



























OSP-P Rodless Cylinders

* Information on electrical linear drives series OSP-E, please refer to catalogue P-A4P017E

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

OPTIONS AND ACCESSORIES FOR SYSTEM VERSATILITY

SERIES OSP-P

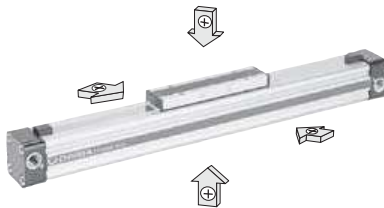
STANDARD VERSIONS OSP-P10 to P80

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

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

Magnetic piston as standard.

Dovetail profile for mounting of accessories and the cylinder itself.



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

For extremely long strokes up to max. 41m



BASIC CYLINDER OPTIONS

CLEAN ROOM CYLINDERS Data Sheet P-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 P-1.10.020E

For use in Ex-Areas



STAINLESS VERSION

For use in constantly damp or wet environments. All screws are A2 quality stainless steel (material no.1.4301 / 1.4303)



SLOW SPEED OPTIONS

Specially formulated grease lubrication facilitates slow, smooth and uniform piston travel in the speed range from 0.005 to 0.2 m/s.



Minimum achievable speeds are dependent on several factors. Please consult our technical department.

Slow speed lubrication in combination with Viton® on demand. Oil free operation preferred.

VITON® VERSION

For use in an environment with high temperatures or in chemically aggressive areas.

All seals are made of Viton®. Sealing bands: Stainless steel.



END-FACE AIR CONNECTION

Data Sheet P-1.10.002E-6

To solve special installation problems.



BOTH AIR CONNECTIONS AT ONE END

Data Sheet P-1.10.002E-7

For simplified tubing connections and space saving.



INTEGRATED VOE VALVES

Data Sheet P-1.10.002E-8

The complete compact solution for optimal cylinder control.



DUPLEX CONNECTION

Data Sheet P-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 P-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.



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 Parker 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.

Magnetic piston as standard - for contactless position sensing on three sides of the cylinder.

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

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

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

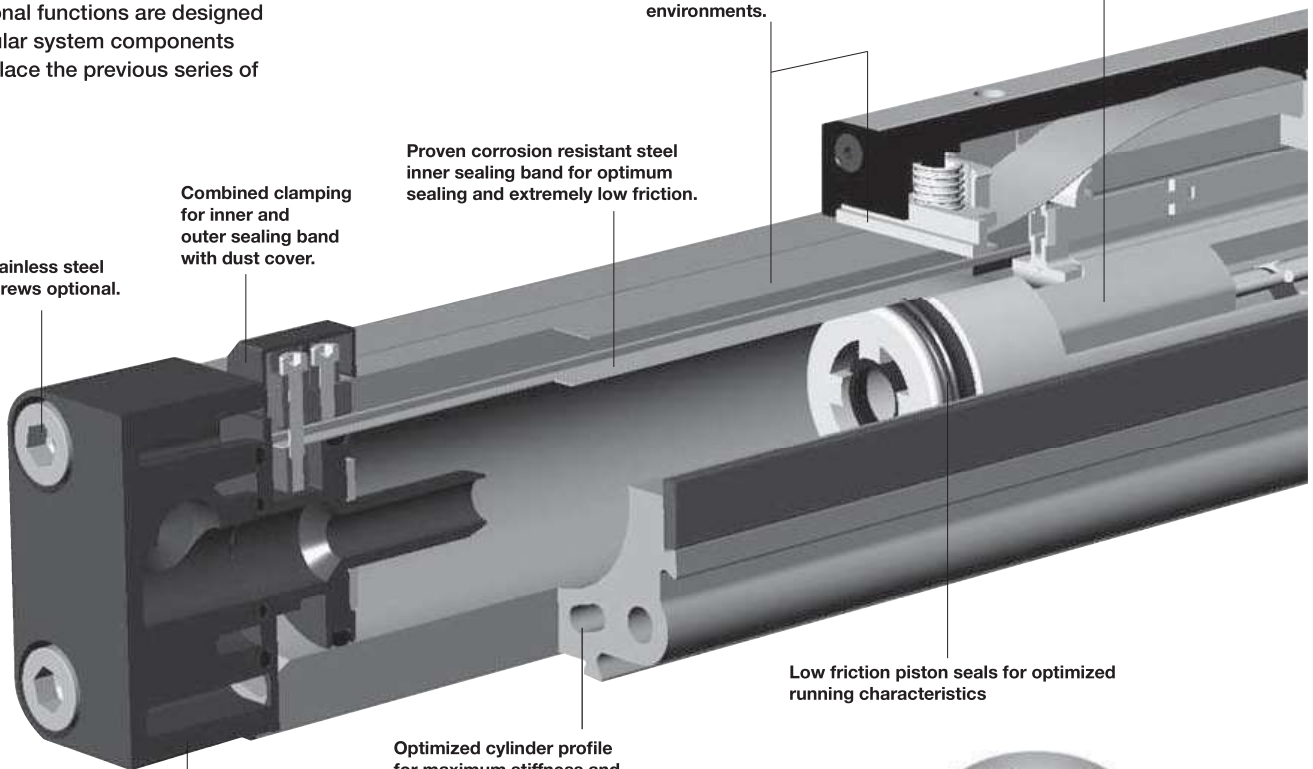
Stainless steel screws optional.

