

# Modular Pneumatic Linear Drive Systems

ORIGA SYSTEM PLUS

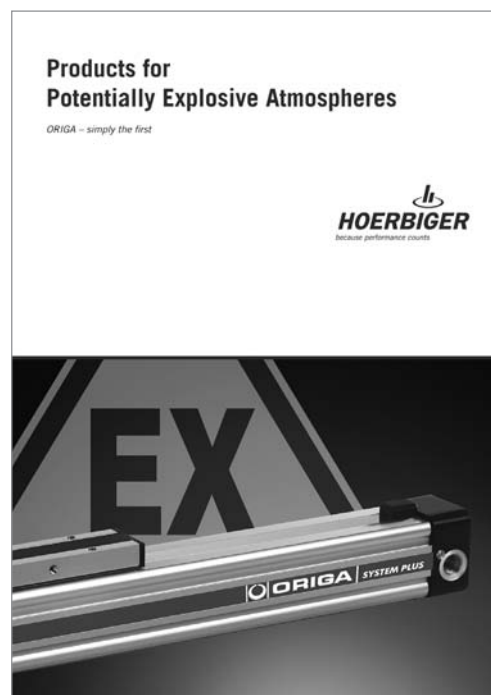


HOERBIGER Origa rodless pneumatic cylinders are the first rodless cylinders that have been approved for use in potentially explosive atmospheres in Equipment Group II, Category 2 GD.

The Cylinders are to the ATEX Certification 94/9/EG (ATEX 95) for Pneumatic Components.

For the different classifications and details please see data sheet 1.10.020E and 1.45.105E.

You will find further information on the ATEX Directives in our brochure A5P060E.



## Special Versions



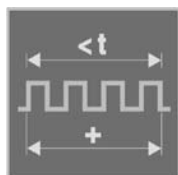
for use in Ex-Areas



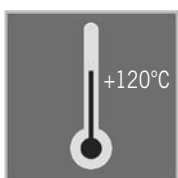
for Clean Room Applications  
certified to  
DIN EN ISO 14644-1



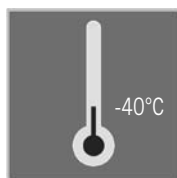
Stainless steel version  
for special applications



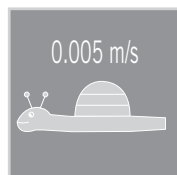
with special pneumatic  
cushioning system for cycle  
time optimization,  
for Ø 16 to 50 mm  
– on request



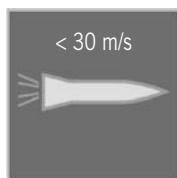
High Temperature Version  
for temperatures up to +120°C



Low Temperature Version  
for temperatures up to  
-40°C



Slow Speed Version  
 $v = 0.005 - 0.2 \text{ m/s}$



High Speed Version  
 $v_{\text{max.}} = 30 \text{ m/s}$



Cylinders with extreme long  
strokes  
Stroke length up to 41 m

### Note:

For guidance on the application of the information in this catalogue please refer to the inner back cover.

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## ONE CONCEPT – THREE DRIVE OPTIONS

Based on the ORIGA rodless cylinder, proven in world wide markets, HOERBIGER Origa now offers the complete solution for linear drive systems. Designed for absolute reliability, high performance, ease of use and optimised engineering the ORIGA SYSTEM PLUS satisfies even the most demanding applications.

### ORIGA SYSTEM PLUS

is a totally modular concept which offers the choice of pneumatic or electric actuation, with guidance and control modules to suit the exact needs of individual installations.

The actuators at the core of the system all have a common aluminium extruded profile, with double dovetail mounting rails on three sides, these

are the principle building blocks of the system to which all modular options are directly attached.



### SYSTEM MODULARITY

#### • Pneumatic Drive

– For all round versatility and convenience, combining ease of control and broad performance capability. Ideally suited for point-to point operations, reciprocating movements and simple traverse / transfer applications.

#### • Electric Screw Drive

– For high force capability and accurate path and position control.

**For additional informations on electrical linear drives, please refer to catalogue A4 P017E.**

#### • Electric Belt Drive

– For high speed applications, accurate path and position control and longer strokes.

**For additional informations on electrical linear drives, please refer to catalogue A4 P017E.**

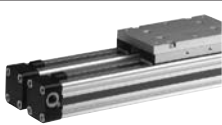
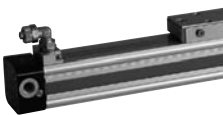
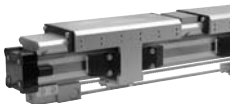
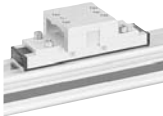
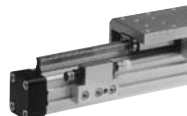
- Different guidance options provide the necessary level of precision, performance and duty for various applications.

- Compact solutions, which are simple to install and can be easily retro-fitted.

- Valves and control options can be directly mounted to the actuator system.

- Diverse mounting options to provide total installation flexibility.

\* Information on electrical linear drives series OSP-E, please refer to catalogue A4 P017E

|                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                         |                                                                                                                                                                                             |                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Basic Linear Drive<br/>Standard Version</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E* <ul style="list-style-type: none"> <li>Belt drive</li> <li>Belt drive with integrated Guides</li> <li>Vertical belt drive with recirculating ball bearing guide</li> </ul> </li> <li>● Series OSP-E* <ul style="list-style-type: none"> <li>Screw drive (Ball Screw, Trapezoidal Screw)</li> </ul> </li> </ul> |                                                                                        | <b>Duplex Connection</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>                                                                                                   |                                                                                             |
| <b>Air Connection on the<br/>End-face or both at One End</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>                                                                                                                                                                                                                                                                                                                |                                                                                        | <b>Multiplex Connection</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>                                                                                                |                                                                                             |
| <b>Long-Stroke Cylinders<br/>for strokes up to 41 m</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>                                                                                                                                                                                                                                                                                                                     |                                                                                        | <b>Linear Guides<br/>– SLIDELINE</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E Screw drive*</li> </ul>                                                  |                                                                                             |
| <b>Clean Room Cylinder<br/>certified to<br/>DIN EN ISO 146644-1</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E..SB</li> </ul>                                                                                                                                                                                                                                                                             |                                                                                        | <b>Linear Guides<br/>– POWERSLIDE</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E Belt drive*</li> <li>● Series OSP-E Screw drive*</li> </ul>             |                                                                                             |
| <b>Products for<br/>ATEX Areas</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>Rodless Cylinders</li> </ul>                                                                                                                                                                                                                                                                                                               |     | <b>Linear Guides<br/>– PROLINE</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E Belt drive*</li> <li>● Series OSP-E Screw drive*</li> </ul>                |                                                                                             |
| <b>Products for<br/>ATEX Areas</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>Rodless Cylinders<br/>with Linear Guide SLIDELINE</li> </ul>                                                                                                                                                                                                                                                                               |   | <b>Linear Guides<br/>– STARLINE</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>                                                                                        |                                                                                             |
| <b>Bi-parting Version</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |                                                                                      | <b>Linear Guides<br/>– KF</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>                                                                                              |                                                                                            |
| <b>Integrated 3/2 Way Valves</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>                                                                                                                                                                                                                                                                                                                                            |                                                                                      | <b>Heavy Duty Linear Guides<br/>– HD</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E Screw drive*</li> </ul>                                              |                                                                                           |
| <b>Clevis Mounting</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E Belt drive*</li> <li>● Series OSP-E Screw drive*</li> </ul>                                                                                                                                                                                                                                                                             |                                                                                      | <b>Intermediate stop module<br/>– ZSM</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>                                                                                  |                                                                                           |
| <b>End Cap Mounting</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E Belt drive*</li> <li>● Series OSP-E Screw drive*</li> </ul>                                                                                                                                                                                                                                                                            |                                                                                      | <b>Brakes</b> <ul style="list-style-type: none"> <li>● Active Brakes</li> <li>● Passive Brakes</li> </ul>                                                                                   | <br> |
| <b>Mid-Section Support</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E Belt drive*</li> <li>● Series OSP-E Screw drive*</li> </ul>                                                                                                                                                                                                                                                                         |                                                                                      | <b>Magnetic Switches</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E Belt drive*</li> <li>● Series OSP-E Screw drive*</li> <li>● ATEX-Versions</li> </ul> |      |
| <b>Inversion Mounting</b> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E Belt drive*</li> <li>● Series OSP-E Screw drive*</li> </ul>                                                                                                                                                                                                                                                                          |                                                                                      | <b>SENSOFLEX–Measuring system</b> <ul style="list-style-type: none"> <li>● Series SFI-plus</li> </ul>                                                                                       |                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                         | <b>Variable Stop VS</b> <ul style="list-style-type: none"> <li>● Series OSP-P<br/>with Linear Guide STL, KF, HD</li> </ul>                                                                  |                                                                                           |

## Modular Components Overview – Rodless Cylinders Series OSP-P

| Linear Drives                            | OSP-P10    | OSP-P16    | OSP-P25     | OSP-P32     | OSP-P40    | OSP-P50     | OSP-P63    | OSP-P80    |
|------------------------------------------|------------|------------|-------------|-------------|------------|-------------|------------|------------|
| Theoretical force at 6bar [N]            | 47         | 120        | 295         | 483         | 754        | 1178        | 1870       | 3010       |
| Effective force at 6bar [N]              | 32         | 78         | 250         | 420         | 640        | 1000        | 1550       | 2600       |
| Velocity v [m/s]                         | > 0.005    | > 0.005    | > 0.005     | > 0.005     | > 0.005    | > 0.005     | > 0.005    | > 0.005    |
| Magnetic piston (three sides)            | X          | □          | □           | □           | □          | □           | □          | □          |
| Lubrication - Prelubricated              | □          | □          | □           | □           | □          | □           | □          | □          |
| Multiple air ports ( 4 x 90° )           | X          | □          | □           | □           | □          | □           | □          | □          |
| Both Air Connections at End-face         | X          | ○          | ○           | ○           | ○          | ○           | ○          | ○          |
| Air Connection on the End-face           | X          | ○          | ○           | ○           | ○          | ○           | ○          | ○          |
| Cushioning                               | □          | □          | □           | □           | □          | □           | □          | □          |
| Cushioning length[mm]                    | 2,50       | 11         | 17          | 20          | 27         | 30          | 32         | 39         |
| Stroke length [mm] ▲                     | 1 - 6000   | 1 - 6000   | 1 - 6000    | 1 - 6000    | 1 - 6000   | 1 - 6000    | 1 - 6000   | 1 - 6000   |
| Pressure range pmax [bar]                | 8.0        | 8.0        | 8.0         | 8.0         | 8.0        | 8.0         | 8.0        | 8.0        |
| Temperature range [°C] *                 | -10 – + 80 | -10 – + 80 | -10 – + 80  | -10 – + 80  | -10 – + 80 | -10 – + 80  | -10 – + 80 | -10 – + 80 |
| Viton / chemical resistance              | ○          | ○          | ○           | ○           | ○          | ○           | ○          | ○          |
| Stainless steel parts                    | ○          | ○          | ○           | ○           | ○          | ○           | ○          | ○          |
| Clevis Mounting                          | ○          | ○          | ○           | ○           | ○          | ○           | ○          | ○          |
| Slow speed lubrication                   | ○          | ○          | ○           | ○           | ○          | ○           | ○          | ○          |
| Duplex Connection / Multiplex Connection | X          | on request | ○           | ○           | ○          | ○           | on request | on request |
| Tandem piston                            | ○          | ○          | ○           | ○           | ○          | ○           | ○          | ○          |
| <b>Basic Cylinder</b>                    |            |            |             |             |            |             |            |            |
| F [N]                                    | 20         | 120        | 300         | 450         | 750        | 1200        | 1650       | 2400       |
| Mx [Nm]                                  | 0.2        | 0.45       | 1.5         | 3           | 6          | 10          | 12         | 24         |
| My [Nm]                                  | 1          | 4          | 15          | 30          | 60         | 115         | 200        | 360        |
| Mz [Nm]                                  | 0.3        | 0.5        | 3           | 5           | 8          | 15          | 24         | 48         |
| <b>Slideline</b>                         |            |            |             |             |            |             |            |            |
| F [N]                                    | X          | 325        | 675         | 925         | 1500       | 2000        | 2500       | 2500       |
| Mx [Nm]                                  | X          | 6          | 14          | 29          | 50         | 77          | 120        | 120        |
| My [Nm]                                  | X          | 11         | 34          | 60          | 110        | 180         | 260        | 260        |
| Mz [Nm]                                  | X          | 11         | 34          | 60          | 110        | 180         | 260        | 260        |
| <b>Proline</b>                           |            |            |             |             |            |             |            |            |
| F [N]                                    | X          | 542        | 857         | 1171        | 2074       | 3111        | X          | X          |
| Mx [Nm]                                  | X          | 8          | 16          | 29          | 57         | 111         | X          | X          |
| My [Nm]                                  | X          | 12         | 39          | 73          | 158        | 249         | X          | X          |
| Mz [Nm]                                  | X          | 12         | 39          | 73          | 158        | 249         | X          | X          |
| <b>Powerslide</b>                        |            |            |             |             |            |             |            |            |
| F [N]                                    | X          | 1400       | 1400 - 3000 | 1400 - 3000 | 3000       | 3000 - 4000 | X          | X          |
| Mx [Nm]                                  | X          | 14         | 14 - 65     | 20 - 65     | 65 - 90    | 90 - 140    | X          | X          |
| My [Nm]                                  | X          | 45         | 63 - 175    | 70 - 175    | 175 - 250  | 250 - 350   | X          | X          |
| Mz [Nm]                                  | X          | 45         | 63 - 175    | 70 - 175    | 175 - 250  | 250 - 350   | X          | X          |
| <b>Starline</b>                          |            |            |             |             |            |             |            |            |
| F [N]                                    | X          | 1000       | 3100        | 3100        | 4000-7500  | 4000-7500   | X          | X          |
| Mx [Nm]                                  | X          | 15         | 50          | 62          | 150        | 210         | X          | X          |
| My [Nm]                                  | X          | 30         | 110         | 160         | 400        | 580         | X          | X          |
| Mz [Nm]                                  | X          | 30         | 110         | 160         | 400        | 580         | X          | X          |
| – variable Stop                          | X          | ○          | ○           | ○           | ○          | ○           | X          | X          |
| <b>KF Guide</b>                          |            |            |             |             |            |             |            |            |
| F [N]                                    | X          | 1000       | 3100        | 3100        | 4000-7100  | 4000-7500   | X          | X          |
| Mx [Nm]                                  | X          | 12         | 35          | 44          | 119        | 170         | X          | X          |
| My [Nm]                                  | X          | 25         | 90          | 133         | 346        | 480         | X          | X          |
| Mz [Nm]                                  | X          | 25         | 90          | 133         | 346        | 480         | X          | X          |
| – variable Stop                          | X          | ○          | ○           | ○           | ○          | ○           | X          | X          |

| Linear Drives                                            | OSP-P10 | OSP-P16    | OSP-P25    | OSP-P32    | OSP-P40    | OSP-P50    | OSP-P63    | OSP-P80    |
|----------------------------------------------------------|---------|------------|------------|------------|------------|------------|------------|------------|
|                                                          |         |            |            |            |            |            |            |            |
| <b>HD Heavy Duty Guide</b>                               |         |            |            |            |            |            |            |            |
| F [N]                                                    | X       | X          | 6000       | 6000       | 15000      | 18000      | X          | X          |
| Mx [Nm]                                                  | X       | X          | 260        | 285        | 800        | 1100       | X          | X          |
| My [Nm]                                                  | X       | X          | 320        | 475        | 1100       | 1400       | X          | X          |
| Mz [Nm]                                                  | X       | X          | 320        | 475        | 1100       | 1400       | X          | X          |
| – variable Stop                                          | X       | X          | ○          | ○          | ○          | ○          | X          | X          |
| – intermediate stop module                               | X       | X          | ○          | X          | X          | X          | X          | X          |
| <b>Active Brake</b>                                      |         |            |            |            |            |            |            |            |
| Braking force at 6 bar (brake surface dry) [N]           | X       | X          | 350        | 590        | 900        | 1400       | 2170       | 4000       |
| <b>Slideline SL / Proline PL with Brakes</b>             |         |            |            |            |            |            |            |            |
| <b>Active Brake</b>                                      |         |            |            |            |            |            |            |            |
| <b>SL</b> Braking force at 6 bar (brake surface dry) [N] | X       | X          | 325        | 545        | 835        | 1200       | X          | X          |
| <b>PL</b> Braking force at 6 bar (brake surface dry) [N] | X       | X          | on request | on request | on request | on request | X          | X          |
| <b>Passive Brake Multibrake</b>                          |         |            |            |            |            |            |            |            |
| <b>SL</b> Braking force at 6 bar (brake surface dry) [N] | X       | X          | 470        | 790        | 1200       | 1870       | 2900       | 2900       |
| <b>PL</b> Braking force at 6 bar (brake surface dry) [N] | X       | X          | 315        | 490        | 715        | 1100       | –          | –          |
| <b>Magnetic Switches</b>                                 |         |            |            |            |            |            |            |            |
| Standard Version                                         | ○       | ○          | ○          | ○          | ○          | ○          | ○          | ○          |
| T-Nut Version                                            | ○       | ○          | ○          | ○          | ○          | ○          | ○          | ○          |
| ATEX Version for EX- Areas (Ex)                          | ○       | ○          | ○          | ○          | ○          | ○          | ○          | ○          |
| <b>Displacement measuring systems</b>                    |         |            |            |            |            |            |            |            |
| SFI-plus incremental                                     | X       | X          | ○          | ○          | ○          | ○          | ○          | ○          |
| <b>Integrated valves 3/2 WV NO VOE</b>                   | X       | X          | ○          | ○          | ○          | ○          | on request | on request |
| <b>Mountings</b>                                         |         |            |            |            |            |            |            |            |
| End Cap Mounting / Mid-Section Support                   | ○       | ○          | ○          | ○          | ○          | ○          | ○          | ○          |
| Inversion Mounting                                       | X       | ○          | ○          | ○          | ○          | ○          | ○          | ○          |
| Shock absorber for intermediate positioning              | X       | X          | on request | on request | on request | on request | X          | X          |
| Adaptor Profile / T-Nut Profile                          | X       | ○          | ○          | ○          | ○          | ○          | X          | X          |
| <b>Special Cylinders</b>                                 |         |            |            |            |            |            |            |            |
| Special Pneumactical Cushioning System                   | X       | on request | on request | on request | on request | on request | X          | X          |
| Clean Room Cylinders to DIN EN ISO 14644-1               | X       | ○          | ○          | ○          | X          | X          | X          | X          |
| Long-Stroke Cylinders (max. stroke length 41 m)          | X       | X          | X          | X          | X          | ○          | ○          | ○          |
| ATEX Version for EX-Areas (Ex)                           | ○       | ○          | ○          | ○          | ○          | ○          | ○          | ○          |
| Bi-parting Version                                       | X       | X          | X          | X          | ○          | X          | X          | X          |
| High-Speed up to 30 m/s                                  | X       | on request | on request | on request | X          | X          | X          | X          |

□ = Standard version

▲ = longer strokes on request

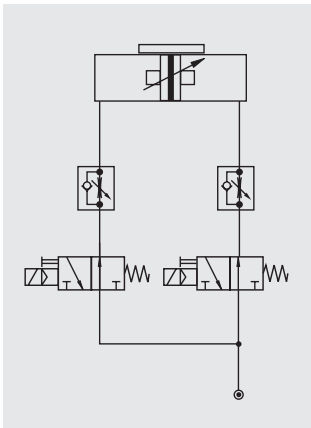
\* = other temperature ranges on request

○ = Option

X = not applicable

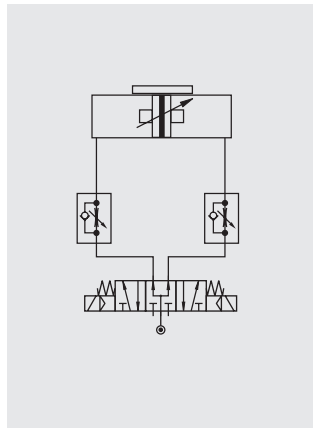
For Electric Linear Drives, Series OSP-E, see catalogue A4 P017E

# CONTROL EXAMPLES FOR OSP-P



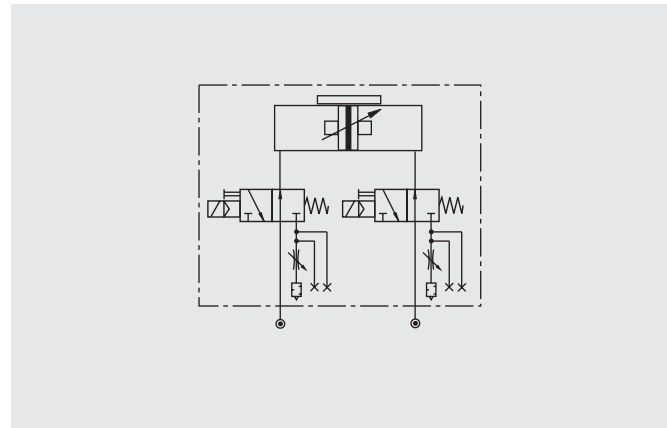
Circuit diagram for end of stroke application. Intermediate positioning is also possible.

The cylinder is controlled by two 3/2-way valves (normally open). The speed can be adjusted independently for both directions.



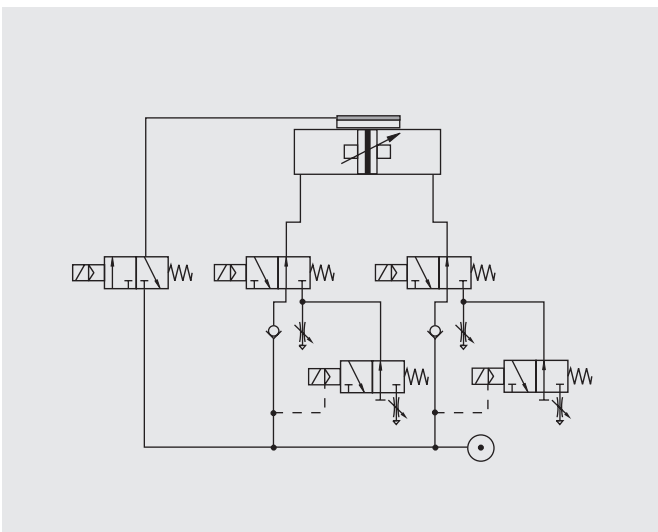
Circuit diagram for end of stroke application. Intermediate positioning is also possible.

The cylinder is controlled by a 5/3-way valve (middle position pressurized). The speed can be adjusted independently for both directions.



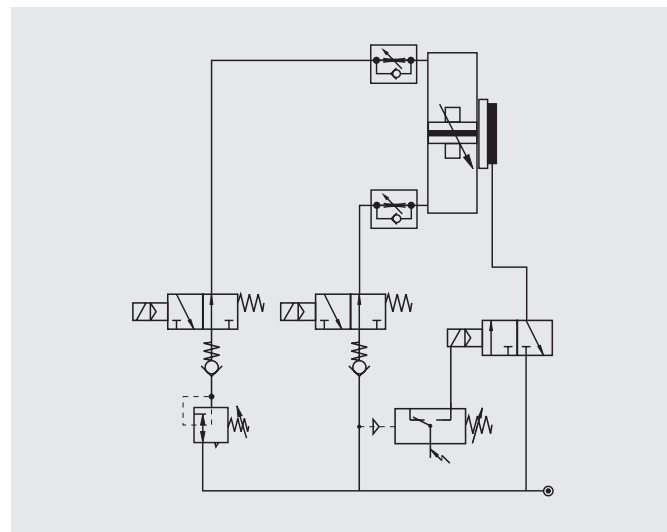
The optional integrated VOE Valves offer optimal control, and allow accurate

positioning of intermediate positions and the lowest possible speeds.



Fast/Slow speed cycle control with pneumatic brake for accurate positioning at high velocities. Additional 3/2-way valves with adjustable throttle valves at the exhaust of the standard directional control valves for two displacement

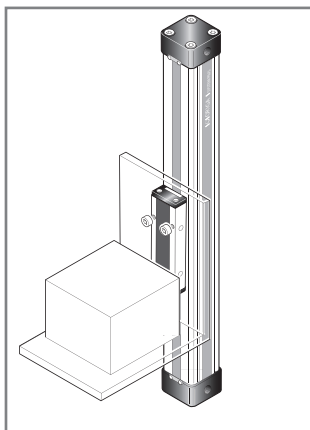
speeds in each direction of the piston's travel. The valve controlling the brake is activated after the slow speed cycle is activated



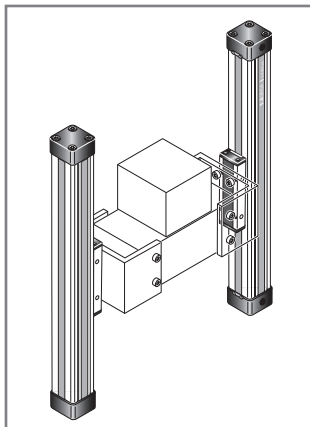
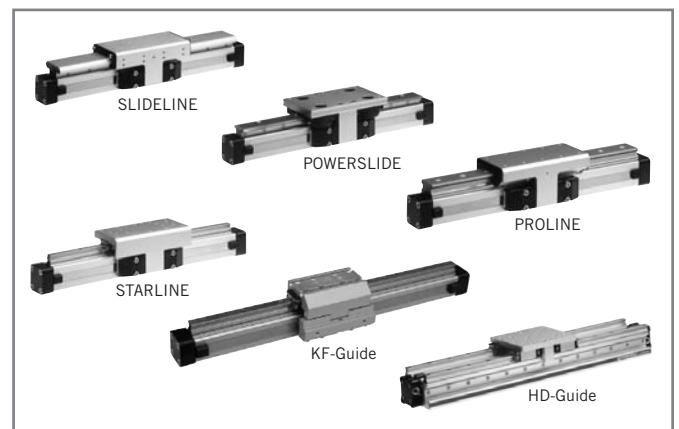
The combination of an OSP-cylinder with the passive MULTIBRAKE as shown here, allows accurate positioning and safety in case of loss of pneumatic air pressure.

# OSP-P APPLICATION EXAMPLES

ORIGA SYSTEM PLUS – rodless linear drives offer maximum flexibility for any application.



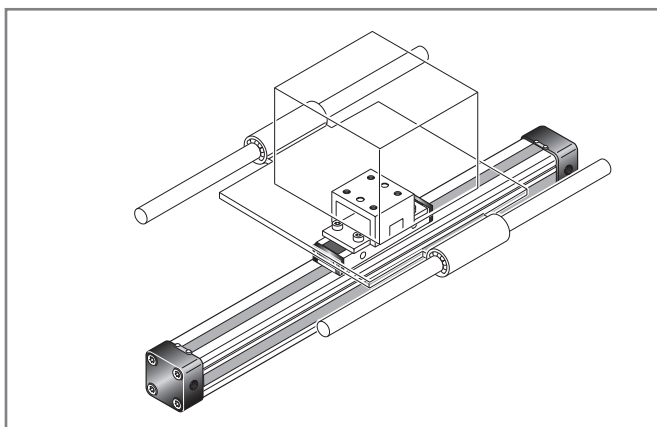
The high load capacity of the piston can cope with high bending moments without additional guides.



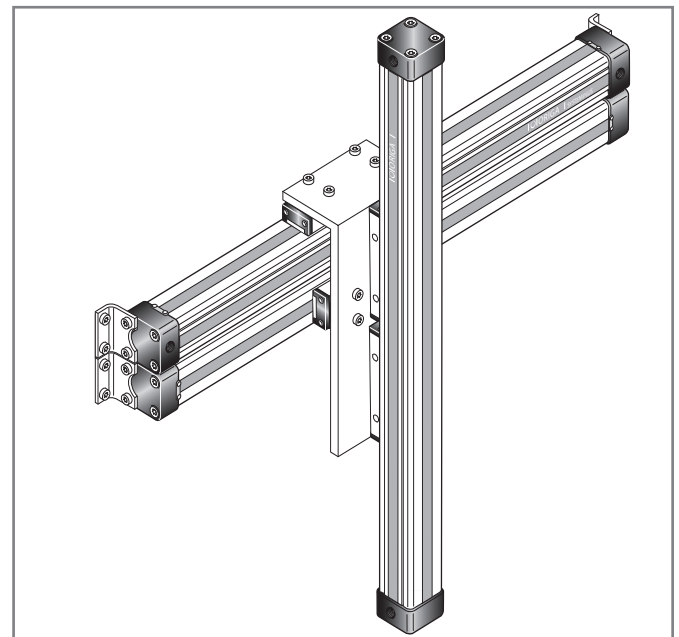
The mechanical design of the OSP-P allows synchronised movement of two cylinders.

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.



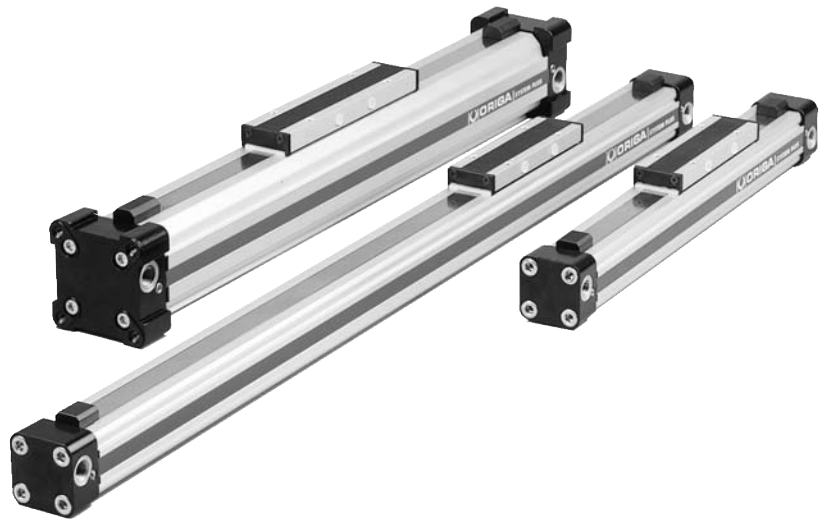
When using external guides, the clevis mounting is used to compensate for deviations in parallelism.



For further information and assembly instructions, please contact your local HOERBIGER Origa dealer.



# Rodless Pneumatic Cylinders Series OSP-P



## Contents

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## 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

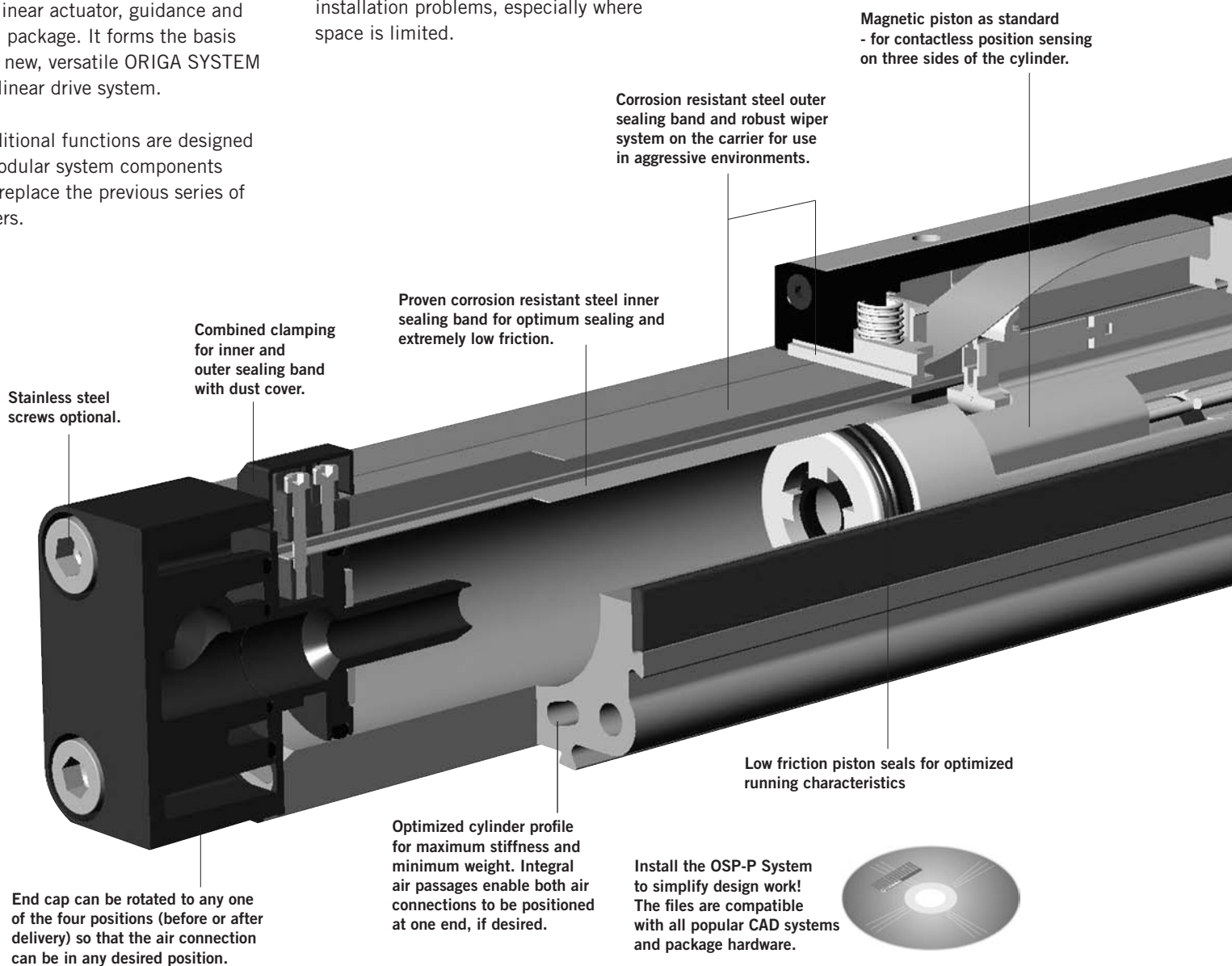
With this second generation linear drive HOERBIGER-ORIGA offers design engineers complete flexibility. The well known ORIGA cylinder has been further developed into a combined linear actuator, guidance and control package. It forms the basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

All additional functions are designed into modular system components which replace the previous series of cylinders.

### MOUNTING RAILS ON 3 SIDES

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

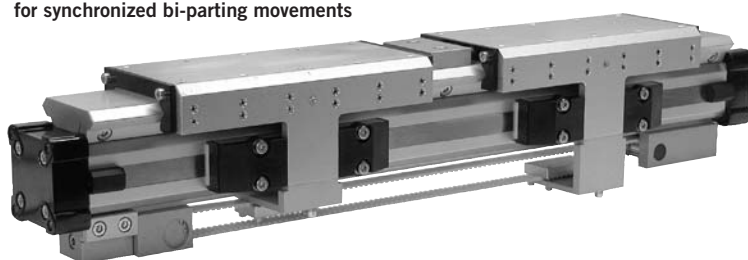
The modular system concept forms an ideal basis for additional customer-specific functions.



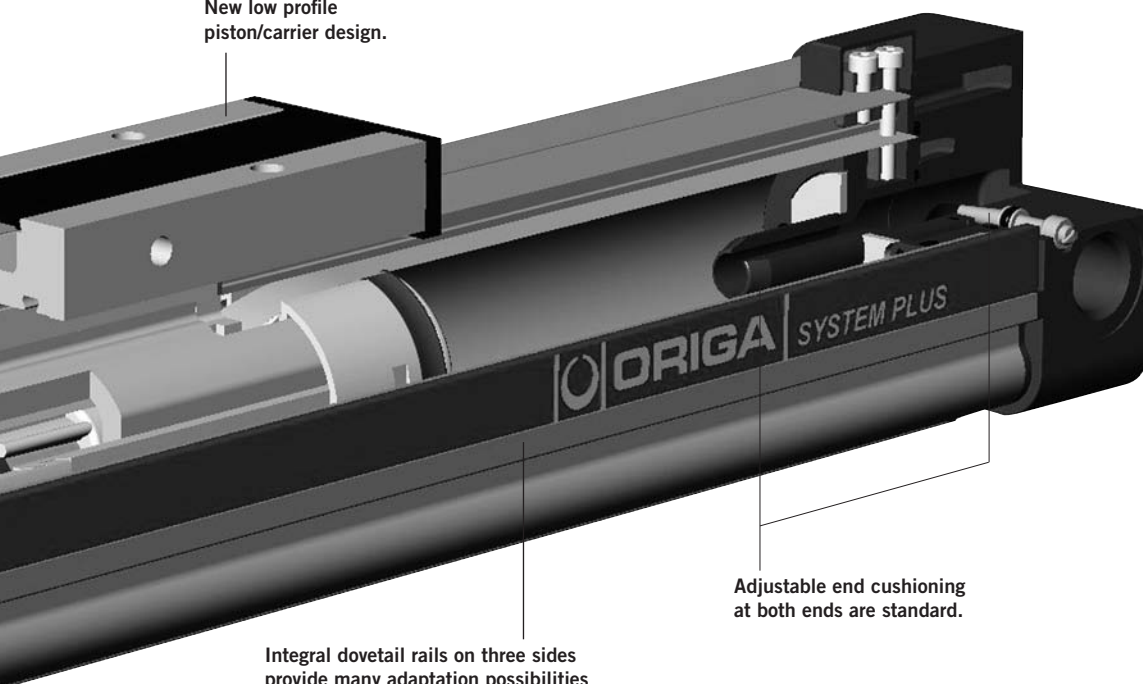
Clean Room Version  
certified to DIN EN ISO 14644-1



Rodless Cylinder  
for synchronized bi-parting movements

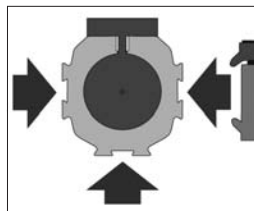


New low profile  
piston/carrier design.



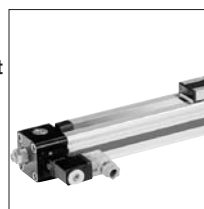
Integral dovetail rails on three sides  
provide many adaptation possibilities  
(linear guides, magnetic switches, etc.).

Modular system components  
are simply clamped on.

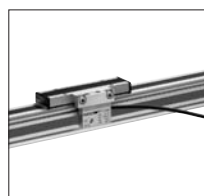


Adjustable end cushioning  
at both ends are standard.

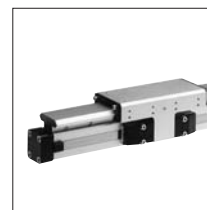
**INTEGRATED  
VOE VALVES**  
The complete compact  
solution for optimal  
cylinder control.



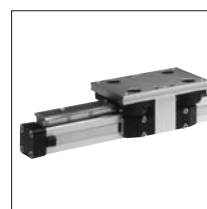
**SENSOFLEX**  
SFI-plus  
incremental  
measuring system  
with 0,1 (1,0) mm  
resolution



**SLIDELINE**  
Combination with  
linear guides  
provides for heavier  
loads.



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



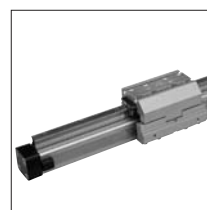
**PROLINE**  
The compact  
aluminium roller  
guide for high loads  
and velocities.



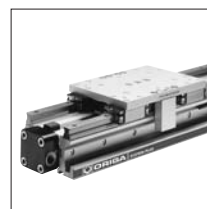
**STARLINE**  
Recirculating ball  
bearing guide for  
very high loads and  
precision



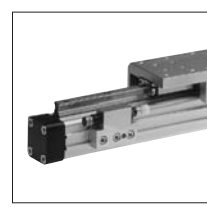
**KF GUIDE**  
Recirculating ball  
bearing guide – the  
mounting dimen-  
sions correspond  
to FESTO Type:  
DGPL-KF



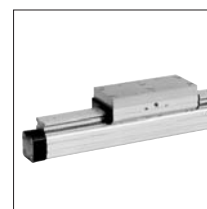
**HEAVY DUTY  
GUIDE HD**  
for heavy duty  
applications.



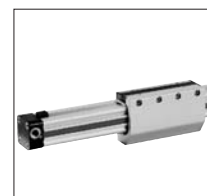
**VARIABLE STOP  
VS**  
The variable stop  
provides simple  
stroke limitation.



Passive  
pneumatic brake  
reacts automatically  
to pressure failure.



Active pneumatic  
brake for secure,  
positive stopping at  
any position.



# OPTIONS AND ACCESSORIES FOR SYSTEM VERSATILITY

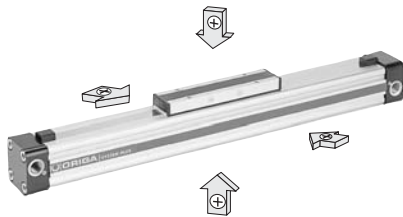
## SERIES OSP-P

### STANDARD VERSIONS OSP-P10 to P80

Data Sheet 1.10.002E-1, -2, -3

Standard carrier with integral guidance. End cap can be rotated 4 x 90° to position air connection on any side.

Magnetic piston as standard.  
Dovetail profile for mounting of accessories and the cylinder itself.



### LONG-STROKE VERSION Data Sheet 1.10.002E- 11

For extremely long strokes up to max. 41m



### BASIC CYLINDER OPTIONS

#### CLEAN ROOM CYLINDERS Data Sheet 1.10.003E

For use in clean room applications, certified with the IPA-Certificate (to DIN EN ISO 14644-1). The special design of the linear drive enables all emissions to be led away.



ATEX-Version  
Data Sheet 1.10.020E  
For use in Ex-Areas



#### 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



#### END-FACE AIR CONNECTION

Data Sheet 1.10.002E-6  
To solve special installation problems.



#### BOTH AIR CONNECTIONS AT ONE END

Data Sheet 1.10.002E-7

For simplified tubing connections and space saving.



#### INTEGRATED VOE VALVES

Data Sheet 1.10.002E-8

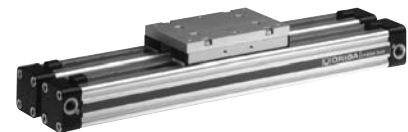
The complete compact solution for optimal cylinder control.



#### DUPLEX CONNECTION

Data Sheet 1.45.011E

The duplex connection combines two OSP-P cylinders of the same size into a compact unit with high performance.



#### MULTIPLEX CONNECTION

Data Sheet 1.45.012E

The multiplex connection combines two or more OSP-P cylinders of the same size into one unit.  
The orientation of the carriers can be freely selected.



## ACCESSORIES

### MAGNETIC SWITCHES TYPE RS, ES, RST, EST

Data Sheet 1.45.100E, 1.45.104E,  
1.45.105E

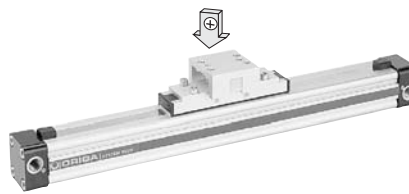
For electrical sensing of end and  
intermediate piston positions, also in  
EX-Areas.



### CLEVIS MOUNTING

Data Sheet 1.45.002E

Carrier with tolerance and parallelism  
compensation for driving loads  
supported by external linear guides.



### END CAP MOUNTING

Data Sheet 1.45.003E

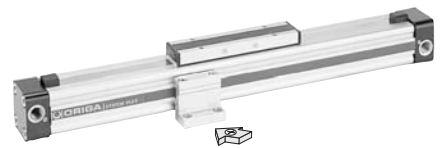
For end-mounting of the cylinder.



### MID-SECTION SUPPORT

Data Sheet 1.45.004E

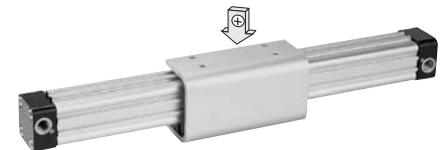
For supporting long cylinders or  
mounting the cylinder by its dovetail  
rails.



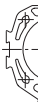
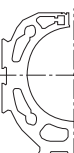
### INVERSION MOUNTING

Data Sheet 1.45.006E

The inversion mounting transfers the  
driving force to the opposite side, e. g.  
for dirty environments.





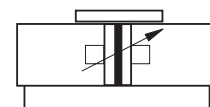
| Characteristics                                                                     |                                                                                     |                                                                                     | Pressures quoted as gauge pressure                                                  |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Characteristics                                                                     |                                                                                     | Symbol                                                                              | Unit                                                                                | Description                                                                                                      |                                                                                     |                                                                                     |                                                                                     |
| General Features                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Type                                                                                |                                                                                     |                                                                                     |                                                                                     | Rodless cylinder                                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Series                                                                              |                                                                                     |                                                                                     |                                                                                     | OSP-P                                                                                                            |                                                                                     |                                                                                     |                                                                                     |
| System                                                                              |                                                                                     |                                                                                     |                                                                                     | Double-acting, with cushioning, position sensing capability                                                      |                                                                                     |                                                                                     |                                                                                     |
| Mounting                                                                            |                                                                                     |                                                                                     |                                                                                     | See drawings                                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Air Connection                                                                      |                                                                                     |                                                                                     |                                                                                     | Threaded                                                                                                         |                                                                                     |                                                                                     |                                                                                     |
| Ambient temperature range                                                           |                                                                                     | T <sub>min</sub><br>T <sub>max</sub>                                                | °C<br>°C                                                                            | -10<br>+80<br>Other temperature ranges on request                                                                |                                                                                     |                                                                                     |                                                                                     |
| Weight (mass)                                                                       |                                                                                     |                                                                                     | kg                                                                                  | See table below                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Installation                                                                        |                                                                                     |                                                                                     |                                                                                     | In any position                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Medium                                                                              |                                                                                     |                                                                                     |                                                                                     | Filtered, unlubricated compressed air (other media on request)                                                   |                                                                                     |                                                                                     |                                                                                     |
| Lubrication                                                                         |                                                                                     |                                                                                     |                                                                                     | Permanent grease lubrication (additional oil mist lubrication not required)<br>Option: special slow speed grease |                                                                                     |                                                                                     |                                                                                     |
| Material                                                                            | Cylinder Profile                                                                    |                                                                                     |                                                                                     | Anodized aluminium                                                                                               |                                                                                     |                                                                                     |                                                                                     |
|                                                                                     | Carrier (piston)                                                                    |                                                                                     |                                                                                     | Anodized aluminium                                                                                               |                                                                                     |                                                                                     |                                                                                     |
|                                                                                     | End caps                                                                            |                                                                                     |                                                                                     | Aluminium, lacquered / Plastic (P10)                                                                             |                                                                                     |                                                                                     |                                                                                     |
|                                                                                     | Sealing bands                                                                       |                                                                                     |                                                                                     | Corrosion resistant steel                                                                                        |                                                                                     |                                                                                     |                                                                                     |
|                                                                                     | Seals                                                                               |                                                                                     |                                                                                     | NBR (Option: Viton®)                                                                                             |                                                                                     |                                                                                     |                                                                                     |
|                                                                                     | Screws                                                                              |                                                                                     |                                                                                     | Galvanized steel<br>Option: stainless steel                                                                      |                                                                                     |                                                                                     |                                                                                     |
|                                                                                     | Dust covers, wipers                                                                 |                                                                                     |                                                                                     | Plastic                                                                                                          |                                                                                     |                                                                                     |                                                                                     |
| Max. operating pressure                                                             |                                                                                     | p <sub>max</sub>                                                                    | bar                                                                                 | 8                                                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Weight (mass) kg                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Cylinder series (Basic cylinder)                                                    |                                                                                     | Weight (Mass) kg                                                                    |                                                                                     |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
|                                                                                     |                                                                                     | At 0 mm stroke                                                                      | per 100 mm stroke                                                                   |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| OSP-P10                                                                             |                                                                                     | 0.087                                                                               | 0.052                                                                               |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| OSP-P16                                                                             |                                                                                     | 0.22                                                                                | 0.1                                                                                 |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| OSP-P25                                                                             |                                                                                     | 0.65                                                                                | 0.197                                                                               |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| OSP-P32                                                                             |                                                                                     | 1.44                                                                                | 0.354                                                                               |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| OSP-P40                                                                             |                                                                                     | 1.95                                                                                | 0.415                                                                               |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| OSP-P50                                                                             |                                                                                     | 3.53                                                                                | 0.566                                                                               |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| OSP-P63                                                                             |                                                                                     | 6.41                                                                                | 0.925                                                                               |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| OSP-P80                                                                             |                                                                                     | 12.46                                                                               | 1.262                                                                               |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Size Comparison                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| P10                                                                                 | P16                                                                                 | P25                                                                                 | P32                                                                                 | P40                                                                                                              | P50                                                                                 | P63                                                                                 | P80                                                                                 |
|  |  |  |  |                               |  |  |  |
| For <b>linear guides</b> see 1.40.001E to 006E                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| For <b>magnetic switches</b> see 1.45.100E, 1.45.104E, 1.45.105E                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| For <b>mountings and accessories</b> see 1.45.001E to 009E                          |                                                                                     |                                                                                     |                                                                                     |                                                                                                                  |                                                                                     |                                                                                     |                                                                                     |

# Rodless Pneumatic Cylinder

Ø 10-80 mm

**OSP**  
ORIGA  
SYSTEM  
PLUS

Series OSP-P..



## Standard Versions:

- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing

## Long-Stroke Cylinders for stroke lengths up to 41 m

(see data sheet 1.10.002E-11)

## Special Versions:

- with special pneumatic cushioning system (on request)
- Clean room cylinders (see data sheet 1.10.003E)
- ATEX-Version (see data sheet 1.10.020E)
- Stainless steel screws
- Slow speed lubrication
- Viton® seals
- Both air connections on one end
- Air connection on the end-face
- Integrated Valves



- End cap can be rotated 4 x 90° to position air connection as desired
- Free choice of stroke length up to 6000 mm, Long-Stroke version (Ø50-80mm) for stroke lengths up to 41 m

**ORIGA**

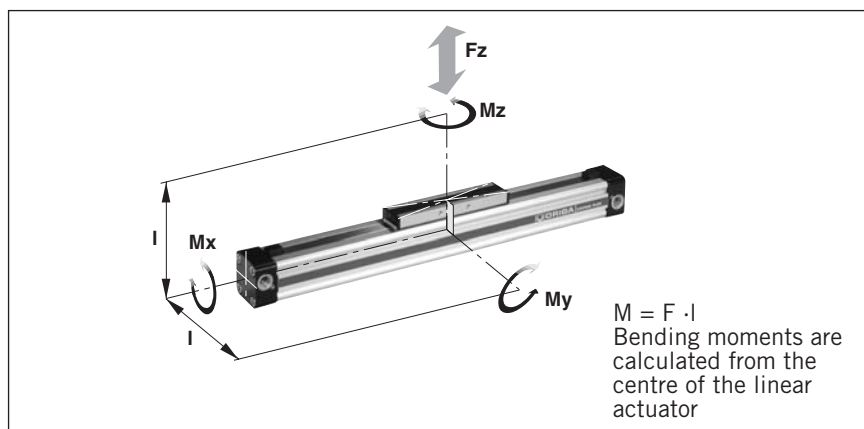
## Loads, Forces and Moments

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  $v \leq 0.5$  m/s.**

When working out the action force required, it is essential to take into account the friction forces generated by the specific application or load.



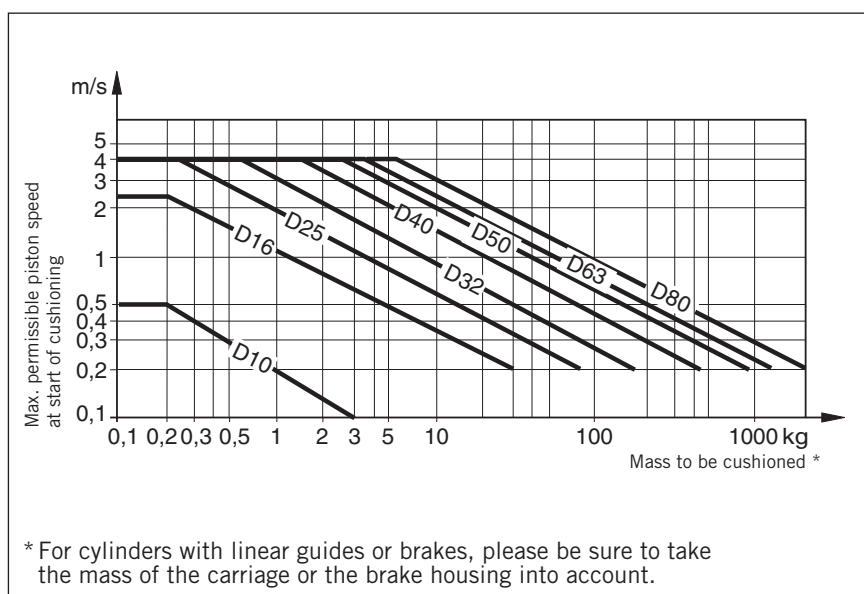
| Cylinder-Series<br>[mm Ø] | Theoretical<br>Action Force<br>at 6 bar [N] | effective<br>Action Force $F_A$<br>at 6 bar [N] | max. Moments  |               |               | max. Load<br>F [N] | Cushion<br>Length<br>[mm] |
|---------------------------|---------------------------------------------|-------------------------------------------------|---------------|---------------|---------------|--------------------|---------------------------|
|                           |                                             |                                                 | $M_x$<br>[Nm] | $M_y$<br>[Nm] | $M_z$<br>[Nm] |                    |                           |
| OSP-P10                   | 47                                          | 32                                              | 0.2           | 1             | 0.3           | 20                 | 2.5 *                     |
| OSP-P16                   | 120                                         | 78                                              | 0.45          | 4             | 0.5           | 120                | 11                        |
| OSP-P25                   | 295                                         | 250                                             | 1.5           | 15            | 3             | 300                | 17                        |
| OSP-P32                   | 483                                         | 420                                             | 3             | 30            | 5             | 450                | 20                        |
| OSP-P40                   | 754                                         | 640                                             | 6             | 60            | 8             | 750                | 27                        |
| OSP-P50                   | 1178                                        | 1000                                            | 10            | 115           | 15            | 1200               | 30                        |
| OSP-P63                   | 1870                                        | 1550                                            | 12            | 200           | 24            | 1650               | 32                        |
| OSP-P80                   | 3016                                        | 2600                                            | 24            | 360           | 48            | 2400               | 39                        |

\* A rubber element (non-adjustable) is used for end cushioning.  
To deform the rubber element enough to reach the absolute end position would require a  $\Delta p$  of 4 bar!

## 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 ca. 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.



If the permitted limit values are exceeded, either additional shock absorbers should be fitted in the area of the centre of gravity or you can consult us about our special cushioning system  
– we shall be happy to advise you on your specific application.

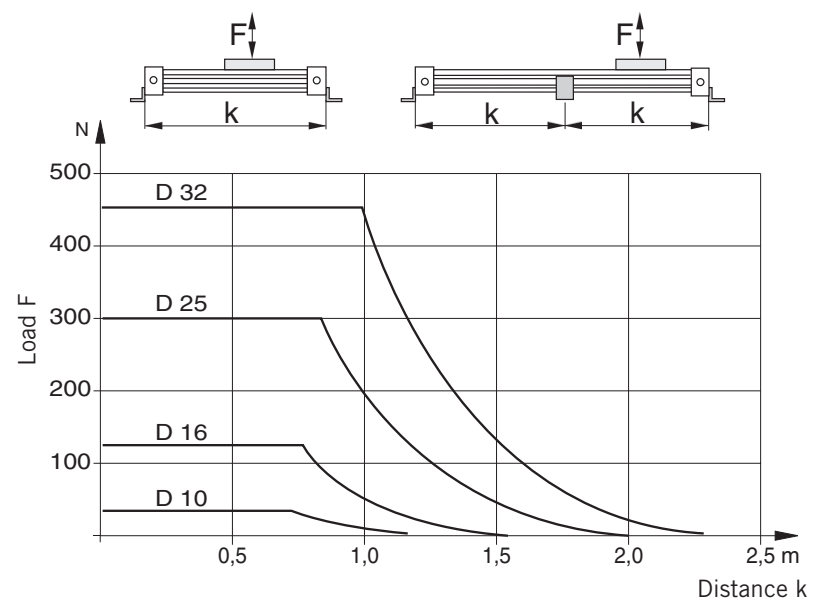
## Mid-Section Supports

To avoid excessive bending and oscillation of the cylinder, mid-section supports are required dependent on specified stroke lengths and applied loads. The diagrams show the maximum possible support spacings depending on the load.

