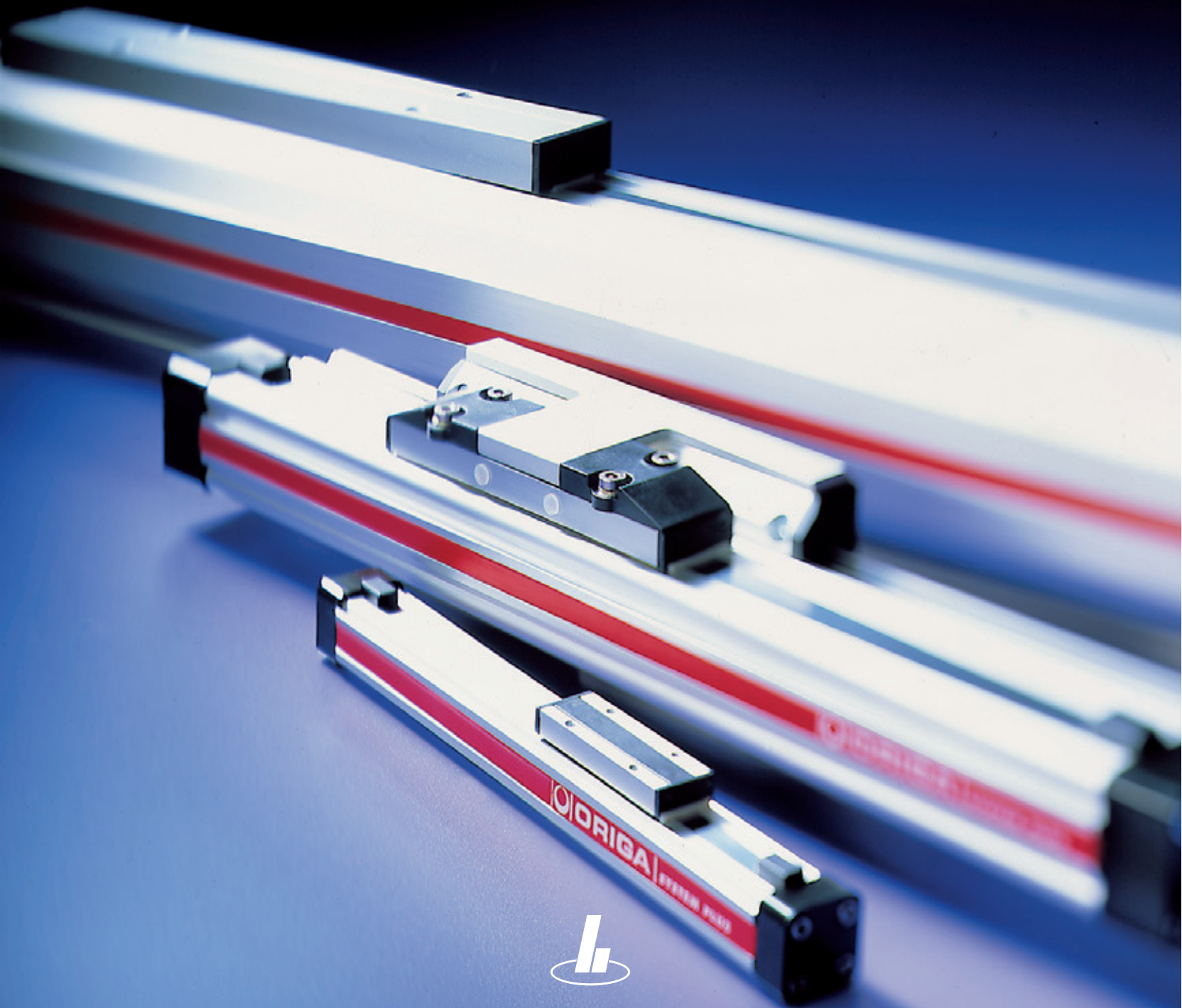


ORIGA SYSTEM PLUS

Modular Pneumatic Linear Drive Systems

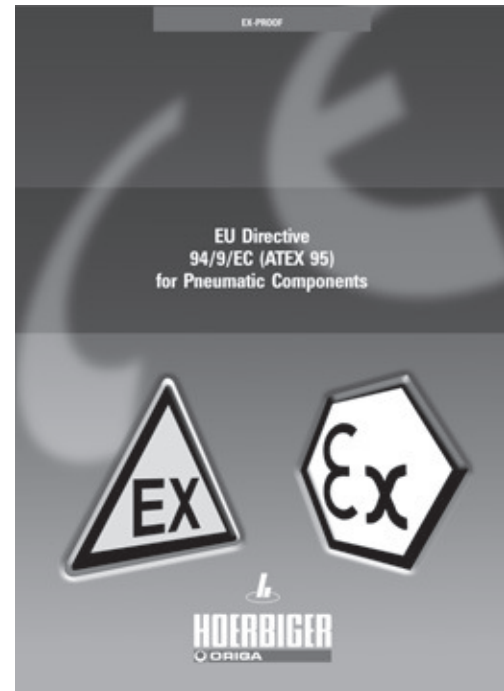


HOERBIGER
ORIGA

The HOERBIGER-ORIGA Rodless Cylinders are also available for use in potentially explosive atmospheres. 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



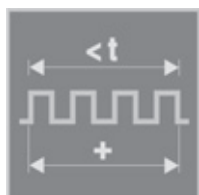
for use in Ex-Areas



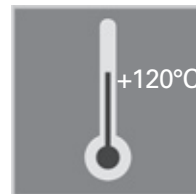
for Clean Room Applications
certified to
DIN EN ISO 14644-1



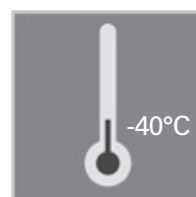
Stainless steel version
for special applications



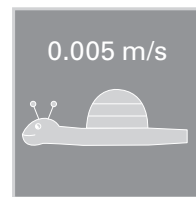
with special pneumatic
cushioning system for
cycle time optimization,
for \varnothing 16 to 50 mm
- on request



High Temperature Version
for temperatures up to
 $+120^{\circ}\text{C}$



Low Temperature Version
for temperatures up to
 -40°C



0.005 m/s

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



$< 30 \text{ m/s}$

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

Contents

Linear Drives

OSP
— ORIGA
— SYSTEM
— PLUS

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PASSIV-Bremsen					
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			ORIGA SERVOTEC		
			Overview	1.55.001E	109-110
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ONE CONCEPT – THREE DRIVE OPTIONS

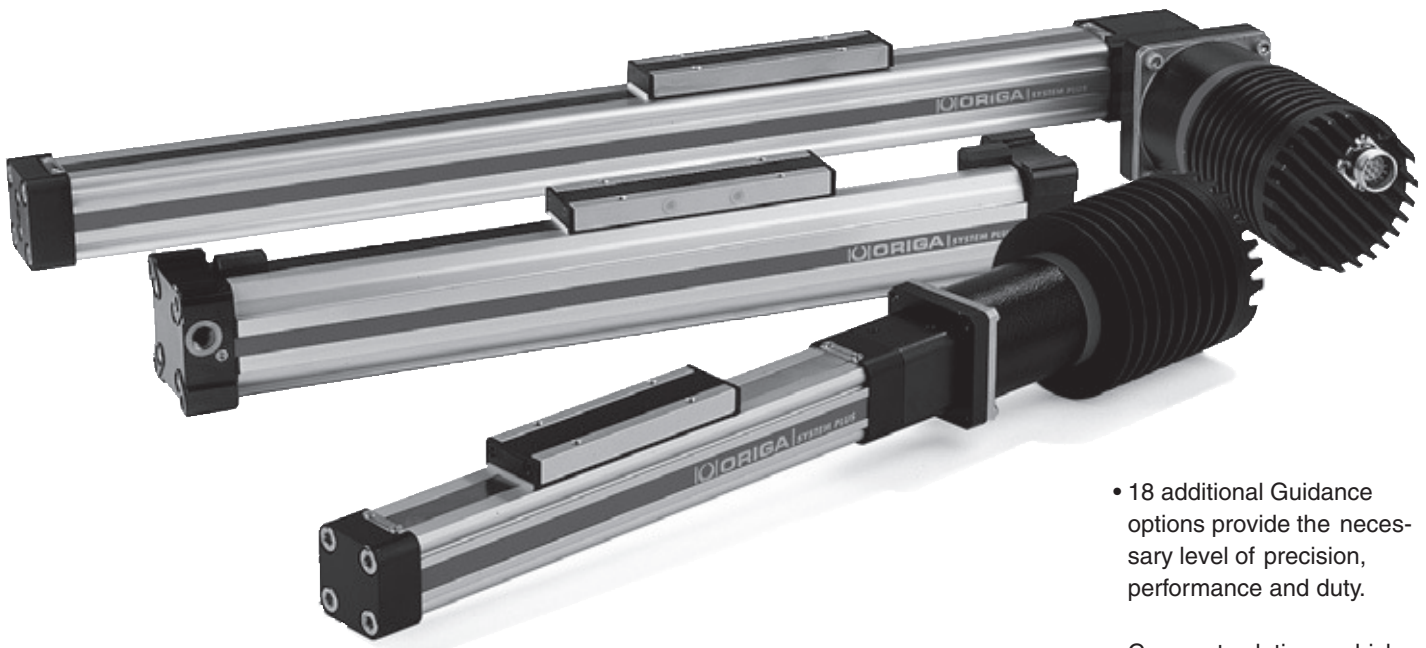
Based on the ORIGA rodless cylinder, proven in world wide markets, HOERBIGER-ORIGA now offers the complete solution for linear drive systems. Designed for absolute reliability, high performance, ease of use and optimised engineering the ORIGA SYSTEM PLUS satisfies even the most demanding applications.

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.

- 18 additional Guidance options provide the necessary level of precision, performance and duty.




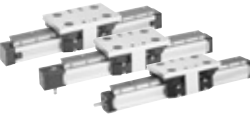

















- Compact solutions, which are simple to install and can be easily retrofitted.

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

- Diverse mounting options to provide total installation flexibility.



ONE CONCEPT – THREE DRIVE OPTIONS

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

<p>Basic Linear Drive Standard Version</p> <ul style="list-style-type: none"> ● Series OSP-P ● Series OSP-E* Belt, Belt Bi-parting, Belt with integrated Guides ● Series OSP-E* Screw (Ball Screw, Trapezoidal Screw) 		<p>Linear Guides – SLIDELINE</p> <ul style="list-style-type: none"> ● Series OSP-P ● Series OSP-E Screw* 	
<p>Air Connection on the End-face or both at One End</p> <ul style="list-style-type: none"> ● Series OSP-P 		<p>Linear Guides – POWERSLIDE</p> <ul style="list-style-type: none"> ● Series OSP-P ● Series OSP-E Belt* ● Series OSP-E Screw* 	
<p>Clean Room Cylinder certified to DIN EN ISO 146644-1</p> <ul style="list-style-type: none"> ● Series OSP-P 		<p>Linear Guides – GUIDELINE</p> <ul style="list-style-type: none"> ● Series OSP-P ● Series OSP-E Belt* ● Series OSP-E Screw* 	
<p>Basic Linear Drive ATEX-Version</p> <ul style="list-style-type: none"> ● Series OSP-P 		<p>Linear Guides – PROLINE</p> <ul style="list-style-type: none"> ● Series OSP-P ● Series OSP-E Belt* ● Series OSP-E Screw* 	
<p>Integrated 3/2 Way Valves</p> <ul style="list-style-type: none"> ● Series OSP-P 		<p>Linear Guides – STARLINE</p> <ul style="list-style-type: none"> ● Series OSP-P 	
<p>Clevis Mounting</p> <ul style="list-style-type: none"> ● Series OSP-P ● Series OSP-E Belt* ● Series OSP-E Screw* 		<p>Linear Guides – KF</p> <ul style="list-style-type: none"> ● Series OSP-P 	
<p>End Cap Mounting</p> <ul style="list-style-type: none"> ● Series OSP-P ● Series OSP-E Belt* ● Series OSP-E Screw* 		<p>Brakes</p> <ul style="list-style-type: none"> ● Active Brakes ● Passive Brakes 	
<p>Mid-Section Support</p> <ul style="list-style-type: none"> ● Series OSP-P ● Series OSP-E Belt* ● Series OSP-E Screw* 		<p>Magnetic Switches</p> <ul style="list-style-type: none"> ● Series OSP-P ● Series OSP-E Belt* ● Series OSP-E Screw* 	
<p>Inversion Mounting</p> <ul style="list-style-type: none"> ● Series OSP-P ● Series OSP-E Belt* ● Series OSP-E Screw* 		<p>SENSOFLEX</p> <ul style="list-style-type: none"> ● Displacement Measuring System 	
<p>Duplex Connection</p> <ul style="list-style-type: none"> ● Series OSP-P 		<p>SERVOTEC – Servo Pneumatic Positioning System</p> <ul style="list-style-type: none"> ● Series OSP-P 	
<p>Multiplex Connection</p> <ul style="list-style-type: none"> ● Series OSP-P 			

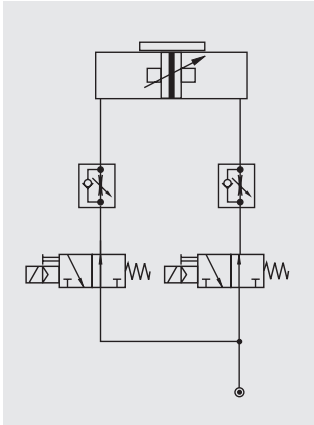
Modular Components Overview – Rodless Cylinders Series OSP-P

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	○	○	○	○	○	○	○	○
Self Guidance								
L [N]	20	120	300	450	750	1200	1650	2400
M [Nm]	1	4	15	30	60	115	200	360
Ms [Nm]	0.2	0.45	1.5	3	6	10	12	24
Mv [Nm]	0.3	0.5	3	5	8	15	24	48
Slideline								
L [N]	X	325	675	925	1500	2000	2500	2500
M [Nm]	X	11	34	60	110	180	260	260
Ms [Nm]	X	6	14	29	50	77	120	120
Mv [Nm]	X	11	34	60	110	180	260	260
Proline								
L [N]	X	542	857	1171	2074	3111	X	X
M [Nm]	X	12	39	73	158	249	X	X
Ms [Nm]	X	8	16	29	57	111	X	X
Mv [Nm]	X	12	39	73	158	249	X	X
Powerslide								
L [N]	X	1400	1400 - 3000	1400 - 3000	3000	3000 - 4000	X	X
M [Nm]	X	45	63 - 175	70 - 175	175 - 250	250 - 350	X	X
Ms [Nm]	X	14	14 - 65	20 - 65	65 - 90	90 - 140	X	X
Mv [Nm]	X	45	63 - 175	70 - 175	175 - 250	250 - 350	X	X
Guideline								
L [N]	X	X	1650 - 2500	1650 - 2500	4400 - 8000	4400 - 8000	X	X
M [Nm]	X	X	115	145	440	500	X	X
Ms [Nm]	X	X	75	90	330	375	X	X
Mv [Nm]	X	X	90	115	310	355	X	X
Guideline with shock absorber for cushioning	X	X	○	○	○	○	X	X
Starline								
L [N]	X	1000	3100	3100	4000-7500	4000-7500	X	X
M [Nm]	X	30	110	160	400	580	X	X
Ms [Nm]	X	15	50	62	150	210	X	X
Mv [Nm]	X	30	110	160	400	580	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
KF Guide								
L [N]	X	1000	3100	3100	4000-7100	4000-7500	X	X
M [Nm]	X	25	90	133	346	480	X	X
Ms [Nm]	X	12	35	44	119	170	X	X
Mv [Nm]	X	25	90	133	346	480	X	X
- variable Stop	X	○	○	○	○	○	X	X
Active Brake								
Braking force at 6 bar (brake surface dry) [N]	X	X	350	590	900	1400	2170	4000
Slideline SL / Proline PL with Brakes								
Active Brake								
SL Braking force at 6 bar (brake surface dry) [N]	X	X	325	545	835	1200	X	X
PL Braking force at 6 bar (brake surface dry) [N]	X	X	on request	on request	on request	on request	X	X
Passive Brake Multibrake								
SL Braking force at 6 bar (brake surface dry) [N]	X	X	470	790	1200	1870	2900	2900
PL Braking force at 6 bar (brake surface dry) [N]	X	X	315	490	715	1100	-	-
Magnetic Switches								
Standard Version	○	○	○	○	○	○	○	○
T-Nut Version	○	○	○	○	○	○	○	○
ATEX Version for EX- Areas 	○	○	○	○	○	○	○	○
Displacement measuring system								
SFA - absolute	X	X	○	○	X	X	X	X
integrated valves 3/2 WV NO VOE	X	X	○	○	○	○	on request	on request
Positioning System Servotec	X	X	○	○	X	X	X	X
Mountings								
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
Special Cylinders								
Special Pneumatical Cushioning System	X		on request	on request	on request	on request	X	X
Clean Room Cylinders to DIN EN ISO 14644-1	X	○	○	○	X	X	X	X
ATEX Version for EX-Areas 	○	○	○	○	○	○	○	○
High-Speed up to 30 m/s	X	on request	on request	on request	X	X	X	X

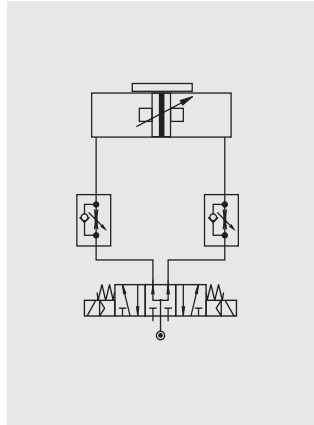
- = Standard version
 ▲ = other strokes on request
 * = other temperature ranges on request
 ○ = Option
 X = not applicable

CONTROL EXAMPLES FOR OSP-P



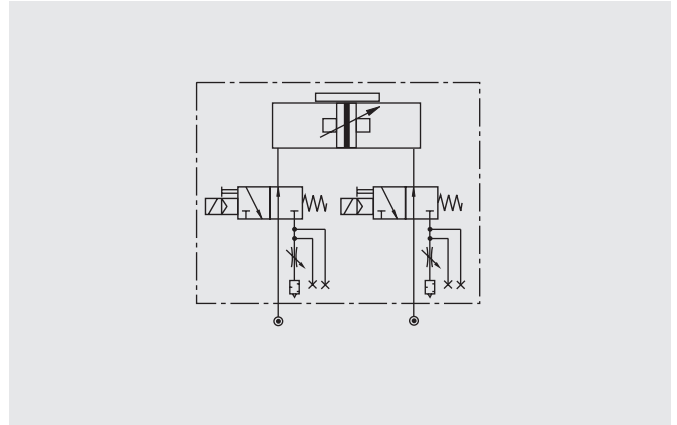
Circuit diagram for end of stroke application. Intermediate positioning is also possible.

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



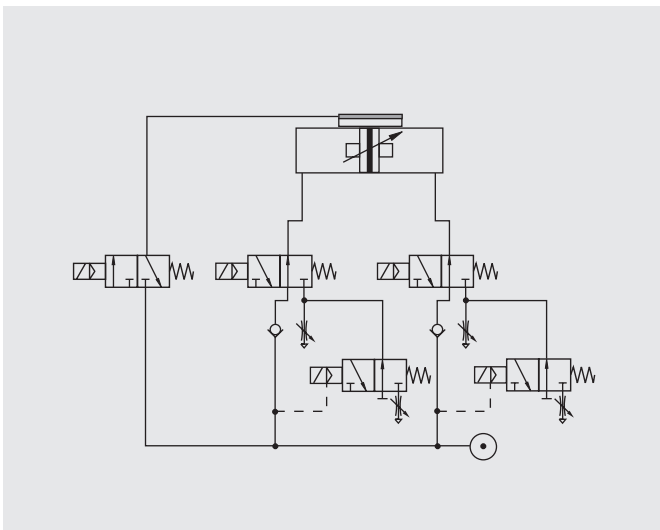
Circuit diagram for end of stroke application. Intermediate positioning is also possible.

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



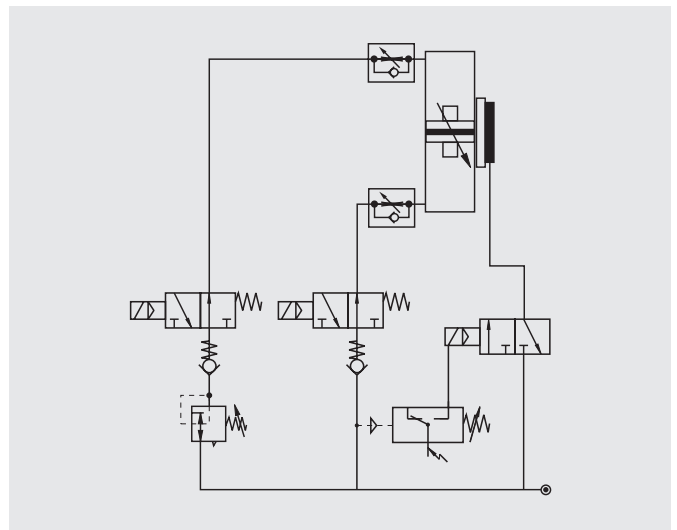
The optional integrated VOE Valves offer optimal control, and allow accurate

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

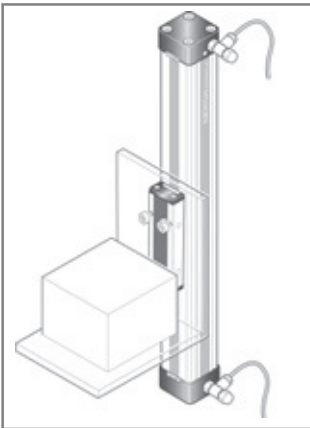
speeds in each direction of the piston's travel. The valve controlling the brake is activated after the slow speed cycle is activated



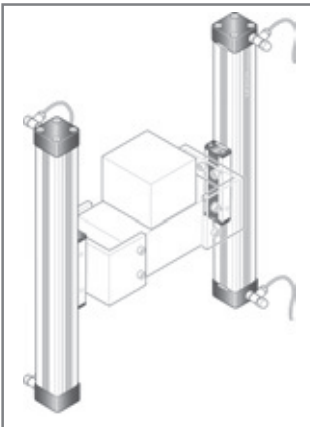
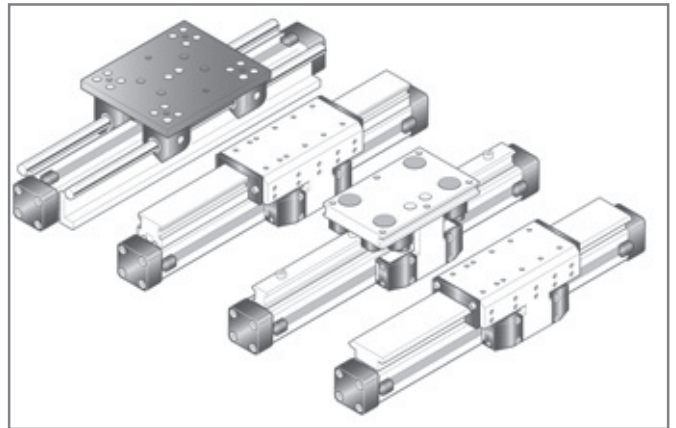
The combination of an OSP cylinder with the passive MULTIBRAKE as shown here, allows accurate positioning and safety in case of loss of pneumatic air pressure.

OSP-P APPLICATION EXAMPLES

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



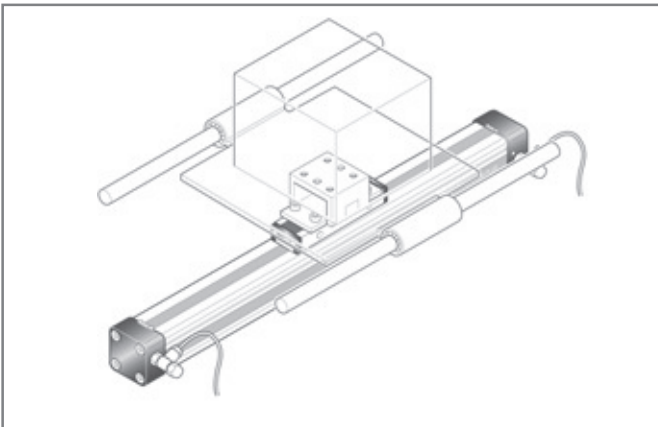
The high load capacity of the piston can cope with high bending moments without additional guides.



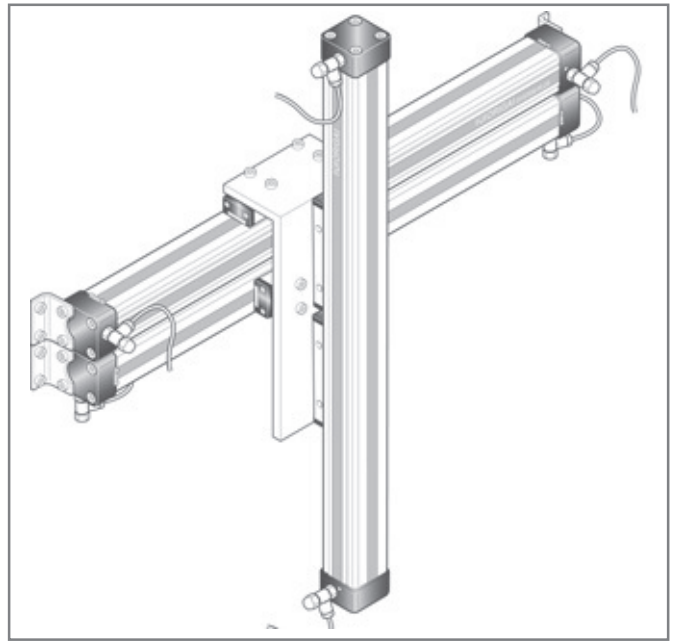
The mechanical design of the OSP-P allows synchronised movement of two cylinders.

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.

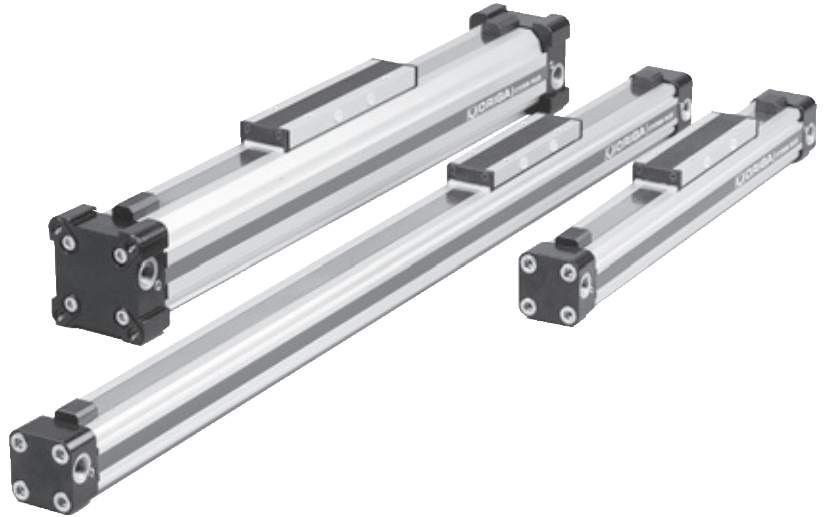


When using external guides, the clevis mounting is used to compensate for deviations in parallelism.




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

Rodless Pneumatic Cylinders Series OSP-P



Contents

Description	Data Sheet No.	Page
Standard Cylinders		
Overview	1.10.001E	10-13
Technical Data	1.10.002E-1 to 3	15-17
Dimensions	1.10.002E-4 to 9	18-23
Order Instructions	1.10.002E-10	24
Clean Room Cylinders		
Technical Data	1.10.003E-1 to 2	25-26
Dimensions	1.10.003E-3	27
Order Instructions	1.10.003E-4	28
Cylinders ATEX-Version 		
Technical Data	1.10.020E-1	29
Dimensions	1.10.002E-4 to 9	16-21
Order Instructions	1.10.020E-2	30

The System Concept

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

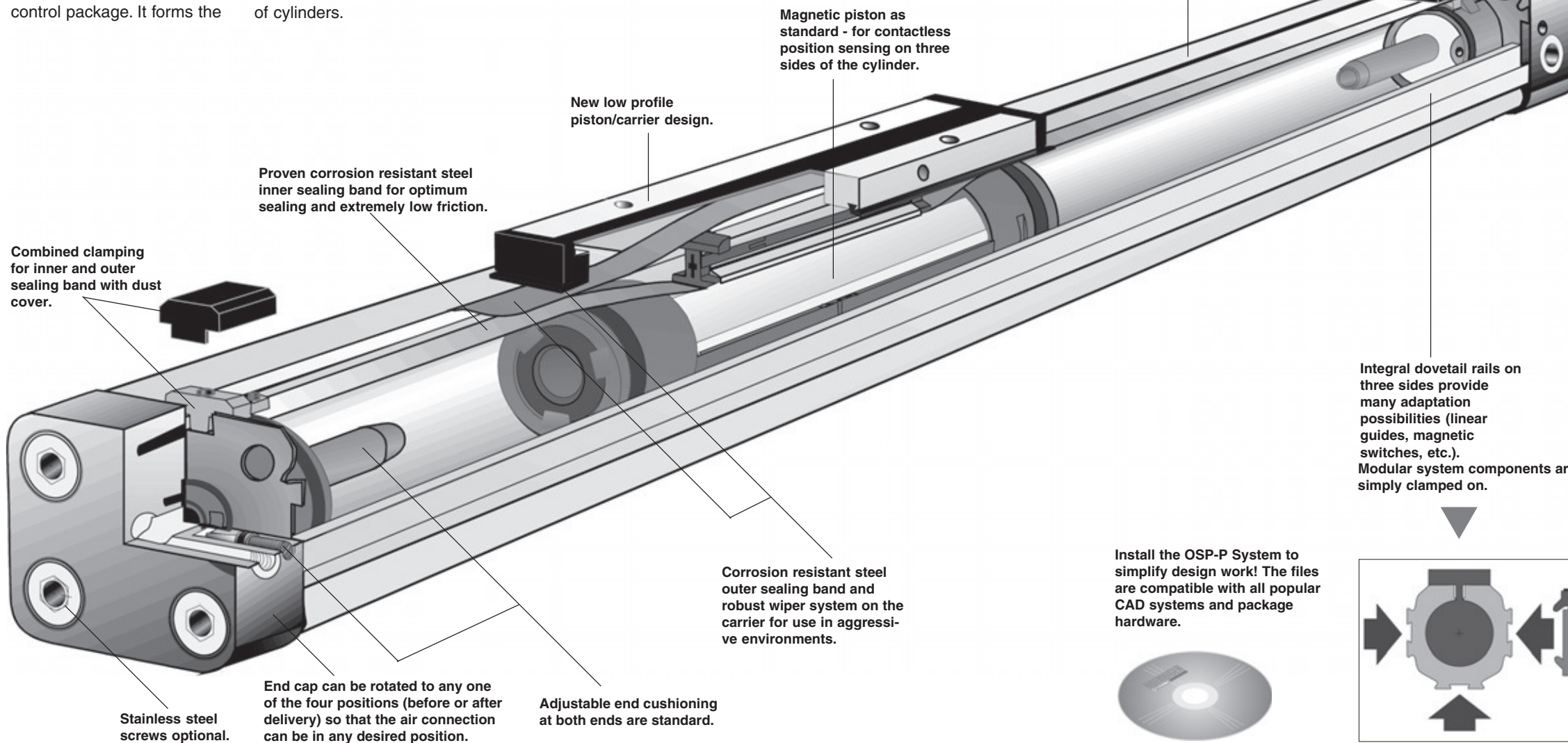
basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

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

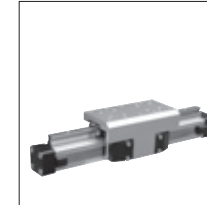
problems, especially where space is limited. The modular system concept forms an ideal basis for additional customer-specific functions.



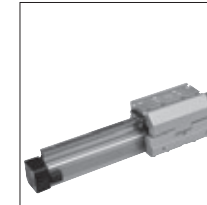
The Components

PNEUMATIC LINEAR ACTUATOR WITH NEW MODULAR SYSTEM

STARLINE
Recirculating ball bearing guide for highest loads and precision



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

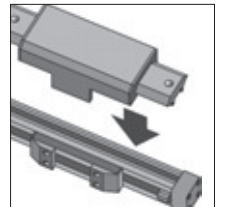


Optimized cylinder profile for maximum stiffness and minimum weight. Integral air passages enable both air connections to be positioned at one end, if desired.

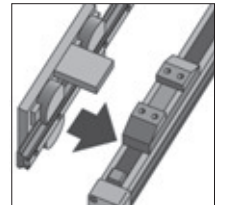
PROLINE
The compact aluminium roller guide for high loads and velocities.



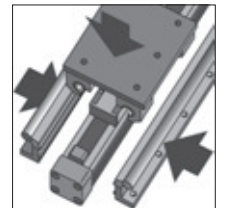
SLIDELINE
Combination with linear guides provides for heavier loads.



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



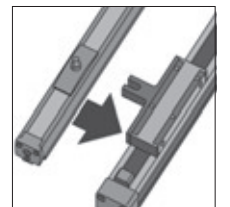
GUIDELINE
linear guides for heavy duty applications.



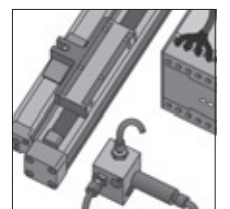
INTEGRATED VOE VALVES
The complete compact solution for optimal cylinder control.



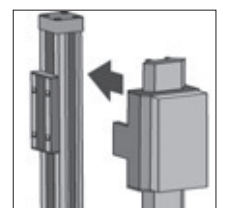
SENSOFLEX SFA
analogue measuring system. Simple and robust for high accuracy applications.



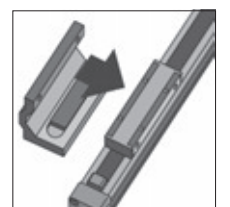
SERVOTEC
electro/pneumatic positioning system.



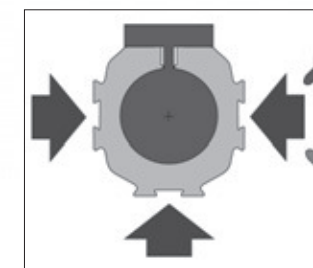
Active pneumatic brake
for secure, positive stopping at any position.



Passive pneumatic brake
reacts automatically to pressure failure.



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



OPTIONS AND ACCESSORIES FOR SYSTEM VERSATILITY

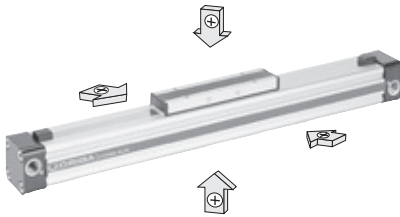
SERIES OSP-P

STANDARD VERSIONS OSP-P10 to P80

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

Standard carrier with integral guidance. End cap can be rotated 4x90° to position air connection on any side.

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



BASIC CYLINDER OPTIONS

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 1.10.004E

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.



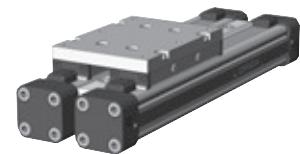
INTEGRATED VOE VALVES

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, 1.45.004E,
1.45.005E

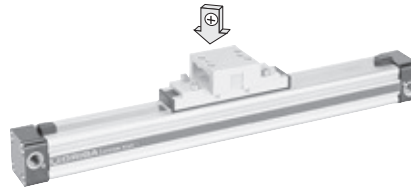
For electrical sensing of end and
intermediate piston positions, also in
EX-Areas.



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

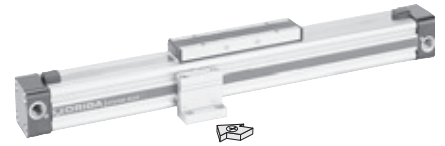
For end-mounting of the cylinder.



MID-SECTION SUPPORT

Data Sheet 1.45.004E

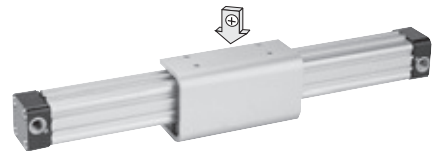
For supporting long cylinders or
mounting the cylinder by its dovetail
rails.



INVERSION MOUNTING

Data Sheet 1.45.006E

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



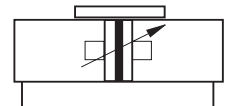
Characteristics		Pressures quoted as gauge pressure							
Characteristics	Symbol	Unit	Description						
General Features									
Type			Rodless cylinder						
Series			OSP-P						
System			Double-acting, with cushioning, position sensing capability						
Mounting			See drawings						
Air Connection			Threaded						
Ambient temperature range	ϑ_{\min} ϑ_{\max}	°C °C	-10 +80	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) 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		Galvanized steel Option: stainless steel						
	Dust covers, wipers		Plastic						
Max. operating pressure	p_{\max}	bar	8						
Weight (mass) kg									
Cylinder series (Basic cylinder)	At 0 mm stroke		Weight (Mass) kg 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 linear guides see 1.40.001E to 006E					For magnetic switches see 1.45.100E, 1.45.004E, 1.45.005E				
For mountings and accessories see 1.45.001E to 009E									

Rodless Pneumatic Cylinder

∅ 10-80 mm

OSP
— ORIGA
— SYSTEM
— PLUS

Series OSP-P..



Standard Versions:

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

Special Versions:

- with special pneumatic cushioning system (on request)
- Clean room cylinders (see data sheet 1.10.003E)
- ATEX-Version Ex (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



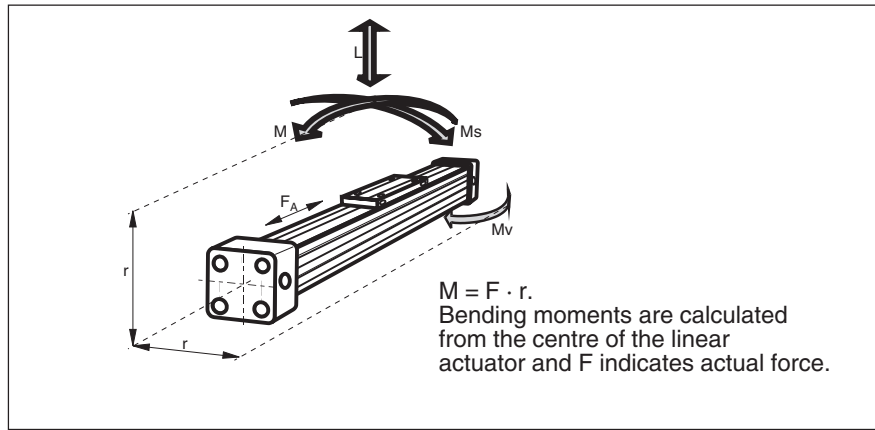
- End cap can be rotated 4 x 90° to position air connection as desired
- Free choice of stroke length up to 6000 mm (longer strokes on request)

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

* A rubber element (non-adjustable) is used for end cushioning.

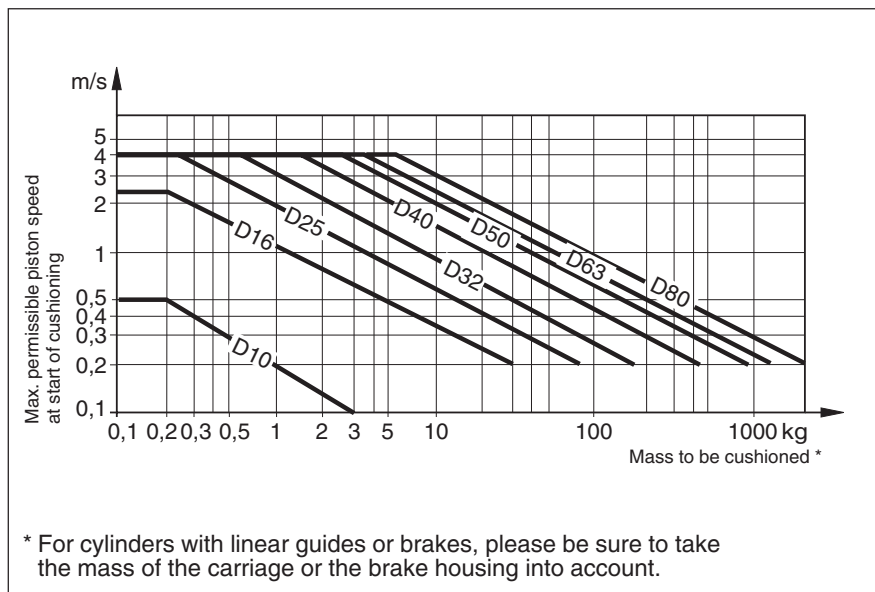
To deform the rubber element enough to reach the absolute end position would require a Δp of 4 bar!

