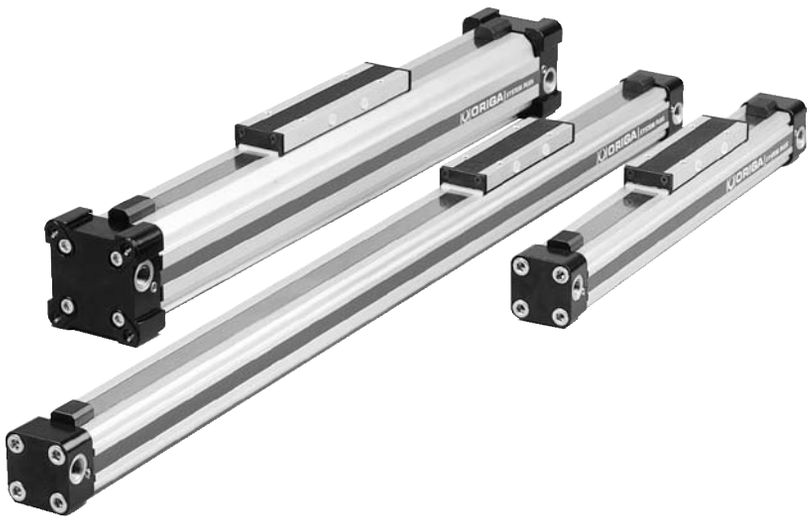
Rodless Pneumatic Cylinders
Series OSP-P



Contents

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

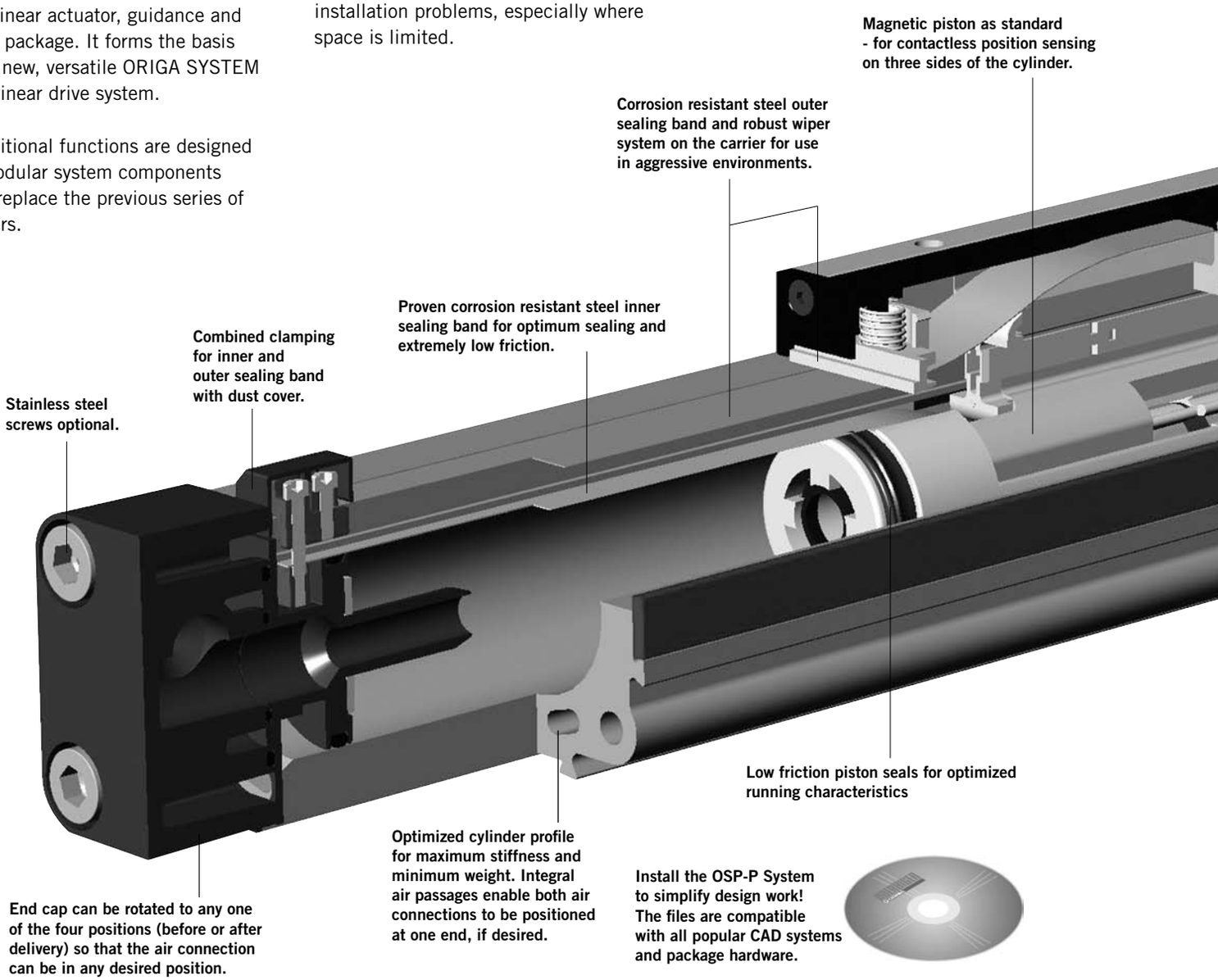
With this second generation linear drive Parker Origa offers design engineers complete flexibility. The well known ORIGA cylinder has been further developed into a combined linear actuator, guidance and control package. It forms the basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

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.

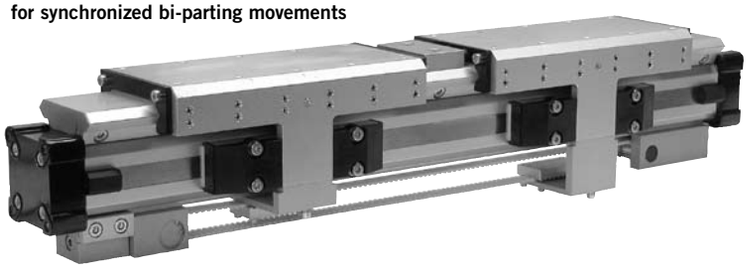
The modular system concept forms an ideal basis for additional customer-specific functions.



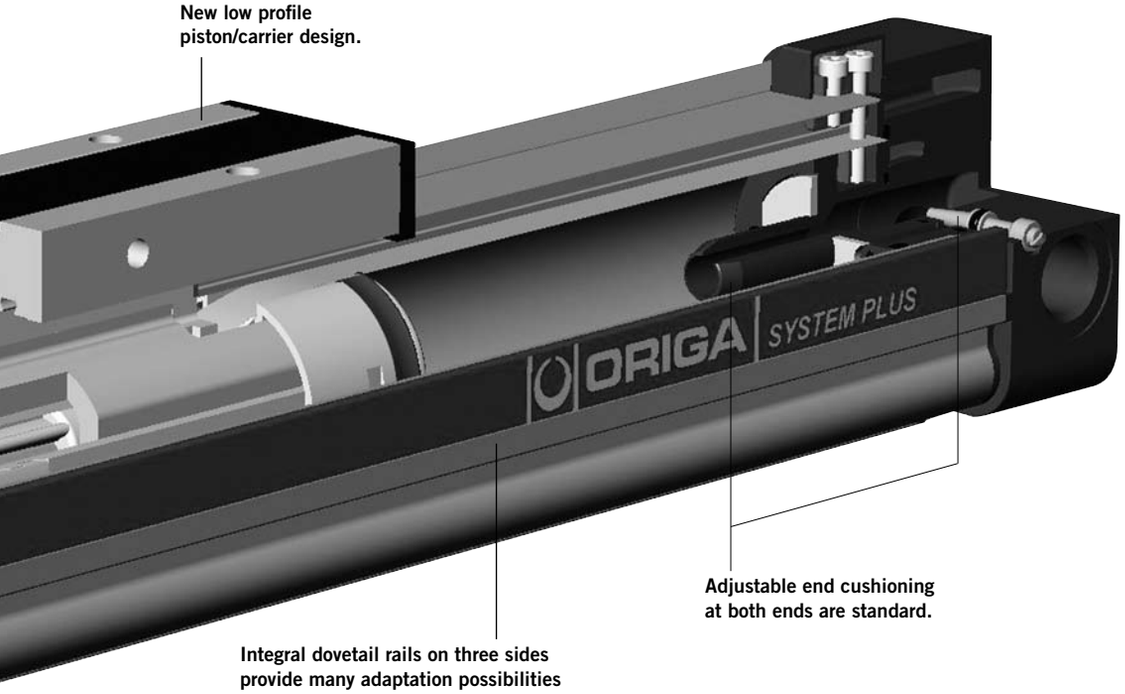
Install the OSP-P System to simplify design work! The files are compatible with all popular CAD systems and package hardware.