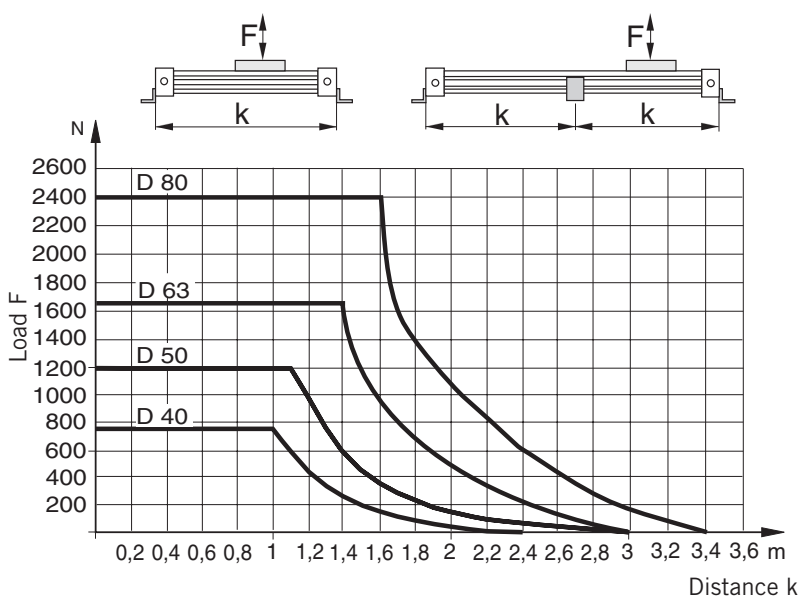
Bending up to max. 0.5 mm is permissible between supports. The mid-section supports are clamped on to the dovetail profile of the cylinder tube. They are also able to take the axial forces.

For types and dimensions see 1.45.004E.

### Permissible Support Spacings: OSP - P10 - P32



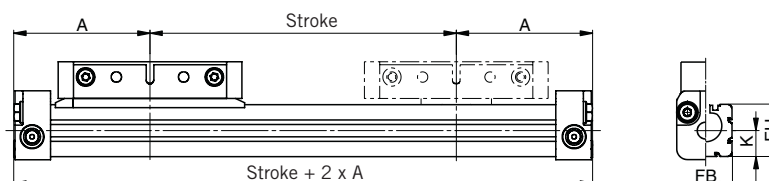
### Permissible Support Spacings: OSP - P40 - P80



## Cylinder Stroke and Dead Length A

- Free choice of stroke length up to 6000 mm in 1 mm steps.
- Longer strokes on request.

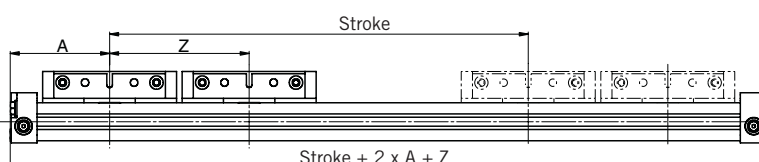
### Dimensions of Basic Cylinder OSP-P10



## Tandem Cylinder

Two pistons are fitted: dimension "Z" is optional. (Please note minimum distance "Zmin").

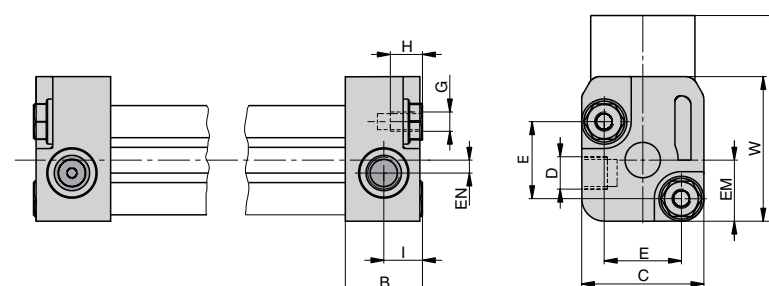
- Free choice of stroke length up to 6000 mm in 1 mm steps.
- Longer strokes on request.
- **Stroke length to order is stroke + dimension "Z"**



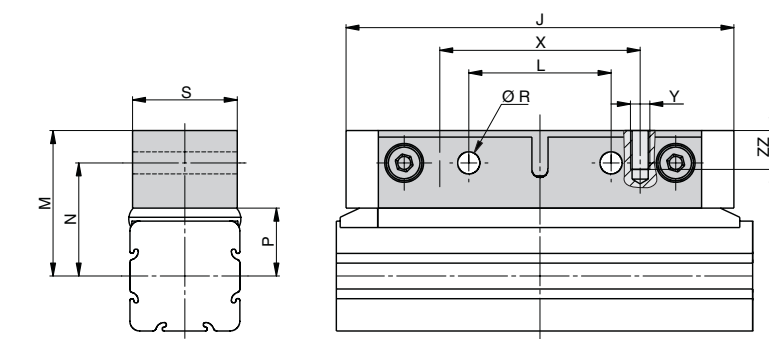
Please note:

To avoid multiple actuation of magnetic switches, the second piston is not equipped with magnets.

### End Cap/Air Connection Series OSP-P10



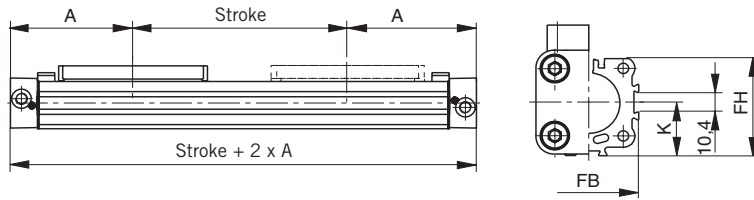
### Carrier Series OSP-P10



Dimension Table (mm)

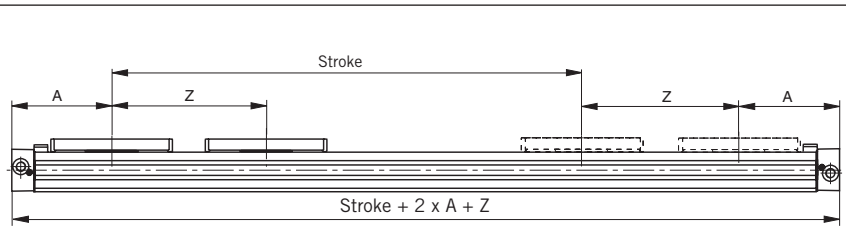
| Cylinder Series | A    | B  | C  | D  | E  | G  | H | I | J  | K   | L  | M    | N    | P    | R   | S  | W    | X  | Y  | Z min | CF | EM  | EN | FB | FH | ZZ |
|-----------------|------|----|----|----|----|----|---|---|----|-----|----|------|------|------|-----|----|------|----|----|-------|----|-----|----|----|----|----|
| OSP-P10         | 44.5 | 12 | 19 | M5 | 12 | M3 | 5 | 6 | 60 | 8.5 | 22 | 22.5 | 17.5 | 10.5 | 3.4 | 16 | 22.5 | 31 | M3 | 64    | 32 | 9.5 | 2  | 17 | 17 | 6  |

## Dimensions of Basic Cylinder OSP - P16-P80



## Cylinder Stroke and Dead Length A

- Free choice of stroke length up to 6000 mm in 1 mm steps.
- Longer strokes on request.

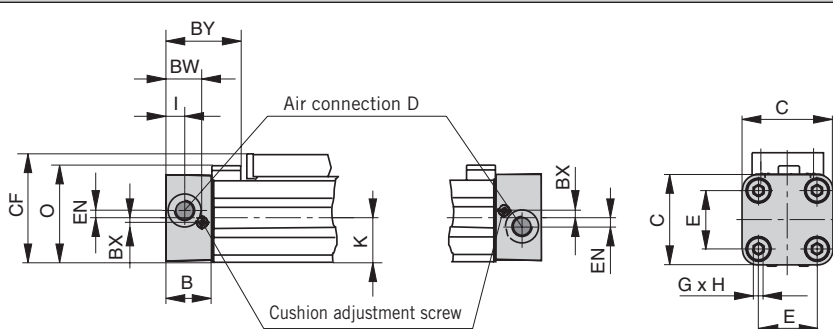


## Tandem Cylinder

Two pistons are fitted: dimension "Z" is optional. (Please note minimum distance "Zmin").

- Free choice of stroke length up to 6000 mm in 1 mm steps.
- Longer strokes on request.
- **Stroke length to order is stroke + dimension "Z"**

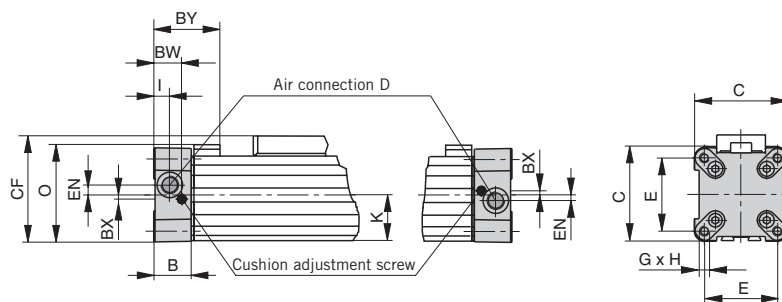
## End Cap/Air Connection can be rotated 4 x 90° Series OSP-P16 to P32



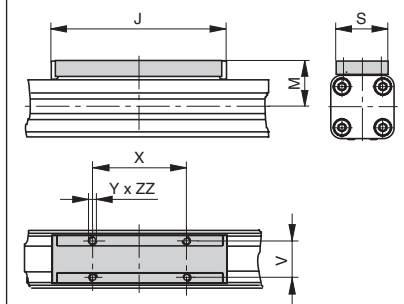
Please note:

To avoid multiple actuation of magnetic switches, the second piston is not equipped with magnets.

## End Cap/Air Connection can be rotated 4 x 90° Series OSP-P40 to P80



## Carrier Series OSP-P16 to P80



## Dimension Table (mm)

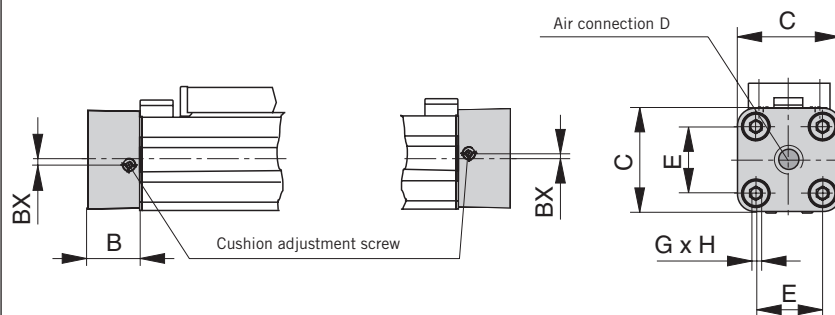
| Cylinder Series | A   | B    | C   | D    | E  | G   | H  | I    | J   | K    | M  | O    | S  | V    | X   | Y   | Z min | BW   | BX  | BY   | CF   | EN   | FB  | FH   | ZZ |
|-----------------|-----|------|-----|------|----|-----|----|------|-----|------|----|------|----|------|-----|-----|-------|------|-----|------|------|------|-----|------|----|
| OSP-P16         | 65  | 14   | 30  | M5   | 18 | M3  | 9  | 5.5  | 69  | 15   | 23 | 33.2 | 22 | 16.5 | 36  | M4  | 81    | 10.8 | 1.8 | 28.4 | 38   | 3    | 30  | 27.2 | 7  |
| OSP-P25         | 100 | 22   | 41  | G1/8 | 27 | M5  | 15 | 9    | 117 | 21.5 | 31 | 47   | 33 | 25   | 65  | M5  | 128   | 17.5 | 2.2 | 40   | 52.5 | 3.6  | 40  | 39.5 | 8  |
| OSP-P32         | 125 | 25.5 | 52  | G1/4 | 36 | M6  | 15 | 11.5 | 152 | 28.5 | 38 | 59   | 36 | 27   | 90  | M6  | 170   | 20.5 | 2.5 | 44   | 66.5 | 5.5  | 52  | 51.7 | 10 |
| OSP-P40         | 150 | 28   | 69  | G1/4 | 54 | M6  | 15 | 12   | 152 | 34   | 44 | 72   | 36 | 27   | 90  | M6  | 212   | 21   | 3   | 54   | 78.5 | 7.5  | 62  | 63   | 10 |
| OSP-P50         | 175 | 33   | 87  | G1/4 | 70 | M6  | 15 | 14.5 | 200 | 43   | 49 | 86   | 36 | 27   | 110 | M6  | 251   | 27   | -   | 59   | 92.5 | 11   | 76  | 77   | 10 |
| OSP-P63         | 215 | 38   | 106 | G3/8 | 78 | M8  | 21 | 14.5 | 256 | 54   | 63 | 107  | 50 | 34   | 140 | M8  | 313   | 30   | -   | 64   | 117  | 12   | 96  | 96   | 16 |
| OSP-P80         | 260 | 47   | 132 | G1/2 | 96 | M10 | 25 | 22   | 348 | 67   | 80 | 133  | 52 | 36   | 190 | M10 | 384   | 37.5 | -   | 73   | 147  | 16.5 | 122 | 122  | 20 |

## Air Connection on the End-face

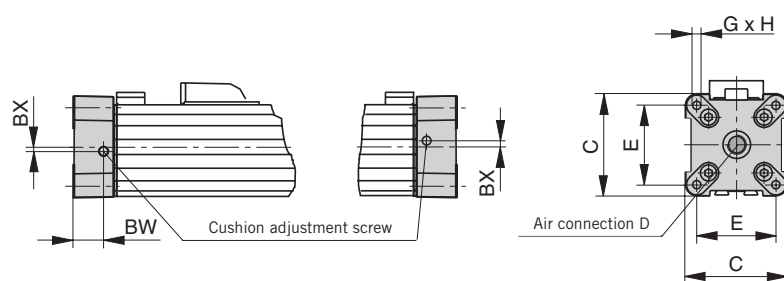
In some situations it is necessary or desirable to fit a special end cap with the air connection on the end-face instead of the standard end cap with the air connection on the side. The special end cap can also be rotated  $4 \times 90^\circ$  to locate the cushion adjustment screw as desired. Supplied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



### Series OSP-P16 to P32



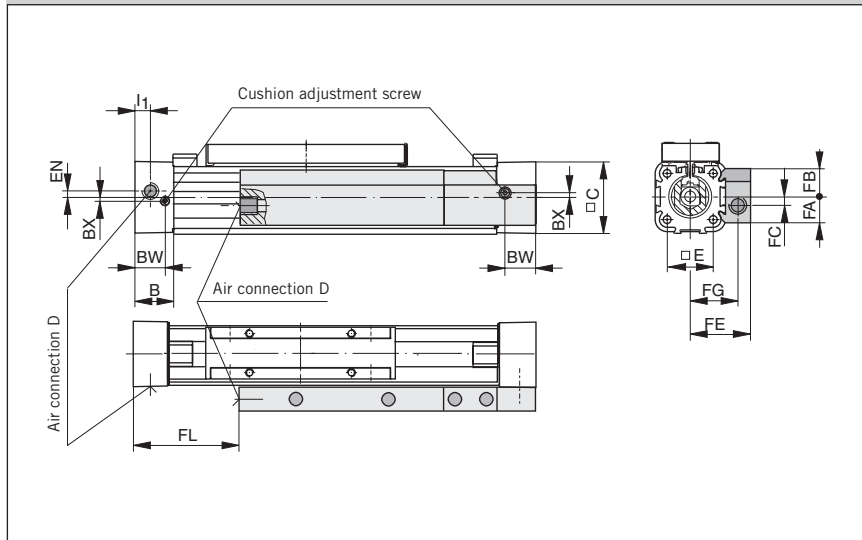
### Series OSP-P40 to P80



Dimension Table (mm)

| Cylinder Series | B    | C   | D    | E  | G   | H  | BX  | BW   |
|-----------------|------|-----|------|----|-----|----|-----|------|
| OSP-P16         | 14   | 30  | M5   | 18 | M3  | 9  | 1.8 | 10.8 |
| OSP-P25         | 22   | 41  | G1/8 | 27 | M5  | 15 | 2.2 | 17.5 |
| OSP-P32         | 25.5 | 52  | G1/4 | 36 | M6  | 15 | 2.5 | 20.5 |
| OSP-P40         | 28   | 69  | G1/4 | 54 | M6  | 15 | 3   | 21   |
| OSP-P50         | 33   | 87  | G1/4 | 70 | M6  | 15 | —   | 27   |
| OSP-P63         | 38   | 106 | G3/8 | 78 | M8  | 21 | —   | 30   |
| OSP-P80         | 47   | 132 | G1/2 | 96 | M10 | 25 | —   | 37.5 |

## Series OSP-P16



## Both Air Connections at One End

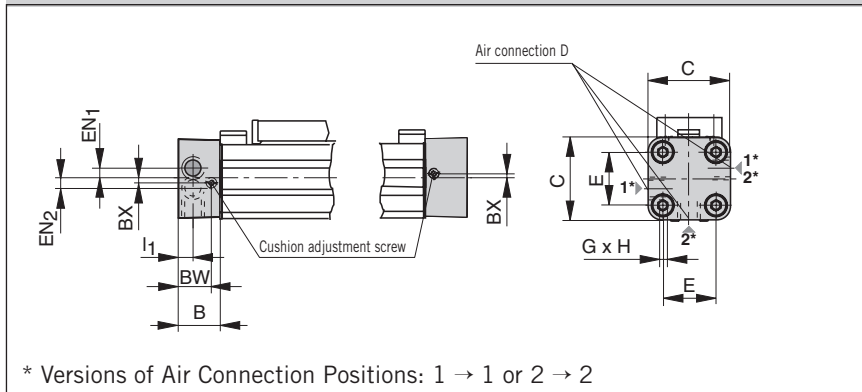
A special end cap with both air connections on one side is available for situations where shortage of space, simplicity of installation or the nature of the process make it desirable.

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.**



## Series OSP-P25

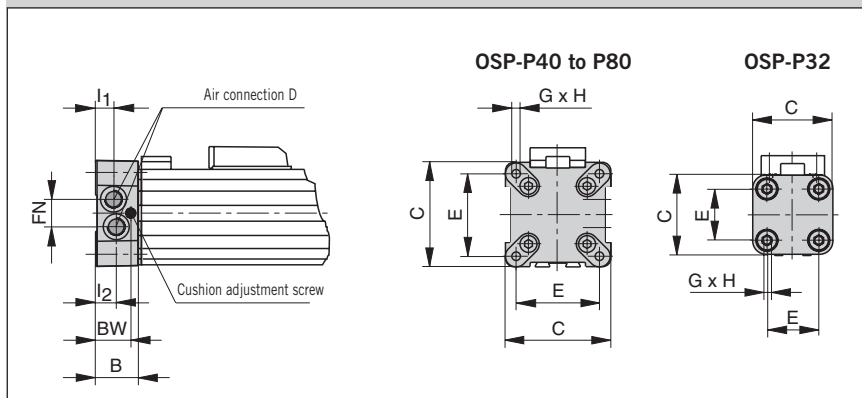


\* Versions of Air Connection Positions: 1 → 1 or 2 → 2

**Please note:**

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

## Series OSP-P32 to P80



## Dimension Table (mm)

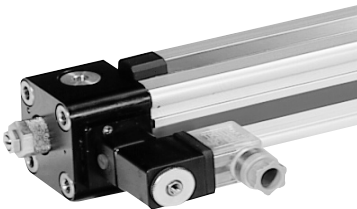
| Cylinder Series | B    | C   | D    | E  | G   | H  | $I_1$ | $I_2$ | BX  | BW   | EN | $EN_1$ | $EN_2$ | FA   | FB   | FC | FE | FG | FL | FN   |
|-----------------|------|-----|------|----|-----|----|-------|-------|-----|------|----|--------|--------|------|------|----|----|----|----|------|
| OSP-P16         | 14   | 30  | M5   | 18 | M3  | 9  | 5.5   | —     | 1.8 | 10.8 | 3  | —      | —      | 12.6 | 12.6 | 4  | 27 | 21 | 36 | —    |
| OSP-P25         | 22   | 41  | G1/8 | 27 | M5  | 15 | 9     | —     | 2.2 | 17.5 | —  | 3.6    | 3.9    | —    | —    | —  | —  | —  | —  | —    |
| OSP-P32         | 25.5 | 52  | G1/8 | 36 | M6  | 15 | 12.2  | 10.5  | —   | 20.5 | —  | —      | —      | —    | —    | —  | —  | —  | —  | 15.2 |
| OSP-P40         | 28   | 69  | G1/8 | 54 | M6  | 15 | 12    | 12    | —   | 21   | —  | —      | —      | —    | —    | —  | —  | —  | —  | 17   |
| OSP-P50         | 33   | 87  | G1/4 | 70 | M6  | 15 | 14.5  | 14.5  | —   | 27   | —  | —      | —      | —    | —    | —  | —  | —  | —  | 22   |
| OSP-P63         | 38   | 106 | G3/8 | 78 | M8  | 21 | 16.5  | 13.5  | —   | 30   | —  | —      | —      | —    | —    | —  | —  | —  | —  | 25   |
| OSP-P80         | 47   | 132 | G1/2 | 96 | M10 | 25 | 22    | 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:

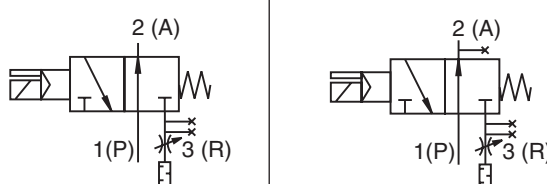
- Complete compact solution
- Various connection possibilities:  
Free choice of air connection with rotating end caps with VOE valves,  
Air connection can be rotated 4 x 90°,  
Solenoid can be rotated 4 x 90°,  
Pilot valve can be rotated 180°
- High piston velocities can be achieved with max. 3 exhaust 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

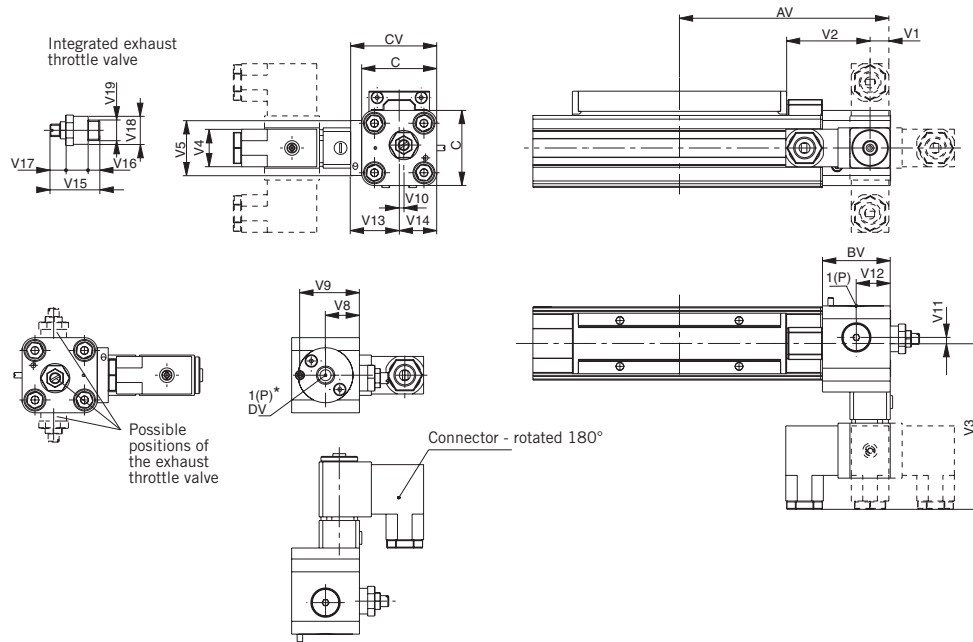


### Characteristics 3/2 Way Valves VOE

| Characteristics       | 3/2 Way Valves with spring return                                                    |        |        |        |
|-----------------------|--------------------------------------------------------------------------------------|--------|--------|--------|
| Pneumatic diagram     |  |        |        |        |
| Type                  | VOE-25                                                                               | VOE-32 | VOE-40 | VOE-50 |
| Actuation             | electrical                                                                           |        |        |        |
| Basic position        | P → A open, R closed                                                                 |        |        |        |
| Type                  | Poppet valve, non overlapping                                                        |        |        |        |
| Mounting              | integrated in end cap                                                                |        |        |        |
| Installation          | in any position                                                                      |        |        |        |
| Port size             | G 1/8                                                                                | G 1/4  | G 3/8  | G 3/8  |
| Temperature           | -10°C to +50°C *                                                                     |        |        |        |
| Operating pressure    | 2-8 bar                                                                              |        |        |        |
| Nominal voltage       | 24 V DC / 230 V AC, 50 Hz                                                            |        |        |        |
| Power consumption     | 2,5 W / 6 VA                                                                         |        |        |        |
| Duty cycle            | 100%                                                                                 |        |        |        |
| Electrical Protection | IP 65 DIN 40050                                                                      |        |        |        |

\* other temperature ranges on request

## Dimensions VOE Valves OSP-P25 and P32

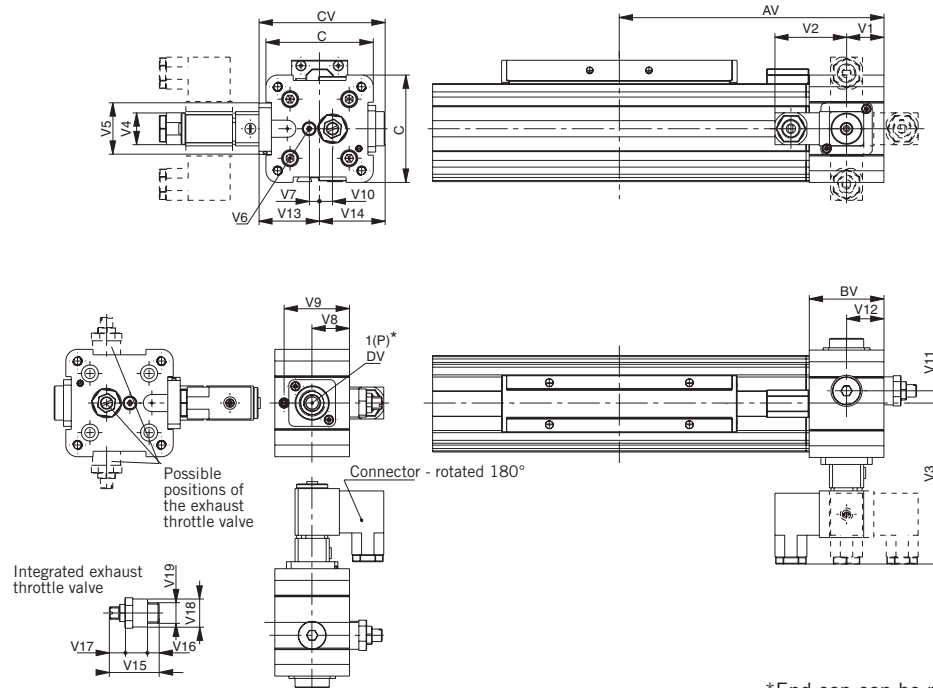


\* End cap can be rotated 4x90°

Dimension Table (mm)

| Cylinder Series | AV  | BV   | C  | CV | DV   | V1   | V2 | V3   | V4 | V5 | V8   | V9   | V10 | V11 | V12  | V13  | V14  | V15 | V16 | V17 | V18 | V19  |
|-----------------|-----|------|----|----|------|------|----|------|----|----|------|------|-----|-----|------|------|------|-----|-----|-----|-----|------|
| OSP-P25         | 115 | 37   | 41 | 47 | G1/8 | 11   | 46 | 90.5 | 22 | 30 | 18.5 | 32.5 | 2.5 | 3.3 | 18.5 | 26.5 | 20.5 | 24  | 5   | 4   | 14  | G1/8 |
| OSP-P32         | 139 | 39.5 | 52 | 58 | G1/4 | 20.5 | 46 | 96   | 22 | 32 | 20.5 | 34.7 | 6   | 5   | 20.5 | 32   | 26   | 32  | 7.5 | 6   | 18  | G1/4 |

## Dimensions VOE Valves OSP-P40 and P50



\*End cap can be rotated 4x90°

Dimension Table (mm)

| Cylinder Series | AV  | BV | C  | CV | DV   | V1 | V2 | V3  | V4 | V5 | V6 | V7  | V8 | V9 | V10  | V11  | V12 | V13 | V14 | V15 | V16 | V17 | V18 | V19  |
|-----------------|-----|----|----|----|------|----|----|-----|----|----|----|-----|----|----|------|------|-----|-----|-----|-----|-----|-----|-----|------|
| OSP-P40         | 170 | 48 | 69 | 81 | G3/8 | 24 | 46 | 103 | 22 | 33 | M5 | 6.7 | 24 | 42 | 8.3  | 8.3  | 24  | 39  | 42  | 32  | 7.5 | 6   | 18  | G1/4 |
| OSP-P50         | 190 | 48 | 87 | 82 | G3/8 | 24 | 46 | 102 | 22 | 33 | M5 | 4.5 | 24 | 42 | 12.2 | 12.2 | 24  | 38  | 44  | 32  | 7.5 | 6   | 18  | G1/4 |

## Order Instructions – Basic Cylinder

### Basic Cylinder

|  |  |       |    |   |   |   |   |   |   |   |       |  |
|--|--|-------|----|---|---|---|---|---|---|---|-------|--|
|  |  | OSP-P | 25 | - | 0 | 0 | 0 | 0 | 0 | - | 01000 |  |
|  |  |       | ▲  |   | ▲ |   | ▲ |   | ▲ |   | ▲     |  |

**Piston Diameter**  
 10 = 10 mm    40 = 40 mm  
 16 = 16 mm    50 = 50 mm  
 25 = 25 mm    63 = 63 mm  
 32 = 32 mm    80 = 80 mm

**Piston Mounting**  
 0 = Standard  
 1 = Tandem

**Air Connections**  
 0 = Standard    A = VOE 24 V =  
 1 = On the end-face    B = VOE 230 V ~ / 110 =  
 2 = Both at one end    C = VOE 48 V =  
                                          E = VOE 110 V ~

**Seals**  
 0 = Standard (NBR)  
 1 = Viton®

**Stroke Length**  
 In mm (5 digits)

**Screws**  
 0 = Standard (galvanized steel)  
 1 = Stainless steel

**Grease Lubrication**  
 0 = Standard  
 1 = Slow <sup>1)</sup>

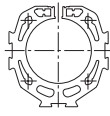
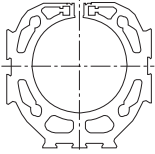
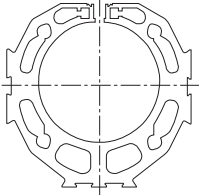
<sup>1)</sup> Slow speed lubrication in combination with Viton® seals on demand.

### Accessories - please order separately

| Description          | Further information see Data Sheet No. |
|----------------------|----------------------------------------|
| Clevis Mounting      | 1.45.002E                              |
| End Cap Mountings    | 1.45.003E                              |
| Mid-Section Support  | 1.45.004E                              |
| Inversion Mounting   | 1.45.006E                              |
| Adaptor Profile      | 1.45.007E                              |
| T-Slot Profile       | 1.45.008E                              |
| Adaptor Profile      | 1.45.009E                              |
| Duplex Connection    | 1.45.011E                              |
| Multiplex Connection | 1.45.012E                              |
| Magnetic Switches    | 1.45.100E, 1.45.104E, 1.45.105E        |
| Cable Cover          | 1.45.102E                              |

| Characteristics           |                     |                                      | Pressures quoted as gauge pressure |                                                                                                                  |
|---------------------------|---------------------|--------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Characteristics           |                     | Symbol                               | Unit                               | Description                                                                                                      |
| General Features          |                     |                                      |                                    |                                                                                                                  |
| Type                      |                     |                                      |                                    | Rodless cylinder                                                                                                 |
| Series                    |                     |                                      |                                    | OSP-P                                                                                                            |
| System                    |                     |                                      |                                    | Double-acting, with cushioning, position sensing capability                                                      |
| Mounting                  |                     |                                      |                                    | See drawings                                                                                                     |
| Air Connection            |                     |                                      |                                    | Threaded                                                                                                         |
| Ambient temperature range |                     | T <sub>min</sub><br>T <sub>max</sub> | °C<br>°C                           | +10<br>+40<br>Other temperature ranges on request                                                                |
| Weight (mass)             |                     |                                      | kg                                 | See table below                                                                                                  |
| Installation              |                     |                                      |                                    | vertical, horizontal (piston at top or at bottom)                                                                |
| Medium                    |                     |                                      |                                    | Filtered, unlubricated compressed air (other media on request)                                                   |
| Lubrication               |                     |                                      |                                    | Permanent grease lubrication (additional oil mist lubrication not required)<br>Option: special slow speed grease |
| Material                  | Cylinder Profile    |                                      |                                    | Anodized aluminium                                                                                               |
|                           | Carrier (piston)    |                                      |                                    | Anodized aluminium                                                                                               |
|                           | End caps            |                                      |                                    | Anodized aluminium                                                                                               |
|                           | Sealing bands       |                                      |                                    | Corrosion resistant steel                                                                                        |
|                           | Seals               |                                      |                                    | NBR (Option: Viton®)                                                                                             |
|                           | Screws              |                                      |                                    | Galvanized steel<br>Option: stainless steel                                                                      |
|                           | Dust covers, wipers |                                      |                                    | Plastic                                                                                                          |
| Max. operating pressure   |                     | p <sub>max</sub>                     | bar                                | 8                                                                                                                |
| Max. speed                |                     | v                                    | m/s                                | 2                                                                                                                |

| Weight (mass) kg                 |                |                                    |
|----------------------------------|----------------|------------------------------------|
| Cylinder series (Basic cylinder) | At 0 mm stroke | Weight (Mass) kg per 100 mm stroke |
| OSP-P50LS                        | 3,53           | 0,566                              |
| OSP-P63LS                        | 6,41           | 0,925                              |
| OSP-P80LS                        | 12,46          | 1,262                              |

| Size Comparison                                                                     |                                                                                     |                                                                                      |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| P50                                                                                 | P63                                                                                 | P80                                                                                  |
|  |  |  |

For **magnetic switches** see 1.45.100E, 1.45.104E, 1.45.105E  
**Accessories** see 1.45.001E to 009E

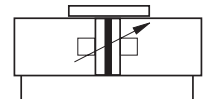
# Rodless Pneumatic Cylinder

Ø 50-80 mm

**OSP**  
ORIGA  
SYSTEM  
PLUS

## Long-Stroke Cylinder for strokes up to 41 m

Series OSP-P..LS



### Standard Versions:

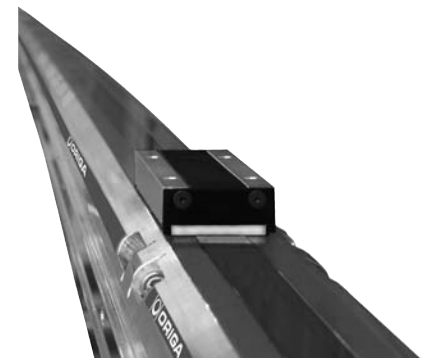
- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing

### Special Versions:

- Stainless steel screws
- Slow speed lubrication
- Viton® seals

### Options:

- Displacement measuring system SFI-plus
- Active Brake AB..



## Loads, Forces and Moments

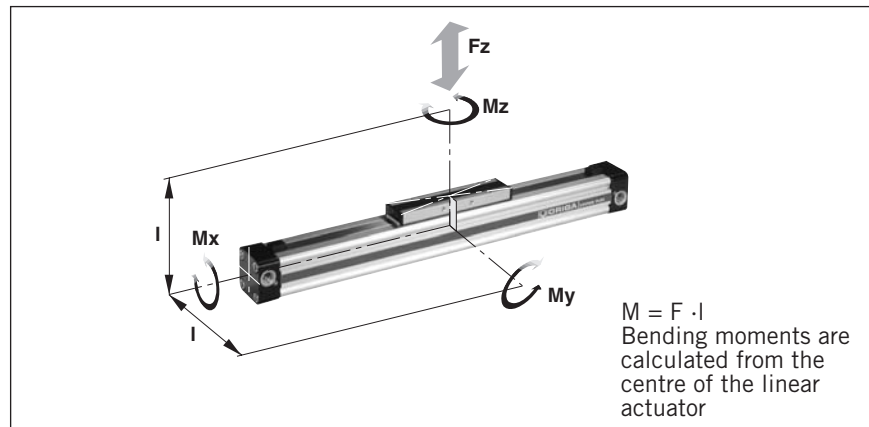
Choice of cylinder is decided by:

- 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  $v \leq 0.5$  m/s.**

When working out the action force required, it is essential to take into account the friction forces generated by the specific application or load.

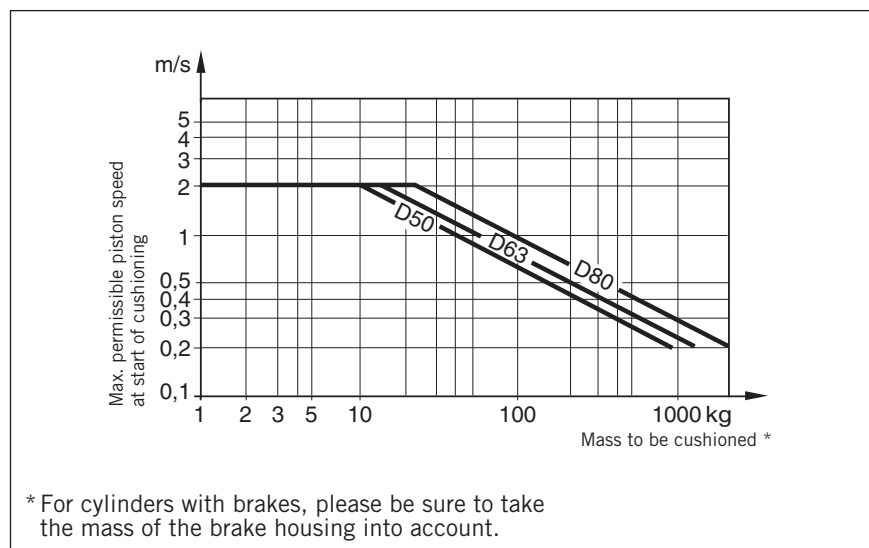


| Cylinder-Series<br>[mm Ø] | Theoretical<br>Action Force<br>at 6 bar [N] | effective<br>Action Force $F_A$<br>at 6 bar [N] | max. Moments  |               |               | max. Load<br>F [N] | Cushion<br>Length<br>[mm] |
|---------------------------|---------------------------------------------|-------------------------------------------------|---------------|---------------|---------------|--------------------|---------------------------|
|                           |                                             |                                                 | $M_x$<br>[Nm] | $M_y$<br>[Nm] | $M_z$<br>[Nm] |                    |                           |
| <b>OSP-P50LS</b>          | 1178                                        | 1000                                            | 10            | 115           | 15            | 1200               | 30                        |
| <b>OSP-P63LS</b>          | 1870                                        | 1550                                            | 12            | 200           | 24            | 1650               | 32                        |
| <b>OSP-P80LS</b>          | 3016                                        | 2600                                            | 24            | 360           | 48            | 2400               | 39                        |

## Cushioning Diagram

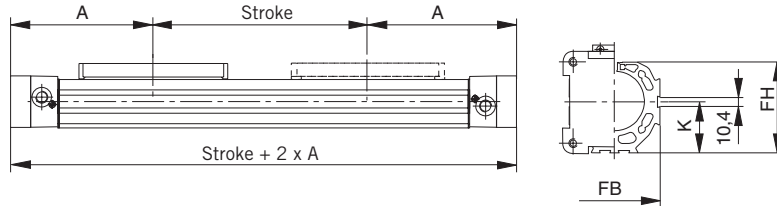
Work out your expected moving mass and read off the maximum permissible speed at start of cushioning. Alternatively, take your desired speed and expected mass and find the cylinder size required.

Please note that piston speed at start of cushioning is typically ca. 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.



**If the permitted limit values are exceeded, additional shock absorbers should be fitted in the area of the centre of gravity .**

## Dimensions of Basic Cylinder OSP - P50 LS to P80LS



## Cylinder Stroke and Dead Length A

- Free choice of stroke length up to 41.000 mm in 1 mm steps.

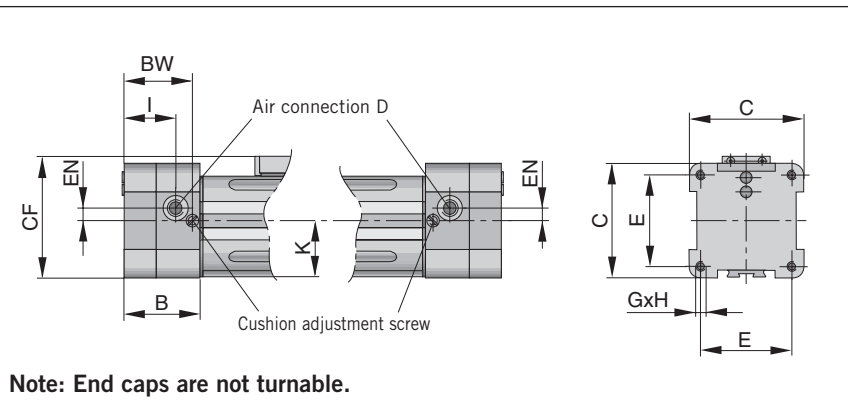
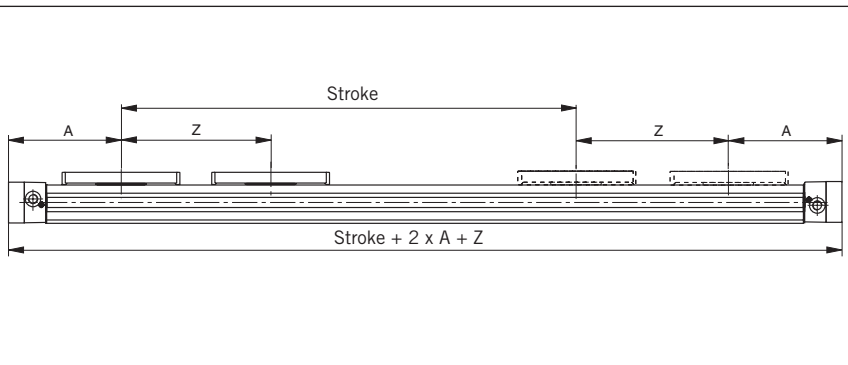
## Tandem Cylinder

Two pistons are fitted: dimension "Z" is optional. (Please note minimum distance "Zmin").

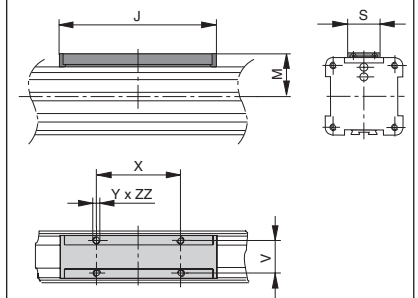
- Free choice of stroke length up to 41.000 mm in 1 mm steps.
- Stroke length to order is stroke + dimension "Z"

Please note:

To avoid multiple actuation of magnetic switches, the second piston is not equipped with magnets.



## Carrier Series OSP-P50LS to P80LS



## Dimension Table (mm)

| Cylinder Series | A   | B  | C   | D    | E  | G   | H  | I    | J   | K  | M  | S  | V  | X   | Y   | Z <sub>min</sub> | BW   | CF   | EN   | FB  | FH  | ZZ |
|-----------------|-----|----|-----|------|----|-----|----|------|-----|----|----|----|----|-----|-----|------------------|------|------|------|-----|-----|----|
| OSP-P50LS       | 200 | 58 | 87  | G1/4 | 70 | M6  | 15 | 39.5 | 200 | 43 | 49 | 36 | 27 | 110 | M6  | 251              | 52   | 92.5 | 10   | 76  | 77  | 10 |
| OSP-P63LS       | 250 | 73 | 106 | G3/8 | 78 | M8  | 21 | 49.5 | 256 | 54 | 63 | 50 | 34 | 140 | M8  | 313              | 65   | 117  | 12   | 96  | 96  | 16 |
| OSP-P80LS       | 295 | 82 | 132 | G1/2 | 96 | M10 | 25 | 57   | 348 | 67 | 80 | 52 | 36 | 190 | M10 | 384              | 72.5 | 147  | 16.5 | 122 | 122 | 20 |

# Linear Drive Accessories

## Ø 50-80 mm Mid-Section Support E1, E1L



For linear drive  
• Series OSP-P..LS

Note on Types E1 and E1L  
(P50LS – P80LS):

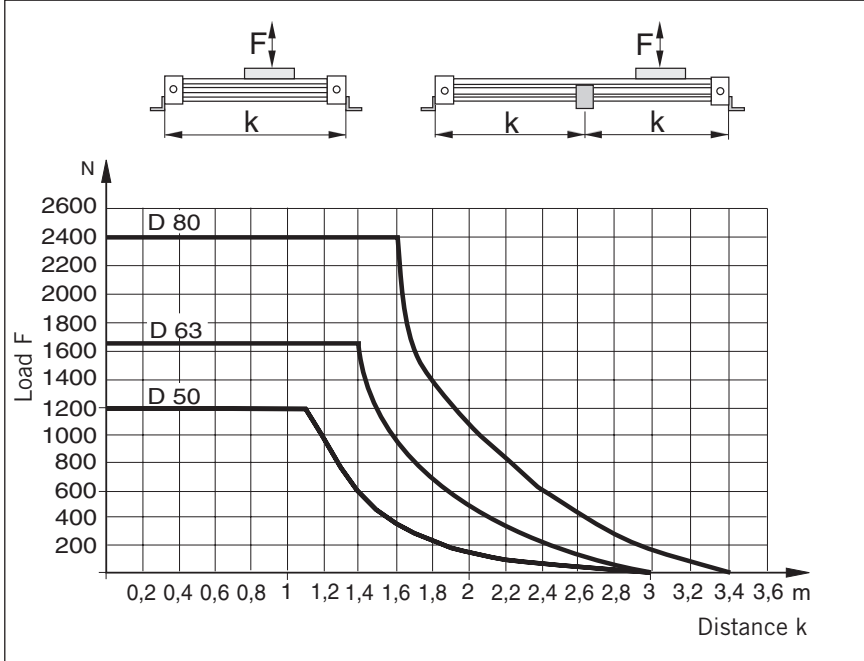
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the centre of the actuator is different.

For mounting the Long-Stroke cylinder, a mid-section support Type E1 (fixed support) is required. Depending on the stroke length and the load, additional E1L supports (movable supports) may be required.

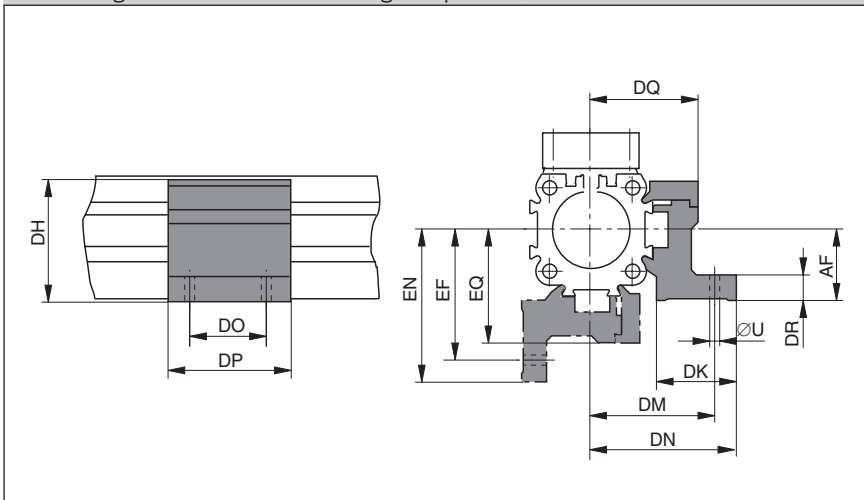
For permissible support spacings see diagram.

Stainless steel version on request.

### Permissible Support Spacings: OSP - P50LS to P80LS



### Series OSP-P50LS to P80LS: Type E1, E1L (Mounting from above / below using a cap screw)



### Dimension Table (mm) Series OSP-P50LS to P80LS

| Series    | R   | U  | AF | DF   | DH    | DK | DM | DN  | DO | DP |
|-----------|-----|----|----|------|-------|----|----|-----|----|----|
| OSP-P50LS | M6  | 7  | 48 | 40   | 71    | 34 | 59 | 67  | 45 | 60 |
| OSP-P63LS | M8  | 9  | 57 | 47.5 | 91    | 44 | 73 | 83  | 45 | 65 |
| OSP-P80LS | M10 | 11 | 72 | 60   | 111.5 | 63 | 97 | 112 | 55 | 80 |



| Series    | DQ | DR | DT | EF  | EM   | EN  | EQ | Order No.<br>Type E1<br>fixed support | Order No.<br>Type E1L<br>movable support |
|-----------|----|----|----|-----|------|-----|----|---------------------------------------|------------------------------------------|
| OSP-P50LS | 52 | 10 | 11 | 64  | 45   | 72  | 57 | 20163                                 | 21352                                    |
| OSP-P63LS | 63 | 12 | 16 | 79  | 53.5 | 89  | 69 | 20452                                 | 21353                                    |
| OSP-P80LS | 81 | 15 | 25 | 103 | 66   | 118 | 87 | 20482                                 | 21354                                    |

## Order Instructions – Long-Stroke Cylinder

**Note:**

Assembly and commissioning of the Long-Stroke cylinder is carried out on site by ORIGA technical personnel.

For more information on ordering and installation please contact your sales or customer service partner.

**Accessories - please order separately**

| Description         | Further information see Data Sheet No. |
|---------------------|----------------------------------------|
| Clevis Mounting     | 1.45.002E                              |
| End Cap Mountings   | 1.45.003E                              |
| Mid-Section Support | 1.10.004E-2                            |
| Inversion Mounting  | 1.45.006E                              |
| Adaptor Profile     | 1.45.007E                              |
| T-Slot Profile      | 1.45.008E                              |
| Connection Profile  | 1.45.009E                              |
| Magnetic Switches   | 1.45.100E, 1.45.104E, 1.45.105E        |
| Cable Cover         | 1.45.102E                              |



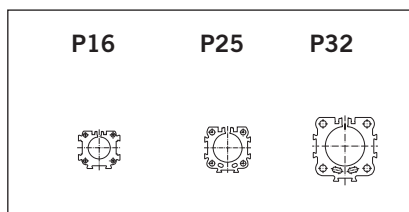
| Characteristics                      |                        | Pressure quoted as gauge pressure |                                                                                                                  |
|--------------------------------------|------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------|
| Characteristics                      | Symbol                 | Unit                              | Description                                                                                                      |
| <b>General Features</b>              |                        |                                   |                                                                                                                  |
| Type                                 |                        |                                   | Rodless Cylinder                                                                                                 |
| Series                               |                        |                                   | OSP-P                                                                                                            |
| System                               |                        |                                   | Double-acting, with cushioning, position sensing capability                                                      |
| Mounting                             |                        |                                   | see drawings                                                                                                     |
| Air connection                       |                        |                                   | Threaded                                                                                                         |
| Ambient and medium temperature range | $T_{min}$<br>$T_{max}$ | °C<br>°C                          | -10 – other temperature ranges<br>+80 on request                                                                 |
| Weight (Mass)                        |                        | kg                                | See table below                                                                                                  |
| Installation                         |                        |                                   | In any position                                                                                                  |
| Medium                               |                        |                                   | Filtered, unlubricated compressed air (other media on request)                                                   |
| Lubrication                          |                        |                                   | Permanent grease lubrication (additional oil mist lubrication not required)<br>Option: special slow speed grease |
| 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                                                                                               |
|                                      | Guide plate            |                                   | Plastic                                                                                                          |
| Max. operating pressure*             | $p_{max}$              | bar                               | 8                                                                                                                |

\* Pressure quoted as gauge pressure

#### Weight (Mass) kg

| Cylinder series (basic cylinder) | Weight (Mass) kg |                   |
|----------------------------------|------------------|-------------------|
|                                  | at 0 mm stroke   | per 100 mm stroke |
| OSP-P16                          | 0.22             | 0.1               |
| OSP-P25                          | 0.65             | 0.197             |
| OSP-P32                          | 1.44             | 0.354             |

#### Size Comparison



# Clean Room Cylinder

## Ø 16 – 32 mm

### Rodless Cylinder

certified to  
**DIN EN ISO 14644-1**



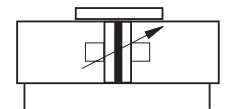
#### Standard Versions:

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

#### Special Versions:

- Slow speed lubrication
- Viton® seals

#### Series OSP-P..



#### Features:

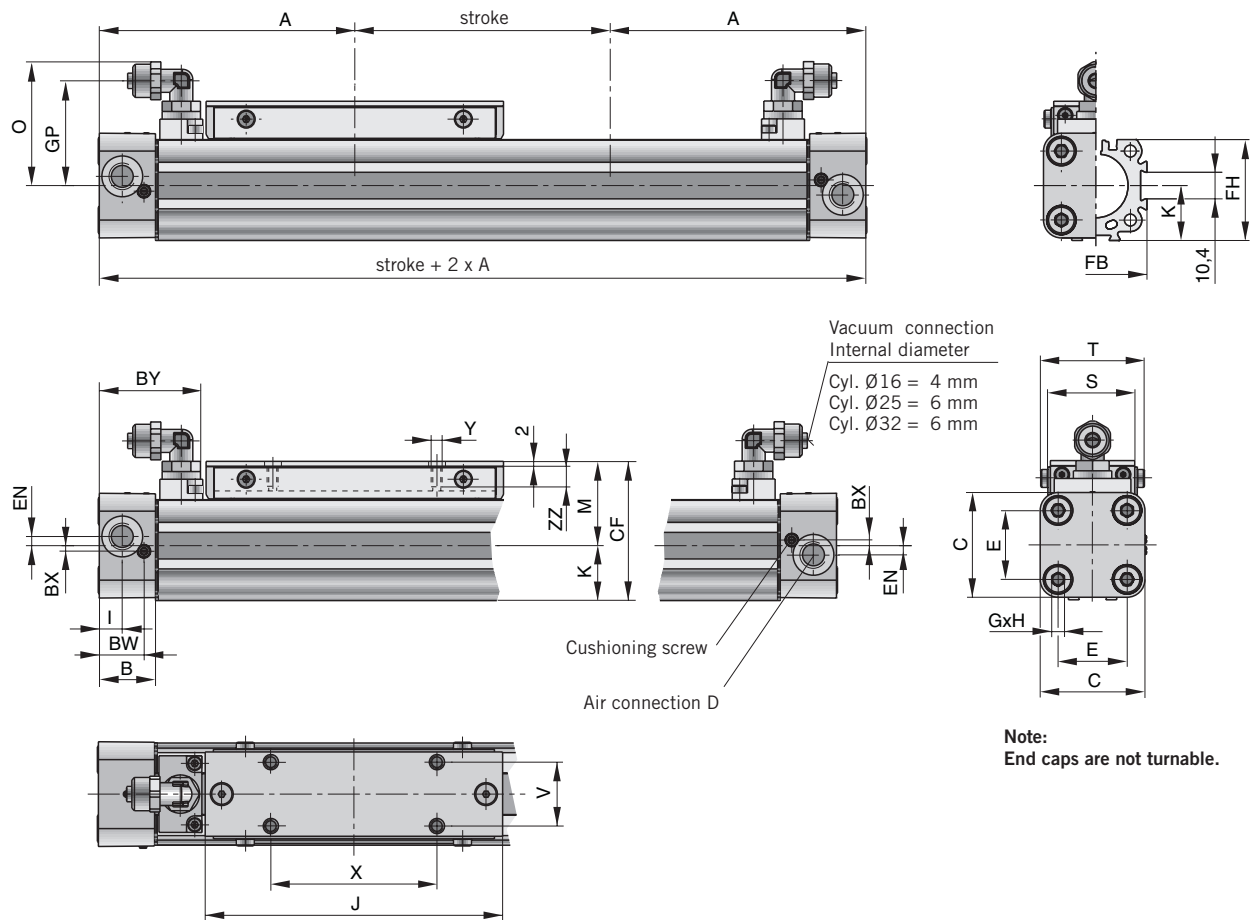
- Clean room classification  
ISO Class 4 at  $v_m = 0.14$  m/s  
ISO Class 5 at  $v_m = 0.5$  m/s
- suitable for smooth slow speed operation up to  $v_{min} = 0.005$  m/s
- optional stroke length up to 1200 mm (longer strokes on request)
- Low maintenance
- Compact design with equal force and velocity in both directions
- Aluminium piston with bearing rings to support high direct and cantilever loads



For **magnetic switches** see 1.45.100E, 1.45.104E, 1.45.105E  
For **mountings and accessories** see 1.45.001E to 009E



## Dimensions (mm)

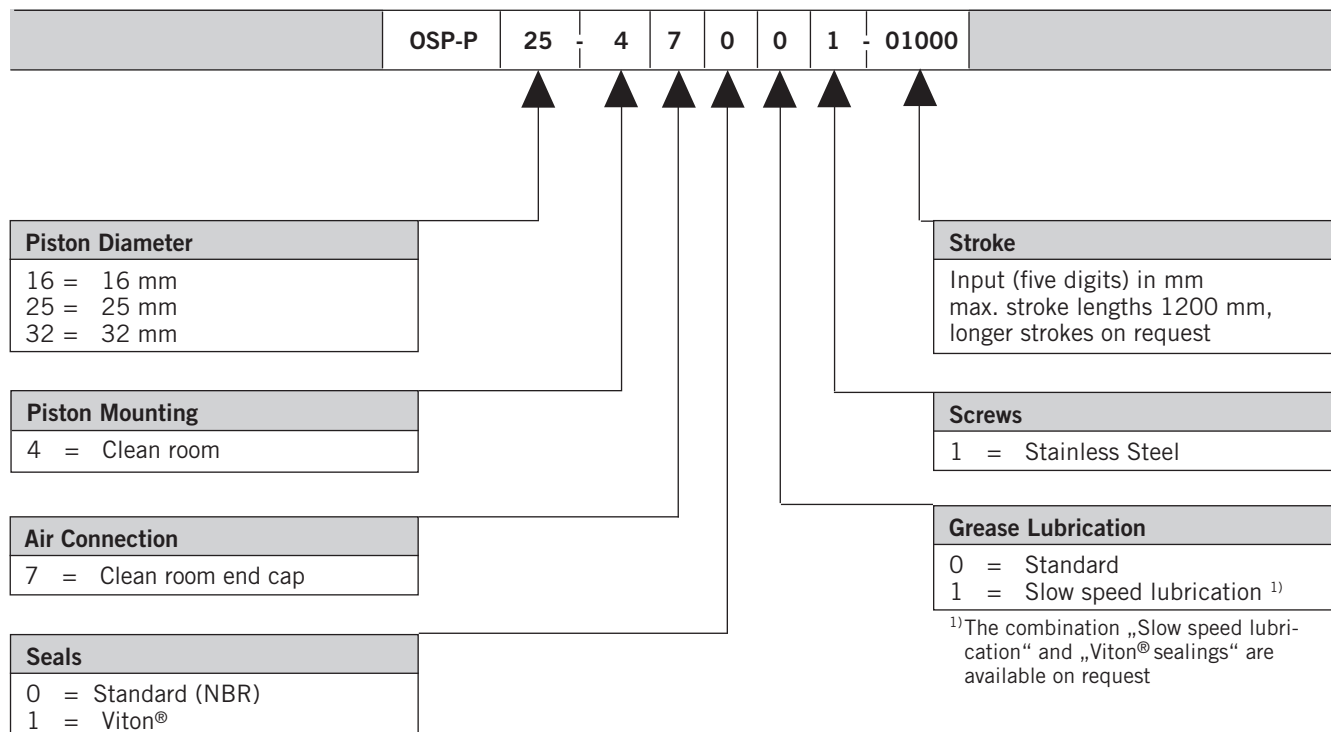


Dimension Table (mm)

| Cylinder Series | A   | B    | C  | D    | E  | G  | H  | I    | J   | K    | M  | O    | S  |
|-----------------|-----|------|----|------|----|----|----|------|-----|------|----|------|----|
| OSP-P16         | 65  | 14   | 30 | M5   | 18 | M3 | 9  | 5.5  | 69  | 15   | 25 | 31   | 24 |
| OSP-P25         | 100 | 22   | 41 | G1/8 | 27 | M5 | 15 | 9    | 117 | 21.5 | 33 | 48.5 | 35 |
| OSP-P32         | 125 | 25.5 | 52 | G1/4 | 36 | M6 | 15 | 11.5 | 152 | 28.5 | 40 | 53.6 | 38 |

| Cylinder Series | T    | V    | X  | Y  | BW   | BX  | BY   | CF   | EN  | FB | FH   | GP   | ZZ |
|-----------------|------|------|----|----|------|-----|------|------|-----|----|------|------|----|
| OSP-P16         | 29.6 | 16.5 | 36 | M4 | 10.8 | 1.8 | 28.5 | 40   | 3   | 30 | 27.2 | 25.7 | 7  |
| OSP-P25         | 40.6 | 25   | 65 | M5 | 17.5 | 2.2 | 40.5 | 54.5 | 3.6 | 40 | 39.5 | 41   | 8  |
| OSP-P32         | 45   | 27   | 90 | M6 | 20.5 | 2.5 | 47.1 | 68.5 | 5.5 | 52 | 51.7 | 46.2 | 10 |

## Order Instructions Basic Cylinders – Clean Room Cylinders



### Accessories – please order separately

| Benennung           | Further information see Data Sheet No. |
|---------------------|----------------------------------------|
| End Cap Mountings   | 1.45.003E                              |
| Mid-Section Support | 1.45.004E                              |
| Adaptor Profile     | 1.45.007E                              |
| T-Slot Profile      | 1.45.008E                              |
| Connection Profile  | 1.45.009E                              |
| Magnetic Switches   | 1.45.100E, 1.45.104E, 1.45.105E        |
| Cable Cover         | 1.45.102E                              |

## Informations for ATEX-Directives

The rodless pneumatic cylinders of HOERBIGER-ORIGA are the first linear drive unit, for that Ex range in the group of equipment II, Category 2 GD are certified.