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.

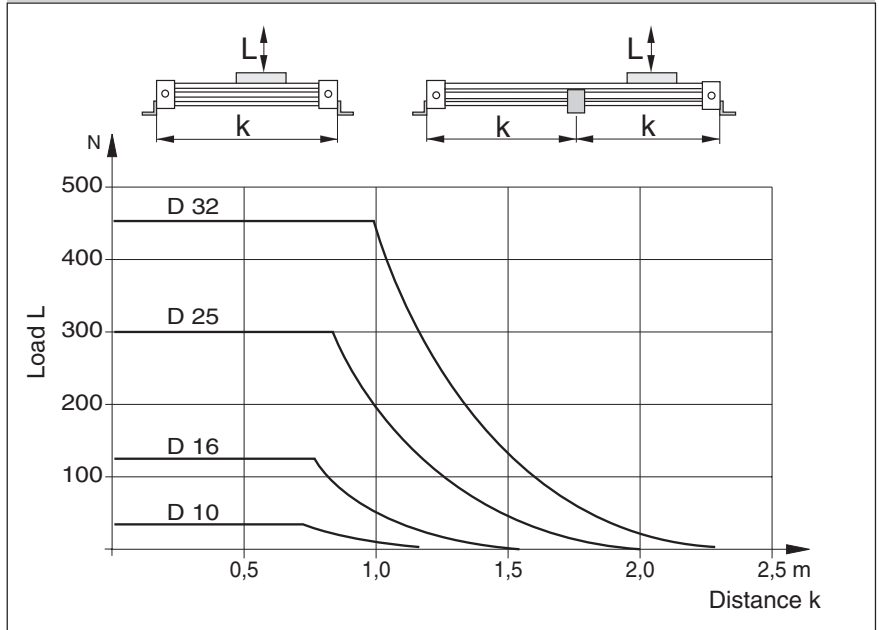
Mid-Section Supports

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.

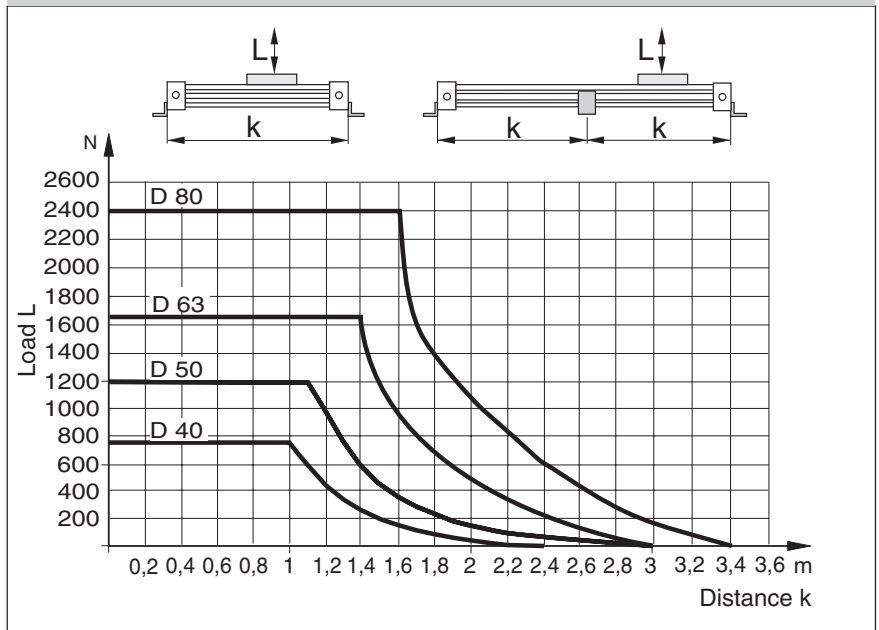
Bending up to max. 0.5 mm is permissible between supports. The mid-section supports are clamped onto the dovetail profile of the cylinder tube. They are also able to take the axial forces.

For types and dimensions see 1.45.004E.

Permissible Support Spacings: OSP - P10 - P32



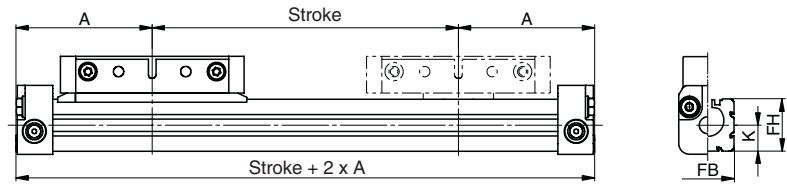
Permissible Support Spacings: OSP - P40 - P80



Cylinder Stroke and Dead Length A

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

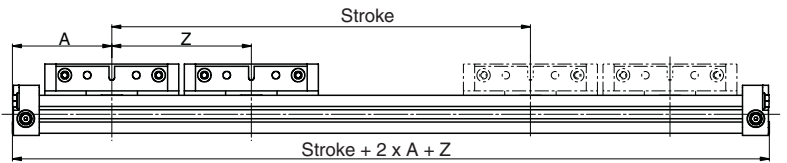
Dimensions of Basic Cylinder OSP-P10



Tandem Cylinder

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

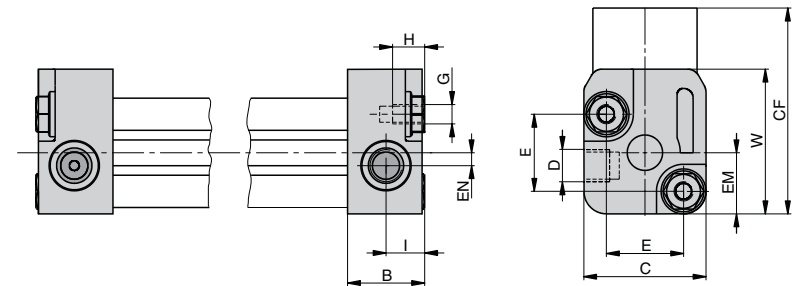
- Free choice of stroke length up to 6000 mm in 1 mm steps.
- Longer strokes on request.
- **Stroke length to order is stroke + dimension "Z"**



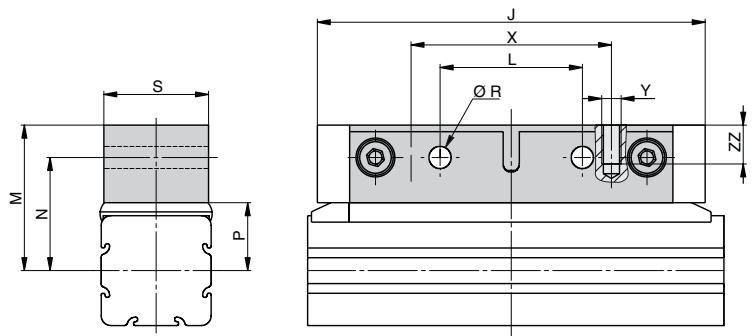
Please note:

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

End Cap/Air Connection Series OSP-P10



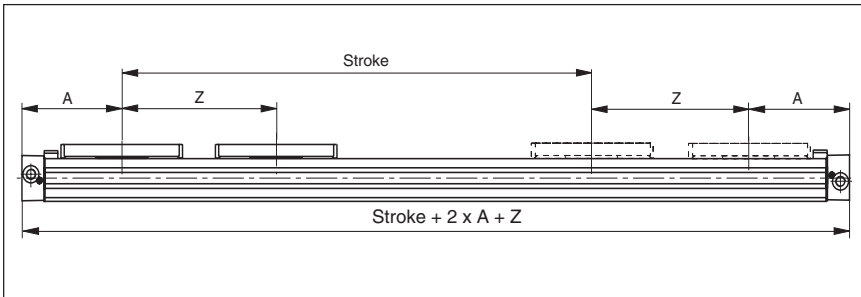
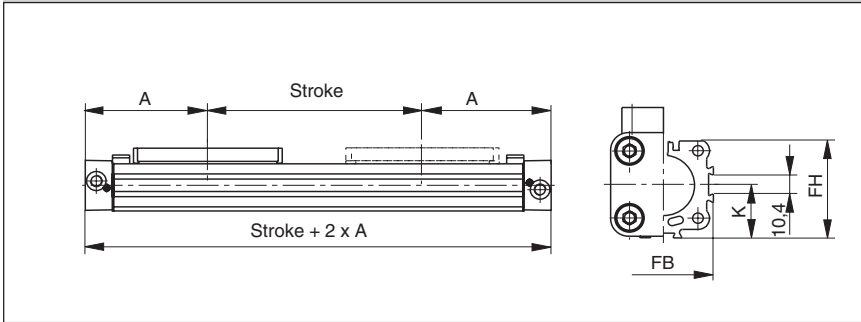
Carrier Series OSP-P10



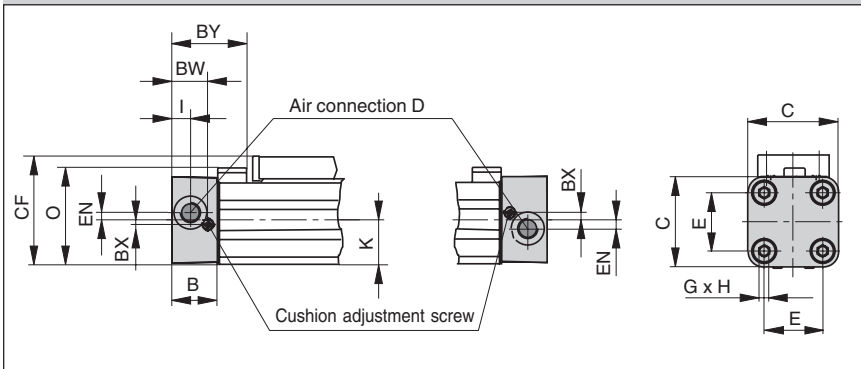
Dimension Table (mm)

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	22.5	3.4	16	22.5	31	M3	64	32	9.5	2	17	17	6

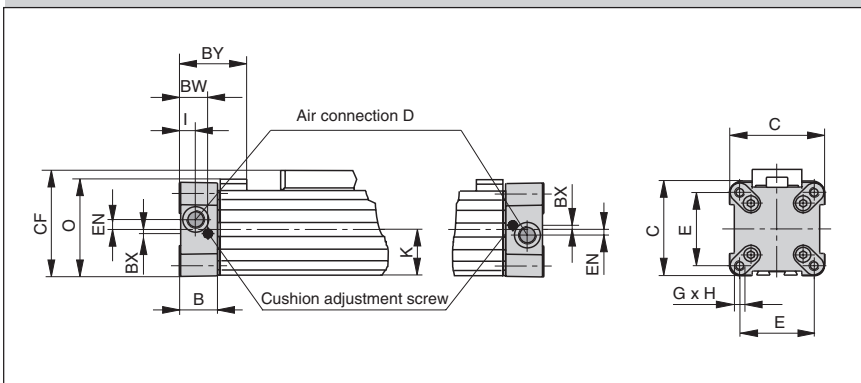
Dimensions of Basic Cylinder OSP - P16-P80



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



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

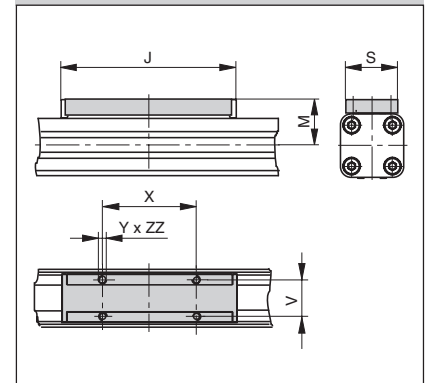
Two pistons are fitted: dimension "Z" is optional. (Please note minimum distance "Zmin").

- 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"**

Please note:

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

Carrier Series OSP-P16 to P80

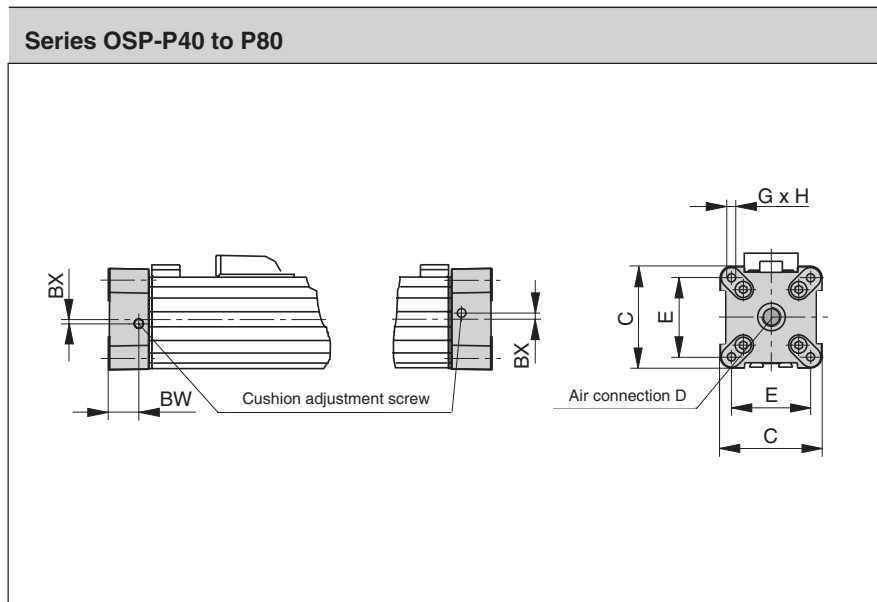
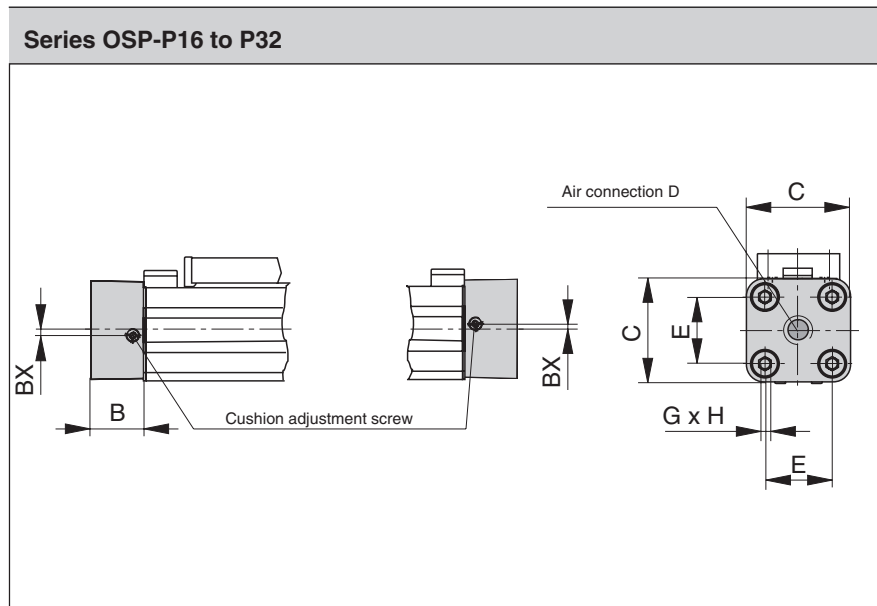
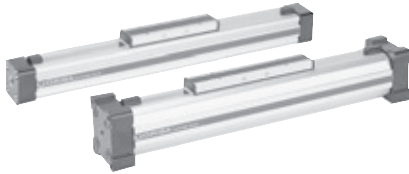


Dimension Table (mm)

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

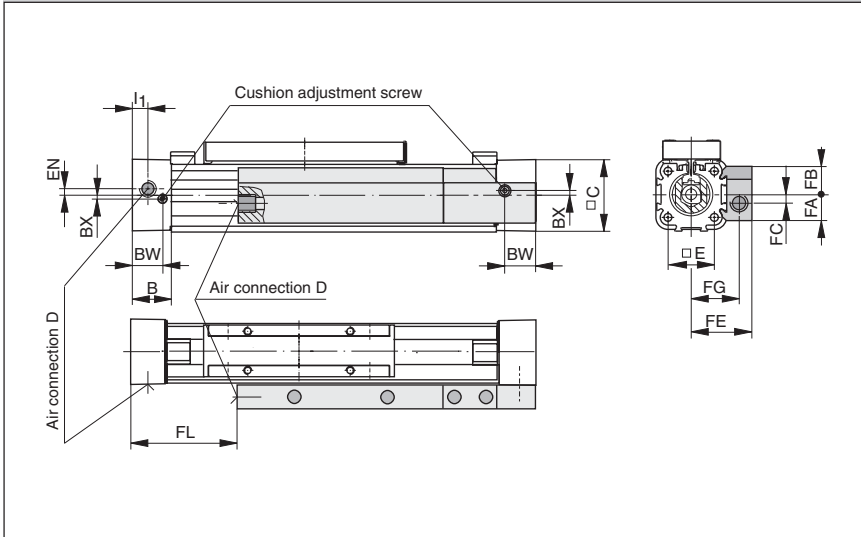
In some situations it is necessary or desirable to fit a special end cap with the air connection on the end-face instead of the standard end cap with the air connection on the side. The special end cap can also be rotated $4 \times 90^\circ$ to locate the cushion adjustment screw as desired. Supplied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



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

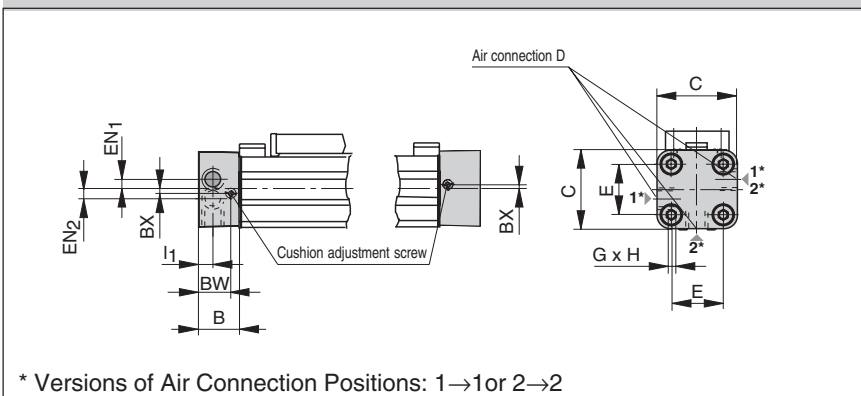
A special end cap with both air connections on one side is available for situations where shortage of space, simplicity of installation or the nature of the process make it desirable.

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

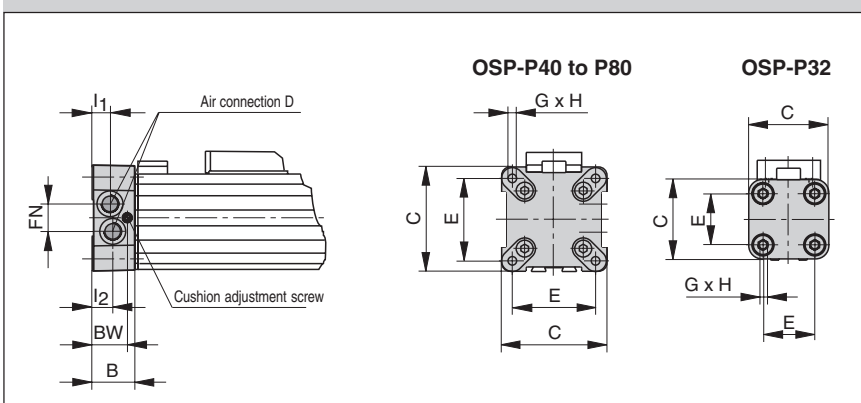


* Versions of Air Connection Positions: 1→1 or 2→2

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.

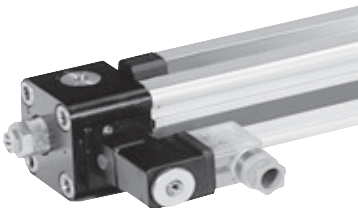
They allow for easy positioning of the cylinder, smooth operation at the lowest speeds and fast response, making them ideally suited for the direct control of production and automation processes.

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



Characteristics:

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

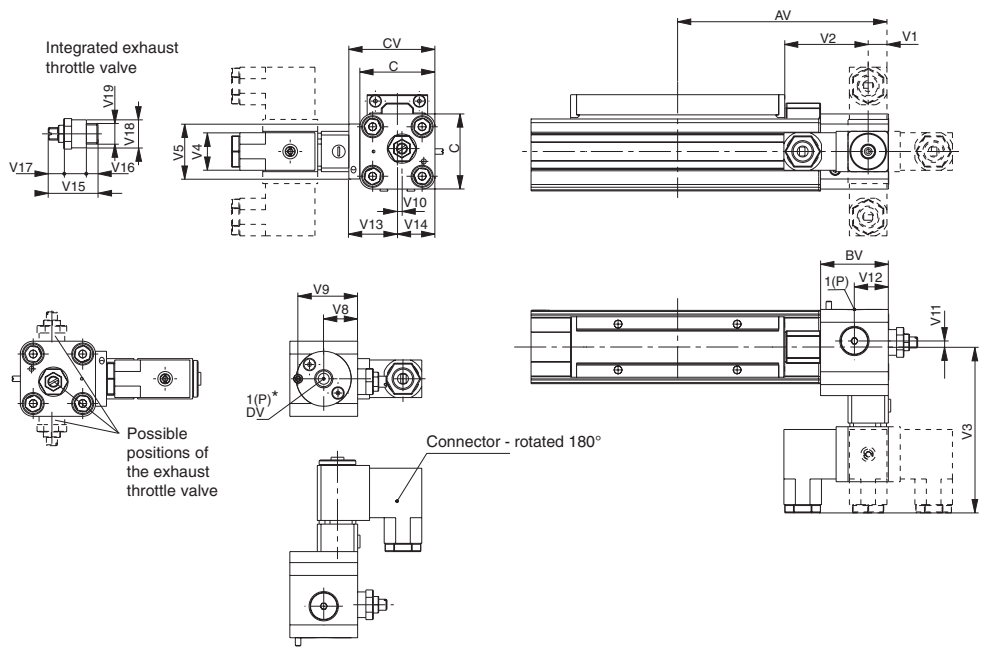


Characteristics 3/2 Way Valves VOE

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

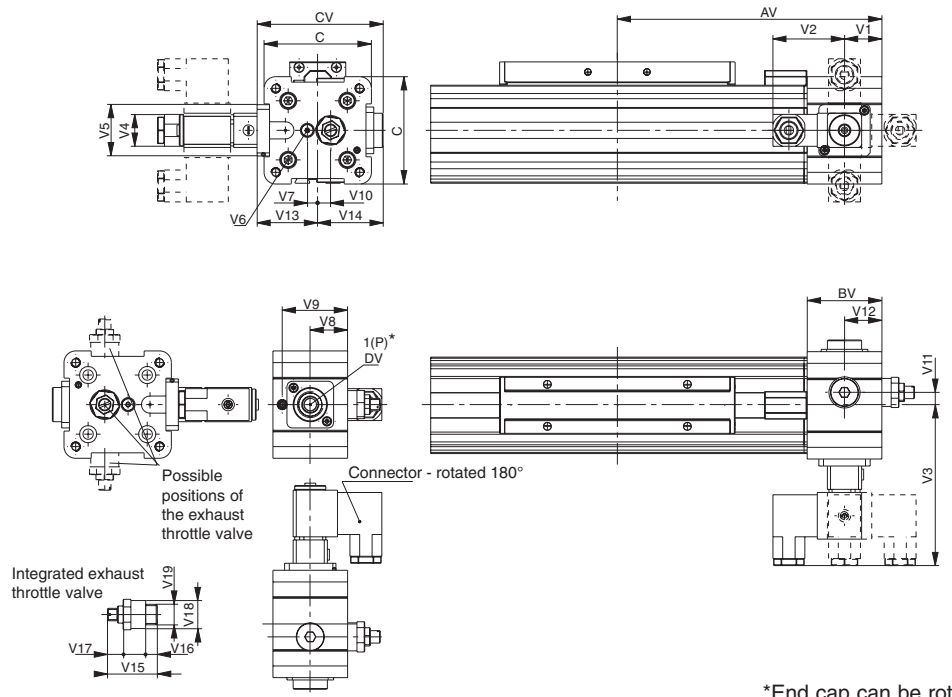


* End cap can be rotated 4x90°

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



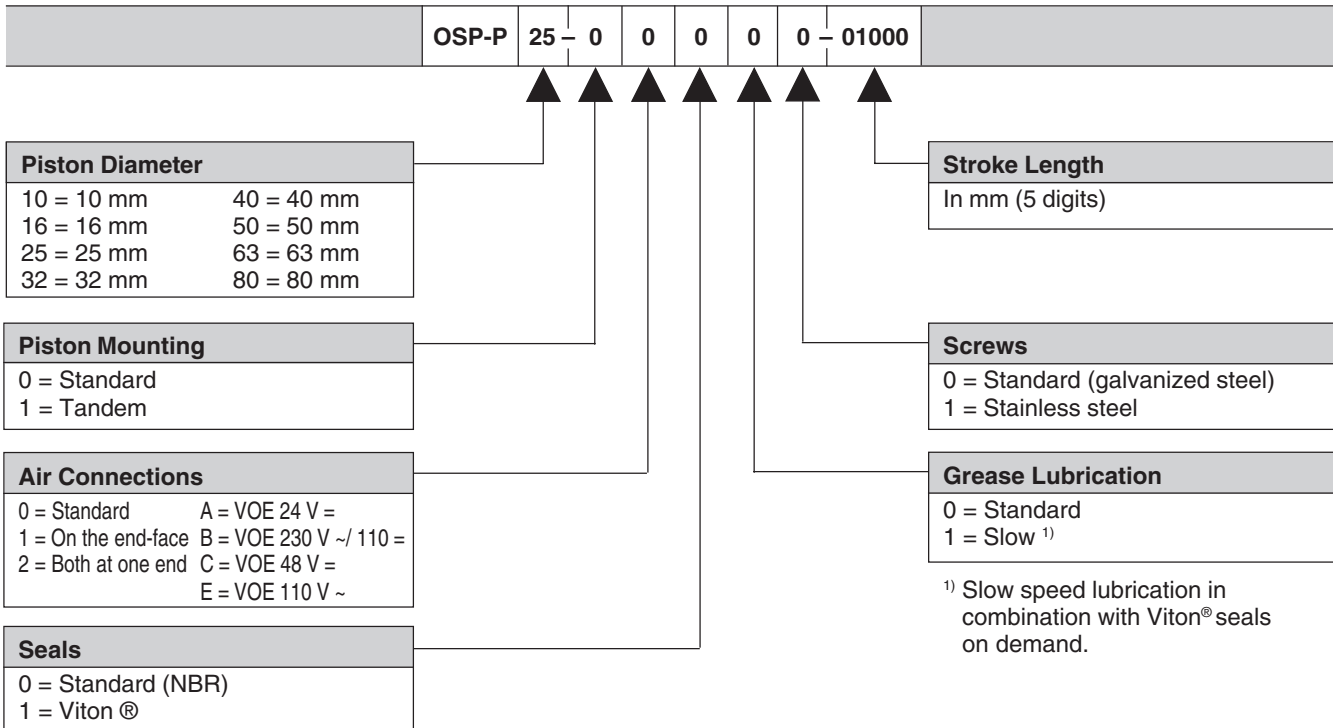
*End cap can be rotated 4x90°

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



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-Nut 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

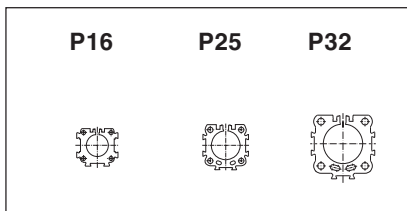
Characteristics		Pressure quoted as gauge pressure	
Characteristics	Symbol	Unit	Description
General Features			
Type			Rodless Cylinder
Series			OSP-P
System			Double-acting, with cushioning, position sensing capability
Mounting			see drawings
Air connection			Threaded
Ambient and medium temperature range	ϑ_{\min} ϑ_{\max}	°C °C	-10 – other temperature ranges +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) 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

OSP
— ORIGA
— SYSTEM
— PLUS

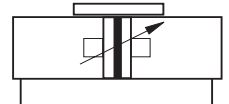
Standard Versions:

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

Special Versions:

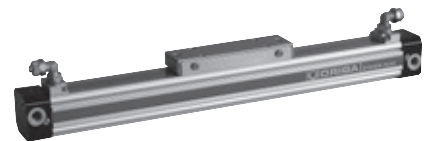
- Slow speed lubrication
- Viton® seals

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



HOERBIGER
ORIGA

For **magnetic switches** see 1.45.100E, 1.45.004E, 1.45.005E
For **mountings and accessories** see 1.45.001E to 009E

Based on the HOERBIGER-ORIGA rodless cylinder, proven in world wide markets, HOERBIGER-ORIGA now offers the only rodless cylinder on the market with a certification from IPA Institute for the cleanroom specification according to DIN EN ISO 14644-1.



Fraunhofer
TESTED[®]
DEVICE
 Linearantrieb OSP-P25
 Report No. HO 0305-291

DUPLIKAT

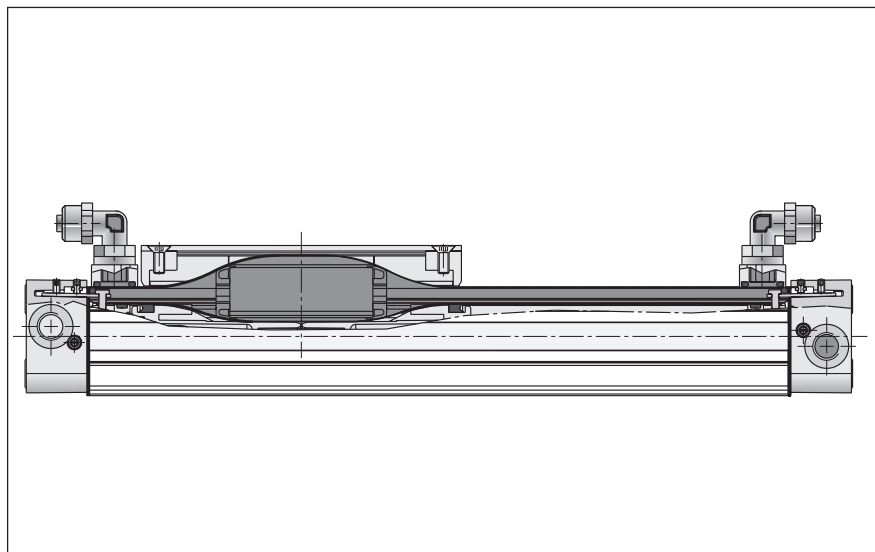
IPA Qualification Certificate

This is to certify that the product mentioned below manufactured by the company
Hoerbiger-Origa GmbH
 Industriestraße 8
 D-70394 Filderstadt
 has been awarded an IPA Qualification Test bearing the report number HO 0305-291.
 In operation at the velocity of $v = 0.2$ m/s with vacuum suction the linear drive OSP-P25 is suitable for use in cleanrooms fulfilling the specifications of the cleanliness class 2 according to ISO 14644-1.
 In operation at the velocity of $v = 0.3$ m/s with vacuum suction the linear drive OSP-P25 is suitable for use in cleanrooms fulfilling the specifications of the cleanliness class 3 according to ISO 14644-1.
 In operation at the velocity of $v = 0.5$ m/s with vacuum suction the linear drive OSP-P25 is suitable for use in cleanrooms fulfilling the specifications of the cleanliness class 5 according to ISO 14644-1.
 In operation at the velocity of $v = 0.5$ m/s without vacuum suction the linear drive OSP-P25 is suitable for use in cleanrooms fulfilling the specifications of the cleanliness class 5 according to ISO 14644-1.
 Detailed information and parameters of the test announcements can be found in the IPA Test Report compiled by the Fraunhofer Society.
 Certified on May 13th 2003.
 The duration of the validity of this certificate is unlimited. For further information visit our website at <http://www.ipa-qualification.com>
 Stuttgart, Germany, May 13th 2003

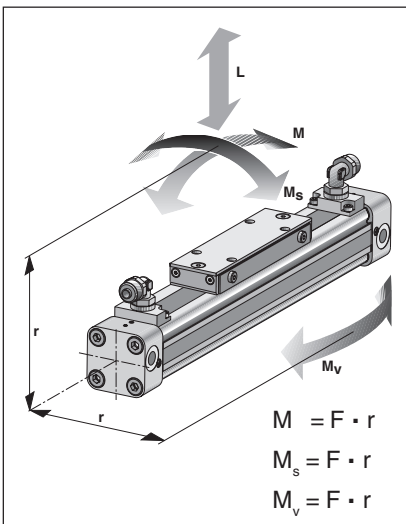
 Fraunhofer
 Institut
 Produktionstechnik und
 Automatisierung

Function:

The clean room cylinders of the ORIGA SYSTEM PLUS (OSP-P) combines the efficiency of the HOERBIGER-ORIGA slot seal system with vacuum protection against progressive wear and contamination from the sliding components. A partial vacuum drawn between inner and outer sealing bands prevents emission into the clean room. To achieve the necessary vacuum a suction flow of ca. 4 m³/h is required.



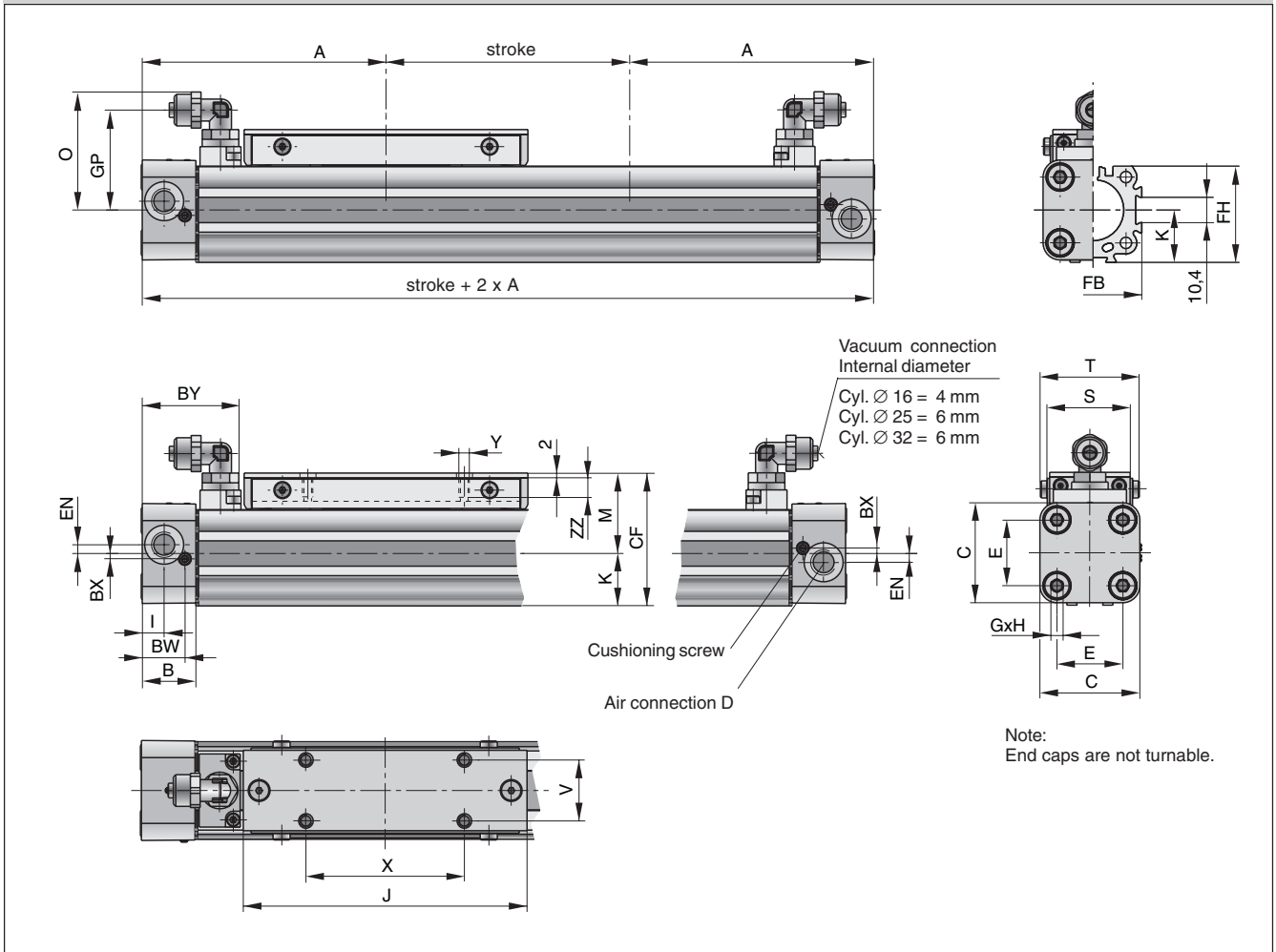
Loads, Forces and Moments



Cylinder Series [mmØ]	Force at 6 bar [N]	Cushion length [mm]	max. allowed Load L [N]	max. allowed Bending Moment M [Nm]	M _s [Nm]	M _v [Nm]
OSP-P16	78	11	120	4	0.45	0.5
OSP-P25	250	17	300	15	1.5	3.0
OSP-P32	420	20	450	30	3.0	5.0

Load and moment data are based on speeds $v \leq 0.2$ m/s. The adjacent table shows the maximum values for light, shock-free operation which must not be exceeded even in dynamic operation.