Clean Room Version
certified to DIN EN ISO 14644-1

Rodless Cylinder
for synchronized bi-parting movements



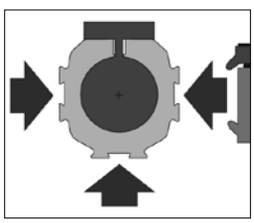
New low profile
piston/carrier design.



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.



SLIDELINE
Combination with linear guides provides for heavier loads.

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

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

STARLINE
Recirculating ball bearing guide for very high loads and precision

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

HEAVY DUTY GUIDE HD
for heavy duty applications.

VARIABLE STOP VS
The variable stop provides simple stroke limitation.

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

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

Passive pneumatic brake reacts automatically to pressure failure.

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

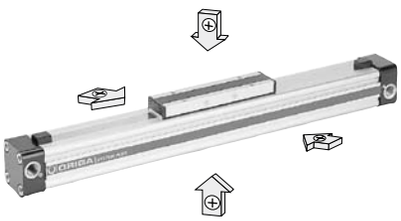
OPTIONS AND ACCESSORIES FOR SYSTEM VERSATILITY

SERIES OSP-P

STANDARD VERSIONS OSP-P10 to P80

Data Sheet 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

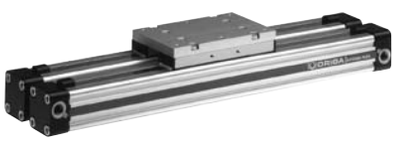
Data Sheet P-1.10.002E-8

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.

ACCESSORIES

MAGNETIC SWITCHES TYPE RS, ES, RST, EST

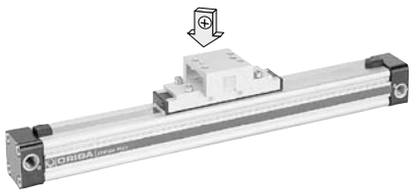
Data Sheet 1.45.100E, 1.45.104E, 1.45.105E

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

CLEVIS MOUNTING

Data Sheet 1.45.002E

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



END CAP MOUNTING

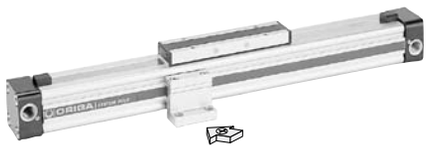
Data Sheet 1.45.003E

For end-mounting of the cylinder.

MID-SECTION SUPPORT

Data Sheet 1.45.004E

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



INVERSION MOUNTING

Data Sheet 1.45.006E

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

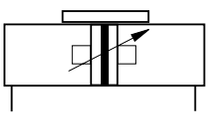
A3P101E00HAA00X

Rodless Pneumatic Cylinder

ø 10-80 mm

OSP
ORIGA SYSTEM PLUS

Series OSP-P..



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

Long-Stroke Cylinders for stroke lenghts up to 41 m
(see data sheet P-1.10.002E-11)

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

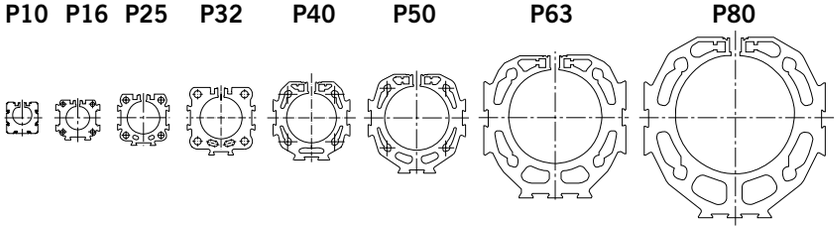
- End cap can be rotated 4 x 90° to position air connection as desired
- Free choice of stroke length up to 6000 mm, Long-Stroke version (Ø50-80mm) for stroke lengths up to 41 m

Characteristics				Pressures quoted as gauge pressure
Characteristics		Symbol	Unit	Description
General Features				
Type				Rodless cylinder
Series				OSP-P
System				Double-acting, with cushioning, position sensing capability
Mounting				See drawings
Air Connection				Threaded
Ambient temperature range		T_{min} T_{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 / 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

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



For **linear guides** see 1.40.001E to 006E
For **magnetic switches** see 1.45.100E, 1.45.104E, 1.45.105E
For **mountings** and **accessories** see 1.45.001E to 009E

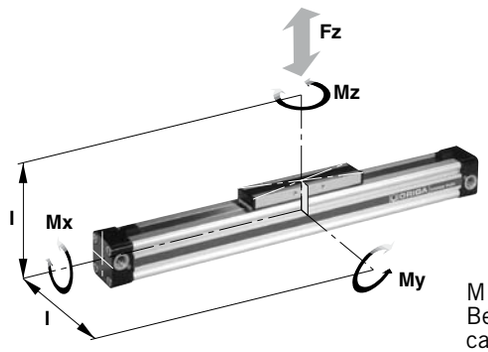
Loads, Forces and Moments

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 ≤ 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.



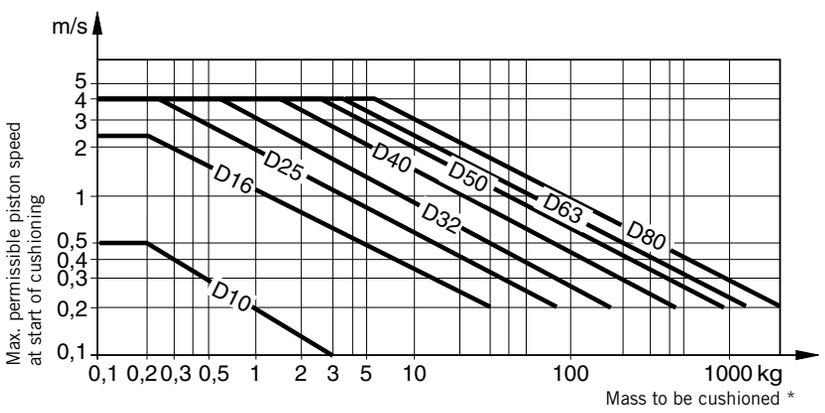
M = F ·l
Bending moments are calculated from the centre of the linear actuator

Cylinder-Series [mm Ø]	Theoretical Action Force at 6 bar [N]	effektive Action Force F_A at 6 bar [N]	max. Moments Mx [Nm]	My [Nm]	Mz [Nm]	max. Load F [N]	Cushion Length [mm]
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.



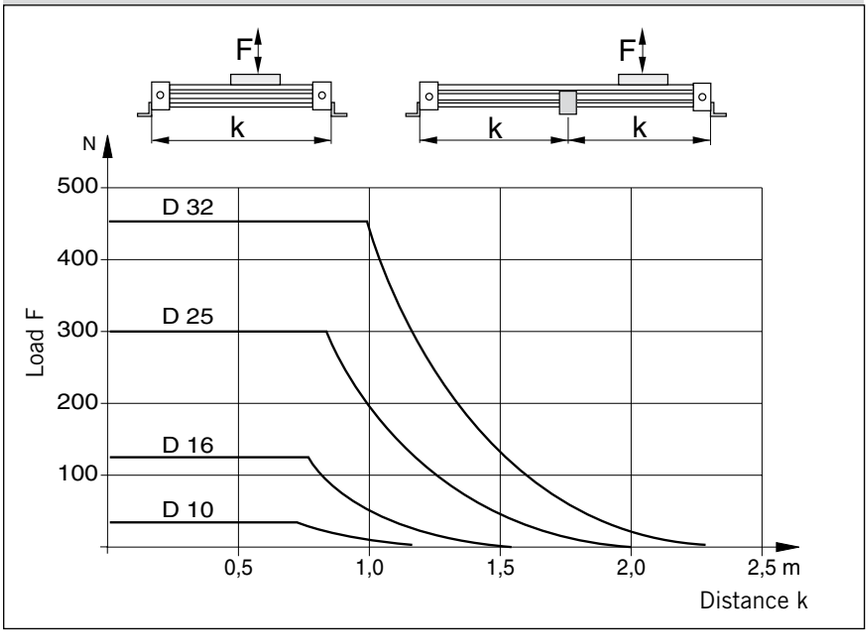
* For cylinders with linear guides or brakes, please be sure to take the mass of the carriage or the brake housing into account.