Low friction piston seals for optimized running characteristics

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

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

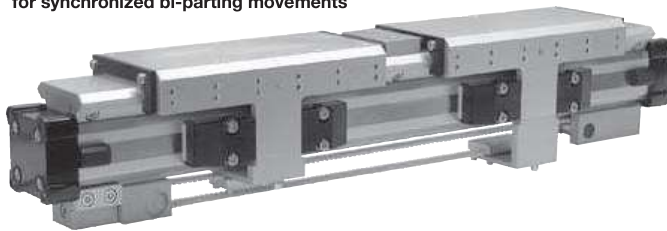
End cap can be rotated to any one of the four positions (before or after delivery) so that the air connection can be in any desired position.



Clean Room Version
certified to DIN EN ISO 14644-1



Rodless Cylinder
for synchronized bi-parting movements



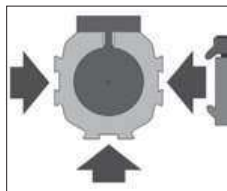
New low profile
piston/carrier design.



Adjustable end cushioning
at both ends are standard.

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

Modular system components
are simply clamped on.



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



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



SLIDELINE
Combination with
linear guides pro-
vides for heavier
loads.



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



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



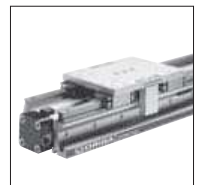
STARLINE
Recirculating ball
bearing guide for
very high loads
and precision.



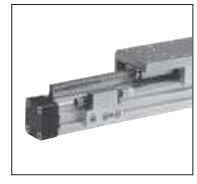
KF GUIDE
Recirculating ball
bearing guide
- the mounting
dimensions corre-
spond to FESTO
Type: DGPL-KF



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



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



Passive
pneumatic brake
reacts automati-
cally to pressure
failure.



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



ACCESSORIES

MAGNETIC SWITCHES TYPE RS, ES, RST, EST

Data Sheet 1.45.100E, 1.45.104E,
1.45.105E

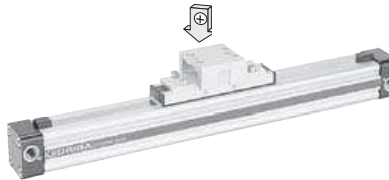
For electrical sensing of end and
intermediate piston positions, also in
EX-Areas.



CLEVIS MOUNTING

Data Sheet 1.45.002E

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



MID-SECTION SUPPORT

Data Sheet 1.45.004E

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



END CAP MOUNTING

Data Sheet 1.45.003E

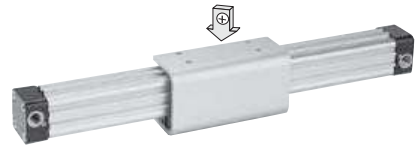
For end-mounting of the cylinder.



