



Pneumatic Linear Drives OSP-L

ORIGA SYSTEM PLUS

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



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ENGINEERING YOUR SUCCESS.

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Introduction – OSP Concept

<p>Basic Linear Drive Standard Version</p> <ul style="list-style-type: none"> ● Series OSP-L 	
<p>Air Connection on the End-face or both at One End</p> <ul style="list-style-type: none"> ● Series OSP-L 	
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<p>End Cap Mounting</p> <ul style="list-style-type: none"> ● Series OSP-L 	
<p>Mid-Section Support</p> <ul style="list-style-type: none"> ● Series OSP-L 	
<p>Inversion Mounting</p> <ul style="list-style-type: none"> ● Series OSP-L 	

<p>Duplex Connection</p> <ul style="list-style-type: none"> ● Series OSP-L 	
<p>Multiplex Connection</p> <ul style="list-style-type: none"> ● Series OSP-L 	
<p>Linear Guides – SLIDELINE</p> <ul style="list-style-type: none"> ● Series OSP-L 	
<p>Linear Guides – STARLINE</p> <ul style="list-style-type: none"> ● Series OSP-L 	
<p>Magnetic Switches</p> <ul style="list-style-type: none"> ● Series OSP-L 	
<p>Variable Stop VS</p> <ul style="list-style-type: none"> ● Series OSP-L with Linear Guide STL 	

Linear Drives	OSP-L25	OSP-L32	OSP-L40	OSP-L50	OSP-L63
Theoretical force at 6bar [N]	295	483	754	1178	1870
Effective force at 6bar [N]	250	420	640	1000	1550
Max. Velocity v [m/s]	4	4	4	4	4
Magnetic piston (three sides)	☐	☐	☐	☐	☐
Lubrication - Prelubricated	☐	☐	☐	☐	☐
Multiple air ports (4 x 90°)	☐	☐	☐	☐	☐
Both Air Connections at End-face	○	○	○	○	○
Air Connection on the End-face	○	○	○	○	○
Cushioning	☐	☐	☐	☐	☐
Cushioning length[mm]	17	20	27	30	32
Stroke length [mm] ▲	1 - 6000	1 - 6000	1 - 6000	1 - 6000	1 - 6000
Pressure range pmax [bar]	8.0	8.0	8.0	8.0	8.0
Temperature range [°C] *	-20 – + 80	-20 – + 80	-20 – + 80	-20 – + 80	-20 – + 80
Stainless steel parts	○	○	○	○	○
Clevis Mounting	○	○	○	○	○
Duplex Connection / Multiplex Connection	○	○	○	○	on request
Tandem piston	○	○	○	○	○
Basic Cylinder					
F [N]	300	450	750	1200	1650
Mx [Nm]	1.5	3	6	10	12
My [Nm]	15	30	60	115	200
Mz [Nm]	3	5	8	15	24
Slideline					
F [N]	675	925	1500	2000	2500
Mx [Nm]	14	29	50	77	120
My [Nm]	34	60	110	180	260
Mz [Nm]	34	60	110	180	260
Starline					
F [N]	3100	3100	4000-7500	4000-7500	×
Mx [Nm]	50	62	150	210	×
My [Nm]	110	160	400	580	×
Mz [Nm]	110	160	400	580	×
– variable Stop	○	○	○	○	×
Magnetic Switches					
Standard Version	○	○	○	○	○
T-Nut Version	○	○	○	○	○
Integrated valves 3/2 WV NO VOE	○	○	○	○	on request
Mountings					
End Cap Mounting / Mid-Section Support	○	○	○	○	○
Inversion Mounting	○	○	○	○	○
Adaptor Profile / T-Nut Profile	○	○	○	○	○/×