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.

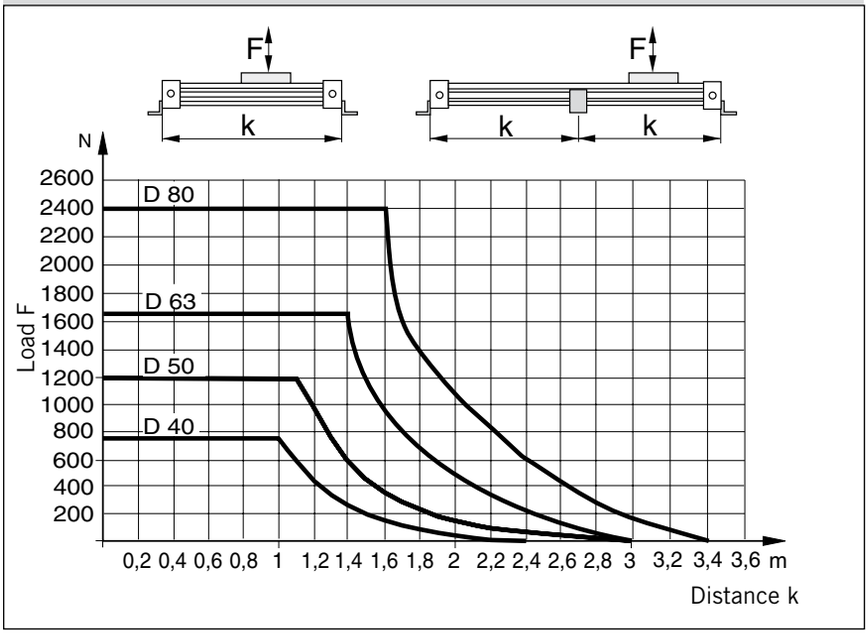
Mid-Section Supports

To avoid excessive bending and oscillation of the cylinder, mid-section supports are required dependent on specified stroke lengths and applied loads. The diagrams show the maximum possible support spacings depending on the load.
Bending up to max. 0.5 mm is permissible between supports. The mid-section supports are clamped on to the dovetail profile of the cylinder tube. They are also able to take the axial forces.
For types and dimensions see 1.45.004E.

Permissible Support Spacings: OSP - P10 - P32



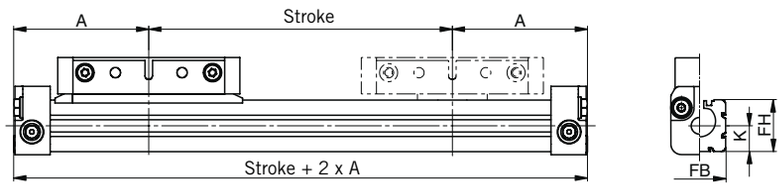
Permissible Support Spacings: OSP - P40 - P80



Cylinder
Stroke and Dead Length A

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

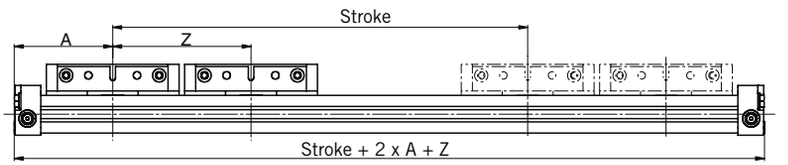
Dimensions of Basic Cylinder OSP-P10



Tandem Cylinder

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

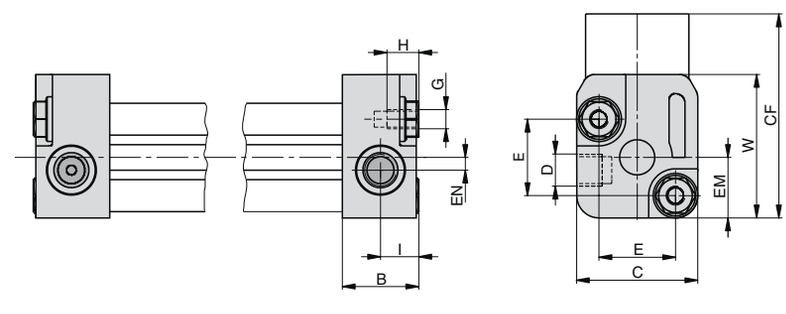
- Free choice of stroke length up to 6000 mm in 1 mm steps
- Longer strokes on request
- **Stroke length to order is stroke + dimension "Z"**



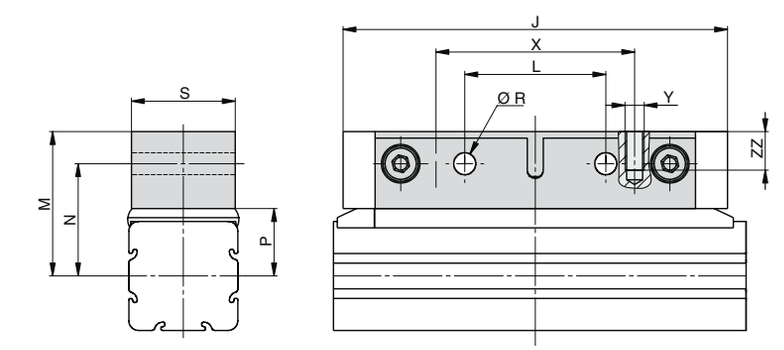
Please note:

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

End Cap/Air Connection Series OSP-P10



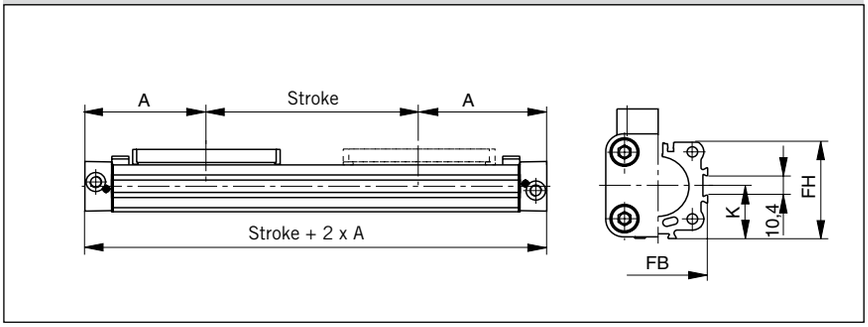
Carrier Series OSP-P10



Dimension Table (mm)

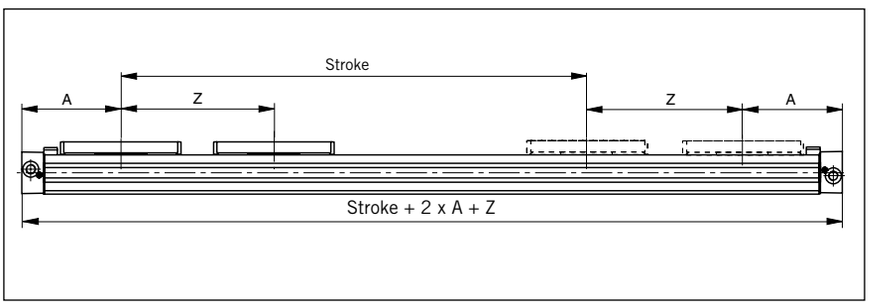
Cylinder Series	A	B	C	D	E	G	H	I	J	K	L	M	N	P	R	S	W	X	Y	Z min	CF	EM	EN	FB	FH	ZZ
OSP-P10	44.5	12	19	M5	12	M3	5	6	60	8.5	22	22.5	17.5	10.5	3.4	16	22.5	31	M3	64	32	9.5	2	17	17	6