Detail informations for use pneumatic components in Ex-Areas see leaflet A5P060E "EU Directive 94/9/EG (ATEX 95) for Pneumatic Components".

## Technical Data (deviant to the Standard Cylinder )

Pressure quoted as gauge pressure

| Characteristics           | Symbol                 | Unit     | Description                                                                                                                                                                                                                                |
|---------------------------|------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient temperature range | $T_{min}$<br>$T_{max}$ | °C<br>°C | -10<br>+60                                                                                                                                                                                                                                 |
| Max. switching frequency  |                        | Hz       | 1 (double stroke/s) Basic cylinder<br>0.5 (1stroke/s) Cylinder with guide                                                                                                                                                                  |
| Operating pressure range  | $p_{max}$              | bar      | Max. 8                                                                                                                                                                                                                                     |
| Max. speed                | $v_{max}$              | m/s      | 3 Basic cylinder<br>2 Cylinder with guide                                                                                                                                                                                                  |
| Medium                    |                        |          | Filtered, unlubricated compressed air – free from water and dirt to ISO 8573-1<br>Solids: Class 7 particle size < 40 µm for Gas<br>Water content: pressure dew point +3 °C, class 4, but at least 5 °C below minimum operating temperature |
| Noise level               |                        | dB (A)   | 70                                                                                                                                                                                                                                         |
| Information for materials |                        |          | Aluminium:<br>see data sheet "Material"<br>Lubrication:<br>see security data sheet "Grease for use in Cylinder with guides"<br>Sealing bands:<br>Corrosion resistant steel                                                                 |

For all other details for dimensions, weights, allowable loads, cushioning diagrams and accessories see data sheets in this catalogue.

## Equipment Group II Categorie 2GD

Rodless cylinder:  II 2GD c T4 T135°C -10°C ≤ Ta ≤ +60°C

| Series    | Size       | Stroke range | Accessories         |
|-----------|------------|--------------|---------------------|
| OSP-P     | Ø 10 to 80 | 1– 6000 mm   | Mountings programme |
| SLIDELINE | Ø 16 to 80 | 1– 6000 mm   | Mountings programme |

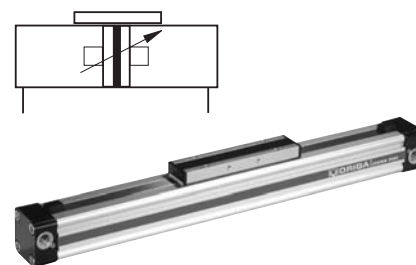
**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

## Components for EX-Areas



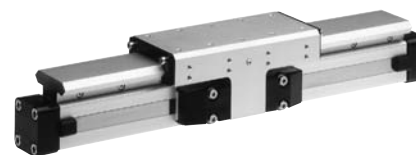
### Rodless Cylinder Ø 10 – 80 mm Basic Cylinder

Series: OSP-P ....ATEX



### Plain Bearing Guide SLIDELINE Ø 16 – 80 mm

Series: SL -..ATEX



For **basic cylinder** see 1.10.002E  
For **plain bearing guide SLIDELINE** see 1.40.002E  
For **mountings and accessories** see 1.45.001E to 009E

Data Sheet No. 1.10.020E-1

 **ORIGA**

## Order Instructions – Basic Cylinder – Series OSP-P..... ATEX

| OSP-P 25 - 0 0 0 0 0 - 01000 ATEX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| <div> <div> <b>Piston diameter</b><br/>           10 = 10 mm    40 = 40 mm<br/>           16 = 16 mm    50 = 50 mm<br/>           25 = 25 mm    63 = 63 mm<br/>           32 = 32 mm    80 = 80 mm         </div> <div> <b>Piston Mounting</b><br/>           0 = Standard<br/>           1 = Tandem         </div> <div> <b>Air Connection</b><br/>           0 = Standard<br/>           1 = On the end-face<br/>           2 = both at one end         </div> <div> <b>Dichtungen</b><br/>           0 = Standard (NBR)<br/>           1 = Viton ®         </div> <div> <b>Stroke length</b><br/>           in mm (5 digits)         </div> <div> <b>Screws</b><br/>           0 = Standard (galvanized steel)<br/>           1 = Stainless steel         </div> <div> <b>Grease Lubrication</b><br/>           0 = Standard<br/>           1 = Slow <sup>1)</sup> </div> </div> <div> <sup>1)</sup> Slow speed lubrication in combination with Viton® seals on demand         </div> |  |  |  |  |  |  |  |  |  |

**Plain bearing guide SLIDELINE – Series SL...ATEX**  
 – the order its only possible in combination with the basic cylinder OSP-P..ATEX!

| for Linear Drive | Type      | Order instruction * | Order No. |
|------------------|-----------|---------------------|-----------|
| OSP-P16....ATEX  | SL-16ATEX |                     | 20341     |
| OSP-P25....ATEX  | SL-25ATEX |                     | 20342     |
| OSP-P32....ATEX  | SL-32ATEX |                     | 20196     |
| OSP-P40....ATEX  | SL-40ATEX |                     | 20343     |
| OSP-P50....ATEX  | SL-50ATEX |                     | 20195     |
| OSP-P63....ATEX  | SL-63ATEX |                     | 20853     |
| OSP-P80....ATEX  | SL-80ATEX |                     | 21000     |

\* corrosion resistant version on request

### Accessories – please order separately

| Description                                                 | Further information see Data Sheet No. |
|-------------------------------------------------------------|----------------------------------------|
| Clevis Mounting Ø 16 to Ø 80 mm                             | 1.45.002E-2                            |
| End Cap Mounting for OSP-P Basic Cylinder                   | 1.45.003E                              |
| End Cap Mounting for OSP-P Basic Cylinder with SLIDELINE    | 1.45.005E-2                            |
| Mid-Section Support for OSP-P Basic Cylinder                | 1.45.004E                              |
| Mid-Section Support for OSP-P Basic Cylinder with SLIDELINE | 1.45.005E-3                            |
| Inversion Mounting                                          | 1.45.006E                              |
| Adaptor Profile                                             | 1.45.007E                              |
| T-Slot Profile                                              | 1.45.008E                              |
| Adaptor Profile                                             | 1.45.009E                              |
| Magnetic Switches ATEX-Version                              | 1.45.105E                              |
| Cable Cover                                                 | 1.45.102E                              |

| Characteristics                                                           |                        |          |                                                                             |
|---------------------------------------------------------------------------|------------------------|----------|-----------------------------------------------------------------------------|
| Characteristics                                                           | Symbol                 | Unit     | Description                                                                 |
| <b>General Features</b>                                                   |                        |          |                                                                             |
| Type                                                                      |                        |          | Rodless cylinder for synchronized bi-parting movements                      |
| Series                                                                    |                        |          | OSP-P                                                                       |
| System                                                                    |                        |          | Double acting with end cushioning.<br>For contactless position sensing      |
| Guide                                                                     |                        |          | Slideline SL40                                                              |
| Synchronization                                                           |                        |          | Toothed belt                                                                |
| Mounting                                                                  |                        |          | See drawings                                                                |
| Ambient temperature range                                                 | $T_{min}$<br>$T_{max}$ | °C<br>°C | -10<br>+60                                                                  |
| Weight (Mass)                                                             |                        | kg       | see Data Sheet No 1.10.021E-2                                               |
| Medium                                                                    |                        |          | Filtered, unlubricated compressed air<br>(other media on request)           |
| Lubrication                                                               |                        |          | Special slow speed grease – additional<br>oil mist lubrication not required |
| Material                                                                  |                        |          |                                                                             |
| Toothed Belt                                                              |                        |          | Steel-corded polyurethane                                                   |
| Belt wheel                                                                |                        |          | Aluminium                                                                   |
| Operating pressure range                                                  | $p_{max}$              | bar      | 6                                                                           |
| Cushioning middle position                                                |                        |          | Elastic buffer                                                              |
| Max. Speed                                                                | $v_{max}$              | m/s      | 0.2                                                                         |
| Max. stroke of each stroke                                                |                        | mm       | 500                                                                         |
| Max. mass per guide carrier                                               |                        | kg       | 25                                                                          |
| Max. moments on guide carrier                                             |                        |          |                                                                             |
| lateral moment                                                            | $Mx_{max}$             | Nm       | 25                                                                          |
| axial moment                                                              | $My_{max}$             | Nm       | 46                                                                          |
| rotating moment                                                           | $Mz_{max}$             | Nm       | 46                                                                          |
| For more technical information see Data Sheet No. 1.10.002E and 1.40.002E |                        |          |                                                                             |

# Rodless Cylinder Ø 40 mm

for synchronized  
bi-parting movements

Type OSP-P40-SL-BP

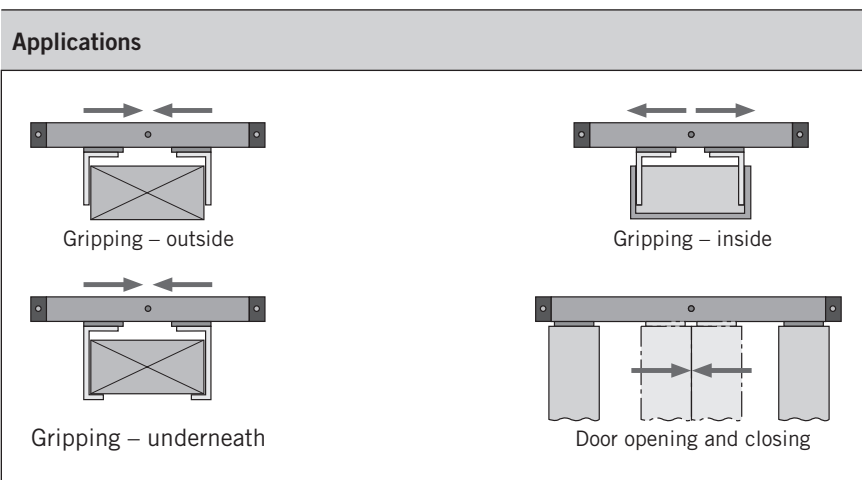


## Features:

- Accurate bi-parting movement through toothed belt synchronization
- Optimum slow speed performance
- Increased action force
- Anodized aluminium guide rail with prism-form slideway arrangement
- Adjustable polymer slide units
- Combined sealing system with polymer and felt elements to remove dirt and lubricate the slideway
- Integrated grease nipples for guide lubrication

## Applications:

- Opening and closing operations
- Gripping of workpieces – outside
- Gripping of hollow workpieces – inside
- Gripping underneath larger objects
- Clamping force adjustable via pressure regulator



For **Magnetic Switches** see 1.45.100E, 1.45.104E, 1.45.105E



| Weight (mass) kg                    |                  |                   |
|-------------------------------------|------------------|-------------------|
| Cylinder series<br>(Basic cylinder) | Weight (Mass) kg |                   |
|                                     | At 0 mm stroke   | per 100 mm stroke |
| OSP-P40-SL-BP                       | 10.33            | 2.13              |

#### Function:

The OSP-P40-SL-BP bidirectional linear drive is based on the OSP-P40 rodless pneumatic cylinder and adapted SLIDELINE SL40 polymer plain-bearing guides.

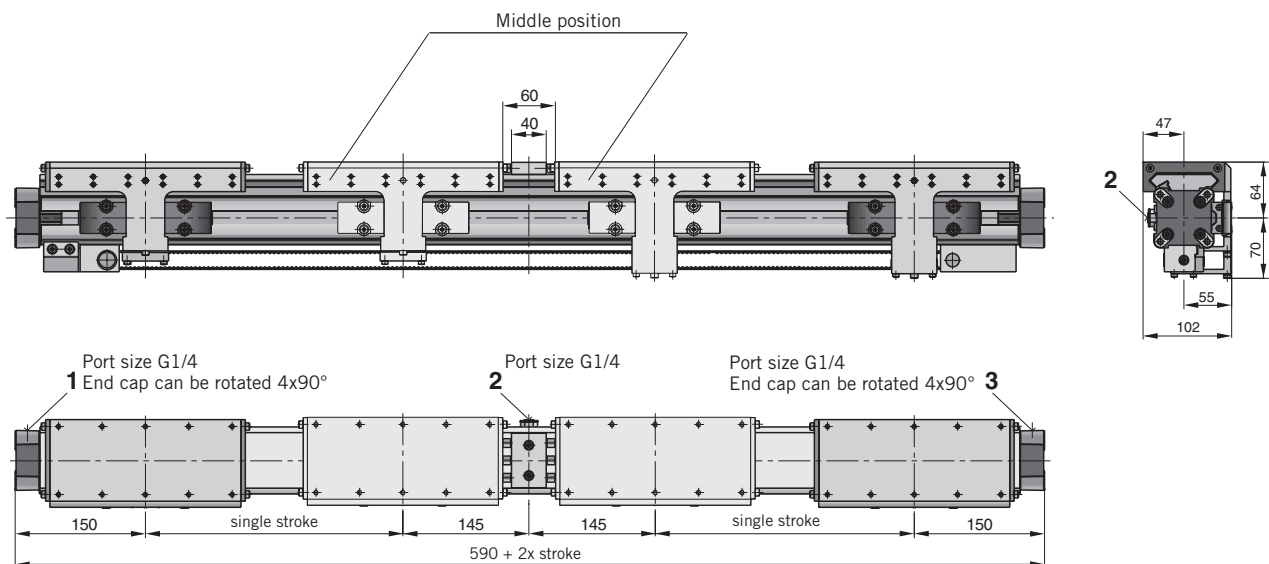
Two pistons in the cylinder bore are connected via yokes and carriers to the SLIDELINE guide carriers, which handle the forces and moments generated.

The bi-parting movements of the guide carriers are accurately synchronized by a recirculating toothed belt.

The two pistons are driven from the middle to the end positions via a common G1/4 air connection in the middle of the cylinder, and are driven from the end positions to the middle via an air connection in each end cap.

End position cushioning is provided by adjustable air cushioning in the end caps, and middle position cushioning by rubber buffers.

#### Dimensions (mm)



#### Air connections:

To drive the guide carriers to the middle position: pressurize ports 1 and 3.

To drive the guide carriers to the end positions: pressurize port 2.

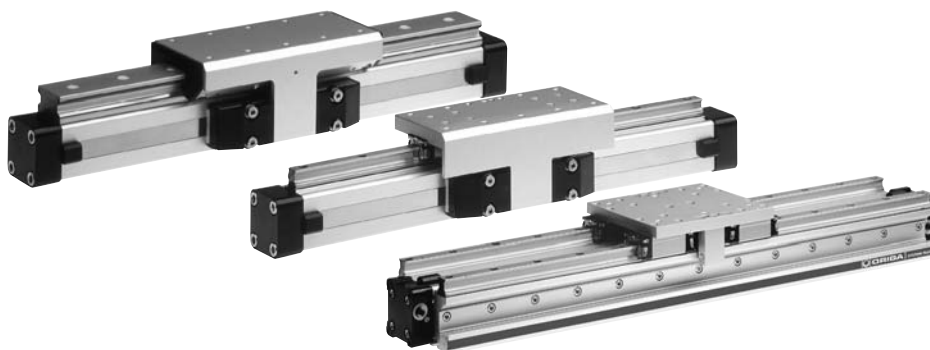
For more dimensions see data sheet no. 1.10.002E-5 und 1.40.002E-2

#### Order Instructions

| Description                                            | Type          | Order No. |
|--------------------------------------------------------|---------------|-----------|
| Rodless cylinder for synchronized bi-parting movements | OSP-P40-SL-BP | 21315     |

**Note:** Order stroke = 2x single stroke

# Linear Guides Series OSP-P



## Contents

| Description                               | Data Sheet No. | Page  |
|-------------------------------------------|----------------|-------|
| Overview                                  | 1.40.001E      | 39-40 |
| Plain bearing guide SLIDELINE             | 1.40.002E      | 41-42 |
| Roller guide POWERSLIDE                   | 1.40.003E      | 43-46 |
| Aluminium roller guide PROLINE            | 1.40.005E      | 47-48 |
| Recirculating ball bearing guide STARLINE | 1.40.006E      | 49-54 |
| Recirculating ball bearing guide KF       | 1.40.007E      | 55-60 |
| Heavy duty guide HD                       | 1.40.008E      | 61-65 |

## Adaptive modular system

The Origa system plus – OSP – provides a comprehensive range of linear guides for the pneumatic and electric linear drives.

### Advantages:

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

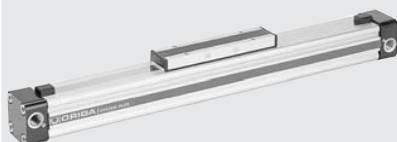
## Rodless Pneumatic Cylinder Series OSP - P

Piston diameters 10 – 80 mm

See data sheet

1.10.002E (Standard)

1.10.020E (ATEX-Version)



## Linear Guides

### SLIDELINE

The cost-effective plain bearing guide for medium loads. Active/ Passive Brake optional.

Piston diameters 16 – 80 mm

See data sheet

1.40.002E (Standard)

1.10.020E (ATEX-Version)

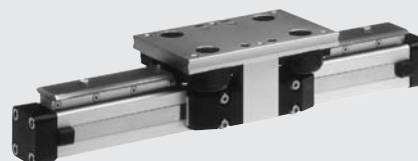


### POWERSLIDE

The roller guide for heavy loads and hard application conditions

Piston diameters 16 – 50 mm

See data sheet 1.40.003E



### PROLINE

The compact aluminium roller guide for high loads and velocities.

Active/ Passive Brake optional.

Piston diameters 16 – 50 mm

See data sheet no. 1.40.005E

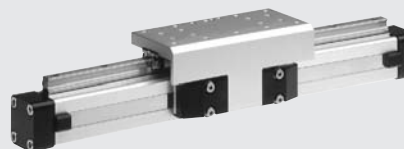


### STARLINE

Recirculating ball bearing guide for very high loads and precision

Piston diameters 16 – 50 mm

See data sheet no. 1.40.006E



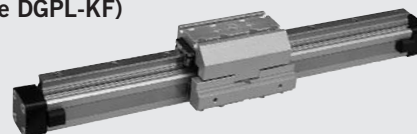
### KF GUIDE

Recirculating ball bearing guide for highest loads and precision.

Correspond to FESTO dimensions (Type DGPL-KF)

Piston diameters 16 – 50 mm

See data sheet no. 1.40.007E

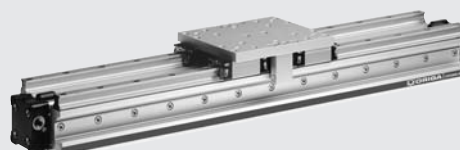


### HD HEAVY DUTY GUIDE

The ball bushing guide for the heavy loads and greatest accuracy.

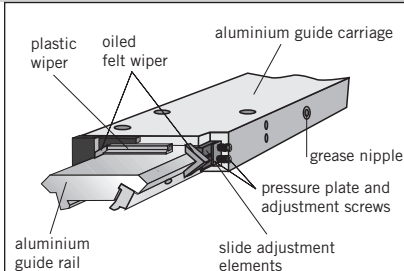
Piston diameters 25 – 50 mm

See data sheet no. 1.40.008E

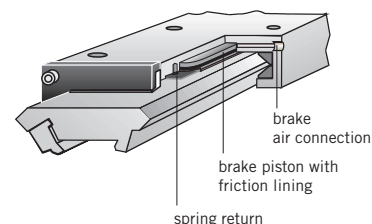


## Versions

for pneumatic linear drive:  
Series OSP-P



## Option – Integrated Brake

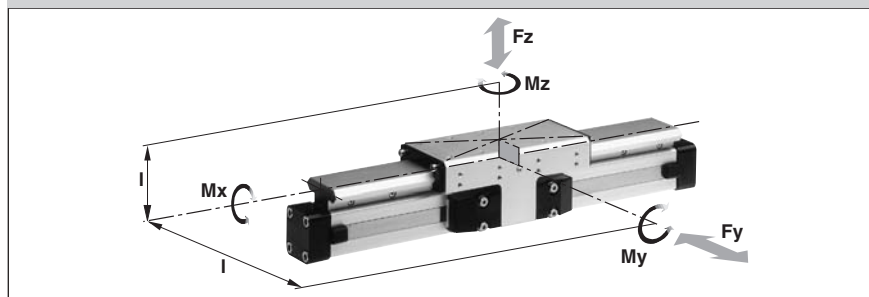


## Integrated Brake (optional) for series OSP-P25 to OSP-P50:

- Actuated by pressure
- Released by exhausting and spring return

For further technical data see also linear drives OSP-P (1.10.002E)

## Loads, Forces and Moments



## 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  $v < 0.2$  m/s.

## \* Please note:

In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

# Plain Bearing Guide SLIDELINE

**OSP**  
ORIGA  
SYSTEM  
PLUS

Series SL 16 to 80  
for Linear-drive  
• Series OSP-P

## Features:

- ATEX-version (without brake) is also available (see data sheet no. 1.10.020E)
- Anodised 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.
- Any length of stroke up to 5500 mm (longer strokes on request)

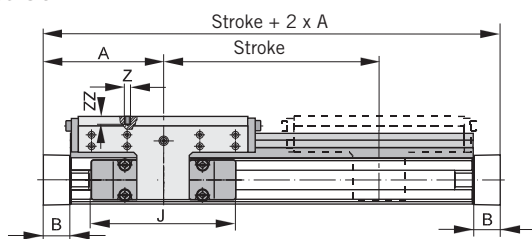
- <sup>1)</sup> Only with integrated brake:  
Braking force on dry oil-free surface  
Values are decreased for lubricated slideways
- <sup>2)</sup> Corrosion resistant fixtures available on request

| Series | For linear drive | Max. moments [Nm] |     |     | Max. loads [N] | Maximum braking force at 6 bar [N] <sup>1)</sup> | Mass of linear drive with guide [kg] |                            | Mass * of guide carriage [kg] | Order No. SLIDELINE <sup>2)</sup> for |                  |
|--------|------------------|-------------------|-----|-----|----------------|--------------------------------------------------|--------------------------------------|----------------------------|-------------------------------|---------------------------------------|------------------|
|        |                  | Mx                | My  | Mz  | Fy, Fz         |                                                  | with 0 mm stroke                     | increase per 100 mm stroke |                               | OSP-P without brake                   | OSP-P with brake |
| SL16   | OSP-P16          | 6                 | 11  | 11  | 325            | –                                                | 0.57                                 | 0.22                       | 0.23                          | 20341                                 | –                |
| SL25   | OSP-P25          | 14                | 34  | 34  | 675            | 325                                              | 1.55                                 | 0.39                       | 0.61                          | 20342                                 | 20409            |
| SL32   | OSP-P32          | 29                | 60  | 60  | 925            | 545                                              | 2.98                                 | 0.65                       | 0.95                          | 20196                                 | 20410            |
| SL40   | OSP-P40          | 50                | 110 | 110 | 1500           | 835                                              | 4.05                                 | 0.78                       | 1.22                          | 20343                                 | 20411            |
| SL50   | OSP-P50          | 77                | 180 | 180 | 2000           | 1200                                             | 6.72                                 | 0.97                       | 2.06                          | 20195                                 | 20412            |
| SL63   | OSP-P63          | 120               | 260 | 260 | 2500           | –                                                | 11.66                                | 1.47                       | 3.32                          | 20853                                 | –                |
| SL80   | OSP-P80          | 120               | 260 | 260 | 2500           | –                                                | 15.71                                | 1.81                       | 3.32                          | 21000                                 | –                |

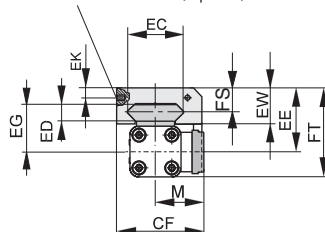
For linear drives see 1.10.002E, for ATEX-version see 1.10.020E  
For mountings see 1.45.005E

## Dimensions

### Series OSP-P



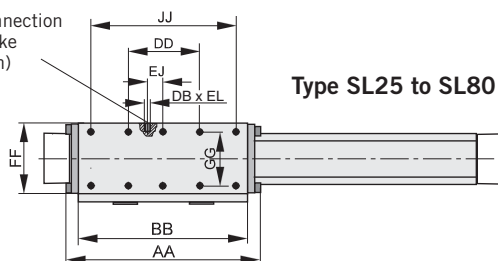
Air connection for brake (Option)



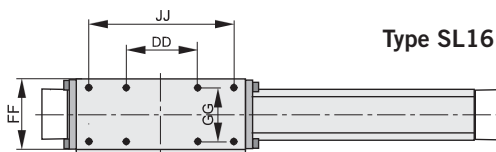
For further mounting elements and options see accessories.

For further information and technical data see data sheets for linear drives OSP-P (1.10.002E)

Air connection for brake (Option)



Type SL25 to SL80



Type SL16

### Dimension Table (mm)

| Series | A   | B    | J   | M    | Z  | AA  | BB  | DB | DD  | CF   | EC  | ED | EE | EG | EJ | EK | EL | EW | FF  | FT    | FS   | GG  | JJ  | ZZ |
|--------|-----|------|-----|------|----|-----|-----|----|-----|------|-----|----|----|----|----|----|----|----|-----|-------|------|-----|-----|----|
| SL 16  | 65  | 14   | 69  | 31   | M4 | 106 | 88  | -  | 30  | 55   | 36  | 8  | 40 | 30 | -  | -  | -  | 22 | 48  | 55    | 14   | 36  | 70  | 8  |
| SL 25  | 100 | 22   | 117 | 40.5 | M6 | 162 | 142 | M5 | 60  | 72.5 | 47  | 12 | 53 | 39 | 22 | 6  | 6  | 30 | 64  | 73.5  | 20   | 50  | 120 | 12 |
| SL 32  | 125 | 25.5 | 152 | 49   | M6 | 205 | 185 | M5 | 80  | 91   | 67  | 14 | 62 | 48 | 32 | 6  | 6  | 33 | 84  | 88    | 21   | 64  | 160 | 12 |
| SL 40  | 150 | 28   | 152 | 55   | M6 | 240 | 220 | M5 | 100 | 102  | 77  | 14 | 64 | 50 | 58 | 6  | 6  | 34 | 94  | 98.5  | 21.5 | 78  | 200 | 12 |
| SL 50  | 175 | 33   | 200 | 62   | M6 | 284 | 264 | M5 | 120 | 117  | 94  | 14 | 75 | 56 | 81 | 6  | 6  | 39 | 110 | 118.5 | 26   | 90  | 240 | 16 |
| SL 63  | 215 | 38   | 256 | 79   | M8 | 312 | 292 | -  | 130 | 152  | 116 | 18 | 86 | 66 | -  | -  | -  | 46 | 152 | 139   | 29   | 120 | 260 | 14 |
| SL 80  | 260 | 47   | 348 | 96   | M8 | 312 | 292 | -  | 130 | 169  | 116 | 18 | 99 | 79 | -  | -  | -  | 46 | 152 | 165   | 29   | 120 | 260 | 14 |

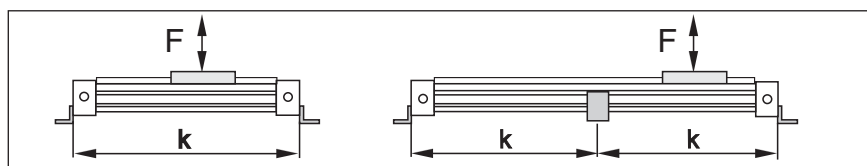
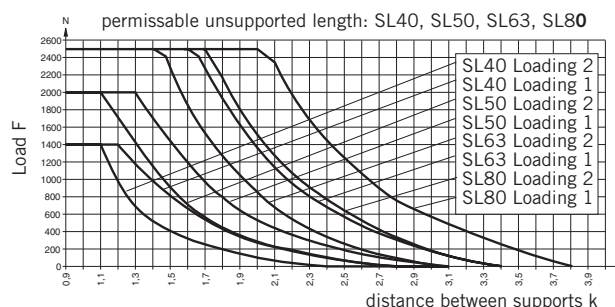
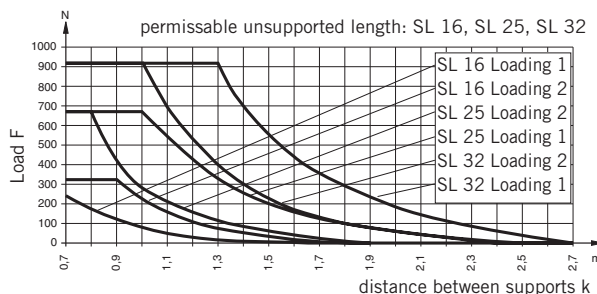
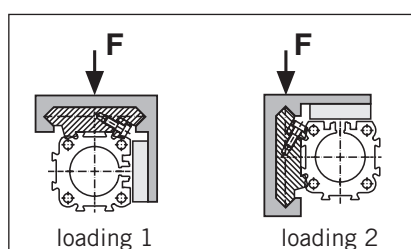
## Mid-Section Support

(for versions see 1.45.005E)

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.

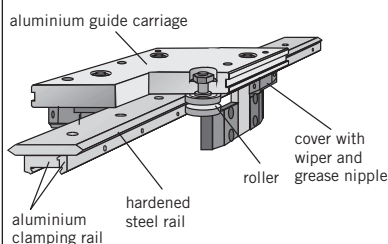
### Note:

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



## Versions

for pneumatic linear drive:  
Series OSP-P

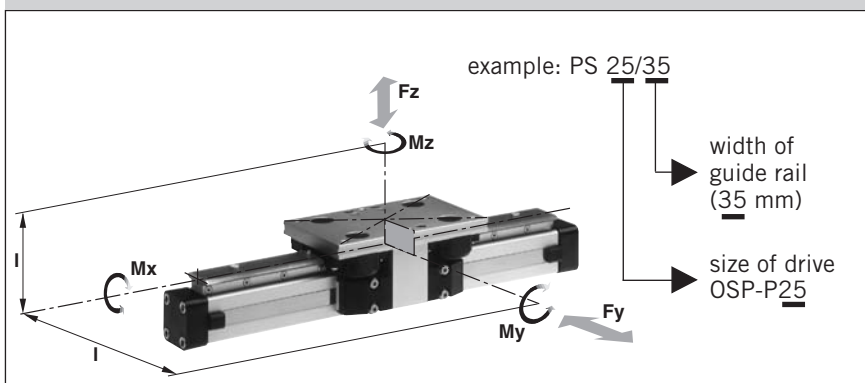


# Roller Guide POWERSLIDE

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

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

## Loads, Forces and Moments



## 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 (1.10.002E)

### \* Please note:

In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

## Features:

- Anodised 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)

| Series   | For linear drive | Max. moments [Nm] |     |     | Max. load [N] | Mass of linear drive with guide [kg] |                            | Mass * of guide carriage [kg] | Order-No. Powerslide for OSP-P <sup>1)</sup> |
|----------|------------------|-------------------|-----|-----|---------------|--------------------------------------|----------------------------|-------------------------------|----------------------------------------------|
|          |                  | Mx                | My  | Mz  |               | with 0 mm stroke                     | increase per 100 mm stroke |                               |                                              |
| PS 16/25 | OSP-P16          | 14                | 45  | 45  | 1400          | 0.93                                 | 0.24                       | 0.7                           | 20285                                        |
| PS 25/25 | OSP-P25          | 14                | 63  | 63  | 1400          | 1.5                                  | 0.4                        | 0.7                           | 20015                                        |
| PS 25/35 | OSP-P25          | 20                | 70  | 70  | 1400          | 1.7                                  | 0.4                        | 0.8                           | 20016                                        |
| PS 25/44 | OSP-P25          | 65                | 175 | 175 | 3000          | 2.6                                  | 0.5                        | 1.5                           | 20017                                        |
| PS 32/35 | OSP-P32          | 20                | 70  | 70  | 1400          | 2.6                                  | 0.6                        | 0.8                           | 20286                                        |
| PS 32/44 | OSP-P32          | 65                | 175 | 175 | 3000          | 3.4                                  | 0.7                        | 1.5                           | 20287                                        |
| PS 40/44 | OSP-P40          | 65                | 175 | 175 | 3000          | 4.6                                  | 1.1                        | 1.5                           | 20033                                        |
| PS 40/60 | OSP-P40          | 90                | 250 | 250 | 3000          | 6                                    | 1.3                        | 2.2                           | 20034                                        |
| PS 50/60 | OSP-P50          | 90                | 250 | 250 | 3000          | 7.6                                  | 1.4                        | 2.3                           | 20288                                        |
| PS 50/76 | OSP-P50          | 140               | 350 | 350 | 4000          | 11.5                                 | 1.8                        | 4.9                           | 20289                                        |

<sup>1)</sup> corrosion resistance version available on request (max. loads and moments are 25% lower)

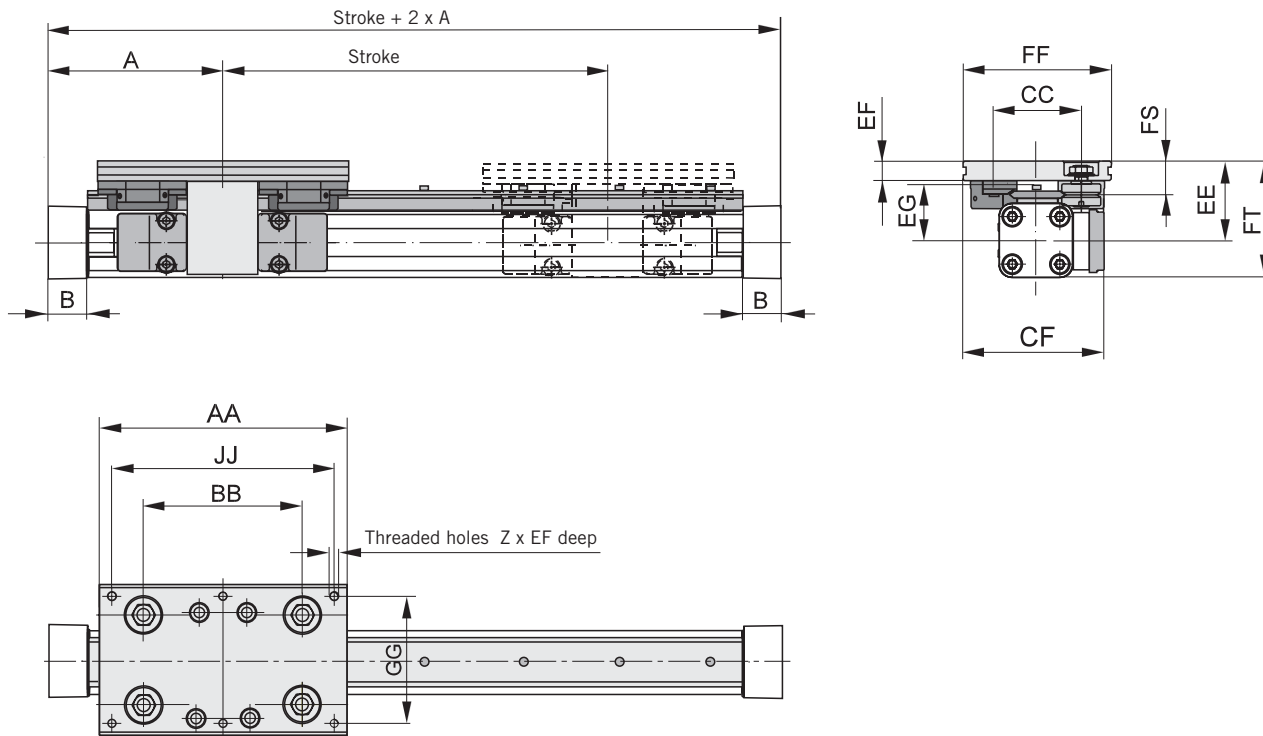
For linear drives see 1.10.002E  
For mountings see 1.45.005E

Data Sheet No. 1.40.003E-1



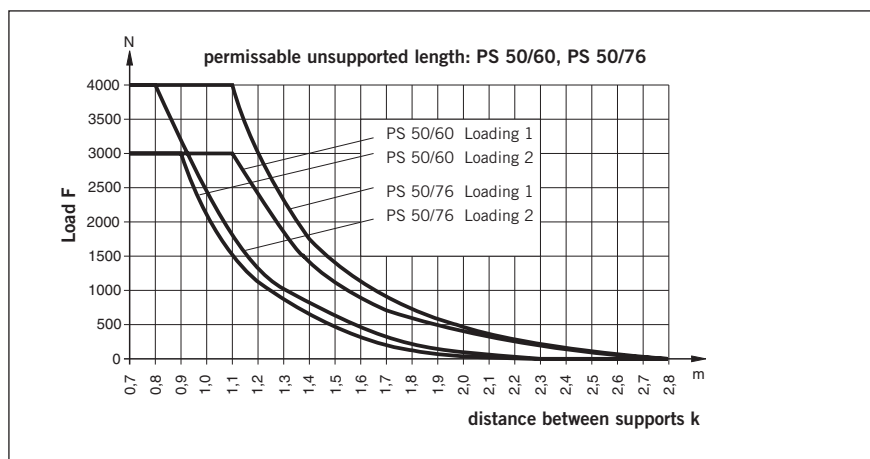
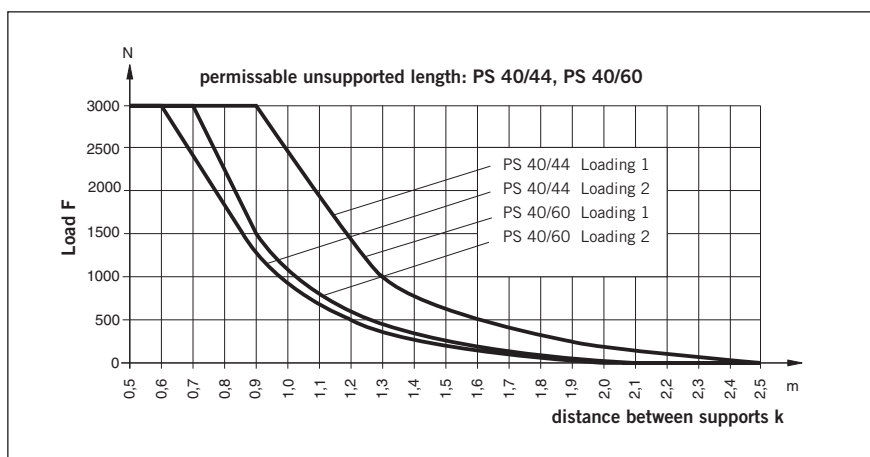
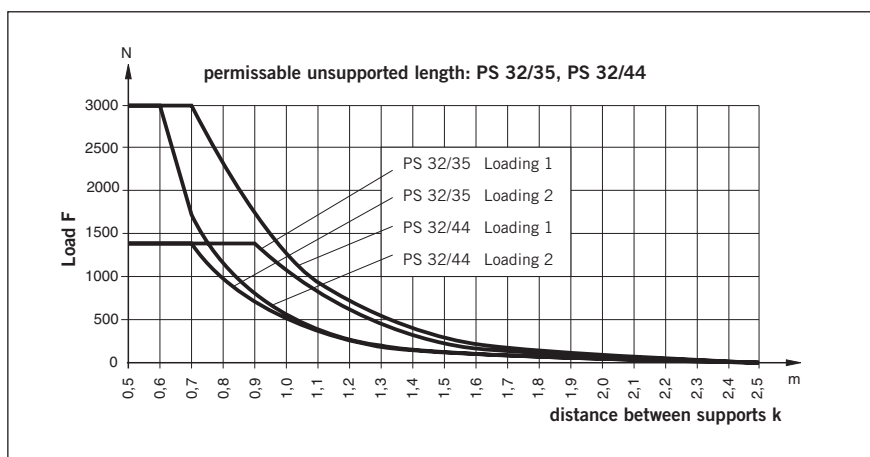
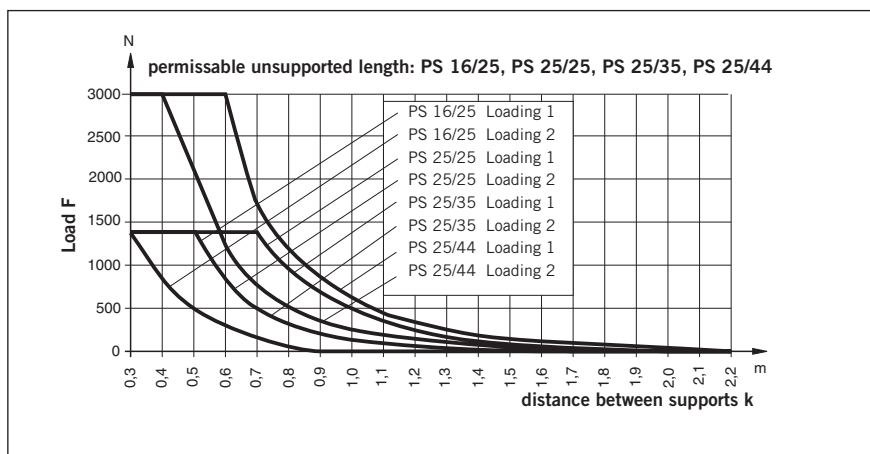
## Dimensions

### Series OSP-P



Dimension Table (mm)

| Series   | A   | B    | Z     | AA  | BB  | CC  | CF    | EE   | EF   | EG   | FF  | FS   | FT    | GG  | JJ  |
|----------|-----|------|-------|-----|-----|-----|-------|------|------|------|-----|------|-------|-----|-----|
| PS 16/25 | 65  | 14   | 4xM6  | 120 | 65  | 47  | 80    | 49   | 12   | 35   | 80  | 21   | 64    | 64  | 100 |
| PS 25/25 | 100 | 22   | 6xM6  | 145 | 90  | 47  | 79.5  | 53   | 11   | 39   | 80  | 20   | 73.5  | 64  | 125 |
| PS 25/35 | 100 | 22   | 6xM6  | 156 | 100 | 57  | 89.5  | 52.5 | 12.5 | 37.5 | 95  | 21.5 | 73    | 80  | 140 |
| PS 25/44 | 100 | 22   | 6xM8  | 190 | 118 | 73  | 100   | 58   | 15   | 39   | 116 | 26   | 78.5  | 96  | 164 |
| PS 32/35 | 125 | 25.5 | 6xM6  | 156 | 100 | 57  | 95.5  | 58.5 | 12.5 | 43.5 | 95  | 21.5 | 84.5  | 80  | 140 |
| PS 32/44 | 125 | 25.5 | 6xM8  | 190 | 118 | 73  | 107   | 64   | 15   | 45   | 116 | 26   | 90    | 96  | 164 |
| PS 40/44 | 150 | 28   | 6xM8  | 190 | 118 | 73  | 112.5 | 75   | 15   | 56   | 116 | 26   | 109.5 | 96  | 164 |
| PS 40/60 | 150 | 28   | 6xM8  | 240 | 167 | 89  | 122.5 | 74   | 17   | 54   | 135 | 28.5 | 108.5 | 115 | 216 |
| PS 50/60 | 175 | 33   | 6xM8  | 240 | 167 | 89  | 130.5 | 81   | 17   | 61   | 135 | 28.5 | 123.5 | 115 | 216 |
| PS 50/76 | 175 | 33   | 6xM10 | 280 | 178 | 119 | 155.5 | 93   | 20   | 64   | 185 | 39   | 135.5 | 160 | 250 |



## Mid-Section Support

(for versions, see accessories)

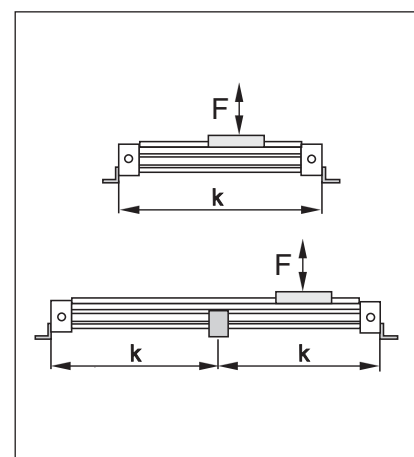
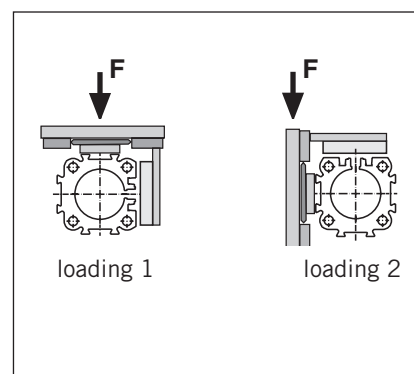
Mid section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading.

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.



For further mounting elements and options see 1.45.001E.

## 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

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

$$L_F = \frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} + \frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}}$$

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

## Lubrication

For maximum system life, lubrication of the rollers must be maintained at all times.

Only high quality Lithium based greases should be used.

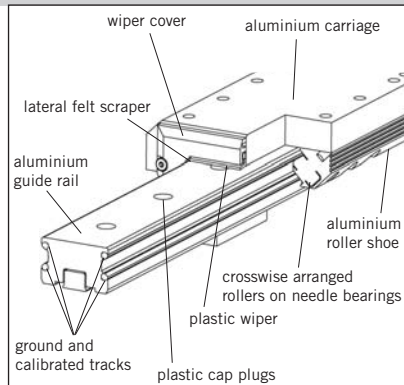
Lubrication intervals are dependant on environmental conditions (temperature, running speed, grease quality etc.) therefore the installation should be regularly inspected.

### 2. Service life calculation

|                                                            |                                                   |
|------------------------------------------------------------|---------------------------------------------------|
| • For PS 16/25, PS 25/25, PS 25/35, and PS 32/35           | Service life [km] = $\frac{106}{(L_F + 0,02)^3}$  |
| • For PS 25/44, PS 32/44, PS 40/44, PS 40/60 and PS 50/60: | Service life [km] = $\frac{314}{(L_F + 0,015)^3}$ |
| • For PS 50/76:                                            | Service life [km] = $\frac{680}{(L_F + 0,015)^3}$ |

## Versions

for pneumatic linear drive:  
Series OSP-P



## Technical Data

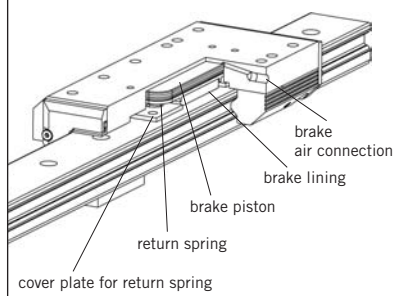
The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} + \frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}} \leq 1$$

The sum of the loads should not exceed >1.  
With a load factor of less than 1, service life is 8000 km

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

## Option – Integrated Brake



# Aluminium Roller Guide PROLINE

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

Series PL 16 to 50  
for Linear-drive  
• Series OSP-P

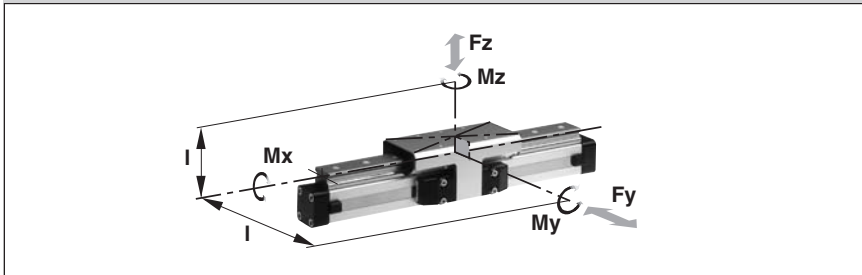
## Features:

- 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
- Any length of stroke up to 3750 mm

## Integrated Brake (optional) for Series OSP-P25 to OSP-P50:

- Actuated by pressurisation
- Release by depressurisation and spring actuation

## Loads, Forces and Moments



## \* Please note:

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

| Series | For linear drive | Max. moments [Nm] |     |     | Max. loads [N]<br>Fy, Fz | Maximum braking force at 6 bar [N] <sup>1)</sup> | Mass of linear drive with guide [kg] |                            | Mass * guide carriage [kg] | Order No. PROLINE for OSP-P |            |
|--------|------------------|-------------------|-----|-----|--------------------------|--------------------------------------------------|--------------------------------------|----------------------------|----------------------------|-----------------------------|------------|
|        |                  | Mx                | My  | Mz  |                          |                                                  | with 0 mm stroke                     | increase per 100 mm stroke |                            | without brake               | with brake |
| PL 16  | OSP-P16          | 8                 | 12  | 12  | 542                      | —                                                | 0.55                                 | 0.19                       | 0.24                       | 20855                       | —          |
| PL 25  | OSP-P25          | 16                | 39  | 39  | 857                      | on request                                       | 1.65                                 | 0.40                       | 0.75                       | 20856                       | 20860      |
| PL 32  | OSP-P32          | 29                | 73  | 73  | 1171                     | on request                                       | 3.24                                 | 0.62                       | 1.18                       | 20857                       | 20861      |
| PL 40  | OSP-P40          | 57                | 158 | 158 | 2074                     | on request                                       | 4.35                                 | 0.70                       | 1.70                       | 20858                       | 20862      |
| PL 50  | OSP-P50          | 111               | 249 | 249 | 3111                     | on request                                       | 7.03                                 | 0.95                       | 2.50                       | 20859                       | 20863      |

<sup>1)</sup> Only for version with brake:

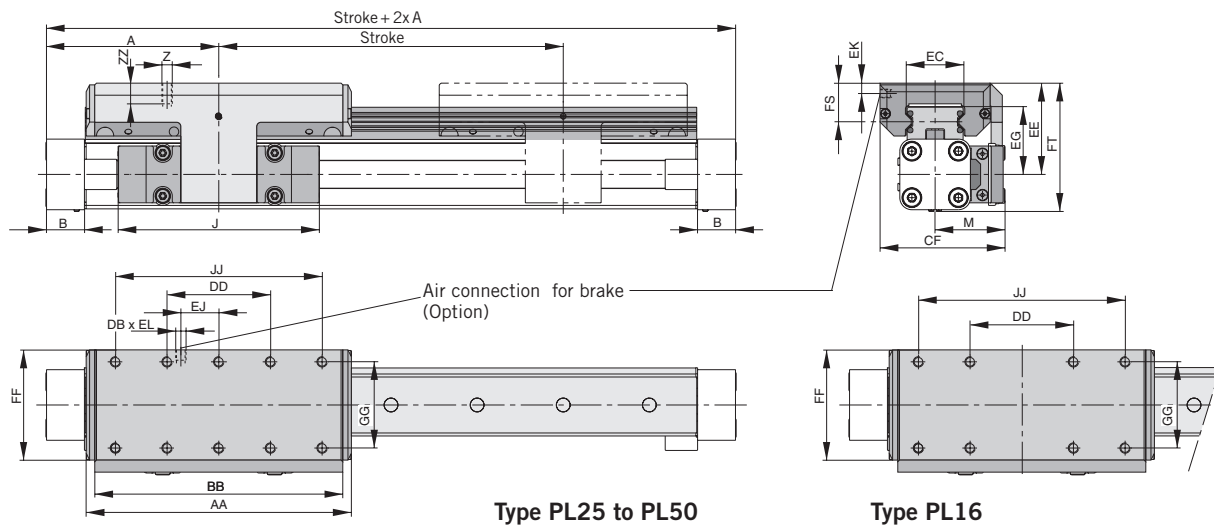
Braking surface dry – oiled surface reduces the effective braking force.

