± EF deep
Mid-Section Support
(for versions, see page 56)

Mid section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading.

A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.

Note
For speeds \( v > 0.5 \) m/s the distance between supports should not exceed 1 m.
Service life

Calculation of service life is achieved in two stages:

• Determination of load factor $L_F$ from the loads to be carried
• Calculation of service life in km

Lubrication

For maximum system life, lubrication of the rollers must be maintained at all times.
Only high quality Lithium based greases should be used.
Lubrication intervals are dependant on environmental conditions (temperature, running speed, grease quality etc.) therefore the installation should be regularly inspected.

### 1. Calculation of load factor $L_F$

\[
L_F = \frac{M}{M_{\text{max}}} + \frac{M_S}{M_{S\text{max}}} + \frac{L_1}{L_{1\text{max}}} + \frac{L_2}{L_{2\text{max}}}
\]

with combined loads, $L_F$ should not exceed the value 1.

### 2. Calculation of service life

<table>
<thead>
<tr>
<th>Model</th>
<th>Service life [km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS 16/25, PS 25/25, PS 25/35, and PS 32/35</td>
<td>$\frac{106}{(L_F + 0.02)^3}$</td>
</tr>
<tr>
<td>PS 25/44, PS 32/44, PS 40/44, PS 40/60 and PS 50/60:</td>
<td>$\frac{314}{(L_F + 0.015)^3}$</td>
</tr>
<tr>
<td>PS 50/76:</td>
<td>$\frac{680}{(L_F + 0.015)^3}$</td>
</tr>
</tbody>
</table>
Series GDL 25 to 50
for Linear-drive
• Series OSP-P

**Ball bushing guide**

**GUIDE**

**Series GDL 25 to 50**

**for Linear-drive**

• Series OSP-P

**Features**

- Anodized aluminium guide rail with four ball bushings
- Hardened and ground steel guide shafts
- Stainless steel guide shafts available on request
- Max. speed \( v = 3 \text{ m/s} \)
- OSP-P: smooth slow speed operation \( v_{\min} \geq 0.02 \text{ m/s} \)
- Any length of stroke up to 6000 mm (longer strokes on request)

**Technical Data**

The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

For further information and technical data see data sheets for linear drives OSP-P (page 13)

**Please note:** In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

### Technical Data Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Max. linear drive</th>
<th>Max. moments [Nm]</th>
<th>Max. load [N]</th>
<th>Mass of linear drive with guide [kg]</th>
<th>Increase p/100mm stroke</th>
<th>Mass of carriage [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDL 25</td>
<td>OSP-P25</td>
<td>115</td>
<td>75</td>
<td>90</td>
<td>2500</td>
<td>2100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.5</td>
<td>0.7</td>
</tr>
<tr>
<td>GDL 32</td>
<td>OSP-P32</td>
<td>145</td>
<td>90</td>
<td>115</td>
<td>2500</td>
<td>2100</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.6</td>
<td>0.9</td>
</tr>
<tr>
<td>GDL 40</td>
<td>OSP-P40</td>
<td>440</td>
<td>330</td>
<td>310</td>
<td>8000</td>
<td>6250</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.3</td>
<td>1.4</td>
</tr>
<tr>
<td>GDL 50</td>
<td>OSP-P50</td>
<td>500</td>
<td>375</td>
<td>355</td>
<td>8000</td>
<td>6250</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>8.6</td>
<td>1.6</td>
</tr>
</tbody>
</table>

*Please note:* 30% lower corrosion resistance version available on request (max. loads and moments are 30% lower)
### Dimensions

**Series OSP-P**

![Diagram](image)

**Note:**
The guideline linear guide must be mounted on a flat surface along its entire length.

**Arrangement of proximity sensors:**
Proximity sensors can be fitted anywhere on either side. The magnet can be screwed on to one of the four ball bushing housings from underneath.
### Dimension Table (mm)

| Series | A  | B  | AF | FB | FC | FD | FE | FF | FG | FH | FJ | FK | FL | FM | FN | FP | FQ | FR | FS | FT | FU |
|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| GDL 25 | 50 | 22 | 22 | 120 | 140 | 80 | 56 | 14 | 118 | 118 | 12 | 32 | 40 | 50 | 66 | 56 | 51.5 | 33.5 | 10 | 32 | 40 |
| GDL 32 | 50 | 25.5 | 30 | 120 | 170 | 80 | 56 | 14 | 118 | 118 | 12 | 32 | 40 | 50 | 66 | 56 | 51.5 | 33.5 | 10 | 32 | 40 |
| GDL 40 | 50.5 | 35 | 38 | 160 | 180 | 110 | 88 | 14 | 104 | 104 | 12 | 38 | 46 | 50 | 66 | 56 | 51.5 | 33.5 | 10 | 32 | 40 |
| GDL 50 | 57 | 33 | 48 | 180 | 200 | 120 | 88 | 14 | 118 | 118 | 12 | 38 | 46 | 50 | 66 | 56 | 51.5 | 33.5 | 10 | 32 | 40 |

**Note:**

The dimension FO is derived from the last two digits of the stroke.

**Example:**

For a cylinder OSP-P25 the adjacent table indicates that for x=25mm:

- FO = 62.5 mm
System Life

The calculation for expected service life is achieved in three steps:
• Determination of the load factor $L_F$
• Determination of guidance constant $K_F$
• Calculation of the service life in km

Lubrication

For maximum system life, lubrication of the ball bushings must be maintained at all times.
Only high quality Lithium-based greases should be used.
Lubrication intervals are dependent on environmental conditions (temperature, running speed, grease quality etc.) therefore the installation should be regularly inspected.

### 1. Calculation of load factor $L_F$

$$L_F = \frac{M}{M_{\text{max}}} + \frac{M_S}{M_{S \text{max}}} + \frac{M_V}{M_{V \text{max}}} + \frac{L}{L_{\text{max}}}$$

with combined loads, $L_F$ should not exceed the value 1.

### 2. Guidance constant $K_F$

<table>
<thead>
<tr>
<th>Installation</th>
<th>Guidance constant $K_F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDL 25, GDL 32</td>
<td>GDL 40, GDL 50</td>
</tr>
<tr>
<td>Horizontal</td>
<td>200</td>
</tr>
<tr>
<td>Sideways</td>
<td>250</td>
</tr>
<tr>
<td>Vertical</td>
<td>90</td>
</tr>
</tbody>
</table>

### 3. Service life calculation

Approximate service life is calculated using the following equation:

$$\text{Service life [km]} = \frac{K_F}{L_F}$$
**Aluminium Roller Guide PROLINE**

Series PL 25 to 50 for Linear Drive
- Series OSP-P

**Features:**
- High precision
- High velocities (10 m/s)*
- Smooth operation - low noise
- Integrated wiper system
- Long life lubrication
- Compact dimensions - compatible to Slideline plain bearing guide
- Stainless steel version available on request
- Any length of stroke up to 3750 mm

**Integrated Brake (optional) for Series OSP-P25 to OSP-P50:**
- Actuated by pressurization
- Release by depressurisation and spring actuation

**Please note:**
The mass of the carriage has to be added to the total moving mass when using the cushioning diagram.

*Consult factory

---

**Technical Data**
The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

\[
\frac{M}{M_{\text{max}}} + \frac{M_s}{M_{s\text{max}}} + \frac{M_v}{M_{v\text{max}}} + \frac{L_1}{L_{1\text{max}}} + \frac{L_2}{L_{2\text{max}}} \leq 1
\]

The sum of the loads should not exceed 1!