Dimensions of Basic Cylinder OSP - P16-P80



Cylinder
Stroke and Dead Length A

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



Tandem Cylinder

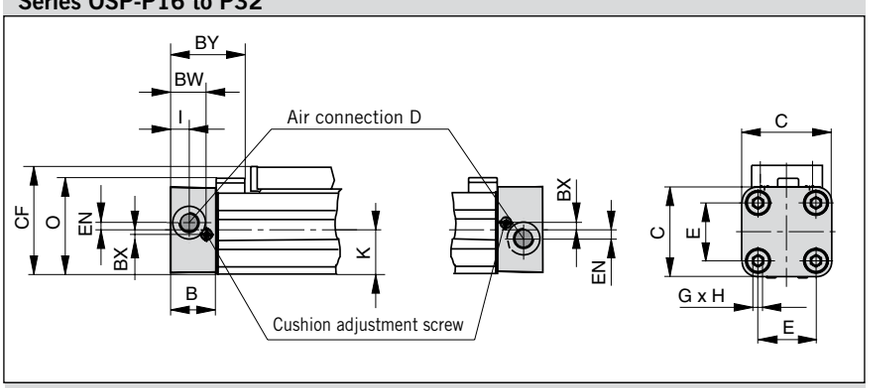
Two pistons are fitted: dimension "Z" is optional. (Please note minimum distance "Zmin").

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

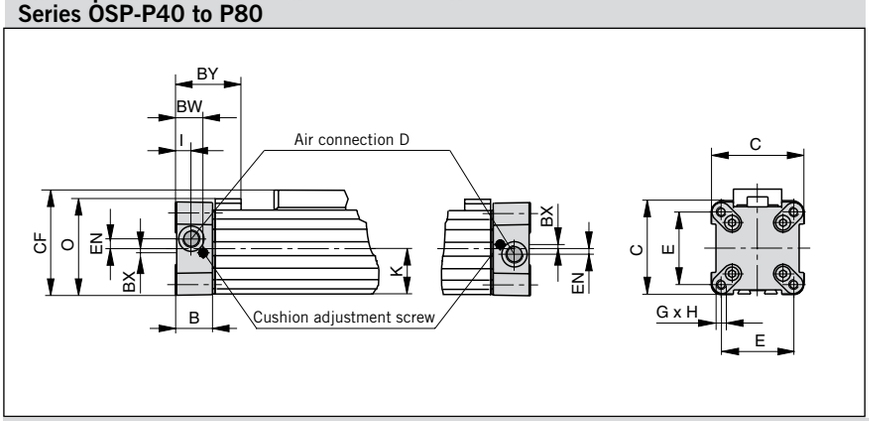
Please note:

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

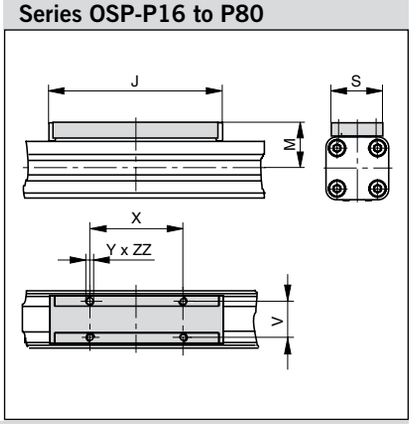
End Cap/Air Connection can be rotated 4 x 90°
Series OSP-P16 to P32



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



Carrier
Series OSP-P16 to P80



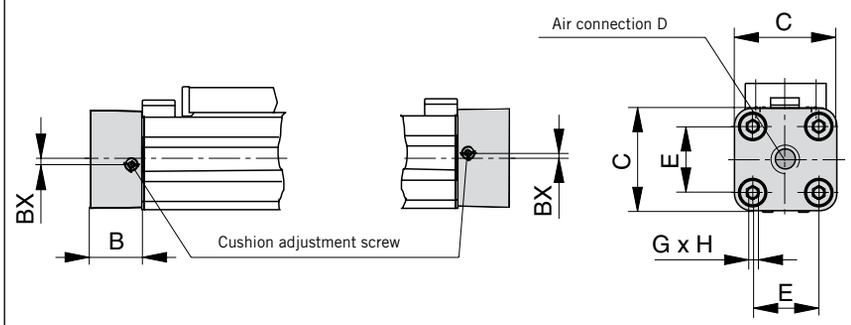
Dimension Table (mm)

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

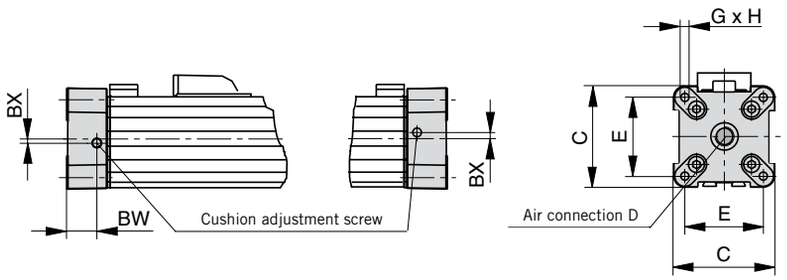
Air Connection on the End-face

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

Series OSP-P16 to P32



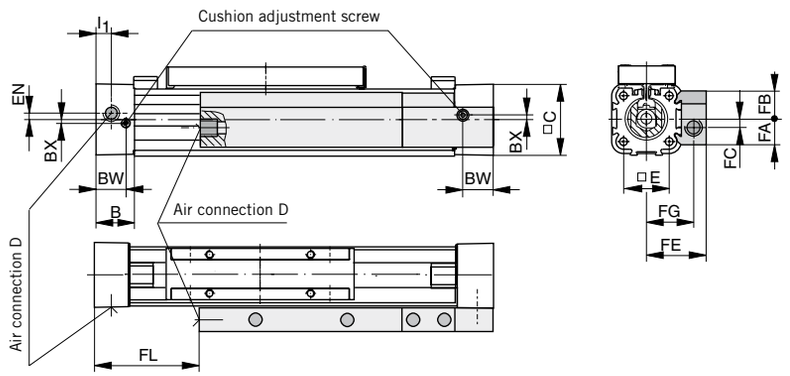
Series OSP-P40 to P80



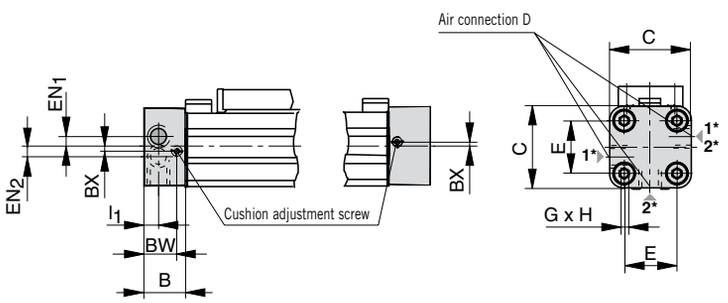
Dimension Table (mm)

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

Series OSP-P16

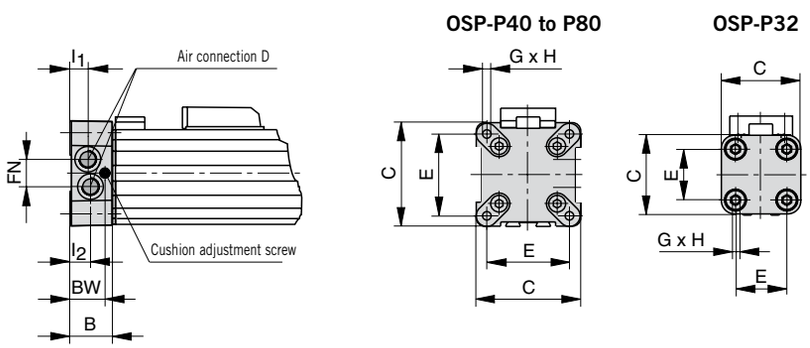


Series OSP-P25



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

Series OSP-P32 to P80



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.

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.

Dimension Table (mm)

Cylinder Series	B	C	D	E	G	H	l_1	l_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

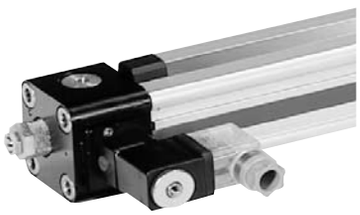
Integrated 3/2 Way Valves VOE

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.