☐ = Standard version

○ = Option

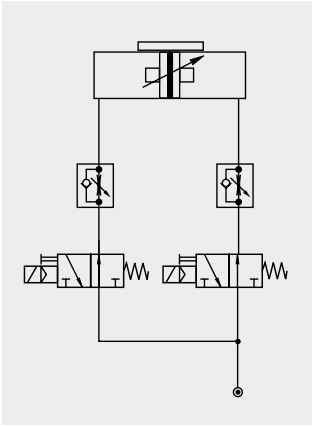
▲ = longer strokes on request

× = not applicable

* = other temperature ranges on request

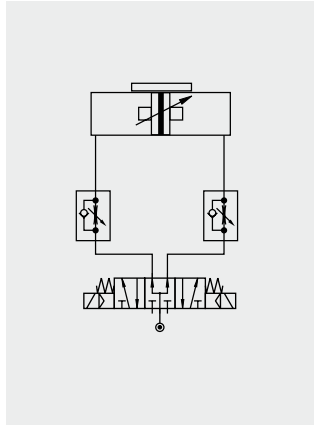
Examples

CONTROL EXAMPLES FOR OSP-L



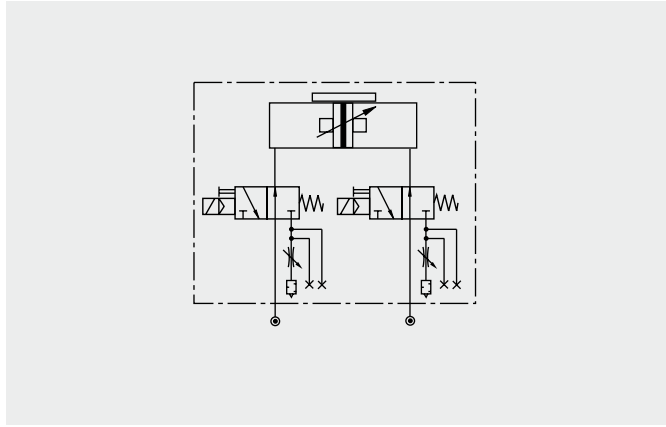
Circuit diagram for end of stroke application. Intermediate positioning is also possible.

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



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

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

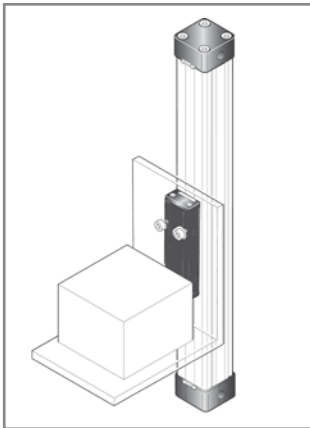


The optional integrated VOE Valves offer optimal control, and allow accurate

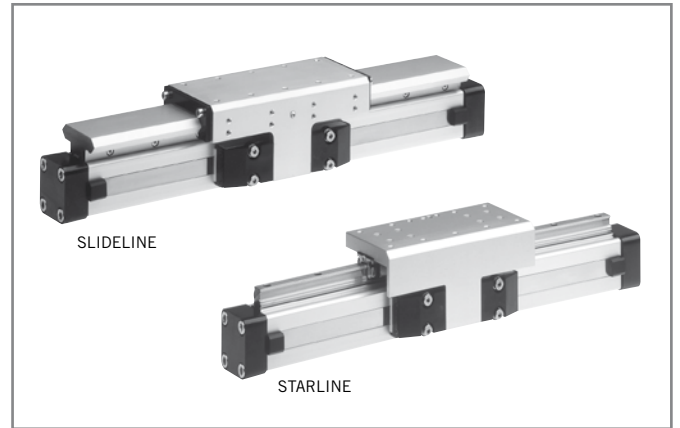
positioning of intermediate positions and the lowest possible speeds.

OSP-L APPLICATION EXAMPLES

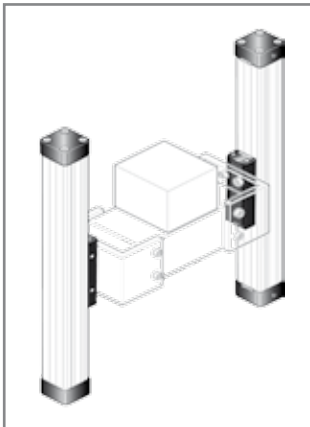
ORIGA SYSTEM PLUS – rodless linear drives offer maximum flexibility for any application.