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

---

**Series**
- For linear drive
- Max. loads [N]
- Maximum braking force at 6 bar [N]¹
- Mass of linear drive with guide [kg]
- Mass of carriage [kg]

<table>
<thead>
<tr>
<th>Series</th>
<th>Max. moments [Nm]</th>
<th>Max. loads [N]</th>
<th>M</th>
<th>M_s</th>
<th>M_v</th>
<th>M_{\text{max}}</th>
<th>M_{s\text{max}}</th>
<th>M_{v\text{max}}</th>
<th>M_{s\text{max}}</th>
<th>L_1</th>
<th>L_2</th>
<th>L_{1\text{max}}</th>
<th>L_{2\text{max}}</th>
<th>Mass of linear drive with guide [kg]</th>
<th>Mass of carriage [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL 25</td>
<td>OSP-P-25</td>
<td>55</td>
<td>55</td>
<td>23</td>
<td>1210</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.65</td>
<td>0.40</td>
<td>0.75</td>
<td></td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>PL 32</td>
<td>OSP-P-32</td>
<td>91</td>
<td>91</td>
<td>36</td>
<td>1460</td>
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<td>2</td>
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<td>313</td>
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<td>7</td>
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<td>0.95</td>
<td>2.50</td>
<td></td>
<td>2.50</td>
<td></td>
</tr>
</tbody>
</table>

¹Only for version with brake:
- Braking surface dry – oiled surface reduces the effective braking force.
- Stainless steel version on request

**Please note:**
The mass of the carriage has to be added to the total moving mass when using the cushioning diagram.

*Consult factory
Mid-Section Support

Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.

Note:
For speeds $v > 0.5$ m/s the distance between supports should not exceed 1m.

Permissible Unsupported Length PL25, PL32, PL40 and PL50
HOLDING DEVICES AND BRAKES
FOR OSP-P
## Versions:
- **ACTIVE Brake**
- Plain bearing guide with integrated Holding Device
- Aluminium roller guide with integrated Holding Device
- Plain bearing guide with PASSIVE Brake
- Aluminium roller guide with PASSIVE Brake

## Holding Devices and Brakes

### Holding Device
for pneumatic linear drive  
Series OSP-P  
Piston diameters 25 - 80 mm.  
See page 39

### Slideline with Brake
Plain bearing guide Slideline - SL with integrated Active Brake  
Piston diameters 25 - 50 mm.  
See page 25

### Proline with Brake
Aluminium roller guide  
Proline - PL with integrated Active Brake  
Piston diameters 25 - 50 mm.  
See page 35

### Multibrake with Slideline
Multi-Brake – Passive Brake with plain bearing guide  
Slideline - SL  
Piston diameter 25 - 80 mm.  
See page 43

### Multibrake with Proline
Multi-Brake – Passive Brake with aluminium roller guide Proline - PL  
Piston diameters 25 - 50 mm.  
See page 47
Position Holding Device

Series AB 25 to 80
- Series OSP-P

Features:
- Actuated by pressurization
- Released by spring actuation
- Completely stainless version
- Holds position, even under changing load conditions

For further technical data, please refer to the data sheets for linear drives OSP-P (page 13)

Function

| Air Connection | Pressure Plate | Spring | Brake Lining | O-Ring for Brake Piston | Cylinder Barrel OSP-P | Brake Housing |

Forces and Weights

<table>
<thead>
<tr>
<th>Series</th>
<th>For linear drive</th>
<th>Max. braking force <a href="1">N</a></th>
<th>Brake pad way [mm]</th>
<th>Linear drive stroke [mm]</th>
<th>Mass [kg] with brake stroke increase per 100 mm stroke</th>
<th>brake* [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB 25</td>
<td>OSP-P25</td>
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<td>2.5</td>
<td>1.0</td>
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<td>AB 40</td>
<td>OSP-P40</td>
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<td>2.83</td>
<td>0.415</td>
<td>0.88</td>
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<td>0.566</td>
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<td>1.262</td>
<td>5.82</td>
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</tbody>
</table>

(1) - at 6 bar both chambers pressurized with 6 bar
Braking surface dry
- oil on the braking surface will reduce the braking force

* Please Note:
The mass of the brake has to be added to the total moving mass when using the cushioning diagram.

For additional information on loads, forces and moment, please refer to page 14
Series OSP-P25 and P32 with Holding Device

Series OSP-P40, P50, P63, P80 with Holding Device

Dimension Table (mm)

<table>
<thead>
<tr>
<th>Series</th>
<th>A</th>
<th>B</th>
<th>J</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>CF</th>
<th>DA</th>
<th>DB</th>
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<td>AB 32</td>
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<td>AB 40</td>
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<td>28</td>
<td>151.4</td>
<td>45</td>
<td>58</td>
<td>22</td>
<td>102</td>
<td>7</td>
<td>M5</td>
<td>79.5</td>
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<td>AB 50</td>
<td>175</td>
<td>33</td>
<td>200</td>
<td>54</td>
<td>69.5</td>
<td>23</td>
<td>118.5</td>
<td>7.5</td>
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<td>97.5</td>
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<td>AB 63</td>
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<td>256</td>
<td>67</td>
<td>88</td>
<td>28</td>
<td>151</td>
<td>9</td>
<td>G1/8</td>
<td>120</td>
</tr>
<tr>
<td>AB 80</td>
<td>260</td>
<td>47</td>
<td>348</td>
<td>83</td>
<td>105</td>
<td>32</td>
<td>185</td>
<td>10</td>
<td>G1/8</td>
<td>149</td>
</tr>
</tbody>
</table>
**End Cap Mountings**

On the end face of each cylinder end cap there are four threaded holes for mounting the cylinder. The hole layout is square, so that the mounting can be fitted to the bottom, top or either side.

**Material:** Series OSP-P25, P32: Galvanized steel

The mountings are supplied in pairs.

**Material:** Series OSP-P40, P50, P63, P80: Anodized aluminium

The mountings are supplied in pairs.

Stainless steel version on request.