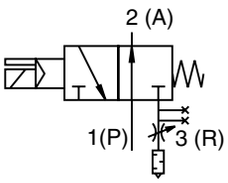
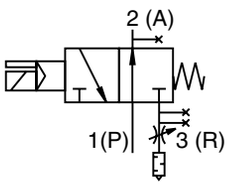
Integrated 3/2 Way Valves VOE Series OSP-P25, P32, P40 and P50

Characteristics:

- Complete compact solution
- Various connection possibilities: Free choice of air connection with rotating end caps with VOE valves, Air connection can be rotated 4 x 90°, Solenoid can be rotated 4 x 90°, Pilot valve can be rotated 180°
- High piston velocities can be achieved with max. 3 exhaust ports
- Minimal installation requirements
- Requires just one air connection per valve
- Optimal control of the OSP-P cylinder
- Excellent positioning characteristics
- Integrated operation indicator
- Integrated exhaust throttle valve
- Manual override - indexed
- Adjustable end cushioning
- Easily retrofitted – please note the increase in the overall length of the cylinder!

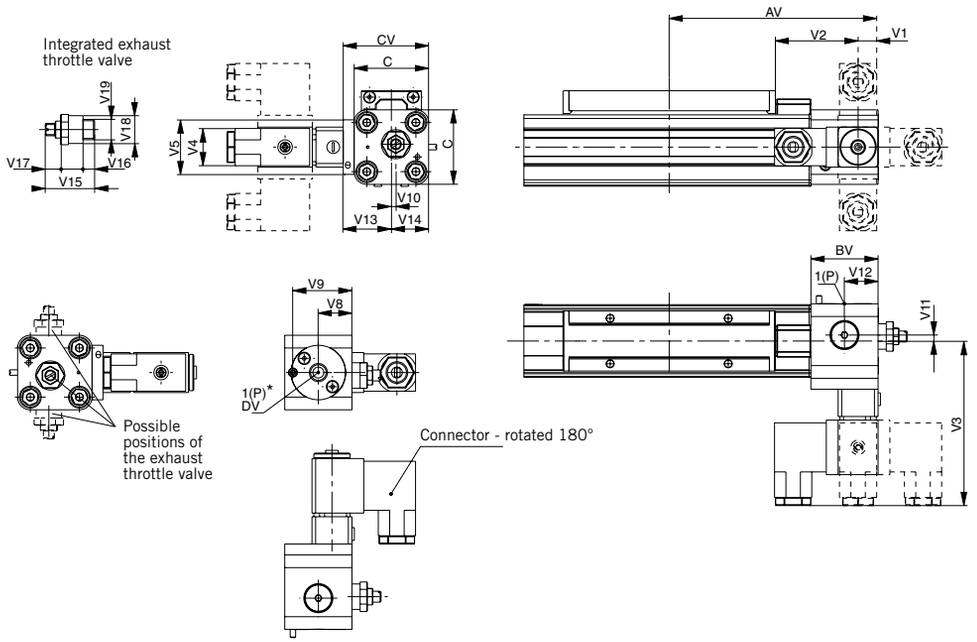


Characteristics 3/2 Way Valves VOE

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

* other temperature ranges on request

Dimensions VOE Valves OSP-P25 and P32

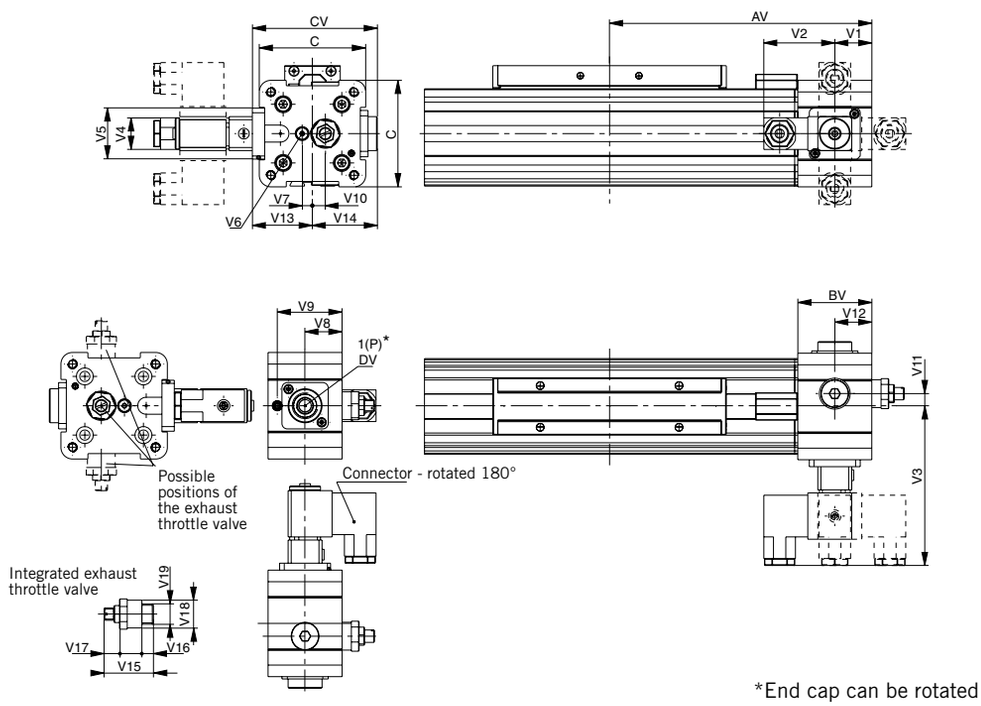


* End cap can be rotated 4x90°

Dimension Table (mm)

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

Dimensions VOE Valves OSP-P40 and P50



*End cap can be rotated 4x90°

Dimension Table (mm)

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

Order Instructions – Basic Cylinder

Basic Cylinder

OSP-P	25 –	0	0	0	0	0 –	01000

Piston Diameter

10 = 10 mm	40 = 40 mm
16 = 16 mm	50 = 50 mm
25 = 25 mm	63 = 63 mm
32 = 32 mm	80 = 80 mm

Piston Mounting

0 = Standard
1 = Tandem

Air Connections

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

Seals

0 = Standard (NBR)
1 = Viton ®

Stroke Length

In mm (5 digits)

Screws

0 = Standard (galvanized steel)
1 = Stainless steel

Grease Lubrication

0 = Standard
1 = Slow [1)]

[1)] Slow speed lubrication in combination with Viton® seals on demand.

Accessories - please order separately

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

Rodless Pneumatic Cylinder

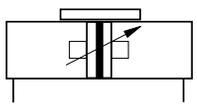
Ø 50-80 mm

OSP
ORIGA SYSTEM PLUS

Long-Stroke Cylinder

for strokes up to 41 m

Series OSP-P..LS



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

Special Versions:
- Stainless steel screws
- Slow speed lubrication
- Viton® seals

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

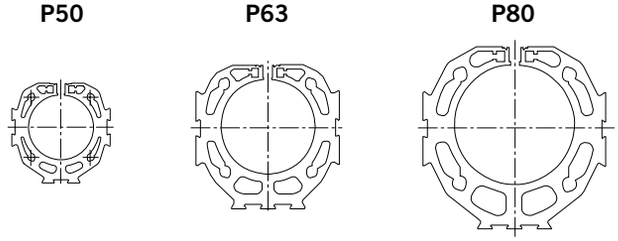
Characteristics — Pressures quoted as gauge pressure

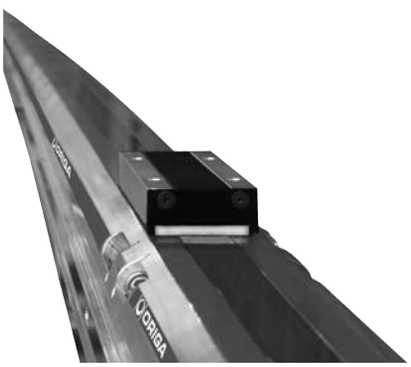
Characteristics		Symbol	Unit	Description
General Features				
Type				Rodless cylinder
Series				OSP-P
System				Double-acting, with cushioning, position sensing capability
Mounting				See drawings
Air Connection				Threaded
Ambient temperature range		T_{min} T_{max}	°C °C	+10 +40 — Other temperature ranges on request
Weight (mass)			kg	See table below
Installation				vertical, horizontal (piston at top or at bottom)
Medium				Filtered, unlubricated compressed air (other media on request)
Lubrication				Permanent grease lubrication (additional oil mist lubrication not required) 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

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





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

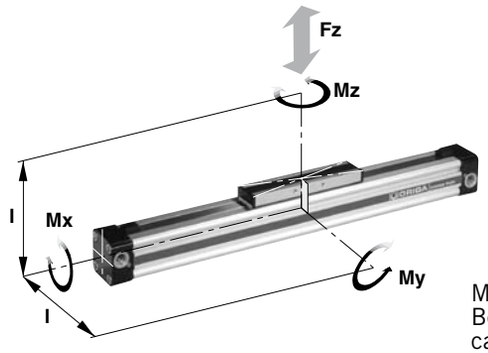
Loads, Forces and Moments

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 ≤ 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.