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

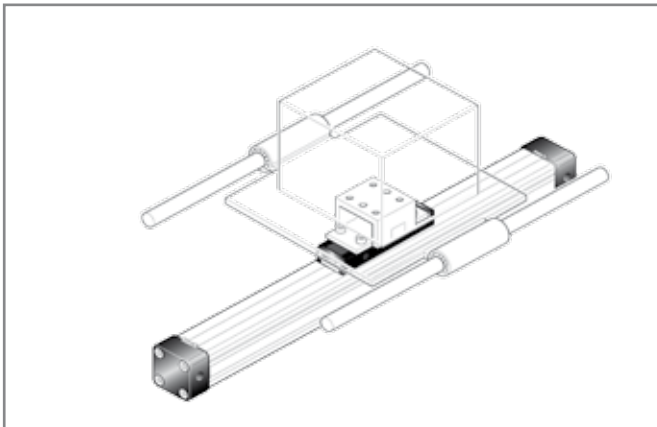


Integrated guides offer optimal guidance for applications requiring high performance, easy assembly and maintenance free operation.

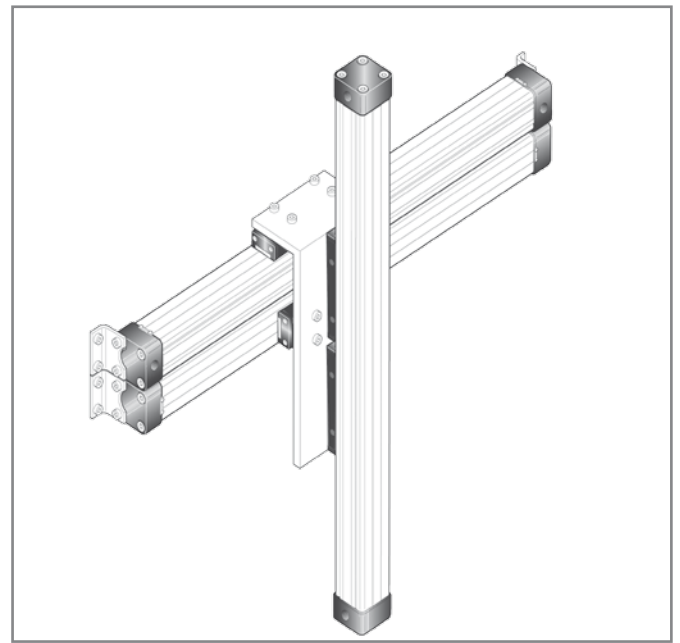


The mechanical design of the OSP-L allows synchronised movement of two cylinders.

Optimal system performance by combining multi-axis cylinder combinations.

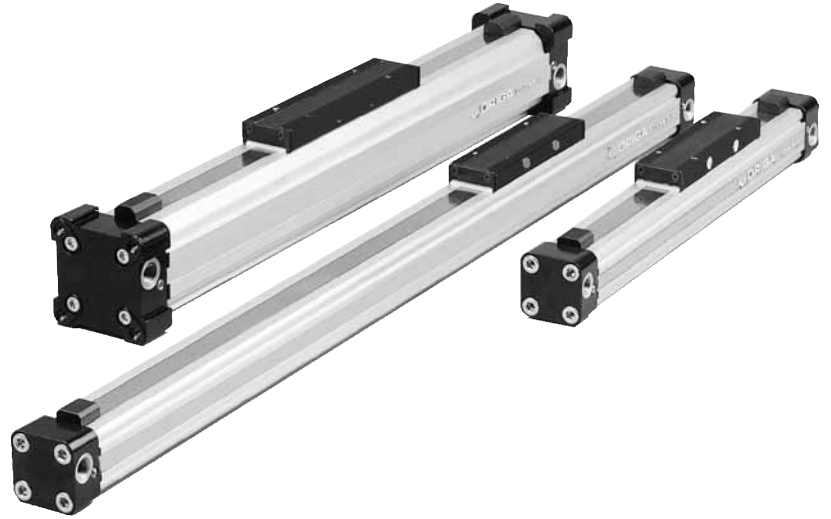


When using external guides, the clevis mounting is used to compensate for deviations in parallelism.