For linear drives see 1.10.002E  
For mountings see 1.45.005E

Data Sheet No. 1.40.005E-1

**ORIGA**

**Dimension Table (mm) Series OSP-P PL16, PL25, PL32, PL40, PL50**



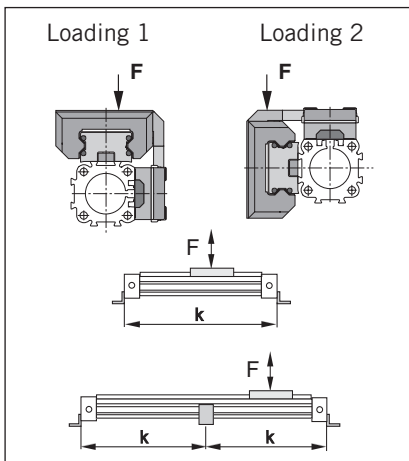
**Dimension Table (mm) Series OSP-P PL16, PL25, PL32, PL40, PL50**

| Series | A   | B    | J   | M    | Z  | AA  | BB  | DB | DD  | CF   | EC   | EE | EG   | EJ | EK | EL | FF  | FS   | FT    | GG | JJ  | ZZ |
|--------|-----|------|-----|------|----|-----|-----|----|-----|------|------|----|------|----|----|----|-----|------|-------|----|-----|----|
| PL16   | 65  | 14   | 69  | 31   | M4 | 98  | 88  | -  | 30  | 55   | 23   | 40 | 30   | -  | -  | -  | 48  | 17   | 55    | 36 | 70  | 8  |
| PL25   | 100 | 22   | 117 | 40.5 | M6 | 154 | 144 | M5 | 60  | 72.5 | 32.5 | 53 | 39   | 22 | 6  | 6  | 64  | 23   | 73.5  | 50 | 120 | 12 |
| PL32   | 125 | 25.5 | 152 | 49   | M6 | 197 | 187 | M5 | 80  | 91   | 42   | 62 | 48   | 32 | 6  | 6  | 84  | 25   | 88    | 64 | 160 | 12 |
| PL40   | 150 | 28   | 152 | 55   | M6 | 232 | 222 | M5 | 100 | 102  | 47   | 64 | 50.5 | 58 | 6  | 6  | 94  | 23.5 | 98.5  | 78 | 200 | 12 |
| PL50   | 175 | 33   | 200 | 62   | M6 | 276 | 266 | M5 | 120 | 117  | 63   | 75 | 57   | 81 | 6  | 6  | 110 | 29   | 118.5 | 90 | 240 | 16 |

## Mid-Section Support

(For versions, see 1.45.005E)

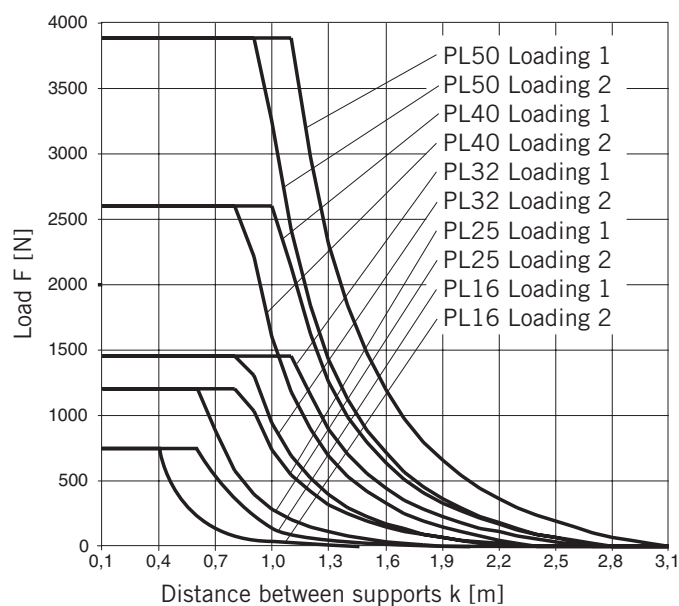
Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max.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



### Note:

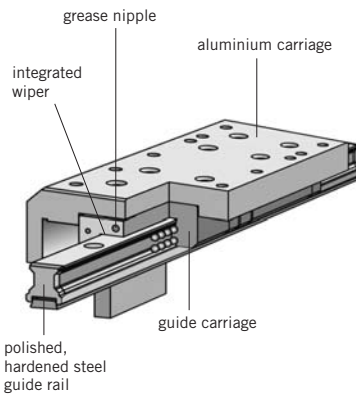
For speeds  $v > 0.5$  m/s the distance between supports should not exceed 1 m.

**Permissible Unsupported Length PL16, PL25, PL32, PL40 und PL50**



## Versions

for pneumatic linear drive:  
Series OSP-P

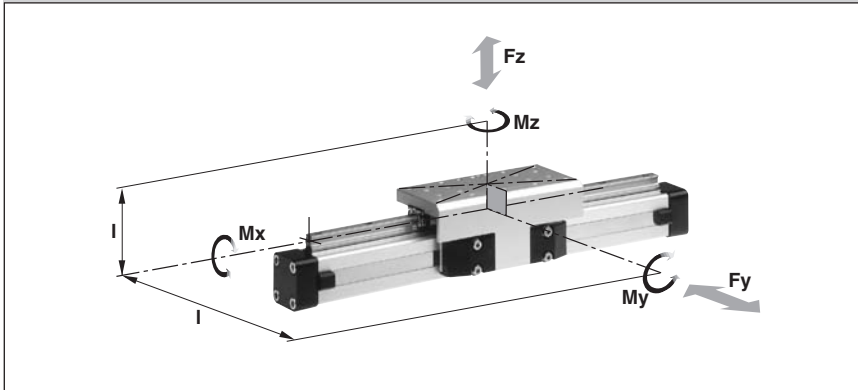


# Recirculating Ball Bearing Guide STARLINE

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

Series STL 16 to 50  
for Linear Drive Series OSP-P

## Loads, Forces and Moments



### Technical Data

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

$$\frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} + \frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}} \leq 1$$

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.

### Features:

- Polished and hardened steel guide rail
- For very high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm
- Anodized aluminium guide carriage – dimensions compatible with OSP guides SLIDELINE and PROLINE
- Installation height (STL16 - 32) compatible with OSP guides SLIDELINE and PROLINE
- Maximum speed  
STL16: v = 3 m/s  
STL25 to 50: v = 5 m/s

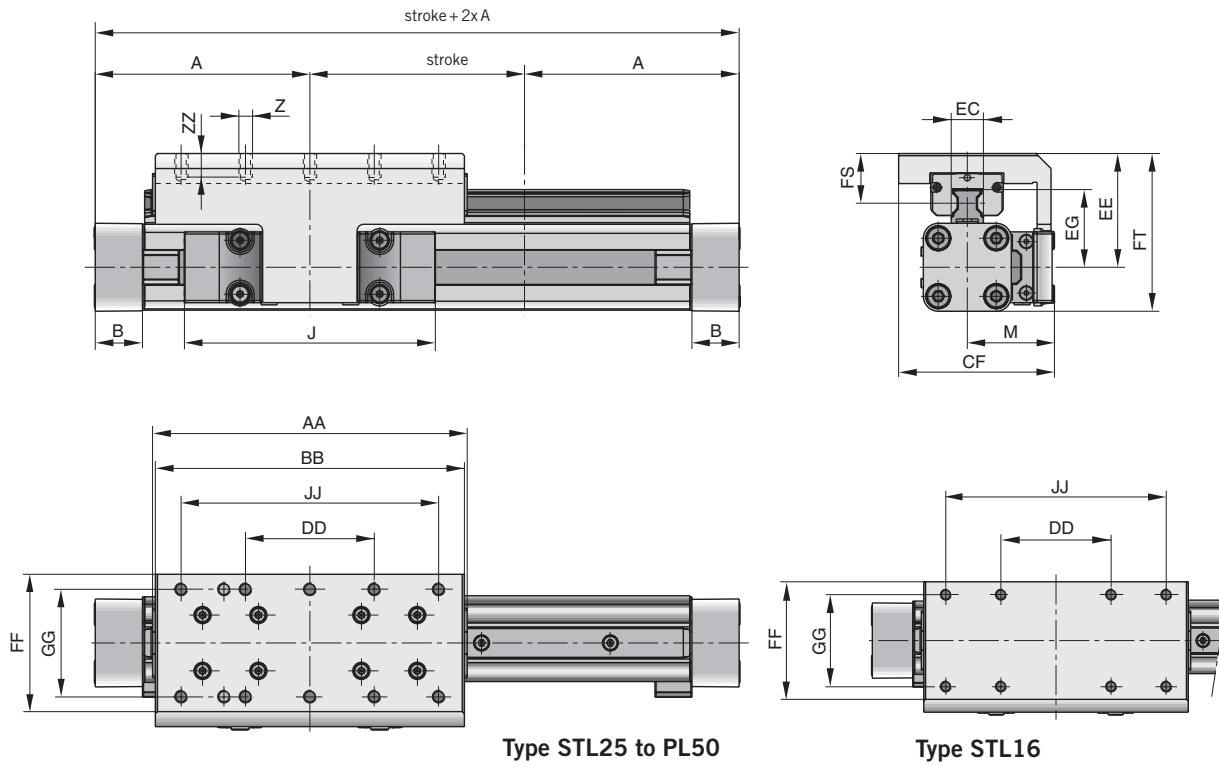
### \*\* Please note:

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

| Series | For linear drive | Max. moments [Nm] |     |     | Max. loads [N] |      | Mass of linear drive with guide [kg] |                            | Mass ** guide carriage [kg] | Order No. STARLINE for OSP-P |
|--------|------------------|-------------------|-----|-----|----------------|------|--------------------------------------|----------------------------|-----------------------------|------------------------------|
|        |                  | Mx                | My  | Mz  | Fy             | Fz   | with 0 mm stroke                     | increase per 100 mm stroke |                             |                              |
| STL16  | OSP-P16          | 15                | 30  | 30  | 1000           | 1000 | 0.598                                | 0.210                      | 0.268                       | 21111                        |
| STL25  | OSP-P25          | 50                | 110 | 110 | 3100           | 3100 | 1.733                                | 0.369                      | 0.835                       | 21112                        |
| STL32  | OSP-P32          | 62                | 160 | 160 | 3100           | 3100 | 2.934                                | 0.526                      | 1.181                       | 21113                        |
| STL40  | OSP-P40          | 150               | 400 | 400 | 4000           | 7500 | 4.452                                | 0.701                      | 1.901                       | 21114                        |
| STL50  | OSP-P50          | 210               | 580 | 580 | 4000           | 7500 | 7.361                                | 0.936                      | 2.880                       | 21115                        |

For linear drives see 1.10.002E  
For mountings see 1.45.005E

## Dimensions Series OSP-P STL16 to STL 50

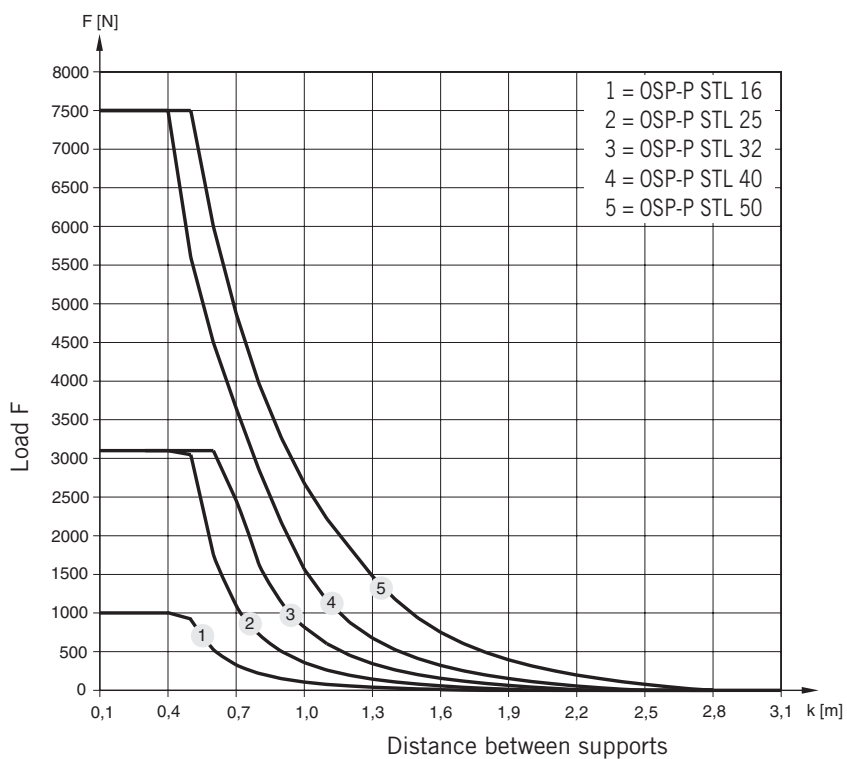


Dimension Table (mm) Series OSP-P STL16 to STL50

| Series       | A   | B    | J   | M    | Z  | AA    | BB  | CF   | DD  | EC | EE | EG   | FF  | FS   | FT    | GG | JJ  | ZZ |
|--------------|-----|------|-----|------|----|-------|-----|------|-----|----|----|------|-----|------|-------|----|-----|----|
| <b>STL16</b> | 65  | 14   | 69  | 31   | M4 | 93    | 90  | 55   | 30  | 15 | 40 | 24.6 | 48  | 18   | 55    | 36 | 70  | 8  |
| <b>STL25</b> | 100 | 22   | 117 | 40.5 | M6 | 146.6 | 144 | 72.5 | 60  | 15 | 53 | 36.2 | 64  | 23.2 | 73.5  | 50 | 120 | 12 |
| <b>STL32</b> | 125 | 25.5 | 152 | 49   | M6 | 186.6 | 184 | 91   | 80  | 15 | 62 | 42.2 | 84  | 26.2 | 88    | 64 | 160 | 12 |
| <b>STL40</b> | 150 | 28   | 152 | 55   | M6 | 231   | 226 | 102  | 100 | 20 | 72 | 51.6 | 94  | 28.5 | 106.5 | 78 | 200 | 12 |
| <b>STL50</b> | 175 | 33   | 200 | 62   | M6 | 270.9 | 266 | 117  | 120 | 23 | 85 | 62.3 | 110 | 32.5 | 128.5 | 90 | 240 | 16 |

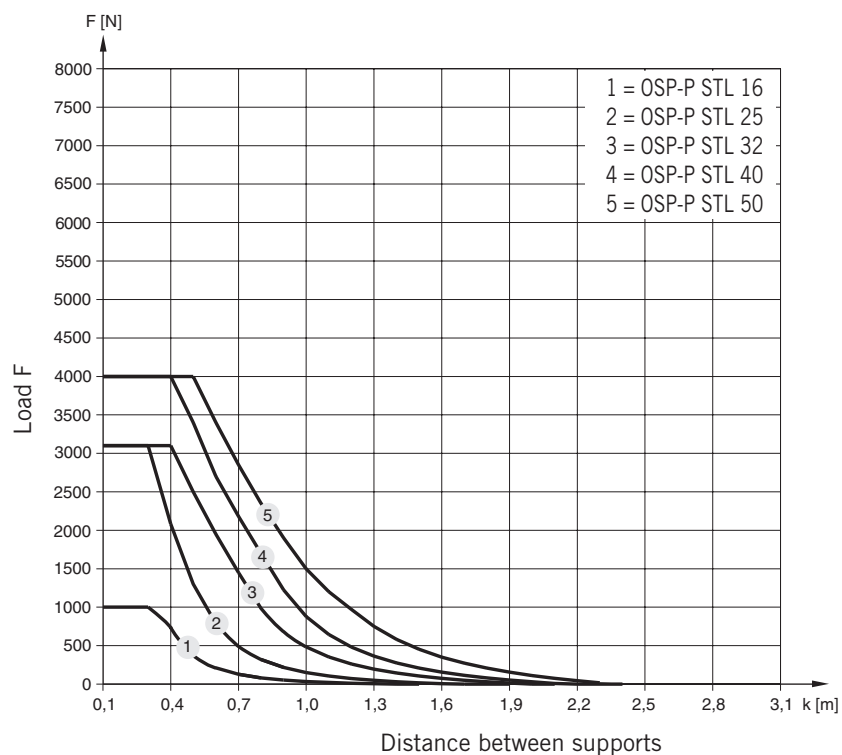
## Permissible Unsupported Length STL16 to STL50

Loading 1 – Top carrier



## Permissible Unsupported Length STL16 to STL50

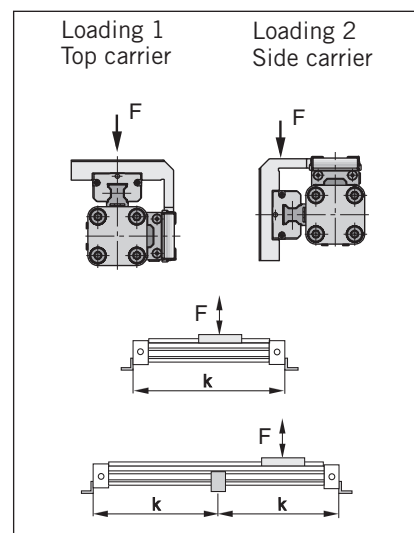
Loading 2 – Side carrier



## Mid-Section Support

(For versions, see 1.45.005E-8, 1.45.005E-9)

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.

## Variable Stop

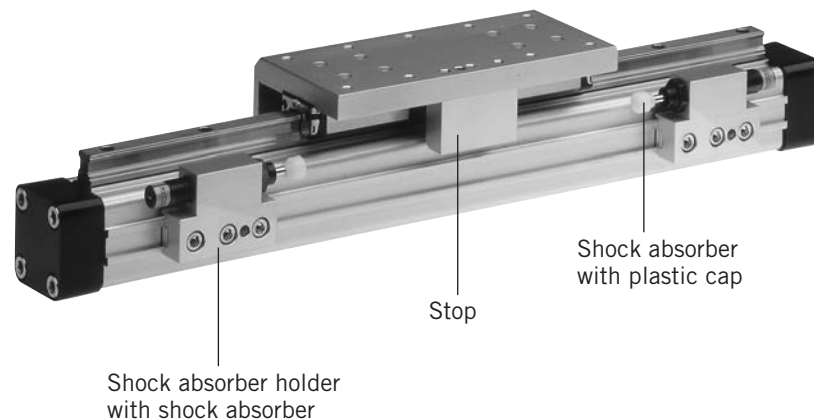
The variable stop Type VS provides simple stroke limitation. It can be retrofitted and positioned anywhere along the stroke length. For every cylinder diameter two types of shock absorber are available – see „Shock Absorber Selection“ below.

Mid-section supports and magnetic switches can still be fitted on the same side as the variable stop.

Depending on the application, two variable stops can be fitted if required.

### Variable Stop Type VS16 to VS50

Arrangement with two variable stops



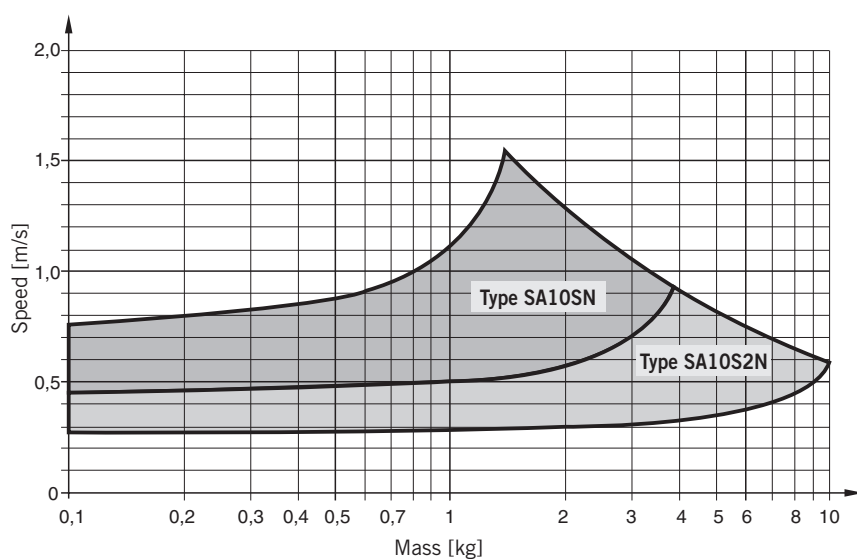
## Shock Absorber Selection

The shock absorber is selected in dependence on the mass and speed.

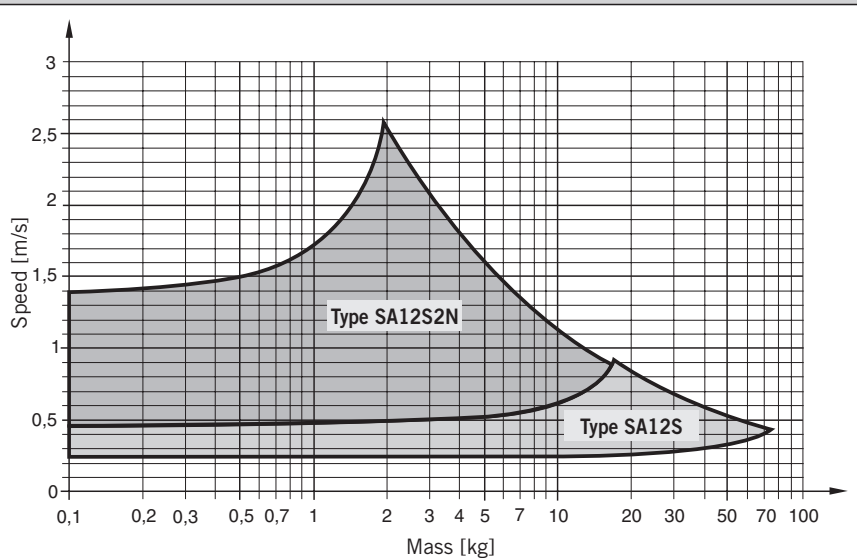
The mass of the carrier itself must be taken into account.

The values relate to an effective driving force of 78 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL16

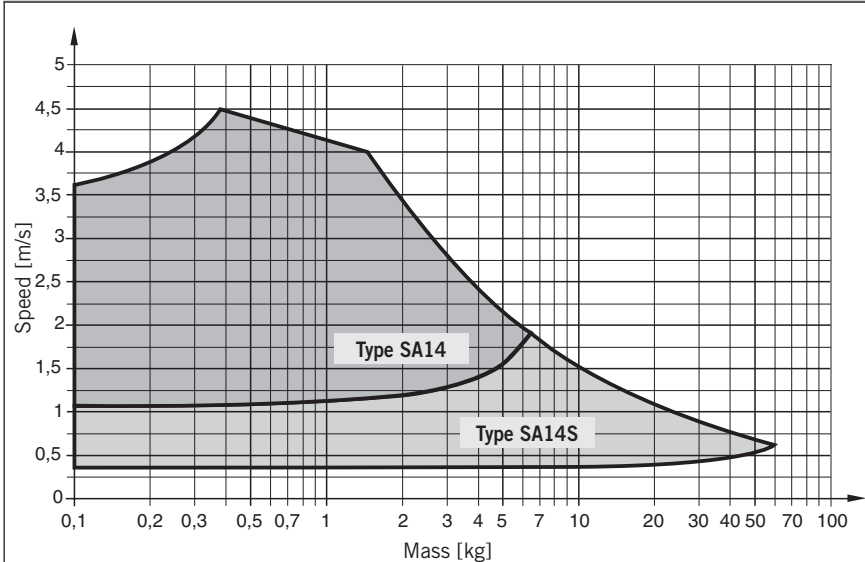


### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL25



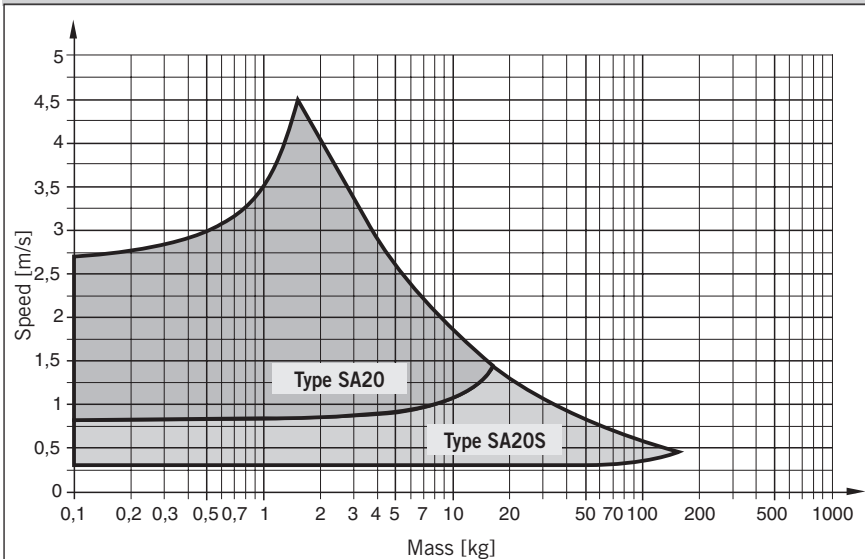
The values relate to an effective driving force of 250 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL32



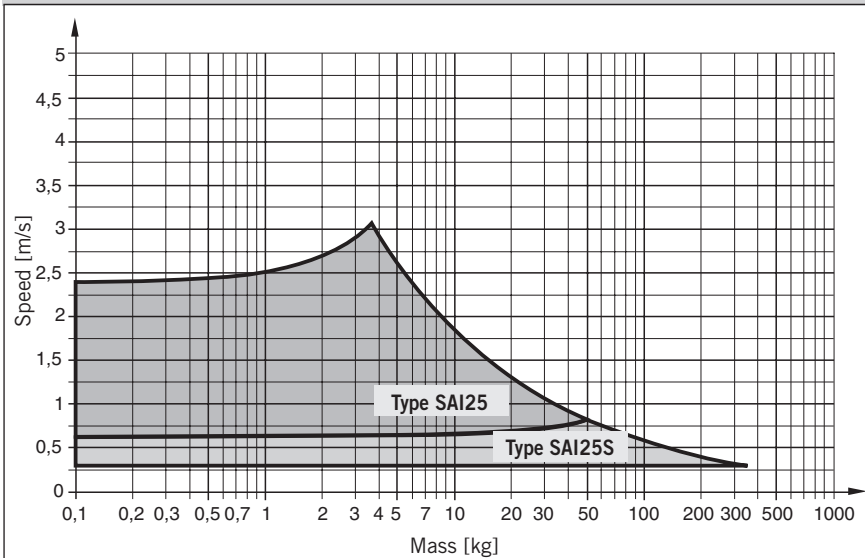
The values relate to an effective driving force of 420 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL40



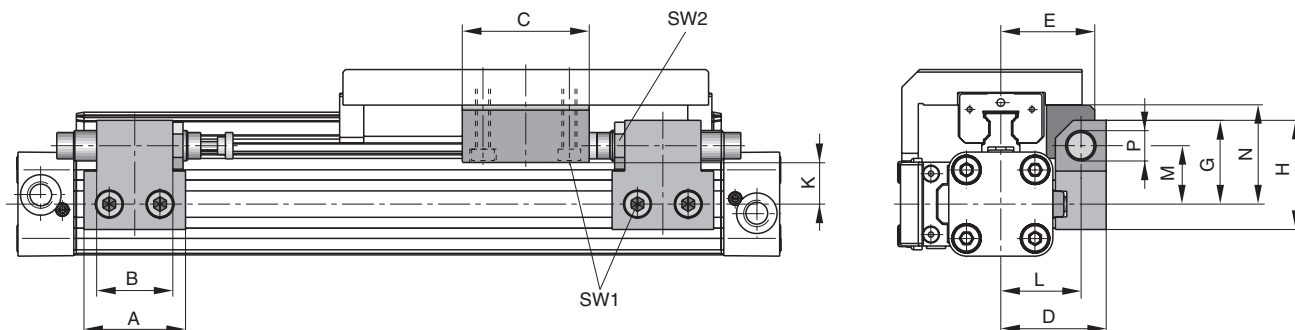
The values relate to an effective driving force of 640 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL50



The values relate to an effective driving force of 1000 N (6 bar)

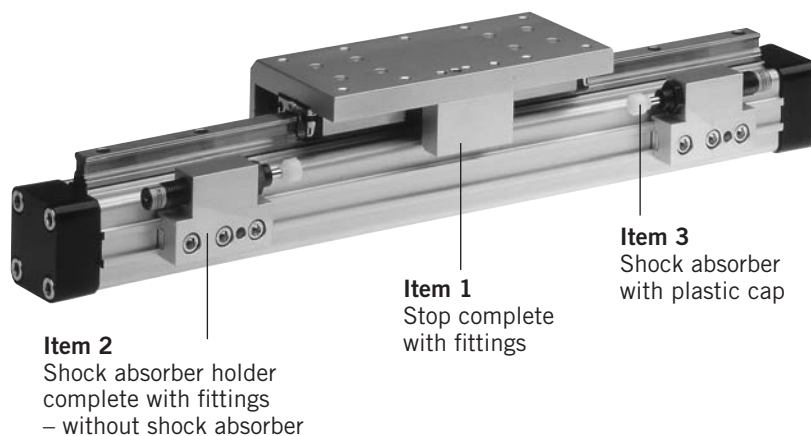
## Dimensions – Variable Stop Type VS16 to VS50



Dimension Table (mm) – Variable Stop Type VS16 to VS50

| Series    | Type | A  | B  | C  | D    | E  | G  | H  | K    | L    | M    | N    | P       | SW1 | SW2  |
|-----------|------|----|----|----|------|----|----|----|------|------|------|------|---------|-----|------|
| OSP-STL16 | VS16 | 30 | 14 | 25 | 33   | 30 | 28 | 38 | 16.2 | 25.5 | 20.5 | 30   | M10x1   | 4   | 12.5 |
| OSP-STL25 | VS25 | 40 | 30 | 50 | 41.5 | 37 | 33 | 43 | 18   | 31.5 | 23   | 39   | M12x1   | 5   | 16   |
| OSP-STL32 | VS32 | 60 | 40 | 50 | 45.5 | 42 | 35 | 45 | 19   | 35.5 | 25   | 48   | M14x1.5 | 5   | 17   |
| OSP-STL40 | VS40 | 84 | 52 | 60 | 64   | 59 | 48 | 63 | 25.6 | 50   | 34   | 58.6 | M20x1.5 | 5   | 24   |
| OSP-STL50 | VS50 | 84 | -  | 60 | 75   | 69 | 55 | 70 | 26.9 | 57   | 38   | 66.9 | M25x1.5 | 5   | 30   |

## Order Information – Variable Stop Type VS16 to VS50

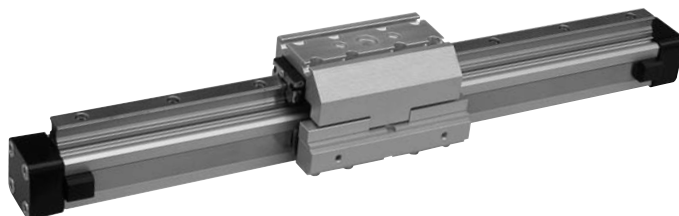


## Order Instructions – Variable Stop Type VS16 to VS50

| Item                              | Description                     | Size    |           |         |           |       |           |       |           |        |           |
|-----------------------------------|---------------------------------|---------|-----------|---------|-----------|-------|-----------|-------|-----------|--------|-----------|
|                                   |                                 | VS16    |           | VS25    |           | VS32  |           | VS40  |           | VS50   |           |
|                                   |                                 | Type    | Order No. | Type    | Order No. | Type  | Order No. | Type  | Order No. | Type   | Order No. |
| 1                                 | Stop, complete                  | -       | 21196     | -       | 21197     | -     | 21198     | -     | 21199     | -      | 21200     |
| 2                                 | Shock absorber holder, complete | -       | 21201     | -       | 21202     | -     | 21203     | -     | 21204     | -      | 21205     |
| 3 *                               | Shock absorber, standard        | SA10SN  | 7718      | SA12S2N | 7723      | SA14  | 7708      | SA20  | 7710      | SAI25  | 7712      |
|                                   | Shock absorber, version S       | SA10S2N | 7721      | SA12S   | 7707      | SA14S | 7709      | SA20S | 7711      | SAI25S | 7713      |
| * Shock absorber with plastic cap |                                 |         |           |         |           |       |           |       |           |        |           |

## Versions

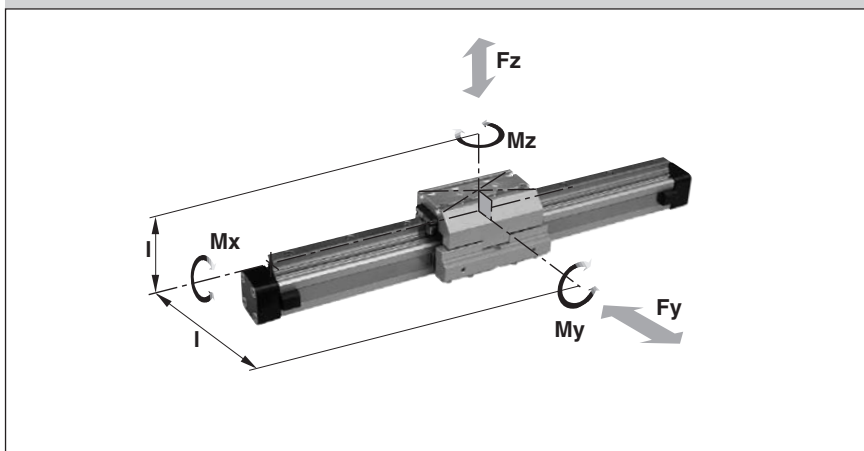
for Pneumatic Linear Drive:  
Series OSP-P KF



# Recirculating Ball Bearing Guide KF

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

## Loads, Forces and Moments



### Technical Data

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

$$\frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} + \frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}} \leq 1$$

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.

#### \* Please note:

the mass of the carriage has to be added to the total moving mass when using the cushioning diagram.

Series KF16 to KF50  
For Linear Drives  
Series OSP-P CLASSIC

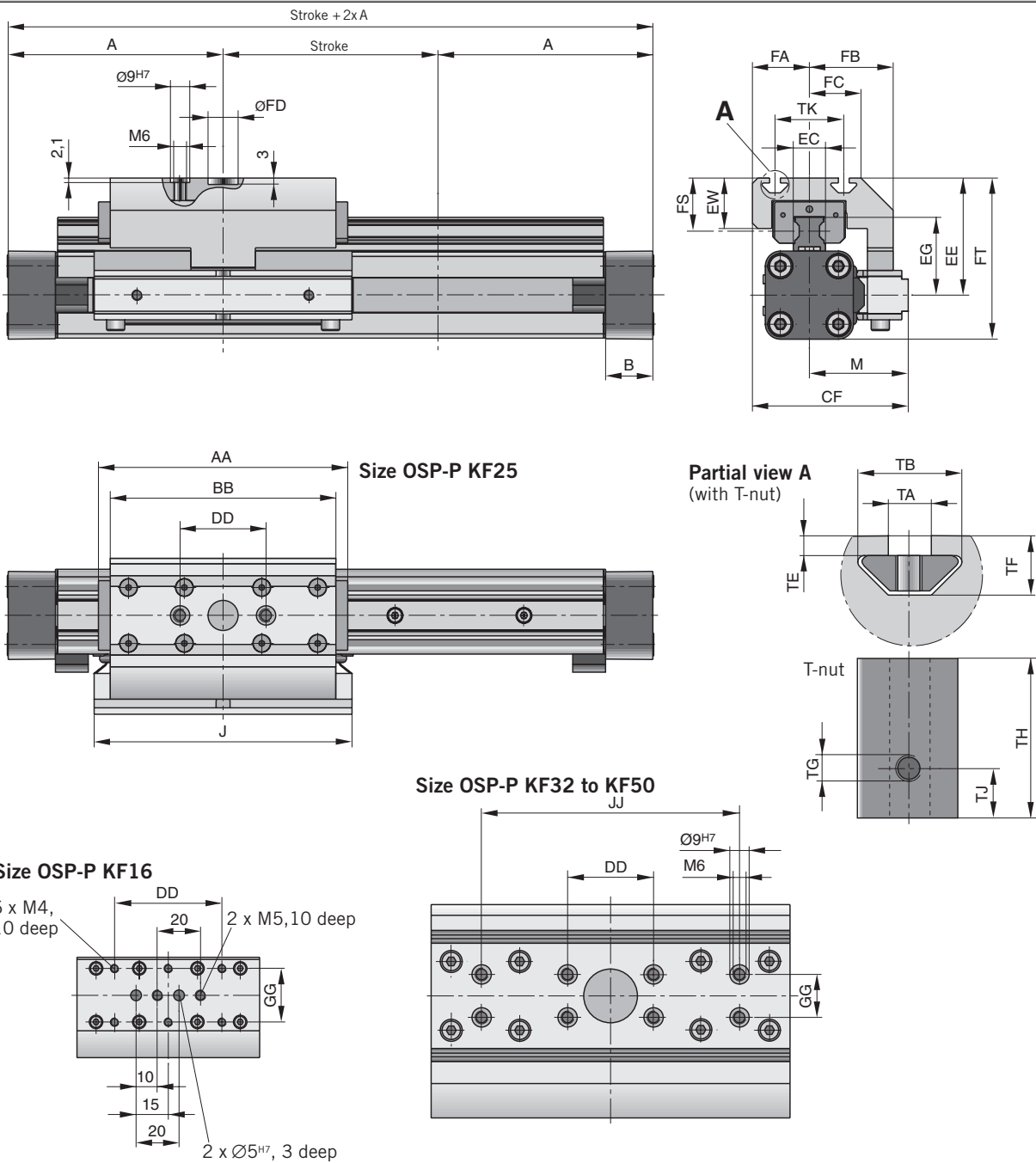
### Features:

- Anodized aluminium guide carriage, the mounting dimensions correspond to FESTO Type: DGPL-KF
- Polished and hardened steel guide rail
- For high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm
- Maximum speed  
KF16, KF40:  $v = 3 \text{ m/s}$   
KF25, KF32, KF50:  $v = 5 \text{ m/s}$

| Series      | for Linear Drive | Max. Moments [Nm] |     |     | Max. Load [N] |      | Mass of drive with guide [kg] with 0 mm stroke | increase per 100 mm stroke | Mass * guide carriage [kg] | Groove stone Thread Size | Order No.    |              |
|-------------|------------------|-------------------|-----|-----|---------------|------|------------------------------------------------|----------------------------|----------------------------|--------------------------|--------------|--------------|
|             |                  | Mx                | My  | Mz  | Fy            | Fz   |                                                |                            |                            |                          | Groove Stone | KF for OSP-P |
| <b>KF16</b> | OSP-P16          | 12                | 25  | 25  | 1000          | 1000 | 0.558                                          | 0.21                       | 0.228                      | —                        | —            | <b>21101</b> |
| <b>KF25</b> | OSP-P25          | 35                | 90  | 90  | 3100          | 3100 | 1.522                                          | 0.369                      | 0.607                      | M5                       | <b>13508</b> | <b>21102</b> |
| <b>KF32</b> | OSP-P32          | 44                | 133 | 133 | 3100          | 3100 | 2.673                                          | 0.526                      | 0.896                      | M5                       | <b>13508</b> | <b>21103</b> |
| <b>KF40</b> | OSP-P40          | 119               | 346 | 346 | 4000          | 7100 | 4.167                                          | 0.701                      | 1.531                      | M6                       | <b>13509</b> | <b>21104</b> |
| <b>KF50</b> | OSP-P50          | 170               | 480 | 480 | 4000          | 7500 | 7.328                                          | 0.936                      | 2.760                      | M8                       | <b>13510</b> | <b>21105</b> |

For linear drives see 1.10.002E  
For mountings see 1.45.005E

## Dimensions Series OSP-P KF16 to KF50



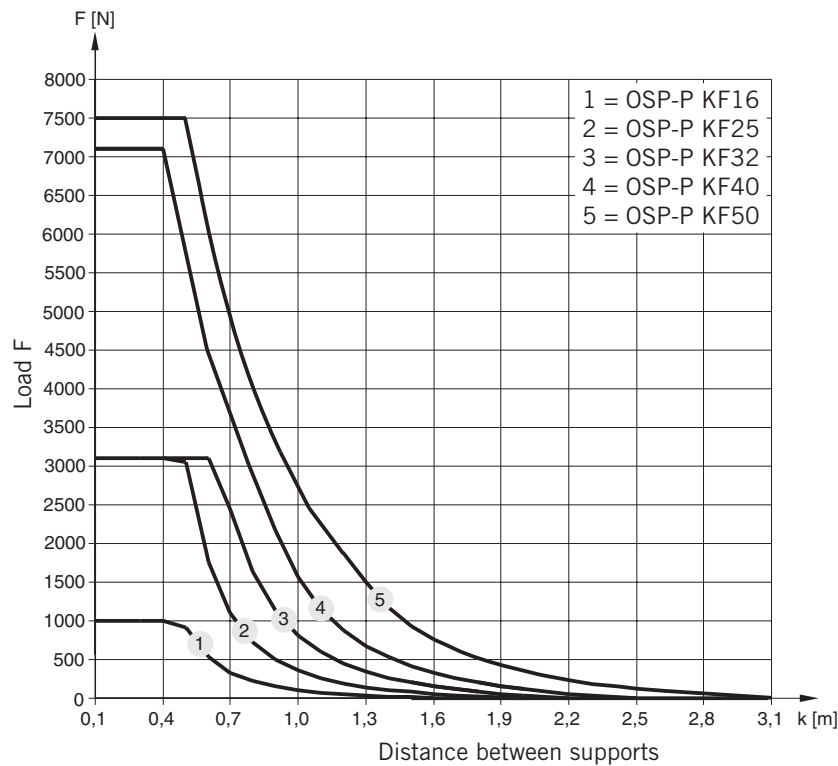
Dimension Table (mm) Series OSP-P KF16, KF25, KF32, KF40, KF50

| Series | A   | B    | J   | AA    | BB  | CF    | DD | EC | EE   | EG   | EW   | JJ  | GG | M    |
|--------|-----|------|-----|-------|-----|-------|----|----|------|------|------|-----|----|------|
| KF16   | 65  | 14   | 76  | 93    | 85  | 48    | 50 | 15 | 41   | 24.6 | 10   | —   | 25 | 30   |
| KF25   | 100 | 22   | 120 | 120.2 | 105 | 72.5  | 40 | 15 | 54.5 | 36.2 | 23.5 | —   | —  | 46   |
| KF32   | 125 | 25.5 | 160 | 146.2 | 131 | 93.8  | 40 | 15 | 60.5 | 42.2 | 23.5 | —   | 20 | 59.8 |
| KF40   | 150 | 28   | 150 | 188.5 | 167 | 103.3 | 40 | 20 | 69.5 | 51.6 | 26.5 | 120 | 20 | 60.8 |
| KF50   | 175 | 33   | 180 | 220.2 | 202 | 121   | 40 | 23 | 90.5 | 62.3 | 32.5 | 120 | 40 | 69   |

| Series | FA   | FB   | FC   | FD               | FT   | FS   | TA | TB   | TE  | TF   | TG | TH   | TJ  | TK |
|--------|------|------|------|------------------|------|------|----|------|-----|------|----|------|-----|----|
| KF16   | 17.7 | 29   | 16.5 | —                | 56   | 19   | —  | —    | —   | —    | —  | —    | —   | —  |
| KF25   | 26.5 | 39   | 24   | 14 <sup>G7</sup> | 75   | 24.7 | 5  | 12.1 | 2.3 | 6.9  | M5 | 11.5 | 4   | 32 |
| KF32   | 34   | 53.8 | 34   | 25 <sup>G7</sup> | 86.5 | 24.7 | 5  | 12.1 | 1.8 | 6.4  | M5 | 11.5 | 4   | 47 |
| KF40   | 42.5 | 56.8 | 41   | 25 <sup>G7</sup> | 104  | 26   | 6  | 12.8 | 1.8 | 8.4  | M6 | 17   | 5.5 | 55 |
| KF50   | 52   | 65   | 50   | 25 <sup>G7</sup> | 134  | 38   | 8  | 21.1 | 4.5 | 12.5 | M8 | 23   | 7.5 | 72 |

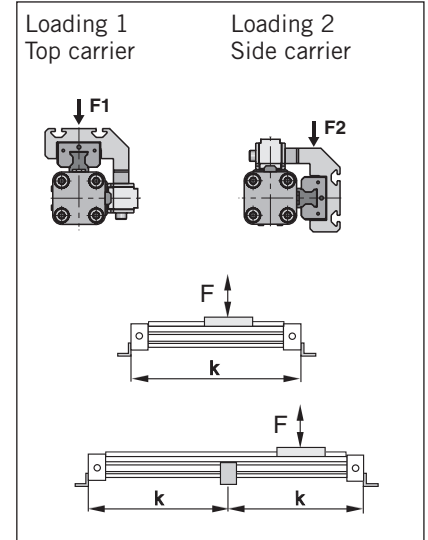
### Permissible Unsupported Length OSP-P KF16 to KF50

Loading 1 – Top carrier



### Mid-Section Support

(For versions, see 1.45.005-5E, 1.45.005E-8, 1.45.005E-9)  
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.

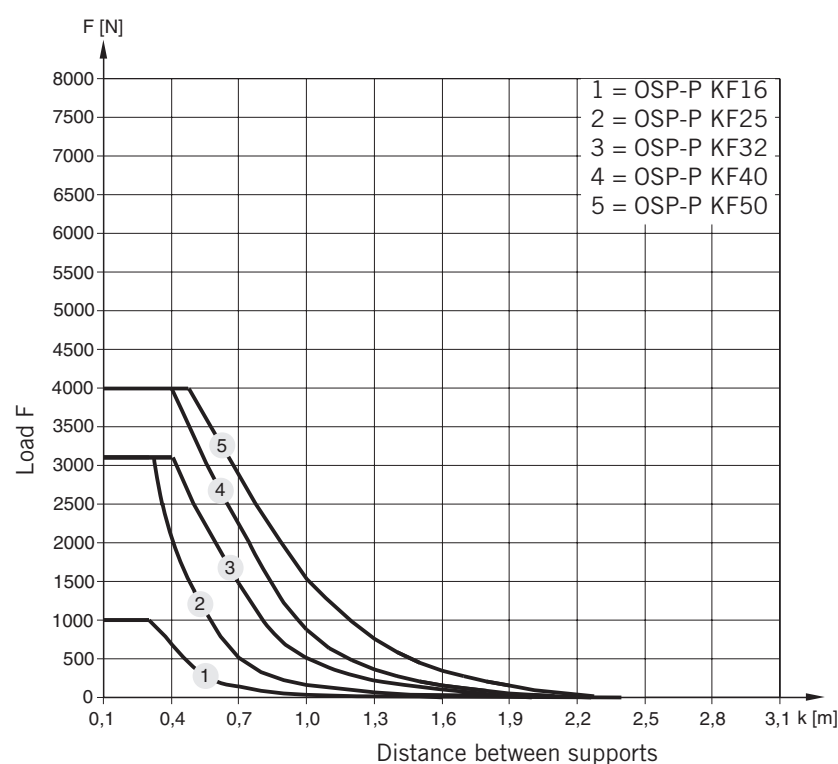


#### Note:

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

### Permissible Unsupported Length OSP-P KF16 to KF50

Loading 2 – Side carrier



## Variable Stop

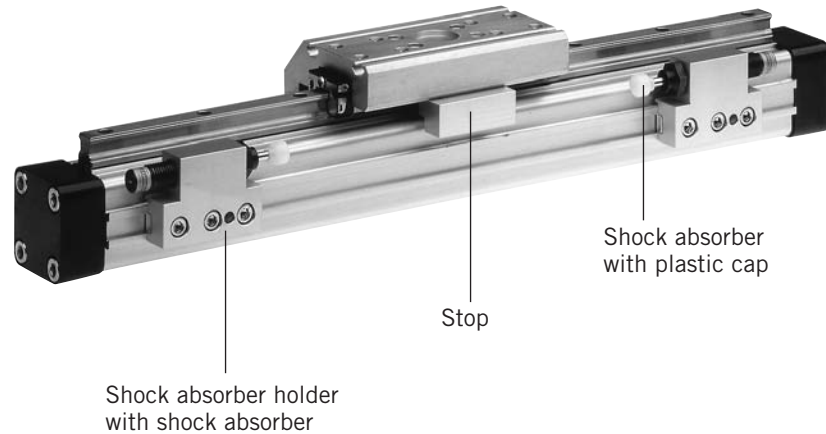
The variable stop Type VS provides simple stroke limitation. It can be retrofitted and positioned anywhere along the stroke length. For every cylinder diameter two types of shock absorber are available – see „Shock Absorber Selection“ below.

Mid-section supports and magnetic switches can still be fitted on the same side as the variable stop.

Depending on the application, two variable stops can be fitted if required.

### Variable Stop Type VS16 to VS50

Arrangement with two variable stops



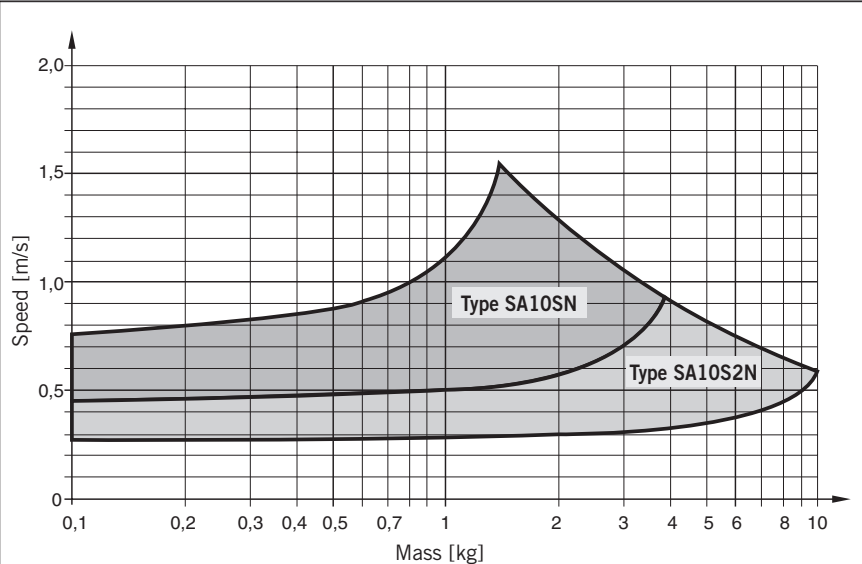
## Shock Absorber Selection

The shock absorber is selected in dependence on the mass and speed.

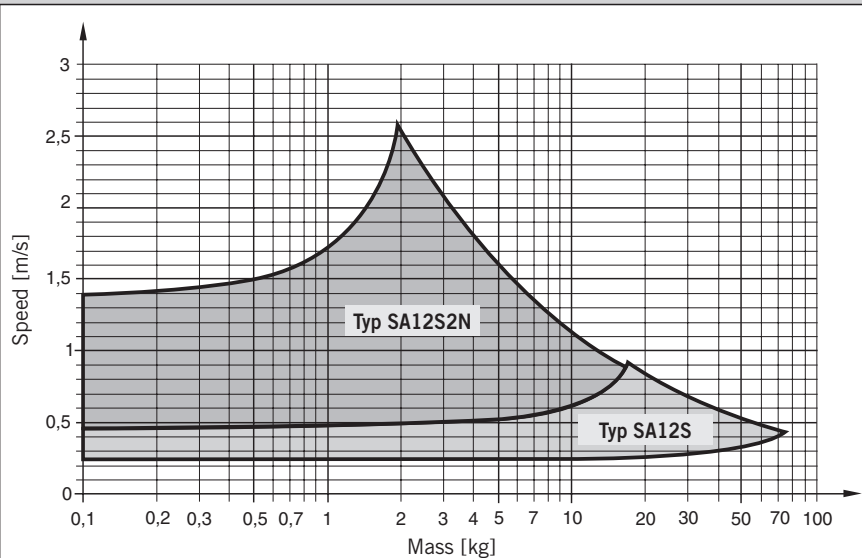
The mass of the carrier itself must be taken into account.