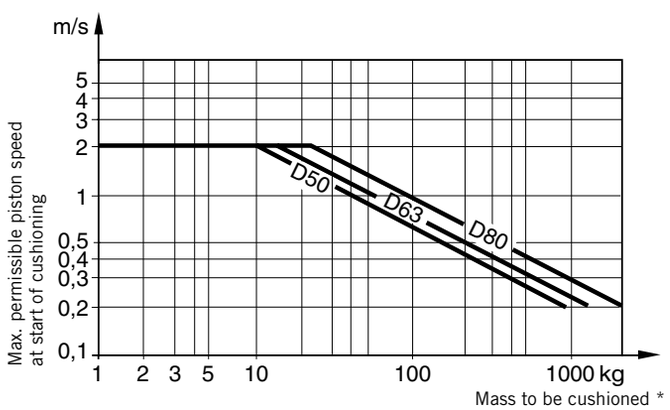


M = F ·l
Bending moments are calculated from the centre of the linear actuator

Cylinder-Series [mm Ø]	Theoretical Action Force at 6 bar [N]	effektive Action Force F_A at 6 bar [N]	max. Moments Mx [Nm]	My [Nm]	Mz [Nm]	max. Load F [N]	Cushion Length [mm]
OSP-P50LS	1178	1000	10	115	15	1200	30
OSP-P63LS	1870	1550	12	200	24	1650	32
OSP-P80LS	3016	2600	24	360	48	2400	39

Cushioning Diagram

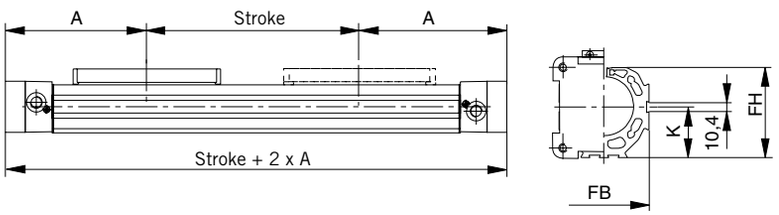
Work out your expected moving mass and read off the maximum permissible speed at start of cushioning. Alternatively, take your desired speed and expected mass and find the cylinder size required.
Please note that piston speed at start of cushioning is typically ca. 50 % higher than the average speed,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

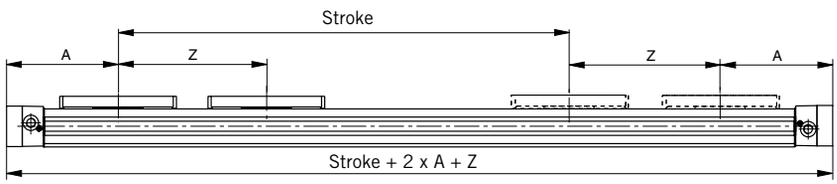


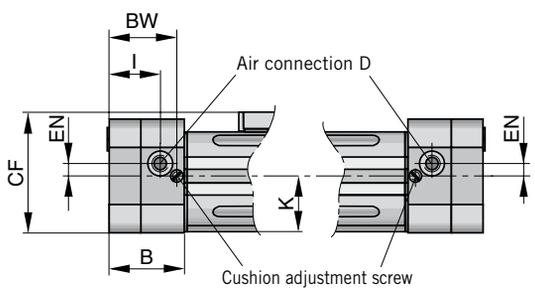
* For cylinders with brakes, please be sure to take the mass of the brake housing into account.

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

Dimensions of Basic Cylinder OSP - P50 LS to P80LS







Note: End caps are not turnable.

Cylinder
Stroke and Dead Length A

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

Tandem Cylinder

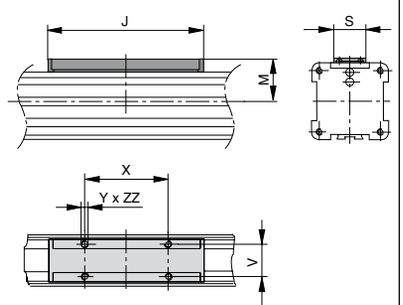
Two pistons are fitted: dimension "Z" is optional. (Please note minimum distance "Zmin").

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

Please note:

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

Carrier
Series OSP-P50LS to P80LS



Dimension Table (mm)

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

Linear Drive Accessories

Ø 50-80 mm

Mid-Section Support E1, E1L

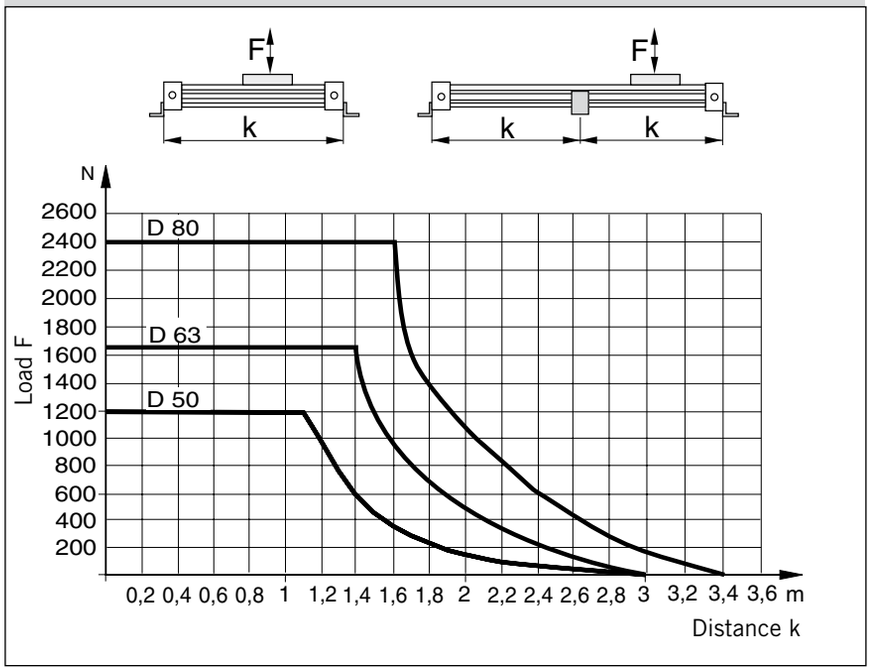
For linear drive
• Series OSP-P..LS

Note on Types E1 and E1L (P50LS – P80LS):
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the centre of the actuator is different.
For mounting the Long-Stroke cylinder, a mid-section support Type E1 (fixed support) is required. Depending on the stroke length and the load, additional E1L supports (movable supports) may be required.