Dimensions (mm)

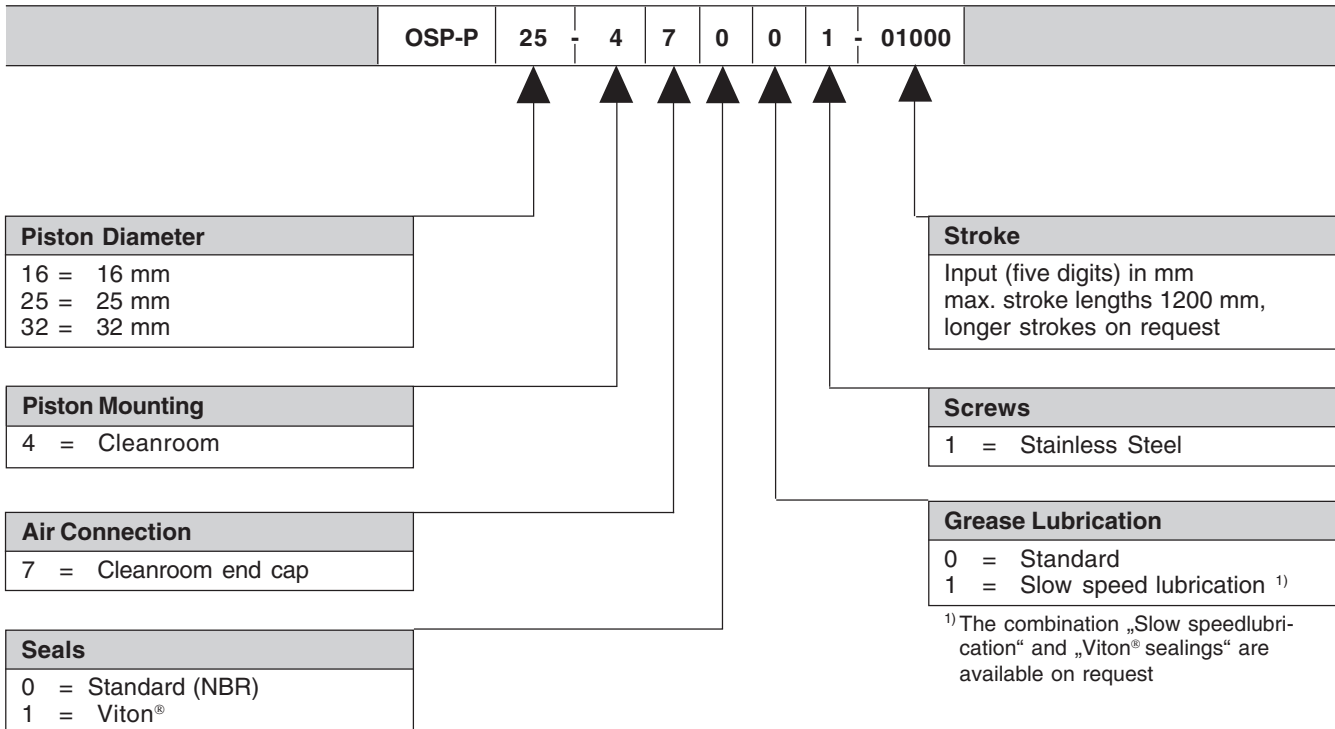


Dimension Table (mm)

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-Nut 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

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	ϑ_{\min} ϑ_{\max}	°C °C	-10 +60
Max. switching frequency		Hz	1 (double stroke/s) Basic cylinder 0.5 (1 stroke/s) Cylinder with guide
Operating pressure range	p_{\max}	bar	Max. 8
Max. speed	v_{\max}	m/s	3 Basic cylinder 2 Cylinder with guide
Medium			Filtered, un lubricated compressed air – free from water and dirt to ISO 8573-1 Solids: Class 7 particle size < 40 µm for Gas 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: see data sheet "Material" Lubrication: see security data sheet "Grease for use in Cylinder with guides" Sealing bands: 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 2G

Rodless cylinder:  II 2G c T4 -10°C ≤ T_a ≤ +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

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

OSP

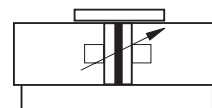
— ORIGA
— SYSTEM
— PLUS

Components for EX-Areas



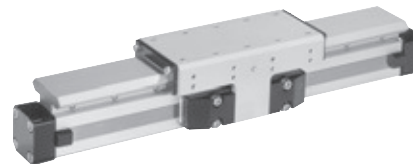
Rodless Cylinder Ø 10 – 80 mm Basic Cylinder

Series: OSP-PATEX



Plain Bearing Guide SLIDELINE Ø 16 – 80 mm

Series: SL -...ATEX



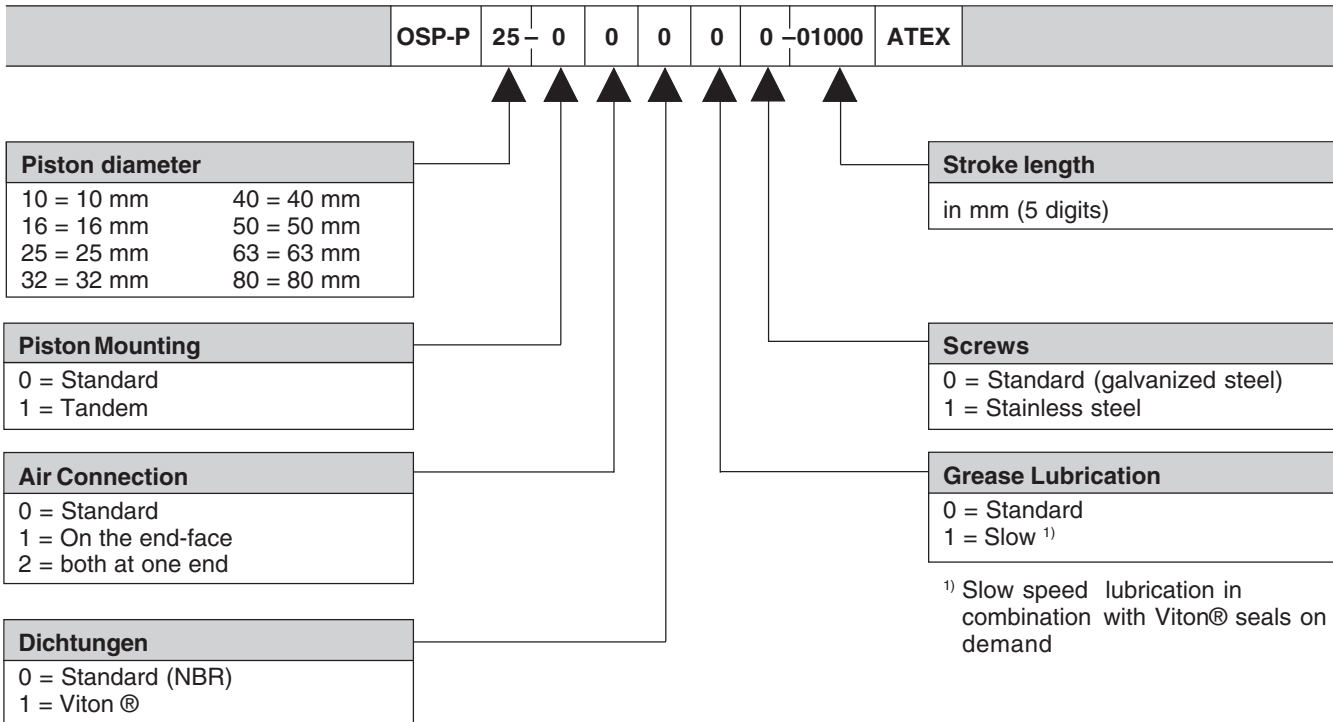
HOERBIGER



A1P708E00HAD00X

The right to introduce technical modifications is reserved

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



Plain bearing guide SLIDELINE – Series SL...ATEX

– the order its only possible in combination with the basic cylinder OSP-P..ATEX!

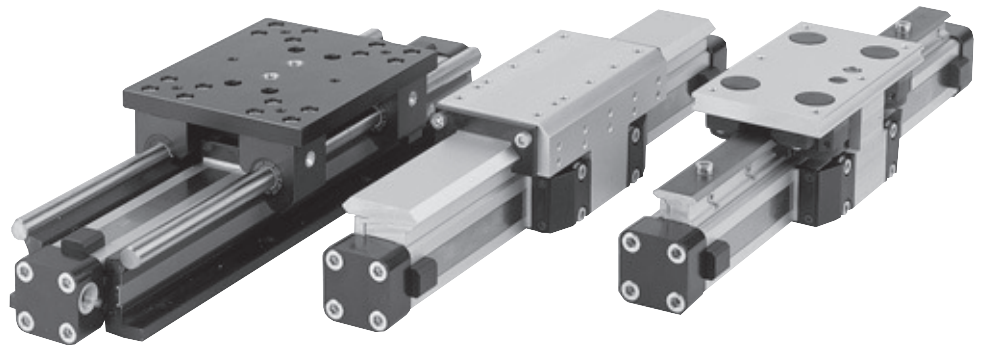
for Linear Drive	Order instruction *	
Type	Order No.	
OSP-P16....ATEX	SL-16ATEX	20341
OSP-P25....ATEX	SL-25ATEX	20342
OSP-P32....ATEX	SL-32ATEX	20196
OSP-P40....ATEX	SL-40ATEX	20343
OSP-P50....ATEX	SL-50ATEX	20195
OSP-P63....ATEX	SL-63ATEX	20853
OSP-P80....ATEX	SL-80ATEX	21000

* 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	1.45.00E-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-Nut Profile	1.45.008E
Adaptor Profile	1.45.009E
Magnetic Switches ATEX-Version	1.45.105E
Cable Cover	1.45.102E

Linear Guides Series OSP-P



Contents

	Description	Data Sheet No.	Page
	Overview	1.40.001E	31-32
	Plain bearing guide SLIDELINE	1.40.002E	33-34
	Roller guide POWERSLIDE	1.40.003E	35-38
	Ball bushing guide GUIDELINE	1.40.004E	39-42
	Aluminium roller guide PROLINE	1.40.005E	43-44
NEW	Recirculating ball bearing guide STARLINE	1.40.006E	45-50
NEW	Recirculating ball bearing guide KF	1.40.007E	51-56

OSP

— ORIGA
— SYSTEM
— PLUS

Adaptive modular system

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

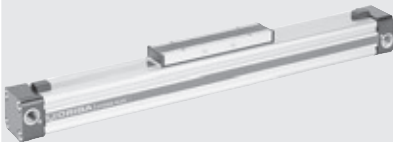
Advantages:

- 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)



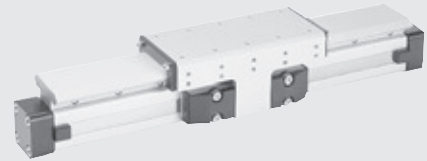
Linear Guides

SLIDELINE

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

Piston diameters 16 – 80 mm

See data sheet
1.40.00E (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

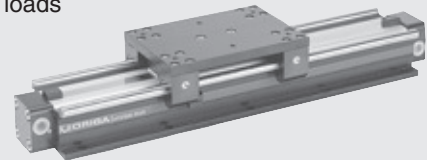


GUIDELINE

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

Piston diameters 25 – 50 mm

See data sheet
1.40.004E

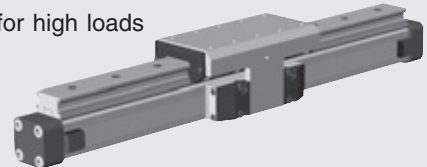


PROLINE

The compact aluminium roller guide for high loads and velocities. Optional with brake.

Piston diameters 16 – 50 mm

See data sheet
1.40.005E

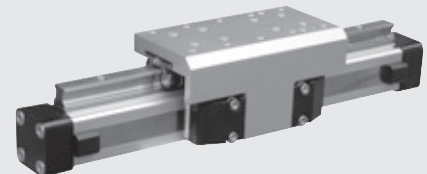


STARLINE

Recirculating ball bearing guide for highest loads and precision

Piston diameters 16 – 50 mm

See data sheet
1.40.006E



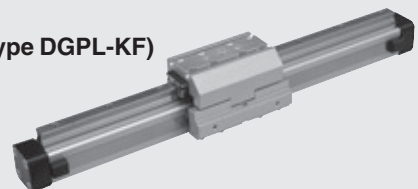
KF GUIDE

Recirculating ball bearing guide for high loads and precision.

Correspond to FESTO dimensions (Type DGPL-KF)

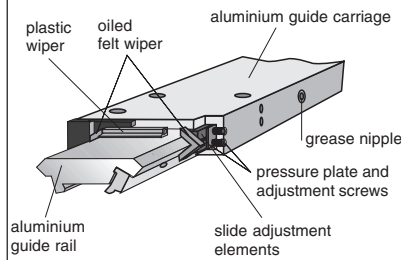
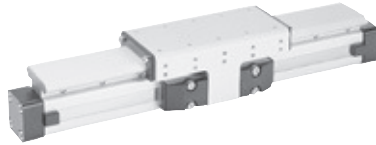
Piston diameters 16 – 50 mm

See data sheet
1.40.007E

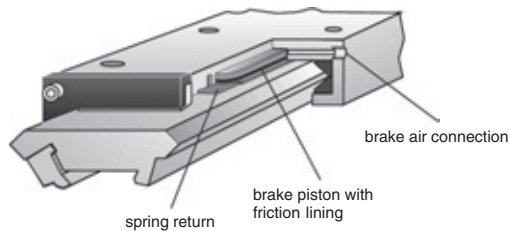


Versions

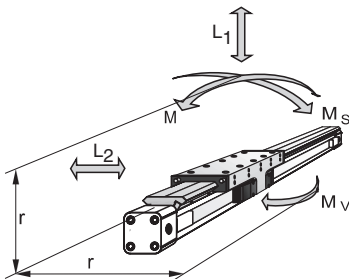
for pneumatic linear drive:
Series OSP-P



Option – Integrated Brake



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)

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)

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

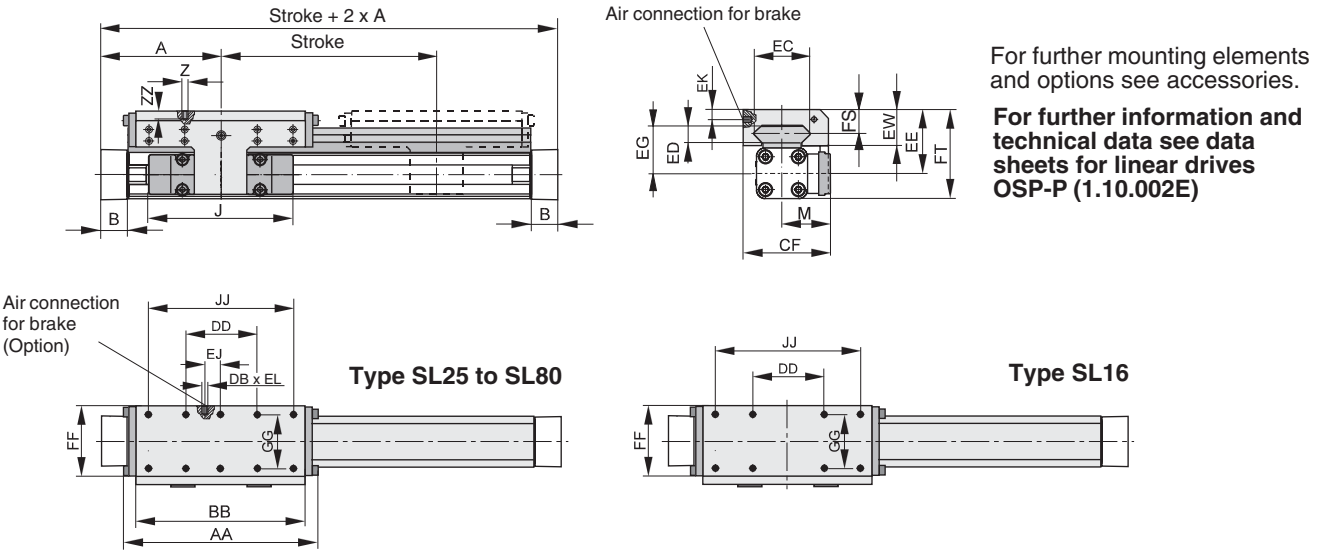
¹⁾ Only with integrated brake: Braking force on dry oil-free surface
Values are decreased for lubricated slideways

²⁾ Corrosion resistant fixtures available on request

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

Dimensions

Series OSP-P



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
SL16	65	14	69	31	M4	106	88	-	30	55	36	8	40	30	-	-	-	22	48	55	14	36	70	8
SL25	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
SL32	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
SL40	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
SL50	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
SL63	215	38	256	79	M8	312	292	-	130	152	116	18	86	66	-	-	-	46	152	139	29	120	260	14
SL80	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)

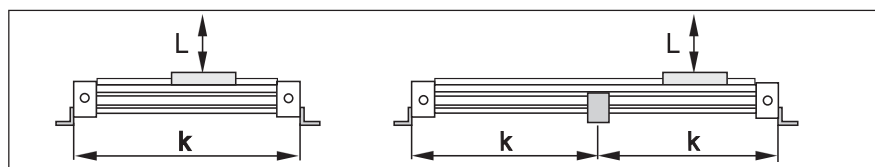
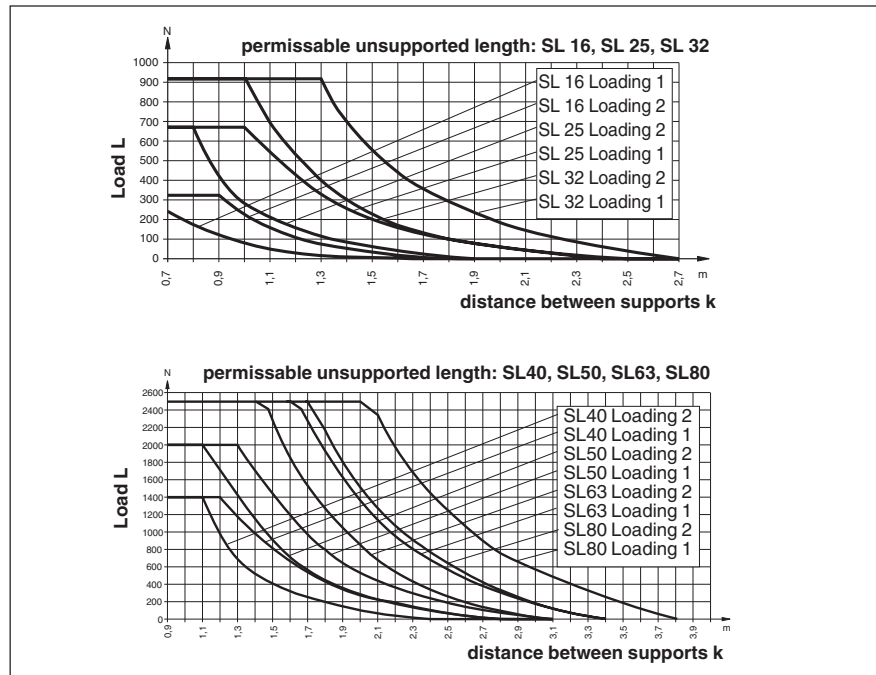
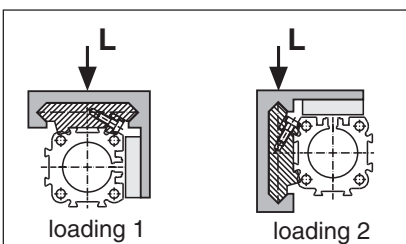
Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading.

A distinction must be drawn between loading 1 and loading 2.

Deflection of 0.5 mm max. between supports is permissible.

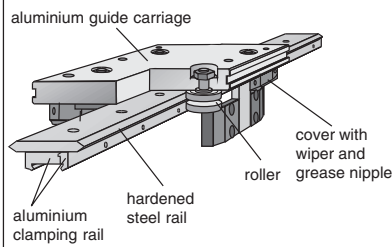
Note:

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



Versions

for pneumatic linear drive:
Series OSP-P

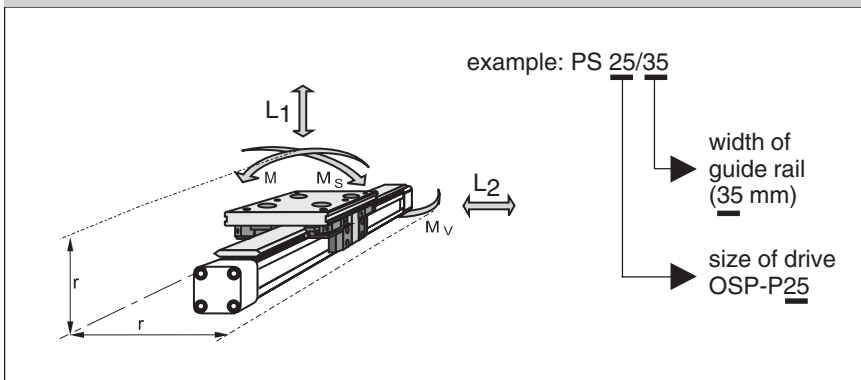


Roller Guide POWERSLIDE

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 $v = 3$ 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 ¹⁾ [kg]	
		M	Ms	Mv					
PS 16/25	OSP-P16	45	14	45	1400	0.93	0.24	0.7	20285
PS 25/25	OSP-P25	63	14	63	1400	1.5	0.4	0.7	20015
PS 25/35	OSP-P25	70	20	70	1400	1.7	0.4	0.8	20016
PS 25/44	OSP-P25	175	65	175	3000	2.6	0.5	1.5	20017
PS 32/35	OSP-P32	70	20	70	1400	2.6	0.6	0.8	20286
PS 32/44	OSP-P32	175	65	175	3000	3.4	0.7	1.5	20287
PS 40/44	OSP-P40	175	65	175	3000	4.6	1.1	1.5	20033
PS 40/60	OSP-P40	250	90	250	3000	6	1.3	2.2	20034
PS 50/60	OSP-P50	250	90	250	3000	7.6	1.4	2.3	20288
PS 50/76	OSP-P50	350	140	350	4000	11.5	1.8	4.9	20289

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

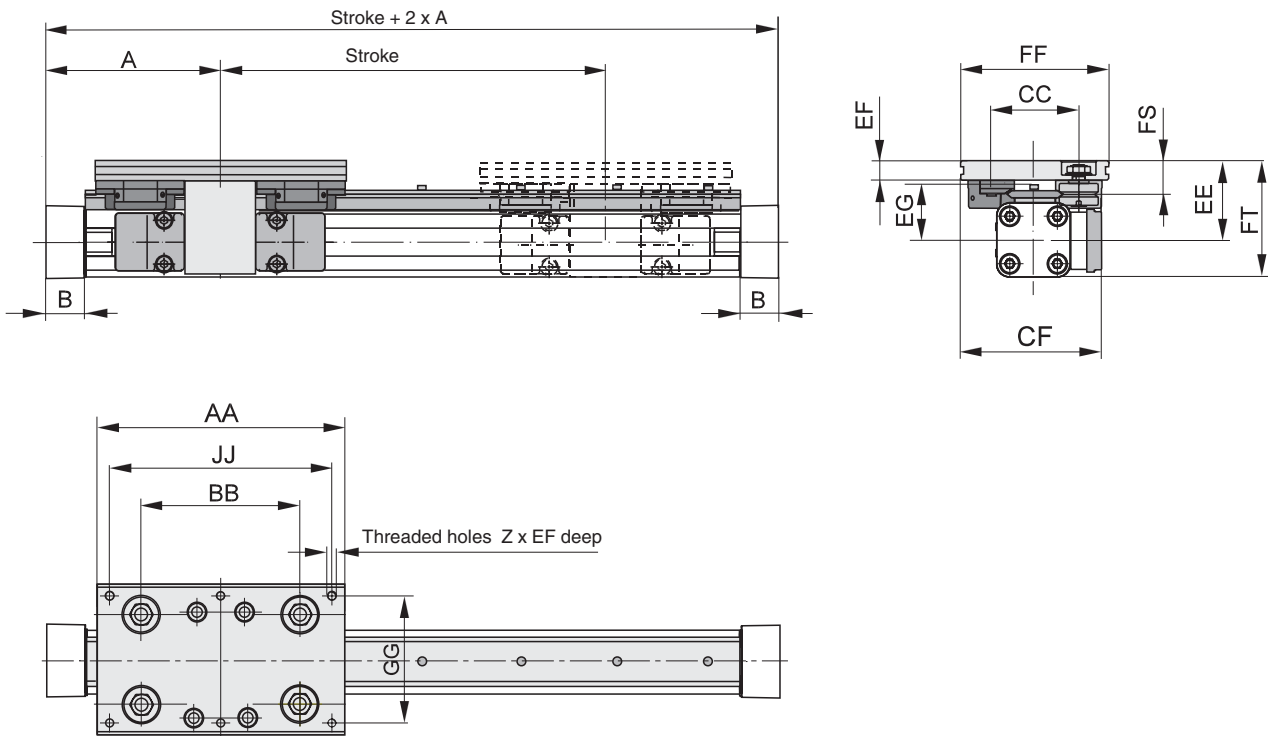
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The right to introduce technical modifications is reserved

For linear drives see 1.10.002E
For mountings see 1.45.005E

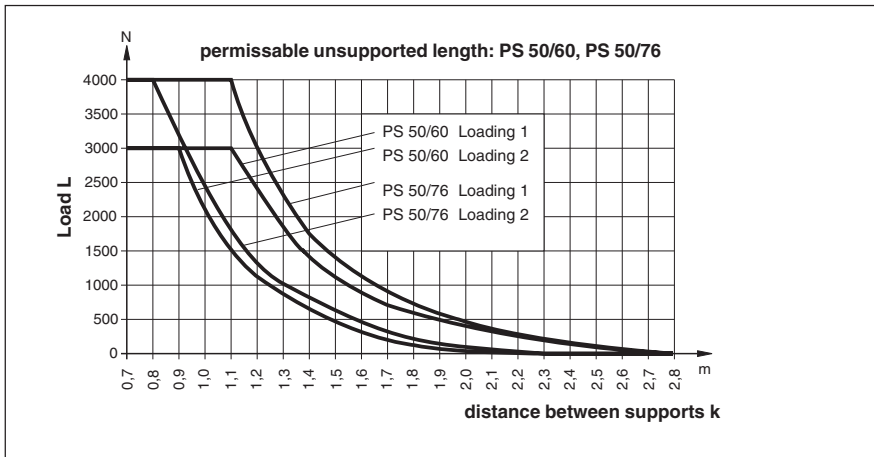
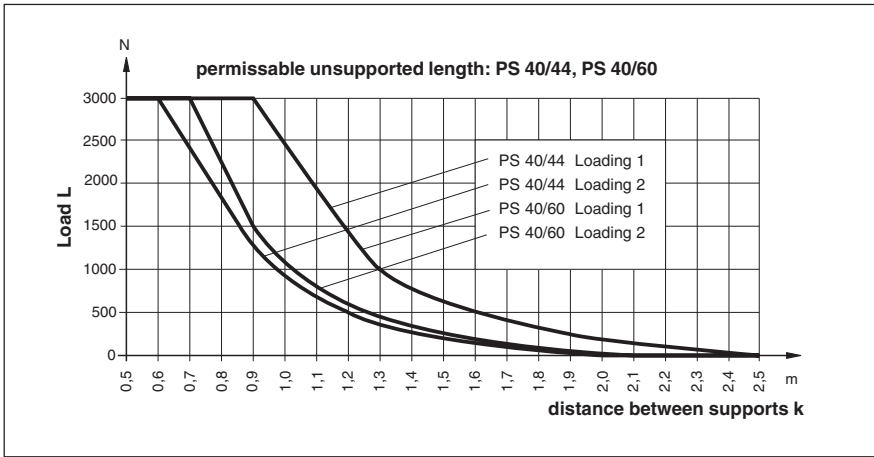
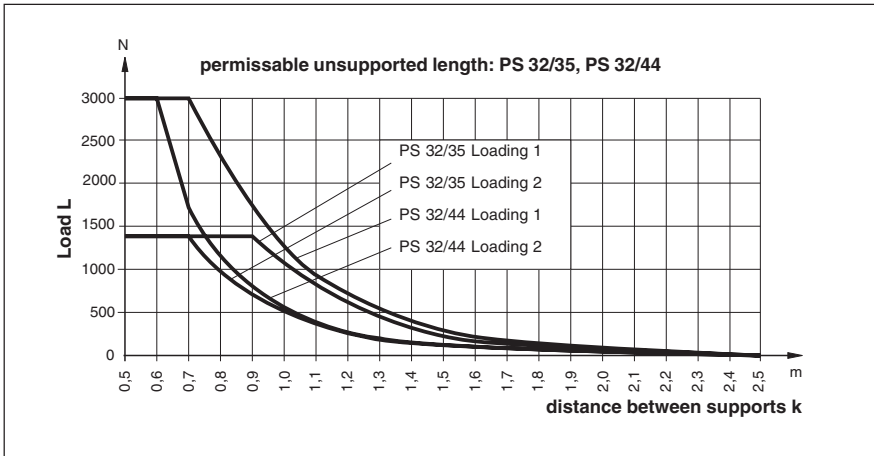
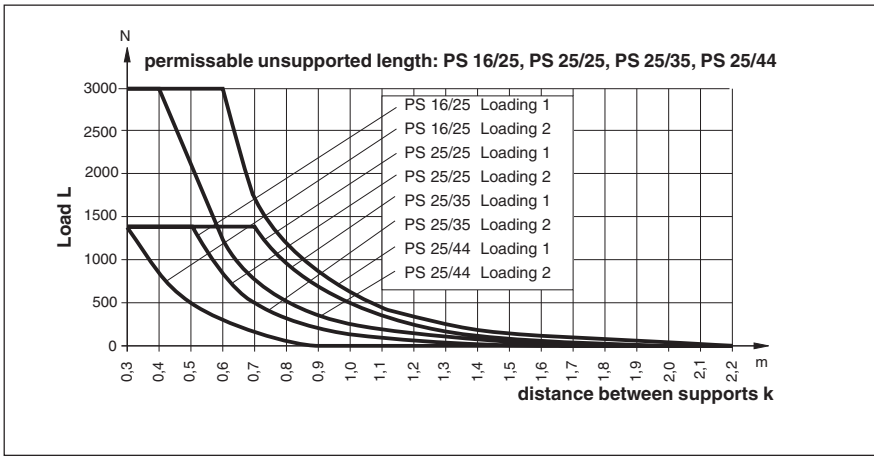
Dimensions

Series OSP-P



Dimension Table (mm)

Series	A	B	Z	AA	BB	CC	CF	EE	EF	EG	FF	FS	FT	GG	JJ
PS16/25	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

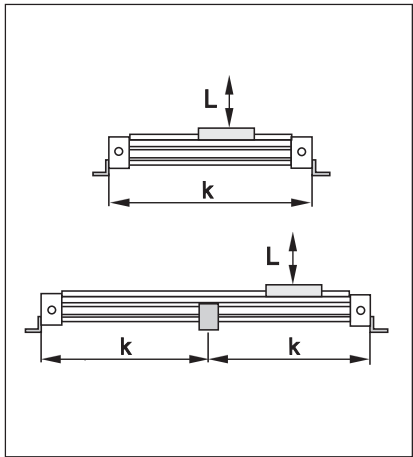
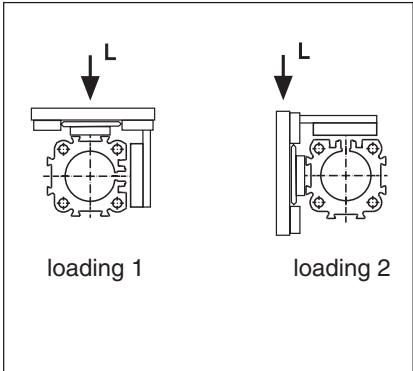
(for versions, see accessories)

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

$$L_F = \frac{M}{M_{\max}} + \frac{M_S}{M_{S \max}} + \frac{M_V}{M_{V \max}} + \frac{L_1}{L_{1 \max}} + \frac{L_2}{L_{2 \max}}$$

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.

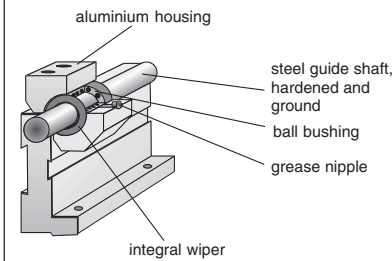
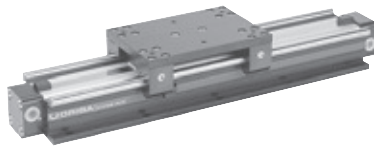
Lubrication intervals are dependant on environmental conditions (temperature, running speed, grease quality etc.) therefore the installation should be regularly inspected.

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

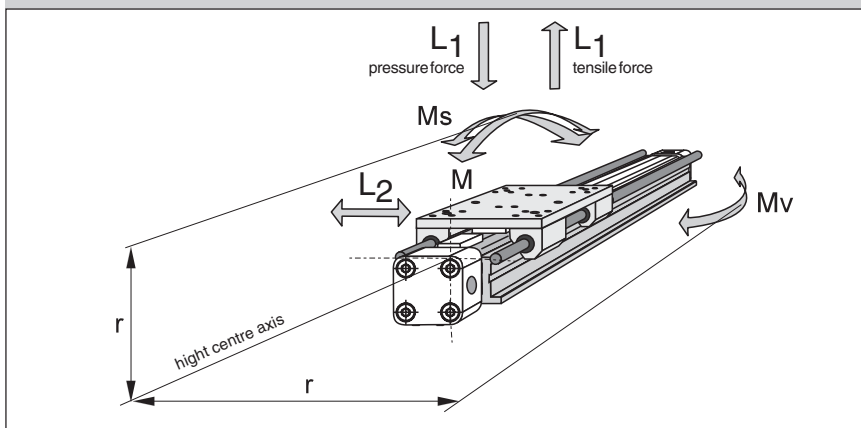
for pneumatic linear drive:
Series OSP-P



Ball bushing guide GUIDELINE

OSP
ORIGA
SYSTEM
PLUS

Loads, Forces and Moments



Series GDL 25 to 50
for Linear-drive
• Series OSP-P

Features

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

Technical Data

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

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

* Please note:

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

Series	For linear drive	Max. moments [Nm]			Max. load [N]			Mass of linear drive with guide [kg]		Mass * of guide carriage [kg]	Order No. GUIDELINE for OSP-P ¹⁾
		M	Ms	Mv	L ₁ pressure force	L ₂ tensile force	L ₃	with 0 mm stroke	increase per 100 mm stroke		
GDL 25	OSP-P25	115	75	90	2500	2100	1650	2.5	0.7	1.1	20175
GDL 32	OSP-P32	145	90	115	2500	2100	1650	3.6	0.9	1.2	20180
GDL 40	OSP-P40	440	330	310	8000	6250	4400	6.3	1.4	2.0	20177
GDL 50	OSP-P50	500	375	355	8000	6250	4400	8.6	1.6	2.2	20183

¹⁾ corrosion resistance version available on request (max. loads and moments are 30% lower)

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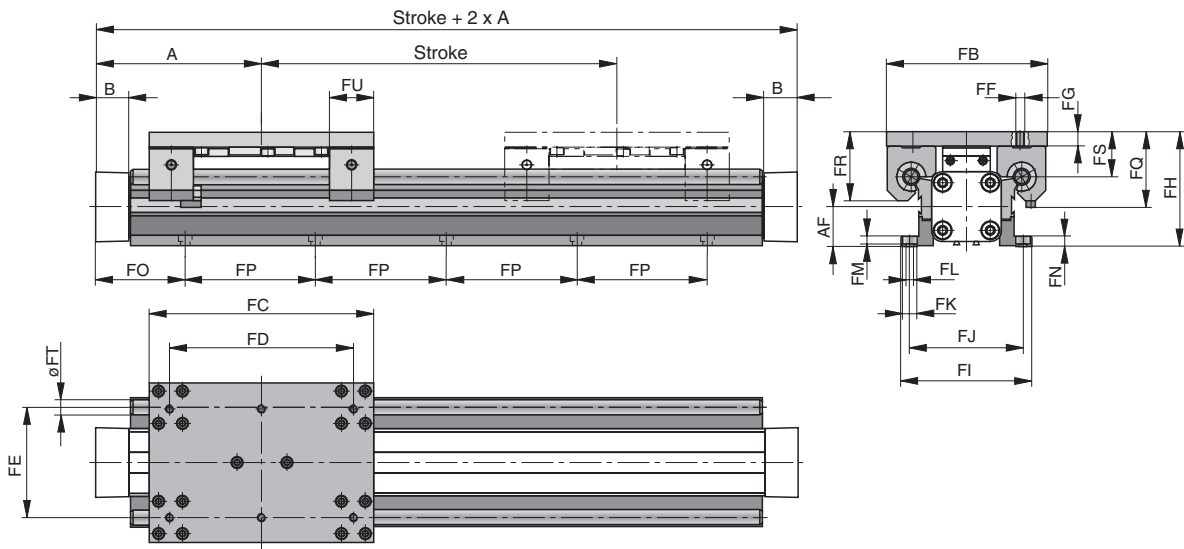
For linear drives see 1.10.002E

Data Sheet No. 1.40.004E-1

HOERBIGER
ORIGA

Dimensions

Series OSP-P



For further options see 1.45.001E.

Arrangement of magnetic switches:

Magnetic switches can be fitted anywhere on either side. The magnet can be screwed on to one of the four ball bushing housings from underneath.

Note:

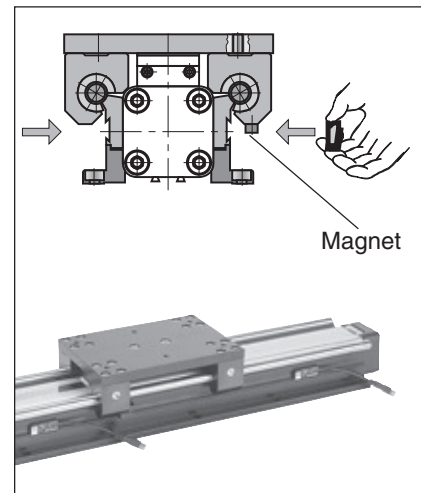
The guideline linear guide must be mounted on a flat surface along its entire length.

Magnetic switches

– see accessories 1.45.100E, 1.45.104E

Linear Drives

OSP-P see data sheet 1.10.002E



Dimension Table (mm)

Series	A	B	AF	FB	FC	FD	FE	FF	FG	FH	FI	FJ	øFK	øFL	FM	FN	FP	FQ	FR	FS	øFT	FU
GDL 25	100	22	22	120	145	110	70	M6	11	78	86	73	10.5	6.0	5.7	8	100	56.5	51.5	33.5	12	32
GDL 32	125	25.5	30	120	170	140	80	M6	11	86	98	85	10.5	6.0	5.7	8	100	56.5	51.5	33.5	12	32
GDL 40	150	28	38	160	180	140	110	M8	14	108	120	104	12	7.5	6.8	10	100	73	61	38	16	36
GDL 50	175	33	48	180	200	160	120	M8	14	118	134	118	12	7.5	6.8	10	100	73	61	38	16	36

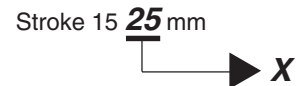
FO				
OSP-P				
x	P25	P32	P40	P50
00	50.0	75.0	50.0	75.0
01	50.5	75.5	50.5	75.5
02	51.0	76.0	51.0	76.0
03	51.5	76.5	51.5	76.5
04	52.0	77.0	52.0	77.0
05	52.5	77.5	52.5	77.5
06	53.0	78.0	53.0	78.0
07	53.5	78.5	53.5	78.5
08	54.0	79.0	54.0	79.0
09	54.5	79.5	54.5	79.5
10	55.0	80.0	55.0	80.0
11	55.5	80.5	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	P25	P32	P40	P50
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	80.5	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:



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

System Life

The calculation for expected service life is achieved in three steps:

- Determination of the load factor L_F , inserting actual values into the adjacent equation
- Determination of guidance constant K_F
- Calculation of the service life in km

Lubrication

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

Only high quality Lithium based greases should be used.

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

1. Calculation of load factor L_F

$$L_F = \frac{M}{M_{\max}} + \frac{M_S}{M_{S \max}} + \frac{M_V}{M_{V \max}} + \frac{L_{1 \text{ pressure force}}}{L_{1 \text{ pressure force max}}} + \frac{L_{1 \text{ tensile force}}}{L_{1 \text{ tensile force max}}} + \frac{L_2}{L_{2 \max}}$$

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

2. Guidance constant K_F

Installation	guidance constant K_F	
	GDL 25, GDL 32	GDL 40, GDL 50
Horizontal	200	210
Sideways	250	320
Vertical	90	120

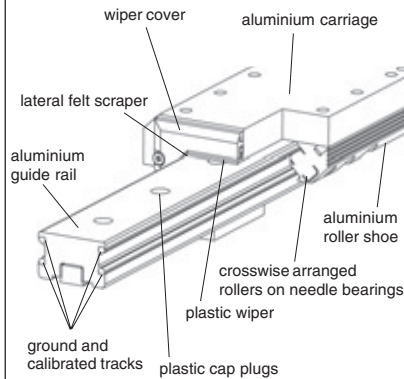
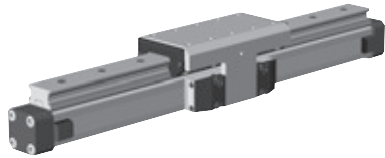
3. Service life calculation

Approximate service life is calculated using the following equation:

$$\text{Service life [km]} = \frac{K_F}{L_F^3}$$

Versions

for pneumatic linear drive:
Series OSP-P

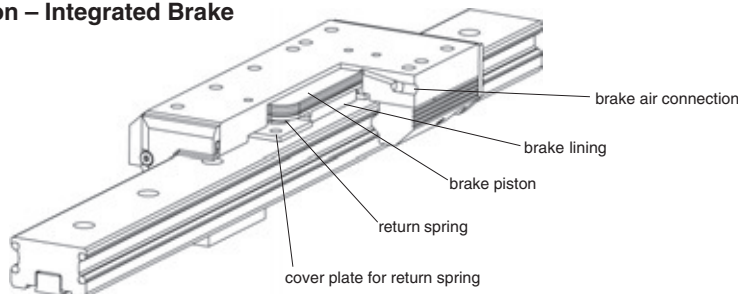


Aluminium Roller Guide PROLINE

OSP
— ORIGA
— SYSTEM
— PLUS

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

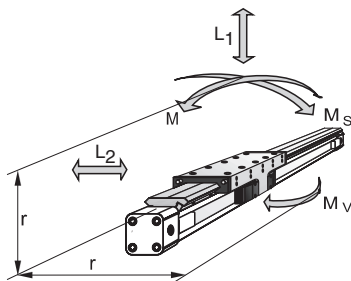
Option – Integrated Brake



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

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:

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

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.