---

**Dimension Table (mm)**

<table>
<thead>
<tr>
<th>Series</th>
<th>E</th>
<th>øU</th>
<th>AB</th>
<th>AC</th>
<th>AD</th>
<th>AE</th>
<th>AF</th>
<th>CL</th>
<th>DG</th>
<th>Order No. Type A3</th>
<th>Type C3</th>
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<td>22</td>
<td>45</td>
<td>49</td>
<td>2.5</td>
<td>39</td>
<td>2060 –</td>
<td>–</td>
</tr>
<tr>
<td>AB32</td>
<td>36</td>
<td>6.6</td>
<td>36</td>
<td>18</td>
<td>26</td>
<td>42</td>
<td>52</td>
<td>3</td>
<td>50</td>
<td>3060 –</td>
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<td>54</td>
<td>9</td>
<td>30</td>
<td>12.5</td>
<td>24</td>
<td>46</td>
<td>60</td>
<td>–</td>
<td>68</td>
<td>–</td>
<td>20339</td>
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<tr>
<td>AB50</td>
<td>70</td>
<td>9</td>
<td>40</td>
<td>12.5</td>
<td>24</td>
<td>54</td>
<td>72</td>
<td>–</td>
<td>86</td>
<td>–</td>
<td>20350</td>
</tr>
<tr>
<td>AB63</td>
<td>78</td>
<td>11</td>
<td>48</td>
<td>15</td>
<td>30</td>
<td>76</td>
<td>93</td>
<td>–</td>
<td>104</td>
<td>–</td>
<td>20821</td>
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<tr>
<td>AB80</td>
<td>96</td>
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<td>17.5</td>
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<td>88</td>
<td>110</td>
<td>–</td>
<td>130</td>
<td>–</td>
<td>20822</td>
</tr>
</tbody>
</table>
Mid Section Support
Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. Deflection of 0.5mm max. between supports is permissible. The mid section supports are attached to the dovetail rails, and can take axial loads.

Mid Section Supports
Note to Type E3:
Mid-section supports can only be mounted opposite of the brake housing.
Stainless steel version available on request.

Dimension Table (mm)

<table>
<thead>
<tr>
<th>Series</th>
<th>U</th>
<th>AF</th>
<th>DE</th>
<th>DH</th>
<th>DK</th>
<th>DM</th>
<th>DN</th>
<th>DO</th>
<th>DP</th>
<th>DQ</th>
<th>DR</th>
<th>Order No. Type 3</th>
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<td>65</td>
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<td>40</td>
<td>47,5</td>
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<td>50</td>
<td>34,5</td>
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<td>34,5</td>
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<td>40,5</td>
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<td>AB 63</td>
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<td>93</td>
<td>34</td>
<td>127</td>
<td>44</td>
<td>73</td>
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<td>110</td>
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<td>149,5</td>
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<td>97</td>
<td>112</td>
<td>55</td>
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<td>81</td>
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</table>

Accessories for linear drives with Holding Device – please order separately

<table>
<thead>
<tr>
<th>Description</th>
<th>For details information, see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clevis mounting</td>
<td>53</td>
</tr>
<tr>
<td>Adaptor profile</td>
<td>60</td>
</tr>
<tr>
<td>T-Nut profile</td>
<td>61</td>
</tr>
<tr>
<td>Sensors (can only be mounted opposite of the brake housing)</td>
<td>66</td>
</tr>
</tbody>
</table>
**Multi-Brake**

with plain bearing guide Slideline SL

**Series MB-SL 25 to 80**
- **Series OSP-P**

**Features:**
- Brake operated by spring actuation
- Brake release by pressurization
- Corrosion resistant as standard
- Optional sensor to indicate brake lining wear
- Anodized aluminium rail, with prism shaped slide elements
- Adjustable plastic slide elements
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideway
- Repreishable guide lubrication by integrated grease nipples
- Blocking function in case of pressure loss
- Intermediate stops possible

**Function:**
The Multi-Brake is a passive device. When the air pressure is removed the brake is actuated and movement of the cylinder is blocked. The brake is released by pressurization.

The high friction, wear resistant brake linings allow the Multi-Brake to be used as a dynamic brake to stop cylinder movement in the shortest possible time. The powerful springs also allow the Multi-Brake to be used effectively in positioning applications.

---

**Technical Data:**
The table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation.

Load and moment data are based on speeds $v < 0.2 \text{ m/s}$.

Operating pressure 4.5 - 8 bar
- A pressure of 4.5 bar is required to release the brake.

For further technical information, please refer to the data sheets for linear drives OSP-P (page 13).

**Loads, Forces and Moments:**

- **For linear drive:**
  - **Series OSP-P:**
  - **Max. loads:**
    - M [Nm]
    - L [N]
    - V [N]
  - **Max. brake force:**
    - L [N]
  - **Mass of linear drive:**
    - M [kg]
    - Mass* of guide carriage [kg]

**Version:**
- **for pneumatic Linear Drive:**
  - **Series OSP-P**

---

**Series** | **For linear drive** | **Max. moments** | **Max. loads** | **Max. brake force** | **Mass of linear drive** | **Mass* of guide carriage**
--- | --- | --- | --- | --- | --- | ---
MB-SL 25 | OSP-P25 | 34 | 14 | 675 | 470 | 2.04 | 0.93 | 1.10
MB-SL 32 | OSP-P32 | 60 | 25 | 905 | 790 | 3.82 | 0.65 | 1.79
MB-SL 40 | OSP-P40 | 110 | 50 | 1500 | 1200 | 5.16 | 0.78 | 2.34
MB-SL 50 | OSP-P50 | 180 | 77 | 2000 | 1870 | 8.29 | 0.97 | 3.63
MB-SL 63 | OSP-P63 | 260 | 120 | 2500 | 2900 | 13.31 | 1.47 | 4.97
MB-SL 80 | OSP-P80 | 260 | 120 | 2500 | 2900 | 17.36 | 1.81 | 4.97

1) Braking surface dry - oil on the braking surface will reduce the braking force

* Please note: in the cushioning diagram, the mass of the guide carriage has to be added to the total moving mass.
Series OSP-P with Passive Brake MB

Dimension Table (mm)

<table>
<thead>
<tr>
<th>Series</th>
<th>A</th>
<th>B</th>
<th>J</th>
<th>M</th>
<th>Z</th>
<th>AA</th>
<th>BB</th>
<th>DB</th>
<th>GO</th>
<th>CF</th>
<th>ED</th>
<th>ES</th>
<th>EG</th>
<th>SP</th>
<th>SL</th>
<th>EM</th>
<th>EW</th>
<th>FT</th>
<th>FS</th>
<th>GC</th>
<th>JJ</th>
<th>ZZ</th>
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<td>22</td>
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<td>14</td>
<td>8</td>
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<td>12</td>
<td>9</td>
<td>73</td>
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<td>64</td>
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<td>MB-SL 32</td>
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<td>M6</td>
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<td>80</td>
<td>14</td>
<td>8</td>
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<td>12</td>
<td>62</td>
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<td>M6</td>
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<td>MB-SL 63</td>
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<td>9</td>
<td>119</td>
<td>53</td>
<td>165</td>
<td>165</td>
<td>29</td>
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</tbody>
</table>
Mid Section Support

Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.

Note:
For speeds \( v > 0.5 \text{ m/s} \) the distance between supports should not exceed 1 m.
Application Example - Vertical Application

Control Examples

Under normal operating circumstances the pressure switch is closed and the air flows through the 3/2 way solenoid valves from port 1 to 2, thus lifting the brake from the rail (operating condition). The brake is pressurized by means of a 3/2 way valve in combination with a pressure switch. When there is a pressure loss, the brake is actuated by the pressure switch.

When the air pressure is restored to both cylinder chambers, the brake is lifted and the linear drive can be moved again.