INVERSION MOUNTING

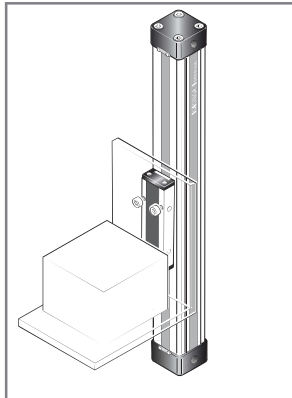
Data Sheet 1.45.006E

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

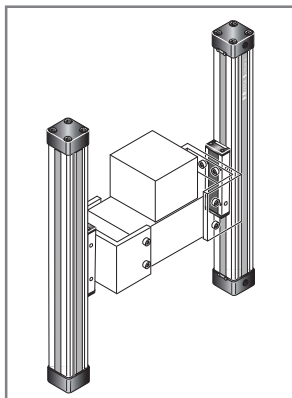
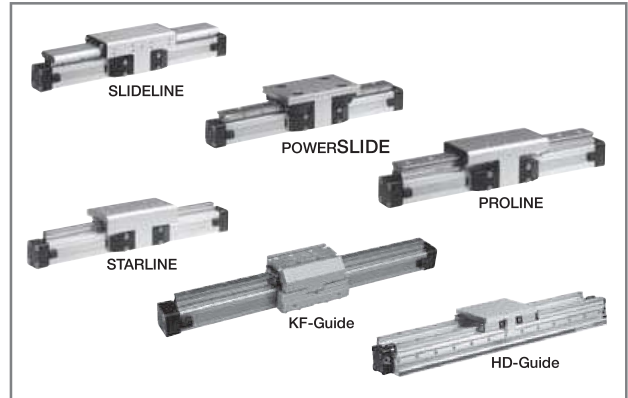


OSP-P APPLICATION EXAMPLES

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



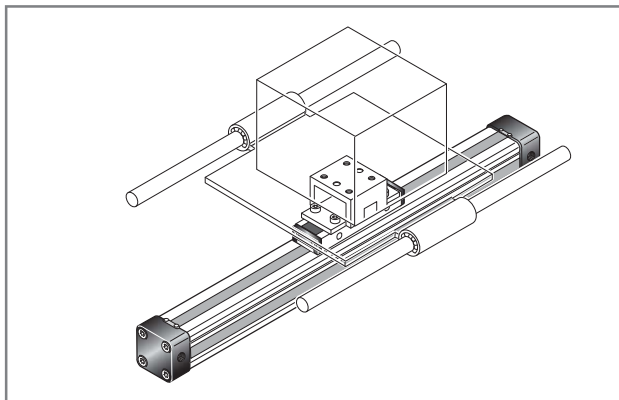
The high load capacity of the piston can cope with high bending moments without additional guides.



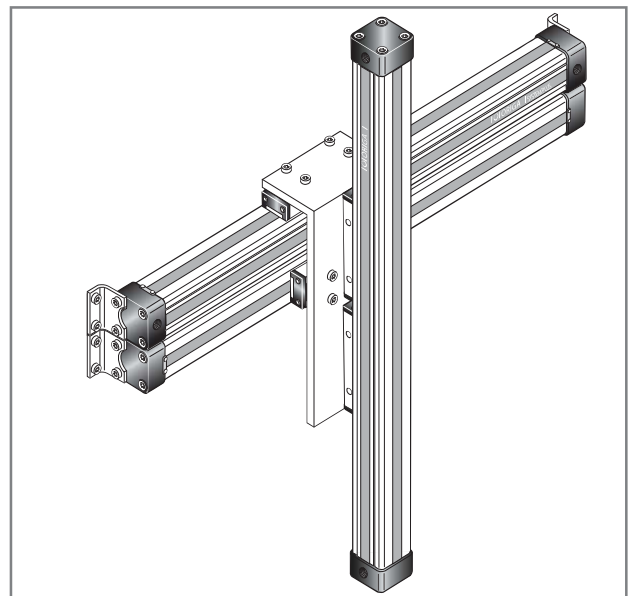
The mechanical design of the OSP-P allows synchronised movement of two cylinders.

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 Parker Origa dealer.

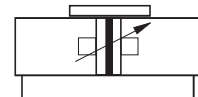
Rodless Pneumatic Cylinder

∅ 10-80 mm



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 range	T _{min}	°C	-10
temperature range	T _{max}	°C	+80
			Other temperature on request
Weight (mass)		kg	See table below
Installation			In any position
Medium air			Filtered, unlubricated compressed (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 / Plastic (P10)
	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

Series OSP-P.



Standard Versions:

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

Long-Stroke Cylinders for stroke lengths up to 41 m

(see data sheet 1.10.002E-11)

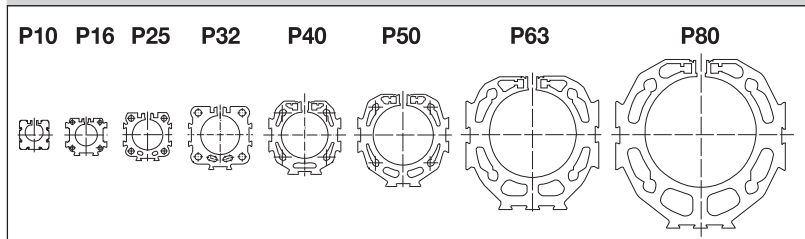
Special Versions:

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

Weight (mass) kg		
Cylinder series (Basic cylinder)	Weight (Mass) kg	
	At 0 mm stroke	per 100 mm stroke
OSP-P10	0.087	0.052
OSP-P16	0.22	0.1
OSP-P25	0.65	0.197
OSP-P32	1.44	0.354
OSP-P40	1.95	0.415
OSP-P50	3.53	0.566
OSP-P63	6.41	0.925
OSP-P80	12.46	1.262

Size Comparison



- End cap can be rotated 4 x 90° to position air connection as desired
- Free choice of stroke length up to 6000 mm, Long-Stroke version (∅50-80mm) for stroke lengths up to 41 m

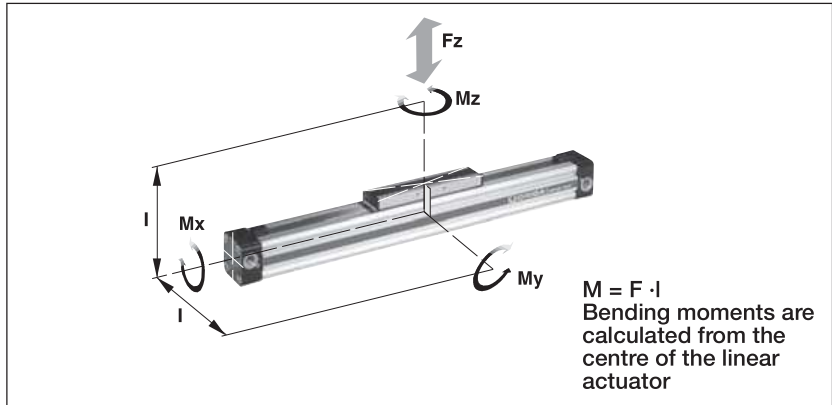
Loads, Forces and Moments

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 F [N]	Cushion Length [mm]
			M_x [Nm]	M_y [Nm]	M_z [Nm]		
OSP-P10	47	32	0.2	1	0.3	20	2.5 *
OSP-P16	120	78	0.45	4	0.5	120	11
OSP-P25	295	250	1.5	15	3	300	17
OSP-P32	483	420	3	30	5	450	20
OSP-P40	754	640	6	60	8	750	27
OSP-P50	1178	1000	10	115	15	1200	30
OSP-P63	1870	1550	12	200	24	1650	32
OSP-P80	3016	2600	24	360	48	2400	39

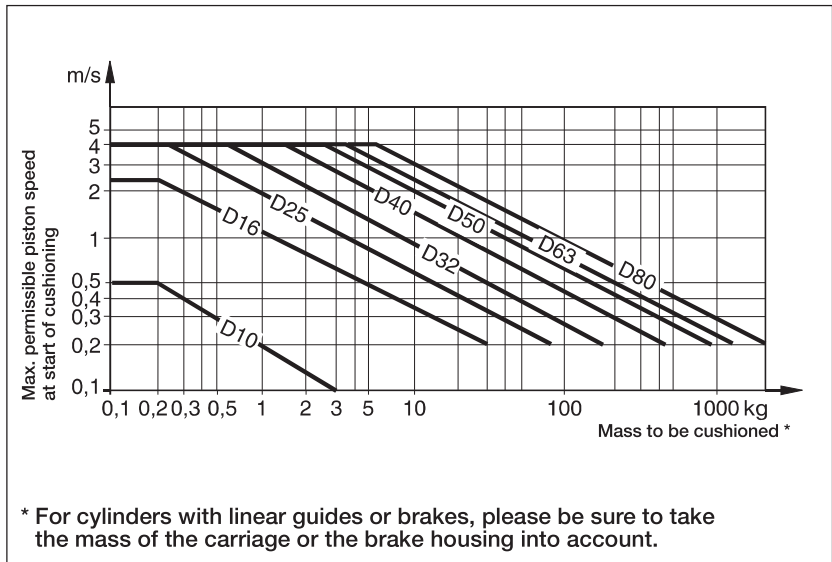
* A rubber element (non-adjustable) is used for end cushioning. To deform the rubber element enough to reach the absolute end position would require a Δp of 4 bar!

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.