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

- Actuated by pressurisation
- Release by depressurisation and spring actuation

* Please note:

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

Series	For linear drive	Max. moments [Nm]			Max. loads [N]	Maximum braking force at 6 bar [N] ¹⁾	Mass of linear drive with guide [kg]		Mass* guide carriage [kg]	Order No. PROLINE for OSP-P	
		M	Ms	Mv			L _{1, L₂}	with 0 mm stroke		increase per 100 mm stroke	without brake
PL 16	OSP-P16	12	8	12	542	–	0.55	0.19	0.24	20855	–
PL 25	OSP-P25	39	16	39	857	on request	1.65	0.40	0.75	20856	20860
PL 32	OSP-P32	73	29	73	1171	on request	3.24	0.62	1.18	20857	20861
PL 40	OSP-P40	158	57	158	2074	on request	4.35	0.70	1.70	20858	20862
PL 50	OSP-P50	249	111	249	3111	on request	7.03	0.95	2.50	20859	20863

¹⁾ Only for version with brake:

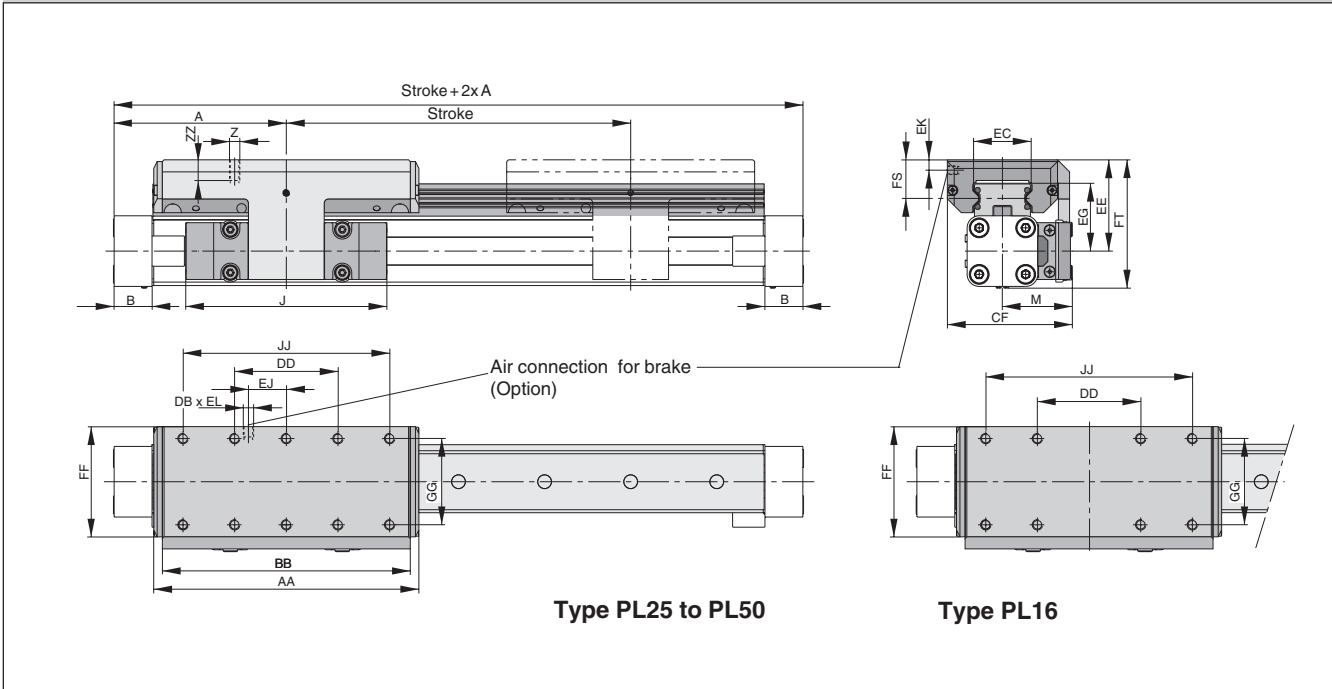
Braking surface dry – oiled surface reduces the effective braking force.

For linear drives see 1.10.002E
For mountings see 1.45.005E

Data Sheet No. 1.40.005E-1

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ORIGA

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



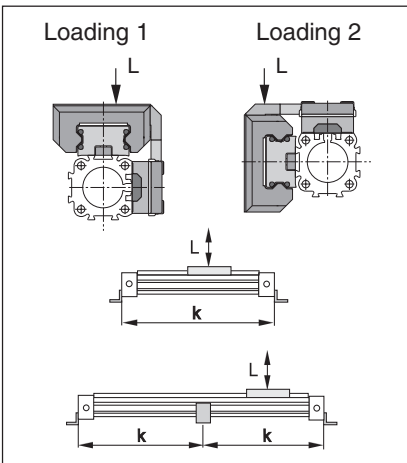
Dimension Table (mm) Series OSP-P PL16, PL25, PL32, PL40, PL50

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)

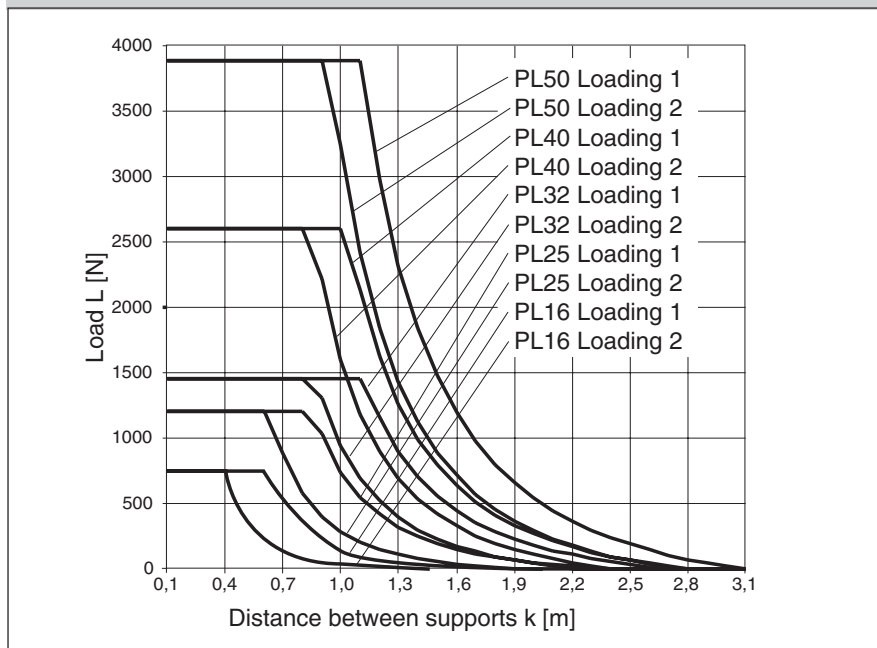
Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max.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



Note:

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

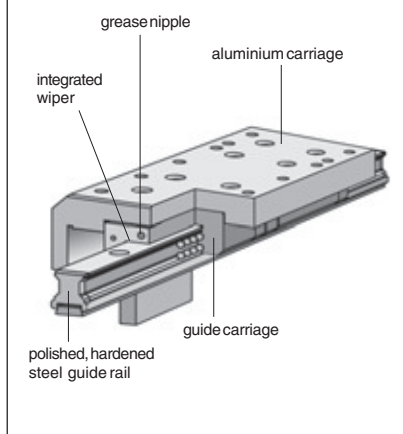
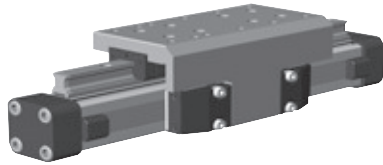
Permissible Unsupported Length PL16, PL25, PL32, PL40 und PL50



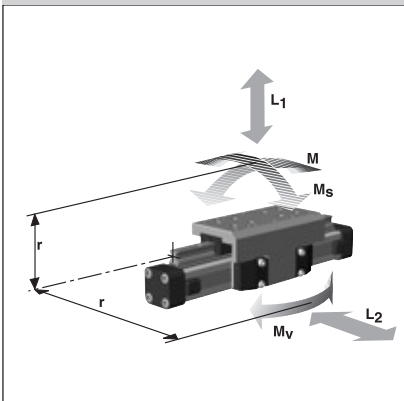
A1P704E00HAE00X

Versions

for pneumatic 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:

$$\frac{M}{M_{max}} + \frac{M_s}{M_{smax}} + \frac{M_v}{M_{vmax}} + \frac{L_1}{L_{1max}} + \frac{L_2}{L_{2max}} \leq 1$$

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.

Recirculating Ball Bearing Guide STARLINE



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

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 (longer strokes on request)
- 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

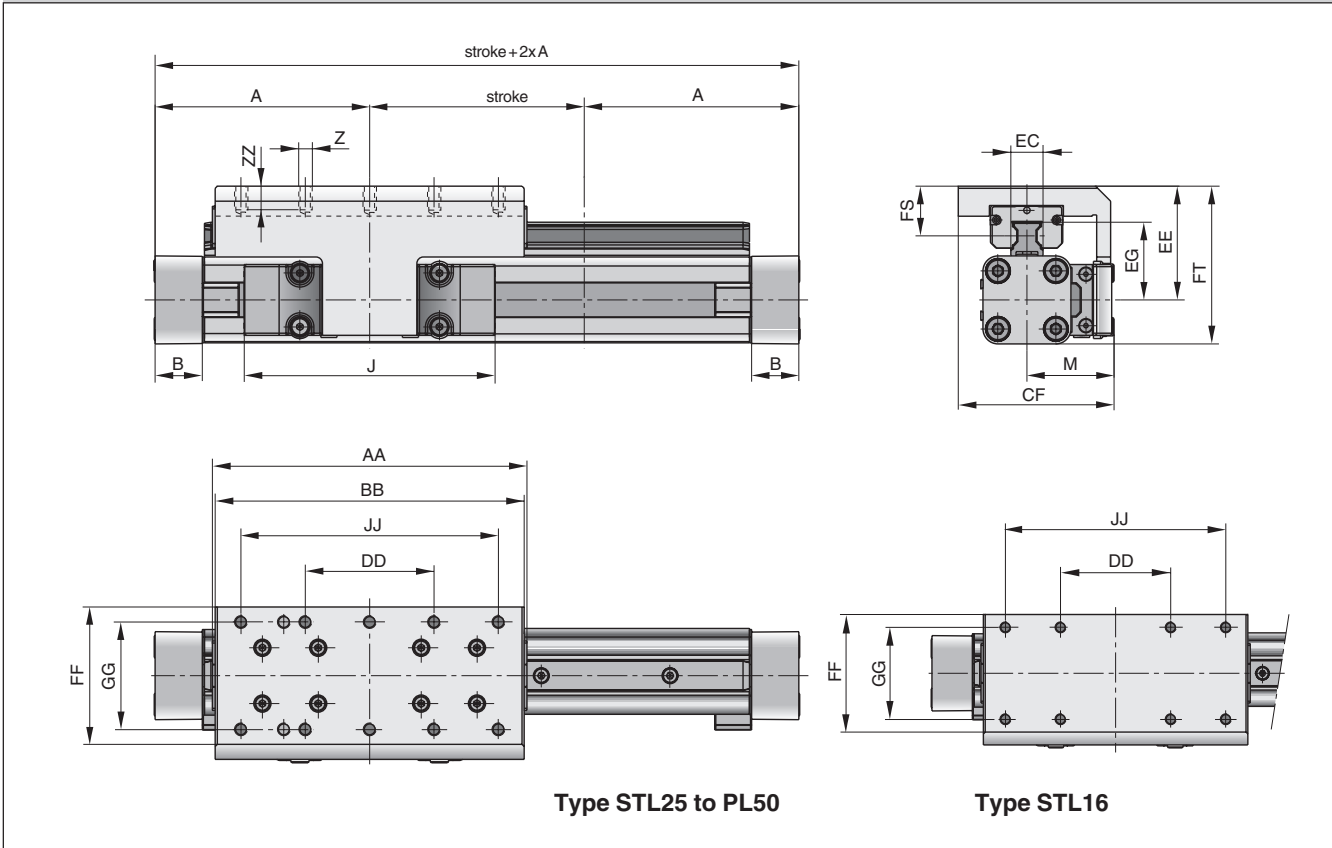
Series	For linear drive	Max. moments [Nm]			Max. loads [N]		Mass of linear drive with guide [kg]		Mass ** guide carriage [kg]	Order No. STARLINE for OSP-P
		M	Ms	Mv	L1	L2	with 0 mm stroke	increase per 100 mm stroke		
STL16	OSP-P16	30	15	30	1000	1000	0.598	0.210	0.268	21111
STL25	OSP-P25	110	50	110	3100	3100	1.733	0.369	0.835	21112
STL32	OSP-P32	160	62	160	3100	3100	2.934	0.526	1.181	21113
STL40	OSP-P40	400	150	400	7500	4000	4.452	0.701	1.901	21114
STL50	OSP-P50	580	210	580	7500	4000	7.361	0.936	2.880	21115

For linear drives see 1.10.002E
For mountings see 1.45.005E



The right to introduce technical modifications is reserved

Dimensions Series OSP-P STL16 to STL 50

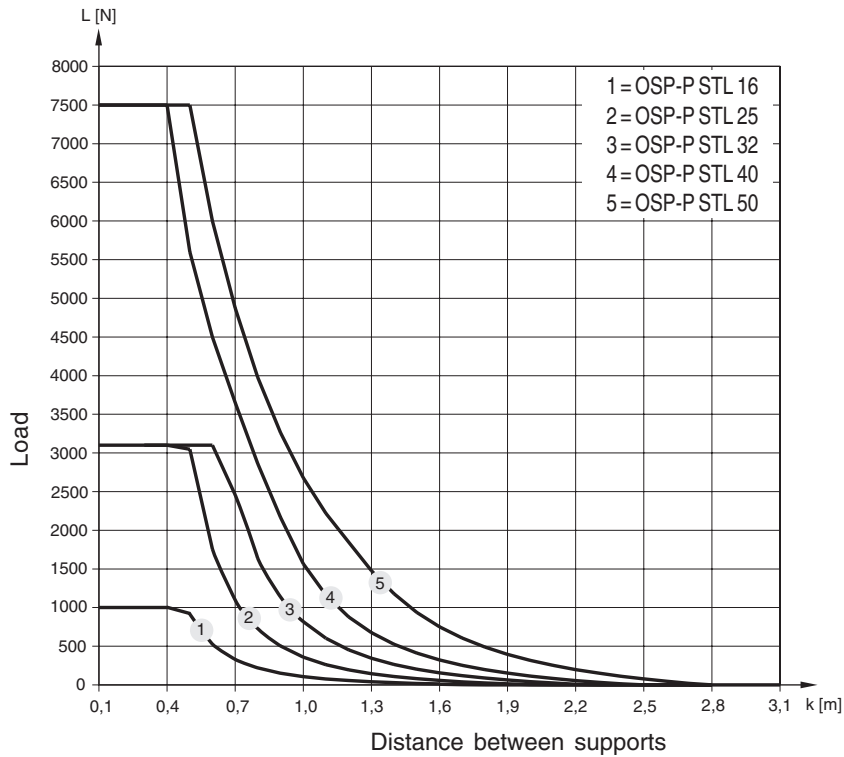


Dimension Table (mm) Series OSP-P STL16 to STL50

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

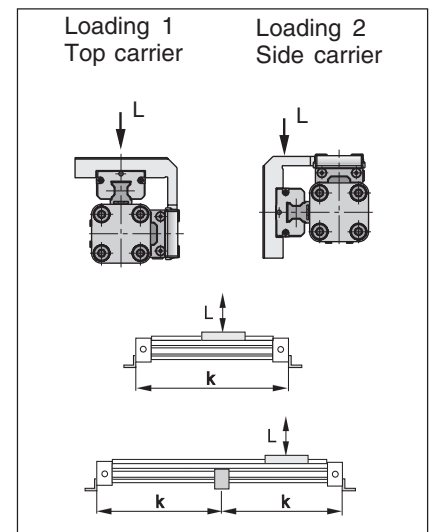
Loading 1 – Top carrier



Mid-Section Support

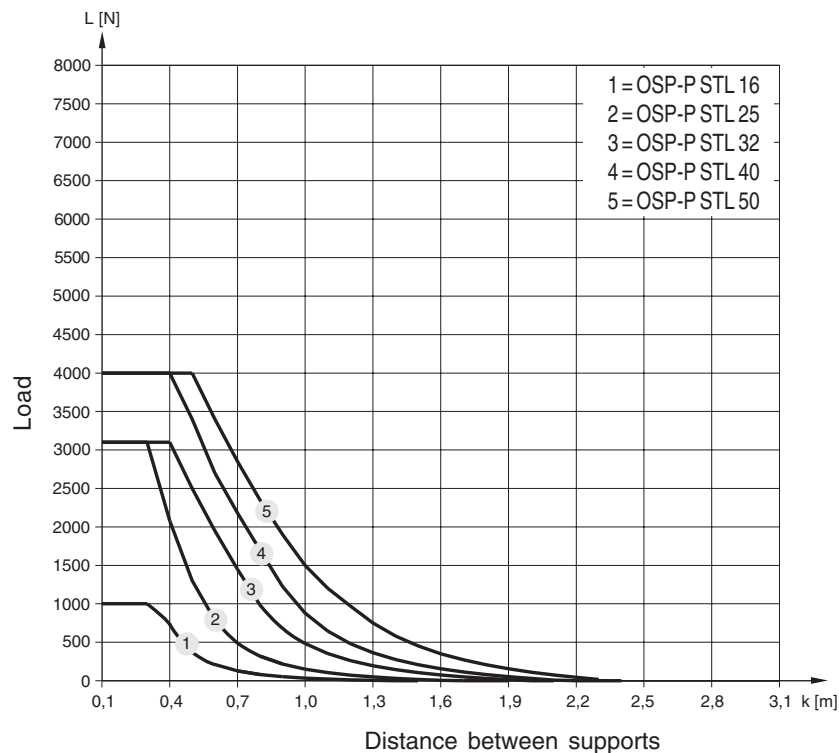
(For versions, see 1.45.005E-8, 1.45.005E-9)

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.



Permissible Unsupported Length STL16 to STL50

Loading 2 – Side carrier



Note:

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

Variable Stop

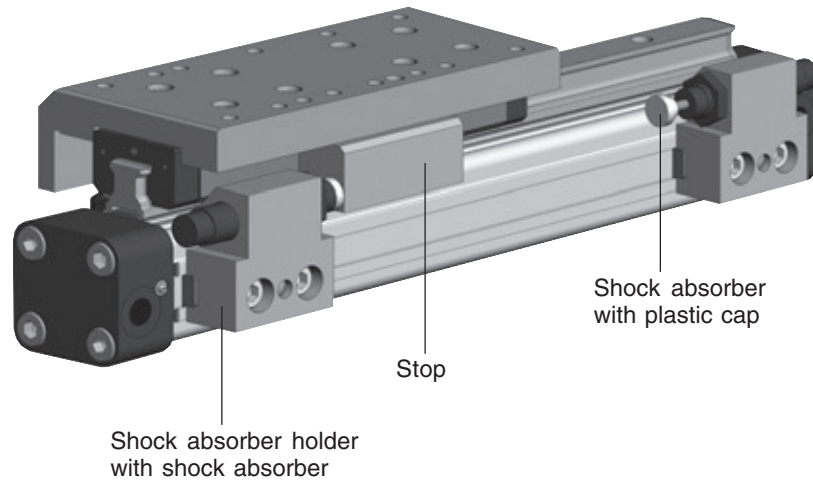
The variable stop Type VS is used to provide intermediate stopping positions. It can be retrofitted and positioned anywhere along the stroke length. For every cylinder diameter two types of shock absorber are available – see „Shock Absorber Selection“ below.

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

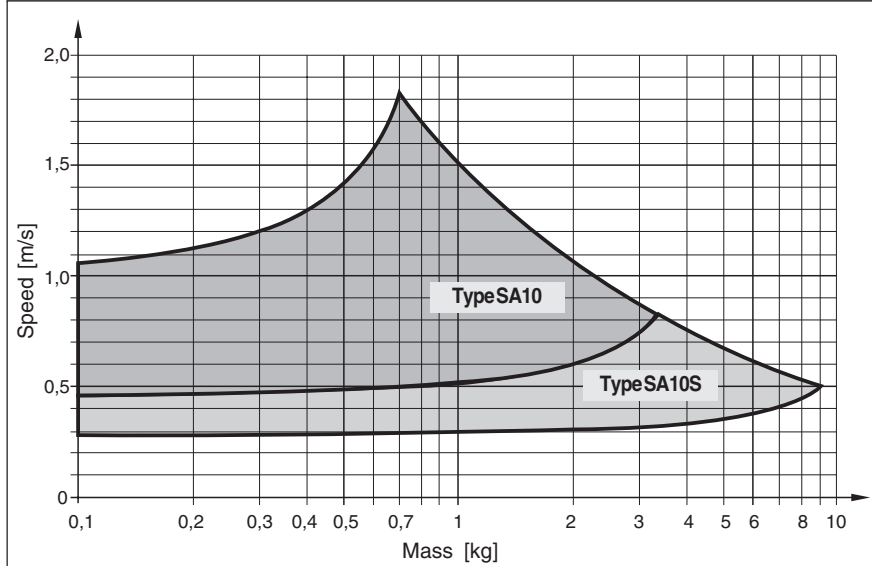
Arrangement with two variable stops



Shock Absorber Selection

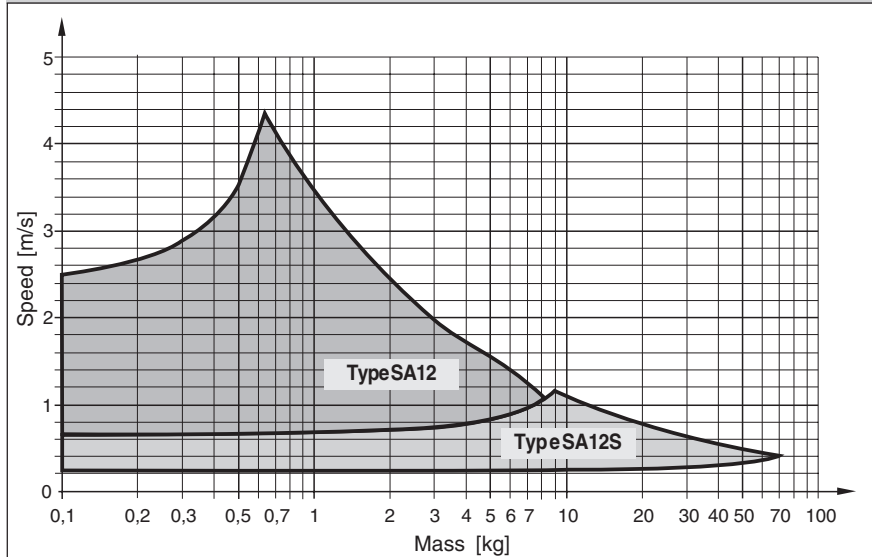
The shock absorber is selected in dependence on the mass and speed. The mass of the carrier itself must be taken into account.

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



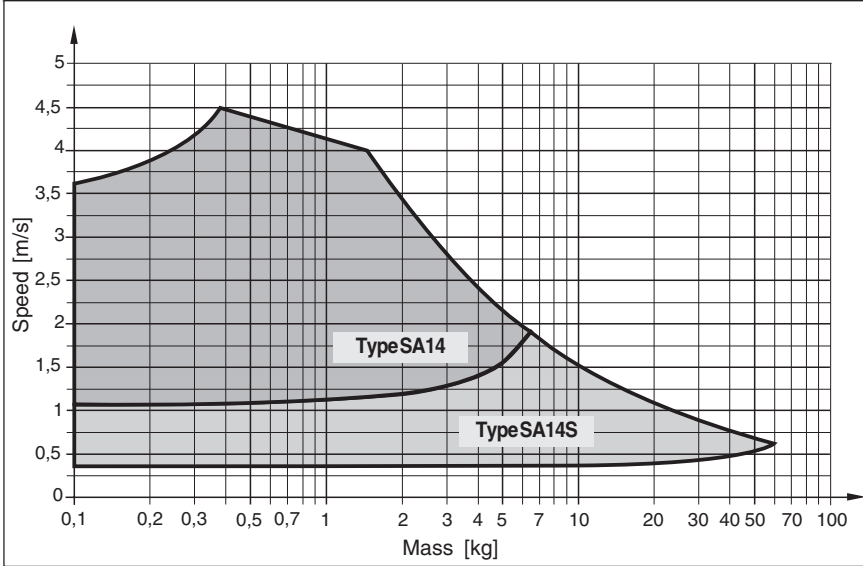
The values relate to an effective driving force of 78 N (6 bar)

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



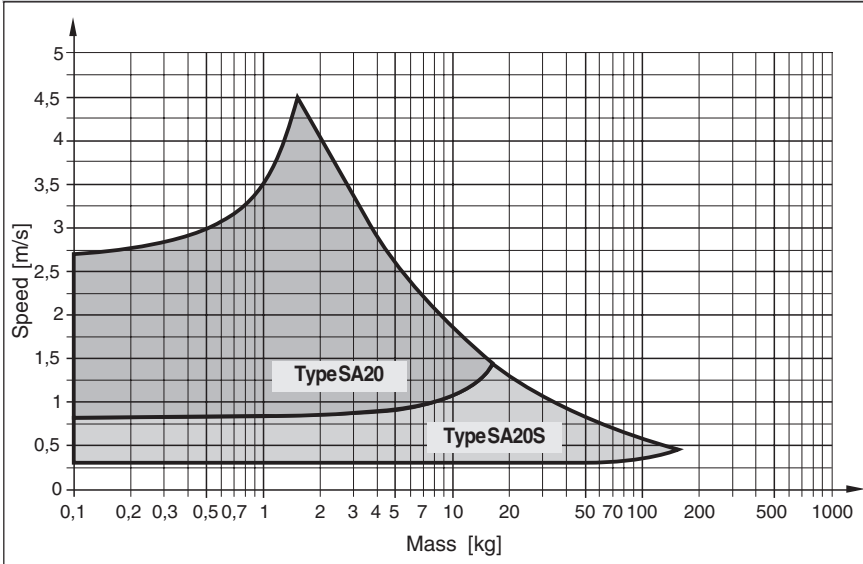
The values relate to an effective driving force of 250 N (6 bar)

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



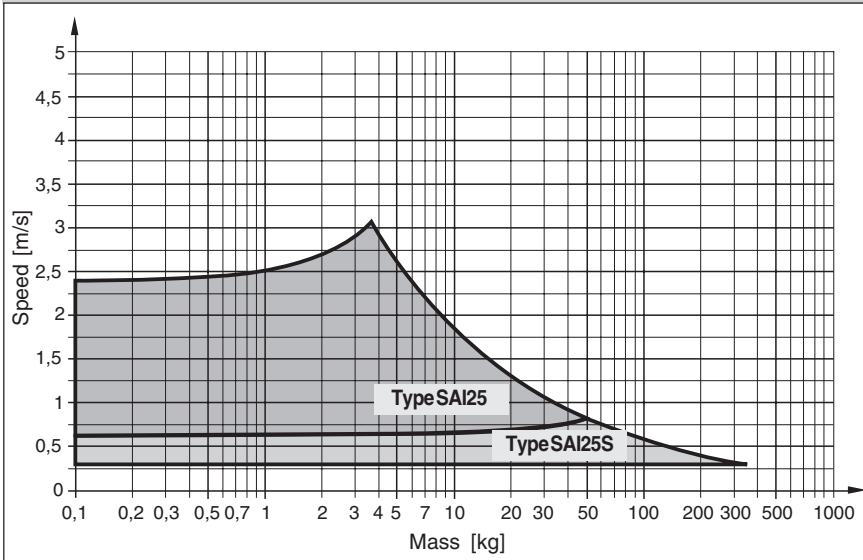
The values relate to an effective driving force of 420 N (6 bar)

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



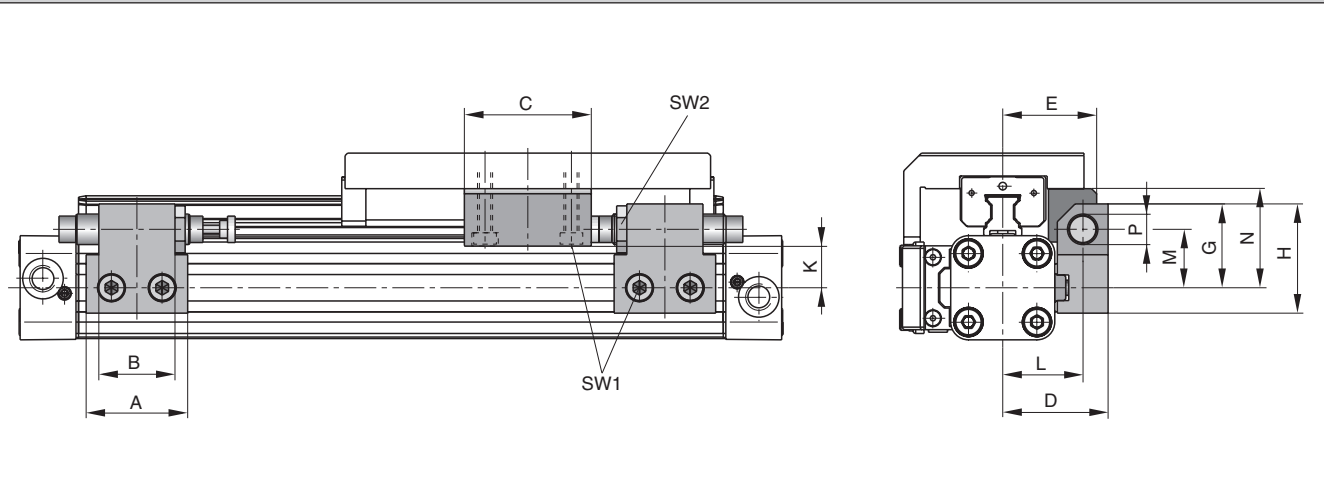
The values relate to an effective driving force of 640 N (6 bar)

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



The values relate to an effective

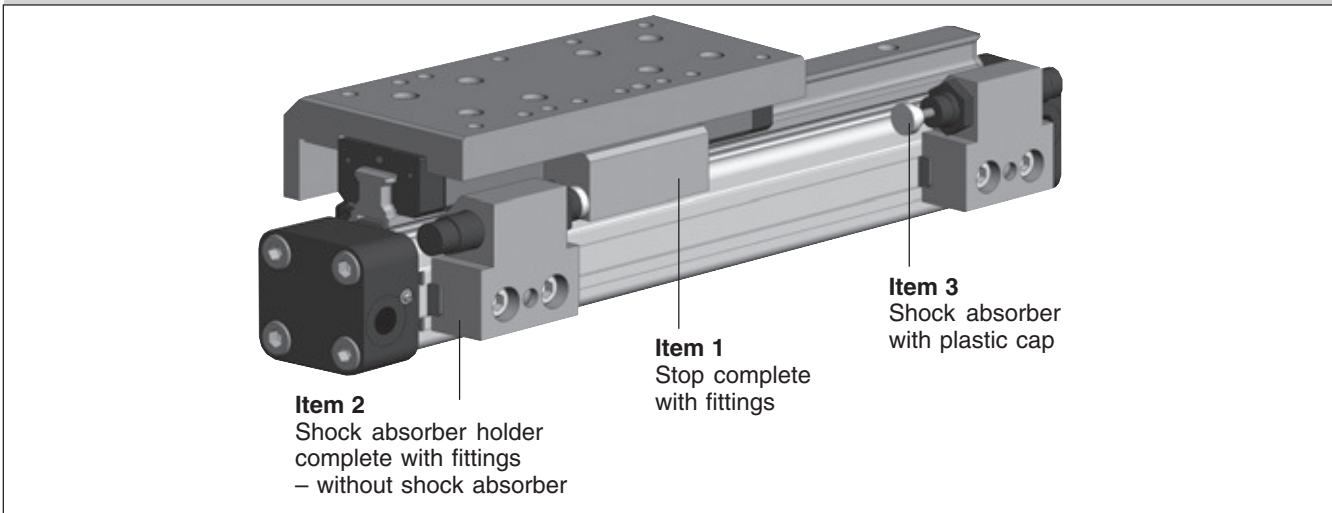
Dimensions – Variable Stop Type VS16 to VS50



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

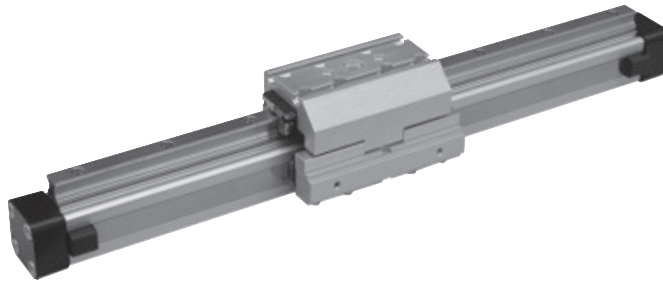


Order Instructions – Variable Stop Type VS16 to VS50

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	SA10	7900	SA12	7706	SA14	7708	SA20	7710	SAI25	7712
	Shock absorber, version S	SA10S	7907	SA12S	7707	SA14S	7709	SA20S	7711	SAI25S	7713
* Shock absorber with plastic cap											

Versions

for Pneumatic Linear Drive:
Series OSP-P KF

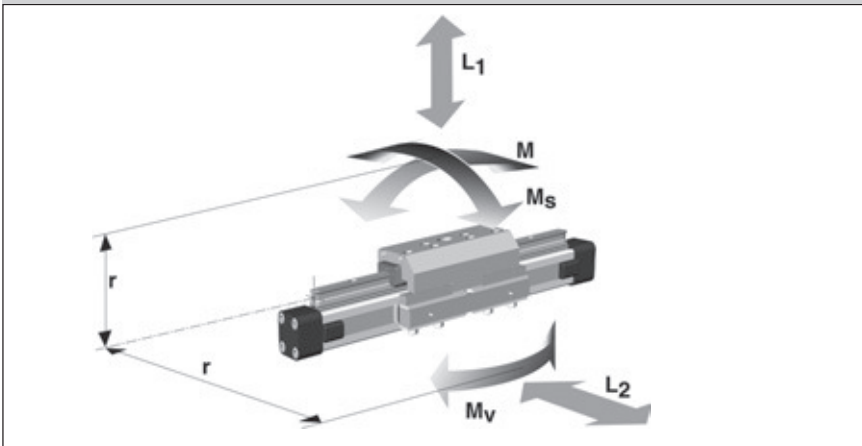


Recirculating Ball Bearing Guide KF



Series KF16 to KF50
For Linear Drives Series OSP-P

Loads, Forces and Moments



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 (longer strokes on request)
- Maximum speed
KF16, KF40: v = 3 m/s
KF25, KF32, KF50: v = 5 m/s

Technical Data

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

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

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.

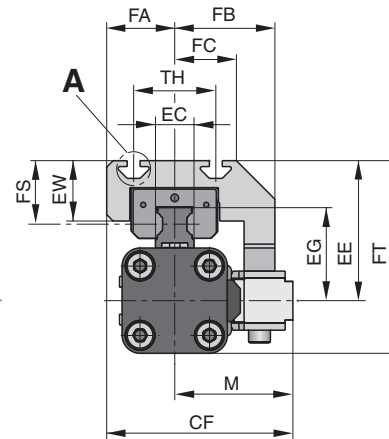
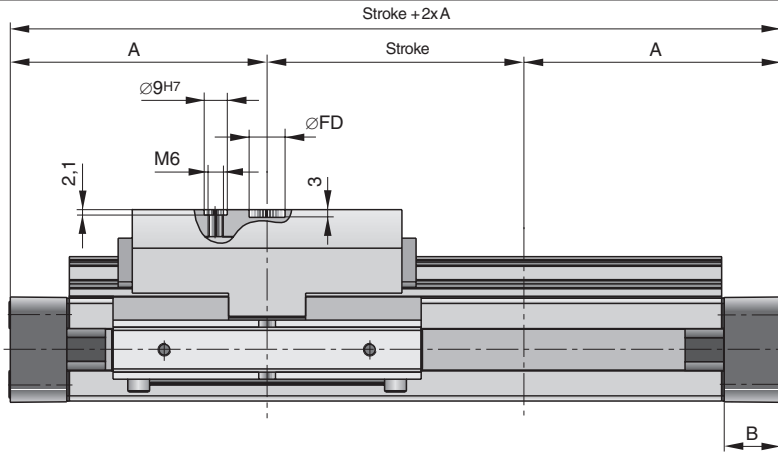
The sum of the loads should not exceed >1

Series	for Linear Drive	Max. Moments [Nm]			Max. Load [N]		Mass of drive with guide [kg]		Mass * guide carriage [kg]	Groove stone Thread Size	Order No.	
		M	Ms	Mv	L1	L2	with 0 mm stroke	increase per 100 mm stroke			Groove Stone	KF for OSP-P
KF16	OSP-P16	25	12	25	1000	1000	0.558	0.21	0.228	–	–	21101
KF25	OSP-P25	90	35	90	3100	3100	1.522	0.369	0.607	M5	13508	21102
KF32	OSP-P32	133	44	133	3100	3100	2.673	0.526	0.896	M5	13508	21103
KF40	OSP-P40	346	119	346	7100	4000	4.167	0.701	1.531	M6	13509	21104
KF50	OSP-P50	480	170	480	7500	4000	7.328	0.936	2.760	M8	13510	21105

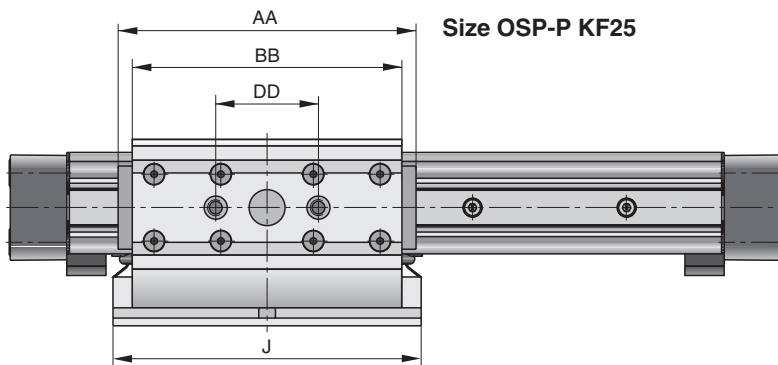
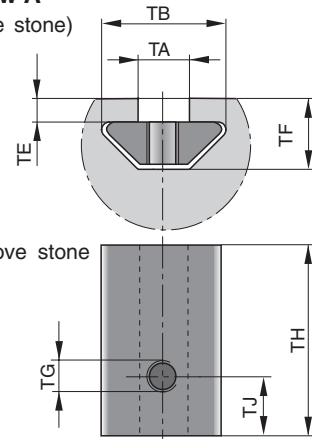
For linear drives see 1.10.002E
For mountings see 1.45.005E



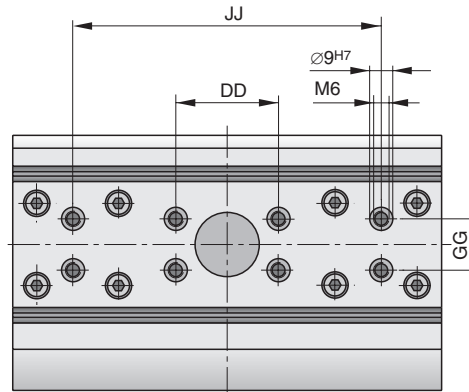
Dimensions Series OSP-P KF16 to KF50



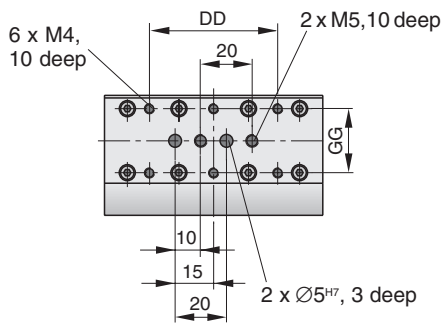
Partial view A
(with groove stone)



Size OSP-P KF32 to KF50



Size OSP-P KF16



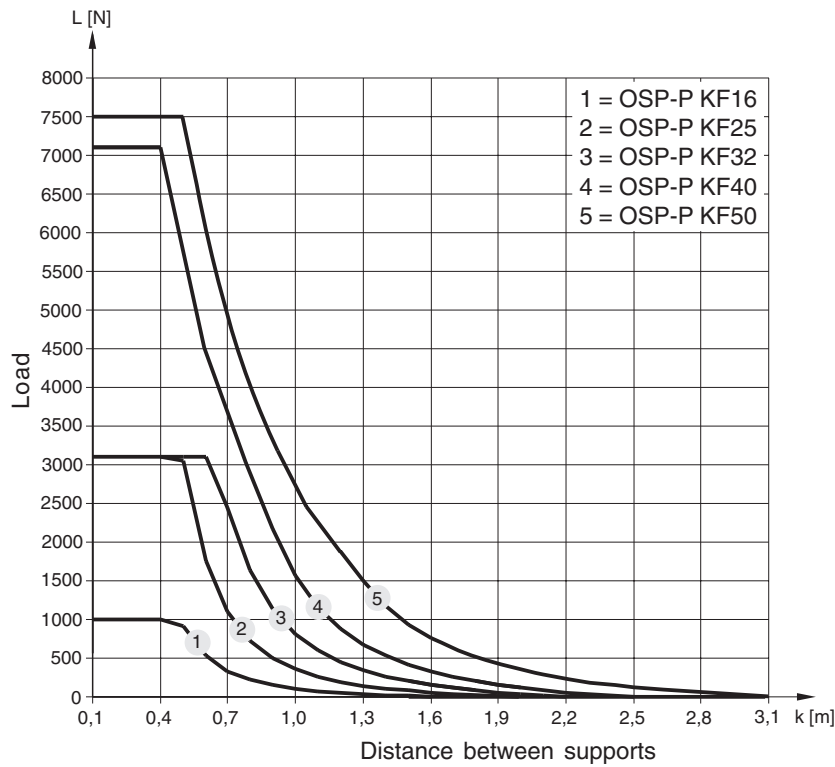
Dimension Table (mm) Series OSP-P KF16, KF25, KF32, KF40, KF50

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
KF16	17.7	29	16.5	–	56	19	–	–	–	–	–	–	–
KF25	26.5	39	24	14 ^{G7}	75	24.7	5	12.1	2.3	6.9	M5	11.5	4
KF32	34	53.8	34	25 ^{G7}	86.5	24.7	5	12.1	1.8	6.4	M5	11.5	4
KF40	42.5	56.8	41	25 ^{G7}	104	26	6	12.8	1.8	8.4	M6	17	5.5
KF50	52	65	50	25 ^{G7}	134	38	8	21.1	4.5	12.5	M8	23	7.5

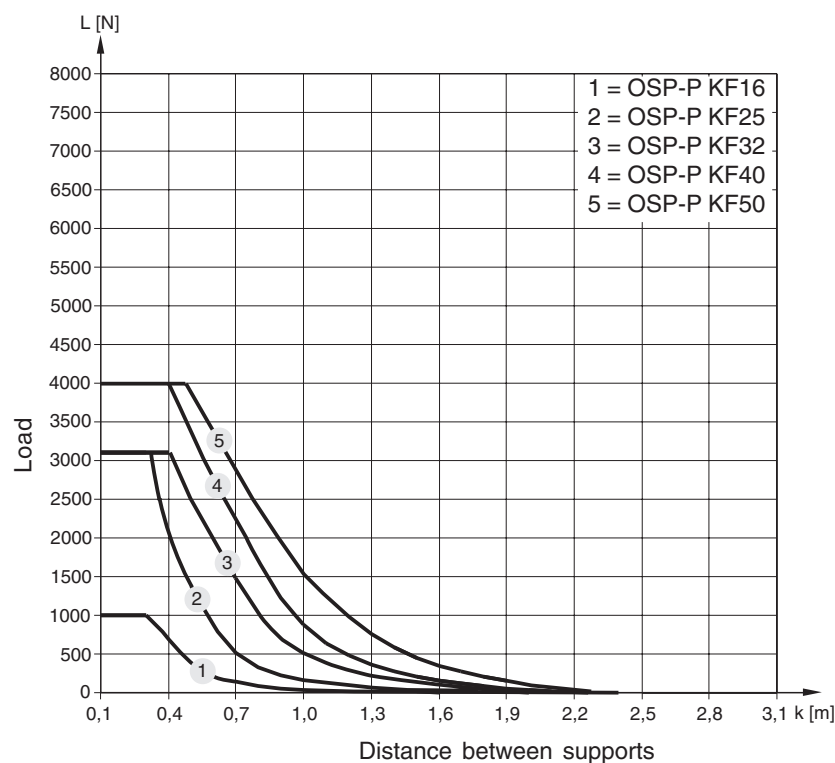
Permissible Unsupported Length OSP-P KF16 to KF50

Loading 1 – Top carrier



Permissible Unsupported Length OSP-P KF16 to KF50

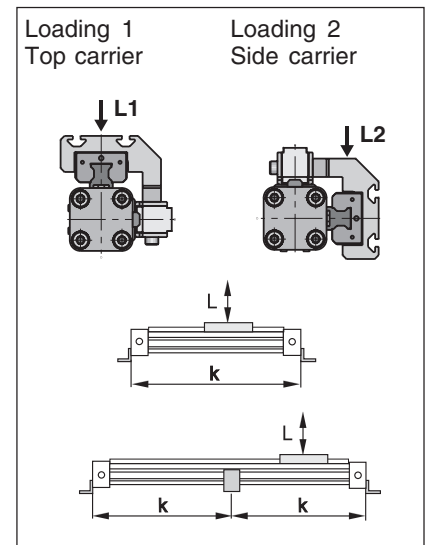
Loading 2 – Side carrier



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.