The speed regulating valves D1 and D2 control the speed of the linear drive, and have no influence on the brake. The two non-return valves give the system a higher stability.

The pressure regulating valve is used to compensate for the downward force in this vertical application.

Please note:
Before the brake is lifted, make sure that both air chambers of the linear drive are pressurized. Small diameter tubing, fittings and valves with a nominal diameter, and tubing that is too long all change the reaction time of the brake!

Tip:
The pressure switch actuates the brake when the pressure drops below the set value.

For accessories, such as tubing and fittings, please refer to our separate catalogue.

Required Components

<table>
<thead>
<tr>
<th>Way Valves</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5</td>
<td>G1/8</td>
</tr>
<tr>
<td>G1/4</td>
<td>G1/2</td>
</tr>
<tr>
<td>Pressure Regulating Valve</td>
<td>G1/8 - G3/8</td>
</tr>
<tr>
<td>P/E-Converter</td>
<td></td>
</tr>
<tr>
<td>Non-Return Valves</td>
<td>G1/8, G1/4</td>
</tr>
<tr>
<td>Screw-in Speed Regulating Valves</td>
<td>M5 - G1/4</td>
</tr>
</tbody>
</table>
### Multi-Brake

**with Aluminium Roller Guide Proline PL**

**Series MB-PL 25 to 50**
- **Series OSP-P**

#### Features:
- Brake operated by spring actuation
- Brake release by pressurization
- Corrosion resistant as standard
- Optional sensor to indicate brake lining wear
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideway
- Blocking function in case of pressure loss
- Intermediate stops possible

#### Function:
The Multi-Brake is a passive device. When the air pressure is removed the brake is actuated and movement of the cylinder is blocked. The brake is released by pressurization.

The high friction, wear resistant brake linings allow the Multi-Brake to be used as a dynamic brake to stop cylinder movement in the shortest possible time. The powerful springs also allow the Multi-Brake to be used effectively in positioning applications.

#### Technical Data

- Operating Pressure: 4.5 - 8 bar. A pressure of min. 4.5 bar release the brake.

#### Loads, Forces and Moments

**Versions**

For pneumatic Linear Drive:  
Series OSP-P

**Function**

Wear resistant brake lining, for long service life

Roller guide Proline for high precision and velocities

**Technical Data**

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

\[ M \leq M_{\text{max}} + M_{\text{V max}} \frac{L_{1}}{L_{\text{L1}}} + M_{\text{S max}} \frac{L_{2}}{L_{\text{L2}}} \]

The sum of the loads should not exceed \( M_{\text{max}} \).

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

#### Loads, Forces and Moments Table

<table>
<thead>
<tr>
<th></th>
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</table>

* Braking surface dry – oil on the braking surface will reduce the braking force

* Please note:
In the cushioning diagram, the mass of the guide carriage has to be added to the total moving mass.
Mid Section Support

Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.

**Note:**
For speeds \( v > 0.5 \text{ m/s} \) the distance between supports should not exceed 1 m.

---

**Permissible Unsupported Length OSP-P MB-PL25, MB-PL32, MB-PL40, MB-PL50**

---

**Dimension Table (mm) Series OSP-P MB-PL25, MB-PL32, MB-PL40, MB-PL50**

| Series   | A   | B   | C   | D   | E   | F   | G   | H   | I   | J   | K   | L   | M   | N   | O   | P   | Q   | R   | S   | T   | U   | V   | W   | X   | Y   | Z   |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| MB-PL25  | 100 | 22  | 1.17| 40.5| 25  | 28  | 99  | 40.5| 12  | 117 | 40.5| 1.17| 28  | 100 | 99  | 40  | 39  | 28  | 144 | 134 | 40.5| 1.17| 28  | 12  |
| MB-PL32  | 125 | 25.5| 1.17| 49  | 32  | 35  | 152 | 49  | 10  | 197 | 1.17| 35  | 12  | 152 | 197 | 71  | 53  | 35  | 187 | 187 | 49  | 1.17| 35  | 10  |
| MB-PL40  | 150 | 28  | 1.17| 55  | 38  | 41  | 152 | 55  | 15  | 232 | 1.17| 41  | 15  | 152 | 232 | 102 | 73  | 41  | 222 | 222 | 55  | 1.17| 41  | 15  |
| MB-PL50  | 175 | 33  | 1.17| 62  | 43  | 46  | 200 | 62  | 20  | 277 | 1.17| 46  | 20  | 200 | 277 | 137 | 97  | 46  | 266 | 266 | 62  | 1.17| 46  | 20  |
Application Example - Vertical Application

Control Examples

Under normal operating circumstances the pressure switch is closed and the air flows through the 3/2 way solenoid valves from port 1 to 2, thus lifting the brake from the rail (operating condition). The brake is pressurized by means of a 3/2 way valve in combination with a pressure switch. When there is a pressure loss, the brake is actuated by the pressure switch.

When the air pressure is restored to both cylinder chambers, the brake is lifted and the linear drive can be moved again.

The speed regulating valves D1 and D2 control the speed of the linear drive, and have no influence on the brake. The two non-return valves give the system a higher stability.

The pressure regulating valve is used to compensate for the downward force in this vertical application.

Please note:
Before the brake is lifted, make sure that both air chambers of the linear drive are pressurized. Small diameter tubing, fittings and valves with a nominal diameter, and tubing that is too long all change the reaction time of the brake!

Tip:
The pressure switch actuates the brake when the pressure drops below the set value.

Required Components

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<thead>
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<th>Way Valves</th>
<th>Port size</th>
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<td>M5</td>
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ACCESSORIES FOR OSP-P LINEAR DRIVE MOUNTINGS, PROXIMITY SENSORS
## Linear Drive Accessories for Series OSP-P

<table>
<thead>
<tr>
<th>Description</th>
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<tr>
<td>End Cap Mountings (for Linear Drives with guides)</td>
<td>56</td>
</tr>
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<td>Mid-Section Support</td>
<td>55</td>
</tr>
<tr>
<td>Mid-Section Support (for Linear Drives with guides)</td>
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<tr>
<td>Inversion Mounting</td>
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<td>Adaptor Profile</td>
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<td>T-Nut Profile</td>
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<td>Shock Mounts</td>
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<td>Metric Conversion Fittings</td>
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<tr>
<td>Proximity Sensors</td>
<td>66, 67</td>
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</table>
Series OSP-P16 to 32

When external guides are used, parallelism deviations can lead to mechanical strain on the piston. This can be avoided by the use of a clevis mounting.

In the drive direction, the mounting has very little play.

Freedom of movement is provided as follows:

- Tilting in direction of movement
- Vertical compensation
- Tilting sideways
- Horizontal compensation

A stainless steel version is also available.

Dimension Table (mm)

<table>
<thead>
<tr>
<th>Series</th>
<th>J</th>
<th>Q</th>
<th>T</th>
<th>øR</th>
<th>HH</th>
<th>KK</th>
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Please note:

When using additional inversion mountings, take into account the dimensions on page 59.