The values relate to an effective driving force of 78 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-KF16

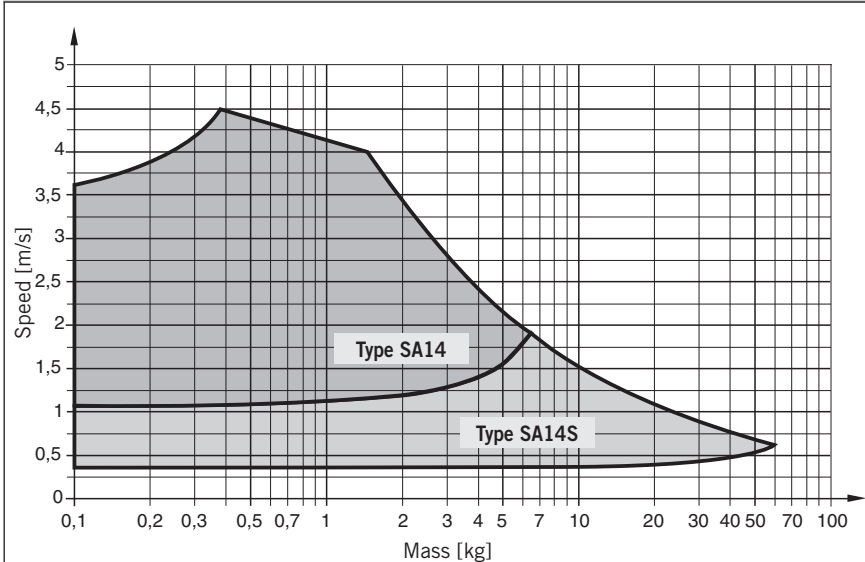


### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-KF25



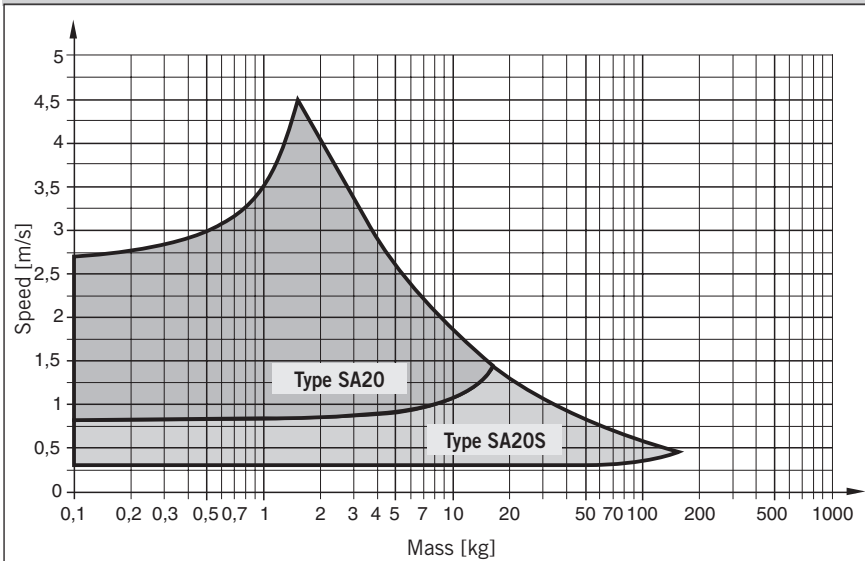
The values relate to an effective driving force of 250 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-KF32



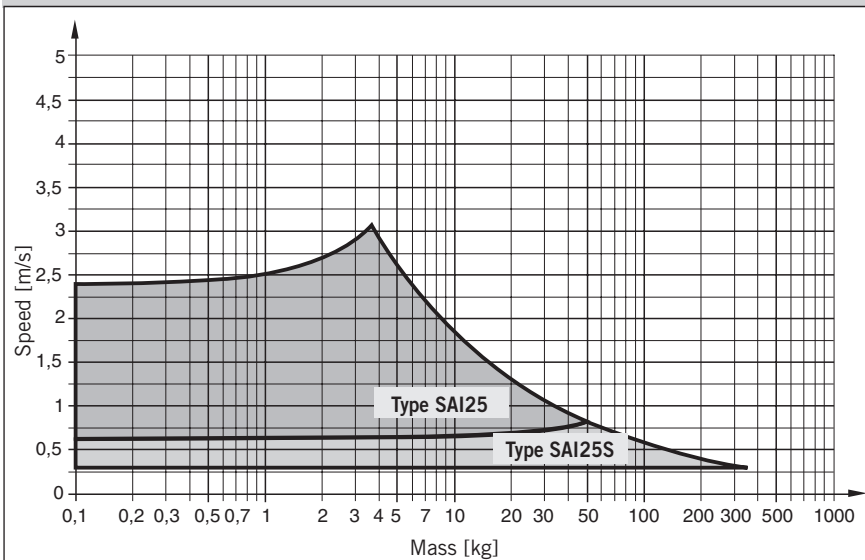
The values relate to an effective driving force of 420 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-KF40



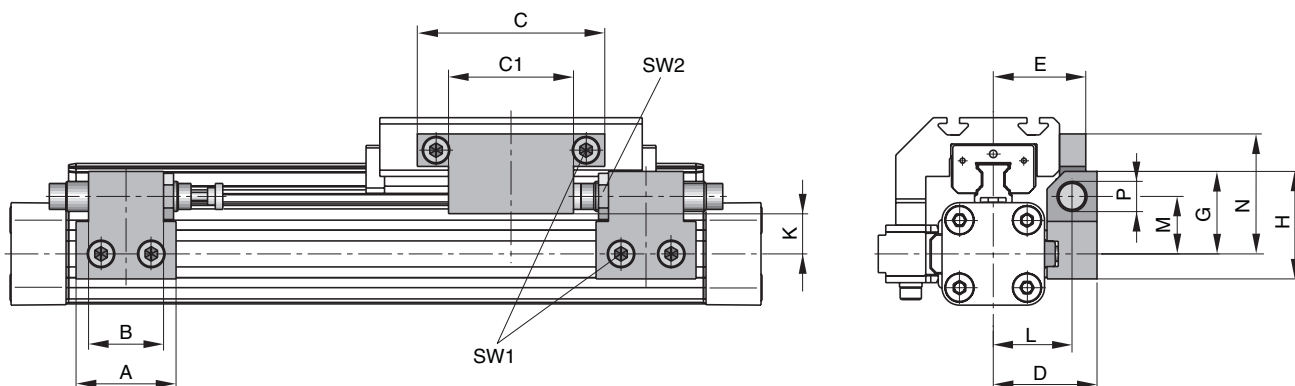
The values relate to an effective driving force of 640 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-KF50



The values relate to an effective driving force of 1000 N (6 bar)

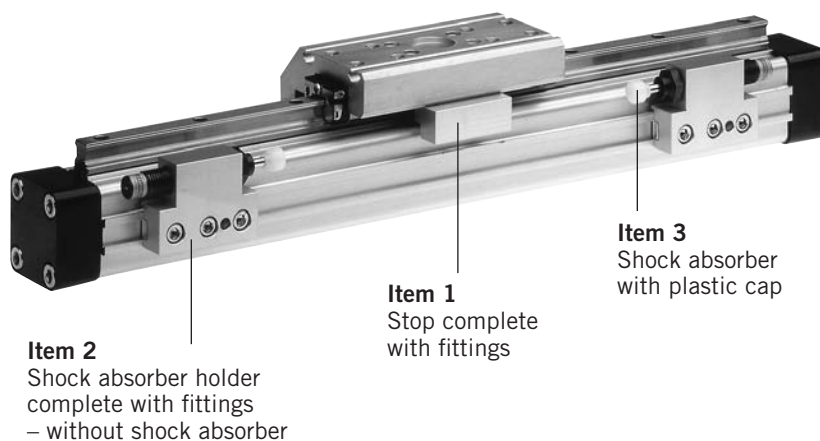
## Dimensions – Variable Stop Type VS16 to VS50



Dimension Table (mm) – Variable Stop Type VS16 to VS50

| Series   | Type | A  | B  | C  | C1 | D    | E    | G  | H  | K    | L    | M    | N    | P         | SW1 | SW2  |
|----------|------|----|----|----|----|------|------|----|----|------|------|------|------|-----------|-----|------|
| OSP-KF16 | VS16 | 30 | 14 | 50 | 25 | 33   | 29.7 | 28 | 38 | 16.2 | 25.5 | 20.5 | 40.5 | M10 x 1   | 4   | 12.5 |
| OSP-KF25 | VS25 | 40 | 30 | 75 | 50 | 41.5 | 37   | 33 | 43 | 18   | 31.5 | 23   | 48   | M12 x 1   | 5   | 16   |
| OSP-KF32 | VS32 | 60 | 40 | 50 | -  | 45.5 | 41.5 | 35 | 45 | 19   | 35.5 | 25   | 37   | M14 x 1.5 | 5   | 17   |
| OSP-KF40 | VS40 | 84 | 52 | 60 | -  | 64   | 59   | 48 | 63 | 25.5 | 50   | 34   | 43   | M20 x 1.5 | 5   | 24   |
| OSP-KF50 | VS50 | 84 | -  | 60 | -  | 75   | 69   | 55 | 70 | 26.9 | 57   | 38   | 58   | M25 x 1.5 | 5   | 30   |

## Order Information – Variable Stop Type VS16 to VS50

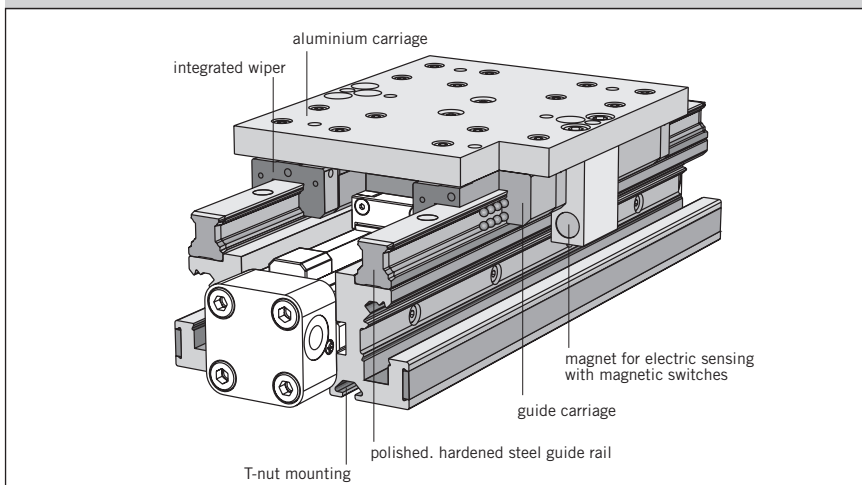


## Order Instructions – Variable Stop Type VS16 to VS50

| Item | Description                     | Size    |           |         |           |       |           |       |           |        |           |
|------|---------------------------------|---------|-----------|---------|-----------|-------|-----------|-------|-----------|--------|-----------|
|      |                                 | VS16    |           | VS25    |           | VS32  |           | VS40  |           | VS50   |           |
|      |                                 | Type    | Order No. | Type    | Order No. | Type  | Order No. | Type  | Order No. | Type   | Order No. |
| 1    | Stop, complete                  | –       | 21186     | –       | 21187     | –     | 21188     | –     | 21189     | –      | 21190     |
| 2    | Shock absorber holder, complete | –       | 21201     | –       | 21202     | –     | 21203     | –     | 21204     | –      | 21205     |
| 3 *  | Shock absorber, standard        | SA10SN  | 7718      | SA12S2N | 7723      | SA14  | 7708      | SA20  | 7710      | SAI25  | 7712      |
|      | Shock absorber, version S       | SA10S2N | 7721      | SA12S   | 7707      | SA14S | 7709      | SA20S | 7711      | SAI25S | 7713      |

\* Shock absorber with plastic cap

# Version with pneumatic linear drive series OSP-P

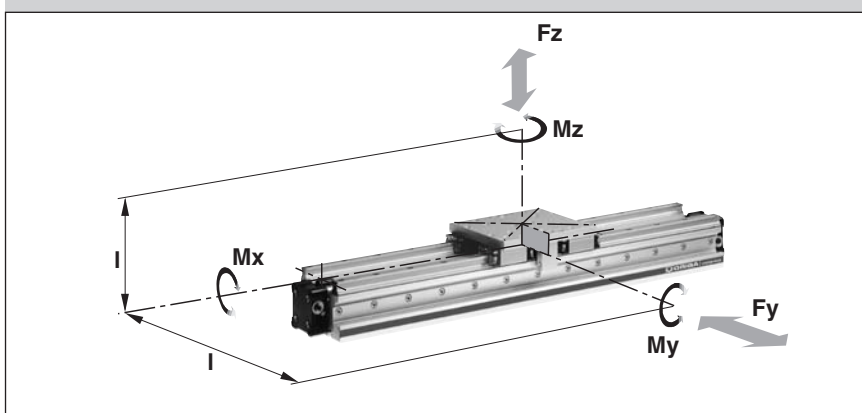


# Heavy Duty-Guide HD

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

**Series HD 25 to 50  
for Linear Drive Series OSP-P**

## Loads, Forces and Moments



## Technical Data

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

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$

The sum of the loads should not >1

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

## \* Please note:

The mass of the carriage does not have to be added to the total moving mass when using the cushioning diagram

## Features:

- Guide system:  
4-row recirculating ball bearing guide
- Polished and hardened steel guide rail
- For highest loads in all directions
- Highest precision
- Integrated wiper system
- Integrated grease nipples
- Any lengths of stroke up to 3700 mm (longer strokes on request)
- Anodized aluminium guide carriage - dimensions compatible with OSP guide GUIDELINE
- Maximum speed  $v = 5 \text{ m/s}$

## Options:

- With variable stop
- With intermediate stop module



| Series       | for linear drive | Max. moments [Nm] |      |      | Max. loads [N] |       | Mass of the linear drive with guide [kg] |                            | Mass * guide carriage [kg] | Order No. HDguide for OSP-P |
|--------------|------------------|-------------------|------|------|----------------|-------|------------------------------------------|----------------------------|----------------------------|-----------------------------|
|              |                  | Mx                | My   | Mz   | Fy             | Fz    | with 0 mm stroke                         | increase per 100 mm stroke |                            |                             |
| <b>HD 25</b> | OSP-P25          | 260               | 320  | 320  | 6000           | 6000  | 3.065                                    | 0.924                      | 1.289                      | <b>21246</b>                |
| <b>HD 32</b> | OSP-P32          | 285               | 475  | 475  | 6000           | 6000  | 4.308                                    | 1.112                      | 1.367                      | <b>21247</b>                |
| <b>HD 40</b> | OSP-P40          | 800               | 1100 | 1100 | 15000          | 15000 | 7.901                                    | 1.748                      | 2.712                      | <b>21248</b>                |
| <b>HD 50</b> | OSP-P50          | 1100              | 1400 | 1400 | 18000          | 18000 | 11.648                                   | 2.180                      | 3.551                      | <b>21249</b>                |

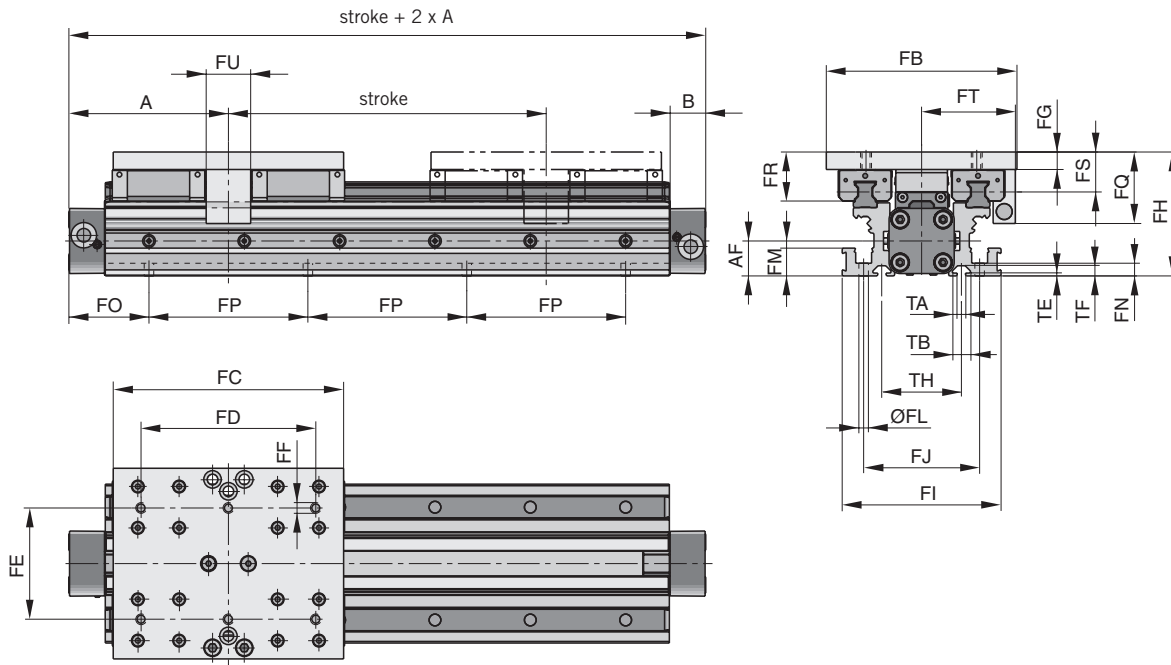
For linear drives see 1.10.002E

Data Sheet No. 1.40.008E-1

**ORIGA**

## Dimensions

### Series OSP-P



#### Note:

The HD heavy duty guide must be mounted on a flat surface for its entire length.

If T-grooves or T-bolts are used, the distance between them should not exceed 100 mm.

#### Variable Stop Type VS25 to VS50

The variable stop provides simple stroke limitation and can be supplied mounted on the right or left, as required.

For further information see following data sheets:

For dimensions and order instructions see 1.40.008E-4

For shock absorber selection see 1.40.006E-4, -5

#### Incremental displacement measuring system ORIGA-Sensoflex Series SFI-plus

can be supplied mounted on the right or left, as required.

For further information see data sheet 1.50.002E

#### Arrangement of magnetic switches:

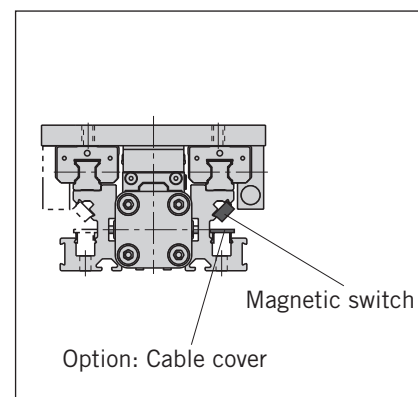
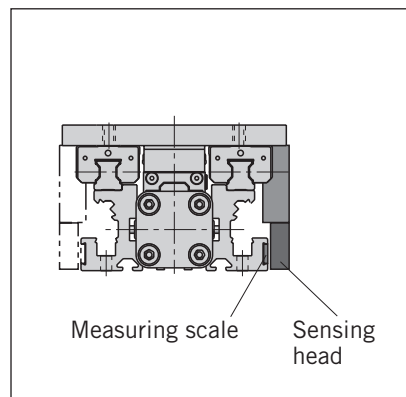
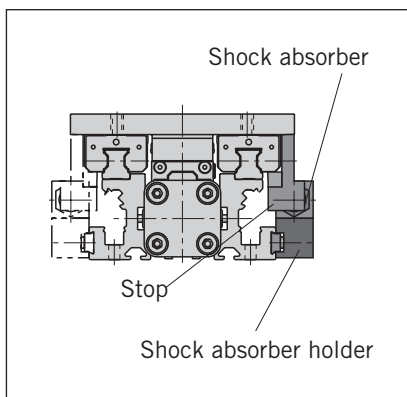
Magnetic switches can be fitted anywhere on either side.

For further information see following data sheets:

Magnetic Switches 1.45.100E, 1.45.104E and 1.45.105E

Cable Cover 1.45.102E-1

Linear Drives OSP-P 1.10.002E



| Dimension Table (mm) |     |      |    |     |     |     |     |    |    |     |     |     |     |
|----------------------|-----|------|----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|
| Series               | A   | B    | AF | FB  | FC  | FD  | FE  | FF | FG | FH  | FI  | FJ  | ØFL |
| HD25                 | 100 | 22   | 22 | 120 | 145 | 110 | 70  | M6 | 11 | 78  | 100 | 73  | 6   |
| HD32                 | 125 | 25.5 | 30 | 120 | 170 | 140 | 80  | M6 | 11 | 86  | 112 | 85  | 6   |
| HD40                 | 150 | 28   | 38 | 160 | 180 | 140 | 110 | M8 | 14 | 108 | 132 | 104 | 7.5 |
| HD50                 | 175 | 33   | 48 | 180 | 200 | 160 | 120 | M8 | 14 | 118 | 150 | 118 | 7.5 |

| Series | FM   | FN | FP  | FQ | FR | FS   | FT | FU | TA  | TB   | TE  | TF   | TH |
|--------|------|----|-----|----|----|------|----|----|-----|------|-----|------|----|
| HD25   | 17.5 | 8  | 100 | 45 | 31 | 25   | 59 | 28 | 5.2 | 11.5 | 1.8 | 6.4  | 50 |
| HD32   | 17.5 | 8  | 100 | 45 | 31 | 25   | 63 | 30 | 5.2 | 11.5 | 1.8 | 6.4  | 60 |
| HD40   | 22   | 10 | 100 | 58 | 40 | 31.5 | 76 | 30 | 8.2 | 20   | 4.5 | 12.3 | 66 |
| HD50   | 22   | 10 | 100 | 58 | 44 | 35.5 | 89 | 30 | 8.2 | 20   | 4.5 | 12.3 | 76 |

| FO    |      |      |      |      |
|-------|------|------|------|------|
| OSP-P |      |      |      |      |
| x     | HD25 | HD32 | HD40 | HD50 |
| 00    | 50.0 | 75.0 | 50.0 | 75.0 |
| 01    | 50.5 | 75.5 | 50.5 | 75.5 |
| 02    | 51.0 | 76.0 | 51.0 | 76.0 |
| 03    | 51.5 | 76.5 | 51.5 | 76.5 |
| 04    | 52.0 | 77.0 | 52.0 | 77.0 |
| 05    | 52.5 | 77.5 | 52.5 | 77.5 |
| 06    | 53.0 | 78.0 | 53.0 | 78.0 |
| 07    | 53.5 | 78.5 | 53.5 | 78.5 |
| 08    | 54.0 | 79.0 | 54.0 | 79.0 |
| 09    | 54.5 | 79.5 | 54.5 | 79.5 |
| 10    | 55.0 | 80.0 | 55.0 | 80.0 |
| 11    | 55.5 | 80.5 | 55.5 | 80.5 |
| 12    | 56.0 | 81.0 | 56.0 | 81.0 |
| 13    | 56.5 | 81.5 | 56.5 | 81.5 |
| 14    | 57.0 | 82.0 | 57.0 | 82.0 |
| 15    | 57.5 | 82.5 | 57.5 | 82.5 |
| 16    | 58.0 | 83.0 | 58.0 | 83.0 |
| 17    | 58.5 | 83.5 | 58.5 | 83.5 |
| 18    | 59.0 | 84.0 | 59.0 | 84.0 |
| 19    | 59.5 | 84.5 | 59.5 | 84.5 |
| 20    | 60.0 | 85.0 | 60.0 | 85.0 |
| 21    | 60.5 | 85.5 | 60.5 | 85.5 |
| 22    | 61.0 | 86.0 | 61.0 | 86.0 |
| 23    | 61.5 | 86.5 | 61.5 | 86.5 |
| 24    | 62.0 | 87.0 | 62.0 | 87.0 |
| 25    | 62.5 | 87.5 | 62.5 | 87.5 |
| 26    | 63.0 | 88.0 | 63.0 | 88.0 |
| 27    | 63.5 | 88.5 | 63.5 | 88.5 |
| 28    | 64.0 | 89.0 | 64.0 | 89.0 |
| 29    | 64.5 | 89.5 | 64.5 | 89.5 |
| 30    | 65.0 | 90.0 | 65.0 | 90.0 |
| 31    | 65.5 | 90.5 | 65.5 | 90.5 |
| 32    | 66.0 | 91.0 | 66.0 | 91.0 |
| 33    | 66.5 | 91.5 | 66.5 | 91.5 |
| 34    | 67.0 | 92.0 | 67.0 | 92.0 |
| 35    | 67.5 | 92.5 | 67.5 | 92.5 |
| 36    | 68.0 | 93.0 | 68.0 | 93.0 |
| 37    | 68.5 | 93.5 | 68.5 | 93.5 |
| 38    | 69.0 | 94.0 | 69.0 | 94.0 |
| 39    | 69.5 | 94.5 | 69.5 | 94.5 |
| 40    | 70.0 | 95.0 | 70.0 | 95.0 |
| 41    | 70.5 | 95.5 | 70.5 | 95.5 |
| 42    | 71.0 | 96.0 | 71.0 | 96.0 |
| 43    | 71.5 | 96.5 | 71.5 | 96.5 |
| 44    | 72.0 | 97.0 | 72.0 | 97.0 |
| 45    | 72.5 | 97.5 | 72.5 | 97.5 |
| 46    | 73.0 | 98.0 | 73.0 | 98.0 |
| 47    | 73.5 | 98.5 | 73.5 | 98.5 |
| 48    | 74.0 | 99.0 | 74.0 | 99.0 |
| 49    | 74.5 | 99.5 | 74.5 | 99.5 |

| FO    |      |      |      |      |
|-------|------|------|------|------|
| OSP-P |      |      |      |      |
| x     | HD25 | HD32 | HD40 | HD50 |
| 50    | 75.0 | 50.0 | 75.0 | 50.0 |
| 51    | 75.5 | 50.5 | 75.5 | 50.5 |
| 52    | 76.0 | 51.0 | 76.0 | 51.0 |
| 53    | 76.5 | 51.5 | 76.5 | 51.5 |
| 54    | 77.0 | 52.0 | 77.0 | 52.0 |
| 55    | 77.5 | 52.5 | 77.5 | 52.5 |
| 56    | 78.0 | 53.0 | 78.0 | 53.0 |
| 57    | 78.5 | 53.5 | 78.5 | 53.5 |
| 58    | 79.0 | 54.0 | 79.0 | 54.0 |
| 59    | 79.5 | 54.5 | 79.5 | 54.5 |
| 60    | 80.0 | 55.0 | 80.0 | 55.0 |
| 61    | 80.5 | 55.5 | 80.5 | 55.5 |
| 62    | 81.0 | 56.0 | 81.0 | 56.0 |
| 63    | 81.5 | 56.5 | 81.5 | 56.5 |
| 64    | 82.0 | 57.0 | 82.0 | 57.0 |
| 65    | 82.5 | 57.5 | 82.5 | 57.5 |
| 66    | 83.0 | 58.0 | 83.0 | 58.0 |
| 67    | 83.5 | 58.5 | 83.5 | 58.5 |
| 68    | 84.0 | 59.0 | 84.0 | 59.0 |
| 69    | 84.5 | 59.5 | 84.5 | 59.5 |
| 70    | 85.0 | 60.0 | 85.0 | 60.0 |
| 71    | 85.5 | 60.5 | 85.5 | 60.5 |
| 72    | 86.0 | 61.0 | 86.0 | 61.0 |
| 73    | 86.5 | 61.5 | 86.5 | 61.5 |
| 74    | 87.0 | 62.0 | 87.0 | 62.0 |
| 75    | 87.5 | 62.5 | 87.5 | 62.5 |
| 76    | 88.0 | 63.0 | 88.0 | 63.0 |
| 77    | 88.5 | 63.5 | 88.5 | 63.5 |
| 78    | 89.0 | 64.0 | 89.0 | 64.0 |
| 79    | 89.5 | 64.5 | 89.5 | 64.5 |
| 80    | 90.0 | 65.0 | 90.0 | 65.0 |
| 81    | 90.5 | 65.5 | 90.5 | 65.5 |
| 82    | 91.0 | 66.0 | 91.0 | 66.0 |
| 83    | 91.5 | 66.5 | 91.5 | 66.5 |
| 84    | 92.0 | 67.0 | 92.0 | 67.0 |
| 85    | 92.5 | 67.5 | 92.5 | 67.5 |
| 86    | 93.0 | 68.0 | 93.0 | 68.0 |
| 87    | 93.5 | 68.5 | 93.5 | 68.5 |
| 88    | 94.0 | 69.0 | 94.0 | 69.0 |
| 89    | 94.5 | 69.5 | 94.5 | 69.5 |
| 90    | 95.0 | 70.0 | 95.0 | 70.0 |
| 91    | 95.5 | 70.5 | 95.5 | 70.5 |
| 92    | 96.0 | 71.0 | 96.0 | 71.0 |
| 93    | 96.5 | 71.5 | 96.5 | 71.5 |
| 94    | 97.0 | 72.0 | 97.0 | 72.0 |
| 95    | 97.5 | 72.5 | 97.5 | 72.5 |
| 96    | 98.0 | 73.0 | 98.0 | 73.0 |
| 97    | 98.5 | 73.5 | 98.5 | 73.5 |
| 98    | 99.0 | 74.0 | 99.0 | 74.0 |
| 99    | 99.5 | 74.5 | 99.5 | 74.5 |

**Note:**

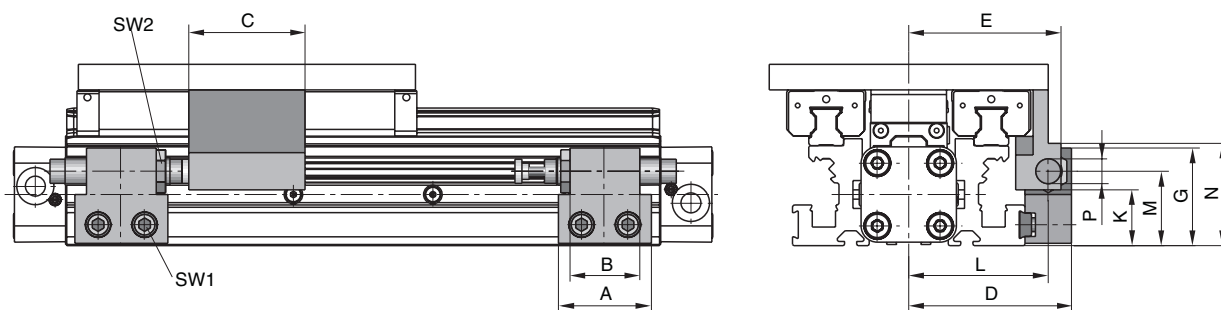
the dimension FO is derived from the last two digits of the stroke:

**Example:**

Stroke 15**25** mm  


For a cylinder OSP-P25 the adjacent table indicates that for x = 25 mm:  
FO = 62.5 mm

## Dimensions – Variable Stop Type VS25 to VS50



Dimension Table (mm) – Variable Stop Type VS25 to VS50

| Series   | Type | A  | B  | C  | D   | E    | G  | K  | L  | M  | N  | P         | SW1 | SW2 |
|----------|------|----|----|----|-----|------|----|----|----|----|----|-----------|-----|-----|
| OSP-HD25 | VS25 | 40 | 30 | 50 | 70  | 65.5 | 42 | 26 | 60 | 32 | 42 | M12 x 1   | 5   | 16  |
| OSP-HD32 | VS32 | 60 | 40 | 54 | 73  | 71   | 44 | 28 | 63 | 34 | 53 | M14 x 1.5 | 5   | 17  |
| OSP-HD40 | VS40 | 84 | 52 | 55 | 96  | 92   | 59 | 35 | 82 | 45 | 61 | M20 x 1.5 | 5   | 24  |
| OSP-HD50 | VS50 | 84 | -  | 60 | 107 | 105  | 66 | 37 | 89 | 49 | 66 | M25 x 1.5 | 5   | 30  |

## Order Information – Variable Stop Type VS25 to VS50



**Item 2**  
Shock absorber holder  
complete with fittings  
– without shock absorber

**Item 1**  
Stop complete  
with fittings

**Item 3**  
Shock absorber  
with plastic cap

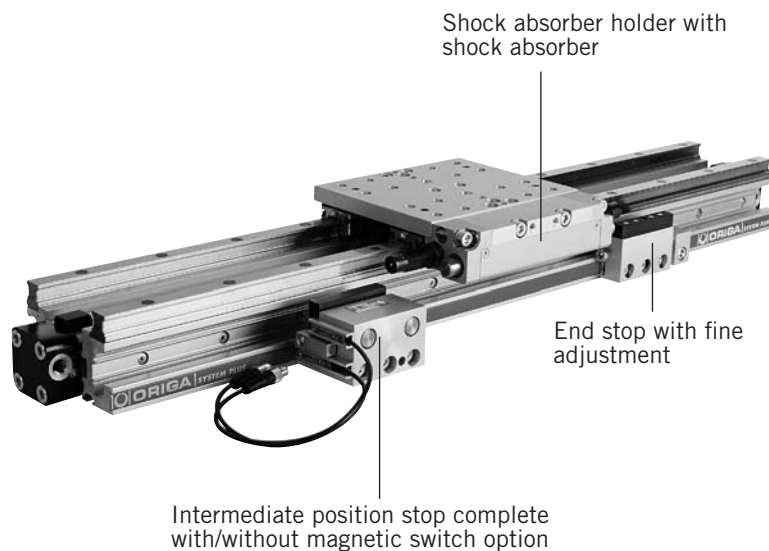
## Shock Absorber Selection

For shock absorber selection in  
dependence on mass and speed  
see data sheet 1.40.006E-4. -5

## Order Instructions – Variable Stop Type VS25 to VS50

| Item                                                               | Description                     | Size VS25 |           | VS32  |           | VS40  |           | VS50   |           |
|--------------------------------------------------------------------|---------------------------------|-----------|-----------|-------|-----------|-------|-----------|--------|-----------|
|                                                                    |                                 | Type      | Order No. | Type  | Order No. | Type  | Order No. | Type   | Order No. |
| 1                                                                  | Stop, complete                  | –         | 21257     | –     | 21258     | –     | 21259     | –      | 21260     |
| 2                                                                  | Shock absorber holder, complete | –         | 21202     | –     | 21203     | –     | 21204     | –      | 21205     |
| 3 *                                                                | Shock absorber, standard        | SA12S2N   | 7723      | SA14  | 7708      | SA20  | 7710      | SAI25  | 7712      |
|                                                                    | Shock absorber, version S       | SA12S     | 7707      | SA14S | 7709      | SA20S | 7711      | SAI25S | 7713      |
| * Shock absorber with plastic cap (see data sheet 1.40.006E-4. -5) |                                 |           |           |       |           |       |           |        |           |

## Intermediate stop module Type ZSM...HD



## Intermediate stop module

The intermediate stop module ZSM allows the guide carriage to stop at any desired intermediate positions with high accuracy. It can be retrofitted. Depending on the application, i.e. the number of intermediate stops, one or more intermediate position stops can be used. The intermediate position stops can be retracted and extended without the need for the guide carriage to be moved back out of position. Therefore the guide carriage can be made to stop at the defined intermediate positions in any order.

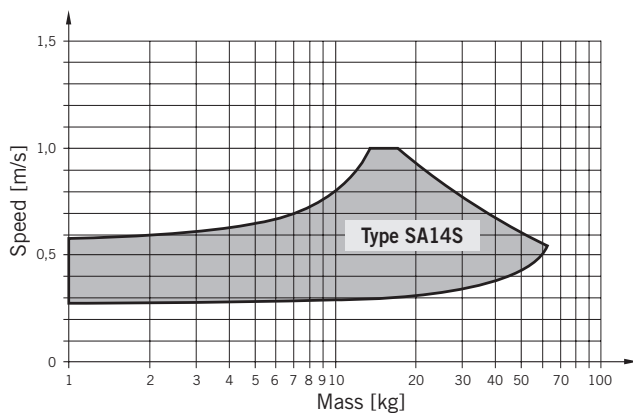
### ORIGA intermediate stop module ZSM:

- Allows stopping at any intermediate positions
- Intermediate position stops can be located steplessly anywhere along the whole stroke length
- Movement to the next position without reverse stroke
- Compact unit
- Cost-effective positioning module without electrical or electronic components
- Option: end stop with fine adjustment

### Technical data

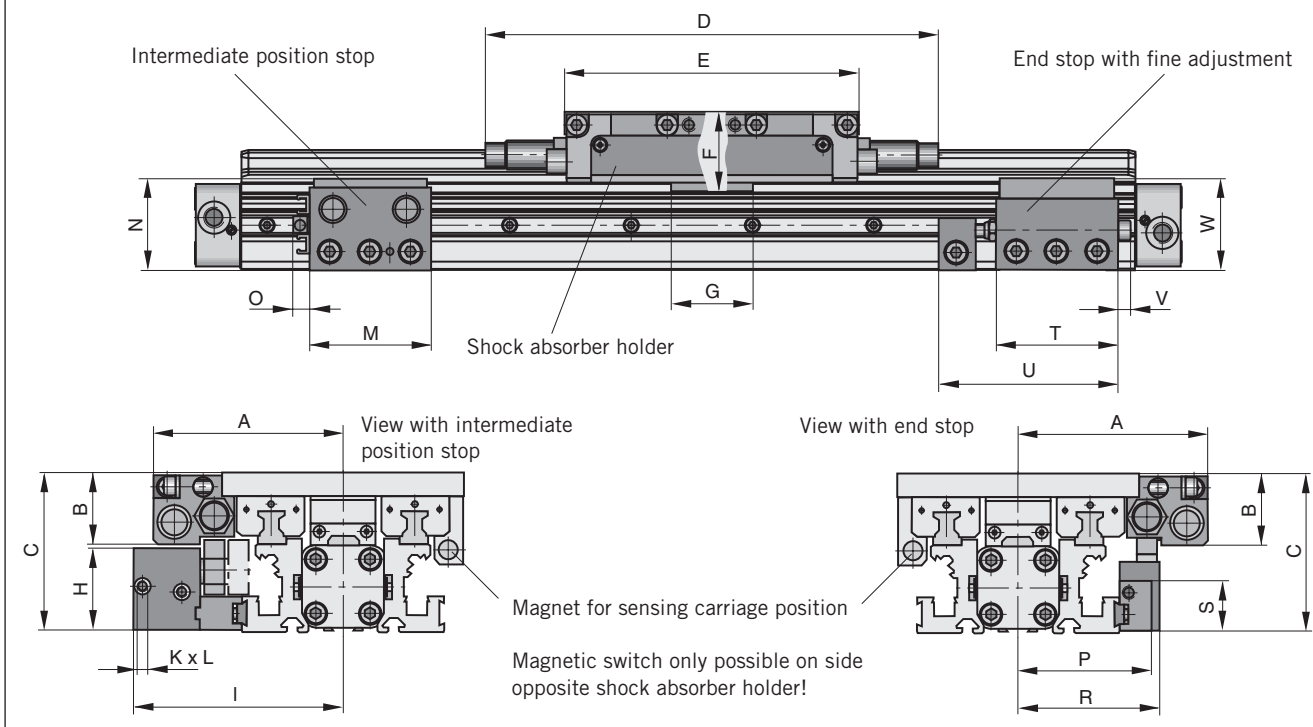
|                            |                |
|----------------------------|----------------|
| Temperature range          | -10°C to +70°C |
| Operating pressure range   | 4 – 8 bar      |
| Intermediate position grid | 85 mm          |

## Shock Absorber Type SA14S



The values relate to an effective driving force of 250 N (6 bar)

## Dimensions – intermediate stop module Type ZSM..HD

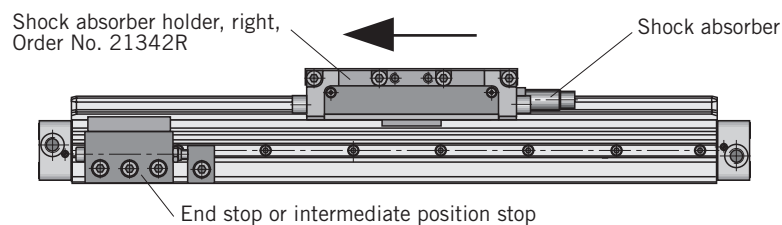


Dimension table (mm) – intermediate stop module Type ZSM..HD

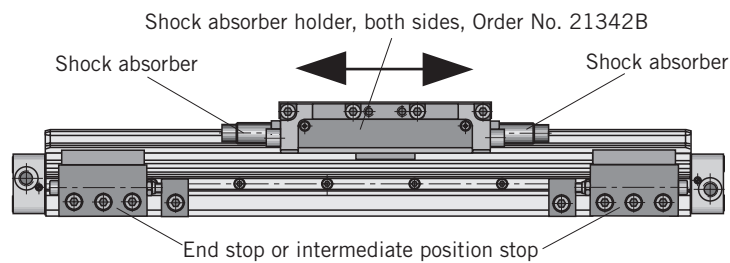
| Series | A  | B  | C  | D   | E   | F  | G  | H  | I   | K  | L | M  | N  | O | P  | R  | S  | T  | U  | V | W  |
|--------|----|----|----|-----|-----|----|----|----|-----|----|---|----|----|---|----|----|----|----|----|---|----|
| ZSM25  | 94 | 35 | 78 | 224 | 145 | 39 | 40 | 41 | 104 | M5 | 5 | 60 | 45 | 8 | 66 | 70 | 26 | 60 | 93 | 6 | 45 |

## Shock absorber arrangement in dependence on direction of movement

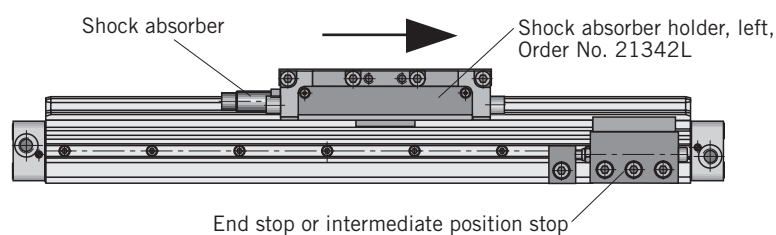
### From right to left



### In both directions



### From left to right



## Order instructions – intermediate stop module Type ZSM..HD

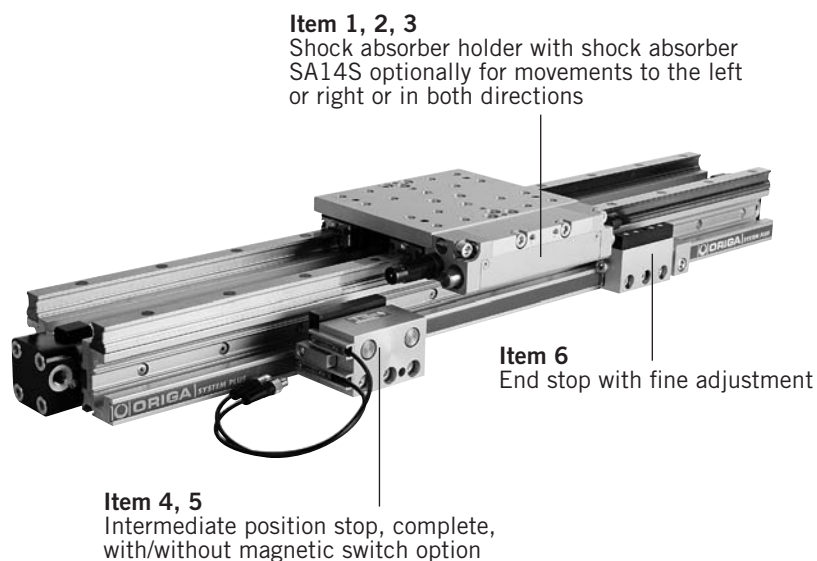


Illustration shows version with shock absorber holder for movement in both directions and magnetic switch option with T-slot switches (for magnetic switches see Accessories 1.45.104E)

## Order instructions – intermediate stop module Type ZSM..HD

| Item | Description                                                         | For intermediate stop module | Order-No. |
|------|---------------------------------------------------------------------|------------------------------|-----------|
| 1*   | Shock absorber holder with shock absorber SA14S, both sides         | ZSM25HD                      | 21342B    |
| 2*   | Shock absorber holder with shock absorber SA14S, left               | ZSM25HD                      | 21342L    |
| 3*   | Shock absorber holder with shock absorber SA14S, right              | ZSM25HD                      | 21342R    |
| 4    | Intermediate position stop complete, without magnetic switch option | ZSM25HD                      | 21343     |
| 5    | Intermediate position stop complete, with magnetic switch option    | ZSM25HD                      | 21344     |
| 6    | End stop with fine adjustment                                       | ZSM25HD                      | 21346     |

\* The shock absorbers are installed in the shock absorber holder and adjusted in our workshop.

### Note:

For movement onwards from the intermediate position, the intermediate position stop must advance.

The intermediate position stop can only advance if both cylinder chambers of the OSP-P cylinder are pressurized.



# Active and Passive Brakes Series OSP-P



## Contents

| Description                                                     | Data Sheet No. | Page  |
|-----------------------------------------------------------------|----------------|-------|
| Overview                                                        | 1.42.001E      | 69-70 |
| Standard cylinder with Active brake                             | 1.42.002E      | 71-74 |
| Plain bearing SLIDELINE with Active brake                       | 1.40.002E      | 41-42 |
| Aluminium roller guide PROLINE with Active brake                | 1.40.005E      | 47-48 |
| Plain bearing SLIDELINE<br>with Passive brake Multibrake        | 1.42.003E      | 75-78 |
| Aluminium roller guide PROLINE<br>with Passive brake Multibrake | 1.42.004E      | 79-82 |

## Active Brakes and Passive Brakes

**Active Brake**  
for pneumatic linear drive  
Series OSP-P  
Piston diameters 25 - 80 mm.

See data sheet no. 1.42.002E



### Versions:

- ACTIVE Brake
- Plain bearing guide with integrated ACTIVE Brake
- Aluminium roller guide with integrated ACTIVE Brake
- Plain bearing guide with PASSIVE Brake
- Aluminium roller guide with PASSIVE Brake

**Slideline with Active Brake**  
Plain bearing guide SLIDELINE - SL  
with integrated ACTIVE Brake  
Piston diameters 25 - 50 mm.

See data sheet no. 1.40.002E



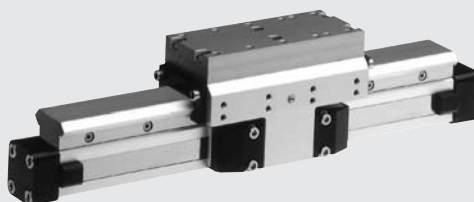
**Proline with Active Brake**  
Aluminium roller guide  
PROLINE - PL with  
integrated ACTIVE Brake  
Piston diameters 25 - 50 mm.

See data sheet no. 1.40.005E



**Multibrake with Slideline**  
MULTI BRAKE – PASSIVE Brake  
with plainbearing guide  
SLIDELINE - SL  
Piston diameter 25 - 80 mm.

See data sheet no. 1.42.003E

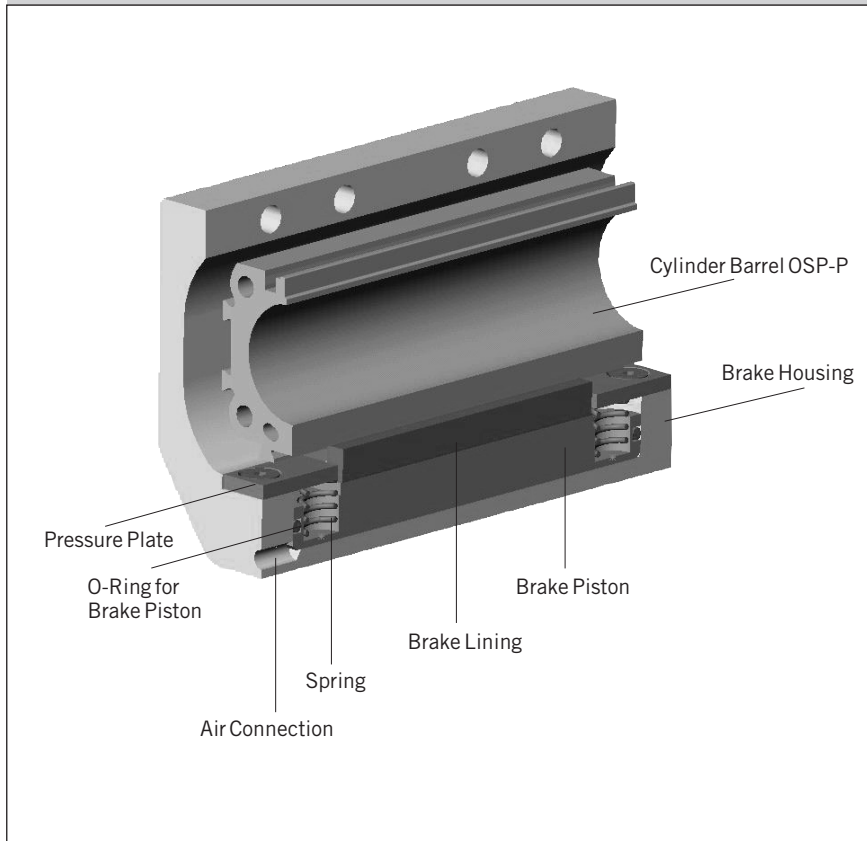


**Multibrake with Proline**  
MULTI BRAKE – PASSIVE Brake with  
aluminium roller guide  
PROLINE - PL  
Piston diameters 25 - 50 mm.

See data sheet no. 1.42.004E



## Function



## Forces and Weights

| Series       | For linear drive | Max. braking force [N] <sup>(1)</sup> | Brake pad way [mm] | Linear drive with brake 0 mm stroke | Mass [kg] increase per 100mm stroke | brake* | Order No. Active brake |
|--------------|------------------|---------------------------------------|--------------------|-------------------------------------|-------------------------------------|--------|------------------------|
| <b>AB 25</b> | OSP-P25          | 350                                   | 2.5                | 1.0                                 | 0.197                               | 0.35   | <b>20806</b>           |
| <b>AB 32</b> | OSP-P32          | 590                                   | 2.5                | 2.02                                | 0.354                               | 0.58   | <b>20807</b>           |
| <b>AB 40</b> | OSP-P40          | 900                                   | 2.5                | 2.83                                | 0.415                               | 0.88   | <b>20808</b>           |
| <b>AB 50</b> | OSP-P50          | 1400                                  | 2.5                | 5.03                                | 0.566                               | 1.50   | <b>20809</b>           |
| <b>AB 63</b> | OSP-P63          | 2170                                  | 3.0                | 9.45                                | 0.925                               | 3.04   | <b>20810</b>           |
| <b>AB 80</b> | OSP-P80          | 4000                                  | 3.0                | 18.28                               | 1.262                               | 5.82   | <b>20811</b>           |

<sup>(1)</sup> – at 6 bar both chambers pressurised 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.

## Active Brake

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

**Series AB 25 to 80  
for linear drive**  
• Series OSP-P

**Features:**

- Actuated by pressurisation
- 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 (1.10.002E)

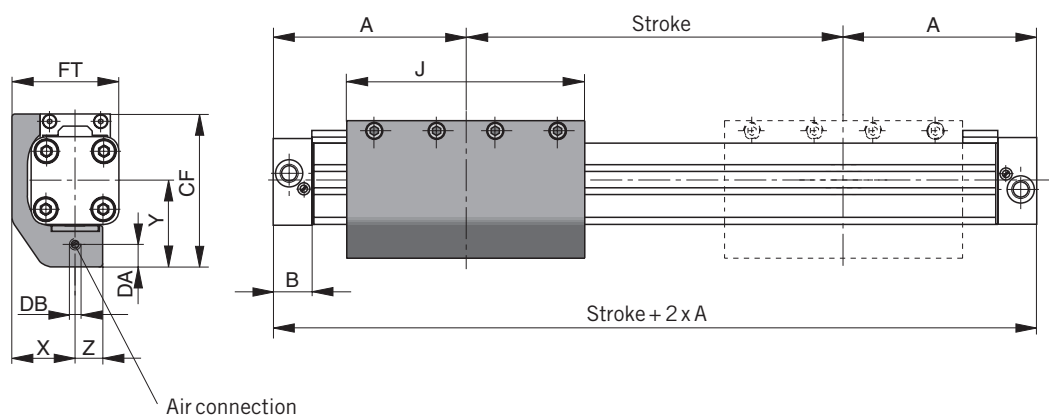
**Note:**

For combinations Active Brake AB + SFI-plus + Magnetic Switch contact our technical department please.

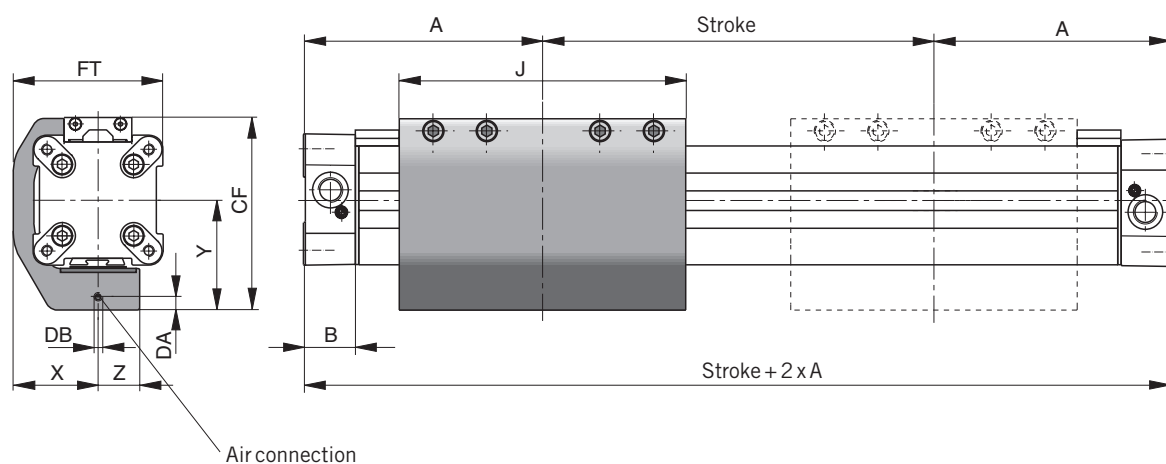


For additional information on loads, forces and moment, please refer to data sheet no. 1.10.002E

### Series OSP-P25 and P32 with Active Brake AB



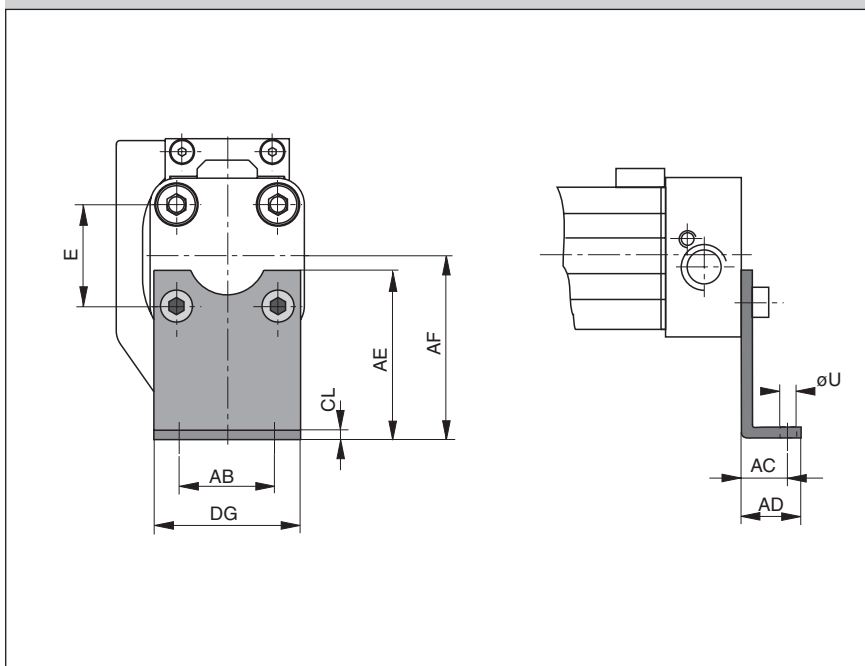
### Series OSP-P40, P50, P63, P80 with Active Brake AB



Dimension Table (mm)

| Series | A   | B    | J     | X    | Y    | Z  | CF    | DA  | DB   | FT   |
|--------|-----|------|-------|------|------|----|-------|-----|------|------|
| AB 25  | 100 | 22   | 117   | 29.5 | 43   | 13 | 74    | 4   | M5   | 50   |
| AB 32  | 125 | 25.5 | 151.4 | 36   | 50   | 15 | 88    | 4   | M5   | 62   |
| AB 40  | 150 | 28   | 151.4 | 45   | 58   | 22 | 102   | 7   | M5   | 79.5 |
| AB 50  | 175 | 33   | 200   | 54   | 69.5 | 23 | 118.5 | 7.5 | M5   | 97.5 |
| AB 63  | 215 | 38   | 256   | 67   | 88   | 28 | 151   | 9   | G1/8 | 120  |
| AB 80  | 260 | 47   | 348   | 83   | 105  | 32 | 185   | 10  | G1/8 | 149  |

### Series OSP – P25 and P32 with Active Brake AB: Type A3



### End Cap Mountings

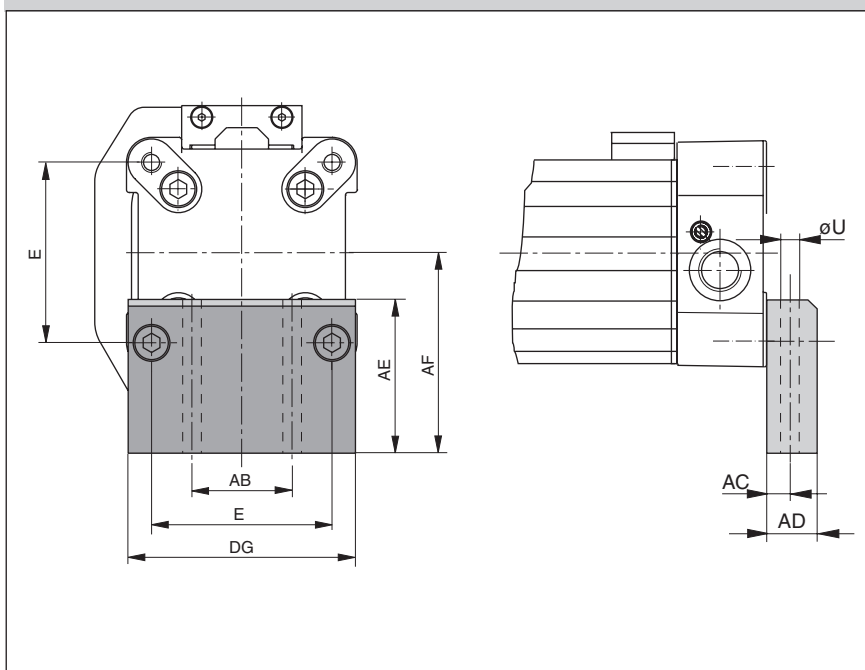
On the end-face of each cylinder end cap there are four threaded holes for mounting the cylinder. The hole layout is square, so that the mounting can be fitted to the bottom, top or either side.

Material: Series OSP-P25, P32:  
Galvanised steel

The mountings are supplied in pairs.



### Series OSP – P40, P50, P63, P80 with Active Brake AB: Type C3



Material: Series OSP-P40, P50, P63, P80:  
Anodised aluminium

The mountings are supplied in pairs.

Stainless steel version on request.



Dimension Table (mm)

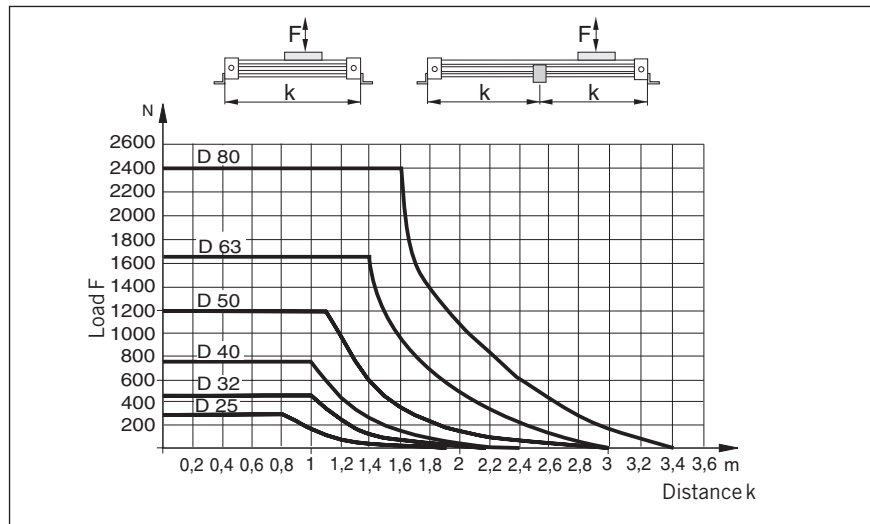
| Series | E  | øU  | AB | AC   | AD | AE | AF  | CL  | DG  | Order No.<br>Type A3 | Type C3 |
|--------|----|-----|----|------|----|----|-----|-----|-----|----------------------|---------|
| AB 25  | 27 | 5.8 | 27 | 16   | 22 | 45 | 49  | 2.5 | 39  | 2060                 | –       |
| AB 32  | 36 | 6.6 | 36 | 18   | 26 | 42 | 52  | 3   | 50  | 3060                 | –       |
| AB 40  | 54 | 9   | 30 | 12.5 | 24 | 46 | 60  | –   | 68  | –                    | 20339   |
| AB 50  | 70 | 9   | 40 | 12.5 | 24 | 54 | 72  | –   | 86  | –                    | 20350   |
| AB 63  | 78 | 11  | 48 | 15   | 30 | 76 | 93  | –   | 104 | –                    | 20821   |
| AB 80  | 96 | 14  | 60 | 17.5 | 35 | 88 | 110 | –   | 130 | –                    | 20822   |

## 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 0.5 mm max. between supports is permissible.

The mid section supports are attached to the dovetail rails, and can take axial loads.



## Mid Section Supports

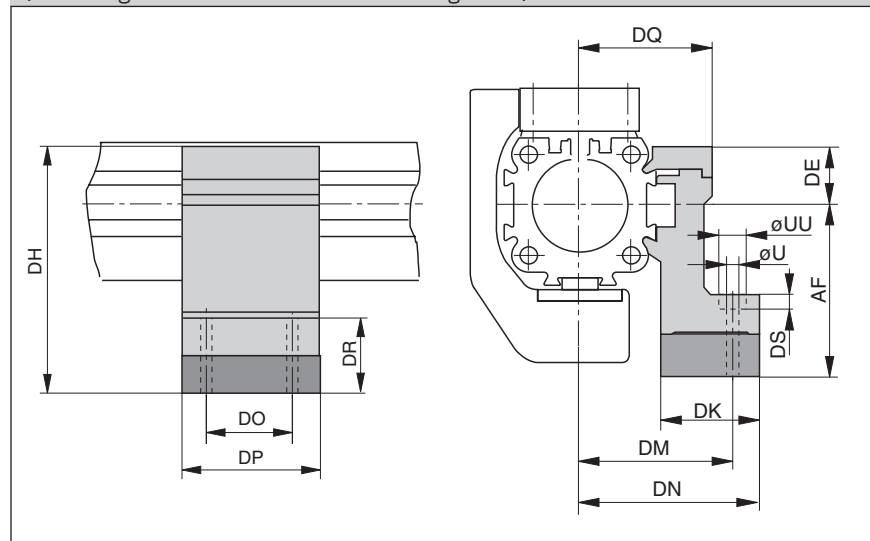
Note to Type E3:

Mid section supports can only be mounted opposite of the brake housing.

Stainless steel version available on request.