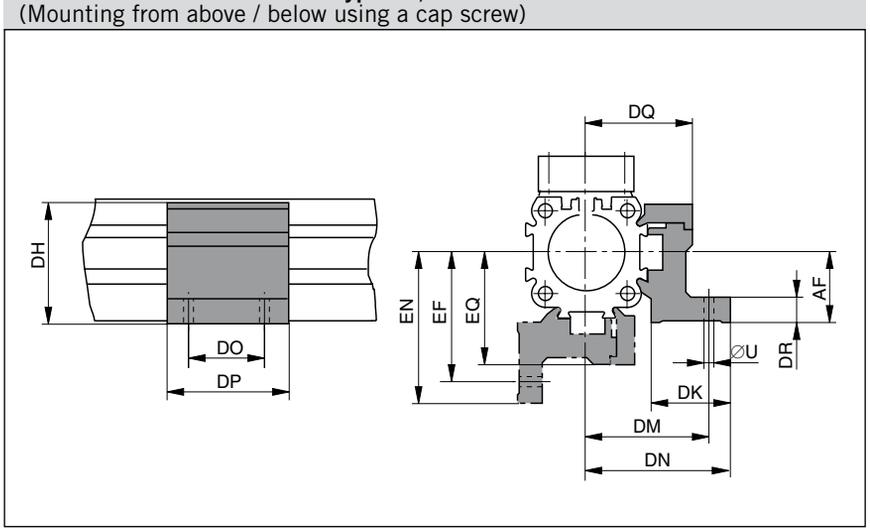
For permissible support spacings see diagram.

Stainless steel version on request.

Permissible Support Spacings: OSP - P50LS to P80LS



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



Dimension Table (mm) Series OSP-P50LS to P80LS

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

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

Order Instructions – Long-Stroke Cylinder

Note:

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

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

Accessories - please order separately

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

Clean Room Cylinder

ø 16 – 32 mm

Rodless Cylinder

certified to DIN EN ISO 14644-1

OSP
ORIGA SYSTEM PLUS

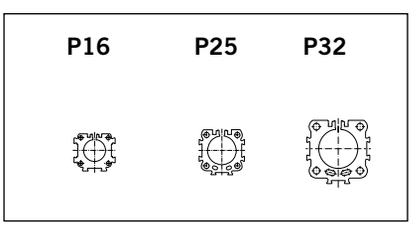
Characteristics				Pressure quoted as gauge pressure
Characteristics		Symbol	Unit	Description
General Features				
Type				Rodless Cylinder
Series				OSP-P
System				Double-acting, with cushioning, position sensing capability
Mounting				see drawings
Air connection				Threaded
Ambient and medium temperature range		T_{min} T_{max}	°C °C	-10 – other temperature ranges +80 on request
Weight (Mass)			kg	See table below
Installation				In any positon
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

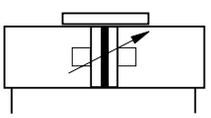
Size Comparison



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

Special Versions:
- Slow speed lubrication
- Viton® seals

Series OSP-P..

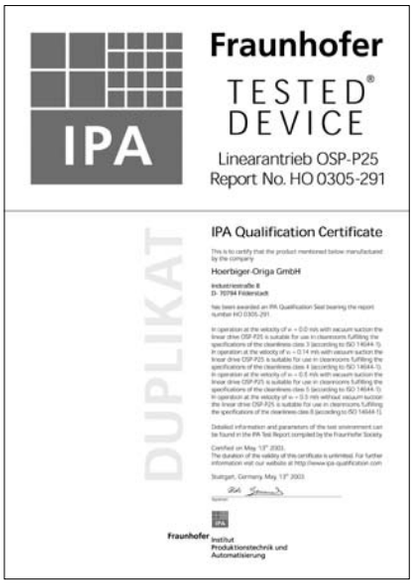


Features:
- Clean room classification
  ISO Class 4 at v_m = 0.14 m/s
  ISO Class 5 at v_m = 0.5 m/s
- suitable for smooth slow speed operation up to v_{min} = 0.005 m/s
- optional stroke length up to 1200 mm
  (longer strokes on request)
- Low maintenance
- Compact design with equal force and velocity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

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

Certification

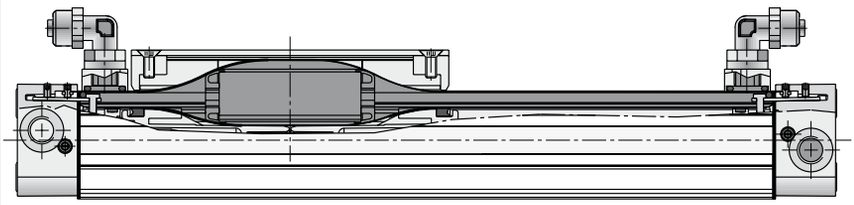
Based on the Parker Origa rodless cylinder, proven in world wide markets, Parker Origa now offers the only rodless cylinder on the market with a certification from IPA Institute for the cleanroom specification according to DIN EN ISO 14644-1.



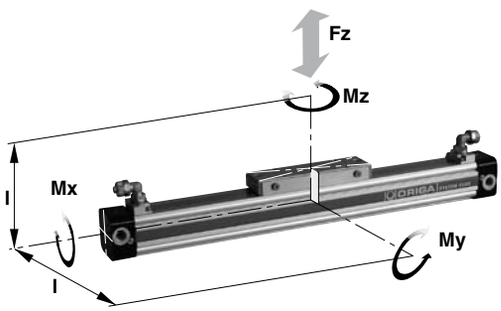
Function:

The clean room cylinders of the ORIGA SYSTEM PLUS (OSP-P) combines the efficiency of the Parker 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 m^3/h is required.

Function Diagram



Loads, Forces and Moments

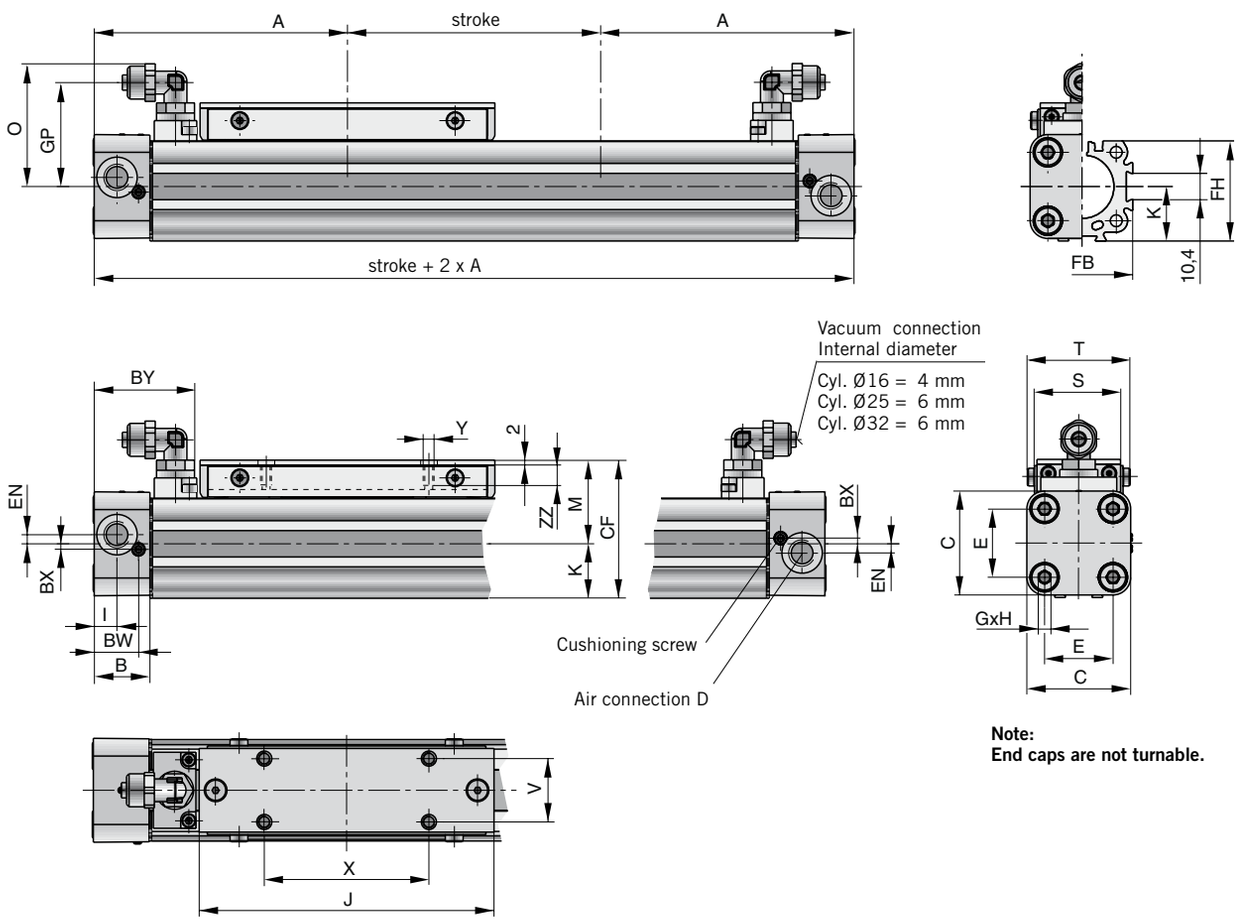


Mx = F • l
My = F • l
Mz = F • l

Cylinder Series [mmØ]	Effective Force at 6 bar [N]	Max. Moment Mx [Nm]	My [Nm]	Mz [Nm]	Max. Load Fz [N]	Cushion length [mm]
OSP-P16	78	0.45	4	0.5	120	11
OSP-P25	250	1.5	15	3.0	300	17
OSP-P32	420	3.0	30	5.0	450	20

Load and moment data are based on speeds v ≤ 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)



Note:
End caps are not turnable.