Variable Stop

The variable stop Type VS is used to provide intermediate stopping positions.

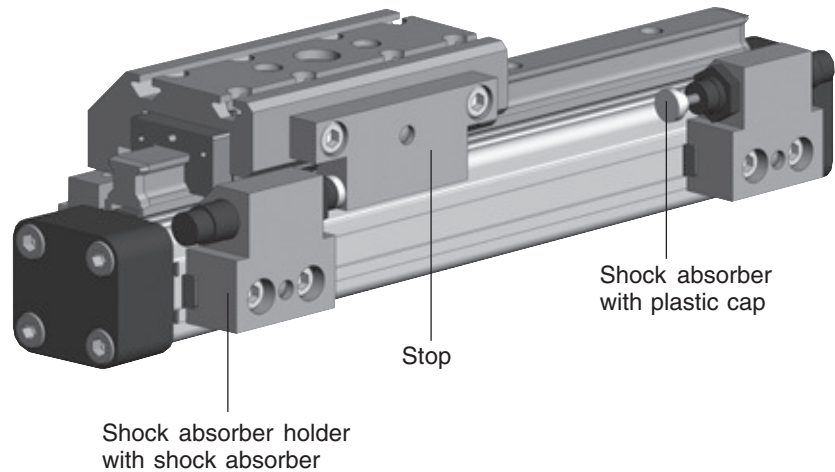
It can be retrofitted and positioned anywhere along the stroke length. For every cylinder diameter two types of shock absorber are available – see „Shock Absorber Selection“ below.

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



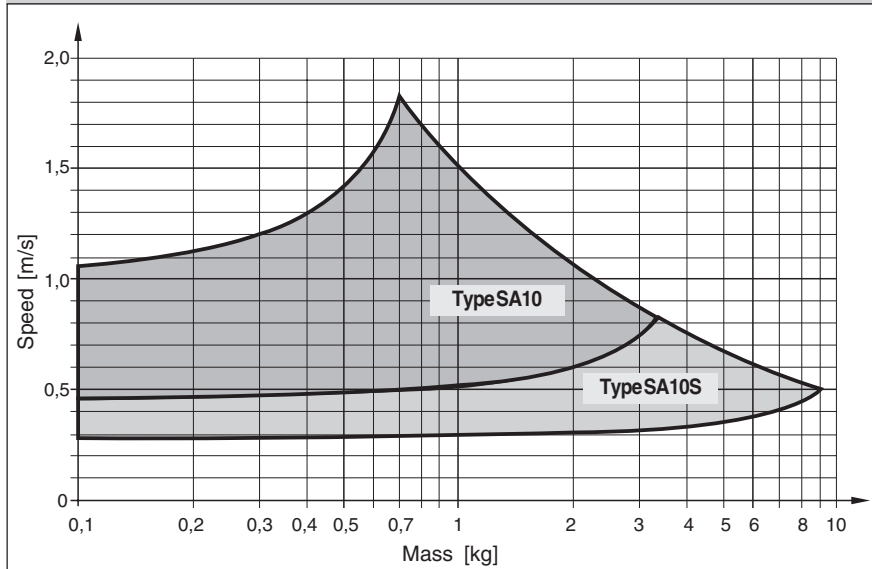
Shock Absorber Selection

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

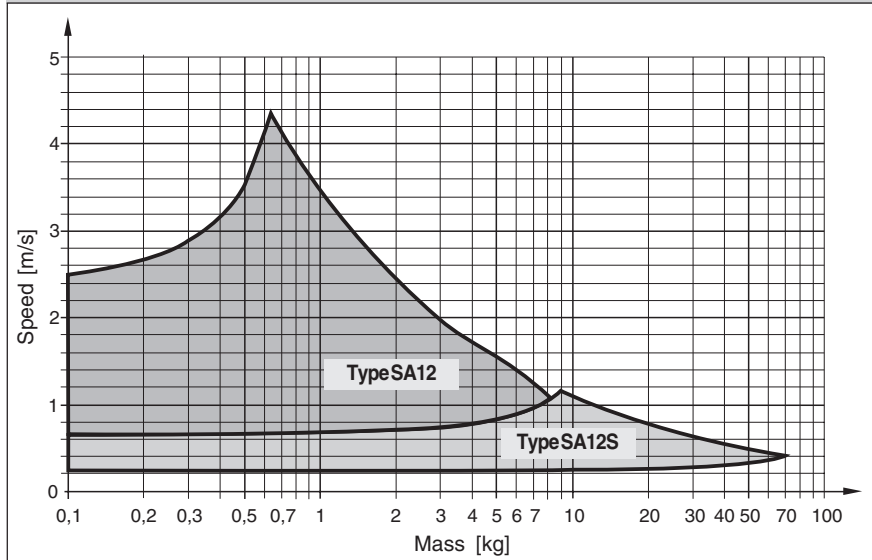
The mass of the carrier itself must be taken into account.

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

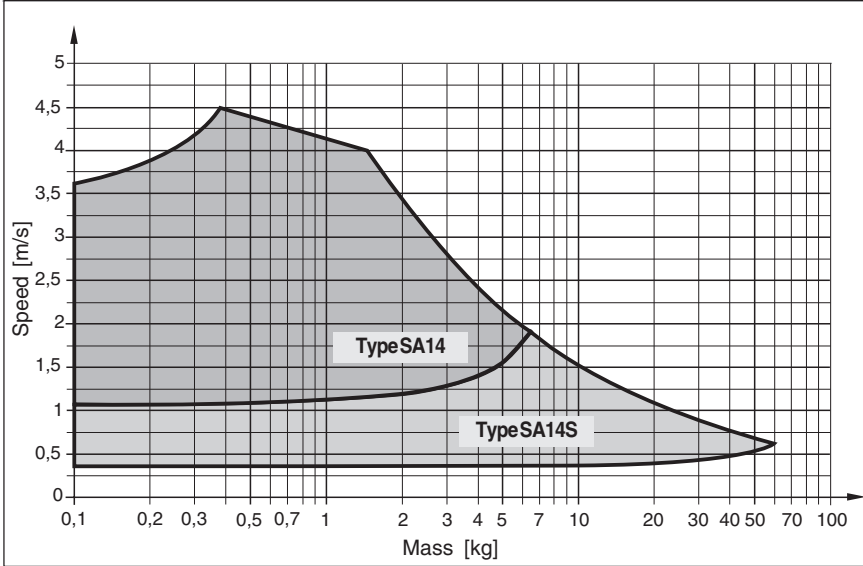


Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-KF25



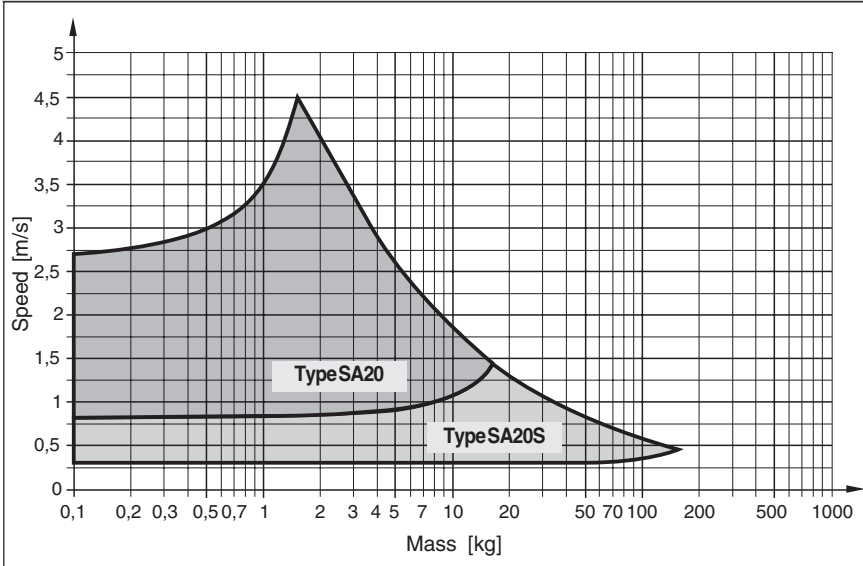
The values relate to an effective driving force of 250 N (6 bar)

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



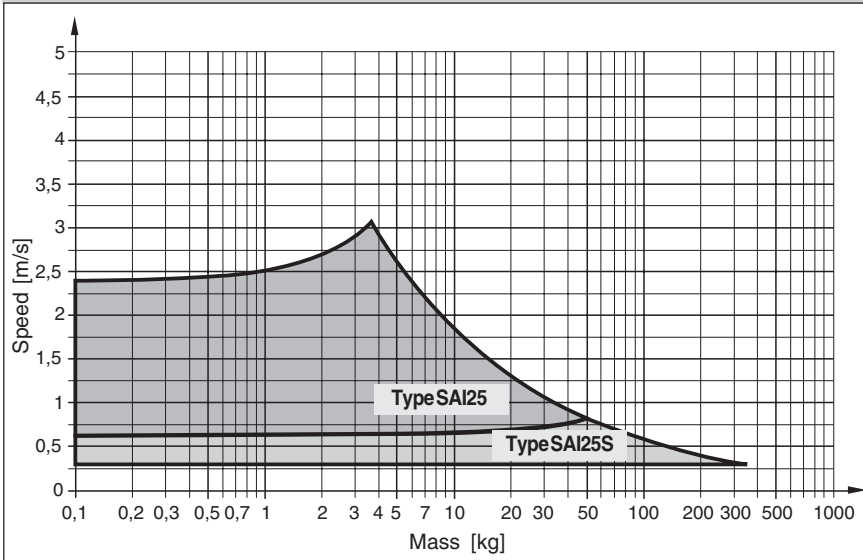
The values relate to an effective driving force of 420 N (6 bar)

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



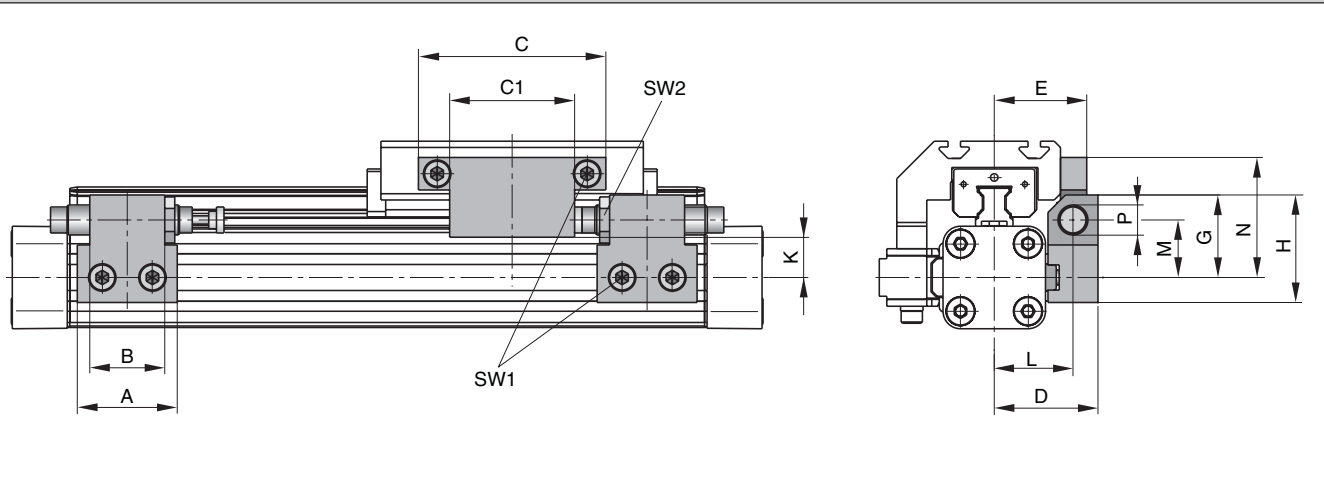
The values relate to an effective driving force of 640 N (6 bar)

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)

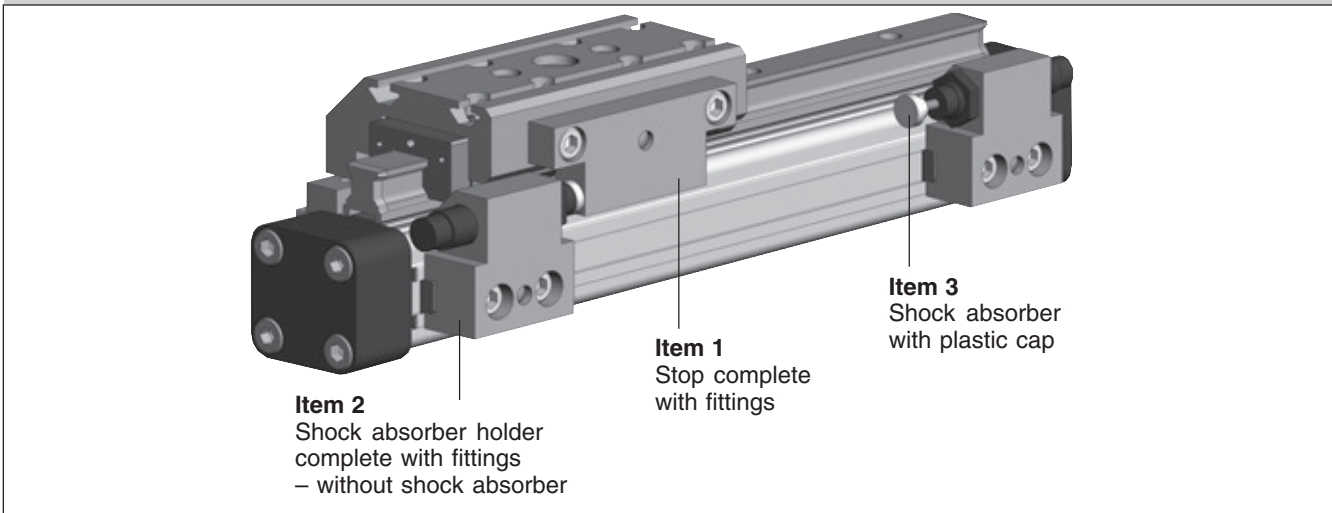
Dimensions – Variable Stop Type VS16 to VS50



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



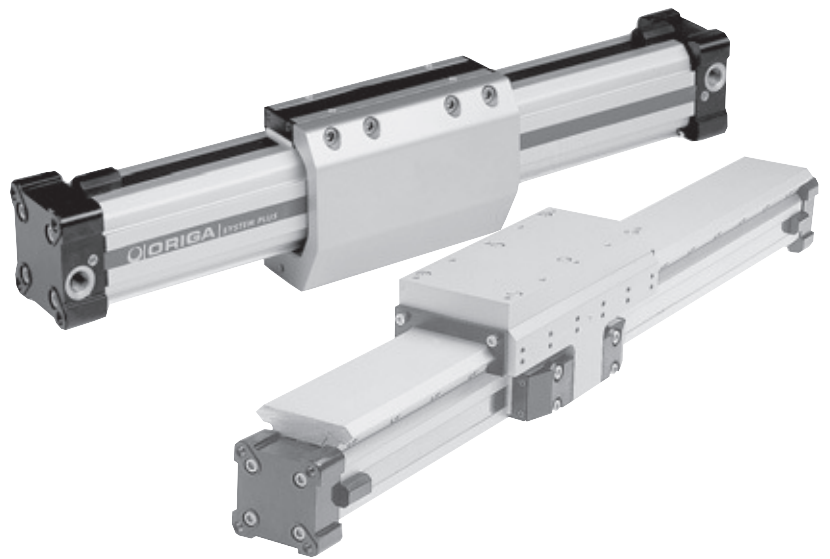
Order Instructions – Variable Stop Type VS16 to VS50

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	SA10	7900	SA12	7706	SA14	7708	SA20	7710	SAI25	7712
	Shock absorber, version S	SA10S	7907	SA12S	7707	SA14S	7709	SA20S	7711	SAI25S	7713

* Shock absorber with plastic cap

Active and Passive Brakes

Series OSP-P



Contents

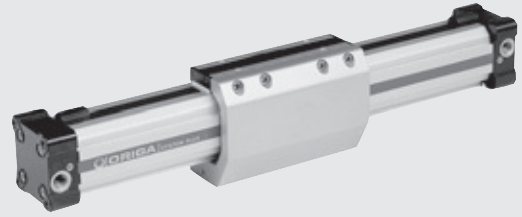
Description	Data Sheet No.	Page
Overview	1.42.001E	57-58
Standard cylinder with Active brake	1.42.002E	59-62
Plain bearing SLIDELINE with Active brake	1.40.002E	33-34
Aluminium roller guide PROLINE with Active brake	1.40.005E	43-44
Plain bearing SLIDELINE with Passive brake Multibrake	1.42.003E	63-66
Aluminium roller guide PROLINE with Passive brake Multibrake	1.42.004E	67-70

Active Brakes and Passive Brakes

Active Brake

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

See data sheet 1.42.002E



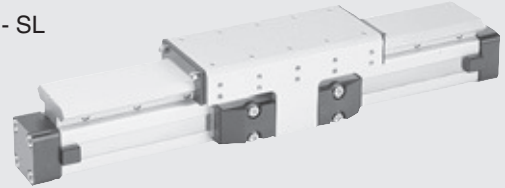
Versions:

- 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.

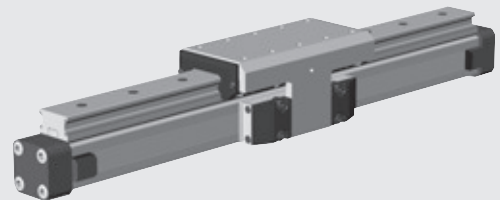
See data sheet 1.40.002E



Proline with Active Brake

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

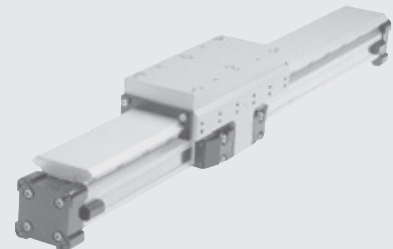
See data sheet 1.40.005E



Multibrake with Slideline

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

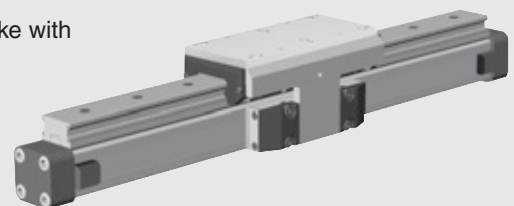
See data sheet 1.42.003E



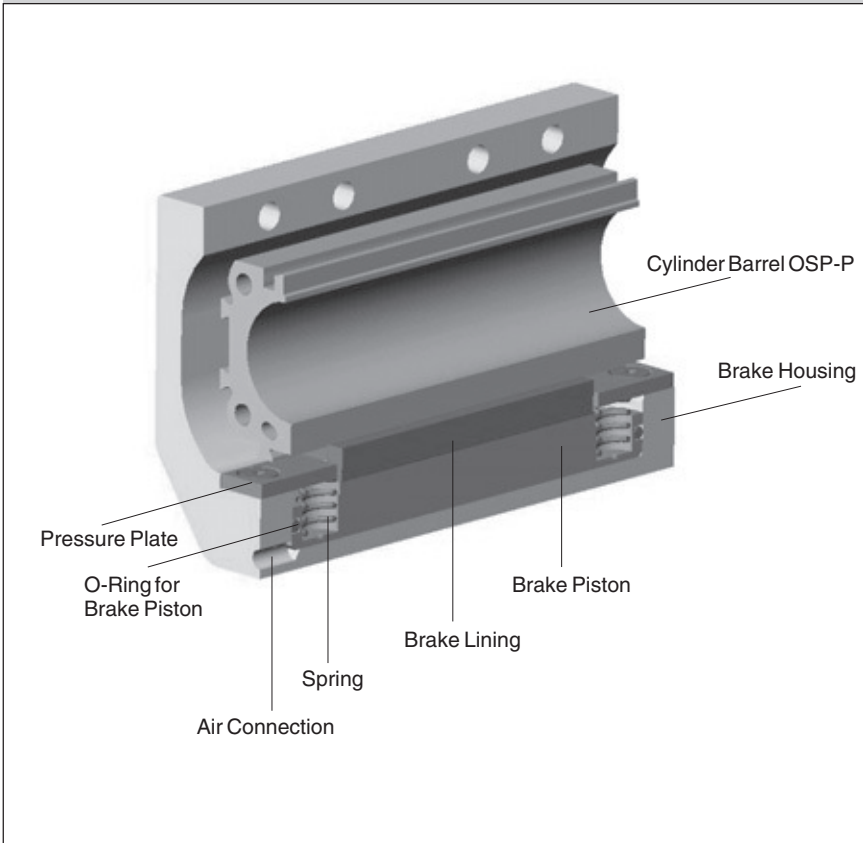
Multibrake with Proline

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

See data sheets 1.42.004E



Function



Active Brake



**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)

Forces and Weights

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

⁽¹⁾ – 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.

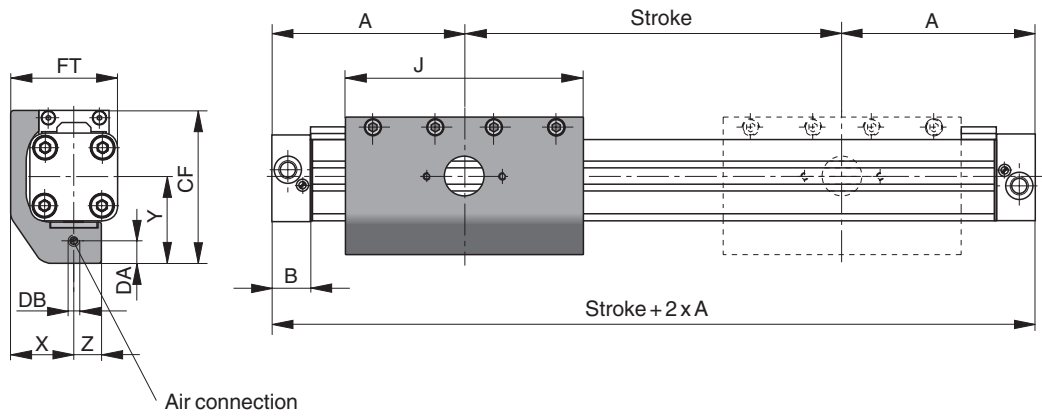
The right to introduce technical modifications is reserved



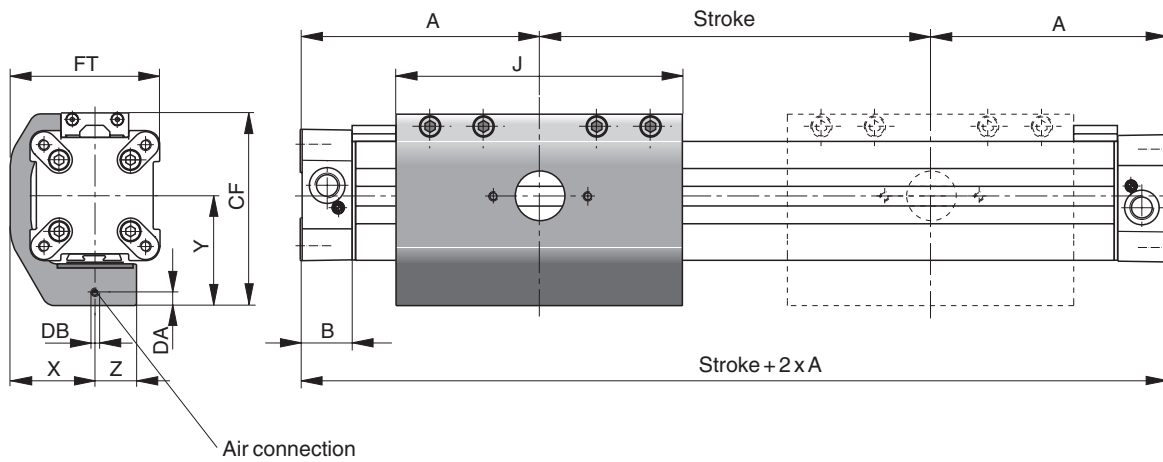
For additional information on loads, forces and moment, please refer to data sheet no. 1.10.002E



Series OSP-P25 and P32 with Active Brake AB



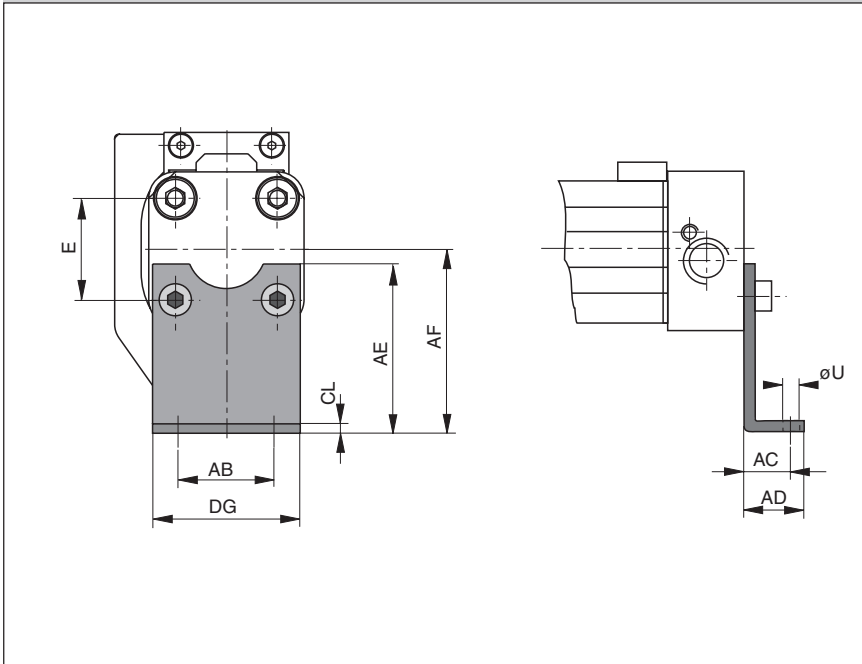
Series OSP-P40, P50, P63, P80 with Active Brake AB



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

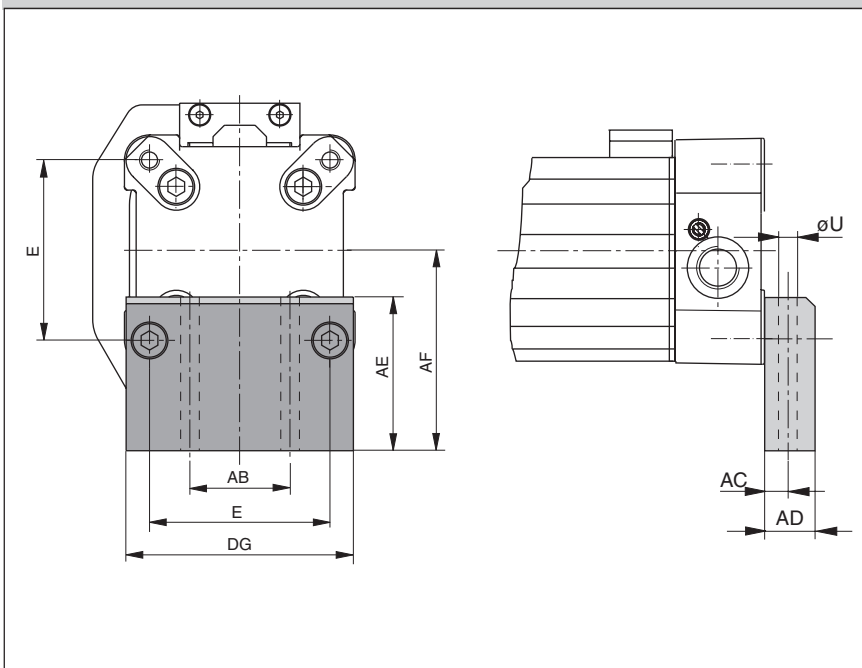
On the end-face of each cylinder end cap there are four threaded holes for mounting the cylinder. The hole layout is square, so that the mounting can be fitted to the bottom, top or either side.

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)

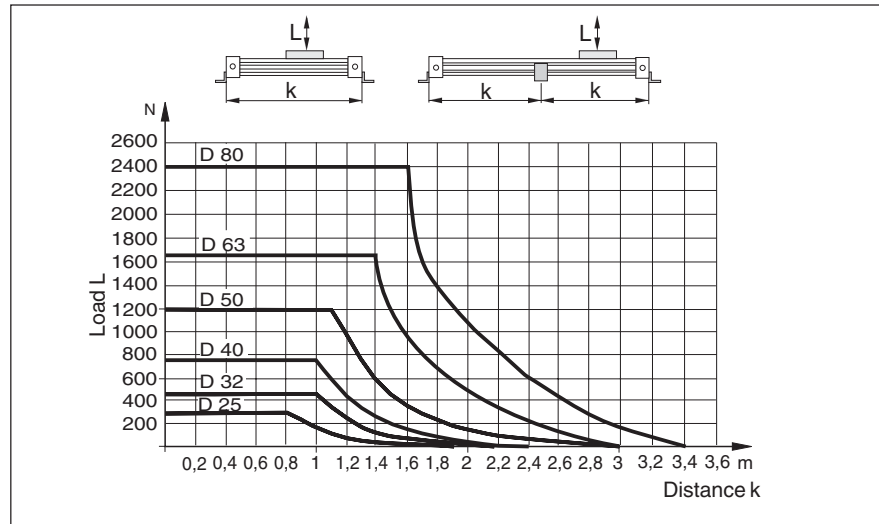
Series	E	øU	AB	AC	AD	AE	AF	CL	DG	Order No.	
										Type A3	Type C3
AB 25	27	5.8	27	16	22	45	49	2.5	39	2060	–
AB 32	36	6.6	36	18	26	42	52	3	50	3060	–
AB 40	54	9	30	12.5	24	46	60	–	68	–	20339
AB 50	70	9	40	12.5	24	54	72	–	86	–	20350
AB 63	78	11	48	15	30	76	93	–	104	–	20821
AB 80	96	14	60	17.5	35	88	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 0.5mm max. between supports is permissible.

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



Mid Section Supports

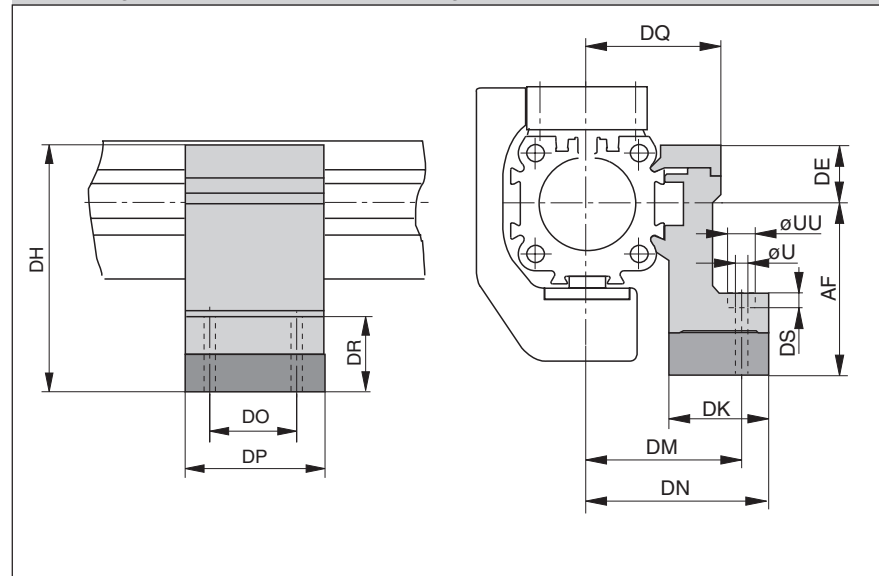
Note to Type E3:

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

Stainless steel version available on request.



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



Dimension Table (mm)

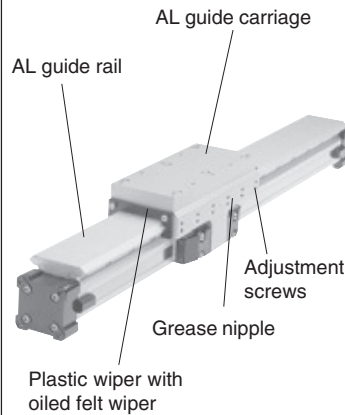
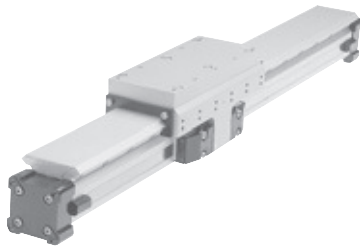
Series	U	UU	AF	DE	DH	DK	DM	DN	DO	DP	DQ	DR	DS	Order No. Type E3
AB 25	5.5	10	49	16	65	26	40	47.5	36	50	34.5	35	5.7	20353
AB 32	5.5	10	52	16	68	27	46	54.5	36	50	40.5	32	5.7	20356
AB 40	7	–	60	23	83	34	53	60	45	60	45	32	–	20359
AB 50	7	–	72	23	95	34	59	67	45	60	52	31	–	20362
AB 63	9	–	93	34	127	44	73	83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

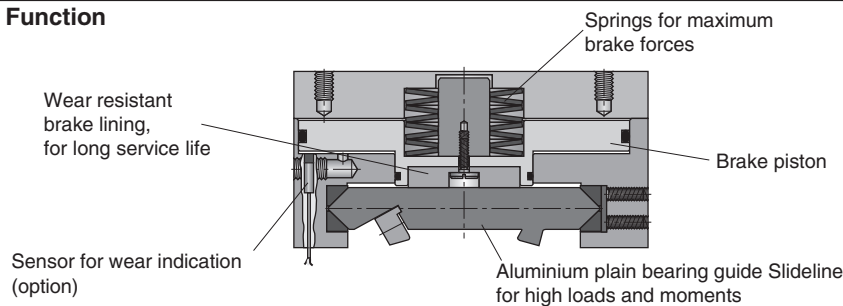
Description	For details information, see data sheet no.
Clevis mounting	1.45.002E
Adaptor profile	1.45.007E
T-Nut profile	1.45.008E
Connection profile	1.45.009E
Magnetic switch (can only be mounted opposite of the brake housing)	1.45.100E, 1.45.104E

Versions

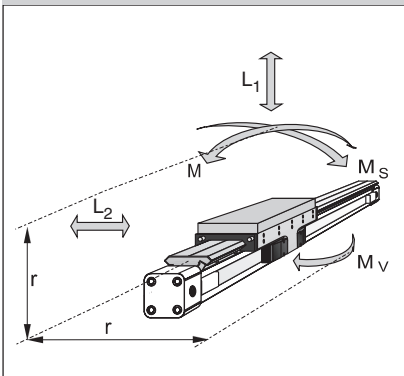
for pneumatic linear drive:
Series OSP-P



Function



Loads, Forces and Moments



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)

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

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.

Series	For linear drive	Max. moments [Nm]			Max. loads [N] L_1, L_2	Max. brake force [N] ¹⁾	Mass of linear drive with guide [kg]		Mass* guide carriage [kg]	Order No. – MB-SL	
		M	Ms	Mv			with 0 mm stroke	increase per 100 mm stroke		without sensor	with sensor for wear indication
MB-SL 25	OSP-P25	34	14	34	675	470	2.04	0.39	1.10	20796	on request
MB-SL 32	OSP-P32	60	29	60	925	790	3.82	0.65	1.79	20797	on request
MB-SL 40	OSP-P40	110	50	110	1500	1200	5.16	0.78	2.34	20798	on request
MB-SL 50	OSP-P50	180	77	180	2000	1870	8.29	0.97	3.63	20799	on request
MB-SL 63	OSP-P63	260	120	260	2500	2900	13.31	1.47	4.97	20800	on request
MB-SL 80	OSP-P80	260	120	260	2500	2900	17.36	1.81	4.97	20846	on request

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

* Please note:

in the cushioning diagram, the mass of the guide carriage has to be added to the total moving mass.