**Series OSP-P25 to P80 with Active Brake AB: Type E3**  
(Mounting from above / below with through-bolt)

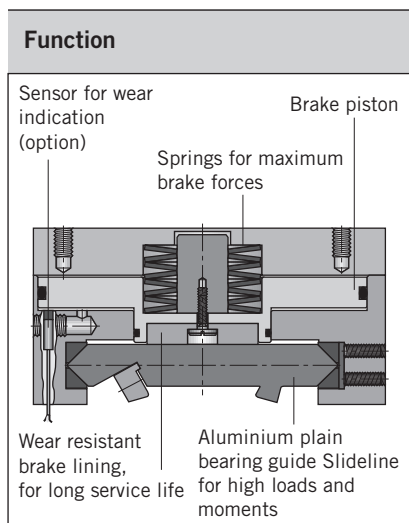
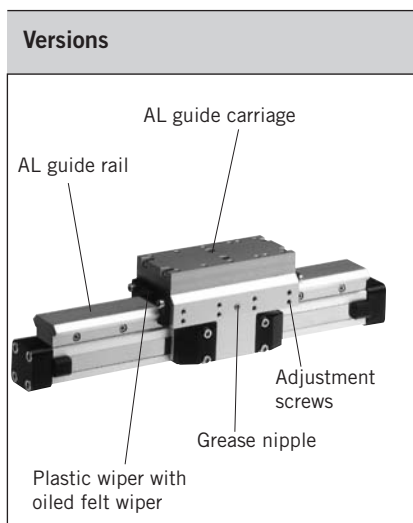


**Dimension Table (mm)**

| Series | U   | UU | AF  | DE   | DH    | DK | DM | DN   | DO | DP | DQ   | DR | DS  | Order No. Type E3 |
|--------|-----|----|-----|------|-------|----|----|------|----|----|------|----|-----|-------------------|
| AB 25  | 5.5 | 10 | 49  | 16   | 65    | 26 | 40 | 47.5 | 36 | 50 | 34.5 | 35 | 5.7 | 20353             |
| AB 32  | 5.5 | 10 | 52  | 16   | 68    | 27 | 46 | 54.5 | 36 | 50 | 40.5 | 32 | 5.7 | 20356             |
| AB 40  | 7   | –  | 60  | 23   | 83    | 34 | 53 | 60   | 45 | 60 | 45   | 32 | –   | 20359             |
| AB 50  | 7   | –  | 72  | 23   | 95    | 34 | 59 | 67   | 45 | 60 | 52   | 31 | –   | 20362             |
| AB 63  | 9   | –  | 93  | 34   | 127   | 44 | 73 | 83   | 45 | 65 | 63   | 48 | –   | 20453             |
| AB 80  | 11  | –  | 110 | 39.5 | 149.5 | 63 | 97 | 112  | 55 | 80 | 81   | 53 | –   | 20819             |

### Accessories for linear drives with Active Brakes – please order separately

| Description                                                                | For details information, see data sheet no. |
|----------------------------------------------------------------------------|---------------------------------------------|
| Clevis mounting                                                            | 1.45.002E                                   |
| Adaptor profile                                                            | 1.45.007E                                   |
| T-groove profile                                                           | 1.45.008E                                   |
| Connection profile                                                         | 1.45.009E                                   |
| Magnetic switch (can <b>only</b> be mounted opposite of the brake housing) | 1.45.100E, 1.45.104E                        |
| Incremental displacement measuring system SFI-plus                         | 1.50.002E                                   |



#### 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 pressurisation.

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.

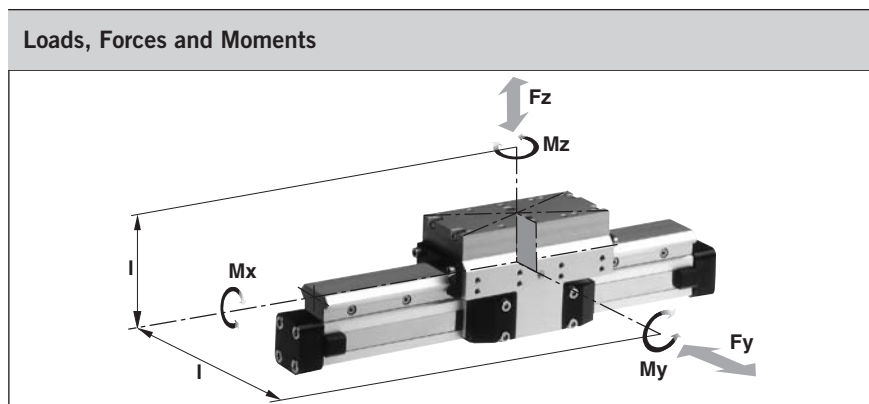
# Multi-Brake Passive Brake with plain bearing guide Slideline SL

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

**Series MB-SL 25 to 80  
for Linear-drive**  
• **Series OSP-P**

#### Features:

- Brake operated by spring actuation
- Brake release by pressurisation
- Optional sensor to indicate brake lining wear
- Anodised 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
- Replenishable guide lubrication by integrated grease nipples
- Blocking function in case of pressure loss
- Intermediate stops possible



#### 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  $v < 0.2$  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 (1.10.002E)

<sup>1)</sup> 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.

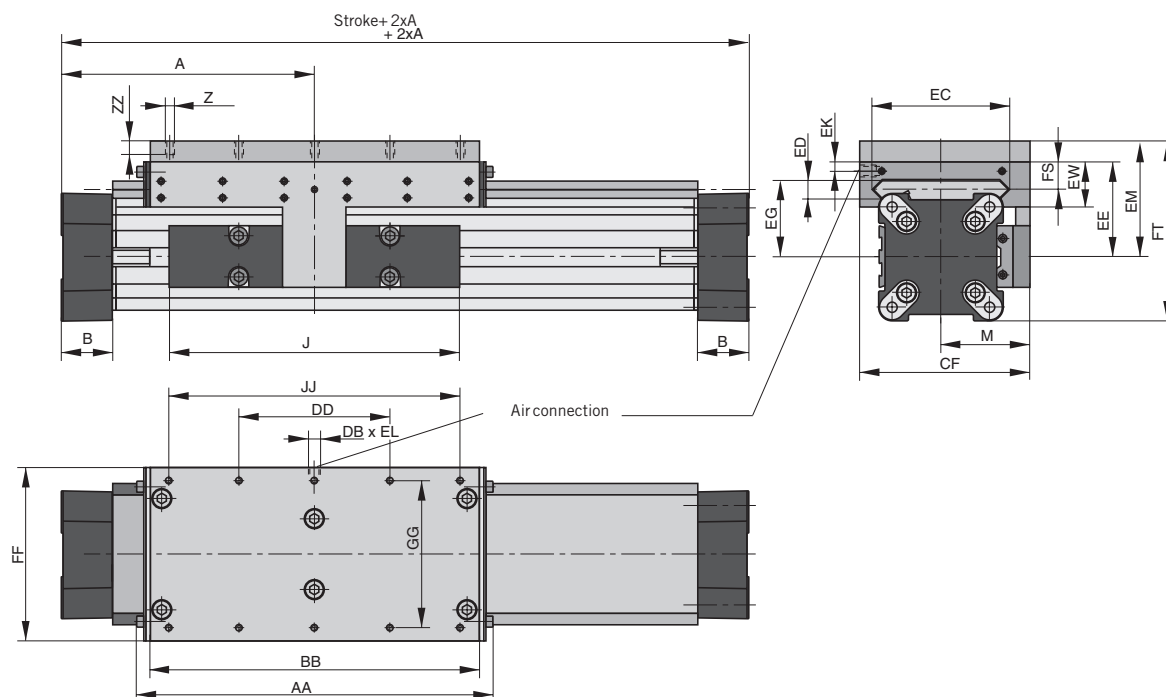
| Series          | For linear drive | Max. moments [Nm] |     |     | Max. loads [N]<br>Ly, Lz | Max. brake force [N] <sup>1)</sup> | Mass of linear drive with guide [kg] |                            | Mass* guide carriage [kg] | Order No. –MB-SL |                                 |
|-----------------|------------------|-------------------|-----|-----|--------------------------|------------------------------------|--------------------------------------|----------------------------|---------------------------|------------------|---------------------------------|
|                 |                  | Mx                | My  | Mz  |                          |                                    | with 0 mm stroke                     | increase per 100 mm stroke |                           | without sensor   | with sensor for wear indication |
| <b>MB-SL 25</b> | OSP-P25          | 14                | 34  | 34  | 675                      | 470                                | 2.04                                 | 0.39                       | 1.10                      | <b>20796</b>     | on request                      |
| <b>MB-SL 32</b> | OSP-P32          | 29                | 60  | 60  | 925                      | 790                                | 3.82                                 | 0.65                       | 1.79                      | <b>20797</b>     | on request                      |
| <b>MB-SL 40</b> | OSP-P40          | 50                | 110 | 110 | 1500                     | 1200                               | 5.16                                 | 0.78                       | 2.34                      | <b>20798</b>     | on request                      |
| <b>MB-SL 50</b> | OSP-P50          | 77                | 180 | 180 | 2000                     | 1870                               | 8.29                                 | 0.97                       | 3.63                      | <b>20799</b>     | on request                      |
| <b>MB-SL 63</b> | OSP-P63          | 120               | 260 | 260 | 2500                     | 2900                               | 13.31                                | 1.47                       | 4.97                      | <b>20800</b>     | on request                      |
| <b>MB-SL 80</b> | OSP-P80          | 120               | 260 | 260 | 2500                     | 2900                               | 17.36                                | 1.81                       | 4.97                      | <b>20846</b>     | on request                      |

For linear drives see 1.10.002E  
For mountings see 1.45.005E

**Data Sheet No. 1.42.003E-1**

**ORIGA**

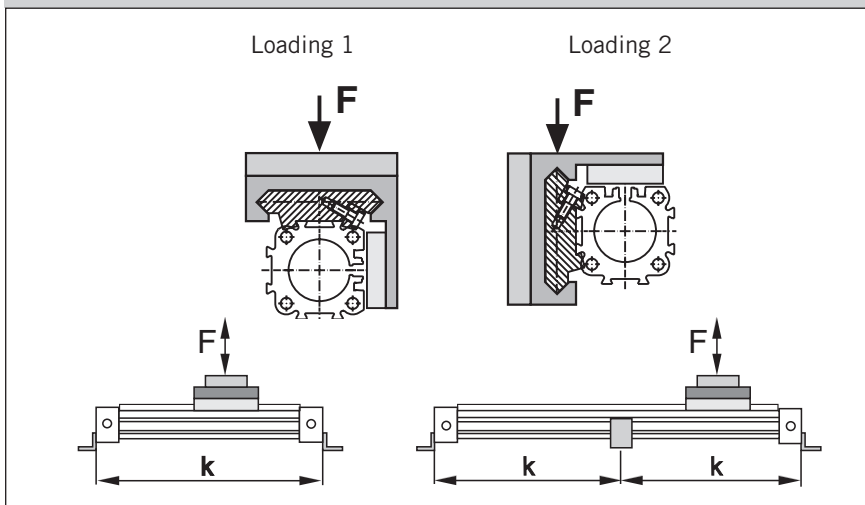
## Series OSP-P with Passive Brake MB-SL



Dimension Table (mm)

| Series         | A   | B    | J   | M    | Z  | AA  | BB  | DB   | DD  | CF   | EC  | ED | EE | EG | EK  | EL | EM  | EW | FF  | FT    | FS   | GG  | JJ  | ZZ |
|----------------|-----|------|-----|------|----|-----|-----|------|-----|------|-----|----|----|----|-----|----|-----|----|-----|-------|------|-----|-----|----|
| <b>MB-SL25</b> | 100 | 22   | 117 | 40,5 | M6 | 162 | 142 | M5   | 60  | 72.5 | 47  | 12 | 53 | 39 | 9   | 5  | 73  | 30 | 64  | 93.5  | 20   | 50  | 120 | 12 |
| <b>MB-SL32</b> | 125 | 25.5 | 152 | 49   | M6 | 205 | 185 | G1/8 | 80  | 91   | 67  | 14 | 62 | 48 | 7   | 10 | 82  | 33 | 84  | 108   | 21   | 64  | 160 | 12 |
| <b>MB-SL40</b> | 150 | 28   | 152 | 55   | M6 | 240 | 220 | G1/8 | 100 | 102  | 77  | 14 | 64 | 50 | 6.5 | 10 | 84  | 34 | 94  | 118.5 | 21.5 | 78  | 200 | 12 |
| <b>MB-SL50</b> | 175 | 33   | 200 | 62   | M6 | 284 | 264 | G1/8 | 120 | 117  | 94  | 14 | 75 | 56 | 10  | 12 | 95  | 39 | 110 | 138.5 | 26   | 90  | 240 | 12 |
| <b>MB-SL63</b> | 215 | 38   | 256 | 79   | M8 | 312 | 292 | G1/8 | 130 | 152  | 116 | 18 | 86 | 66 | 11  | 12 | 106 | 46 | 152 | 159   | 29   | 120 | 260 | 13 |
| <b>MB-SL80</b> | 260 | 47   | 348 | 96   | M8 | 312 | 292 | G1/8 | 130 | 169  | 116 | 18 | 99 | 79 | 11  | 12 | 119 | 46 | 152 | 185   | 29   | 120 | 260 | 13 |

## Loading



## Mid Section Support

(for versions see 1.45.005E)

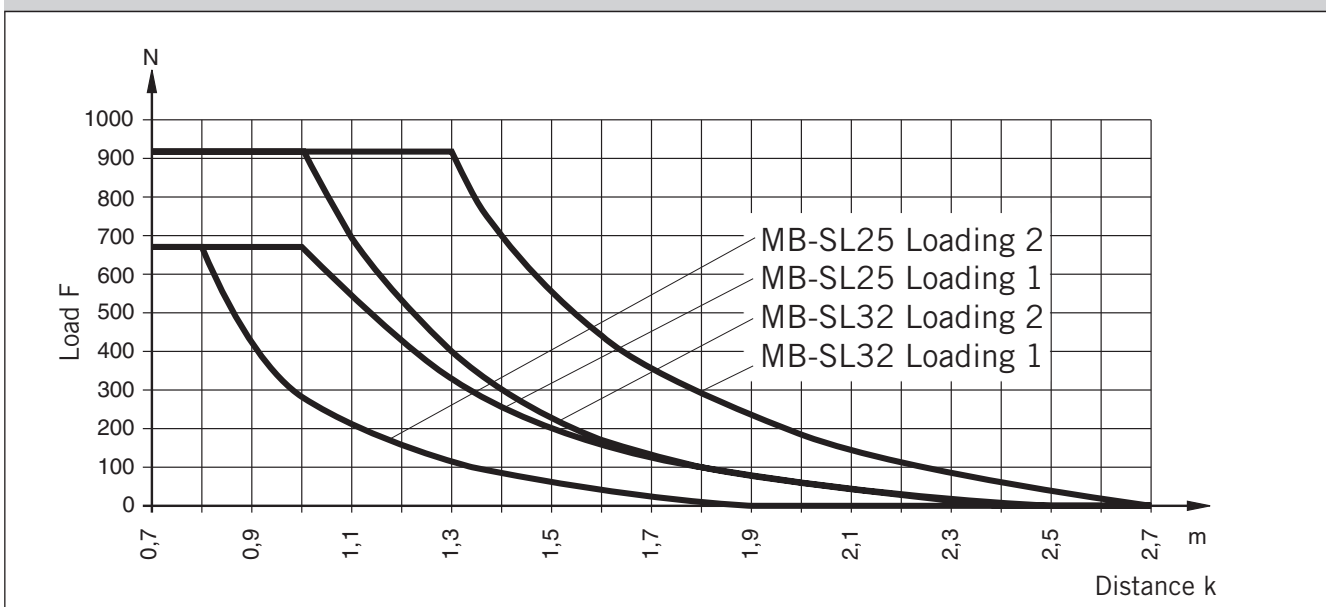
Mid section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive.

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.

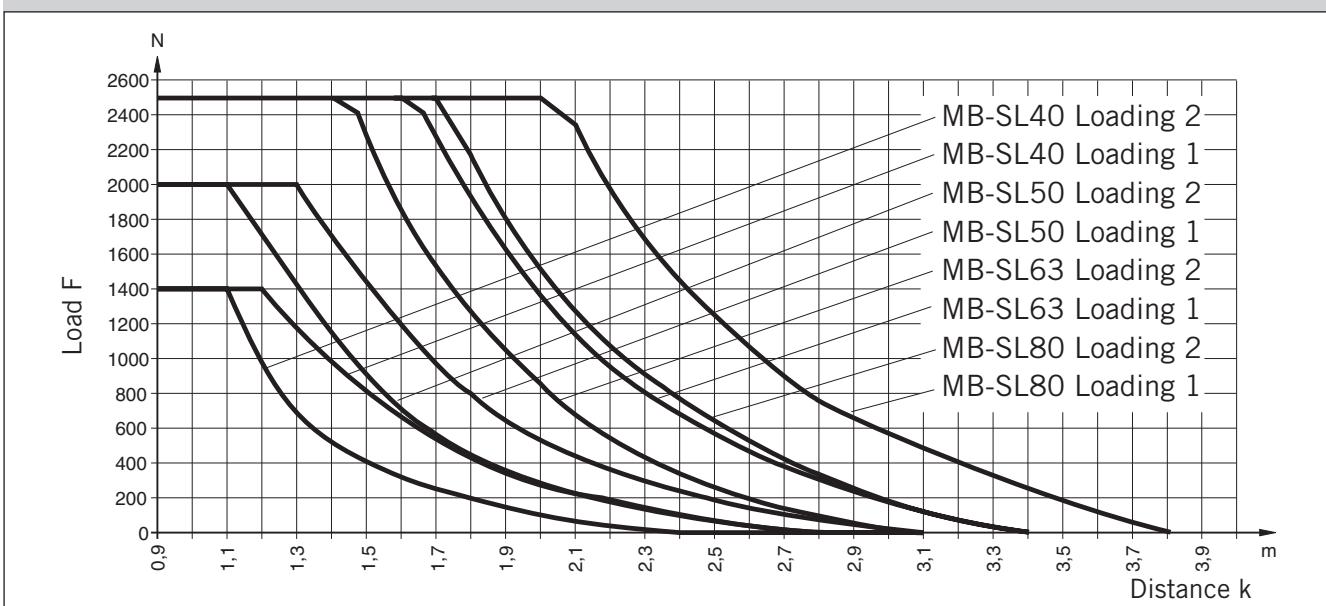
### Note:

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

## Permissible Unsupported Length MB-SL25, MB-SL32

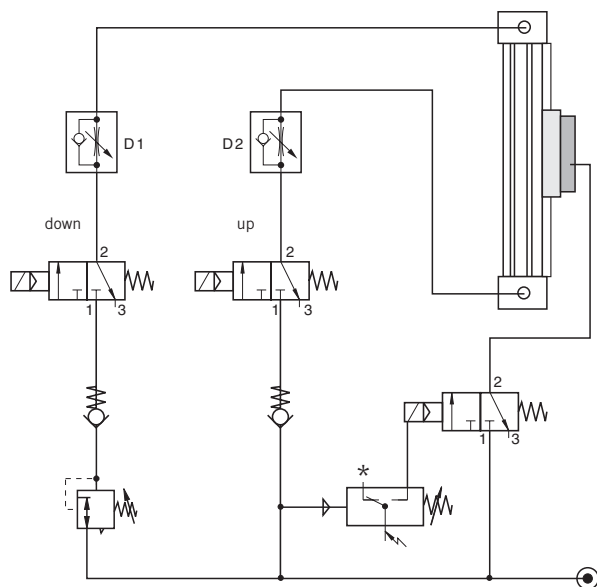


## Permissible Unsupported Length MB-SL40, MB-SL50, MB-SL63 and MB-SL80

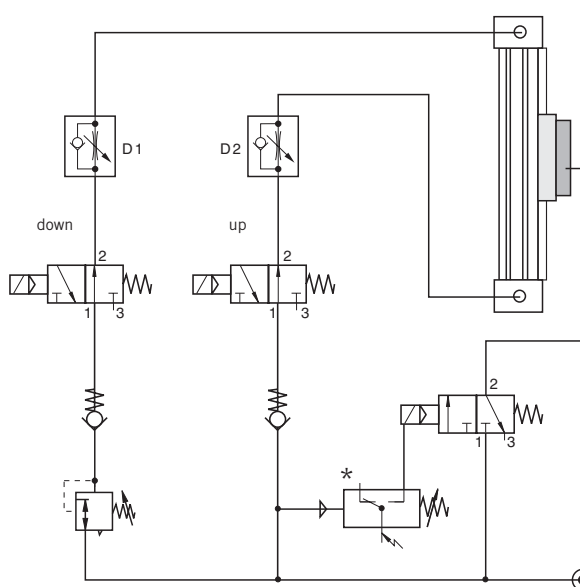


## Application Example - Vertical Application

Control of a cylinder with 3/2 way valves. Basic position – **exhausted**



Control of a cylinder with 3/2 way valves. Basic position – **pressurised**



### 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 pressurised 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 pressurised.  
**Small diameter tubing, fittings and valves with a nominal diameter, and tubing that is too long all change the reaction time of the brake!**

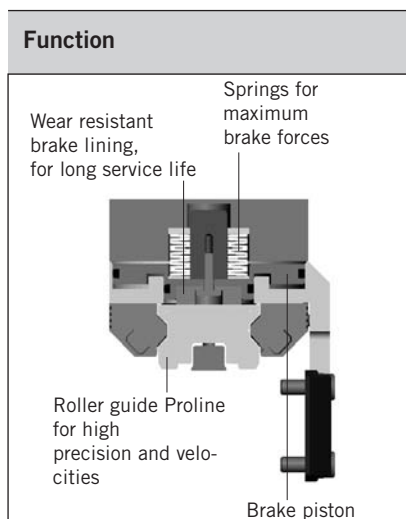
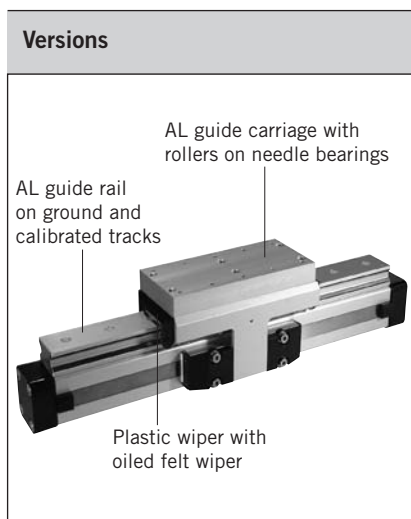
**\* Tip:**  
The pressure switch actuates the brake when the pressure drops below the set value.

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



### Required Components

| Way Valves                       |                 |
|----------------------------------|-----------------|
| Port size                        | see catalogue   |
| M5, G1/8                         | Valves          |
| G1/4, G1/2                       | A4P026E         |
| Pressure Regulating Valves       |                 |
| G1/8 - G3/8                      | see catalogue   |
|                                  | Air Preparation |
|                                  | A4P006E         |
| Pneumatic Accessories            |                 |
| P/E-Switch                       | see catalogue   |
| Non-Return Valves                | Pneumatic       |
| G1/8 - G3/8                      | Accessories     |
|                                  | A4P021E         |
| Screw-in Speed Regulating Valves |                 |
| M5 - G1/4                        |                 |



### 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 pressurisation.

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.

# Multi-Brake Passive Brake with Aluminium Roller Guide Proline PL

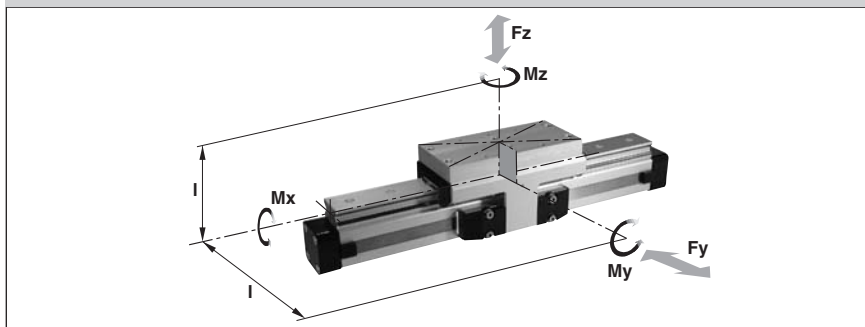
**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

**Series MB-PL 25 to 50  
for Linear-drive**  
• Series OSP-P

### Features:

- Brake operated by spring actuation
- Brake release by pressurisation
- 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

### Loads, Forces and Moments



### Technical Data

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

$$\frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} + \frac{F_x}{F_{x_{\max}}} + \frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}} \leq 1$$

The sum of the loads should not exceed >1.  
With a load factor of less than 1, service life is 8000 km

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

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

<sup>1)</sup> 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.

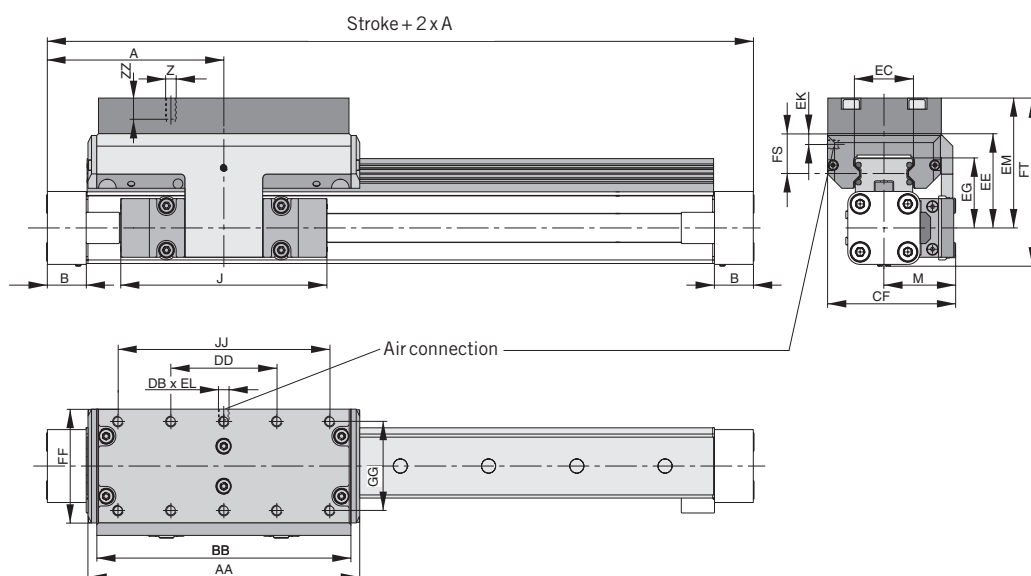
| Series         | For linear drive | Max. moments [Nm] |                |                | Max. loads [N]<br>F <sub>y</sub> , F <sub>z</sub> | Max. brake force [N] <sup>1)</sup> | Mass of linear drive with guide [kg] |                            | Mass* guide carriage [kg] | Order No. – MB-PL |                                 |
|----------------|------------------|-------------------|----------------|----------------|---------------------------------------------------|------------------------------------|--------------------------------------|----------------------------|---------------------------|-------------------|---------------------------------|
|                |                  | M <sub>x</sub>    | M <sub>y</sub> | M <sub>z</sub> |                                                   |                                    | with 0 mm stroke                     | increase per 100 mm stroke |                           | without sensor    | with sensor for wear indication |
| <b>MB-PL25</b> | OSP-P25          | 16                | 39             | 39             | 857                                               | 315                                | 2.14                                 | 0.40                       | 1.24                      | <b>20864</b>      | <b>on request</b>               |
| <b>MB-PL32</b> | OSP-P32          | 29                | 73             | 73             | 1171                                              | 490                                | 4.08                                 | 0.62                       | 2.02                      | <b>20865</b>      | <b>on request</b>               |
| <b>MB-PL40</b> | OSP-P40          | 57                | 158            | 158            | 2074                                              | 715                                | 5.46                                 | 0.70                       | 2.82                      | <b>20866</b>      | <b>on request</b>               |
| <b>MB-PL50</b> | OSP-P50          | 111               | 249            | 249            | 3111                                              | 1100                               | 8.60                                 | 0.95                       | 4.07                      | <b>20867</b>      | <b>on request</b>               |

For linear drives see 1.10.002E  
For mountings see 1.45.005E

Data Sheet No. 1.42.004E-1

**ORIGA**

## Series OSP-P with Passive Brake MB-PL



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

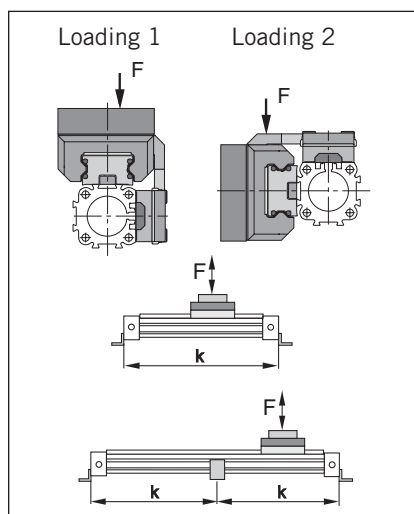
| Series  | A   | B    | J   | M    | Z  | AA  | BB  | DB   | DD  | CF   | EC   | EE | EG   | EK  | EL | EM | FF  | FS   | FT    | GG | JJ  | ZZ |
|---------|-----|------|-----|------|----|-----|-----|------|-----|------|------|----|------|-----|----|----|-----|------|-------|----|-----|----|
| MB-PL25 | 100 | 22   | 117 | 40.5 | M6 | 154 | 144 | M5   | 60  | 72.5 | 32.5 | 53 | 39   | 9   | 5  | 73 | 64  | 23   | 93.5  | 50 | 120 | 12 |
| MB-PL32 | 125 | 25.5 | 152 | 49   | M6 | 197 | 187 | G1/8 | 80  | 91   | 42   | 62 | 48   | 7   | 10 | 82 | 84  | 25   | 108   | 64 | 160 | 12 |
| MB-PL40 | 150 | 28   | 152 | 55   | M6 | 232 | 222 | G1/8 | 100 | 102  | 47   | 64 | 50.5 | 6.5 | 10 | 84 | 94  | 23.5 | 118.5 | 78 | 200 | 12 |
| MB-PL50 | 175 | 33   | 200 | 62   | M6 | 276 | 266 | G1/8 | 120 | 117  | 63   | 75 | 57   | 10  | 12 | 95 | 110 | 29   | 138.5 | 90 | 240 | 16 |

## Mid Section Support

(for versions see 1.45.005E)

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.

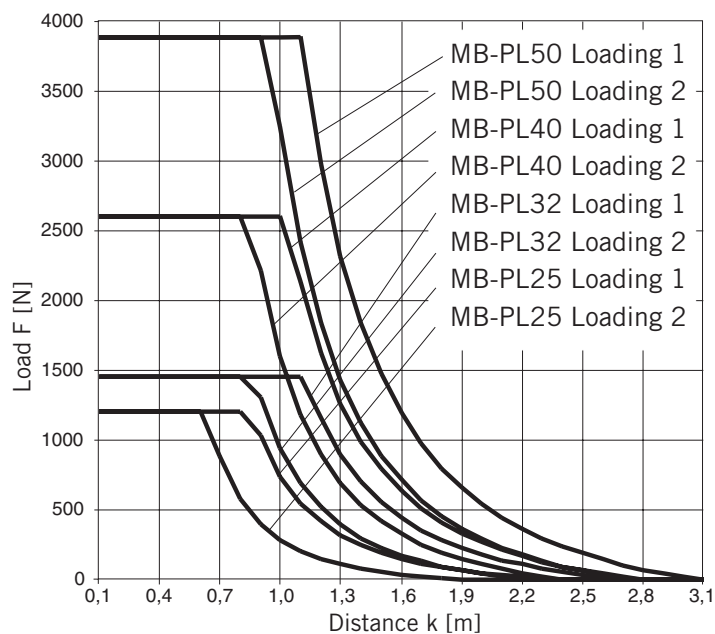
A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.



### Note:

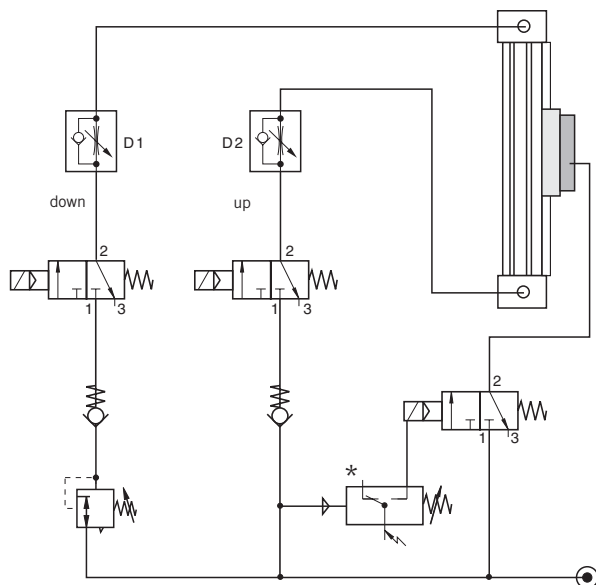
For speeds  $v > 0.5$  m/s the distance between supports should not exceed 1 m.

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

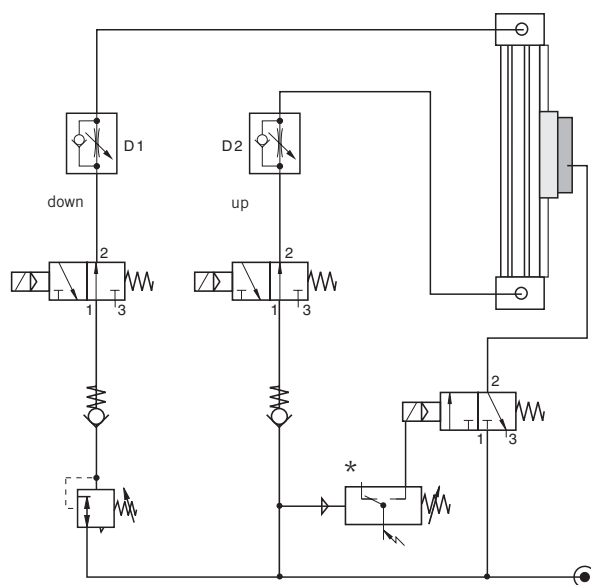


## Application Example - Vertical Application

Control of a cylinder with  
3/2 way valves. Basic position – **exhausted**



Control of a cylinder with  
3/2 way valves. Basic position – **pressurised**



### 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 pressurised 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 pressurised.**

**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

| Way Valves                       |                 |
|----------------------------------|-----------------|
| Port size                        | see catalogue   |
| M5, G1/8                         | Valves          |
| G1/4, G1/2                       | A4P026E         |
| Pressure Regulating Valves       |                 |
| G1/8 - G3/8                      | see catalogue   |
|                                  | Air Preparation |
|                                  | A4P006E         |
| Pneumatic Accessories            |                 |
| P/E-Switch                       | see catalogue   |
| Non-Return Valves                | Pneumatic       |
| G1/8 - G3/8                      | Accessories     |
| Screw-in Speed Regulating Valves | A4P021E         |
| M5 - G1/4                        |                 |



# Linear Drive-Accessories (Mountings and Magnetic Switches) Series OSP-P



## Contents

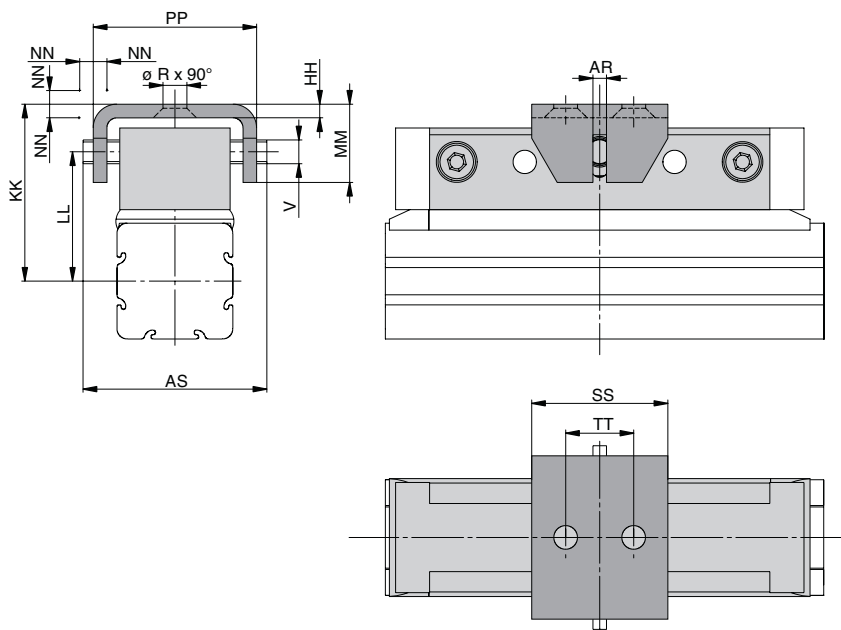
| Description                                                                                                       | Data Sheet No.       | Page           |
|-------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Overview                                                                                                          | 1.45.001E            | 83-84          |
| Clevis Mounting                                                                                                   | 1.45.002E            | 85-86          |
| End Cap Mountings                                                                                                 | 1.45.003E            | 87             |
| End Cap Mountings (for Linear Drives with guides)                                                                 | 1.45.00E-2,-6,-7     | 89,90,92,94,95 |
| Mid-Section Support                                                                                               | 1.45.004E            | 88             |
| Mid-Section Support (for Linear Drives with guides)                                                               | 1.45.005E-3,-5,-8,-9 | 89,91,93,96,97 |
| Inversion Mounting                                                                                                | 1.45.006E            | 99             |
| Adaptor Profile                                                                                                   | 1.45.007E            | 100            |
| T-Slot Profile                                                                                                    | 1.45.008E            | 101            |
| Connection Profile                                                                                                | 1.45.009E            | 102            |
| Duplex Connection                                                                                                 | 1.45.011E            | 103            |
| Multiplex Connection                                                                                              | 1.45.012E            | 104            |
| Magnetic Switch, standard version                                                                                 | 1.45.100E            | 105-107        |
| Magnetic Switch for T-Nut mounting                                                                                | 1.45.104E            | 109-112        |
| Magnetic Switch ATEX-version  | 1.45.105E            | 113-115        |
| Cable Cover                                                                                                       | 1.45.102E            | 108            |

| Linear Drive Accessories for Series OSP-P                                                                         |                                                                                     |                |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------|
| Description                                                                                                       |                                                                                     | Data Sheet No. |
| Clevis Mounting                                                                                                   |    | 1.45.002E      |
| End Cap Mountings                                                                                                 |    | 1.45.003E      |
| End Cap Mountings<br>(for Linear Drives with guides)                                                              |    | 1.45.005E      |
| Mid-Section Support                                                                                               |    | 1.45.004E      |
| Mid-Section Support<br>(for Linear Drives with guides)                                                            |    | 1.45.005E      |
| Inversion Mounting                                                                                                |    | 1.45.006E      |
| Adaptor Profile                                                                                                   |  | 1.45.007E      |
| T-Slot Profile                                                                                                    |  | 1.45.008E      |
| Connection Profile                                                                                                |  | 1.45.009E      |
| Dulex Connection                                                                                                  |  | 1.45.011E      |
| Multiplex Connection                                                                                              |  | 1.45.012E      |
| Magnetic Switch, standard version                                                                                 |  | 1.45.100E      |
| Magnetic Switch, ATEX-version  |                                                                                     | 1.45.105E      |
| Magnetic Switch for T-Nut mounting                                                                                |                                                                                     | 1.45.104E      |
| Cable cover                                                                                                       |  | 1.45.102E      |

A3P111E00HAA00X

The right to introduce technical modifications is reserved

# Series OSP-P10



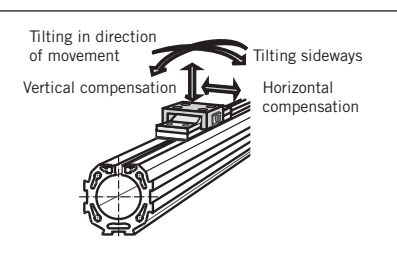
## Linear Drive Accessories ø 10 mm Clevis Mounting

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

For Linear-drive  
• Series OSP-P

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



Dimension Table (mm)

| Series  | øR  | V   | AR | AS | HH | KK | LL | MM   | NN* | PP | SS | TT | Order No. |           |
|---------|-----|-----|----|----|----|----|----|------|-----|----|----|----|-----------|-----------|
|         |     |     |    |    |    |    |    |      |     |    |    |    | Standard  | Stainless |
| OSP-P10 | 3.4 | 3.5 | 2  | 27 | 2  | 26 | 19 | 11.5 | 1   | 24 | 20 | 10 | 20971     | —         |

\* Dimension NN gives the possible plus and minus play in horizontal and vertical movement, which also makes tilting sideways possible.



For rodless pneumatic cylinder OSP-P see 1.10.002E

Data Sheet No. 1.45.002E-1

**ORIGA**

# Linear Drive Accessories

## ø 16-80 mm Clevis Mounting



For Linear-drive  
• Series OSP-P

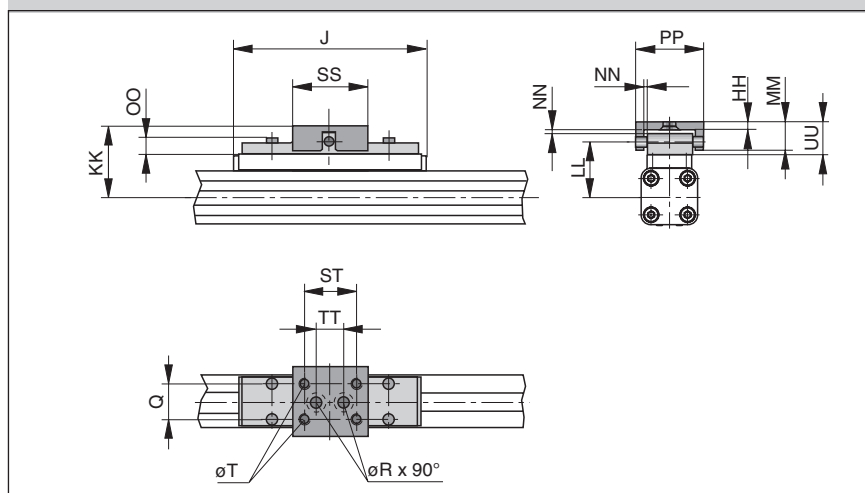
When external guides are used, parallelism deviations can lead to mechanical strain on the piston. This can be avoided by the use of a clevis mounting. In the drive direction, the mounting has very little play. Freedom of movement is provided as follows:

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

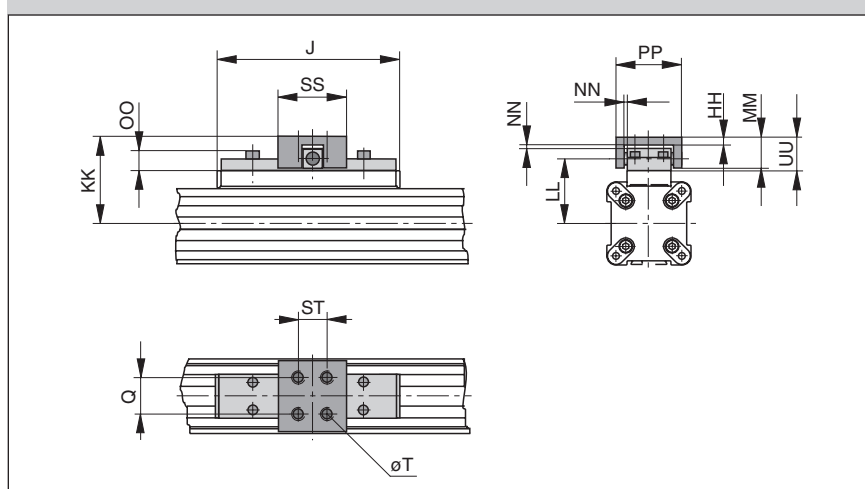
A stainless steel version is also available.



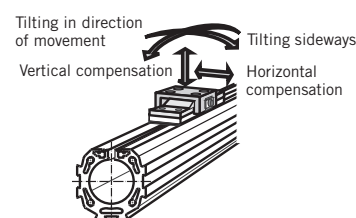
### Series OSP-P16 to 32



### Series OSP-P40 to 80



**Please note:**  
When using additional inversion mountings, take into account the dimensions in data sheet 1.45.006E.



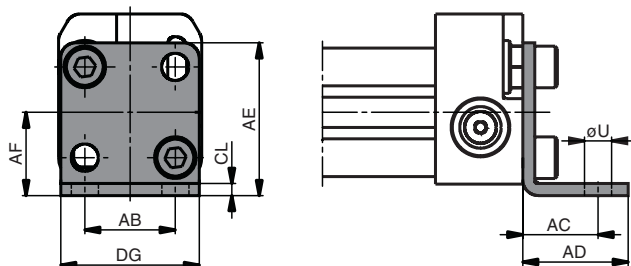
Dimension Table (mm)

| Series  | J   | Q  | T   | øR  | HH  | KK  | LL   | MM | NN* | OO  | PP | SS | ST | TT | UU | Order No. |           |
|---------|-----|----|-----|-----|-----|-----|------|----|-----|-----|----|----|----|----|----|-----------|-----------|
|         |     |    |     |     |     |     |      |    |     |     |    |    |    |    |    | Standard  | Stainless |
| OSP-P16 | 69  | 10 | M4  | 4.5 | 3   | 34  | 26.6 | 10 | 1   | 8.5 | 26 | 28 | 20 | 10 | 11 | 20462     | 20463     |
| OSP-P25 | 117 | 16 | M5  | 5.5 | 3.5 | 52  | 39   | 19 | 2   | 9   | 38 | 40 | 30 | 16 | 21 | 20005     | 20092     |
| OSP-P32 | 152 | 25 | M6  | 6.6 | 6   | 68  | 50   | 28 | 2   | 13  | 62 | 60 | 46 | 40 | 30 | 20096     | 20094     |
| OSP-P40 | 152 | 25 | M6  | –   | 6   | 74  | 56   | 28 | 2   | 13  | 62 | 60 | 46 | –  | 30 | 20024     | 20093     |
| OSP-P50 | 200 | 25 | M6  | –   | 6   | 79  | 61   | 28 | 2   | 13  | 62 | 60 | 46 | –  | 30 | 20097     | 20095     |
| OSP-P63 | 256 | 37 | M8  | –   | 8   | 100 | 76   | 34 | 3   | 17  | 80 | 80 | 65 | –  | 37 | 20466     | 20467     |
| OSP-P80 | 348 | 38 | M10 | –   | 8   | 122 | 96   | 42 | 3   | 16  | 88 | 90 | 70 | –  | 42 | 20477     | 20478     |

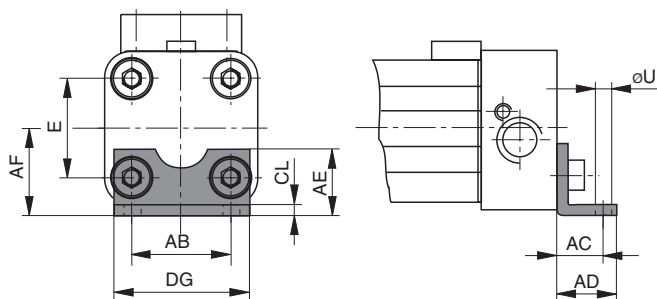
\* Dimension NN gives the possible plus and minus play in horizontal and vertical movement, which also makes tilting sideways possible.

For rodless pneumatic cylinder OSP-P see 1.10.002E

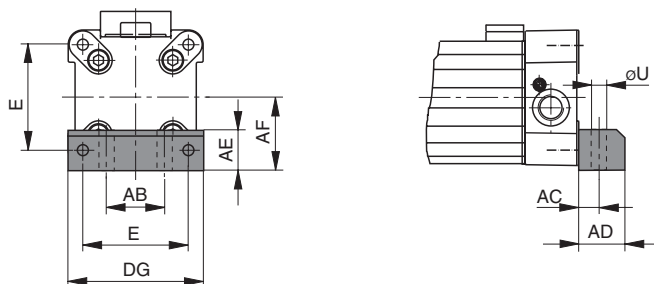
## Series OSP-P10 : Type A1



## Series OSP-P16 to 32: Type A1



## Series OSP-P40 to 80: Type C1



# Linear Drive Accessories

ø 10-80 mm  
End Cap Mountings

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

For Linear-drive  
• 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-P10 – P32:

Galvanised steel.

Series OSP-P40 – P80:

Anodized aluminium.

The mountings are supplied in pairs.



Dimension Table (mm)

| Series  | E  | øU  | AB | AC   | AD | AE   | AF | CL  | DG   | Order No. (* |         |
|---------|----|-----|----|------|----|------|----|-----|------|--------------|---------|
|         |    |     |    |      |    |      |    |     |      | Type A1      | Type C1 |
| OSP-P10 | -  | 3.6 | 12 | 10   | 14 | 20.2 | 11 | 1.6 | 18.4 | 0240         | —       |
| OSP-P16 | 18 | 3.6 | 18 | 10   | 14 | 12.5 | 15 | 1.6 | 26   | 20408        | —       |
| OSP-P25 | 27 | 5.8 | 27 | 16   | 22 | 18   | 22 | 2.5 | 39   | 2010         | —       |
| OSP-P32 | 36 | 6.6 | 36 | 18   | 26 | 20   | 30 | 3   | 50   | 3010         | —       |
| OSP-P40 | 54 | 9   | 30 | 12.5 | 24 | 24   | 38 | —   | 68   | —            | 4010    |
| OSP-P50 | 70 | 9   | 40 | 12.5 | 24 | 30   | 48 | —   | 86   | —            | 5010    |
| OSP-P63 | 78 | 11  | 48 | 15   | 30 | 40   | 57 | —   | 104  | —            | 6010    |
| OSP-P80 | 96 | 14  | 60 | 17.5 | 35 | 50   | 72 | —   | 130  | —            | 8010    |

(\* = Pair)

For rodless pneumatic cylinder OSP-P see 1.10.002E

Data Sheet No. 1.45.003E

**ORIGA**

# Linear Drive Accessories

## ∅ 10-80 mm Mid-Section Support



For Linear-drive  
• Series OSP-P

Note on Types E1 and D1  
(P16 – P80):

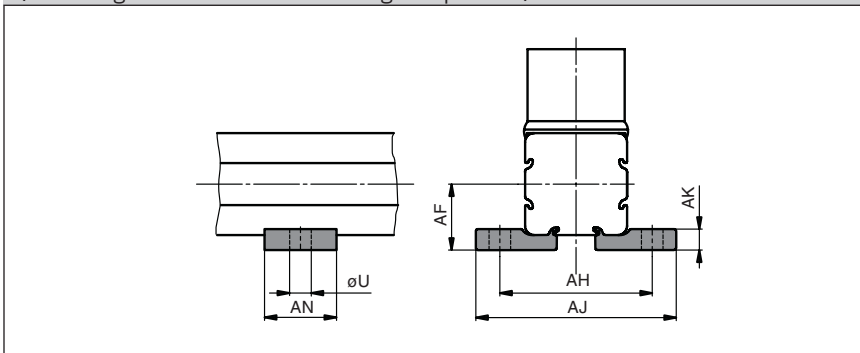
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the centre of the actuator is different.

For design notes, see data sheet  
1.10.002E-2

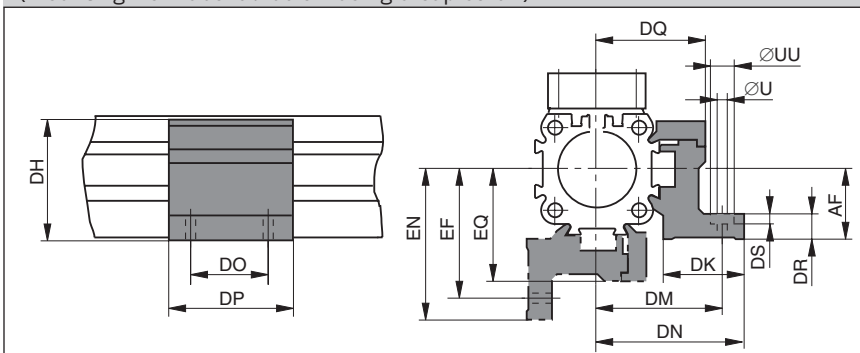
Stainless steel version on demand.



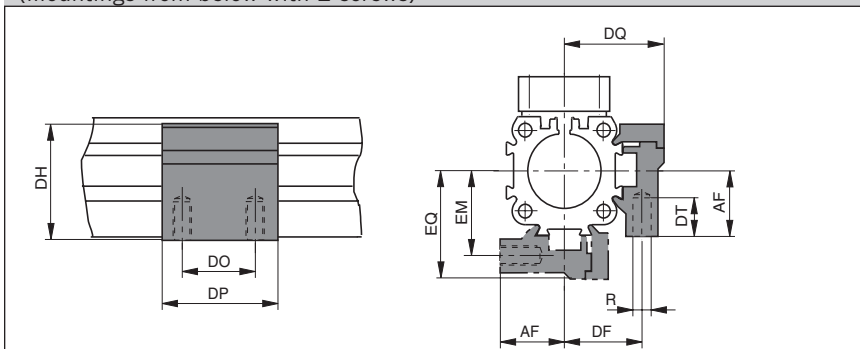
**Series OSP-10, Type E1**  
(Mounting from above / below using a cap screw)



**Series OSP-P16 to P80: Type E1**  
(Mounting from above / below using a cap screw)



**Series OSP-16 to 80, Type D1**  
(Mountings from below with 2 screws)



**Dimension Table (mm) Series OSP-P10**

| Series  | U   | AF | AH   | AJ   | AK  | AN | Order No. |         |
|---------|-----|----|------|------|-----|----|-----------|---------|
|         |     |    |      |      |     |    | Type E1   | Type D1 |
| OSP-P10 | 3.6 | 11 | 25.4 | 33.4 | 3.5 | 12 | 0250      | -       |

**Dimension Table (mm) – Series OSP-P16 to P80**

| Series  | R   | U   | UU | AF | DF   | DH    | DK | DM | DN   | DO | DP | DQ   | DR | DS  | DT  | EF   | EM   | EN   | EQ | Order No. |         |
|---------|-----|-----|----|----|------|-------|----|----|------|----|----|------|----|-----|-----|------|------|------|----|-----------|---------|
|         |     |     |    |    |      |       |    |    |      |    |    |      |    |     |     |      |      |      |    | Type E1   | Type D1 |
| OSP-P16 | M3  | 3.4 | 6  | 15 | 20   | 29.2  | 24 | 32 | 36.4 | 18 | 30 | 27   | 6  | 3.4 | 6.5 | 32   | 20   | 36.4 | 27 | 20435     | 20434   |
| OSP-P25 | M5  | 5.5 | 10 | 22 | 27   | 38    | 26 | 40 | 47.5 | 36 | 50 | 34.5 | 8  | 5.7 | 10  | 41.5 | 28.5 | 49   | 36 | 20009     | 20008   |
| OSP-P32 | M5  | 5.5 | 10 | 30 | 33   | 46    | 27 | 46 | 54.5 | 36 | 50 | 40.5 | 10 | 5.7 | 10  | 48.5 | 35.5 | 57   | 43 | 20158     | 20157   |
| OSP-P40 | M6  | 7   | –  | 38 | 35   | 61    | 34 | 53 | 60   | 45 | 60 | 45   | 10 | –   | 11  | 56   | 38   | 63   | 48 | 20028     | 20027   |
| OSP-P50 | M6  | 7   | –  | 48 | 40   | 71    | 34 | 59 | 67   | 45 | 60 | 52   | 10 | –   | 11  | 64   | 45   | 72   | 57 | 20163     | 20162   |
| OSP-P63 | M8  | 9   | –  | 57 | 47.5 | 91    | 44 | 73 | 83   | 45 | 65 | 63   | 12 | –   | 16  | 79   | 53.5 | 89   | 69 | 20452     | 20451   |
| OSP-P80 | M10 | 11  | –  | 72 | 60   | 111.5 | 63 | 97 | 112  | 55 | 80 | 81   | 15 | –   | 25  | 103  | 66   | 118  | 87 | 20482     | 20480   |

A1P580E00HAA00X

The right to introduce technical  
modifications is reserved



For rodless pneumatic cylinder OSP-P see 1.10.002E

A1P542E00HAA00X

The right to introduce technical modifications is reserved

| Overview                                                                                                          |         |                                    |    |    |    |    |                  |                  |       |            |       |       |       |       |       |       |       |       |   |
|-------------------------------------------------------------------------------------------------------------------|---------|------------------------------------|----|----|----|----|------------------|------------------|-------|------------|-------|-------|-------|-------|-------|-------|-------|-------|---|
| Mounting Type                                                                                                     | Type    | Type – OSP Guides                  |    |    |    |    |                  |                  |       |            |       |       |       |       |       |       |       |       |   |
|                                                                                                                   |         | SLIDELINE<br>PROLINE<br>MULTIBRAKE |    |    |    |    |                  |                  |       | POWERSLIDE |       |       |       |       |       |       |       |       |   |
|                                                                                                                   |         | 16 <sup>1)</sup>                   | 25 | 32 | 40 | 50 | 63 <sup>1)</sup> | 80 <sup>1)</sup> | 16/25 | 25/25      | 25/35 | 25/44 | 32/35 | 32/44 | 40/44 | 40/60 | 50/60 | 50/76 |   |
| End cap mounting<br>             | Type A1 | X                                  |    |    |    |    |                  |                  | X     |            |       |       |       |       |       |       |       |       |   |
|                                                                                                                   | Type A2 | O                                  | O  | O  |    |    |                  |                  |       |            |       |       |       |       |       |       |       |       |   |
|                                                                                                                   | Type A3 |                                    |    |    |    |    |                  |                  |       | O          | O     |       | O     |       |       |       |       |       |   |
| End cap mounting, reinforced<br> | Type B1 |                                    | X  | X  |    |    |                  |                  | X     | X          | X     | X     | X     |       |       |       |       |       |   |
|                                                                                                                   | Type B3 |                                    |    |    |    |    |                  |                  | O     |            |       |       |       |       |       |       |       |       |   |
|                                                                                                                   | Type B4 |                                    |    |    |    |    |                  |                  |       |            |       | O     |       | O     |       |       |       |       |   |
|                                                                                                                   | Type B5 |                                    |    |    |    |    |                  |                  |       |            |       |       |       |       |       |       |       |       |   |
| End cap mounting<br>           | Type C1 |                                    |    |    | X  | X  | X                | X                |       |            |       |       |       |       |       | X     | X     | X     | X |
|                                                                                                                   | Type C2 |                                    |    |    | O  | O  |                  |                  |       |            |       |       |       |       |       |       |       |       |   |
|                                                                                                                   | Type C3 |                                    |    |    |    |    | O                | O                |       |            |       |       |       |       |       | O     |       | O     |   |
|                                                                                                                   | Type C4 |                                    |    |    |    |    |                  |                  |       |            |       |       |       |       |       | O     |       | O     |   |
| Mid section support, small                                                                                        | Type D1 | X                                  | X  | X  | X  | X  | X                | X                | X     | X          | X     | X     | X     | X     | X     | X     | X     | X     | X |
| Mid section support, wide                                                                                         | Type E1 | X                                  | X  | X  | X  | X  | X                | X                | X     | X          | X     | X     | X     | X     | X     | X     | X     | X     | X |
|                                | Type E2 | O                                  | O  | O  | O  | O  |                  |                  |       |            |       |       |       |       |       |       |       |       |   |
|                                                                                                                   | Type E3 |                                    |    |    |    |    | O                | O                | O     | O          |       | O     |       | O     |       | O     |       | O     |   |
|                                                                                                                   | Type E4 |                                    |    |    |    |    |                  |                  |       |            |       | O     |       | O     |       | O     |       | O     |   |
|                                                                                                                   | Type E5 |                                    |    |    |    |    |                  |                  |       |            |       |       |       |       |       |       |       |       |   |

- 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

# Linear Drive Accessories

## Mountings for Linear Drives fitted with OSP-Guides



For Linear-drives  
• Series OSP-P

**Note:**  
For mountings and mid-section supports for linear drives with recirculating ball bearing guide STARLINE see data sheet 1.45.005E-6 to 1.45.005E-9, for recirculating ball bearing guide KF see data sheet 1.45.005E-4 to 1.45.005E-9



For rodless pneumatic cylinder OSP-P see 1.10.002E

Data Sheet No. 1.45.005E-1

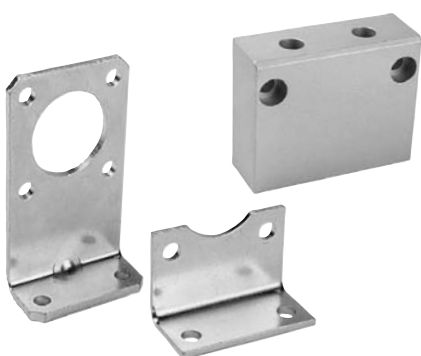


## End cap mountings\*

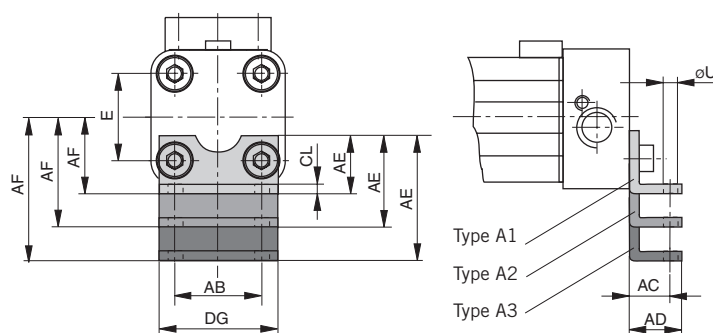
Four internal screw threads are located in the end faces of all OSP actuators for mounting the drive unit. End cap mountings may be secured across any two adjacent screws.