Linear Drive Accessories
ø 16-80 mm
Clevis Mounting

For Linear Drive
- For Series OSP-P
Linear Drive Accessories
ø 16–80 mm
End Cap Mountings

For Linear Drive
- For Series OSP-P

On the end-face of each end cap there are four threaded holes for mounting the actuator. The hole layout is square, so that the mounting can be fitted to the bottom, top or either side, regardless of the position chosen for the air connection.

Material:
Series OSP-P16 – P32: Galvanized steel.
Series OSP-P40 – P50: Anodized aluminum.

The mountings are supplied in pairs.

Dimension Table (mm)

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<tr>
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<th>AB</th>
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(*) = P32
Linear Drive Accessories
φ 16-80 mm
Mid-Section Support

Note on Types E1 and D1:
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the centre of the actuator is different.

Stainless steel version on demand.

Dimension Table (mm)

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<th>DQ (mm)</th>
<th>DM (mm)</th>
<th>DN (mm)</th>
<th>DO (mm)</th>
<th>DR (mm)</th>
<th>DT (mm)</th>
<th>EF (mm)</th>
<th>EM (mm)</th>
<th>EN (mm)</th>
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### Overview

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<tr>
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<td>Type D2</td>
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<td>O</td>
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<tr>
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<tr>
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<td>Type E2</td>
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<td>O</td>
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<tr>
<td></td>
<td>Type E3</td>
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<td>O</td>
<td>O</td>
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<td>O</td>
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<td></td>
<td>Type E4</td>
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<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- X = carriage mounted in top (12 o’clock position)
- O = carriage mounted in lateral (3 or 9 o’clock position)
- = available components
- 1) = not available for all sizes
End cap mountings *

Four internal screw threads are located in the end faces of all OSP actuators for mounting the drive unit. End cap mountings may be secured across any two adjacent screws.

Material: Series OSP-16, 25, 32: zinc plated steel
Series OSP-40, 50, 63, 80: anodized aluminium

Supplied in pairs.

Series OSP – 16, 25, 32: Type A

Series OSP – 16, 25, 32: Type B

Series OSP – 40, 50, 63, 80: Type C

Supplementary Table (mm)

<table>
<thead>
<tr>
<th>Mounting Type</th>
<th>Dimensions AE and AF (Dependant on the mounting type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>18 10 14 1.6 18 10 14 1.6 18 10 14 1.6 18 10 14 1.6</td>
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<td>A2</td>
<td>23 12 15 2 23 12 15 2 23 12 15 2 23 12 15 2 23 12 15 2</td>
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<tr>
<td>A3</td>
<td>28 14 18 3 28 14 18 3 28 14 18 3 28 14 18 3 28 14 18 3</td>
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<td>B1</td>
<td>34 16 20 4 34 16 20 4 34 16 20 4 34 16 20 4 34 16 20 4</td>
</tr>
<tr>
<td>B3</td>
<td>40 18 24 5 40 18 24 5 40 18 24 5 40 18 24 5 40 18 24 5</td>
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<td>B4</td>
<td>46 20 28 6 46 20 28 6 46 20 28 6 46 20 28 6 46 20 28 6</td>
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<tr>
<td>C1</td>
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<tr>
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<td>48 26 42 9 48 26 42 9 48 26 42 9 48 26 42 9 48 26 42 9</td>
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Supplementary Table (mm)

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<tr>
<th>Series</th>
<th>E</th>
<th>eU</th>
<th>AB</th>
<th>AC</th>
<th>AD</th>
<th>CL</th>
<th>SG</th>
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<td>18</td>
<td>10</td>
<td>14</td>
<td>1.6</td>
<td>26</td>
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<tr>
<td>OSP-P25</td>
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<td>5.8</td>
<td>27</td>
<td>16</td>
<td>22</td>
<td>2.5</td>
<td>39</td>
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<tr>
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<td>36</td>
<td>18</td>
<td>26</td>
<td>3</td>
<td>50</td>
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<td>15</td>
<td>24</td>
<td>-</td>
<td>68</td>
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<td>9</td>
<td>70</td>
<td>12.5</td>
<td>24</td>
<td>-</td>
<td>86</td>
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<tr>
<td>OSP-P63</td>
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<td>10</td>
<td>30</td>
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<td></td>
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<tr>
<td>OSP-P80</td>
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<td>96</td>
<td>20</td>
<td>35</td>
<td>130</td>
<td></td>
</tr>
</tbody>
</table>

* see mounting instructions on page 54
Mounting type | Order No. (versions) | size (mm) | 16 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 160 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 |
A1 | 20408 | 2010 | 3010 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
A2 | 20464 | 2040 | 3040 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
B1 | – | 20311 | 20313 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
B2 | – | 20312 | 20314 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
B3 | – | 20346 | 20348 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
B4 | – | 20347 | 20349 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
C1 | – | – | – | – | – | – | – | 4010 | 5010 | 6010 | 7010 | 8010 | – | – | – | – | – | – | – | – | – | – | – | – |
C2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 20338 | 20349 | – | – | – | – | – | – |
C3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 20339 | 20350 | 20351 | 20352 | 20353 | 20354 | 20355 | 20356 |
C4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
D1 | 20434 | 20008 | 20157 | 20027 | 20028 | 20029 | 20030 | 20031 | 20032 | 20033 | 20034 | 20035 | 20036 | 20037 | 20038 | 20039 | 20040 | 20041 | 20042 | 20043 | 20044 | 20045 | 20046 |
D2 | 20435 | 20009 | 20158 | 20028 | 20029 | 20030 | 20031 | 20032 | 20033 | 20034 | 20035 | 20036 | 20037 | 20038 | 20039 | 20040 | 20041 | 20042 | 20043 | 20044 | 20045 | 20046 | 20047 |
E1 | 20436 | 20352 | 20355 | 20356 | 20357 | 20358 | 20359 | 20360 | 20361 | 20362 | 20363 | 20364 | 20365 | 20366 | 20367 | 20368 | 20369 | 20370 | 20371 | 20372 | 20373 | 20374 | 20375 |
E2 | 20437 | 20353 | 20356 | 20357 | 20358 | 20359 | 20360 | 20361 | 20362 | 20363 | 20364 | 20365 | 20366 | 20367 | 20368 | 20369 | 20370 | 20371 | 20372 | 20373 | 20374 | 20375 | 20376 |
E3 | 20438 | 20354 | 20357 | 20356 | 20357 | 20358 | 20359 | 20360 | 20361 | 20362 | 20363 | 20364 | 20365 | 20366 | 20367 | 20368 | 20369 | 20370 | 20371 | 20372 | 20373 | 20374 | 20375 |
E4 | – | 20354 | 20357 | 20356 | 20357 | 20358 | 20359 | 20360 | 20361 | 20362 | 20363 | 20364 | 20365 | 20366 | 20367 | 20368 | 20369 | 20370 | 20371 | 20372 | 20373 | 20374 | 20375 |

(* Pair)
### Linear Drive Accessories

**Φ 16-80 mm Inversion Mounting**

For Linear Drive
- For Series OSP-P

In dirty environments, or where there are special space problems, inversion of the cylinder is recommended. The inversion bracket transfers the driving force to the opposite side of the cylinder. The size and position of the mounting holes are the same as on the standard cylinder.

Stainless steel version on demand.