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

OSP-P	25	-	4	7	0	0	1	-	01000

Piston Diameter

16 = 16 mm
25 = 25 mm
32 = 32 mm

Piston Mounting

4 = Clean room

Air Connection

7 = Clean room end cap

Seals

0 = Standard (NBR)
1 = Viton®

Stroke

Input (five digits) in mm
max. stroke lengths 1200 mm,
longer strokes on request

Screws

1 = Stainless Steel

Grease Lubrication

0 = Standard
1 = Slow speed lubrication [1)]

[1)] The combination „Slow speed lubrication“ and „Viton® sealings“ are available on request

Accessories – please order separately

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

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".

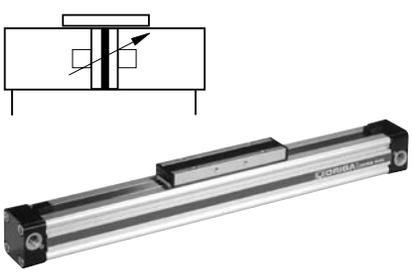
Components for EX-Areas

OSP
ORIGA SYSTEM PLUS

Rodless Cylinder ø 10 – 80 mm

Basic Cylinder

Series: OSP-P ....ATEX



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, unlibricated 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.

Plain Bearing Guide SLIDELINE ø 16 – 80 mm

Series: SL -..ATEX

Equipment Group II Categorie 2GD

Rodless cylinder: Ⓔx 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

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

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

OSP-P	25	–	0	0	0	0	0	–	01000	ATEX

Piston diameter

10 = 10 mm	40 = 40 mm
16 = 16 mm	50 = 50 mm
25 = 25 mm	63 = 63 mm
32 = 32 mm	80 = 80 mm

Piston Mounting

0 = Standard
1 = Tandem

Air Connection

0 = Standard
1 = On the end-face
2 = both at one end

Dichtungen

0 = Standard (NBR)
1 = Viton ®

Stroke length

in mm (5 digits)

Screws

0 = Standard (galvanized steel)
1 = Stainless steel

Grease Lubrication

0 = Standard
1 = Slow [1)]

[1)] Slow speed lubrication in combination with Viton® seals on demand

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	**P-1.45.002E-2**
End Cap Mounting for OSP-P Basic Cylinder	**P-1.45.003E**
End Cap Mounting for OSP-P Basic Cylinder with SLIDELINE	**P-1.45.005E-2**
Mid-Section Support for OSP-P Basic Cylinder	**P-1.45.004E**
Mid-Section Support for OSP-P Basic Cylinder with SLIDELINE	**P-1.45.005E-3**
Inversion Mounting	**P-1.45.006E**
Adaptor Profile	**P-1.45.007E**
T-Slot Profile	**P-1.45.008E**
Adaptor Profile	**P-1.45.009E**
Magnetic Switches ATEX-Version	**P-1.45.105E**
Cable Cover	**P-1.45.102E**

Rodless Cylinder Ø 40 mm

for synchronized bi-parting movements

Type OSP-P40-SL-BP

OSP ORIGA SYSTEM PLUS

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

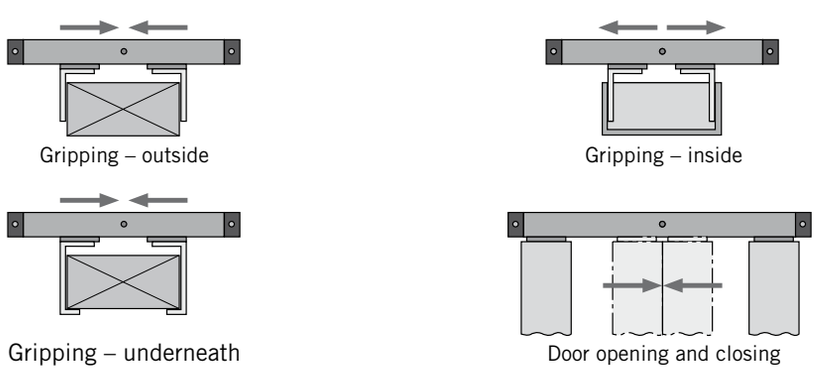
Applications:

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

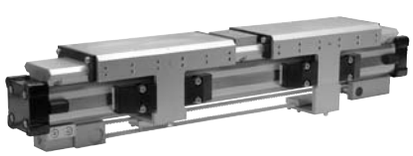
Characteristics

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, unlubricated 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			

Applications



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



P-A1P753E00BAG00X

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

Function:

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

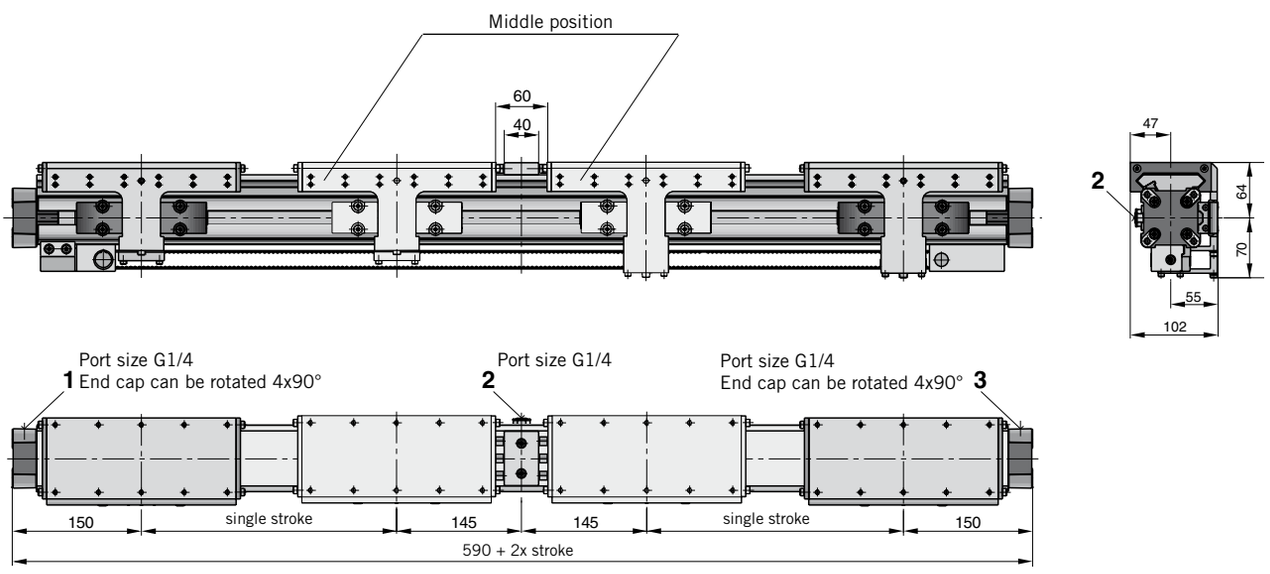
Two pistons in the cylinder bore are connected via yokes and carriers to the SLIDELINE guide carriers, which handle the forces and moments generated.

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

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

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

Dimensions (mm)



Air connections:

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

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

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

Order Instructions

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

Note: Order stroke = 2x single stroke