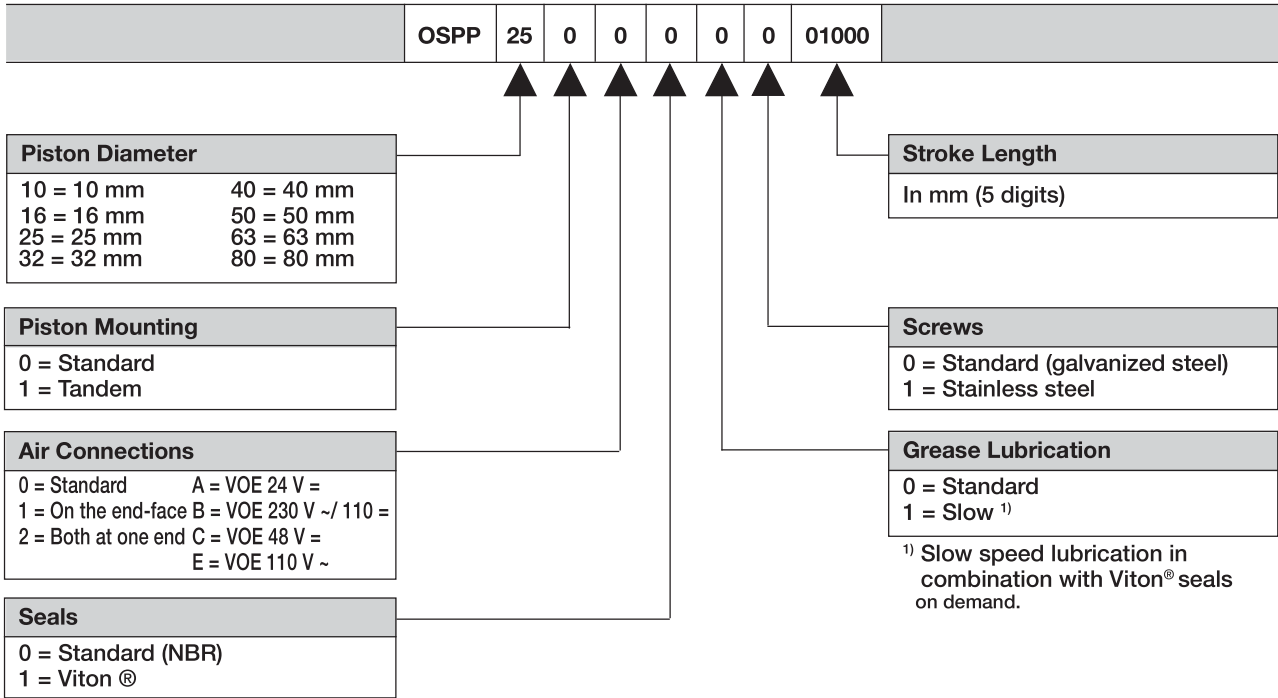


* For cylinders with linear guides or brakes, please be sure to take the mass of the carriage or the brake housing into account.

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.

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-Slot Profile	1.45.008E
Adaptor Profile	1.45.009E
Duplex Connection	1.45.011E
Multiplex Connection	1.45.012E
Magnetic Switches	1.45.100E, 1.45.104E, 1.45.105E
Cable Cover	1.45.102E

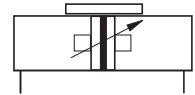
Rodless Pneumatic Cylinder

Ø 50-80 mm



Long-Stroke Cylinder for strokes up to 41 m

Series OSP-P..LS



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 ranges temperature range	T_{min} T_{max}	°C °C	+10 +40	Other temperature on request
Weight (mass)		kg	See table below	
Installation			vertical, horizontal (piston at top or at bottom)	
Medium air			Filtered, unlubricated compressed (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		Anodized aluminium	
	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	
Max. speed	v	m/s	2	

Standard Versions:

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

Special Versions:

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

Options:

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

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

Size Comparison			
	P50	P63	P80



Informations for ATEX-Directives

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

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

Components for EX-Areas



Technical Data (deviant to the Standard Cylinder)

Pressure quoted as gauge pressure

Characteristics	Symbol	Unit	Description
Ambient temperature range	T _{min} T _{max}	°C °C	-10 +60
Max. switching frequency		Hz	1 (double stroke/s) Basic cylinder 0.5 (1stroke/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 2GD

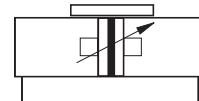
Rodless cylinder: II 2GD c T4 T135°C -10°C ≤ Ta ≤ +60°C

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



Rodless Cylinder Ø 10 – 80 mm Basic Cylinder

Series: OSP-P ...ATEX



Plain Bearing Guide SLIDELINE Ø 16 – 80 mm

Series: SL ...ATEX



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

Rodless Cylinder Ø 40 mm

for synchronized
bi-parting movements

Type OSP-P40-SL-BP



Features:

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

Applications:

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

Applications