Please note:
- Other components of the OSP system such as mid-section supports, proximity switches and the external air passage for the P16, can still be mounted on the free side of the cylinder.

When combining single end porting with inversion mountings, RS switches can only be mounted directly opposite to the external air-supply profile.

**Important Note:**
- May be used in combination with Clevis Mounting, ref. page 53

---

#### Dimension Table (mm)

<table>
<thead>
<tr>
<th>Series</th>
<th>V</th>
<th>X</th>
<th>Y</th>
<th>BC</th>
<th>BE</th>
<th>BJ</th>
<th>ZZ</th>
<th>Order No.</th>
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<tr>
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<td>16.5</td>
<td>36</td>
<td>M4</td>
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<td>33</td>
<td>25</td>
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<td>M5</td>
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<td>44</td>
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<tr>
<td>OSP-P32</td>
<td>27</td>
<td>90</td>
<td>M6</td>
<td>150</td>
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<td>52</td>
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<td>6</td>
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<tr>
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<td>90</td>
<td>M6</td>
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<td>60</td>
<td>45</td>
<td>8</td>
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<tr>
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<td>M10</td>
<td>347</td>
<td>88</td>
<td>107.5</td>
<td>62</td>
<td>15</td>
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</table>
Drive Profile

LFEAD

Linear Drive
Accessories
Ø 16-50 mm
Adaptor Profile

For Linear Drive
- For Series OSP-P

Adaptor Profile OSP
- A universal attachment for mounting of valves etc.
- Solid material

Dimension Table (mm)

<table>
<thead>
<tr>
<th>Series</th>
<th>Order No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>L</th>
<th>X</th>
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<tbody>
<tr>
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<td>20.5</td>
<td>28</td>
<td>M3</td>
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<td>27</td>
<td>50</td>
<td>38</td>
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<td>OSP-P25</td>
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<td>16</td>
<td>23</td>
<td>32</td>
<td>M5</td>
<td>10.5</td>
<td>30.5</td>
<td>50</td>
<td>36</td>
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<td>16</td>
<td>23</td>
<td>32</td>
<td>M5</td>
<td>10.5</td>
<td>30.5</td>
<td>50</td>
<td>36</td>
</tr>
<tr>
<td>OSP-P40</td>
<td>20025</td>
<td>20</td>
<td>33</td>
<td>43</td>
<td>M6</td>
<td>14</td>
<td>45</td>
<td>80</td>
<td>65</td>
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<tr>
<td>OSP-P50</td>
<td>20025</td>
<td>20</td>
<td>33</td>
<td>43</td>
<td>M6</td>
<td>14</td>
<td>52</td>
<td>80</td>
<td>65</td>
</tr>
</tbody>
</table>
Linear Drive Accessories
 Ø 16-50 mm
 T-Nut Profile

For Linear Drive
 - For Series OSP-P

T-Nut Profile OSP
 - A universal attachment for mounting with standard T-Nuts

### Dimension Table (mm)

<table>
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<tr>
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<th>Order No.</th>
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<th>TB</th>
<th>TC</th>
<th>TD</th>
<th>TE</th>
<th>TF</th>
<th>TG</th>
<th>TH</th>
<th>TL</th>
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<td>11.5</td>
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<td>28</td>
<td>1.8</td>
<td>6.4</td>
<td>12</td>
<td>27</td>
<td>50</td>
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<td>11.5</td>
<td>16</td>
<td>32</td>
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<td>6.4</td>
<td>14.5</td>
<td>34.5</td>
<td>50</td>
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<tr>
<td>OSP-P32</td>
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<td>5</td>
<td>11.5</td>
<td>16</td>
<td>32</td>
<td>1.8</td>
<td>6.4</td>
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<td>50</td>
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<tr>
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<td>4.5</td>
<td>12.3</td>
<td>20</td>
<td>58</td>
<td>80</td>
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</tbody>
</table>
**Typical Valve Installation Using Valve Mounting Plate**

**Ordering Information:**
Order #: PD 40372

**Dimensions**

**Mounting Holes:**
- A = 5/2-way; 1/4" NPT
- B = 5/2-way; 1/8" NPT
- C = 3/2-way; 1/4" NPT
- D = 3/2-way; 1/8" NPT
## Linear Drive Assembly

### Adjustable Shock Mount

#### Dimensions

![Linear Drive Assembly Diagram](image)

#### Dimension Table (mm)

<table>
<thead>
<tr>
<th>Series</th>
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<th>SB</th>
<th>SC</th>
<th>SD</th>
<th>SE</th>
<th>SF</th>
<th>SG</th>
<th>SH+Length</th>
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<td>40</td>
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<td>16</td>
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<td>33</td>
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<td>20173</td>
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<td>50</td>
<td>38</td>
<td>16</td>
<td>73</td>
<td>36</td>
<td>M20x1.5</td>
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<td>60</td>
<td>44</td>
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<td>90</td>
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<td>36</td>
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</tr>
</tbody>
</table>

---

**HOERBIGER**

---

Page 63
Linear Drive Assembly
Adjustable Shock Mounts for Power Slide

Contact factory with application information and for quote request.

Dimension Table (mm)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bore/Rail</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<td>M5</td>
<td>M5</td>
<td>14.8</td>
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<td>18</td>
<td>100</td>
<td>1(\times)12</td>
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<td>37.8</td>
<td>M6</td>
<td>M6</td>
<td>23.3</td>
</tr>
</tbody>
</table>
For clean guidance of sensor cables along the cylinder body.
Contains a maximum of 3 cables with diameter 3 mm.
Material: Plastic
Color: Red
Temperature Range: -10 to +80°C

Dimensions

<table>
<thead>
<tr>
<th>Series</th>
<th>RC</th>
<th>RD</th>
<th>Order No. (mm)</th>
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<tbody>
<tr>
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<td>19</td>
<td>13039 – 00000</td>
</tr>
<tr>
<td>OSP-P25</td>
<td>23.5</td>
<td>25.5</td>
<td>13039 – 00000</td>
</tr>
<tr>
<td>OSP-P32</td>
<td>29.5</td>
<td>32.5</td>
<td>13039 – 00000</td>
</tr>
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<td>37.5</td>
<td>13039 – 00000</td>
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<td>41.5</td>
<td>46.5</td>
<td>13039 – 00000</td>
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<td>64.5</td>
<td>70.5</td>
<td>13039 – 00000</td>
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Metric Conversion Fittings

<table>
<thead>
<tr>
<th>Order Number</th>
<th>Port Size</th>
<th>Bore Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>2521-1/8-02</td>
<td>G1/8 to 1/8&quot;NPT</td>
<td>P25</td>
</tr>
<tr>
<td>2521-1/4-04</td>
<td>G1/4 to 1/4&quot;NPT</td>
<td>P32, P40, P50</td>
</tr>
<tr>
<td>2521-3/8-06</td>
<td>G3/8 to 3/8&quot;NPT</td>
<td>P63</td>
</tr>
<tr>
<td>2521-1/2-08</td>
<td>G1/2 to 1/2&quot;NPT</td>
<td>P80</td>
</tr>
</tbody>
</table>
Accessories

For electrical sensing of the carrier position, e.g. at the end positions, proximity sensors may be fitted. Position sensing is contactless and is based on magnets fitted as standard to the carrier. A yellow LED indicates operating status.