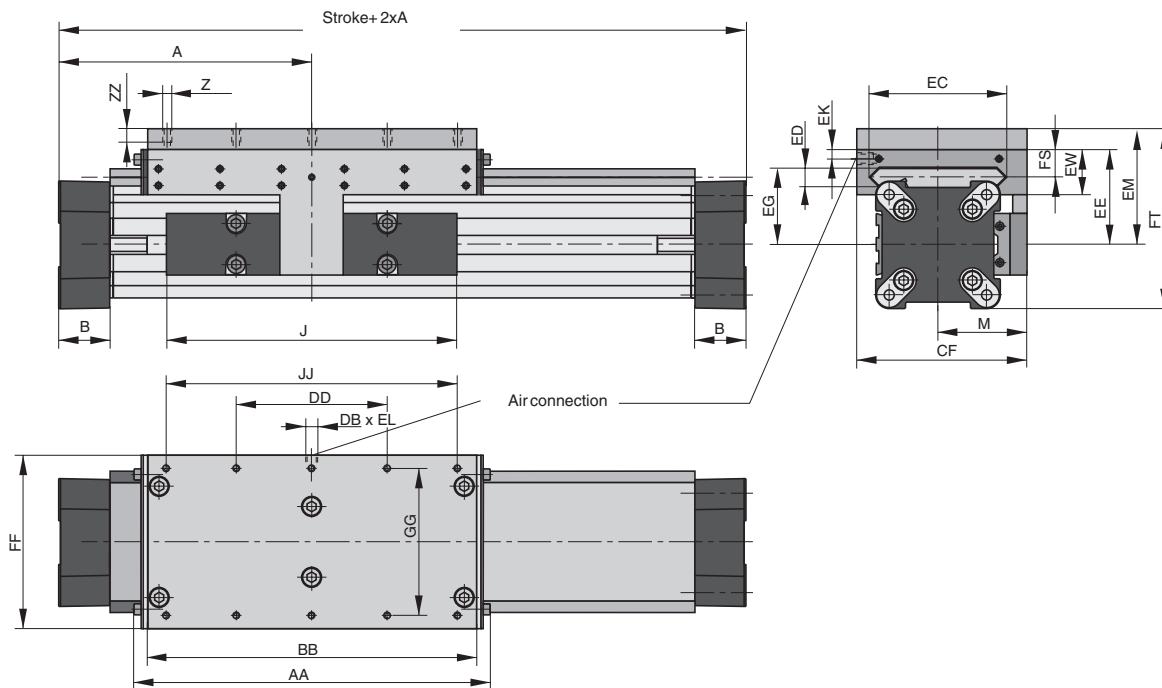
For linear drives see 1.10.002E

For mountings see 1.45.005E

Data Sheet No. 1.42.003E-1

HOERBIGER
ORIGA

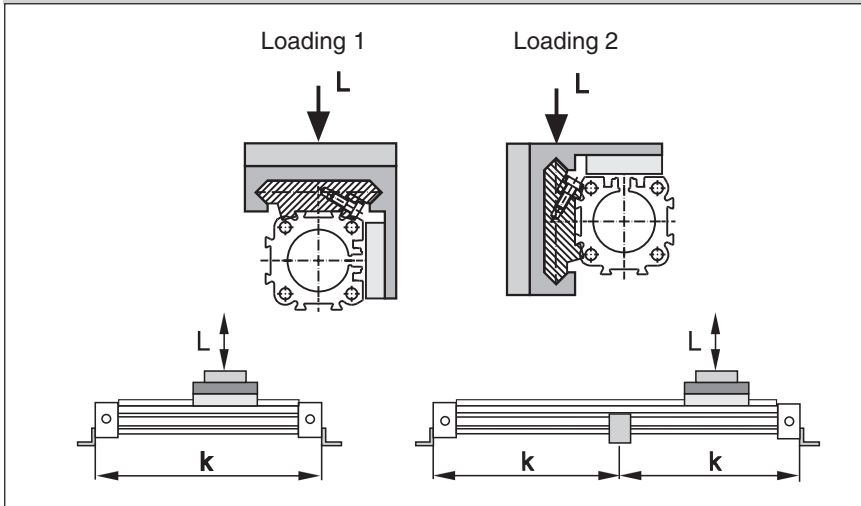
Series OSP-P with Passive Brake MB-SL



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
MB-SL25	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
MB-SL32	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
MB-SL40	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
MB-SL50	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
MB-SL63	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
MB-SL80	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

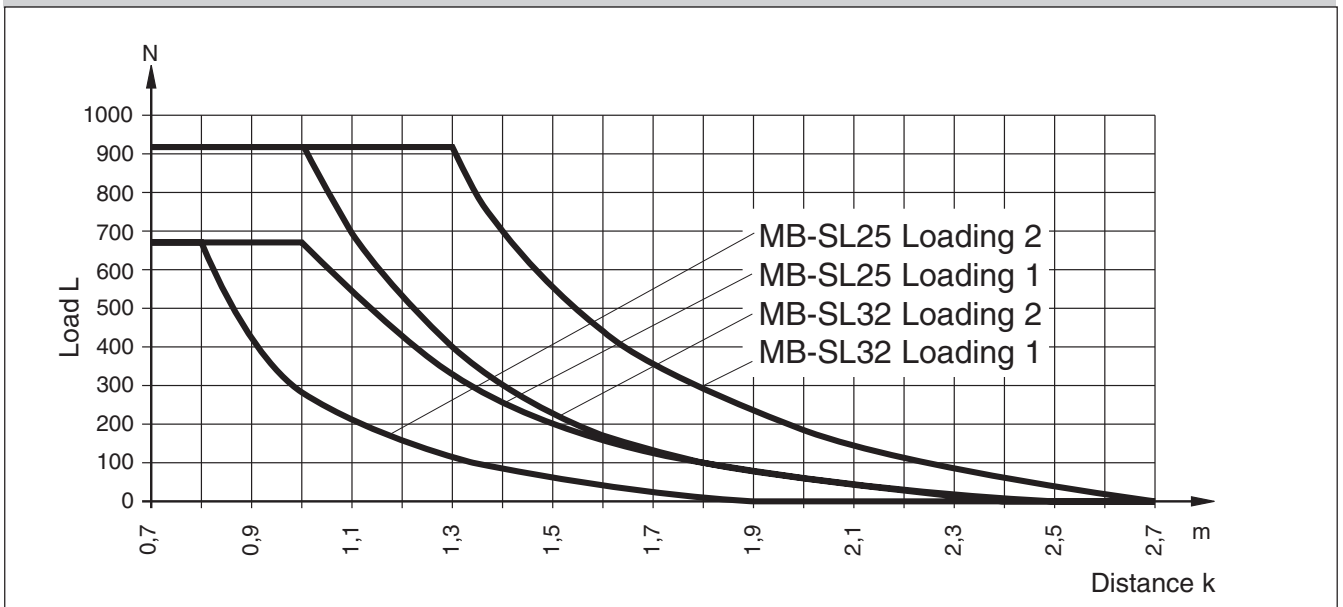
(for versions see 1.45.005E)

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.

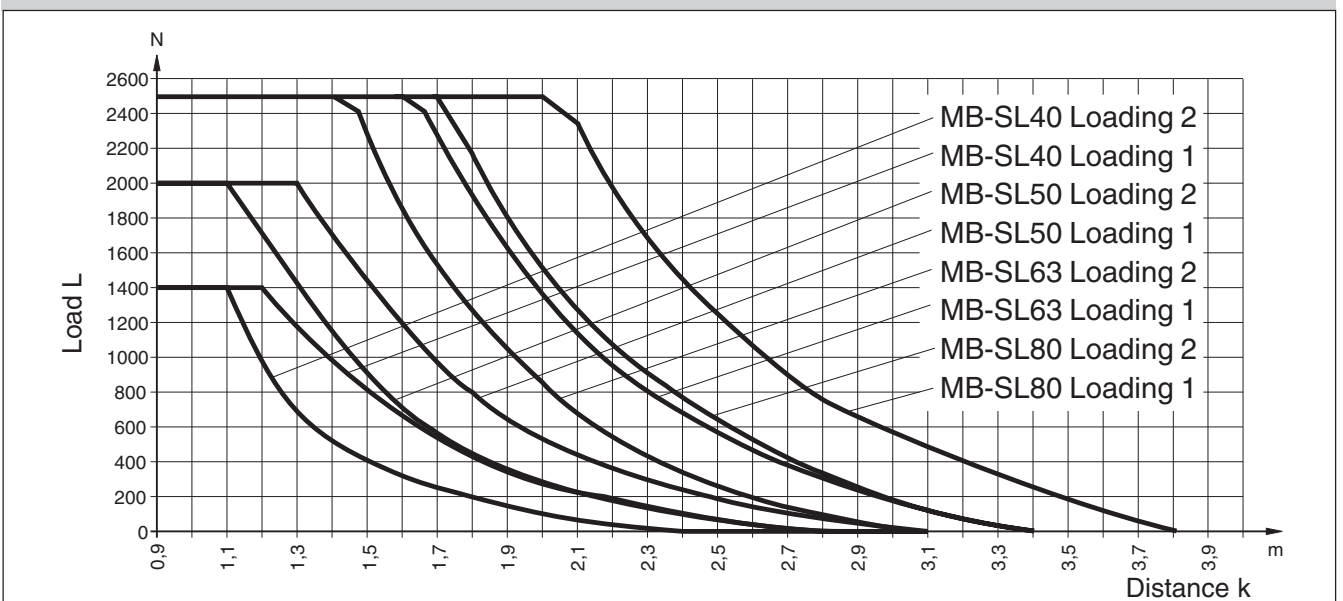
Note:

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

Permissible Unsupported Length MB-SL25, MB-SL32

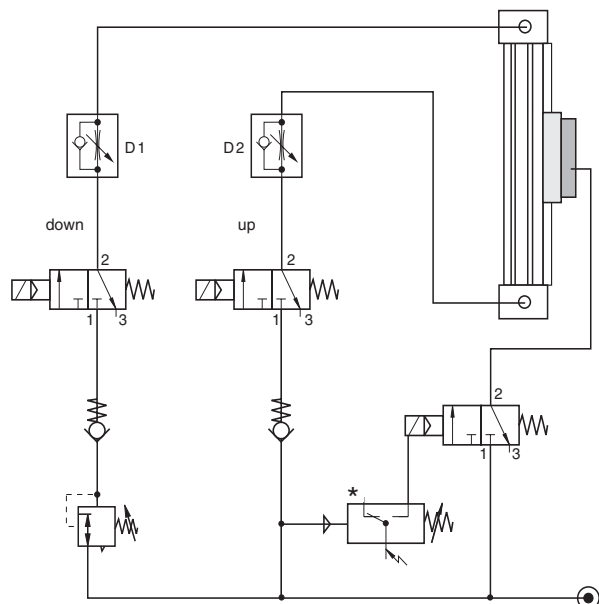


Permissible Unsupported Length MB-SL40, MB-SL50, MB-SL63 and MB-SL80

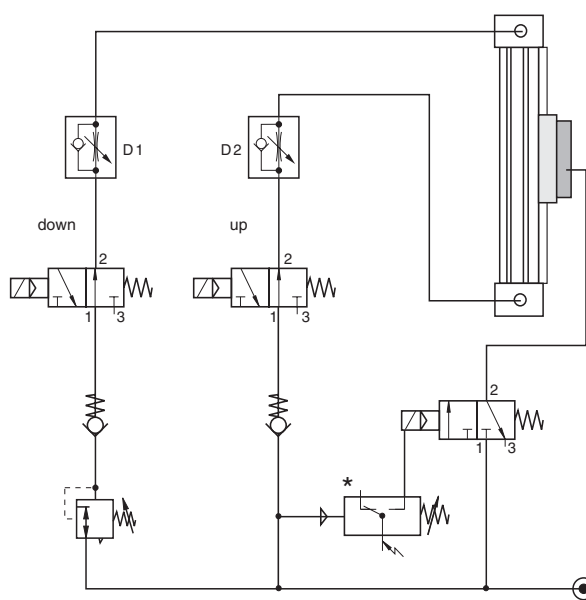


Application Example - Vertical Application

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.

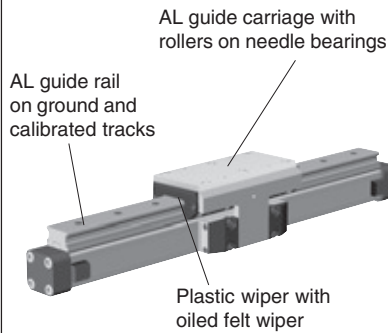
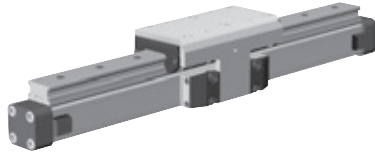
For accessories, such as tubing and fittings, please refer to our separate catalogue.

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
	Data sheet no. 5.12.006E
Pneumatic Accessories	
P/E-Switch	see catalogue
Non-Return Valves	Pneumatic Accessories
G1/8 - G3/8	A4P021E
Screw-in Speed Regulating Valves	
M5 - G1/4	

Versions

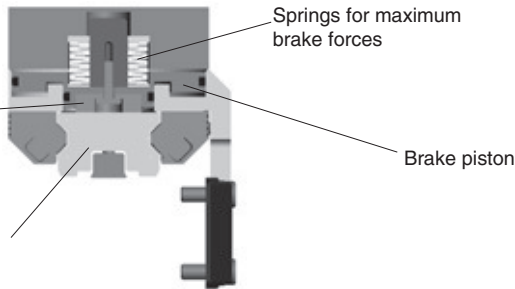
for pneumatic linear drive:
Series OSP-P



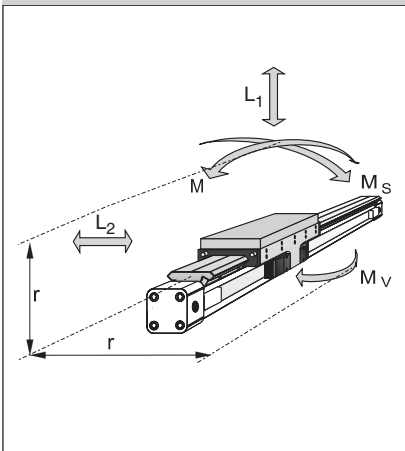
Function

Wear resistant brake lining, for long service life

Roller guide Proline for high precision and velocities



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:

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

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.

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

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.

Series	For linear drive	Max. moments [Nm]			Max. loads [N] L1, L2	Max. brake force [N] ¹⁾	Mass of linear drive with guide [kg]		Mass* guide carriage [kg]	Order No. – MB-PL	
		M	Ms	Mv			with 0mm stroke	increase per 100mm stroke		without sensor	with sensor for wear indication
MB-PL25	OSP-P25	39	16	39	857	315	2.14	0.40	1.24	20864	on request
MB-PL32	OSP-P32	73	29	73	1171	490	4.08	0.62	2.02	20865	on request
MB-PL40	OSP-P40	158	57	158	2074	715	5.46	0.70	2.82	20866	on request
MB-PL50	OSP-P50	249	111	249	3111	1100	8.60	0.95	4.07	20867	on request

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

* **Please note:**

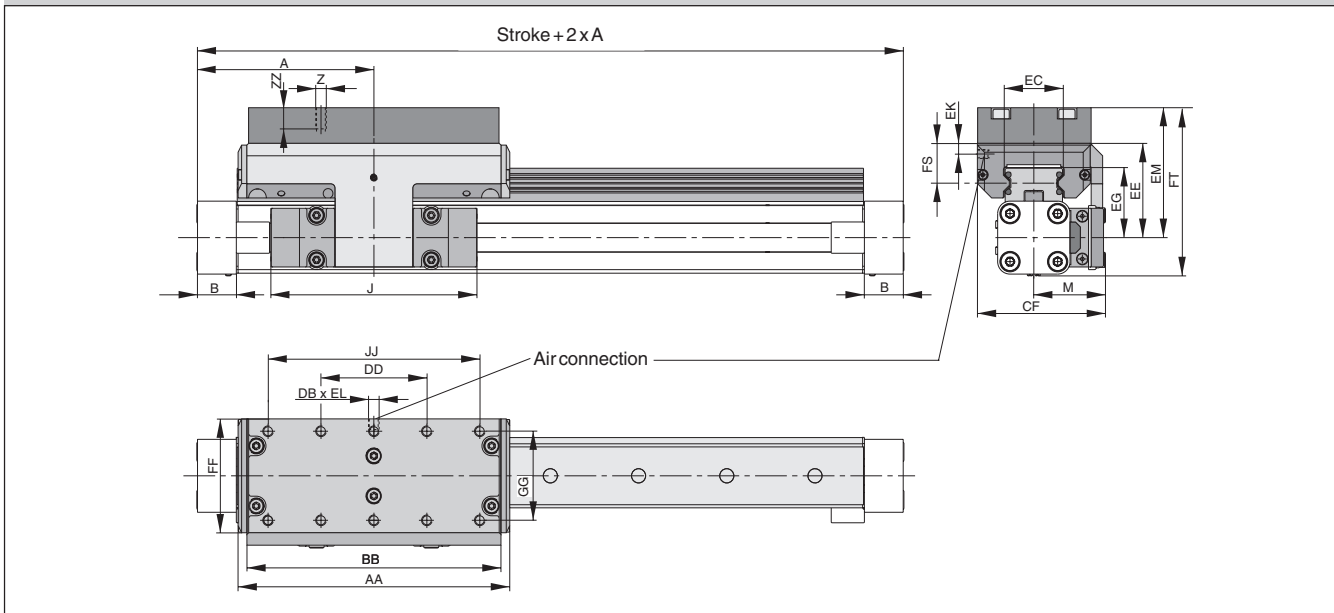
In the cushioning diagram, the mass of the guide carriage has to be added to the total moving mass.

For linear drives see 1.10.002E
For mountings see 1.45.005E

Data Sheet No. 1.42.004E-1

HOERBIGER
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

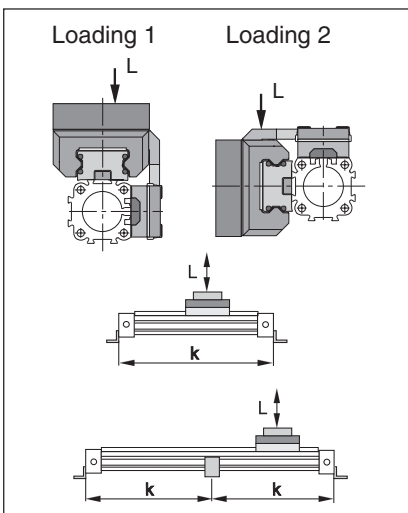
(for versions see 1.45.005E)

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.

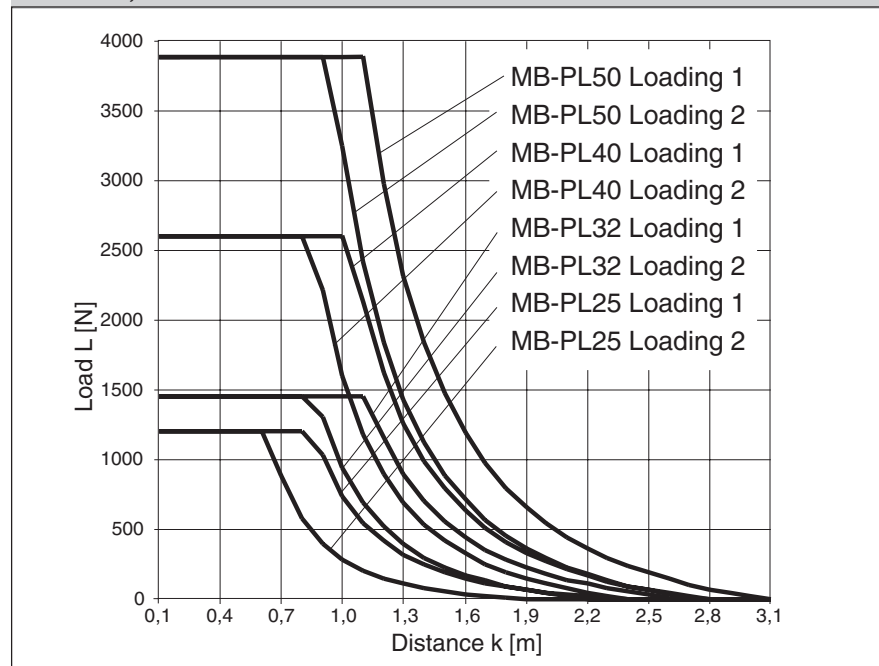
A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.

Note:

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

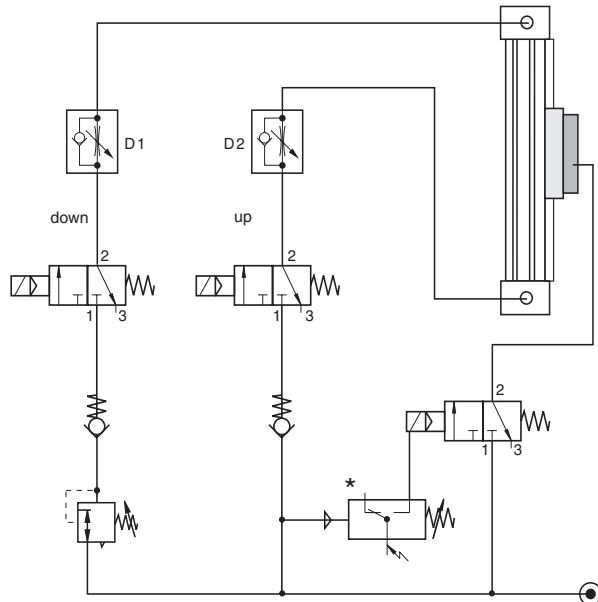


Permissible Unsupported Length OSP-P MB-PL25, MB-PL32, MB-PL40, MB-PL50

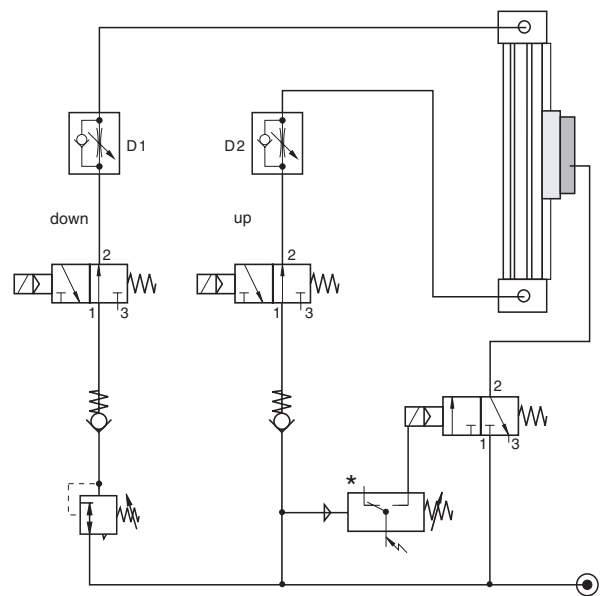


Application Example - Vertical Application

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!**

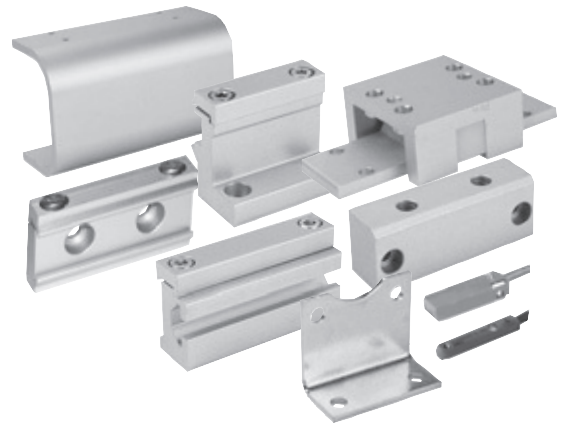
***Tip:** The pressure switch actuates the brake when the pressure drops below the set value.

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
	Data sheet no. 5.12.006E
Pneumatic Accessories	
P/E-Switch	see catalogue
Non-Return Valves	Pneumatic Accessories
G1/8 - G3/8	A4P021E
Screw-in Speed Regulating Valves	
M5 - G1/4	

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



Contents

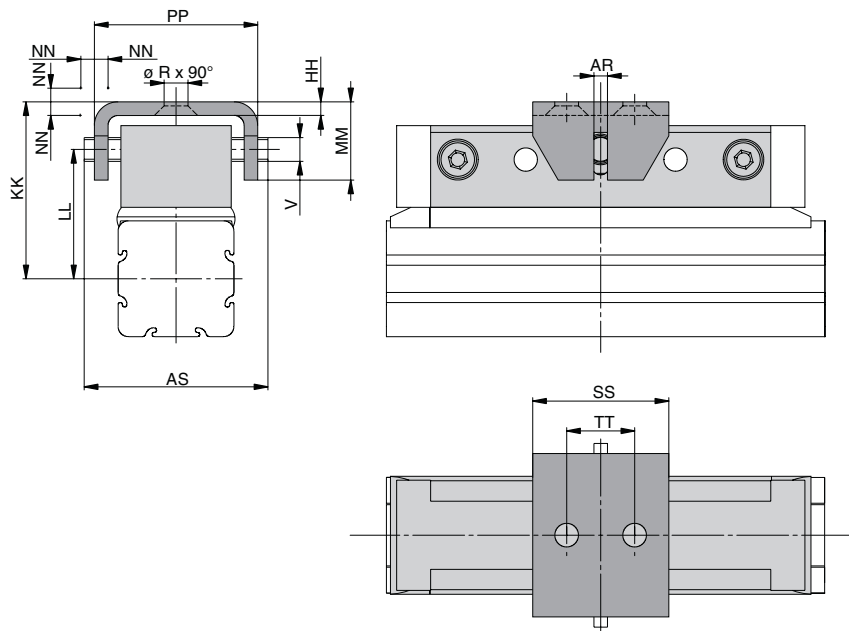
Description	Data Sheet No.	Page
Overview	1.45.001E	71-72
Clevis Mounting	1.45.002E	73-74
End Cap Mountings	1.45.003E	75
End Cap Mountings (for Linear Drives with guides)	1.45.00E-2,-6,-7	78, 80, 82
Mid-Section Support	1.45.004E	76
Mid-Section Support (for Linear Drives with guides)	1.45.005E-3,-5,-8,-9	79, 81, 84-85
Inversion Mounting	1.45.006E	87
Adaptor Profile	1.45.007E	88
T-Nut Profile	1.45.008E	89
Connection Profile	1.45.009E	90
Duplex Connection	1.45.011E	91
Multiplex Connection	1.45.012E	92
Magnetic Switch, standard version	1.45.100E	93-95
Magnetic Switch for T-Nut mounting	1.45.104E	97-100
Magnetic Switch ATEX-version 	1.45.105E	101-103
Cable Cover	1.45.102E	96

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 (for Linear Drives with guides)		1.45.005E
Mid-Section Support		1.45.004E
Mid-Section Support (for Linear Drives with guides)		1.45.005E
Inversion Mounting		1.45.006E
Adaptor Profile		1.45.007E
T-Nut 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

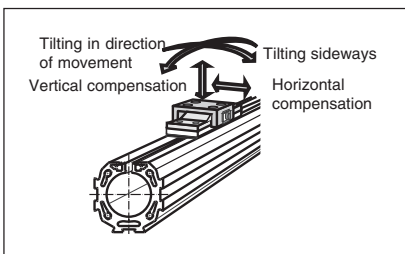
Clevis Mounting



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



Linear Drive Accessories

ø 16-80 mm
Clevis Mounting

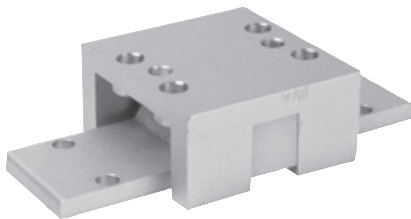


For Linear-drive
• Series OSP-P

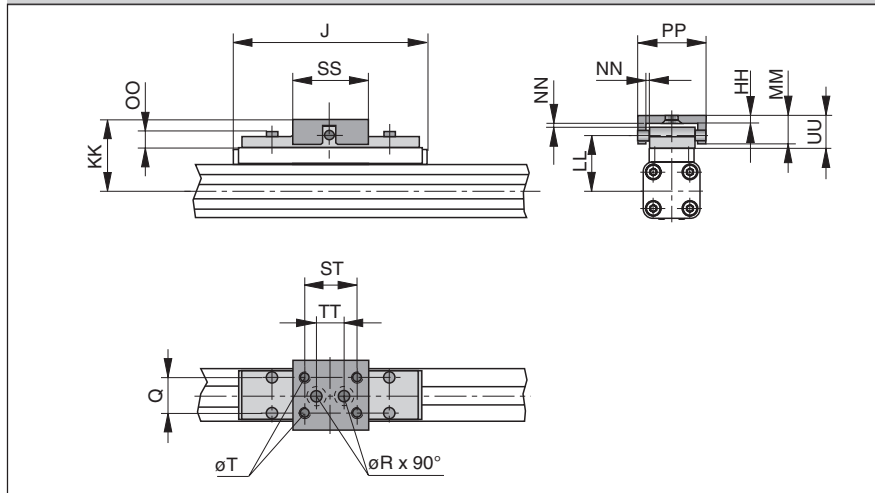
When external guides are used, parallelism deviations can lead to mechanical strain on the piston. This can be avoided by the use of a clevis mounting. In the drive direction, the mounting has very little play. Freedom of movement is provided as follows:

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

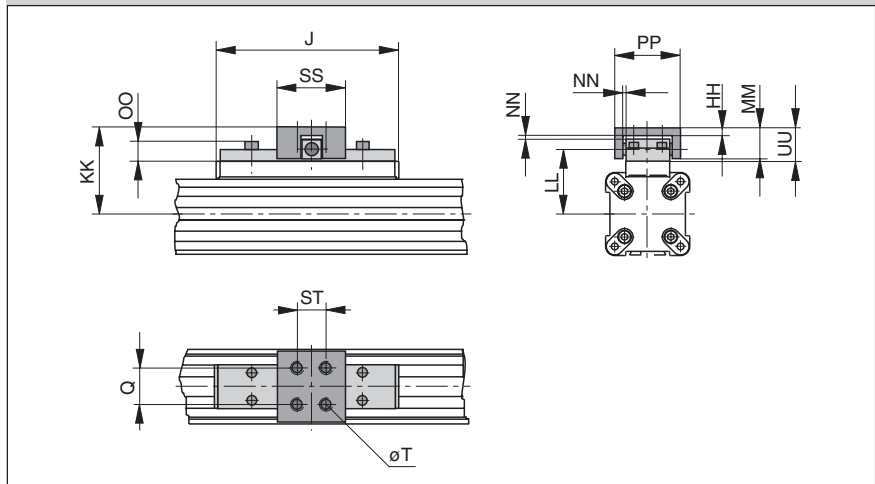
A stainless steel version is also available.



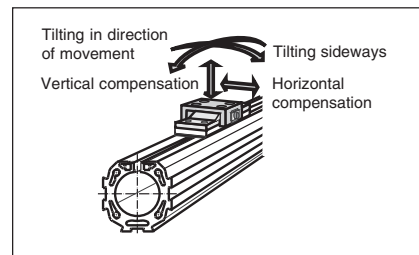
Series OSP-P16 to 32



Series OSP-P40 to 80



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



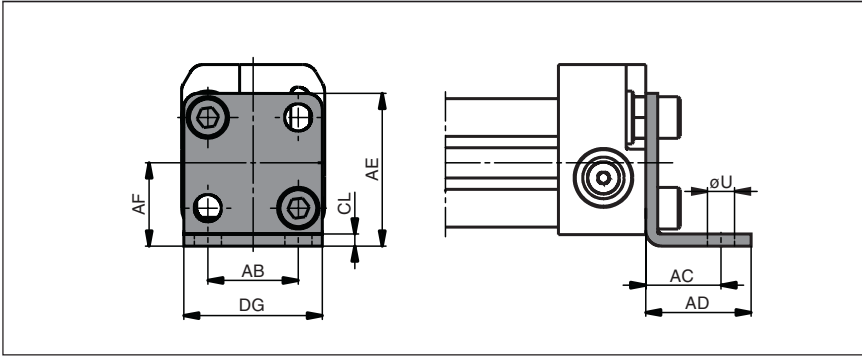
Dimension Table (mm)

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

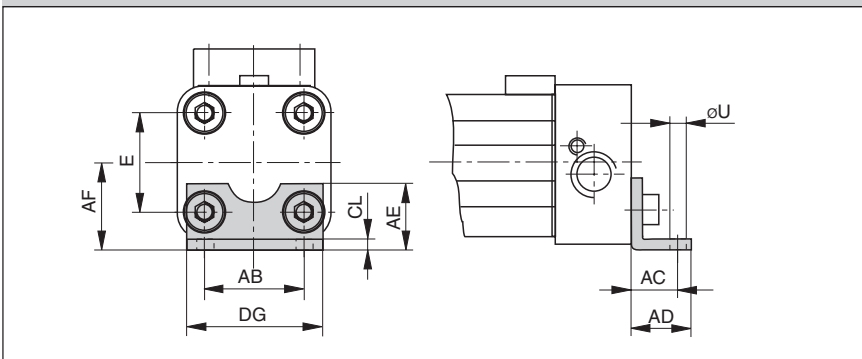
* Dimension NN gives the possible plus and minus play in horizontal and vertical movement, which also makes tilting sideways possible.

For rodless pneumatic cylinder OSP-P see 1.10.002E

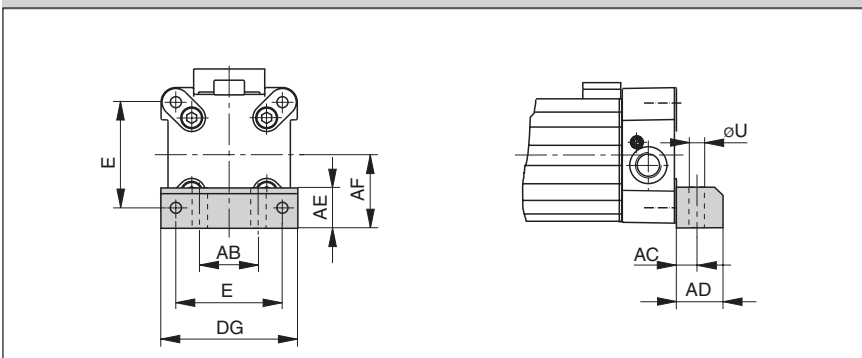
Series OSP-P10 : Type A1



Series OSP-P16 to 32: Type A1



Series OSP-P40 to 80: Type C1



Linear Drive Accessories

ø 10-80 mm

End Cap Mountings

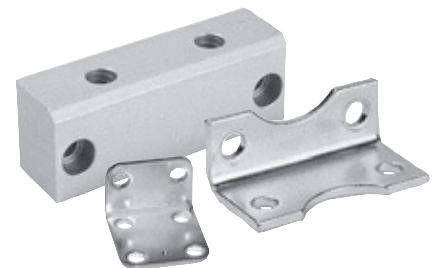


For Linear-drive
• Series OSP-P

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. (*	
										TypeA1	TypeC1
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

Linear Drive Accessories

∅ 10-80 mm

Mid-Section Support

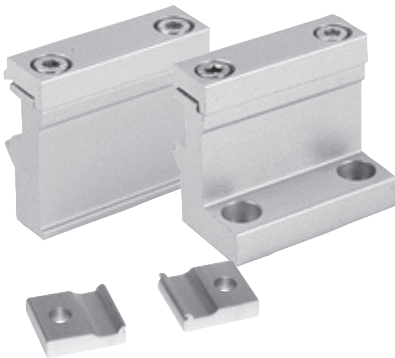


For Linear-drive
• Series OSP-P

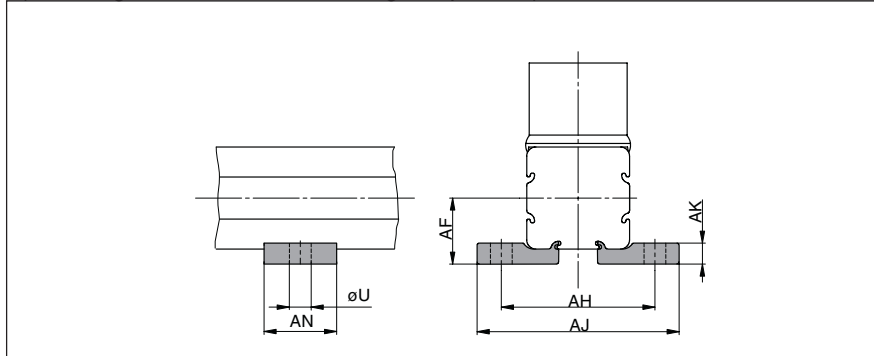
Note on Types E1 and D1 (P16 – P80):
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the centre of the actuator is different.

For design notes, see data sheet 1.10.002E-2

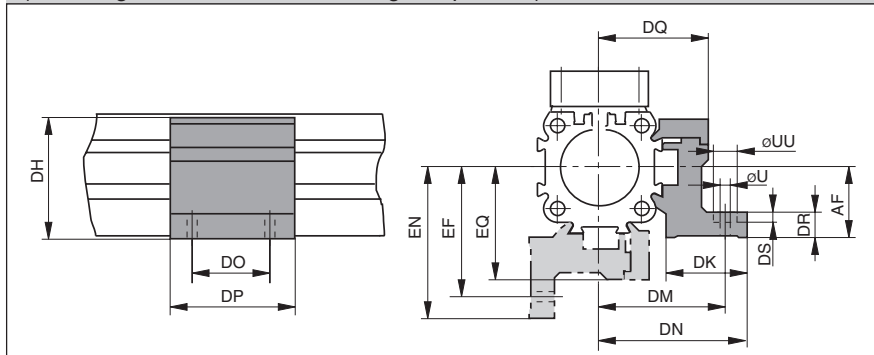
Stainless steel version on demand.



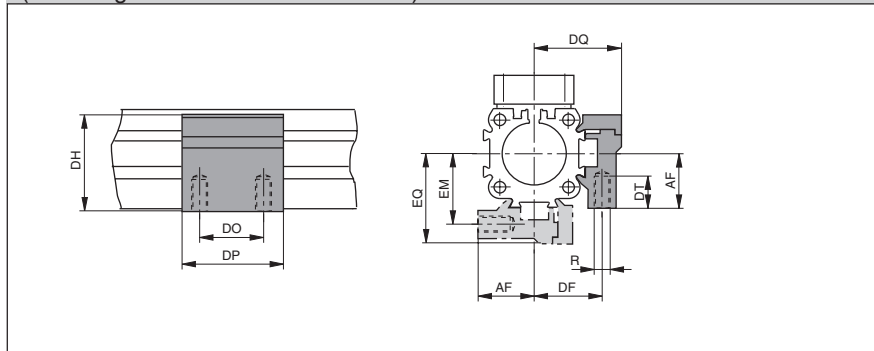
Series OSP-10, Type E1
(Mounting from above / below using a cap screw)



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



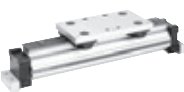

Series	R	U	UU	AF	DF	DH	DK	DM	DN	DO	DP	DQ	DR	DS	DT	EF	EM	EN	EQ	Order No.	
																				Type E1	Type D1
OSP-P16	M3	3.4	6	15	20	29.2	24	32	36.4	18	30	27	6	3.4	6.5	32	20	36.4	27	20435	20434
OSP-P25	M5	5.5	10	22	27	38	26	40	47.5	36	50	34.5	8	5.7	10	41.5	28.5	49	36	20009	20008
OSP-P32	M5	5.5	10	30	33	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



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 PROLINE MULTIBRAKE						POWERSLIDE										
		16 ¹⁾	25	32	40	50	63 ¹⁾	80 ¹⁾	16/25	25/25	25/35	25/44	32/35	32/44	40/44	40/60	50/60	50/76
End cap mounting 	Type A1	X							X									
	Type A2	O	O	O														
	Type A3									O	O		O					
End cap mounting, reinforced 	Type B1		X	X					X	X	X	X	X					
	Type B3								O									
	Type B4											O		O				
	Type B5																	
End cap mounting 	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 Mid section support, wide 	Type D1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Type E1	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

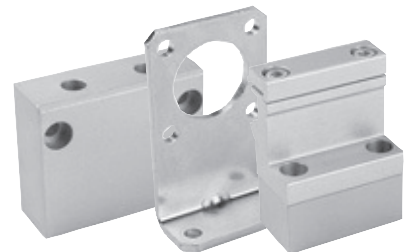
Linear Drive Accessories

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



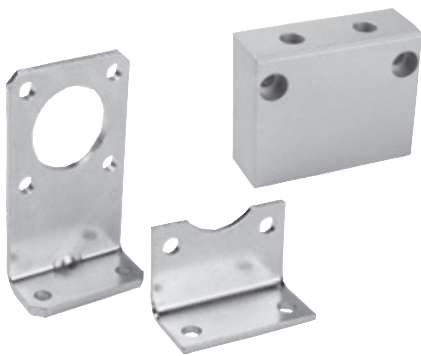
For rodless pneumatic cylinder OSP-P see 1.10.002E

End cap mountings *

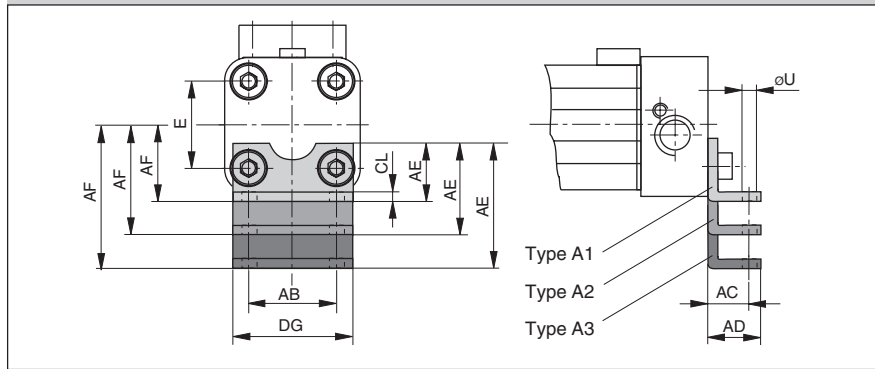
Four internal screw threads are located in the end faces of all OSP actuators for mounting the drive unit. End cap mountings may be secured across any two adjacent screws.