Material: Series OSP-16, 25, 32:  
Galvanised steel  
Series OSP-40,50, 63, 80:  
Anodized aluminium

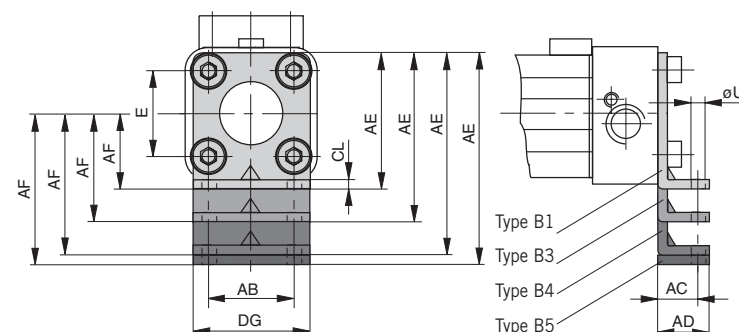
The mountings are supplied in pairs.



### Series OSP-P16, 25, 32: Type A



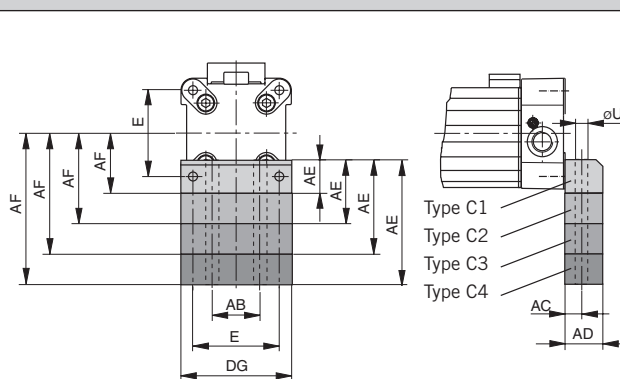
### Series OSP-P16, 25, 32: Type B



**Dimension Table (mm)**  
– Dimensions AE and AF (Dependant on the mounting type)

| Mount.<br>type | Dimensions<br>AE for size |    |    |    |    |    |    |    | AF for size |    |    |    |    |     |  |  |
|----------------|---------------------------|----|----|----|----|----|----|----|-------------|----|----|----|----|-----|--|--|
|                | 16                        | 25 | 32 | 40 | 50 | 63 | 80 | 16 | 25          | 32 | 40 | 50 | 63 | 80  |  |  |
| A1             | 12.5                      | 18 | 20 | -  | -  | -  | -  | 15 | 22          | 30 | -  | -  | -  | -   |  |  |
| A2             | 27.5                      | 33 | 34 | -  | -  | -  | -  | 30 | 37          | 44 | -  | -  | -  | -   |  |  |
| A3             | -                         | 45 | 42 | -  | -  | -  | -  | -  | 49          | 52 | -  | -  | -  | -   |  |  |
| B1             | -                         | 42 | 55 | -  | -  | -  | -  | -  | 22          | 30 | -  | -  | -  | -   |  |  |
| B3             | 55                        | -  | -  | -  | -  | -  | -  | 42 | -           | -  | -  | -  | -  | -   |  |  |
| B4             | -                         | 80 | 85 | -  | -  | -  | -  | -  | 60          | 60 | -  | -  | -  | -   |  |  |
| B5             | -                         | -  | 90 | -  | -  | -  | -  | -  | -           | 65 | -  | -  | -  | -   |  |  |
| C1             | -                         | -  | -  | 24 | 30 | 40 | 50 | -  | -           | -  | 38 | 48 | 57 | 72  |  |  |
| C2             | -                         | -  | -  | 37 | 39 | -  | -  | -  | -           | -  | 51 | 57 | -  | -   |  |  |
| C3             | -                         | -  | -  | 46 | 54 | 76 | 88 | -  | -           | -  | 60 | 72 | 93 | 110 |  |  |
| C4             | -                         | -  | -  | 56 | 77 | -  | -  | -  | -           | -  | 70 | 95 | -  | -   |  |  |

### Series OSP-P40, 50, 63, 80: Type C

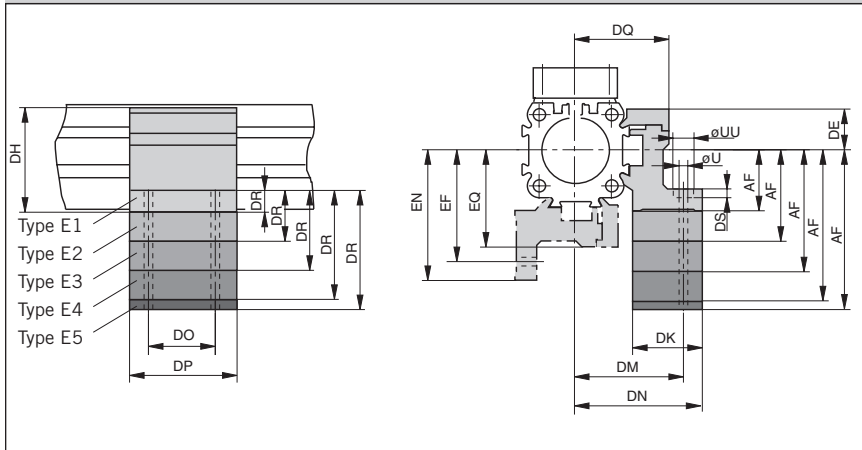


**Dimension Table (mm)**

| Series  | E  | øU  | AB | AC   | AD | CL  | DG  |
|---------|----|-----|----|------|----|-----|-----|
| OSP-P16 | 18 | 3.6 | 18 | 10   | 14 | 1.6 | 26  |
| OSP-P25 | 27 | 5.8 | 27 | 16   | 22 | 2.5 | 39  |
| OSP-P32 | 36 | 6.6 | 36 | 18   | 26 | 3   | 50  |
| OSP-P40 | 54 | 9   | 30 | 12.5 | 24 | -   | 68  |
| OSP-P50 | 70 | 9   | 40 | 12.5 | 24 | -   | 86  |
| OSP-P63 | 78 | 11  | 48 | 15   | 30 | -   | 104 |
| OSP-P80 | 96 | 14  | 60 | 17.5 | 35 | -   | 130 |

\* see mounting instructions on page 1.45.005E-1

**Series OSP-P16 to 80: Type E.**  
(Mounting from above / below using a cap screw)



## Mid-Section Support

Information regarding type E1 and D1:

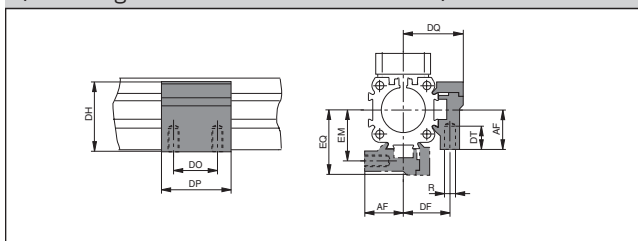
Mounting of the mid section supports is also possible on the lower side of the drive. In this case, please note the new centre line dimensions.

See layout information on data sheet no. 1.40.002E-2, 1.40.003E-3, 1.40.005E-3, 1.42.003E-3 and 1.42.004E-3

Stainless steel version on request.



**Series OSP-P16 to 80: Type D1**  
(Mounting from below with thread screw)



**Dimension Table (mm)**  
– Dimensions AF and DR (Dependant on the mounting type)

| Mount. type | Dimensions DR for size |    |    |    |    |    |    |  | Dimensions AF for size |    |    |    |    |    |     |  |
|-------------|------------------------|----|----|----|----|----|----|--|------------------------|----|----|----|----|----|-----|--|
|             | 16                     | 25 | 32 | 40 | 50 | 63 | 80 |  | 16                     | 25 | 32 | 40 | 50 | 63 | 80  |  |
| D1          | –                      | –  | –  | –  | –  | –  | –  |  | 15                     | 22 | 30 | 38 | 48 | 57 | 72  |  |
| E1          | 6                      | 8  | 10 | 10 | 10 | 12 | 15 |  | 15                     | 22 | 30 | 38 | 48 | 57 | 72  |  |
| E2          | 21                     | 23 | 24 | 23 | 19 | –  | –  |  | 30                     | 37 | 44 | 51 | 57 | –  | –   |  |
| E3          | 33                     | 35 | 32 | 32 | 34 | 48 | 53 |  | 42                     | 49 | 52 | 60 | 72 | 93 | 110 |  |
| E4          | –                      | 46 | 40 | 42 | 57 | –  | –  |  | 60                     | 60 | 70 | 95 | –  | –  | –   |  |
| E5          | –                      | –  | 45 | –  | –  | –  | –  |  | –                      | –  | 65 | –  | –  | –  | –   |  |

**Dimension Table (mm)**

| Series  | R   | U   | UU | DE   | DF   | DH    | DK | DM | DN   | DO | DP | DQ   | DS  | DT  | EF   | EM   | EN   | EQ |
|---------|-----|-----|----|------|------|-------|----|----|------|----|----|------|-----|-----|------|------|------|----|
| OSP-P16 | M3  | 3.4 | 6  | 14.2 | 20   | 29.2  | 24 | 32 | 36.4 | 18 | 30 | 27   | 3.4 | 6.5 | 32   | 20   | 36.4 | 27 |
| OSP-P25 | M5  | 5.5 | 10 | 16   | 27   | 38    | 26 | 40 | 47.5 | 36 | 50 | 34.5 | 5.7 | 10  | 41.5 | 28.5 | 49   | 36 |
| OSP-P32 | M5  | 5.5 | 10 | 16   | 33   | 46    | 27 | 46 | 54.5 | 36 | 50 | 40.5 | 5.7 | 10  | 48.5 | 35.5 | 57   | 43 |
| OSP-P40 | M6  | 7   | –  | 23   | 35   | 61    | 34 | 53 | 60   | 45 | 60 | 45   | –   | 11  | 56   | 38   | 63   | 48 |
| OSP-P50 | M6  | 7   | –  | 23   | 40   | 71    | 34 | 59 | 67   | 45 | 60 | 52   | –   | 11  | 64   | 45   | 72   | 57 |
| OSP-P63 | M8  | 9   | –  | 34   | 47.5 | 91    | 44 | 73 | 83   | 45 | 65 | 63   | –   | 16  | 79   | 53.5 | 89   | 69 |
| OSP-P80 | M10 | 11  | –  | 39.5 | 60   | 111.5 | 63 | 97 | 112  | 55 | 80 | 81   | –   | 25  | 103  | 66   | 118  | 87 |

**Ordering information for mountings Type A – Type B – Type C – Type D – Type E**

| Mounting type (versions) | Order No. size |       |       |       |       |       |       |
|--------------------------|----------------|-------|-------|-------|-------|-------|-------|
|                          | 16             | 25    | 32    | 40    | 50    | 63    | 80    |
| A1 *)                    | 20408          | 2010  | 3010  | –     | –     | –     | –     |
| A2 *)                    | 20464          | 2040  | 3040  | –     | –     | –     | –     |
| A3 *)                    | –              | 2060  | 3060  | –     | –     | –     | –     |
| B1 *)                    | –              | 20311 | 20313 | –     | –     | –     | –     |
| B3 *)                    | 20465          | –     | –     | –     | –     | –     | –     |
| B4 *)                    | –              | 20312 | 20314 | –     | –     | –     | –     |
| B5 *)                    | –              | –     | 20976 | –     | –     | –     | –     |
| C1 *)                    | –              | –     | –     | 4010  | 5010  | 6010  | 8010  |
| C2 *)                    | –              | –     | –     | 20338 | 20349 | –     | –     |
| C3 *)                    | –              | –     | –     | 20339 | 20350 | 20821 | 20822 |
| C4 *)                    | –              | –     | –     | 20340 | 20351 | –     | –     |
| D1                       | 20434          | 20008 | 20157 | 20027 | 20162 | 20451 | 20480 |
| E1                       | 20435          | 20009 | 20158 | 20028 | 20163 | 20452 | 20482 |
| E2                       | 20436          | 20352 | 20355 | 20358 | 20361 | –     | –     |
| E3                       | 20437          | 20353 | 20356 | 20359 | 20362 | 20453 | 20819 |
| E4                       | –              | 20354 | 20357 | 20360 | 20363 | –     | –     |
| E5                       | –              | –     | 20977 | –     | –     | –     | –     |

(\* Pair

# Linear Drive Accessories

## Ø 25-50 mm

### End Cap Mounting correspond to FESTO dimensions HP25 – 50

for Linear Drives with  
Recirculating Ball Bearing Guide

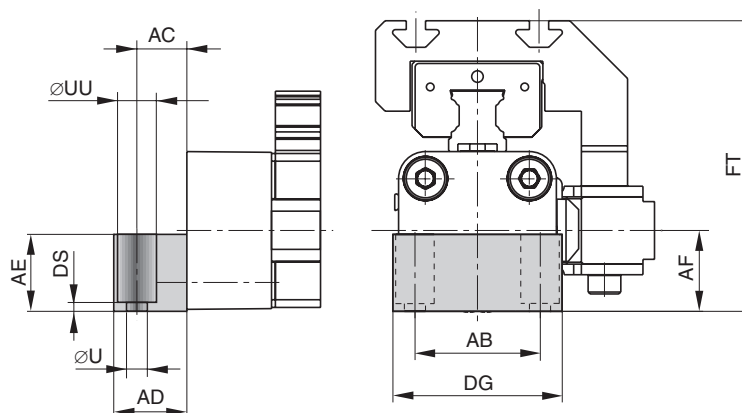
#### • Series OSP-P KF

On the end-face of each end cap  
there are four threaded holes for  
mounting the actuator.

Material:  
Series OSP-P KF25 – 50:  
Anodized aluminium.

The mountings are supplied in pairs.

#### Series OSP-P KF25 to KF50: Type HP (Correspond to FESTO dimensions)

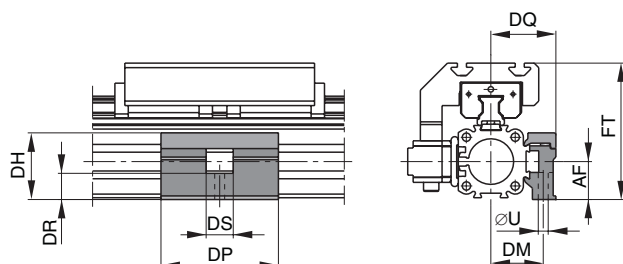


**Note:**  
Correspond to FESTO DGPL-KF,  
when the End Cap Mountings HP are mounted on the opposite side to the carriage  
(see drawing)

Dimension Table (mm)

| Series | ØU  | AB   | AC   | AD | AE | AF | DG | DS | FT    | ØUU | Order No. |
|--------|-----|------|------|----|----|----|----|----|-------|-----|-----------|
| HP25   | 5.5 | 32.5 | 13   | 19 | 20 | 21 | 44 | 2  | 75.5  | 10  | 21107     |
| HP32   | 6.6 | 38   | 17   | 24 | 24 | 27 | 52 | 3  | 87.5  | 11  | 21108     |
| HP40   | 6.6 | 45   | 17.5 | 24 | 24 | 35 | 68 | 2  | 104.5 | 11  | 21109     |
| HP50   | 9   | 65   | 25   | 35 | 35 | 48 | 86 | 6  | 138.5 | 15  | 21110     |

**Series OSP-P KF25: Type MUP**  
(Mounting over through holes)



# Linear Drive Accessories

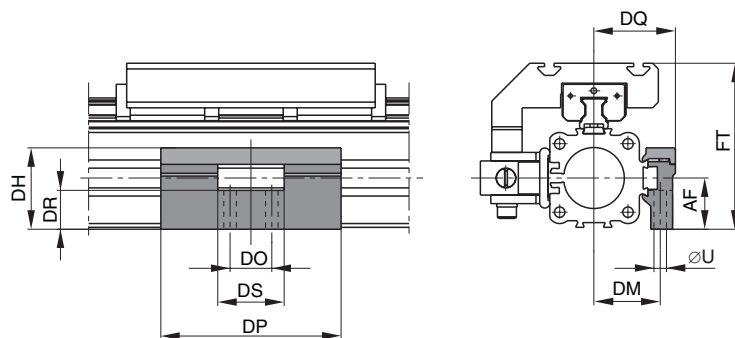
Ø 25-50 mm

## Mid-Section Support

correspond to  
FESTO dimensions  
MUP25 – 50

for Linear Drives with  
Recirculating Ball Bearing Guide

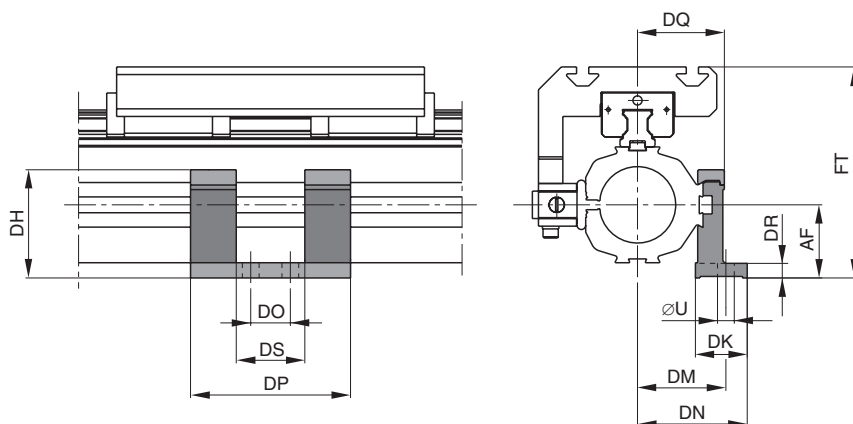
**Series OSP-P KF32 to KF40: Type MUP**  
(Mounting over through holes)



• Series OSP-P KF

For design notes, see data sheet  
1.40.007E-3

**Series OSP-P KF50: Type MUP**  
(Mounting over through holes)



**Note:**  
Correspond to FESTO DGPL-KF,  
when the Mid-Section Support MUP  
are mounted on the 90° side to the  
carriage (see drawings).

Dimension Table (mm)

| Series | ØU  | AF | DH   | DK | DM | DN | DO | DP  | DQ | DR   | DS | FT    | Order No. |
|--------|-----|----|------|----|----|----|----|-----|----|------|----|-------|-----------|
| MUP25  | 5.5 | 21 | 36.9 | –  | 29 | –  | –  | 65  | 36 | 14.5 | 15 | 75.5  | 21119     |
| MUP32  | 6.6 | 27 | 42.9 | –  | 35 | –  | 22 | 95  | 43 | 20.5 | 35 | 87.5  | 21120     |
| MUP40  | 6.6 | 35 | 58   | –  | 40 | –  | 22 | 95  | 48 | 28.5 | 35 | 104.5 | 21121     |
| MUP50  | 11  | 48 | 71   | 34 | 58 | 72 | 26 | 105 | 57 | 10   | 45 | 138.5 | 21122     |

# Linear Drive Accessories

## Ø 16 to 32 mm End Cap Mounting Type: B

for Linear Drives with  
Recirculating Ball Bearing Guide

- Series OSP-P STL
- Series OSP-P KF

### Material:

Galvanised steel  
Anodized aluminium

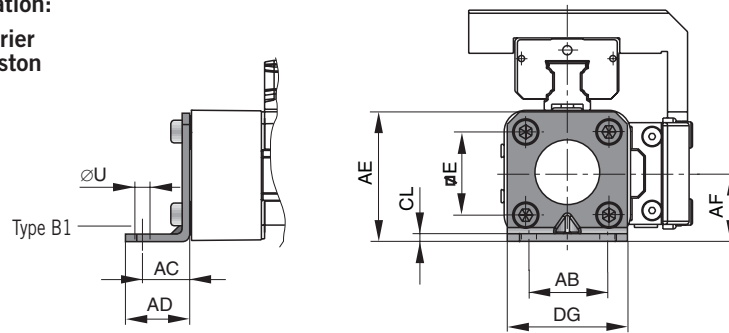
The mountings are supplied in pairs.



Series OSP-P STL16, STL25, STL32 : Type B1  
Series OSP-P KF16, KF25, KF32 : Type B1

### Installation:

Top carrier  
Side piston

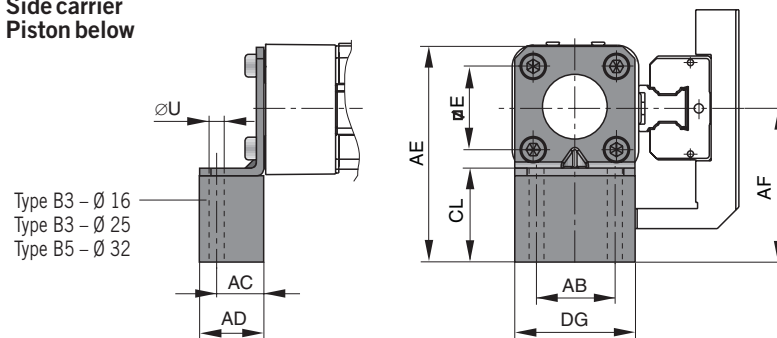


Drawing shows: Mounting with Guide Type STL

Series OSP-P STL16, STL25, STL32: Type B3 (Ø 32:B5)  
Series OSP-P KF16, KF25, KF32: Type B3 (Ø 32:B5)

### Installation:

Side carrier  
Piston below

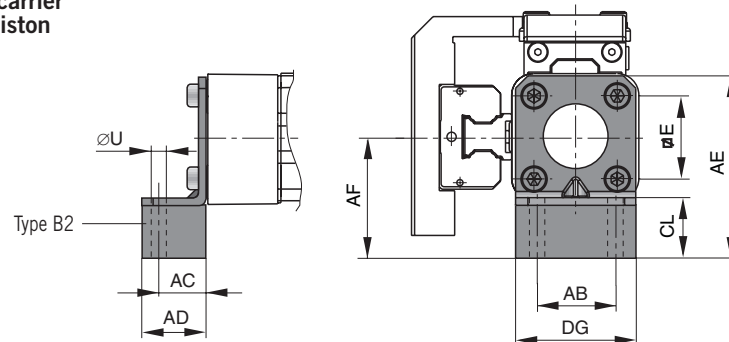


Drawing shows: Mounting with Guide Type STL

Series OSP-P STL16, STL25, STL32: Type B2  
Series OSP-P KF16, KF25, KF32: Type B2

### Installation:

Side carrier  
Top piston



Drawing shows: Mounting with Guide Type STL

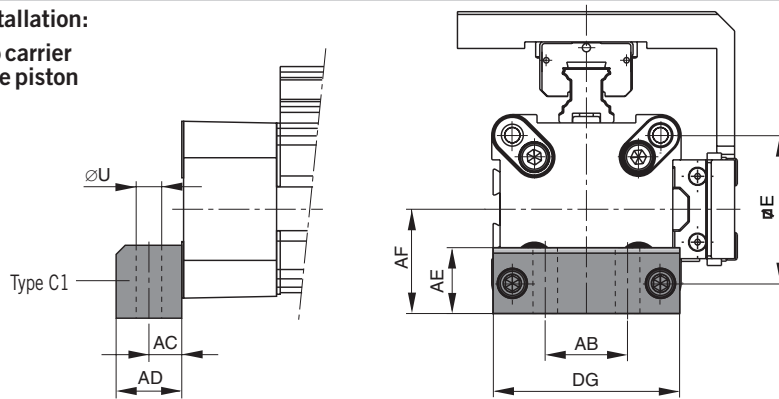
Dimension Table (mm) for End Cap Mounting Type: B1 to B5

| Series Type             | Mounting | E  | ØU  | AB | AC | AD | AE | AF | CL   | DG | Order No. (pair) |
|-------------------------|----------|----|-----|----|----|----|----|----|------|----|------------------|
| OSP-PSTL16<br>OSP-PKF16 | B1       | 18 | 3.6 | 18 | 10 | 14 | 28 | 15 | 2    | 26 | 21135            |
|                         | B2       | 18 | 3.6 | 18 | 10 | 14 | 43 | 30 | 17   | 26 | 21136            |
|                         | B3       | 18 | 3.6 | 18 | 10 | 14 | 55 | 42 | 29   | 26 | 21137            |
| OSP-PSTL25<br>OSP-PKF25 | B1       | 27 | 5.8 | 27 | 16 | 22 | 42 | 22 | 2.5  | 39 | 20311            |
|                         | B2       | 27 | 5.8 | 27 | 16 | 22 | 57 | 37 | 17.5 | 39 | 21138            |
|                         | B3       | 27 | 5.8 | 27 | 16 | 22 | 69 | 49 | 29.5 | 39 | 21139            |
| OSP-PSTL32<br>OSP-PKF32 | B1       | 36 | 6.6 | 36 | 18 | 26 | 55 | 30 | 3    | 50 | 20313            |
|                         | B2       | 36 | 6.6 | 36 | 18 | 26 | 69 | 44 | 17   | 50 | 21140            |
|                         | B5       | 36 | 6.6 | 36 | 18 | 26 | 90 | 65 | 9    | 50 | 21141            |

Series OSP-P STL40, STL50: Type C1  
Series OSP-P KF40, KF50: Type C1

Installation:

Top carrier  
Side piston



Drawing shows: Mounting with Guide Type STL

## Ø 40 to 50 mm End Cap Mounting Type: C

for Linear Drives with Recirculating  
Ball Bearing Guide

- Series OSP-P STL
- Series OSP-P KF

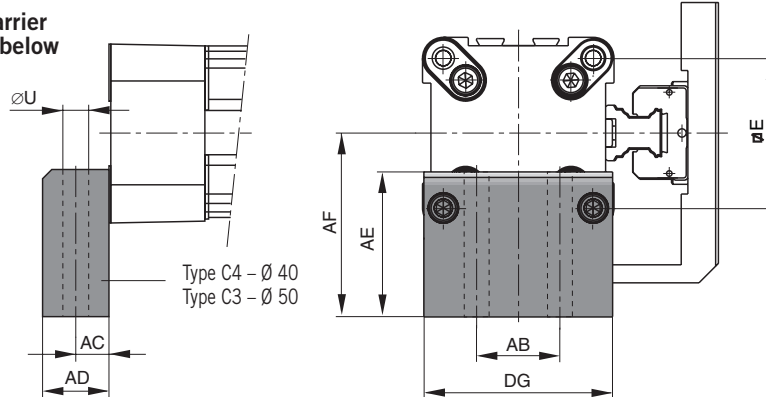
Material:  
Anodized aluminium

The mountings are supplied in pairs.

Series OSP-P STL40, STL50: Type C4 (Ø 50: C3)  
Series OSP-P KF40, KF50: Type C4 (Ø 50: C3)

Installation:

Side carrier  
Piston below

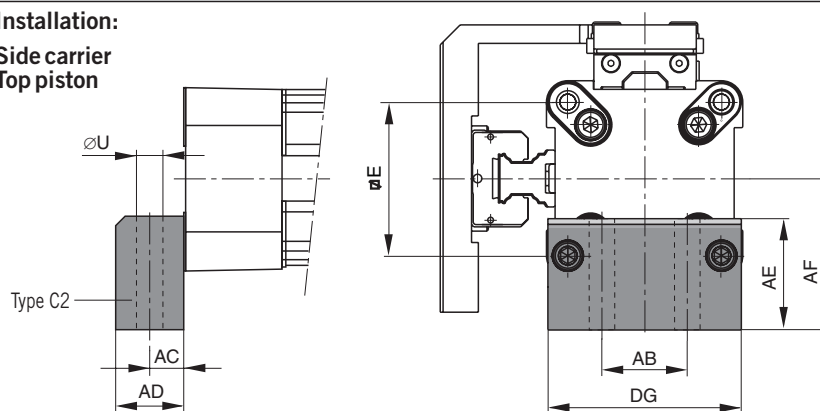


Drawing shows: Mounting with Guide Type STL

Series OSP-P STL40, STL50: Type C2  
Series OSP-P KF40, KF50: Type C2

Installation:

Side carrier  
Top piston



Drawing shows: Mounting with Guide Type STL

Dimension Table (mm) for End Cap Mounting Type: C1 to C4

| Series Type | Mounting | E  | ØU | AB | AC   | AD | AE | AF | DG | Order No. (pair) |
|-------------|----------|----|----|----|------|----|----|----|----|------------------|
| OSP-P STL40 | C1       | 54 | 9  | 30 | 12.5 | 24 | 24 | 38 | 68 | 4010             |
| OSP-P KF40  | C2       | 54 | 9  | 30 | 12.5 | 24 | 37 | 51 | 68 | 20338            |
|             | C4       | 54 | 9  | 30 | 12.5 | 24 | 56 | 70 | 68 | 20340            |
| OSP-P STL50 | C1       | 70 | 9  | 40 | 12.5 | 24 | 30 | 48 | 86 | 5010             |
| OSP-P KF50  | C2       | 70 | 9  | 40 | 12.5 | 24 | 39 | 57 | 86 | 20349            |
|             | C3       | 70 | 9  | 40 | 12.5 | 24 | 54 | 72 | 86 | 20350            |



# Linear Drive Accessories

## Ø 16 to 50

### Mid-Section Support Type: D1ST

for Linear Drives with  
Recirculating Ball Bearing Guide

- Series OSP-P STL
- Series OSP-P KF

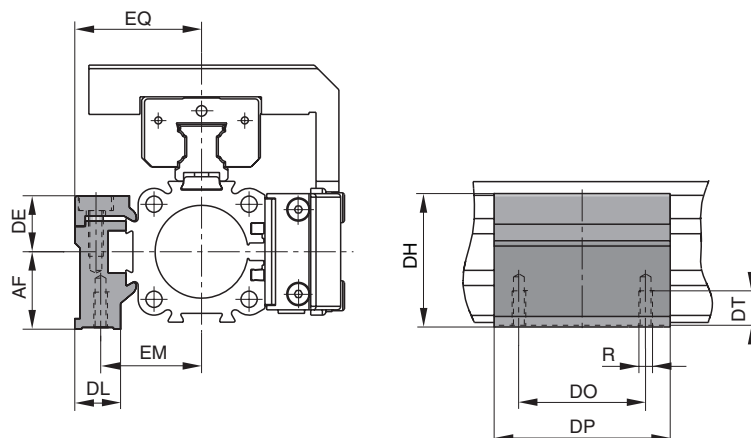
Note on Types D1ST  
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the centre of the actuator is different.

For design notes, see page  
1.40.006E-3 (Serie OSP-P STL)  
1.40.007E-3 (Serie OSP-P KF)



Series OSP-P STL16 to STL50: Type D1ST  
Series OSP-P KF16 to KF50: Type D1ST

Mountings from below with 2 screws



Drawing shows: Mounting with Guide Type STL

Dimension Table (mm) Mid-Section Support D1ST

| Series OSP-P ..... | Mounting Type | R  | AF | DE   | DH   | DL   | DO | DP | DT  | EM   | EQ | Order No. |
|--------------------|---------------|----|----|------|------|------|----|----|-----|------|----|-----------|
| STL/KF16           | D1ST          | M3 | 15 | 14.2 | 29.2 | 14.6 | 18 | 30 | 6.5 | 20   | 27 | 21125     |
| STL/KF25           | D1ST          | M5 | 22 | 16   | 38   | 13   | 36 | 50 | 10  | 28.5 | 36 | 21126     |
| STL/KF32           | D1ST          | M5 | 30 | 16   | 46   | 13   | 36 | 60 | 10  | 35.5 | 43 | 21127     |
| STL/KF40           | D1ST          | M6 | 38 | 23   | 61   | 19   | 45 | 60 | 11  | 38   | 48 | 21128     |
| STL/KF50           | D1ST          | M6 | 48 | 23   | 71   | 19   | 45 | 60 | 11  | 45   | 57 | 21129     |

Order example: Type D1ST16

Order No. 21125

## Mid-Section Support Type: E1ST bis E5ST

for Linear Drives with  
Recirculating Ball Bearing Guide

- Series OSP-P STL
- Series OSP-P KF

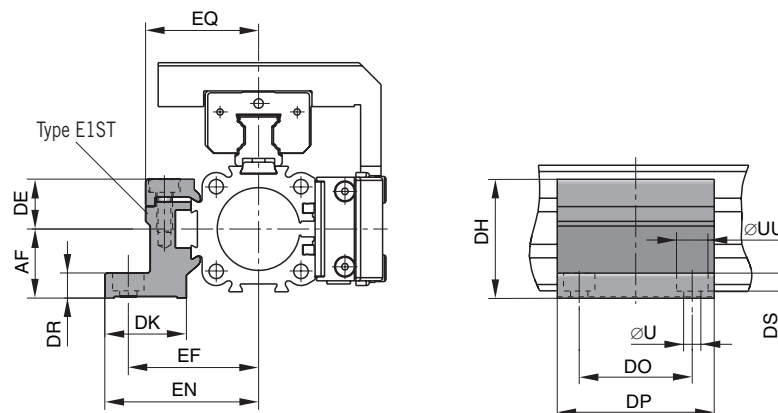


Series OSP-P STL16 to STL50: Type E1ST  
Series OSP-P KF16 to KF50: Type E1ST

Installation:

Top carrier  
Side position

Mounting from above / below  
using a cap screw



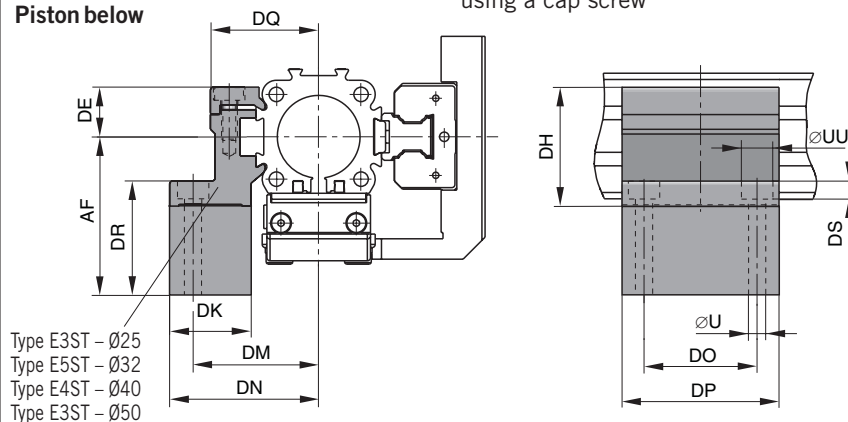
Drawing shows: Mounting with Guide Type STL

Series OSP-P STL25 to STL50: Type E3ST, E4ST, E5ST  
 Series OSP-P STL25 to STL50: Type E3ST, E4ST, E5ST

Installation:

Side carrier  
 Piston below

Mounting from above / below  
 using a cap screw



Drawing shows: Mounting with Guide Type STL

## Mid-Section Support Type: E1ST to E5ST

for Linear Drives with  
 Recirculating Ball Bearing Guide

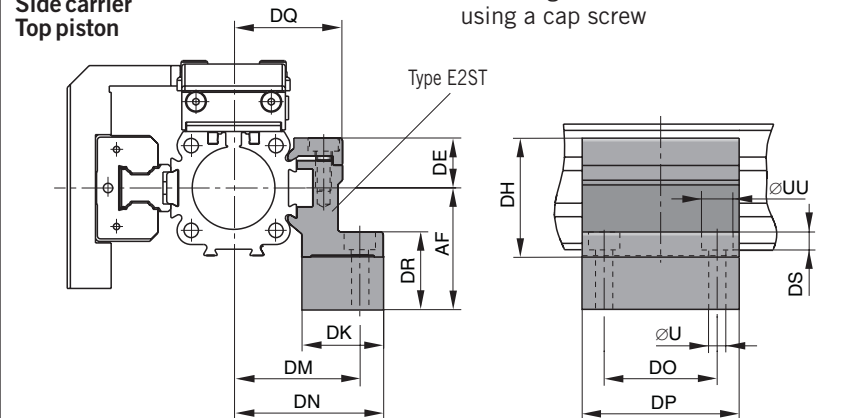
- Series OSP-P STL
- Series OSP-P KF

Series OSP-P STL16 to STL50: Type E2ST  
 Series OSP-P KF16 to KFL50: Type E2ST

Installation:

Side carrier  
 Top piston

Mounting from above / below  
 using a cap screw



Drawing shows: Mounting with Guide Type STL



Dimension Table (mm) for Mid-Section Support E1ST to E5ST

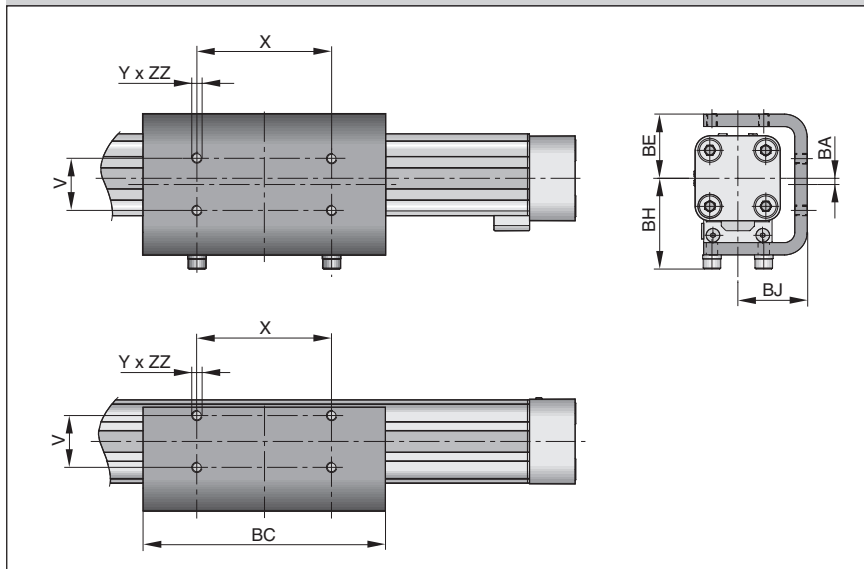
| Series<br>OSP-P ..... | Mounting<br>Type | ØU  | ØUU | AF | DE   | DH   | DK | DM | DN   | DO | DP | DR | DQ   | DS  | EF   | EN   | EQ | Order<br>No. |
|-----------------------|------------------|-----|-----|----|------|------|----|----|------|----|----|----|------|-----|------|------|----|--------------|
| STL/KF16              | E1ST             | 3.4 | 6   | 15 | 14.2 | 29.2 | 24 | 32 | 36.4 | 18 | 30 | 6  | 27   | 3.4 | 32   | 36.4 | 27 | 21130        |
| STL/KF16              | E2ST             | 3.4 | 6   | 30 | 14.2 | 29.2 | 24 | 32 | 36.4 | 18 | 30 | 21 | 27   | 3.4 | 32   | 36.4 | 27 | 21142        |
| STL/KF25              | E1ST             | 5.5 | 10  | 22 | 16   | 38   | 26 | 40 | 47.5 | 36 | 50 | 8  | 34.5 | 5.7 | 41.5 | 49   | 36 | 21131        |
| STL/KF25              | E2ST             | 5.5 | 10  | 37 | 16   | 38   | 26 | 40 | 47.5 | 36 | 50 | 23 | 34.5 | 5.7 | 41.5 | 49   | 36 | 21143        |
| STL/KF25              | E3ST             | 5.5 | 10  | 49 | 16   | 38   | 26 | 40 | 47.5 | 36 | 50 | 35 | 34.5 | 5.7 | 41.5 | 49   | 36 | 21148        |
| STL/KF32              | E1ST             | 5.5 | 10  | 30 | 16   | 46   | 27 | 46 | 54.5 | 36 | 60 | 10 | 40.5 | 5.7 | 48.5 | 57   | 43 | 21132        |
| STL/KF32              | E2ST             | 5.5 | 10  | 44 | 16   | 46   | 27 | 46 | 54.5 | 36 | 60 | 24 | 40.5 | 5.7 | 48.5 | 57   | 43 | 21144        |
| STL/KF32              | E5ST             | 5.5 | 10  | 65 | 16   | 46   | 27 | 46 | 54.5 | 36 | 60 | 45 | 40.5 | 5.7 | 48.5 | 57   | 43 | 21151        |
| STL/KF40              | E1ST             | 7   | -   | 38 | 23   | 61   | 34 | 53 | 60   | 45 | 60 | 10 | 45   | -   | 56   | 63   | 48 | 21133        |
| STL/KF40              | E2ST             | 7   | -   | 51 | 23   | 61   | 34 | 53 | 60   | 45 | 60 | 23 | 45   | -   | 56   | 63   | 48 | 21145        |
| STL/KF40              | E4ST             | 7   | -   | 70 | 23   | 61   | 34 | 53 | 60   | 45 | 60 | 42 | 45   | -   | 56   | 63   | 48 | 21150        |
| STL/KF50              | E1ST             | 7   | -   | 48 | 23   | 71   | 34 | 59 | 67   | 45 | 60 | 10 | 52   | -   | 64   | 72   | 57 | 21134        |
| STL/KF50              | E2ST             | 7   | -   | 57 | 23   | 71   | 34 | 59 | 67   | 45 | 60 | 19 | 52   | -   | 64   | 72   | 57 | 21146        |
| STL/KF50              | E3ST             | 7   | -   | 72 | 23   | 71   | 34 | 59 | 67   | 45 | 60 | 34 | 52   | -   | 64   | 72   | 57 | 21149        |

Order example: Type E1ST16

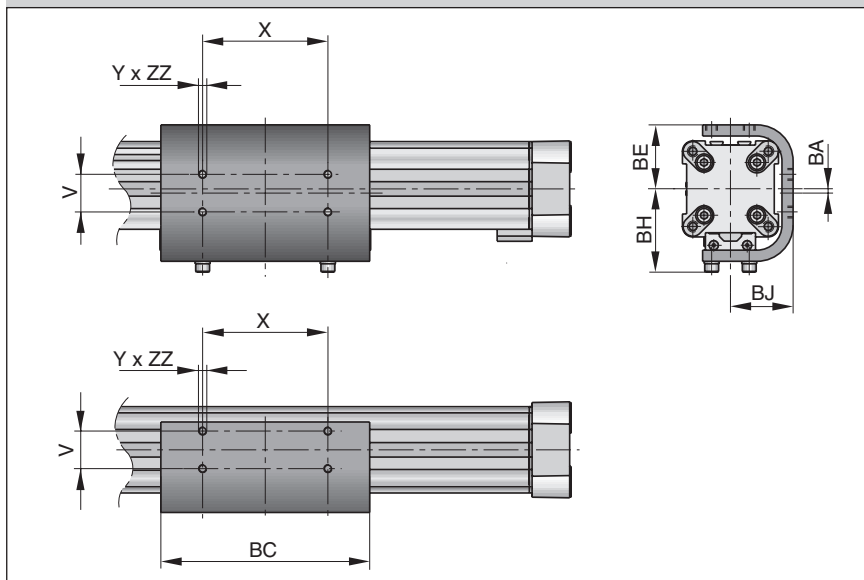
Order No. 21130



### Series OSP-P16 to 32



### Series OSP-P40 to 80



### Dimension Table (mm)

| Series  | V    | X   | Y   | BA  | BC  | BE | BH    | BJ   | ZZ | Order No. |
|---------|------|-----|-----|-----|-----|----|-------|------|----|-----------|
| OSP-P16 | 16,5 | 36  | M4  | 2   | 69  | 23 | 33    | 25   | 4  | 20446     |
| OSP-P25 | 25   | 65  | M5  | 3   | 117 | 31 | 44    | 33,5 | 6  | 20037     |
| OSP-P32 | 27   | 90  | M6  | 3   | 150 | 38 | 52    | 39,5 | 6  | 20161     |
| OSP-P40 | 27   | 90  | M6  | 3   | 150 | 46 | 60    | 45   | 8  | 20039     |
| OSP-P50 | 27   | 110 | M6  | 1   | 200 | 55 | 65    | 52   | 8  | 20166     |
| OSP-P63 | 34   | 140 | M8  | 2,5 | 255 | 68 | 83,5  | 64   | 10 | 20459     |
| OSP-P80 | 36   | 190 | M10 | 3,5 | 347 | 88 | 107,5 | 82   | 15 | 20490     |

## Linear Drive Accessories

### ø 16-80 mm

### Inversion Mounting

**OSP**  
ORIGA  
SYSTEM  
PLUS

For Linear-drive  
• 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**, **magnetic 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 magnetic switches can only be mounted directly opposite to the external air-supply profile.

#### Important Note:

May be used in combination with Clevis Mounting, ref. dimensions in data sheet 1.45.002E



For rodless pneumatic cylinder OSP-P see 1.10.002E

**ORIGA**

# Linear Drive Accessories ø 16-50 mm Adaptor Profile



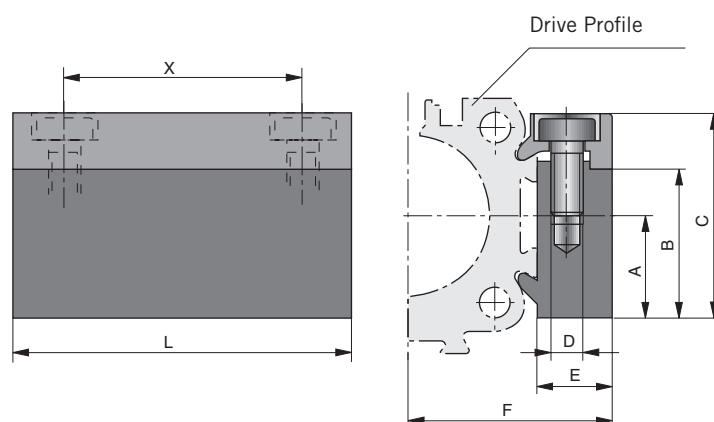
For Linear-drive  
• Series OSP-P

## Adaptor Profile OSP

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



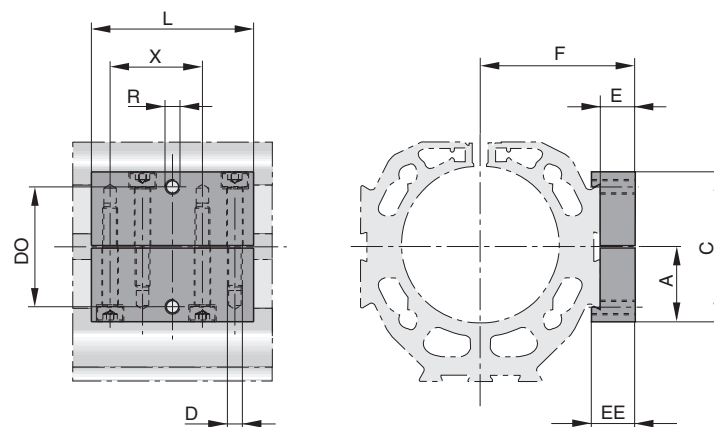
### Series OSP-P16 to 50



#### Dimension Table (mm)

| Series  | A  | B    | C  | D  | E    | F    | L  | X  | Order No. |           |
|---------|----|------|----|----|------|------|----|----|-----------|-----------|
|         |    |      |    |    |      |      |    |    | Standard  | Stainless |
| OSP-P16 | 14 | 20.5 | 28 | M3 | 12   | 27   | 50 | 38 | 20432     | 20438     |
| OSP-P25 | 16 | 23   | 32 | M5 | 10.5 | 30.5 | 50 | 36 | 20006     | 20186     |
| OSP-P32 | 16 | 23   | 32 | M5 | 10.5 | 36.5 | 50 | 36 | 20006     | 20186     |
| OSP-P40 | 20 | 33   | 43 | M6 | 14   | 45   | 80 | 65 | 20025     | 20267     |
| OSP-P50 | 20 | 33   | 43 | M6 | 14   | 52   | 80 | 65 | 20025     | 20267     |

### Series OSP-P63 to 80



#### Dimension Table (mm)

| Series  | A  | C  | D  | E  | F  | L  | R  | X  | EE   | DO | Order No.* |
|---------|----|----|----|----|----|----|----|----|------|----|------------|
| OSP-P63 | 30 | 60 | M6 | 14 | 62 | 65 | M6 | 37 | 17,5 | 48 | 20792Z     |
| OSP-P80 | 30 | 60 | M6 | 14 | 75 | 65 | M6 | 37 | 17,5 | 48 | 20792Z     |

\* Stainless version



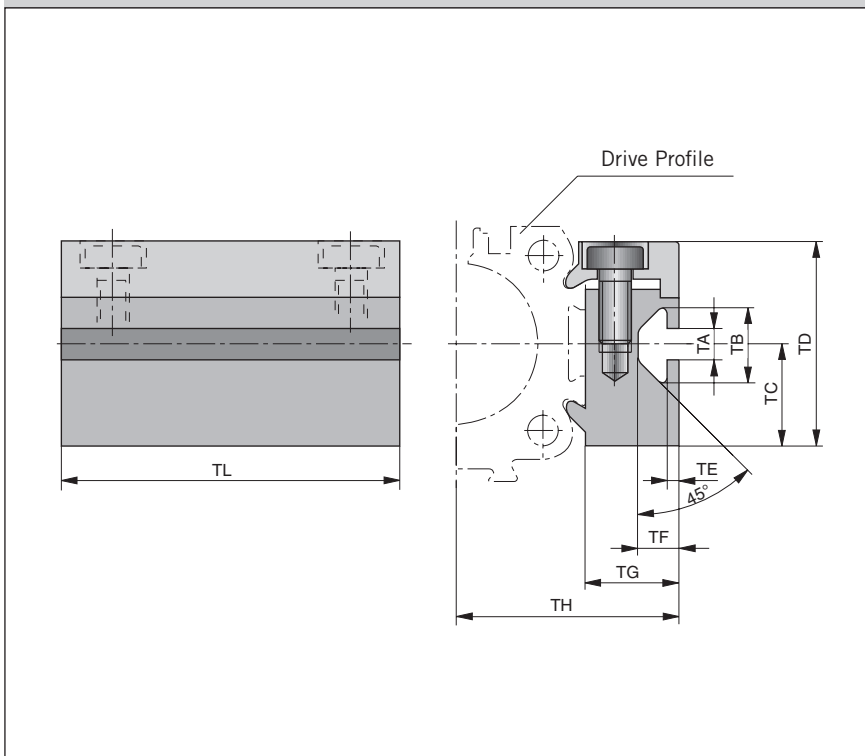
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The right to introduce technical  
modifications is reserved

For rodless pneumatic cylinder OSP-P see 1.10.002E



## Dimensions



# Linear Drive Accessories ø 16-50 mm T-Slot Profile

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

For Linear-drive  
• Series OSP-P

### T-Slot Profile OSP

- A universal attachment for mounting with standard T-Nuts

Dimension Table (mm)

| Series  | TA  | TB   | TC | TD | TE  | TF   | TG   | TH   | TL | Order No. |           |
|---------|-----|------|----|----|-----|------|------|------|----|-----------|-----------|
|         |     |      |    |    |     |      |      |      |    | Standard  | Stainless |
| OSP-P16 | 5   | 11.5 | 14 | 28 | 1.8 | 6.4  | 12   | 27   | 50 | 20433     | 20439     |
| OSP-P25 | 5   | 11.5 | 16 | 32 | 1.8 | 6.4  | 14.5 | 34.5 | 50 | 20007     | 20187     |
| OSP-P32 | 5   | 11.5 | 16 | 32 | 1.8 | 6.4  | 14.5 | 40.5 | 50 | 20007     | 20187     |
| OSP-P40 | 8.2 | 20   | 20 | 43 | 4.5 | 12.3 | 20   | 51   | 80 | 20026     | 20268     |
| OSP-P50 | 8.2 | 20   | 20 | 43 | 4.5 | 12.3 | 20   | 58   | 80 | 20026     | 20268     |

Following T-nuts from the company ITEM  
could be used:

| Cyl.-Series | T-nut St 5 | T-nut St 8 |
|-------------|------------|------------|
| OSP-P16-32  | ●          |            |
| OSP-P40-50  |            | ●          |



For rodless pneumatic cylinder OSP-P see 1.10.002E

**ORIGA**

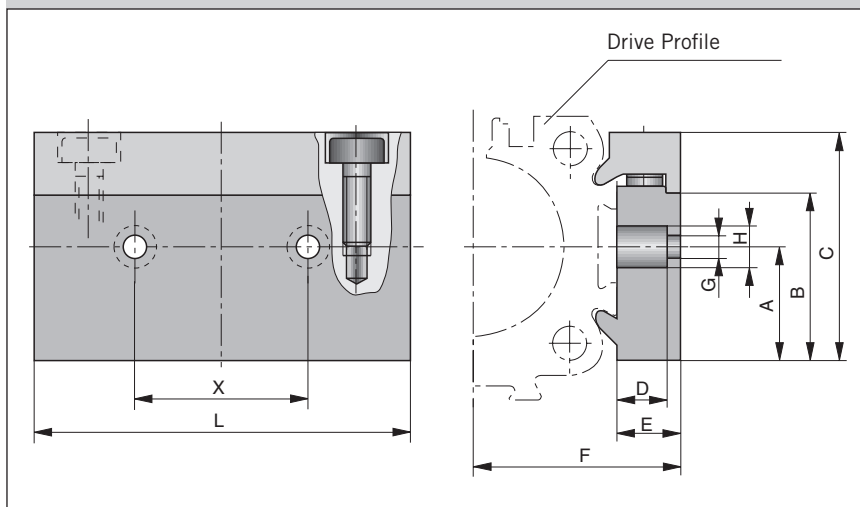
# Linear Drive Accessories

ø 16-50 mm  
Connection Profile



- For combining
- Series OSP-P with system profiles
  - Series OSP-P with Series OSP-P

## Dimensions

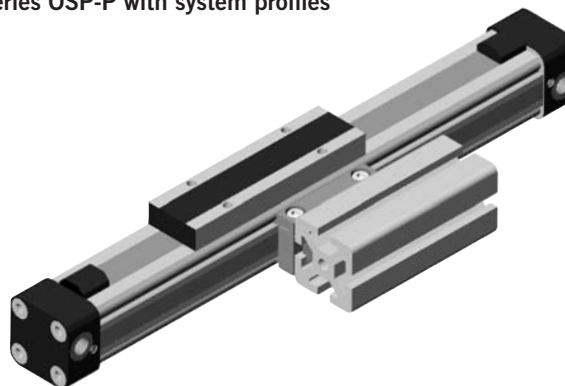


Dimension Table (mm)

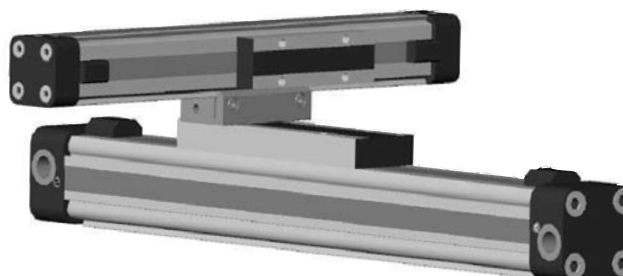
| Cylinder Series | for mounting on the carrier of | A  | B    | C  | D   | E    | F    | G   | H  | L  | X  | Order No. |
|-----------------|--------------------------------|----|------|----|-----|------|------|-----|----|----|----|-----------|
| OSP-P16         | OSP25                          | 14 | 20.5 | 28 | 8.5 | 12   | 27   | 5.5 | 10 | 50 | 25 | 20849     |
| OSP-P25         | OSP32-50                       | 16 | 23   | 32 | 8.5 | 10.5 | 30.5 | 6.6 | 11 | 60 | 27 | 20850     |
| OSP-P32         | OSP32-50                       | 16 | 23   | 32 | 8.5 | 10.5 | 36.5 | 6.6 | 11 | 60 | 27 | 20850     |
| OSP-P40         | OSP32-50                       | 20 | 33   | 43 | 8   | 14   | 45   | 6.6 | 11 | 60 | 27 | 20851     |
| OSP-P50         | OSP32-50                       | 20 | 33   | 43 | 8   | 14   | 52   | 6.6 | 11 | 60 | 27 | 20851     |

## Possible Combinations

### Combination of Series OSP-P with system profiles



### Combination of Series OSP-P with Series OSP-P



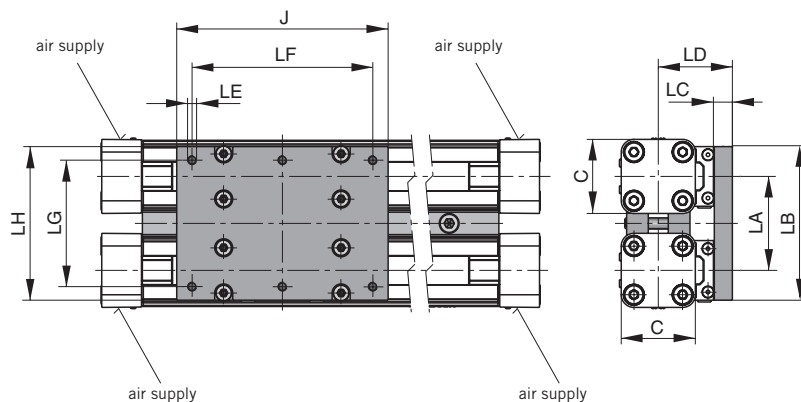
A1P681E00AHH00X

The right to introduce technical modifications is reserved



For rodless pneumatic cylinder OSP-P see 1.10.002E

## Dimensions



# Linear Drive Accessories ø 25-50 mm Duplex Connection

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

For connection of cylinders of the  
Series OSP-P

The duplex connection combines two  
OSP-P cylinders of the same size into  
a compact unit with high performance.