The universal proximity sensors are suitable for all HOERBIGER-ORIGA OSP-Actuators and aluminum profile rod type cylinders.

Piston, speed and switching distance affect signal duration and should be considered in conjunction with the minimum reaction time of ancillary control equipment.

<table>
<thead>
<tr>
<th>Characteristics to VDI 3292</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics</td>
</tr>
<tr>
<td>Operating voltage</td>
</tr>
<tr>
<td>Connection</td>
</tr>
<tr>
<td>Switching function</td>
</tr>
<tr>
<td>Max. permanent switching current</td>
</tr>
<tr>
<td>Max. switching capacity</td>
</tr>
<tr>
<td>Residual voltage</td>
</tr>
<tr>
<td>Status indicator</td>
</tr>
<tr>
<td>Typical switching time</td>
</tr>
<tr>
<td>Switch-off delay</td>
</tr>
<tr>
<td>Pole reversal</td>
</tr>
<tr>
<td>Pole reversal protection</td>
</tr>
<tr>
<td>Switchable capacity</td>
</tr>
<tr>
<td>Switching distance</td>
</tr>
<tr>
<td>Hysteresis for OSP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
</tr>
<tr>
<td>Insulation class</td>
</tr>
<tr>
<td>Connection *)</td>
</tr>
<tr>
<td>Cable cross section</td>
</tr>
<tr>
<td>Cable (highly flexible)</td>
</tr>
<tr>
<td>Wire colors</td>
</tr>
<tr>
<td>Permissible minimum bending radius, fixed of cable</td>
</tr>
<tr>
<td>Permissible minimum bending radius, fixed moving</td>
</tr>
<tr>
<td>Switching point accuracy</td>
</tr>
<tr>
<td>Temperature range *)</td>
</tr>
<tr>
<td>Service life</td>
</tr>
<tr>
<td>Electrical protection</td>
</tr>
<tr>
<td>Shock resistance</td>
</tr>
<tr>
<td>Weight (mass)</td>
</tr>
</tbody>
</table>

*) other versions on request
**) RS with connector (RS-S)
**Type RS**
In the type RS contact is made by a mechanical reed switch encapsulated in glass.
Direct connection with 2-pole cable, 5m long, open ended (Type RS-K).
With 3-pole connector M8, cable length ca. 100 mm (Type RS-S).

**Type ES**
In the type ES contact is made by an electronic switch – without bounce or wear and protected from pole reversal.
The output is short circuit proof and insensitive to shocks and vibrations.
Connection is by 3-pole connector for easy disconnection.
Fitted with connection cable 100 mm long with connector. A 5m cable with connector and open end can be ordered separately, or use the Order No. for the complete Type ES with 5m cable.

---

### Proximity Sensors RS and ES

**Electrical Service Life**
Protective Measures
Magnetic switches are sensitive to excessive currents and inductions.
With high switching frequencies and inductive loads such as relays, solenoid valves or lifting magnets, service life will be greatly reduced.

With resistive and capacitative loads with high switch-on current, such as light bulbs, a protective resistor should be fitted. This also applies to long cable lengths and voltages over 100 V.

In the switching of inductive loads such as relays, solenoid valves and lifting magnets, voltage peaks (transients) are generated which must be suppressed by protective diodes, RC loops or varistors.

**Connection Examples**
- Load with protective circuits
  - (a) Protective resistor for light bulb
  - (b) Freewheel diode on inductivity
  - (c) Varistor on inductivity
  - (d) RC element on inductivity

For the type ES, external protective circuits are not normally needed.

---

### Dimensions (mm) – Type RS-K

![Dimensions diagram for Type RS-K](image)

### Dimensions (mm) – Type ES-S / RS-S*

![Dimensions diagram for Type ES-S](image)

---

### Dimension Table (mm) and Order Instructions

<table>
<thead>
<tr>
<th>Series</th>
<th>Dimens. (mm)</th>
<th>RS closer</th>
<th>RS open</th>
<th>NPN</th>
<th>Order No.</th>
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</thead>
<tbody>
<tr>
<td>OSP-16</td>
<td>20</td>
<td>20.5</td>
<td>PNP</td>
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<tr>
<td>OSP-25</td>
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<td>27</td>
<td>NPN</td>
<td>10044</td>
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<tr>
<td>OSP-32</td>
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<td>34</td>
<td>NPN</td>
<td>10044</td>
<td></td>
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<tr>
<td>OSP-40</td>
<td>36</td>
<td>39</td>
<td>NPN</td>
<td>10044</td>
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<td>OSP-50</td>
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<td>44</td>
<td>NPN</td>
<td>10044</td>
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</tr>
<tr>
<td>OSP-63</td>
<td>53</td>
<td>59</td>
<td>NPN</td>
<td>10044</td>
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<td>OSP-80</td>
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<td>72</td>
<td>NPN</td>
<td>10044</td>
<td></td>
</tr>
</tbody>
</table>

Cable 5 m with connector and with open end for sensor Type ES-S / RS-S: KC1342 4041

---

* Operating voltage max. 70 V

---

* Operating voltage max. 70 V
**Service Packs**

<table>
<thead>
<tr>
<th>Bore Sizes</th>
<th>16mm</th>
<th>25mm</th>
<th>32mm</th>
<th>40mm</th>
<th>50mm</th>
<th>63mm</th>
<th>80mm</th>
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</thead>
<tbody>
<tr>
<td><strong>Buna Service Pack</strong></td>
<td>Part Number</td>
<td>11111</td>
<td>11112</td>
<td>11113</td>
<td>11114</td>
<td>11115</td>
<td>11116</td>
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<tr>
<td>Single Piston</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Viton Service Pack</strong></td>
<td>Part Number</td>
<td>11121</td>
<td>11122</td>
<td>11123</td>
<td>11124</td>
<td>11125</td>
<td>11126</td>
</tr>
<tr>
<td>Single Piston</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Buna Service Pack</strong></td>
<td>Part Number</td>
<td>11131</td>
<td>11132</td>
<td>11133</td>
<td>11134</td>
<td>11135</td>
<td>11136</td>
</tr>
<tr>
<td>Single Piston - Slow Speed Grease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Viton Service Pack</strong></td>
<td>Part Number</td>
<td>11141</td>
<td>11142</td>
<td>11143</td>
<td>11144</td>
<td>11145</td>
<td>11146</td>
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<tr>
<td>Single Piston - Slow Speed Grease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Behind part number, please add stroke length in mm*

**Service Pack Information**

Service Packs, containing all the components necessary to completely rebuild an Origa rodless cylinder, are available. Each pack contains a complete seal kit, inner and outer bands, Origa grease tube, cleaning tool and repair instructions. It’s all packaged in an easy-to-ship, easy-to-store box clearly labeled to indicate the cylinder type, bore and stroke it is intended for. Contact your local Origa distributor for more information.