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

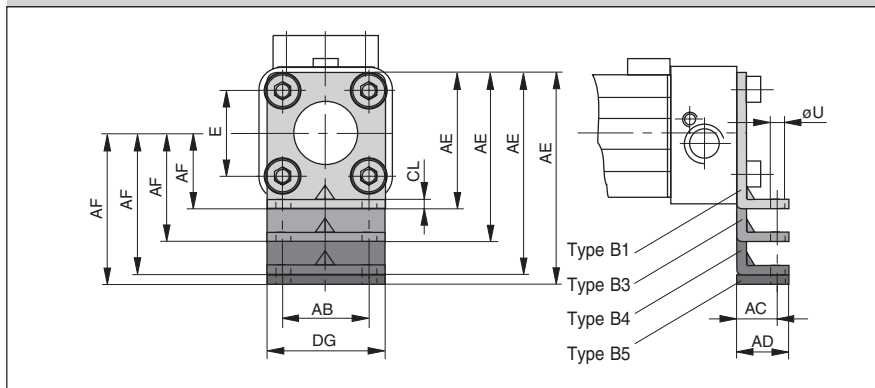
The mountings are supplied in pairs.



Series OSP-P16, 25, 32: Type A



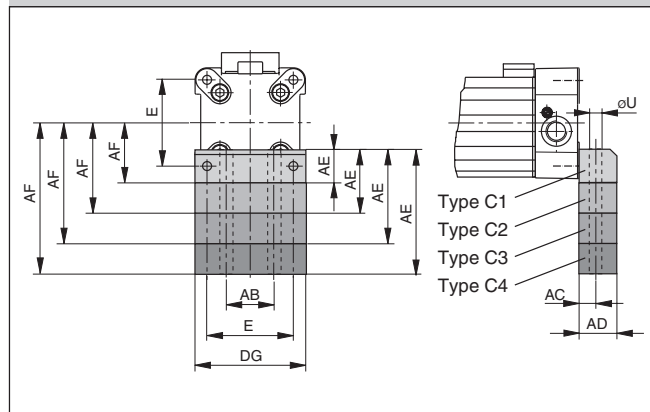
Series OSP-P16, 25, 32: Type B



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

Mount. type	Dimensions 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

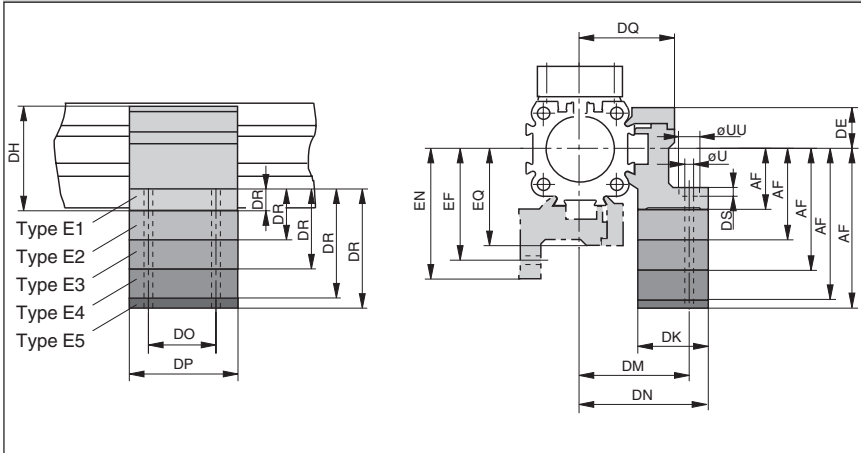


Dimension Table (mm)

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:

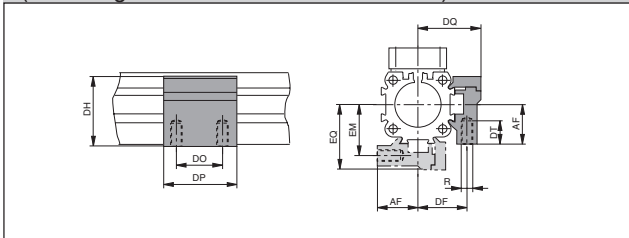
Mounting of the mid section supports is also possible on the lower side of the drive. In this case, please note the new centre line dimensions.

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

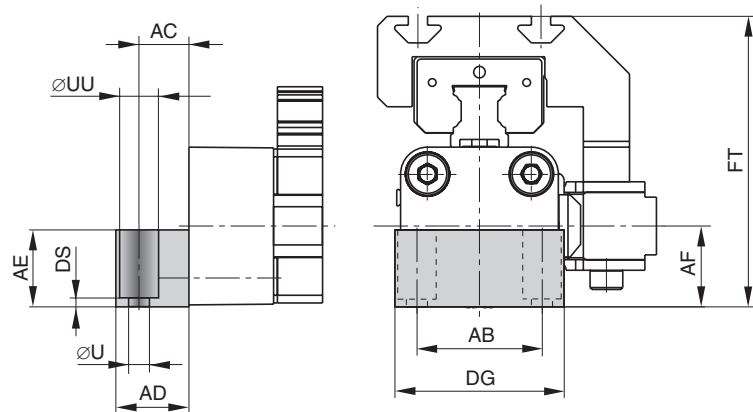
- Series OSP-P KF

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)

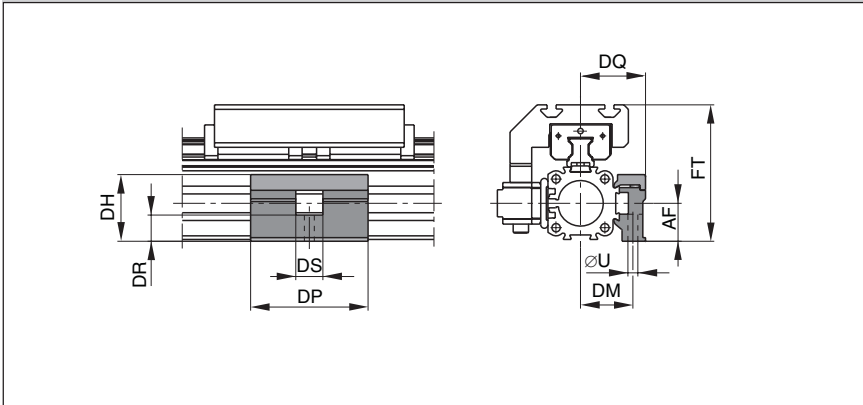


Note:
Correspond to FESTO DGPL-KF,
when the End Cap Mountings HP are mounted on the opposite side to the carriage
(see drawing)

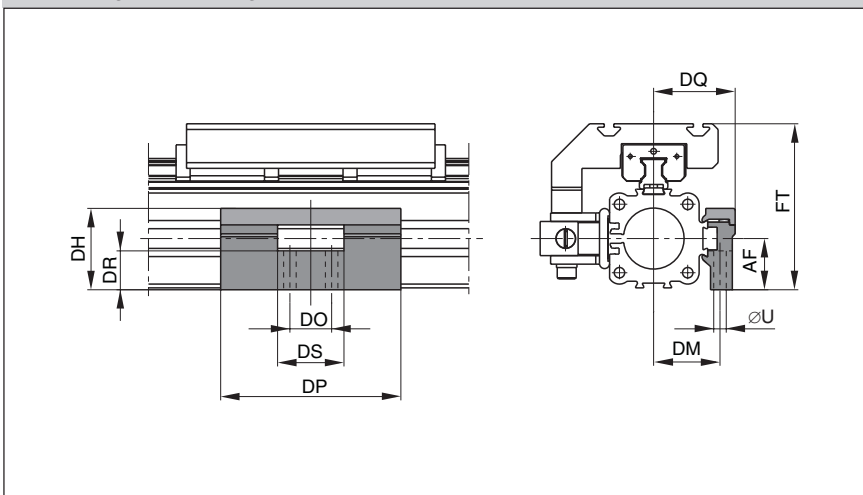
Dimension Table (mm)

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

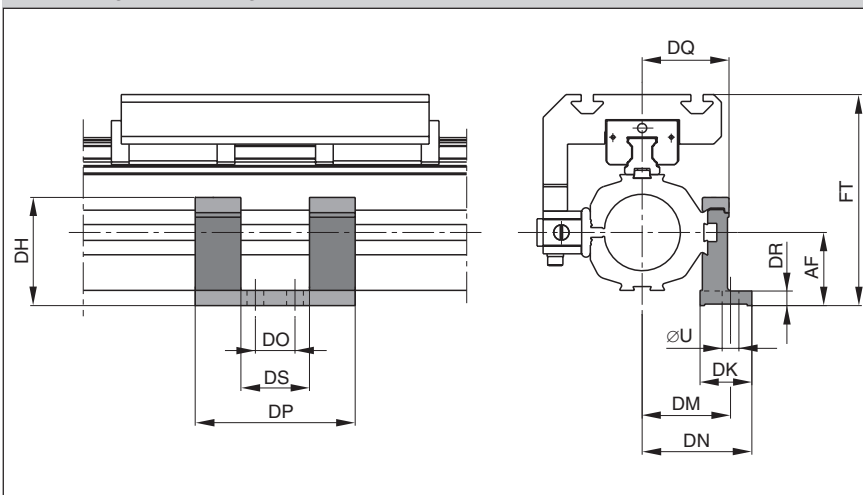
Series OSP-P KF25: Type MUP
(Mounting over through holes)



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



Series OSP-P KF50: 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 KF

For design notes, see data sheet
1.40.007E-3

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

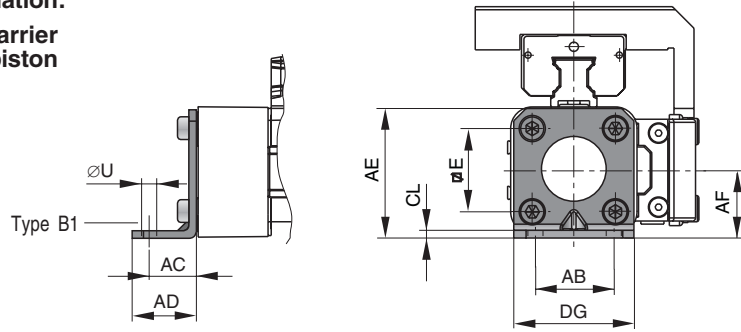
Material:
Galvanised steel
Anodized aluminium

The mountings are supplied in pairs.



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

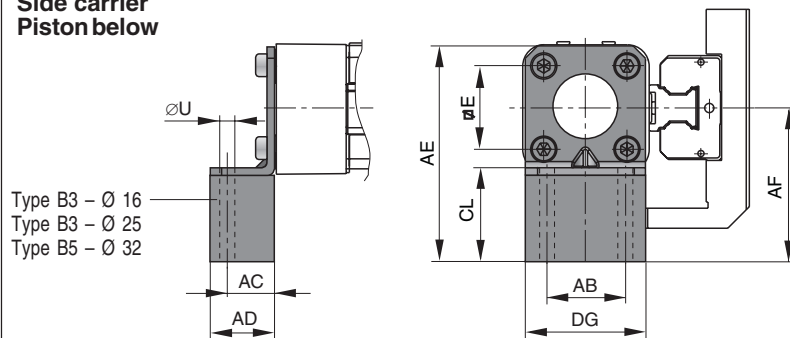
Installation:
Top carrier
Sidepiston



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)

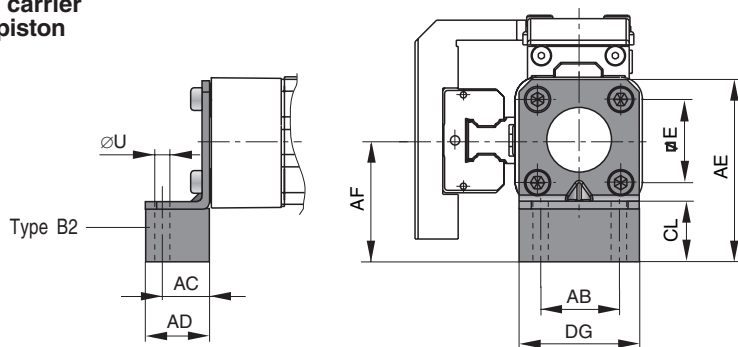
Installation:
Side carrier
Piston below



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
Toppiston



Drawing shows: Mounting with Guide Type STL

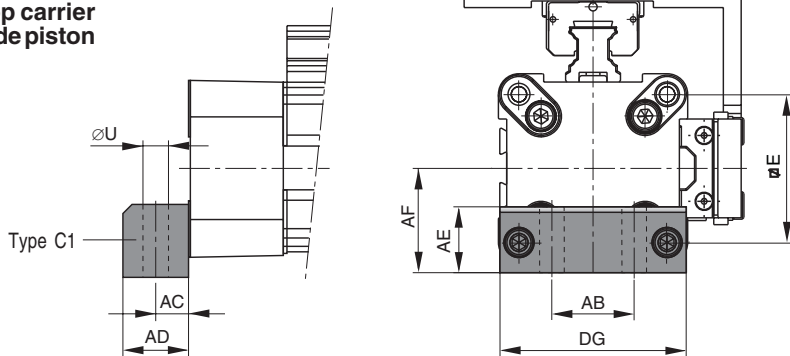
Dimension Table (mm) for End Cap Mounting Type: B1 to B5

Series	Mounting Type	E	ØU	AB	AC	AD	AE	AF	CL	DG	Order No. (pair)
OSP-P STL16	B1	18	3.6	18	10	14	28	15	2	26	21135
OSP-P KF16	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-P STL25	B1	27	5.8	27	16	22	42	22	2.5	39	20311
OSP-P KF25	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-P STL32	B1	36	6.6	36	18	26	55	30	3	50	20313
OSP-P KF32	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

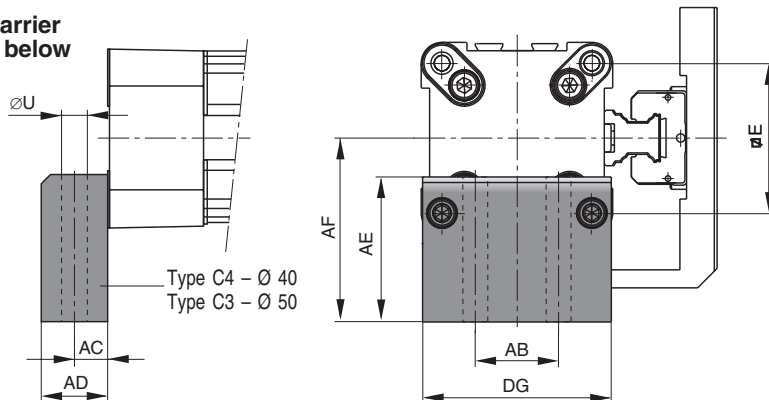
Material:
 Anodized aluminium

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

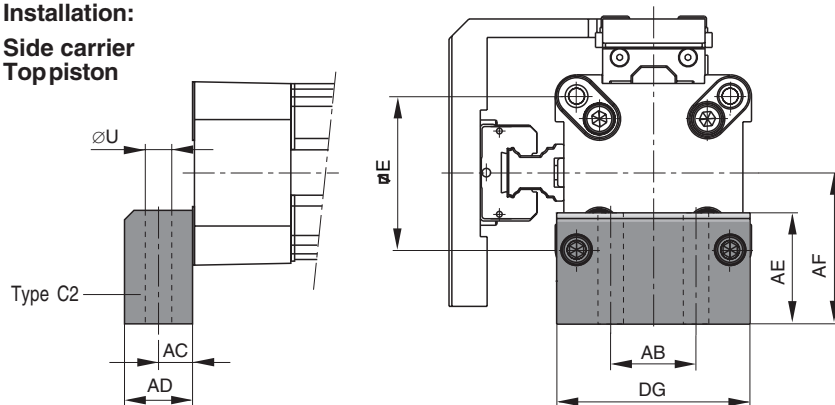


Drawing shows: Mounting with Guide Type STL

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	Mounting Type	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

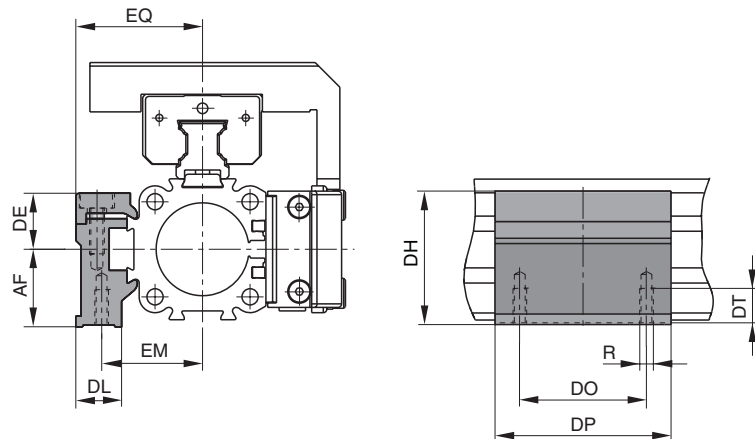
Note on Types D1ST
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the centre of the actuator is different.

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

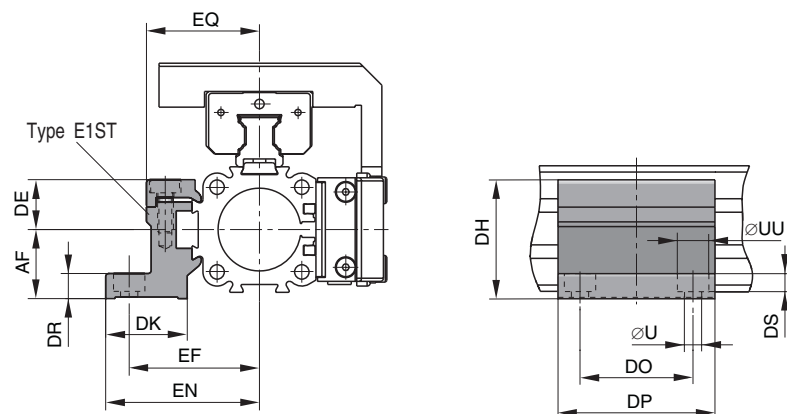
- Series OSP-P STL
- Series OSP-P KF



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

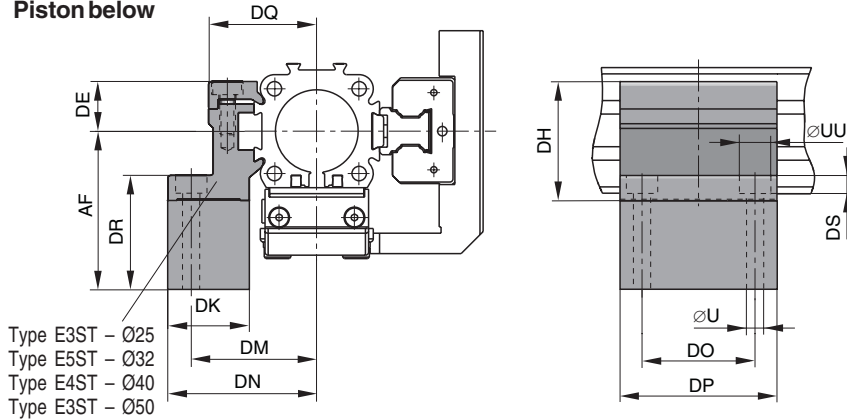


Drawing shows: Mounting with Guide Type STL

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

Installation: Mounting from above / below using a cap screw

Side carrier
Piston below



Type E3ST - Ø25
 Type E5ST - Ø32
 Type E4ST - Ø40
 Type E3ST - Ø50

Drawing shows: Mounting with Guide Type STL

Mid-Section Support Type: E1ST to E5ST

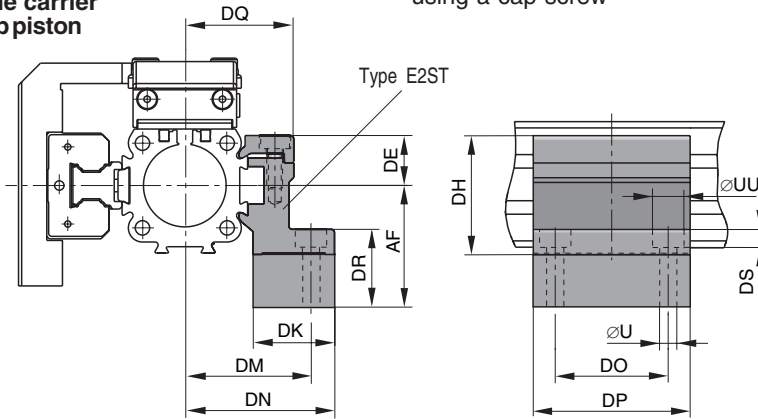
for Linear Drives with
 Recirculating Ball Bearing Guide

- 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: Mounting from above / below using a cap screw

Side carrier
Top piston



Drawing shows: Mounting with Guide Type STL



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

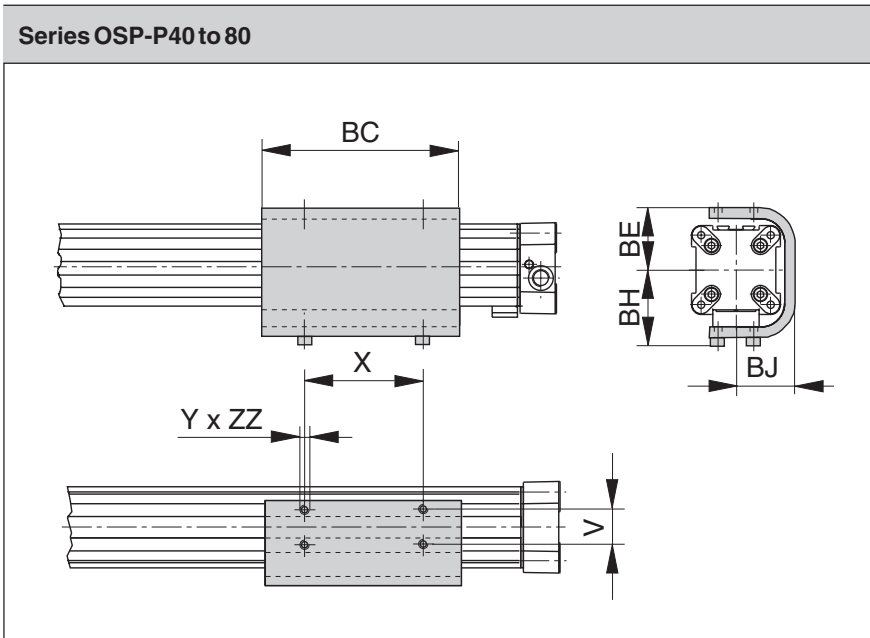
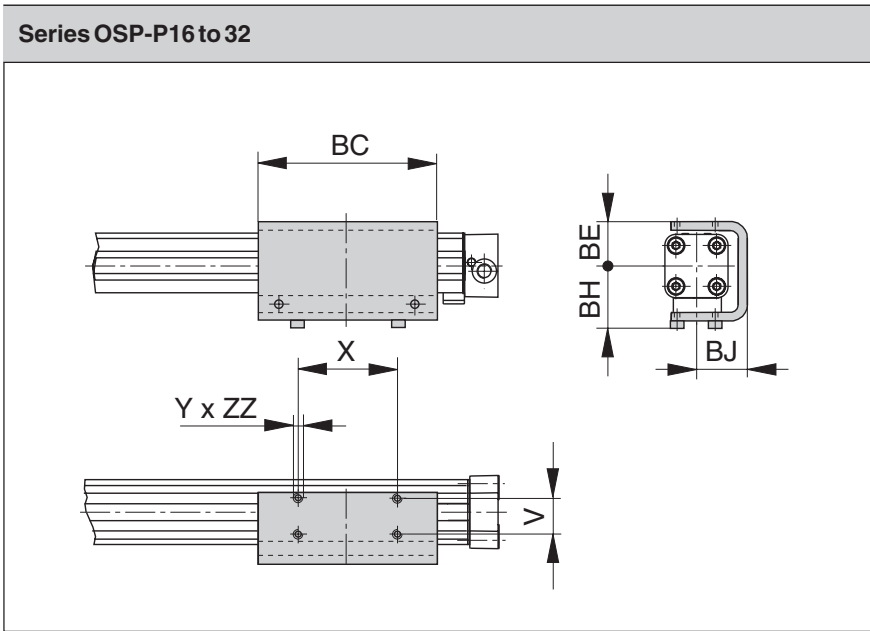
Series OSP-P	Mounting Type	ØU	ØUU	AF	DE	DH	DK	DM	DN	DO	DP	DR	DQ	DS	EF	EN	EQ	Order No.
STL/KF16	E1ST	3.4	6	15	14.2	29.2	24	32	36.4	18	30	6	27	3.4	32	36.4	27	21130
STL/KF16	E2ST	3.4	6	30	14.2	29.2	24	32	36.4	18	30	21	27	3.4	32	36.4	27	21142
STL/KF25	E1ST	5.5	10	22	16	38	26	40	47.5	36	50	8	34.5	5.7	41.5	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

A1P581E00HAA00X

The right to introduce technical modifications is reserved



Dimension Table (mm)									
Series	V	X	Y	BC	BE	BH	BJ	ZZ	Order No.
OSP-P16	16.5	36	M4	69	23	33	25	4	20446
OSP-P25	25	65	M5	117	31	44	33.5	6	20037
OSP-P32	27	90	M6	150	38	52	39.5	6	20161
OSP-P40	27	90	M6	150	46	60	45	8	20039
OSP-P50	27	110	M6	200	55	65	52	8	20166
OSP-P63	34	140	M8	255	68	83.5	64	10	20459
OSP-P80	36	190	M10	347	88	107.5	82	15	20490

For rodless pneumatic cylinder OSP-P see 1.10.002E

Data Sheet No. 1.45.006E

Linear Drive Accessories

ø 16-80 mm
Inversion Mounting



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



Linear Drive Accessories

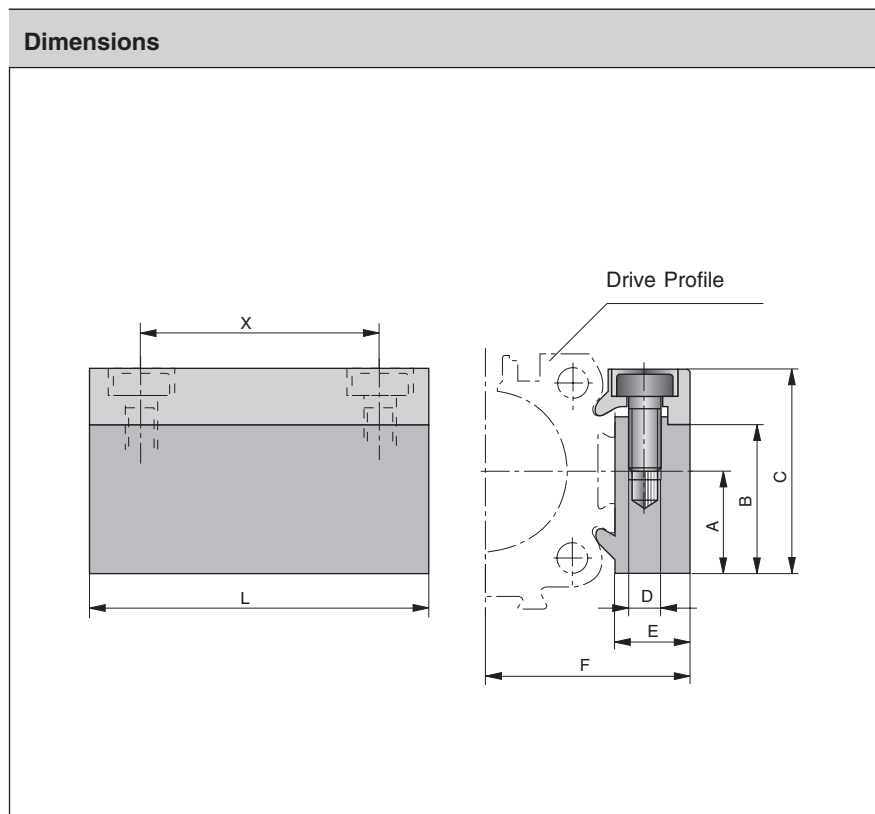
ø 16-50 mm Adaptor Profile



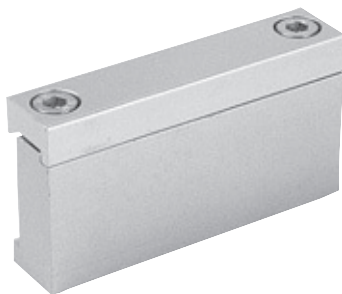
For Linear-drive
• Series OSP-P

Adaptor Profile OSP

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



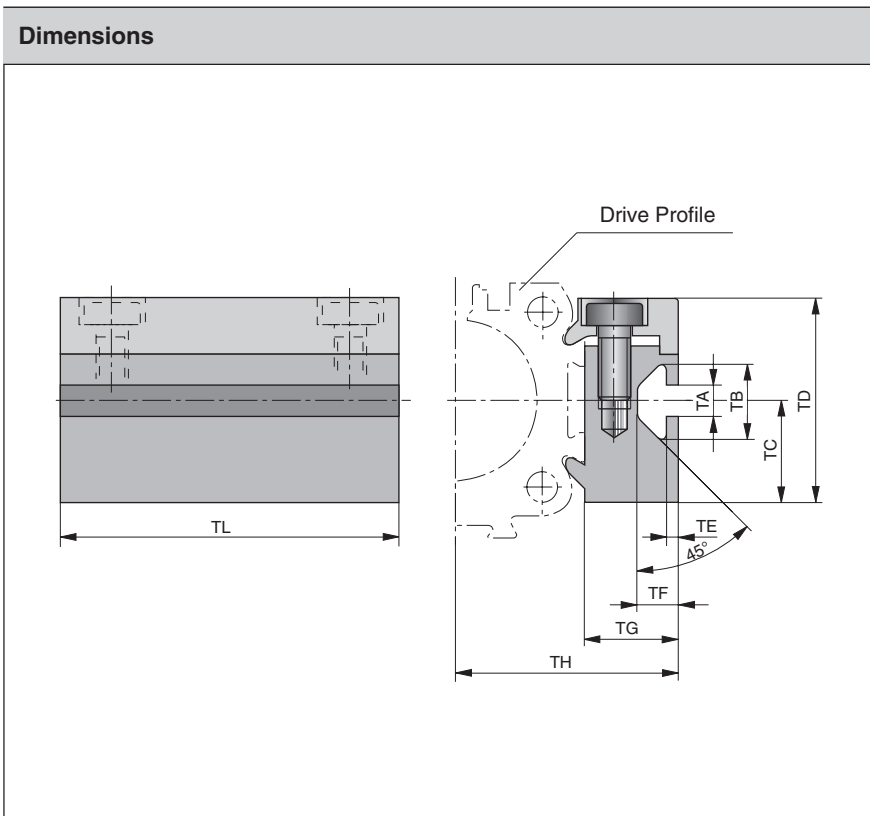
Dimension Table (mm)										
Series	A	B	C	D	E	F	L	X	Order No.	
									Standard	Stainless
OSP-P16	14	20.5	28	M3	12	27	50	38	20432	20438
OSP-P25	16	23	32	M5	10.5	30.5	50	36	20006	20186
OSP-P32	16	23	32	M5	10.5	36.5	50	36	20006	20186
OSP-P40	20	33	43	M6	14	45	80	65	20025	20267
OSP-P50	20	33	43	M6	14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



For rodless pneumatic cylinder OSP-P see 1.10.002E

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The right to introduce technical modifications is reserved



Linear Drive Accessories

ø 16-50 mm

T-Nut Profile



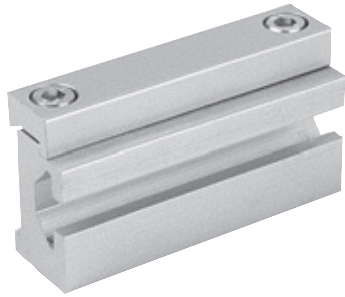
For Linear-drive
• Series OSP-P

T-Nut 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 St5	T-Nut St8
OSP-P16-32	●	
OSP-P40-50		●



For rodless pneumatic cylinder OSP-P see 1.10.002E

Linear Drive Accessories

ø 16-50 mm

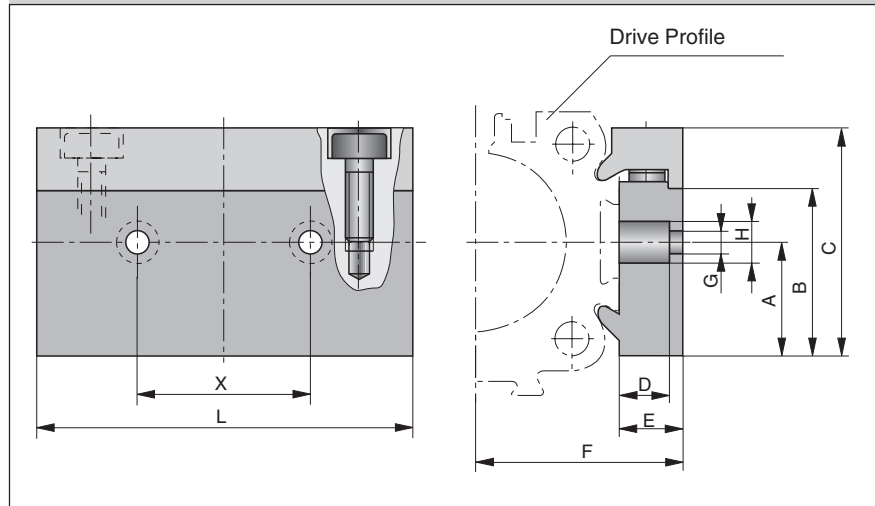
Connection Profile



For combining

- Series OSP-P with system profiles
- Series OSP-P with Series OSP-P

Dimensions

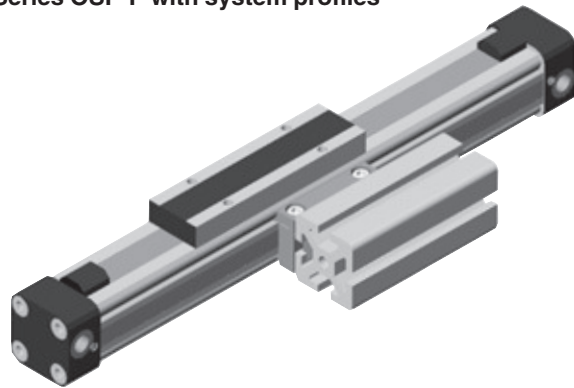


Dimension Table (mm)

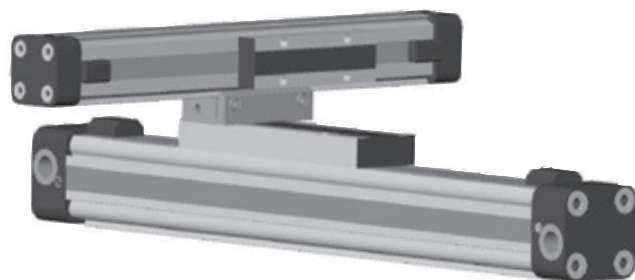
Cylinder Series	for mounting on the carrier of	A	B	C	D	E	F	G	H	L	X	Order No.
OSP-P16	OSP25	14	20.5	28	8.5	12	27	5.5	10	50	25	20849
OSP-P25	OSP32-50	16	23	32	8.5	10.5	30.5	6.6	11	60	27	20850
OSP-P32	OSP32-50	16	23	32	8.5	10.5	36.5	6.6	11	60	27	20850
OSP-P40	OSP32-50	20	33	43	8	14	45	6.6	11	60	27	20851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

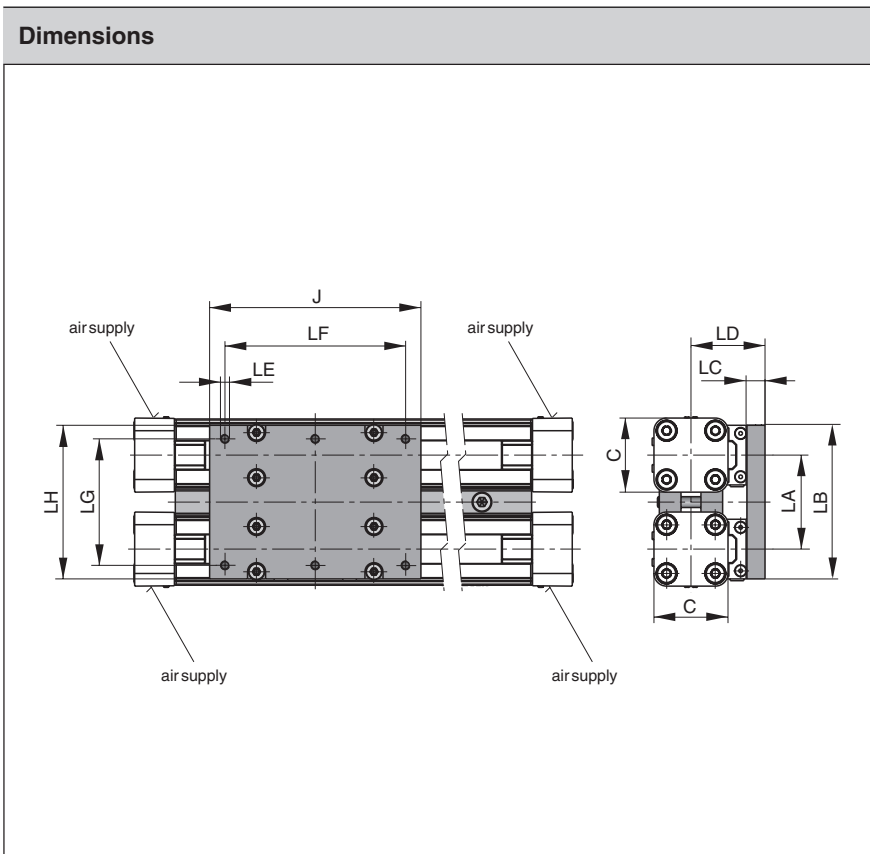


For rodless pneumatic cylinder OSP-P see 1.10.002E

Data Sheet No. 1.45.009E

A1P681E00AHH00X

The right to introduce technical modifications is reserved



Linear Drive Accessories

ø 25-50 mm
Duplex Connection



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)

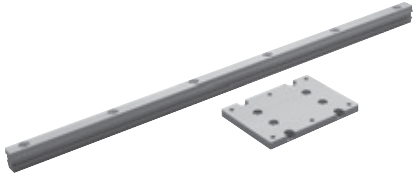
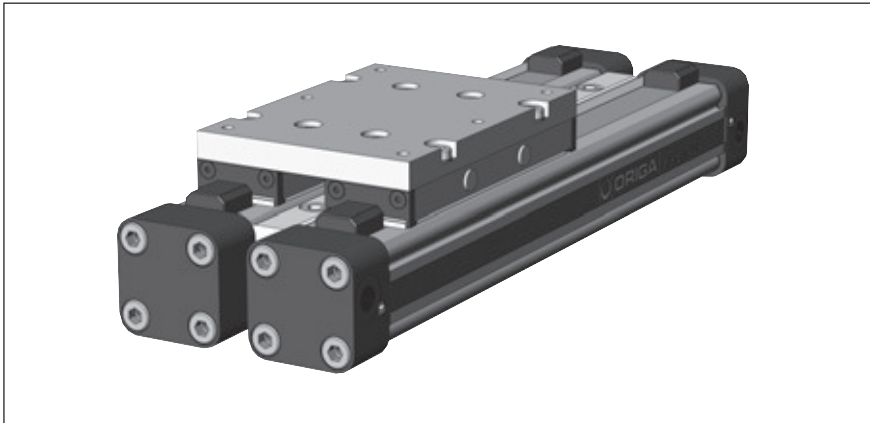
Cylinder Series	C	J	LA	LB	LC	LD	LE	LF	LG	LH	Order	No.
											Standard	Stainless
OSP-P25	41	117	52	86	10	41	M5	100	70	85	20153	20194
OSP-P32	52	152	64	101	12	50	M6	130	80	100	20290	20291
OSP-P40	69	152	74	111	12	56	M6	130	90	110	20156	20276
OSP-P50	87	200	88	125	12	61	M6	180	100	124	20292	20293

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



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

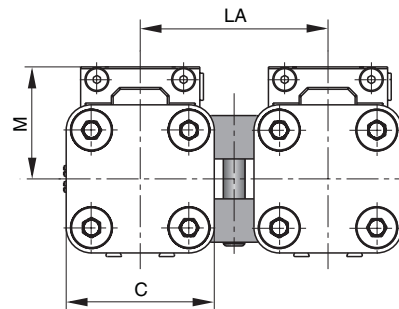
- The orientation of the carriers can be freely selected

Included in delivery:

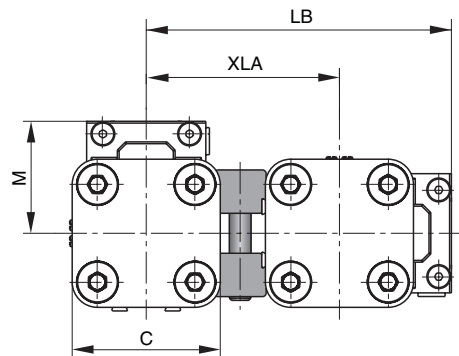
2 clamping profiles with clamping screws

Dimensions

Installation:
Top carrier/Top carrier

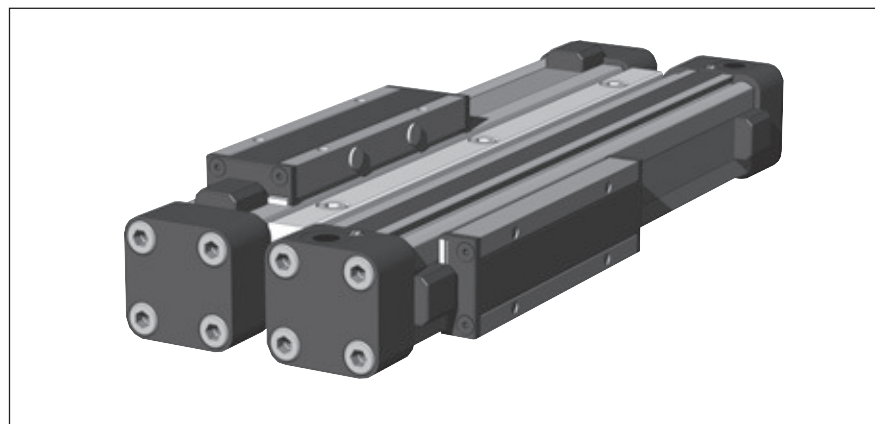


Installation:
Top carrier/Side carrier



Dimension Table (mm)

Cylinder Series	C	M	LA	LE	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

Characteristics				
Characteristics	Symbol	Unit	Description	
Electrical Characteristics			Type RS	Type ES
Switching output			Reed	PNP, NPN
Operating voltage	U_B	V	10-240 AC/DC (NO) 10-150 AC/DC (NC)	10-30 DC
Residual voltage		V	< 3	< 3
Connection			Two wire	Three wire
Output function			normally open normally closed	normally open
Permanent current	I_{Dmax}	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			LED does not work	—
Pole reversal protection			—	Built in
Short-circuit protection			—	Built in
Switchable capacity load		μ F	0.1 at 100 Ω , 24 VDC	
Switching point accuracy		mm	$\pm 0,2$	
Switching distance		mm	ca. 15	ca. 15
Hysteresis for OSP		mm	ca. 8	ca. 3
Lifetime			3 x 10 ⁶ , up to 6 x 10 ⁶ cycles	Theoretically unlimited
Mechanical Characteristics				
Housing			Makrolon, smoke color	
Cable cross section		mm ²	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 *) ¹⁾	ϑ_{min} ϑ_{max}	$^{\circ}$ C $^{\circ}$ C	-25 other temperature ranges +80 on request	
Shock resistance		m/s ²	100 (contact switches)	500

*) other versions on request

¹⁾ 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

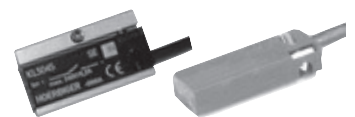


For electrical sensing of the carrier position, e.g. at the end positions, magnetic switches may be fitted. Position sensing is contactless and is based on magnets fitted as standard to the carrier. A yellow LED indicates operating status.