Dimension Table (mm)

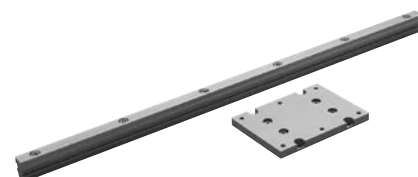
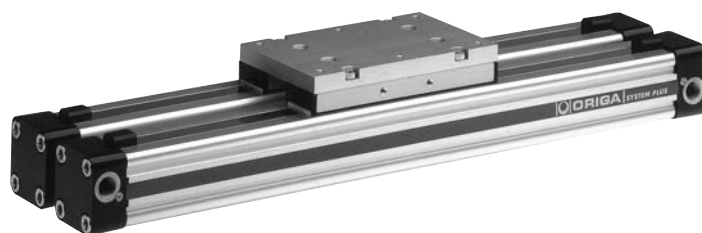
| Cylinder<br>Series | C  | J   | LA | LB  | LC | LD | LE | LF  | LG  | LH  | Order No. |           |
|--------------------|----|-----|----|-----|----|----|----|-----|-----|-----|-----------|-----------|
|                    |    |     |    |     |    |    |    |     |     |     | Standard  | Stainless |
| OSP-P25            | 41 | 117 | 52 | 86  | 10 | 41 | M5 | 100 | 70  | 85  | 20153     | 20194     |
| OSP-P32            | 52 | 152 | 64 | 101 | 12 | 50 | M6 | 130 | 80  | 100 | 20290     | 20291     |
| OSP-P40            | 69 | 152 | 74 | 111 | 12 | 56 | M6 | 130 | 90  | 110 | 20156     | 20276     |
| OSP-P50            | 87 | 200 | 88 | 125 | 12 | 61 | M6 | 180 | 100 | 124 | 20292     | 20293     |

## Features

- increased load and torque capacity
- higher driving forces

## Included in delivery:

- 2 clamping profiles with screws
- 1 mounting plate with fixings



For rodless cylinders OSP-P see 1.10.002E

Data Sheet No. 1.45.011E

**ORIGA**

# Linear Drive Accessories

ø 25-50 mm  
Multiplex Connection



For connection of cylinders of the  
Series OSP-P

The multiplex connection combines  
two or more OSP-P cylinders of the  
same size into on unit.

## Features

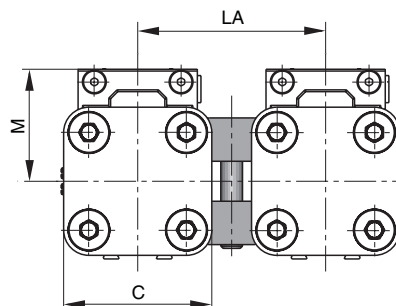
- The orientation of the carriers can  
be freely selected

## Included in delivery:

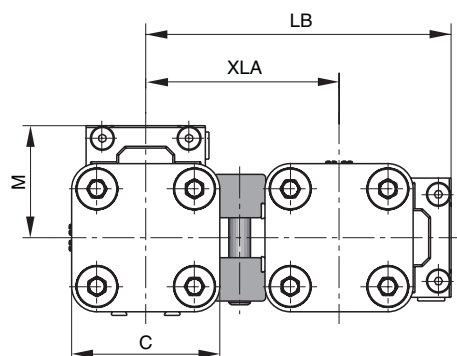
2 clamping profiles with clamping  
screws

## Dimensions

Installation:  
Top carrier/Top carrier

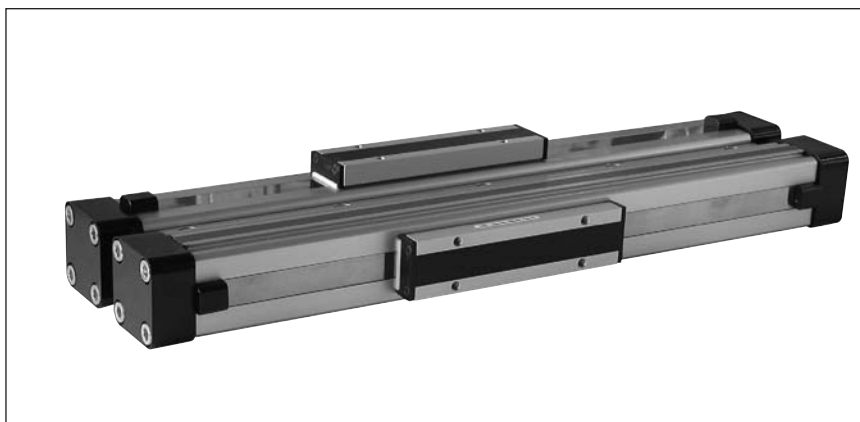


Installation:  
Top carrier/Side carrier



## Dimension Table (mm)

| Cylinder<br>Series | C  | M  | LA | LB    | XLA  | Order No. |           |
|--------------------|----|----|----|-------|------|-----------|-----------|
|                    |    |    |    |       |      | Standard  | Stainless |
| OSP-P25            | 41 | 31 | 52 | 84.5  | 53.5 | 20035     | 20193     |
| OSP-P32            | 52 | 38 | 64 | 104.5 | 66.5 | 20167     | 20265     |
| OSP-P40            | 69 | 44 | 74 | 121.5 | 77.5 | 20036     | 20275     |
| OSP-P50            | 87 | 49 | 88 | 142.5 | 93.5 | 20168     | 20283     |



For rodless cylinders OSP-P see 1.10.002E

A1P706E00HAD00X

The right to introduce technical  
modifications is reserved



| Characteristics                            |                  |                                                           |                         |
|--------------------------------------------|------------------|-----------------------------------------------------------|-------------------------|
| Characteristics                            | Unit             | Description                                               |                         |
| Electrical Characteristics                 |                  | Type RS                                                   | Type ES                 |
| Switching output                           |                  | Reed                                                      | PNP, NPN                |
| Operating voltage                          | V                | 10-240 AC/DC (NO)<br>10-150 AC/DC (NC)                    | 10-30 DC                |
| Residual voltage                           | V                | < 3                                                       | < 3                     |
| Connection                                 |                  | Two wire                                                  | Three wire              |
| Output function                            |                  | normally open<br>normally closed                          | normally open           |
| Permanent current                          | mA               | 200                                                       | 200                     |
| Max. switching capacity                    | VA (W)           | 10 VA                                                     | —                       |
| Power consumption without load             | mA               | —                                                         | < 20                    |
| Function indicator                         |                  | LED, yellow                                               |                         |
| Typical switching time                     | ms               | On: < 2                                                   | On: < 2                 |
| Switch-off delay                           | ms               | —                                                         | ca. 25                  |
| Pole reversal does not work                |                  | LED                                                       | —                       |
| Pole reversal protection                   |                  | —                                                         | Built in                |
| Short-circuit protection                   |                  | —                                                         | Built in                |
| Switchable capacity load                   | μF               | 0.1 at 100 Ω, 24 VDC                                      |                         |
| Switching point accuracy                   | mm               | ± 0,2                                                     |                         |
| Switching distance                         | mm               | ca. 15                                                    | ca. 15                  |
| Hysteresis for OSP                         | mm               | ca. 8                                                     | ca. 3                   |
| Lifetime                                   |                  | 3 x 10 <sup>6</sup> , up to<br>6 x 10 <sup>6</sup> cycles | Theoretically unlimited |
| Mechanical Characteristics                 |                  |                                                           |                         |
| Housing                                    |                  | Makrolon, smoke color                                     |                         |
| Cable cross section                        | mm <sup>2</sup>  | 2 x 0.14                                                  | 3 x 0.14                |
| Cable type *)                              |                  | PVC                                                       | PUR, black              |
| Bending radius fixed                       | mm               | ≥ 20                                                      |                         |
| moving                                     | mm               | ≥ 70                                                      |                         |
| Weight (Mass)                              | kg               | 0.012                                                     |                         |
| Degree of protection                       | IP               | 67 to DIN EN 60529                                        |                         |
| Ambient temperature range *) <sup>1)</sup> | °C<br>°C         | -25 other temperature ranges<br>+80 on request            |                         |
| Shock resistance                           | m/s <sup>2</sup> | 100<br>(contact switches)                                 | 500                     |

\*) other versions on request

<sup>1)</sup> for the magnetic switch temperature range, please take into account the surface temperature and the self-heating properties of the linear drive.

# Linear Drive Accessories

## ø 10-80 mm Magnetic Switches



For electrical sensing of the carrier position, e.g. at the end positions, magnetic switches 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 magnetic switches 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.**

$$\text{Min. reaction time} = \frac{\text{Switching distance}}{\text{Piston speed}}$$



For linear drives see 1.10.002E

## Type RS

In the type RS contact is made by a mechanical **reed switch** encapsulated in glass.

Direct connection with 2-pole cable, 5 m long, open ended (**Type RS-K**).

## 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 5 m cable with connector and open end can be ordered separately, or use the Order No. for the complete Type ES with 5 m cable.

## Magnetic Switches 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.

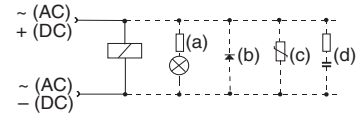
With **resistive and capacitive loads** with high switch-on current, such as light bulbs, a protective resistor should be fitted. This also applies to long cable lengths and voltages over 100 V.

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

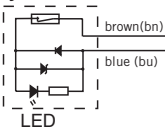
Load with protective circuits  
(a) Protective resistor for light bulb  
(b) Freewheel diode on inductivity  
(c) Varistor on inductivity  
(d) RC element on inductivity



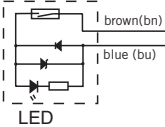
For the type ES, external protective circuits are not normally needed.

### Electrical Connection, Type RS

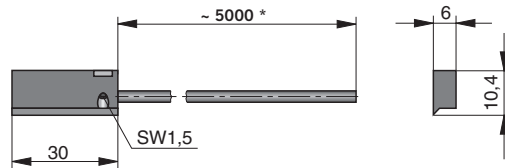
#### Normally closed (NC)



#### Normally open (NO)



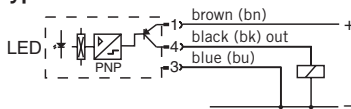
### Dimensions (mm) – Type RS-K



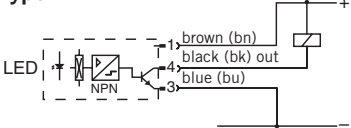
\* Length with possible minus tolerance, see chart below

### Electrical Connection, Type ES

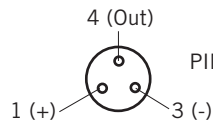
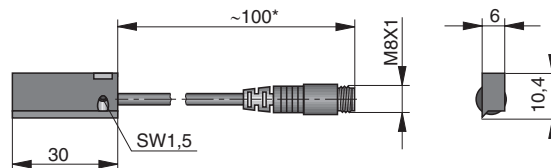
#### Standard Version: Type PNP



#### Optional Version Type NPN



### Dimensions (mm) – Type ES-S



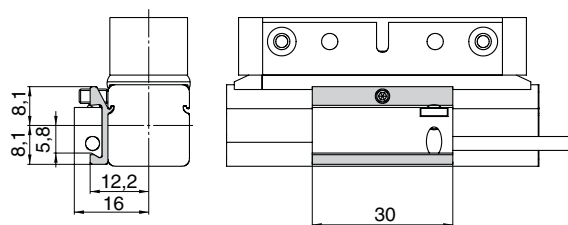
PIN assignment (view of pins) according to DIN EN 50044

\* Length with possible minus tolerance, see chart below

### Length of connection cable with length tolerance

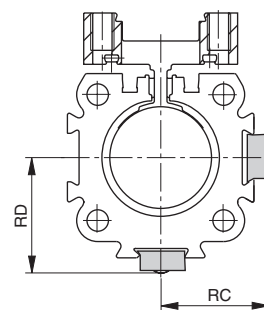
| Magnetic Switch Order No. | Nominal cable length | Length tolerance |
|---------------------------|----------------------|------------------|
| KL3045                    | 5000 mm              | – 50 mm          |
| KL3048                    | 5000 mm              | – 50 mm          |
| KL3054                    | 100 mm               | – 20 mm          |
| KL3060                    | 145 mm               | ± 5 mm           |

### Dimensions Series OSP-P10



Note:  
Sensors can not be mounted directly opposite of the carrier

### Dimensions Series OSP-P16 to 80



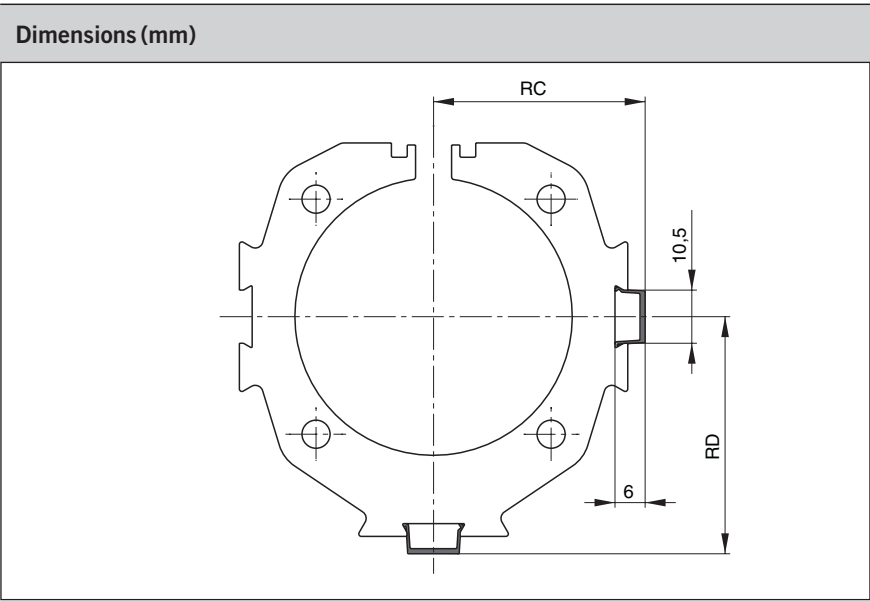
### Dimension Table (mm) and Order Instructions

| Series                                                                     | Dimensions |      | Order No.                  |                              |           |         |                          |       |                                         |
|----------------------------------------------------------------------------|------------|------|----------------------------|------------------------------|-----------|---------|--------------------------|-------|-----------------------------------------|
|                                                                            | RC         | RD   | RS closer<br>Normally open | RS opener<br>Normally closed | ES<br>PNP | NPN     | ES compl. with 5 m cable |       | Adapter<br>only for OSP-P10)            |
| OSP-P10                                                                    | –          | –    | Type:                      | Type:                        | Type:     | Type:   | Type:                    | Type: | 20968<br><br>please order<br>separately |
| OSP-P16                                                                    | 20         | 20.5 | RS-K                       | RS-K                         | ES-S      | ES-S    | ES-S                     | ES-S  |                                         |
| OSP-P25                                                                    | 25         | 27   | KL3045                     | KL 3048                      | KL 3054   | KL 3060 | 10750                    | 10751 |                                         |
| OSP-P32                                                                    | 31         | 34   |                            |                              |           |         |                          |       |                                         |
| OSP-P40                                                                    | 36         | 39   |                            |                              |           |         |                          |       |                                         |
| OSP-P50                                                                    | 43         | 48   |                            |                              |           |         |                          |       |                                         |
| OSP-P63                                                                    | 53         | 59   |                            |                              |           |         |                          |       |                                         |
| OSP-P80                                                                    | 66         | 72   |                            |                              |           |         |                          |       |                                         |
| Cable 5 m with connector and with open end for magnetic switches Type ES-S |            |      |                            |                              | 4041      |         |                          |       |                                         |

# Linear Drive Accessories

ø 16-80 mm  
Cable Cover

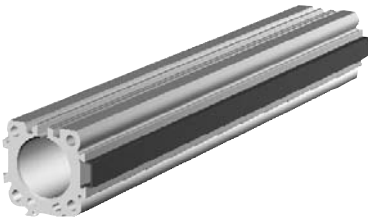
For clean guidance of magnetic switch  
cables along the cylinder body.  
Contains a maximum of 3 cables with  
diameter 3 mm.  
Material: Plastic  
Colour: Red  
Temperature Range: -10 to +80°C



| Dimension Table (mm) and Order Instructions |                 |      |                                                                                              |
|---------------------------------------------|-----------------|------|----------------------------------------------------------------------------------------------|
| Series                                      | Dimensions (mm) |      | Order No.                                                                                    |
|                                             | RC              | RD   |                                                                                              |
| OSP-P16                                     | 18.5            | 19   | 13039<br><br>Minimal length: 1m<br>Max. profile length: 2m<br>Multiple profiles can be used. |
| OSP-P25                                     | 23.5            | 25.5 |                                                                                              |
| OSP-P32                                     | 29.5            | 32   |                                                                                              |
| OSP-P40                                     | 34.5            | 37.5 |                                                                                              |
| OSP-P50                                     | 41.5            | 46.5 |                                                                                              |
| OSP-P63                                     | 51.5            | 57.5 |                                                                                              |
| OSP-P80                                     | 64.5            | 70.5 |                                                                                              |

A1P687E00HAE00X

The right to introduce technical  
modifications is reserved



| Characteristics                                                            |                 |                                                                       |                                                                                          |
|----------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Characteristics                                                            | Unit            | Description                                                           |                                                                                          |
| Electrical Characteristics                                                 |                 | Type RST                                                              | Type EST                                                                                 |
| Switching output                                                           |                 | Reed                                                                  | PNP                                                                                      |
| Operating voltage                                                          | V               | 10-30 AC/DC                                                           | 10-30 DC                                                                                 |
| Ripple                                                                     |                 | -                                                                     | ≤10%                                                                                     |
| Voltage drop                                                               | V               | ≤3                                                                    | ≤2                                                                                       |
| Electrical configuration                                                   |                 | 2 wire                                                                | 3 wire                                                                                   |
| Output function                                                            |                 | normally open<br>normally closed                                      | normally open                                                                            |
| Permanent current                                                          | mA              | ≤ 100                                                                 | ≤ 100                                                                                    |
| Breaking capacity                                                          | W               | ≤ 6 peak                                                              | -                                                                                        |
| Power consumption,<br>at U <sub>B</sub> =24V,<br>switched on, without load | mA              | -                                                                     | ≤ 10                                                                                     |
| Function indicator                                                         |                 | LED, yellow (not for normally closed)                                 |                                                                                          |
| Response time                                                              | ms              | ≤2                                                                    | ≤0.5                                                                                     |
| Sensitivity                                                                | mT              | 2 – 4                                                                 | 2 – 4                                                                                    |
| Time delay before availability                                             | ms              | -                                                                     | ≤2                                                                                       |
| Reverse polarity prot.                                                     |                 | yes                                                                   | yes                                                                                      |
| Short-circuit protection                                                   |                 | no                                                                    | yes (pulsed)                                                                             |
| Switchable capacity load                                                   | μF              | 0.1 at 100 Ω, 24 VDC                                                  |                                                                                          |
| Switching frequency                                                        | Hz              | ≤400                                                                  | ≤5 k                                                                                     |
| Repeatability                                                              | mm              | ≤0.2                                                                  | ≤0.2                                                                                     |
| Hysteresis                                                                 | mm              | ≤1.5                                                                  | ≤1.5                                                                                     |
| EMC                                                                        | EN              | 60947-5-2                                                             |                                                                                          |
| Lifetime                                                                   |                 | ≥35 Mio. cycles<br>with PLC load                                      | unlimited                                                                                |
| Power-up pulse<br>suppression                                              |                 | -                                                                     | yes                                                                                      |
| Protection for<br>inductive load                                           |                 | -                                                                     | yes                                                                                      |
| Mechanical Characteristics                                                 |                 |                                                                       |                                                                                          |
| Housing                                                                    |                 | Plastic / PA66 + PA6I red                                             |                                                                                          |
| Cable cross section                                                        | mm <sup>2</sup> | 2 x 0.14                                                              | 3 x 0.14                                                                                 |
| Cable type                                                                 |                 | PUR, black                                                            | PUR, black                                                                               |
| Bending radius                                                             | mm              | ≥36                                                                   | ≥30                                                                                      |
| Weight                                                                     | kg              | ca. 0.030 RST-K<br>ca. 0.010 RST-S                                    | ca. 0.030 EST-K<br>ca. 0.010 EST-S                                                       |
| Degree of protection                                                       | IP              | 67 to EN 60529                                                        |                                                                                          |
| Ambient<br>temperature range <sup>1)</sup>                                 | °C              | -25 to +80                                                            | -25 to +75<br>at U <sub>B</sub> =10 – 30 V<br>-25 to +80<br>at U <sub>B</sub> =10 – 28 V |
| – with adapter                                                             | °C              | -25 to +60                                                            |                                                                                          |
| Adapter<br>tightening torque                                               | Nm              | 0.15 (tightening torque of screwing adapter<br>on to magnetic switch) |                                                                                          |
| Shock resistance                                                           |                 |                                                                       |                                                                                          |
| Vibration to EN 60068-2-6                                                  | G               | 15, 11 ms, 10 to 55 Hz, 1 mm                                          |                                                                                          |
| Shock to EN 60068-2-27                                                     | G               | 50, 11 ms                                                             |                                                                                          |
| Bump to EN 60068-2-29                                                      | G               | 30, 11 ms, 1000 bumps each axis                                       |                                                                                          |
| For linear drives see 1.10.002E                                            |                 |                                                                       |                                                                                          |

Data Sheet No. 1.45.104E-1

# Linear Drive Accessories

## ø 10-80 mm Magnetic Switches



Series **RST**  
**EST**

Magnetic switches are used for electrical sensing of the position of the piston, e.g. at its end positions. They can also be used for sensing of intermediate positions.

Sensing is contactless, based on magnets which are built-in as standard. A yellow LED indicates operating status.

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

<sup>1)</sup> for the magnetic switch temperature range, please take into account the surface temperature and the self-heating properties of the linear drive.



## Type RST

In the type RST contact is made by a mechanical **reed switch** encapsulated in glass.

## Type EST

In the type EST 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 5 m cable with connector and open end can be ordered separately, or use the Order No. for the complete Type ES with 5 m cable.

## Magnetic Switches RST and EST

### 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.

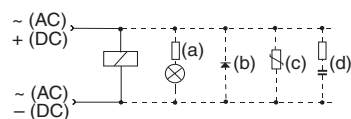
With **resistive and capacitive loads** with high switch-on current, such as light bulbs, a protective resistor should be fitted. This also applies to long cable lengths and voltages over 100 V.

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

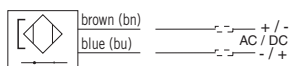
Load with protective circuits  
(a) Protective resistor for light bulb  
(b) Freewheel diode on inductivity  
(c) Varistor on inductivity  
(d) RC element on inductivity



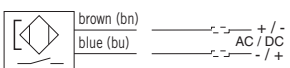
For the type EST, external protective circuits are not normally needed.

### Electrical Connection Type RST-K

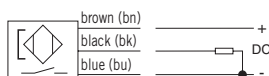
#### Normally closed



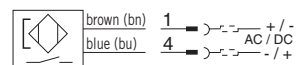
#### Normally open



### Electrical Connection Type EST-K



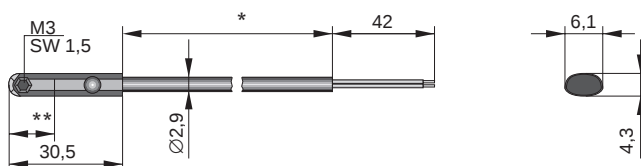
### Electrical Connection Type RST-S



### Electrical Connection Type EST-S



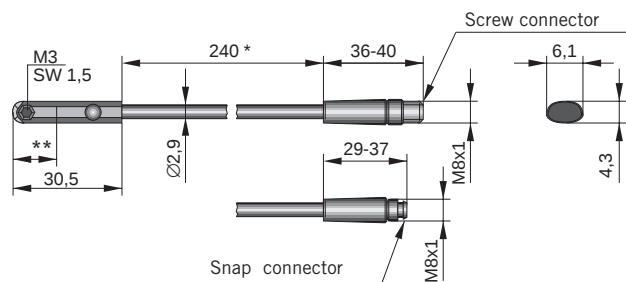
### Dimensions (mm) – Type RST-K, EST-K



\* Cable lengths available: 5000 mm  $\pm$  75 mm  
2000 mm  $\pm$  40 mm

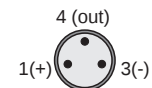
\*\* Switching point: Type RST-K Normally closed 14 mm  
Type RST-K Normally open 12.3 mm  
Type EST-K Normally open 8.1 mm

## Dimensions (mm) – Type RST-S, EST-S



\*  $\pm 6$  mm

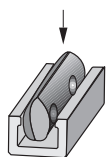
\*\* Switching point: Type RST-K Normally closed 14 mm  
Type RST-K Normally open 12.3 mm  
Type EST-K Normally open 8.1 mm



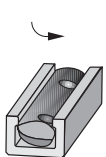
PIN assignment  
(view of pins)  
to DIN EN 50044

## Installation

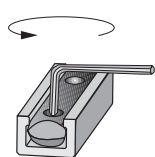
Insert  
magnetic  
switch



Rotate  
magnetic  
switch



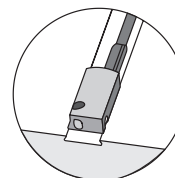
Secure  
magnetic  
switch



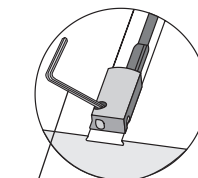
Insert magnetic switch  
into adapter



Insert adapter  
into cylinder  
dovetail slot

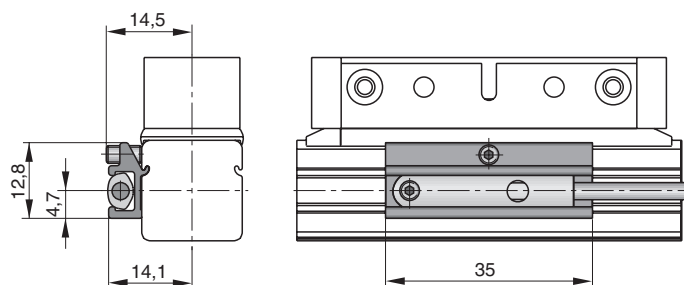


Tighten screw:  
torque 1.5 Nm

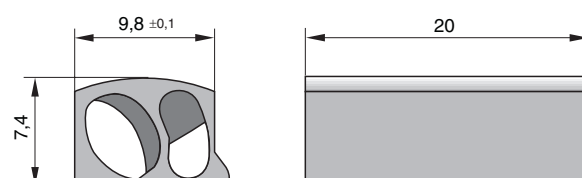


SW = 1.5 mm

## Dimensions adapters for RST/EST magnetic switch – for type OSP-P10



## Dimensions adapters for RST/EST magnetic switch – for type OSP-P16 – 80



| Order Instructions                                                                                     |                 |       |           |
|--------------------------------------------------------------------------------------------------------|-----------------|-------|-----------|
| Version                                                                                                | Voltage         | Type  | Order No. |
| Magnetic switch,<br>reed contact, normally open,<br>LED indicator, cable 2 m                           | 10-30 V AC / DC | RST-K | KL 3301   |
| Magnetic switch,<br>reed contact, normally open,<br>LED indicator, cable 5 m                           | 10-30 V AC / DC | RST-K | KL 3300   |
| Magnetic switch,<br>reed contact, normally open,<br>snap connector M8,<br>LED indicator, cable 0.24 m  | 10-30 V AC / DC | RST-S | KL 3302   |
| Magnetic switch,<br>reed contact, normally open,<br>screw connector M8,<br>LED indicator, cable 0.24 m | 10-30 V AC / DC | RST-S | KL 3303   |
| Magnetic switch,<br>reed contact, normally closed,<br>cable 5 m                                        | 10-30 V AC / DC | RST-K | KL 3305   |
| Magnetic switch,<br>electronic, PNP<br>LED indicator, cable 2 m                                        | 10-30 V DC      | EST-K | KL 3308   |
| Magnetic switch,<br>electronic, PNP<br>LED indicator, cable 5 m                                        | 10-30 V DC      | EST-K | KL 3309   |
| Magnetic switch,<br>electronic, PNP<br>snap connector M8,<br>LED indicator                             | 10-30 V DC      | EST-S | KL 3312   |
| Magnetic switch,<br>electronic, PNP<br>screw connector M8,<br>LED indicator                            | 10-30 V DC      | EST-S | KL 3306   |

**Included in delivery:** 1 magnetic switch, 1 adapter for T-slot magnetic switch for type OSP-P16 – 80  
**Note:** When using T-nut magnetic switches with the OSP-P10,  
please order the adapter Order No. 8872 separately.

| Accessories                                                                 |         |           |
|-----------------------------------------------------------------------------|---------|-----------|
| Description                                                                 | Type    | Order No. |
| Cable M8, 2.5 m<br>without lock nut                                         | KS 25   | KY 3240   |
| Cable M8, 5.0 m<br>without lock nut                                         | KS 50   | KY 3241   |
| Cable M8, 10.0 m<br>without lock nut                                        | KS 100  | KC 3140   |
| Cable M8, 2.5 m<br>with lock nut                                            | KSG 25  | KC 3102   |
| Cable M8, 5.0 m<br>with lock nut                                            | KSG 50  | KC 3104   |
| Adapter for RST/EST magnetic switch – for type OSP-P10                      | HMTP010 | 8872      |
| Adapter for RST/EST magnetic switch – for type OSP-P16 – 80<br>(pack of 10) |         | KL 3333   |

| Characteristics                         |          |                                                                                              |                |
|-----------------------------------------|----------|----------------------------------------------------------------------------------------------|----------------|
| Characteristics                         | Unit     | Description                                                                                  |                |
| Elektrical Characteristics              |          | Type RS-K ATEX                                                                               | Type ES-K ATEX |
| ATEX Certification                      |          | yes                                                                                          | yes            |
| Category Type: RS-K                     |          | ⊕ II 3GD EEX nC IIC T3 146°C                                                                 |                |
| Category Type: ES-K                     |          | ⊕ II 2GD EEX ib IIC T5 100°C                                                                 |                |
| Switching output                        |          | Reed                                                                                         | NAMUR          |
| Operating voltage                       | V        | 10-240 AC/DC                                                                                 | 7-10 DC        |
| Voltage drop                            | V        | ≤ 3                                                                                          | –              |
| Electrical configuration                |          | Two wire                                                                                     | Two wire       |
| Output function                         |          | normally open                                                                                | normally open  |
| Permanent current                       | mA       | ≤ 200                                                                                        | ≤ 3            |
| Power consumption                       | W/VA     | ≤ 10/10 peak                                                                                 | –              |
| Peak current                            | mA       | ≤ 500                                                                                        | –              |
| Power consumption without load          | mA       | –                                                                                            | ≤ 1            |
| Function indicator                      |          | LED, yellow                                                                                  |                |
| Response time On/Out                    | ms       | ≤ 2                                                                                          | ≤ 0.5          |
| Sensitivity                             | mT       | 2-4                                                                                          | 2-4            |
| Reverse polarity prot.                  |          | yes                                                                                          | yes            |
| Short-circuit protection                |          | no                                                                                           | yes            |
| Repeatability                           | mm       | ≤ 0.2                                                                                        | ≤ 0.2          |
| Hysteresis                              | mm       | ≤ 1.5                                                                                        | ≤ 1.5          |
| EMC                                     | EN       | 60947-5-2                                                                                    |                |
| Lifetime                                |          | ≥ 10 Mio. Cycles with PLC load                                                               |                |
| Mechanical Characteristics              |          |                                                                                              |                |
| Housing                                 |          | Makrolon, smoke color                                                                        |                |
| Cable cross section                     | mm²      | 2 x 0.14                                                                                     | 2 x 0.14       |
| Cable type                              |          | PVC, blau                                                                                    | PVC, blue      |
| Weight                                  | kg       | ca. 0.075                                                                                    |                |
| Degree of protection                    | IP       | 67 to EN 60529                                                                               |                |
| Ambient temperature range <sup>1)</sup> | °C<br>°C | -25<br>+80                                                                                   | -20<br>+75     |
| Surface temperature                     | °C       | The maximum surface temperature T=146°C is referred to the max. ambiente temperature of 80°C | –              |
| Shock resistance                        |          |                                                                                              |                |
| Vibration and Shock                     |          | 50G at 50Hz and 1mm                                                                          |                |

<sup>1)</sup> for the magnetic switch temperature range, please take into account the surface temperature and the self-heating properties of the linear drive.

**OSP**  
— ORIGA  
— SYSTEM  
— PLUS

## Components for EX-Areas

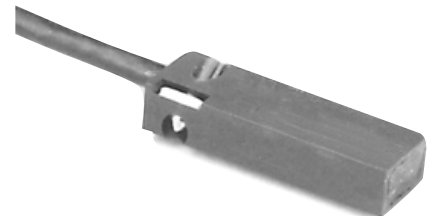


### Magnetic Switches ø 10 – 80 mm

Series: RS-K..ATEX  
ES-K..ATEX

For electrical sensing of the carrier position, e.g. at the end positions, magnetic switches 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 magnetic switches are suitable for all HOERBIGER Origa OSP-Actuators and aluminum profile rod type cylinders.



For Linear Drives in ATEX-Version see 1.10.020E

# Magnetic Switches

## Type RS-K

### ATEX-Version

In the type RS contact is made by a mechanical **reed switch** encapsulated in glass.

ATEX-Category Type: RS-K  
 Ex II 3GD EEX nC IIC T3 146°C

#### Electrical Service Life

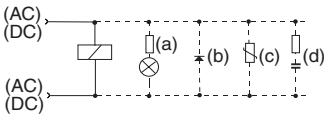
#### Protective Measures

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 capacitive loads** with high switch-on current, such as light bulbs, a protective resistor should be fitted. This also applies to long cable lengths.

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



# Magnetic Switches

## Type ES-K

### ATEX-Version

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.

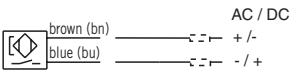
ATEX-Category Type: ES-K  
 Ex II 2GD EEX ib IIC T5 100°C

**Note!**  
 The connection of the magnetic switch Type ES-K ATEX must be realised by means of an EEX i switching amplifier (see Accessories).

#### Electrical Connection

#### Type RS-K ATEX

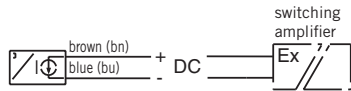
Normally open (Reed)



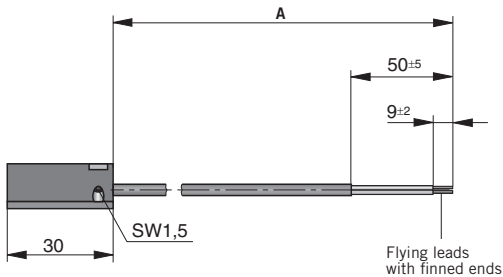
#### Electrical Connection

#### Type ES-K ATEX

Normally open (NAMUR)



#### Dimensions (mm)



#### Dimension Table (mm)

| Magnetic switch Order No. | Nominal cable length A | Lenghts tolerance |
|---------------------------|------------------------|-------------------|
| KL3240                    | 5000                   | - 50              |
| KL3241                    | 10000                  | - 50              |
| KL3250                    | 5000                   | - 50              |
| KL3251                    | 10000                  | - 50              |

| Order Instructions                                                                |                |           |           |
|-----------------------------------------------------------------------------------|----------------|-----------|-----------|
| Version                                                                           | Voltage        | Type      | Order No. |
| Magnetic switch,<br>reed contact, normally open<br>LED indicator, cable 5 m       | 10-240 V AC/DC | RS-K ATEX | KL3240    |
| Magnetic switch,<br>reed contact, normally open<br>LED indicator, cable 10 m      | 10-240 V AC/DC | RS-K ATEX | KL3241    |
| Magnetic switch, electronic,<br>NAMUR, normally open<br>LED indicator, cable 5 m  | 7-10 V DC      | ES-K ATEX | KL3250    |
| Magnetic switch, electronic,<br>NAMUR, normally open<br>LED indicator, cable 10 m | 7-10 V DC      | ES-K ATEX | KL3251    |

#### Accessories

| Description                            | for magnetic switch | Order No. |
|----------------------------------------|---------------------|-----------|
| 2 channel switching amplifier 24 V DC  | ES-K ATEX           | 2876      |
| 2 channel switching amplifier 220 V AC | ES-K ATEX           | 1546      |

**Note:** 2 magnetic switches can be connected to each switching amplifier.



# ORIGA-SENSOFLEX

## Displacement Measuring System for Cylinder Series OSP-P



### Contents

| Description                 | Data Sheet No. | Page    |
|-----------------------------|----------------|---------|
| Overview                    | 1.50.001E      | 117-118 |
| Technical Data SFI-plus     | 1.50.002E-1, 2 | 119-120 |
| Dimensions SFI-plus         | 1.50.002E-2    | 120     |
| Order Instructions SFI-plus | 1.50.002E-3    | 121     |

# ORIGA-Sensoflex

Displacement measuring system  
for automated movement

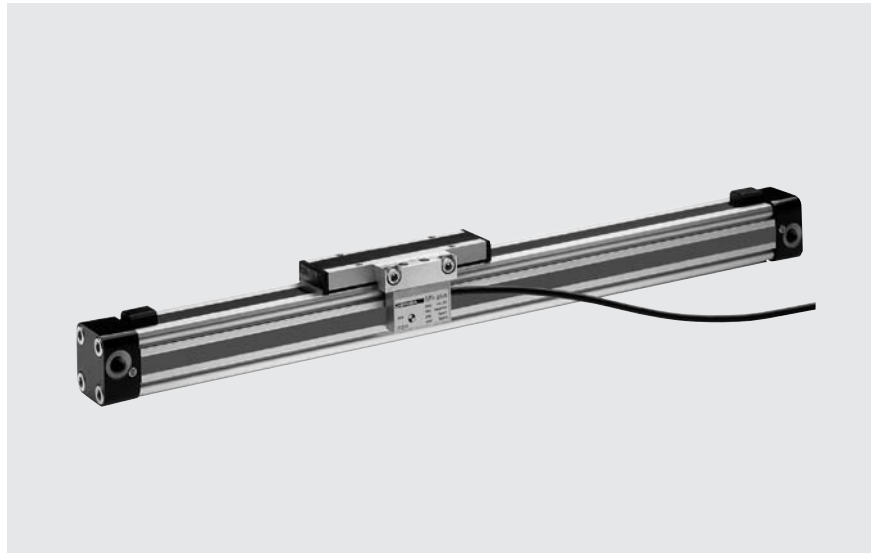
Series SFI-plus  
(incremental measuring system)

for cylinder series  
• OSP-P...

## Characteristics

- Contactless magnetic displacement measurement system
- Displacement length up to 32 m
- Resolution 0.1 mm (option: 1 mm)
- Displacement speed up to 10 m/s
- For linear and non-linear rotary motion
- Suitable for almost any control or display unit with a counter input

For further specifications,  
see 1.50.002E



The SFI-plus magnetic displacement measuring system consists of 2 main components.

- **Measuring Scale**  
Self-adhesive magnetic measuring scale

- **Sensing Head**  
Converts the magnetic poles into electrical signals which are then processed by counter inputs downstream (e.g. PLC, PC, digital counter)

A3P108E00HAA00X

The right to introduce technical  
modifications is reserved

| Characteristics                                                      |                 |                                         |       |
|----------------------------------------------------------------------|-----------------|-----------------------------------------|-------|
| Characteristics                                                      | Unit            | Description                             |       |
| Type                                                                 |                 | 21210                                   | 21211 |
| Output Function                                                      |                 |                                         |       |
| Resolution                                                           | mm              | 0.1                                     | 1     |
| Pole lengths magnetic scale                                          | mm              | 5                                       |       |
| Maximum speed                                                        | m/s             | 10                                      |       |
| Repeat accuracy                                                      |                 | ± 1 Increment                           |       |
| Distance between sensor and scale                                    | mm              | ≤ 4                                     |       |
| Tangential deviation                                                 |                 | ≤ 5°                                    |       |
| Lateral deviation                                                    | mm              | ≤ ± 1.5                                 |       |
| Switching output                                                     |                 | PNP                                     |       |
| Electrical Characteristics                                           |                 |                                         |       |
| Operating voltage U <sub>b</sub>                                     | V DC            | 18 – 30                                 |       |
| Voltage drop                                                         | V               | ≤ 2                                     |       |
| Continuous current for each output                                   | mA              | ≤ 20                                    |       |
| Power consumption at U <sub>b</sub> = 24V, switched on, without load | mA              | ≤ 50                                    |       |
| Short-circuit protection                                             |                 | yes                                     |       |
| Reverse polarity protection                                          |                 | yes                                     |       |
| Protection from inductive load                                       |                 | yes                                     |       |
| Power-up pulse suppression                                           |                 | yes                                     |       |
| EMC                                                                  |                 |                                         |       |
| Electrostatic discharge immunity                                     | kV              | 6, B, to EN 61000-4-2                   |       |
| Electromagnetic field immunity                                       | V/m             | 10, A, to EN61000-4-3                   |       |
| Electrical fast transient/burst immunity (for signal connections)    | kV              | 1, B, to EN 61000-4-4                   |       |
| Electrical fast transient/burst immunity (for DC connections)        | kV              | 2, B, to EN 61000-4-4                   |       |
| Surge immunity (for signal connections)                              | kV              | 1, B, to EN 61000-4-5                   |       |
| Surge immunity (for DC connections)                                  | kV              | 0,5, B, to EN 61000-4-5                 |       |
| Immunity to conducted disturbances                                   | V               | 10, A, to EN 61000-4-6                  |       |
| Power frequency magnetic field immunity at 50 Hz                     | A/m             | 30, A, to EN 61000-4-8                  |       |
| Emission standard for residential                                    |                 | to EN 61000-6-4                         |       |
| Radio disturbance characteristics                                    |                 | to EN 55011, Group 1, A                 |       |
| Mechanical Characteristics                                           |                 |                                         |       |
| Housing                                                              |                 | Aluminium                               |       |
| Cable length                                                         | m               | 5.0 – fixed, open end                   |       |
| Cable cross section                                                  | mm <sup>2</sup> | 4 x 0.14                                |       |
| Cable type                                                           |                 | PUR, black                              |       |
| Bending radius                                                       | mm              | ≥ 36                                    |       |
| Weigth (mass)                                                        | kg              | ca. 0.165                               |       |
| Environmental Conditions / Shock Resistance                          |                 |                                         |       |
| Degree of protection                                                 | IP              | 67 to EN60529                           |       |
| Ambient temperature range                                            | °C              | -25 to +80                              |       |
| Broad-band random vibration to EN 60068-2-64                         | g               | 5, 5 Hz to 2 kHz, 0.5 h each axis       |       |
| Vibration stress to EN 60068-2-6                                     | g               | 12, 10 Hz to 2 kHz, 2 mm, 5 h each axis |       |
| Shock to EN 60068-2-27                                               | g               | 100, 6 ms, 50 bumps each axis           |       |
| Bump to EN 60068-2-29                                                | g               | 5, 2 ms, 8000 bumps each axis           |       |

For **Overview** see 1.50.001

# Displacement measuring system

for automated movement

## ORIGA-Sensoflex (incremental displacement measuring system)

Series SFI-plus  
for cylinder series

- OSP-P...

### Note:

For combinations Active Brake AB +  
SFI-plus + Magnetic Switch contact  
our technical department please.



Sensing Head

The sensing head provides two pulsating, 90° out of phase counter signals (phase A/B) with a 0.4 mm resolution (option 4 mm). External processing can improve the resolution to 0.1 mm (option 1 mm). The counting direction can be determined automatically from the phase variance of the counter signals.

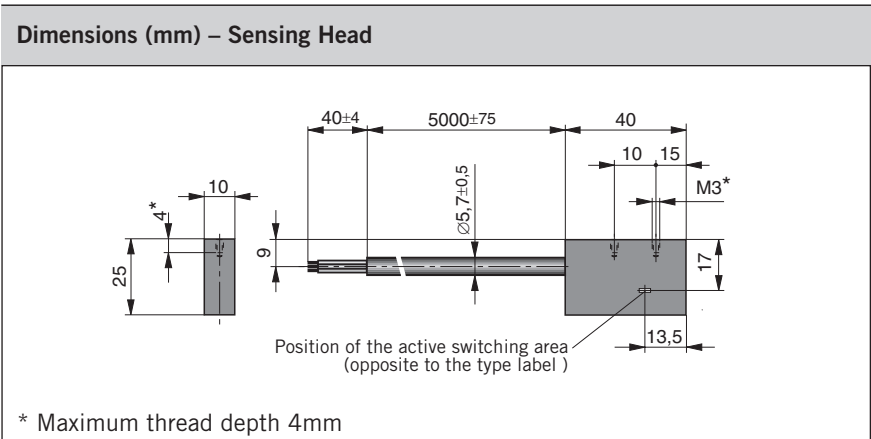
| Electrical Connection |             |
|-----------------------|-------------|
| Colour                | Description |
| bn = brown            | + DC        |
| bu = blue             | – DC        |
| bl = black            | Phase A     |
| wt = white            | Phase B     |

SFI-plus mounted on a rodless cylinder series OSP-P

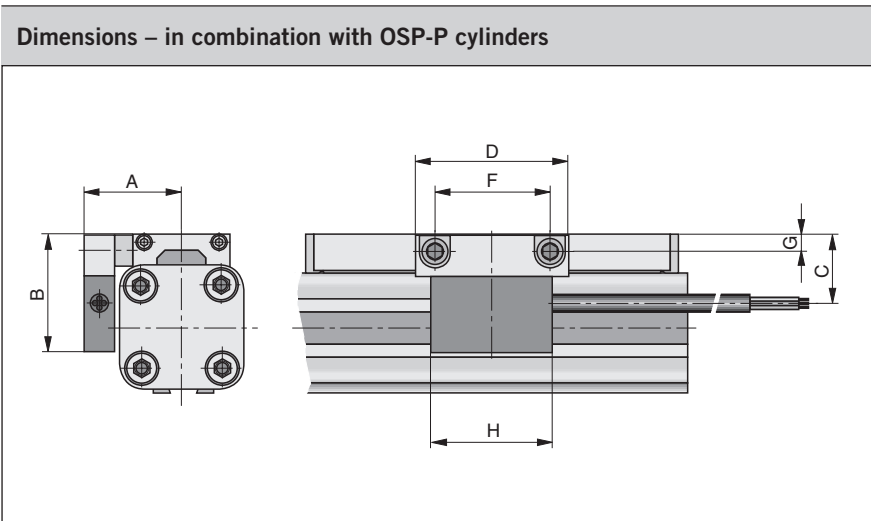
The SFI-plus system can be mounted directly on a rodless OSP-P cylinder with the special mounting kit. The position of the sensing head is generally 90° to the carrier.



Combinations consisting of SFI-plus and OSP-P Cylinders with guides are available on request.



| Output signal – Sensing Head |         |          |     |  |
|------------------------------|---------|----------|-----|--|
| $U_a = U_e$                  | Phase B | $U_{a1}$ | 0°  |  |
|                              | Phase A | $U_{a2}$ | 90° |  |



| Dimension Table (mm) |      |    |    |    |    |     |    |
|----------------------|------|----|----|----|----|-----|----|
| Series               | A    | B  | C  | D  | F  | G   | H  |
| OSP-P25              | 32   | 39 | 23 | 50 | 38 | 5.5 | 40 |
| OSP-P32              | 37.5 | 46 | 30 | 50 | 38 | 6.5 | 40 |
| OSP-P40              | 42.5 | 50 | 34 | 50 | 38 | 6.5 | 40 |
| OSP-P50              | 49.5 | 55 | 39 | 50 | 38 | 6.5 | 40 |
| OSP-P63              | 59.5 | 65 | 49 | 50 | 38 | 10  | 40 |
| OSP-P80              | 72.5 | 80 | 64 | 50 | 38 | 12  | 40 |

| Order instructions                                                                                                                           |              |
|----------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Description                                                                                                                                  | Order No.    |
| Sensing head with measuring scale – Resolution 0.1 mm<br>(scale length = required measuring distance + a minimum of – see table below)       | <b>21240</b> |
| Option: Sensing head with measuring scale – Resolution 1 mm<br>(scale length = required measuring distance + a minimum of – see table below) | <b>21241</b> |
| Sensing head – Resolution 0.1 mm (spare part)                                                                                                | <b>21210</b> |
| Option: Sensing head – Resolution 1 mm (spare part)                                                                                          | <b>21211</b> |
| Measuring scale per meter (spare part)                                                                                                       | <b>21235</b> |
| Mounting kit for OSP-P25                                                                                                                     | <b>21213</b> |
| Mounting kit for OSP-P32                                                                                                                     | <b>21214</b> |
| Mounting kit for OSP-P40                                                                                                                     | <b>21215</b> |
| Mounting kit for OSP-P50                                                                                                                     | <b>21216</b> |
| Mounting kit for OSP-P63                                                                                                                     | <b>21217</b> |
| Mounting kit for OSP-P80                                                                                                                     | <b>21218</b> |

\* Overall length of the measuring scale results from stroke length of the cylinder + dead length  
Dead length for linear drives series OSP-P see table.

| Series   | Dead length (mm) |
|----------|------------------|
| OSP-P 25 | 154              |
| OSP-P 32 | 196              |
| OSP-P 40 | 240              |
| OSP-P 50 | 280              |
| OSP-P 63 | 350              |
| OSP-P 80 | 422              |

**Example:**

Cylinder OSP-P, Ø25 mm, stroke length 1000 mm

dead length + stroke length = overall length of the measuring scale  
**154 mm + 1000 mm = 1154 mm**





# Notes

# Notes

# Notes

# Notes

# Notes

## Information on application

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## Importance of EU Directives

Various Directives have been issued by the EU Commission in the course of the unification of the single European market; the following Directives are in part of significance for ORIGA products:

- Simple pressure vessels (87/404/EWG, amended by 90/488/EWG and 93/68/EWG)
- Low-voltage electrical equipment (73/23/EWG, amended by 93/68/EWG)
- Machinery Directive (89/392/EWG, amended by 91/368/EWG, 93/44/EWG and 98/37/EG)
- Pressure Equipment Directive (97/23/EWG)
- Equipment and protective systems intended for use in potentially explosive atmospheres (ATEX Directive, 94/9/EG)
- Electromagnetic Compatibility Directive (EMV Directive, 89/336/EWG, amended by 92/31/EWG)

If a product comes within the scope of application of one of these Guidelines, then an EU Declaration of Conformity with CE mark (CE for Communauté Européenne) is required. This CE marking does not represent a quality feature but verifies that the conformity assessment procedure specified has been concluded successfully and the protective requirements of the relevant EU Directives have been observed.

Products which do not come under any of the above mentioned Directives may not bear the CE mark nor may any manufacturer's declaration according to the EU Machinery Directive or Declaration of Conformity be issued for these products.

If a product may not be CE marked according to the Machinery Directive, it must however be marked if it comes within the scope of application of any other Directive.

The following harmonized standards are applied in the design of ORIGA components and systems:

- DIN EN ISO 12100 Safety of machinery
- DIN EN 60204.1 Electrical equipment of machines
- DIN EN 983 Safety requirements for fluid power systems and their components

### The following Directives are of particular significance to HOERBIGER:

- ORIGA products in potentially explosive atmospheres, to which the above mentioned ATEX Directive applies, are treated according to the Directive and CE and EX marked.
- According to the Machinery Directive, ORIGA products are mainly components for installation in machines and therefore do not require an EU Declaration of Conformity with CE mark. HOERBIGER-ORIGA issues a manufacturer's declaration according to the Machinery Directive for these components. This declaration corresponds to a great extent to the Declaration of Conformity with the comment that commissioning is only permitted if the machine or system conforms to the Directives. This manufacturer's declaration impacts neither our product liability based on the product liability law nor warranty assurances according to our General Terms of Sale and Delivery. Neither does the manufacturer's declaration affect our quality assurance measures according to our Quality Management Manual nor our quality certification according to ISO 9001.
- According to the Pressure Equipment Directive, ORIGA products are components of low hazard potential, thus most of the products do not come under this Directive. The exceptions to this are maintenance equipment from a certain pressure/volume level onwards. These components are treated according to the Directive if required and bear the CE mark.

### ORIGA products are excluded from the following EU Guidelines:

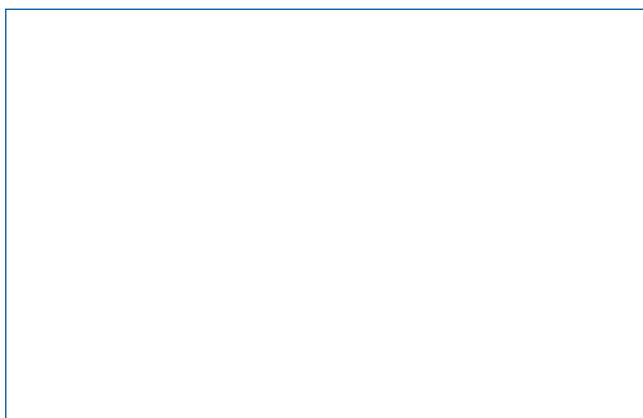
- End-of-life vehicles (2000/53/EG).
- Waste Electronic and Electrical equipment (WEEE, 2002/96/EG) and Restriction on Hazardous Substances (RoHS, 2002/95/EG).
- Pressure Equipment Directive (97/23/EWG) with the above mentioned exceptions.

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