**Seal Kits**

<table>
<thead>
<tr>
<th>Bore Sizes</th>
<th>16mm</th>
<th>25mm</th>
<th>32mm</th>
<th>40mm</th>
<th>50mm</th>
<th>63mm</th>
<th>80mm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buna Seal Kit - Standard Cylinder</strong></td>
<td>Part Number</td>
<td>11052</td>
<td>11053</td>
<td>11054</td>
<td>11055</td>
<td>11056</td>
<td>11057</td>
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<tr>
<td><strong>Viton Seal Kit - Standard Cylinder</strong></td>
<td>Part Number</td>
<td>11059</td>
<td>11060</td>
<td>11061</td>
<td>11062</td>
<td>11063</td>
<td>11064</td>
</tr>
<tr>
<td><strong>Seal Kit - Sideline Carriage</strong></td>
<td>Part Number</td>
<td>11066</td>
<td>11067</td>
<td>11068</td>
<td>11069</td>
<td>11070</td>
<td>–</td>
</tr>
<tr>
<td><strong>Seal Kit Active Brake - Standard Cylinder</strong></td>
<td>Part Number</td>
<td>–</td>
<td>11822</td>
<td>11823</td>
<td>11824</td>
<td>11825</td>
<td>11826</td>
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<tr>
<td><strong>Seal Kit - Multibrake</strong></td>
<td>Part Number</td>
<td>–</td>
<td>11089</td>
<td>11090</td>
<td>11091</td>
<td>11092</td>
<td>11093</td>
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</table>
## Ordering Instructions

### US-OSP-

#### MOUNTING

<table>
<thead>
<tr>
<th>Series</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>P Pneumatic</td>
<td>0</td>
<td>10 (not available)</td>
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</tr>
<tr>
<td>1</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mount Single Piston Mount**

- **0**: Double (all)
- **1**: Standard mount (NR20) (all)
- **2**: Floating mount (NR25) (all)
- **3**: Invert mount (NR30) (all)
- **4**: Invert float mount (NR35) (all)
- **5**: Slideline (NR50) (one piston, two carriages) (16, 25, 32, 40, 50, 63)
- **6**: Powerslide 25 (one piston, four carriages) (18, 25, 32, 40, 50)
- **7**: Powerslide 35 (one piston, four carriages) (25, 32, 40, 50)
- **8**: Powerslide 44 (one piston, four carriages) (25, 32, 40, 50)
- **9**: Powerslide 60 (one piston, four carriages) (40, 50)
- **A**: Powerslide 76 (one piston, four carriages) (50)
- **B**: Brake active-pressure (25, 32, 40, 50, 63, 80)
- **C**: Slideline (16, 25, 32, 40, 50, 63)
- **D**: Joint clamp std (25, 32, 40, 50, 63, 80)
- **E**: Joint clamp invert (25, 32, 40, 50, 63, 80)
- **F**: Joint clamp invert float (25, 32, 40, 50, 63, 80)
- **G**: Joint clamp plate (25, 32, 40, 50, 63, 80)
- **H**: Joint clamp invert plate (25, 32, 40, 50, 63, 80)
- **I**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **J**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **K**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **L**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **M**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **N**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **O**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **P**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **Q**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **R**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **S**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **T**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **U**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **V**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **W**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **X**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **Y**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **Z**: Special

#### Mount Double Piston Mount

- **0**: Single (all)
- **1**: Standard mount (NR20) (all)
- **2**: Floating mount (NR25) (all)
- **3**: Invert mount (NR30) (all)
- **4**: Invert float mount (NR35) (all)
- **5**: Slideline (NR50) (one piston, two carriages) (16, 25, 32, 40, 50, 63)
- **6**: Powerslide 25 (one piston, four carriages) (18, 25, 32, 40, 50)
- **7**: Powerslide 35 (one piston, four carriages) (25, 32, 40, 50)
- **8**: Powerslide 44 (one piston, four carriages) (25, 32, 40, 50)
- **9**: Powerslide 60 (one piston, four carriages) (40, 50)
- **A**: Powerslide 76 (one piston, four carriages) (50)
- **B**: Brake active-pressure (25, 32, 40, 50, 63, 80)
- **C**: Joint clamp std (25, 32, 40, 50, 63, 80)
- **D**: Joint clamp invert (25, 32, 40, 50, 63, 80)
- **E**: Joint clamp invert float (25, 32, 40, 50, 63, 80)
- **F**: Joint clamp plate (25, 32, 40, 50, 63, 80)
- **G**: Joint clamp invert plate (25, 32, 40, 50, 63, 80)
- **H**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **I**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **J**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **K**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **L**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **M**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **N**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **O**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **P**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **Q**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **R**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **S**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **T**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **U**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **V**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **W**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **X**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **Y**: Joint clamp active-pressure (25, 32, 40, 50, 63, 80)
- **Z**: Special
<table>
<thead>
<tr>
<th>Scale</th>
<th>Group</th>
<th>Port</th>
<th>Stroke &amp; Coating</th>
<th>End Cap Support</th>
<th>Center Support Qty.</th>
<th>Switch Qty.</th>
<th>Stroke (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>none</td>
<td>0</td>
<td>std</td>
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<tr>
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<tr>
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<td>0</td>
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<td>15</td>
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<td>0</td>
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<td>17</td>
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<td>std</td>
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<td>0</td>
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<td>18</td>
</tr>
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<td>6</td>
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<td>std</td>
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<td>0</td>
<td>none</td>
<td>19</td>
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<td>std</td>
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<td>11</td>
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<td>std</td>
<td>none</td>
<td>0</td>
<td>none</td>
<td>24</td>
</tr>
</tbody>
</table>

**Options**

- **Grease**
  - Standard: 0
  - Low: 1
  - Medium: 2
  - High: 3

- **Screws & Coating**
  - Standard: 0
  - Stainless: 1
  - Xylan coated: 2
  - Stainless/Xylan: 3

- **Seals**
  - Buna: 0
  - Viton: 1
  - Others: 3

- **Ports**
  - Standard: 0
  - Pos 2: 1
  - Pos 5: 2
  - Single: 3
  - Pos 1: 4
  - Pos 3: 5
  - Pos 4: 6

- **End Cap Support**
  - None: 0
  - A1 (16,25,32): 1
  - A2 (16,25,32): 2
  - A3 (25,32): 3
  - C1 (40,50,63,80): 4
  - C2 (40,50): 5
  - C3 (40,50,63,80): 6
  - C4 (40,50): 7
  - B1 (16): 8
  - B1.5: 9

**Choices**

- **Switches/Support**
  - None: 0
  - Reed KL3045: 1
  - Reed KL3048: 2
  - NPN: 3
  - PNP: 4

- **Strokes**
  - Standard: 0

Note: Position #2 is the standard location.
Pneumatic Actuator Application Sheet

Distributor: 
Salesperson: 
Phone: 
Fax: 

Stroke: ____________ Time to make move: ____________ Load: ____________ Incline: ____________

☐ Check if load is externally supported

Actuator type:

M =
MS =
MV =

Description:

☐ See Attached for additional information

Special Features Required:

☐ Switches 
Type ________ 
Qty. ________

Please complete and fax to: 630/871-1515, Attention: Technical Support
Advice, service and sales ... worldwide and round the clock.