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.

	Switching distance
Min. reaction time =	—————
	Piston speed



HOERBIGER
ORIGA

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.

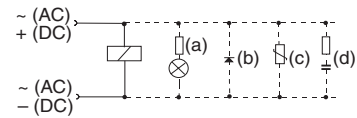
With **resistive and capacitive loads** with high switch-on current, such as light bulbs, a protective resistor should be fitted. This also applies to long cable lengths and voltages over 100 V.

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

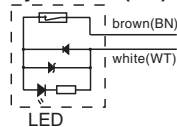
- Load with protective circuits
- (a) Protective resistor for light bulb
- (b) Freewheel diode on inductivity
- (c) Varistor on inductivity
- (d) RC element on inductivity



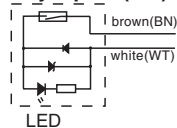
For the type ES, external protective circuits are not normally needed.

Electrical Connection, Type RS

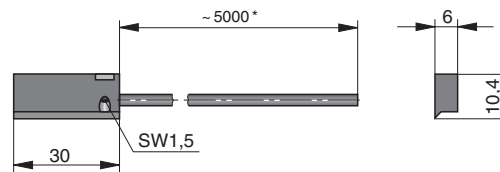
Normally closed (NC)



Normally open (NO)



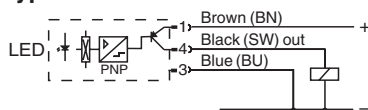
Dimensions (mm) – Type RS-K



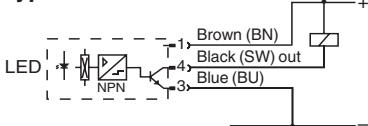
* Length with possible minus tolerance, see chart below

Electrical Connection, Type ES

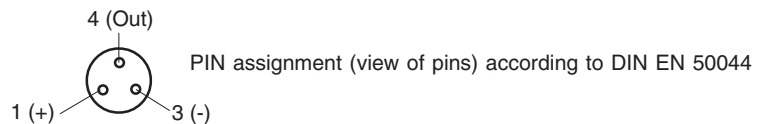
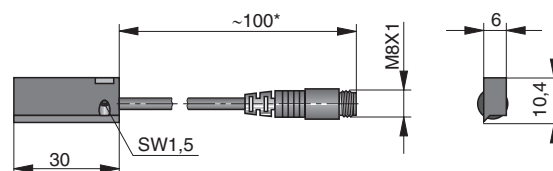
Standard Version: Type PNP



Optional Version Type NPN



Dimensions (mm) – Type ES-S

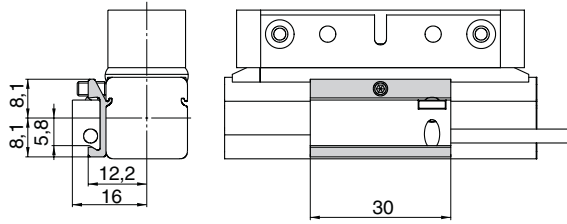


* Length with possible minus tolerance, see chart below

Length of connection cable with length tolerance

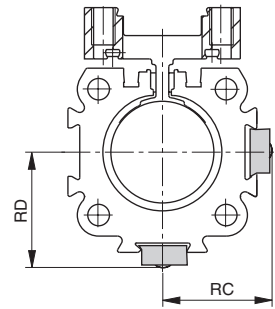
Magnetic Switch Order No.	Nominal cable length	Length tolerance
KL3045	5000 mm	- 50 mm
KL3048	5000 mm	- 50 mm
KL3054	100 mm	- 20 mm
KL3060	145 mm	± 5 mm

Dimensions Series OSP-P10



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

Dimensions Series OSP-P16 to 80



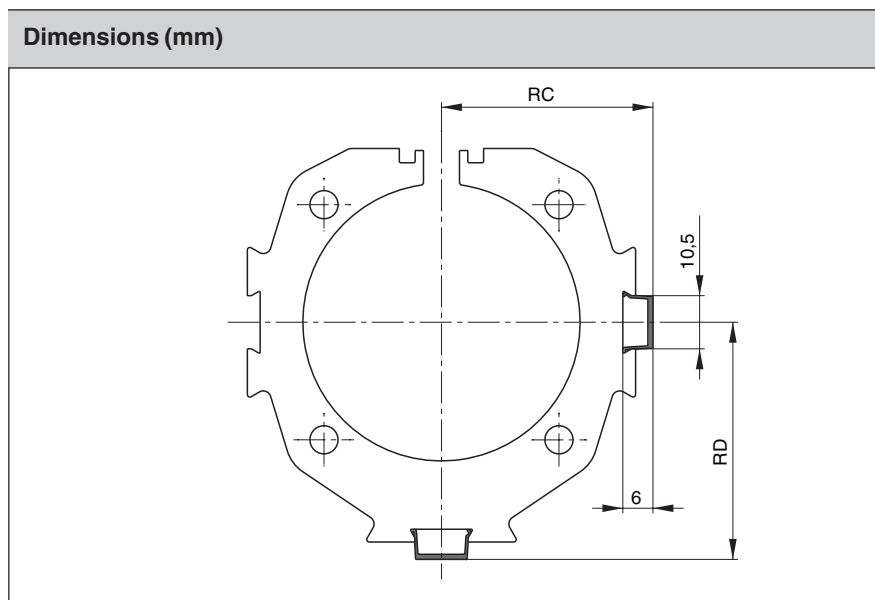
Dimension Table (mm) and Order Instructions

Series	Dimensions		Order No..						
	RC	RD	RS closer Normally open	RS opener Normally closed	ES PNP	NPN	ES compl. with 5 m cable		Adapter only for OSP-P10)
			Type:	Type:	Type:	Type:	Type:	Type:	
OSP-P10	–	–	RS-K KL3045	RS-K KL 3048	ES-S KL 3054	ES-S KL 3060	ES-S 10750	ES-S 10751	20968
OSP-P16	20	20.5							please order separately
OSP-P25	25	27							
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				

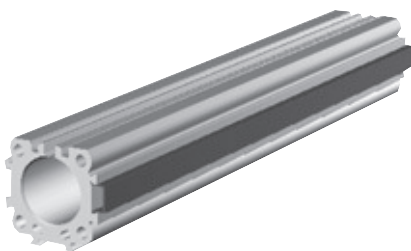
Linear Drive Accessories

∅ 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 Minimal length: 1m Max. profile length: 2m 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	Symbol	Unit	Description	
Electrical Characteristics			Type RST	Type EST
Switching output			Reed	PNP
Operating voltage	U_B	V	10-30 AC/DC	10-30 DC
Ripple	U_b		-	≤ 10%
Voltage drop		V	≤ 3	≤ 2
Electrical configuration			2 wire	3 wire
Output function			normally open normally closed	normally open
Permanent current	I_{Dmax}	mA	≤ 100	≤ 100
Breaking capacity		W	≤ 6 peak	-
Power consumption, at $U_B=24V$, 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
Timedelaybeforeavailability		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 wit PLC load	unlimited
Power-up pulse suppression			-	yes
Protection for inductive load			-	yes
Mechanical Characteristics				
Housing			Plastic / PA66 + PA6I red	
Cable cross section		mm ²	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 ca. 0.010 RST-S	ca. 0.030 EST-K ca. 0.010 EST-S
Degree of protection		IP	67 to EN 60529	
Ambient temperature range ¹⁾		°C	-25 to +80	-25 to +75 at $U_B=10 - 30 V$ -25 to +80 at $U_B=10 - 28 V$
- with adapter		°C	-25 to +60	
Adapter tightening torque		Nm	0.15 (tightening torque of screwing adapter onto magnetic switch)	
Shock resistance				
Vibration to EN 60068-2-6		G	15, 11ms, 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

∅ 10-80 mm

Magnetic Switches

OSP
— ORIGA
— SYSTEM
— PLUS

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.

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



HOERBIGER
ORIGA

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.

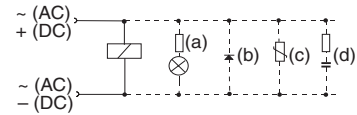
With **resistive and capacitive loads** with high switch-on current, such as light bulbs, a protective resistor should be fitted. This also applies to long cable lengths and voltages over 100 V.

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

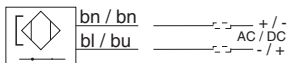
- Load with protective circuits
- (a) Protective resistor for light bulb
 - (b) Freewheel diode on inductivity
 - (c) Varistor on inductivity
 - (d) RC element on inductivity



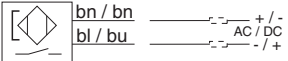
For the type EST, external protective circuits are not normally needed.

Electrical Connection Type RST-K

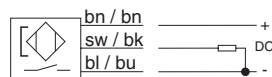
Normally closed



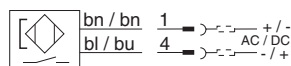
Normally open



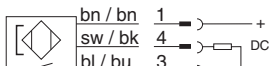
Electrical Connection Type EST-K



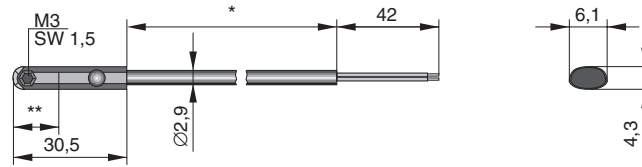
Electrical Connection Type RST-S



Electrical Connection Type EST-S

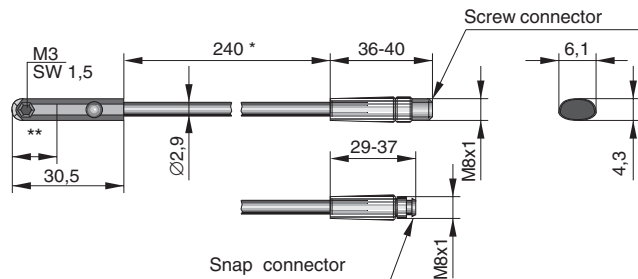


Dimensions (mm) – Type RST-K, EST-K

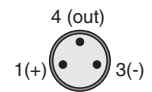


- * Cable lengths available: 5000 mm ± 75 mm
2000 mm ± 40 mm
- ** Switching point: Type RST-K Normally closed 14 mm
Type RST-K Normally open 12.3 mm
Type EST-K Normally open 8.1 mm

Dimensions (mm) – Type RST-S, EST-S

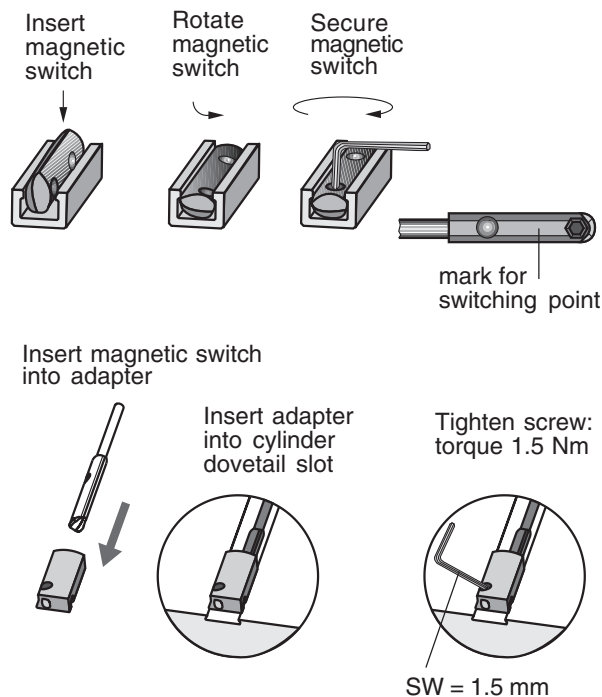


- * ± 6 mm
- ** Switching point: Type RST-K Normally closed 14 mm
Type RST-K Normally open 12.3 mm
Type EST-K Normally open 8.1 mm

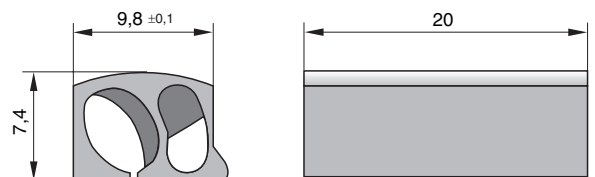


PIN assignment
(view of pins)
to DIN EN 50044

Installation



Dimensions of Adapter for Magnetic Switch



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

Included in delivery: 1 magnetic switch
1 adapter for dovetail groove mounting

Accessories		
Description	Order Instruction	
	Type	Order No.
Cable M8, 2.5 m without lock nut	KS 25	KY 3240
Cable M8, 5.0 m without lock nut	KS 50	KY 3241
Cable M8, 10.0 m without lock nut	KS 100	KY 3140
Cable M8, 2.5 m with lock nut	KSG 25	KC 3102
Cable M8, 5.0 m with lock nut	KSG 50	KC 3104
Adapter for dovetail groove (pack of 10)		KL 3333

Characteristics				
Characteristics	Symbol	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	U_B	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	I_{Dmax}	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		mm ²	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 ¹⁾		°C °C	-25 +80	-20 +75
Surface temperature		°C	The maximum surface temperature $T=146^{\circ}\text{C}$ is referred to the max. ambiente temperature of 80°C	
Shock resistance				
Vibration and Shock			50G at 50Hz and 1mm	

¹⁾ 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

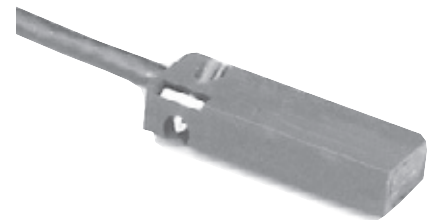


Magnetic Switches ø 10 – 80 mm

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.



HOERBIGER
ORIGA

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
 ⓧ II 3GD EEX nC IIC T3 146°C

Electrical Service Life Protective Measures

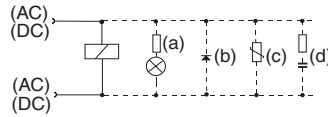
Magnetic switches are sensitive to excessive currents and inductions. With high switching frequencies and inductive loads such as relays, solenoid valves or lifting magnets, service life will be greatly reduced.

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



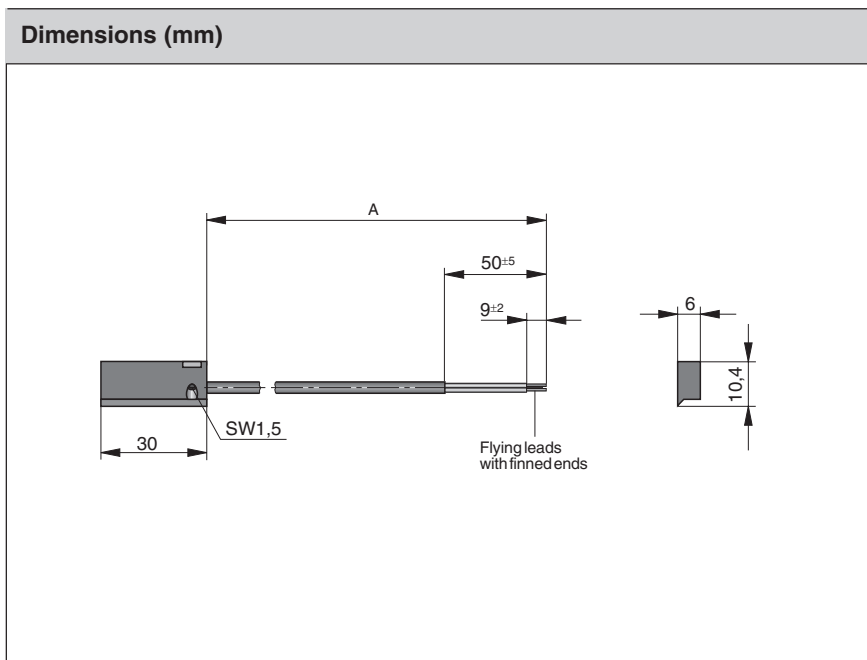
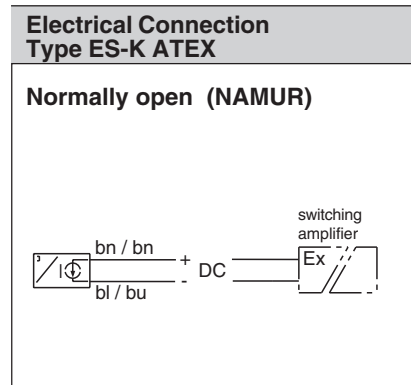
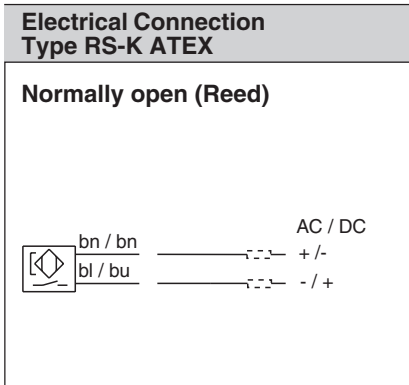
Magnetic Switches Type ES-K ATEX-Version

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
 ⓧ 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).



Dimension Table (mm)

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

Order Instructions			
Version	Valotage	Type	Order Instruction Order No.
Magnetic switch, reed contact, normally open LED indicator, cable 5 m	10-240 V AC/DC	RS-K ATEX	KL3240
Magnetic switch, reed contact, normally open LED indicator, cable 10 m	10-240 V AC/DC	RS-K ATEX	KL3241
Magnetic switch, electronic, NAMUR, normally open LED indicator, cable 5 m	7-10 V DC	ES-K ATEX	KL3250
Magnetic switch, electronic, NAMUR, normally open 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	105-106
Technische Daten SFA	1.50.003E-1 to 2	107-108
Dimensions SFA	1.50.003E-2	108
Order Instructions SFA	1.50.003E-2	108

ORIGA- Sensoflex

Displacement measuring systems
for automated movement

Series SFA
(analogue displacement measuring
system)

Note:
Please do not use this measuring
system for new constructions.

Measuring systems on request
– please contact your local
HOERBIGER-ORIGA company

For cylinder series

• **OSP-P...**

Characteristics

- Measurement up to 4000 mm (stepless)
- Resolution infinitely accurate, typically 0.01 mm
- No moving energy supply
- Preservation of measuring value in case of loss of power.

For further specifications,
see 1.50.003E



This analogue displacement measuring system is based on a conductive plastic potentiometer for the direct and absolute measurement of displacement in control, monitoring and

measurement applications. The system is simple, robust and insensitive to electrical or magnetic interference.

A3P108E00HAA00X

The right to introduce technical
modifications is reserved

General

Characteristics

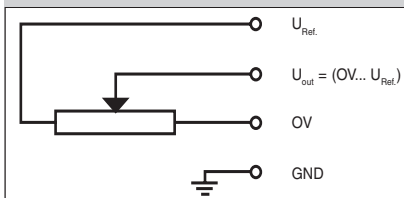
- Displacement measuring system without propulsion rod
- Minimal space requirements through compact design and minimal dead stroke
- Pin for easy connection
- Assembly with mounting brackets

In spite of its high resolution, this analogue displacement measuring system is inexpensive and ideally suited for rough industrial use because of its robust design.

Easy handling and very low energy consumption make this system ideally suited for measuring, control and automation technology. Basically, the SFA displacement measuring system functions as a voltage divider. A wiper is moved over a resistor, which in this modern system is a high-quality and robust conductive plastic layer.

This allows a high velocity and provides a very high resolution and a long life span.

Electrical connection



Assembly instructions

To achieve the linearity and life-span values specified in the technical data sheets, it is imperative that the wiper-voltage is read at a very low current ($I < 10 \mu\text{A}$). A higher current ($I > 10\text{mA}$) would destroy the measuring system.

Characteristics

Characteristics	Unit	Description
General Features		
Measuring length		1-3000 mm stepless on request to 4000 mm
Life span		6000 km or 15 Million movements over ± 2 mm
Velocity	m/s	max. 1.5 *
Acceleration	m/s ²	max. 200
Actuating force	N	typ. 2
Repeatability	mm	± 0.02 (from one direction)
Reproducibility	mm	± 0.05 (from both directions)
Housing		anodized Aluminium
Weight (Mass)	kg/m	ca. 1.2
Temperature range	°C	-20 to +80
Relative humidity	%	10 to 95 (non condensating)
Electrical features		
Recommended wiper current	μA	0,1 – maximum wiper current 10 mA
Potentiometer voltage	V (DC)	max. 42
Recommended power	V (DC)	6.8 to 30
Connector		plastic elbow connector, cable 5mtr insulated, with open end
Temperature coefficient of the voltage divider ratio	ppm/°C	5
Enclosure class	IP	40
Signal output		potentiometric (voltage divider)
Insulation resistance	M Ω	10
Dielectric strength	V	500 eff

* higher speed decreases the life span

Displacement measuring system

for automated movements

ORIGA-Sensoflex

(analogue displacement measuring system)

Series SFA

for cylinder series

OSP-P...

Characteristics

- Stepless displacement length of up to 4000 mm
- Resolution infinitely accurate, typically 0.01 mm
- No moving power supply
- Preservation of measuring values in case of powerloss

This analogue displacement measuring system is based on a conductive plastic potentiometer for the direct and absolute measurement of displacement in control, monitoring and measurement applications.

The system is simple, robust and insensitive to electrical or magnetic interference.

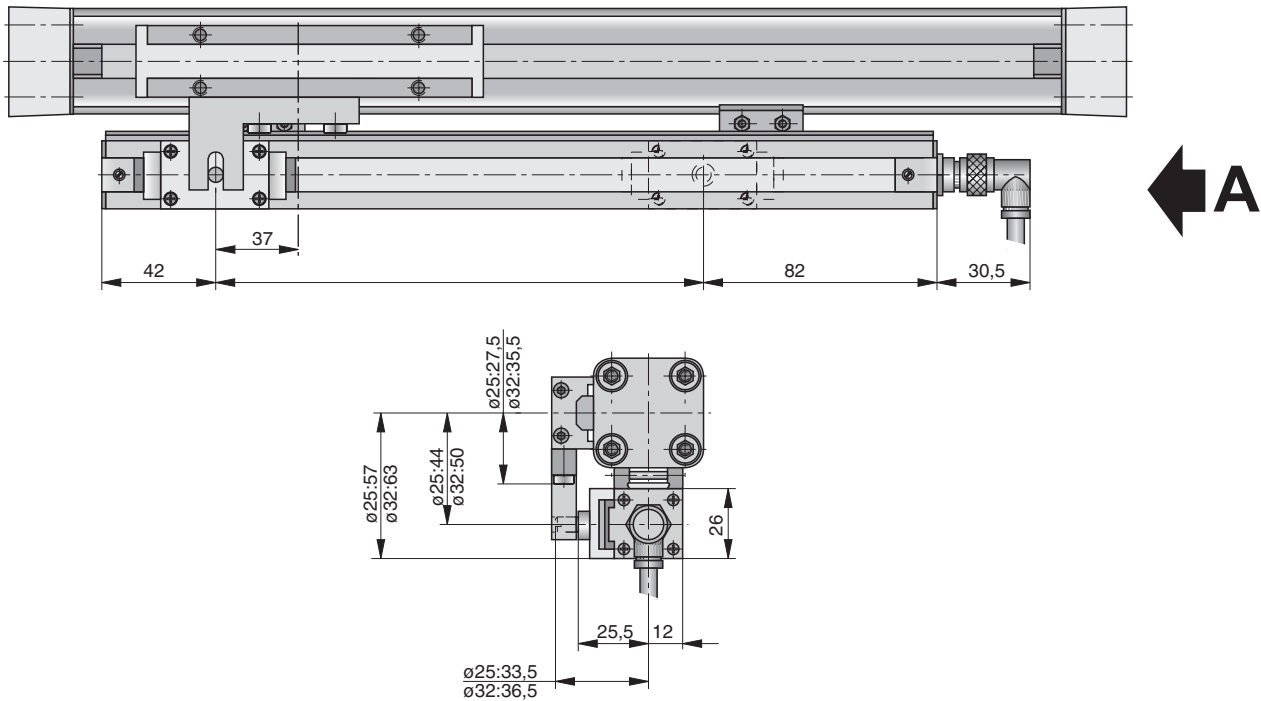


HOERBIGER
ORIGA

Electrical Measuring Range

Description	Measuring distance (mm)							
	125	150	300	600	1000	1500	1800	3000
Resistor value (kΩ) typical	2	5	5	5	10	10	20	20
Resistor tolerance (%)	± 40							
Independent linearity (%)	±0.09	±0.08	±0.07	±0.05	±0.04	±0.03	±0.03	±0.02

Dimensions (mm) – SFA with cylinder OSP-P



Order instructions

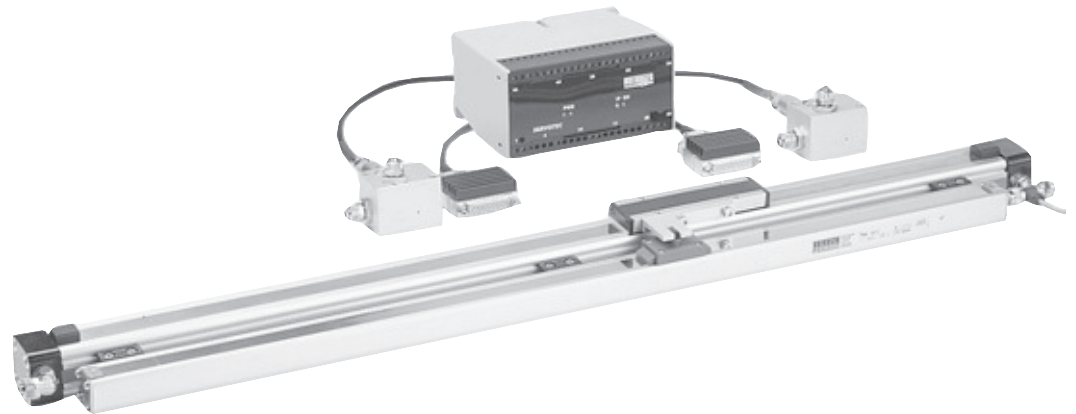
Description	Order-No.
SFA with measuring length of 1-3000 mm*, without Cable, for OSP-P25	4650A
SFA with measuring length of 1-3000 mm*, without Cable, for OSP-P32	4650
Mounting for OSP-P ø 25 mm (Coupling, mounting, cable)	20430
Mounting for OSP-P ø 32 mm (Coupling, mounting, cable)	20431
Cable 5 m	4618

* (longer lengths on request)

ORIGA-SERVOTEC

Servo-Pneumatic Positioningsystem

Series OSP-P



Contents

Description	Data Sheet No.	Page
Overview	1.55.001E	109-110
Technische Daten	1.55.002E-1	111
Dimensions	1.55.002E-2	112

ORIGA- Servotec

Servo-pneumatic positioning system

Note:

Please do not use this measuring system for new constructions.

Measuring systems on request
– please contact your local
HOERBIGER-ORIGA company

Series SERVOTEC-

For cylinder series

OSP-P...

Characteristics

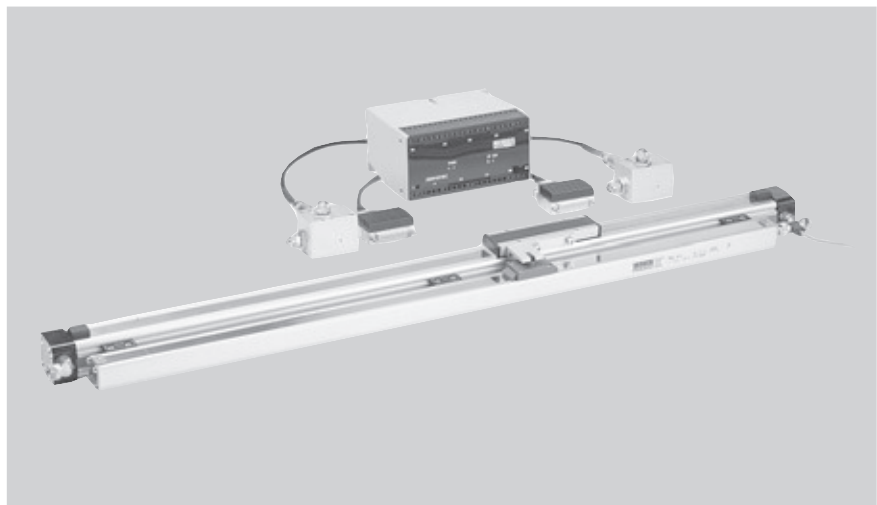
- Stepless stroke lengths up to 3000 mm
- Reproducibility up to 0.1 mm/m
- Displacement speed up to 2.5 m/s
- Absolute measuring system

Modern positioning systems are expected to be exact and yet dynamic. The ORIGA SERVOTEC positioning system is an inexpensive alternative to electric positioning drives. In combination with commercially available industrial control systems, SERVOTEC enables the increasing number of positioning problems in the handling industry to be solved with servo-pneumatics at low cost.

For further specifications,
see 1.55.002E



Controller in compact housing



Actuator system (Cylinder, Measuring System, Servo Valves)

A3P109E00HAA00X

The right to introduce technical
modifications is reserved

General

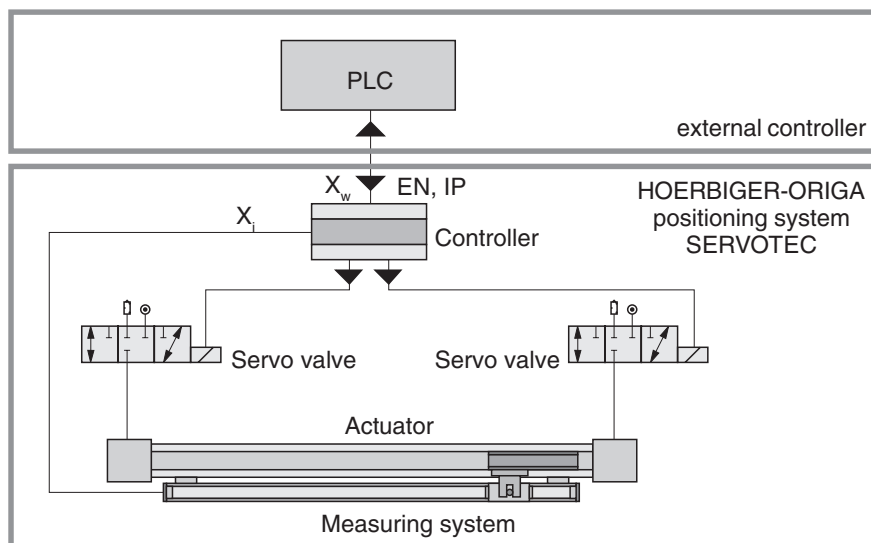
Characteristics

- Binary and analogue control
- Positioning controller in compact housing
- For wall and rail mounting (35 mm DIN-rail)

actual value is compared with a preset value. The deviations found are eliminated by the extremely fast servo-valves. With this constant electronic monitoring the cylinder piston is positioned within a very close range of tolerance.

Function

The constantly working, absolute measuring system senses the exact position of the cylinder piston. This signal is fed back to the position monitor of the controller, where the



A1P562E00DZ00X

The right to introduce technical modifications is reserved

Characteristics

Characteristics	Unit	Description
General Features		
Cylinder diameter	mm	25, 32
Positionable stroke length	mm	0 – 3000
Velocity	mm/s	5 – 2500
Reproducibility max.	mm/m	± 0.1
Mounting		wall- or rail mounting (35 mm DIN-rail)
Temperature range	°C	0 – 50
Relative humidity	%	10 – 80 (non condensating)
Pneumatic		
Operating pressure range	bar	1 – 8
Electric		
Voltage – Controller	V (DC) V (AC)	24 (max. 50 W) 230 (10 VA)
Voltage – Control signals	V(DC)	analogue: 0–10/0 – 20mA (set value) binary: PLC-level (24 V DC) for Enable and In Position
Power consumption – Controller – Servo valves	VA W	10 2 x 25
Connection		terminal screws
Electrical protection	IP	42 (Controller IP 20)

Data Sheet No. 1.55.002E-1

Positioning system

Servo-pneumatic

ORIGA-Servotec

Series SERVOTEC-
for Cylinder Series OSP-P...

Characteristics

- Stepless stroke lengths to 3000 mm
- Reproducibility up to 0.1 mm/m
- Displacement velocity up to 2.5 m/s
- Absolute measuring system

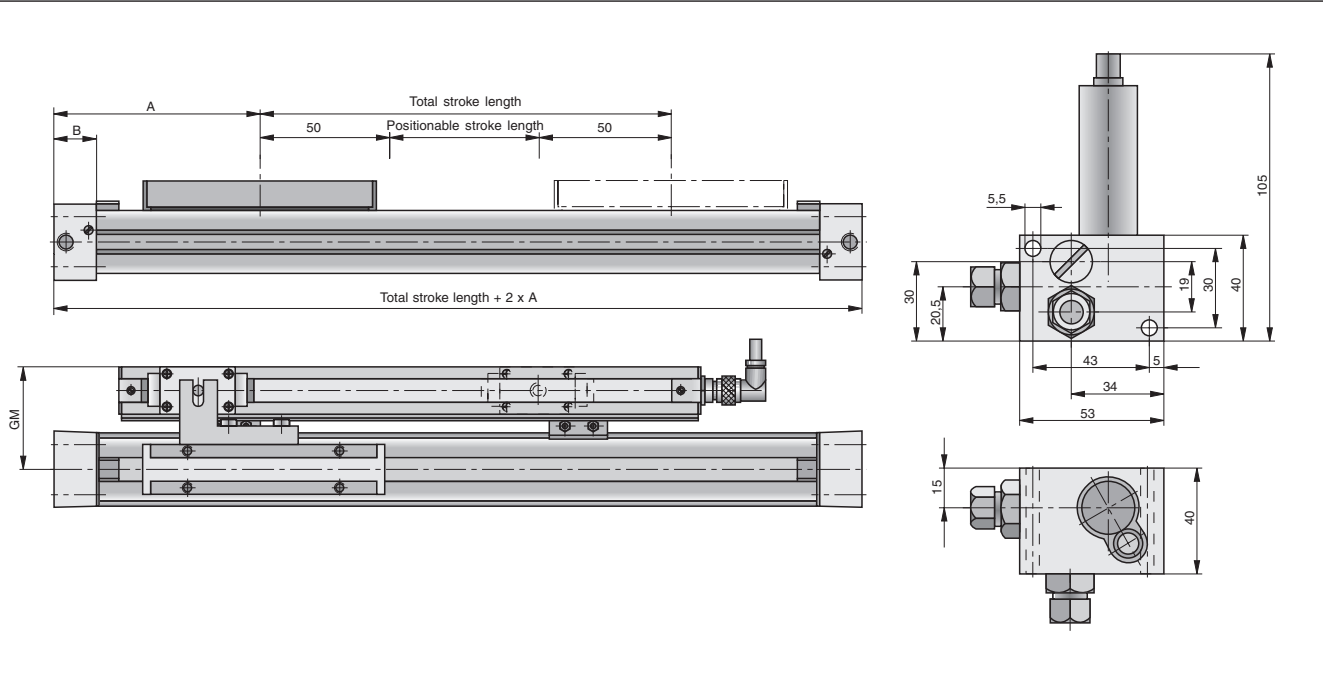
Pneumatic linear drives fitted with the SERVOTEC positioning system are compact and overload-proof and can be built into new or existing installations.

The SERVOTEC positioning controller can communicate with digital and analogue signals with almost any commercially available control system (PLC or PC).



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ORIGA

Dimensions – Cylinder with external servo valves



Note

- For physical reasons the first and last 50 mm of stroke shouldn't be positioned.
- Piston force, loads and dimensions are the same as those of the standard cylinders OSP-P (data sheet 1.10.002E) or with Linear Guides SL (data sheet 1.40.002E) and PS (data sheet 1.40.003E) and PL (data sheet 1.40.005E)

Dimensions (mm)

Cyl.ø	A	B	GM
25	100	22	57
32	125	25.5	63

Note:

To choose the right positioning actuator for your application, please contact your local sales engineer.

Assembly

- Suited for wall and rail mounting (35 mm DIN rail to EN 50022)
- Terminal screws (for 2 mm² diameter cable) are provided for the connection of the valves, the measuring system, and PLC.

Delivery includes

The SERVOTEC system is delivered with the following components fully assembled:

Standard version

- Rodless cylinder for actuation
- Electronic controller
- Measuring system with cable
- Servovalves with cables and silencers
- Manual

Dimensions (mm) – Positioning controller