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

Rodless Pneumatic Cylinders Series OSP-L



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ORIGA SYSTEM PLUS

– INNOVATION FROM A PROVEN DESIGN

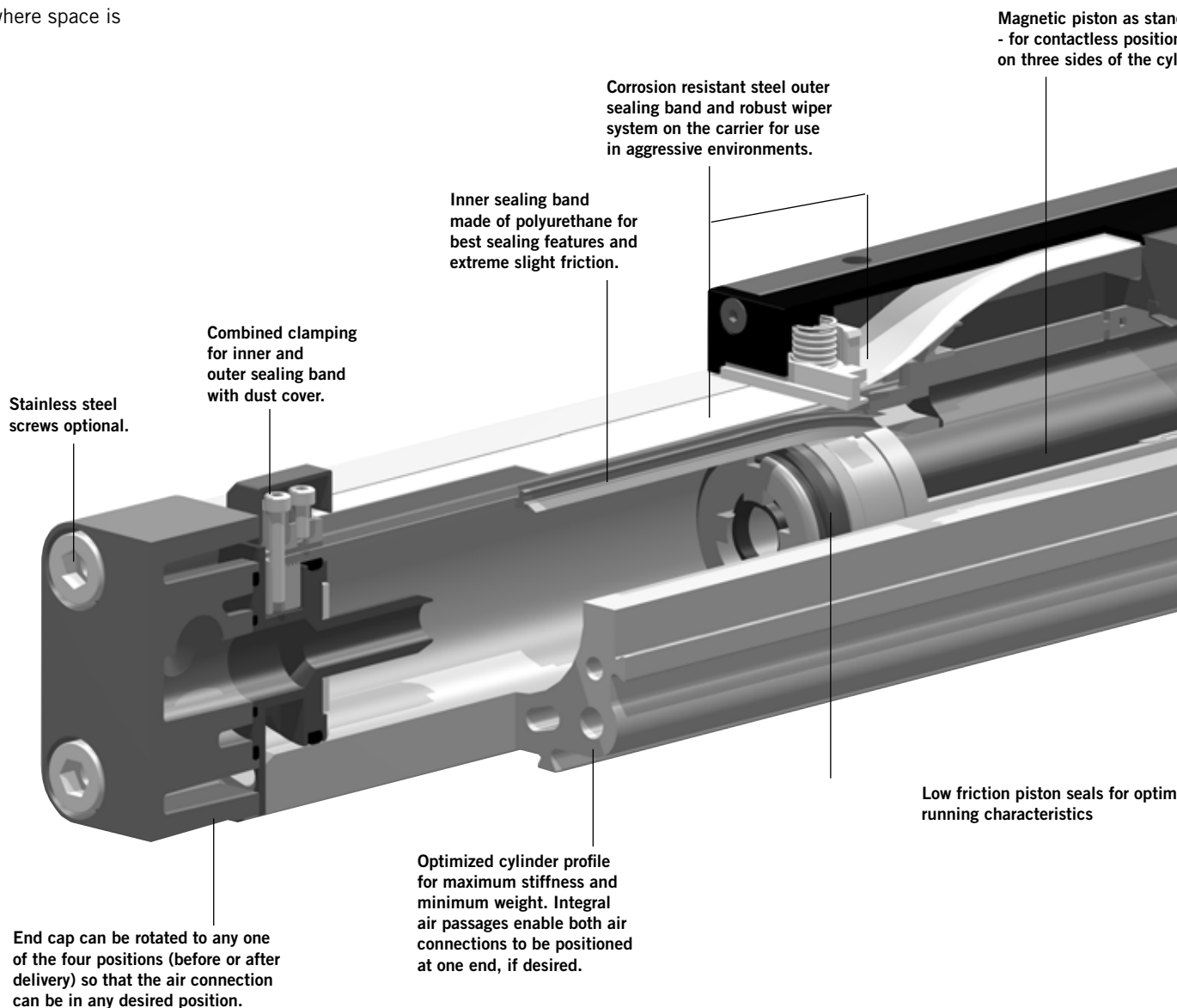
The newly developed product line OSP-L can be simply and neatly integrated into any machine layout.

MOUNTING RAILS ON 3 SIDES

Mounting rails on 3 sides of the cylinder enable modular components such as linear guides, valves, magnetic switches etc. to be fitted to the cylinder itself.

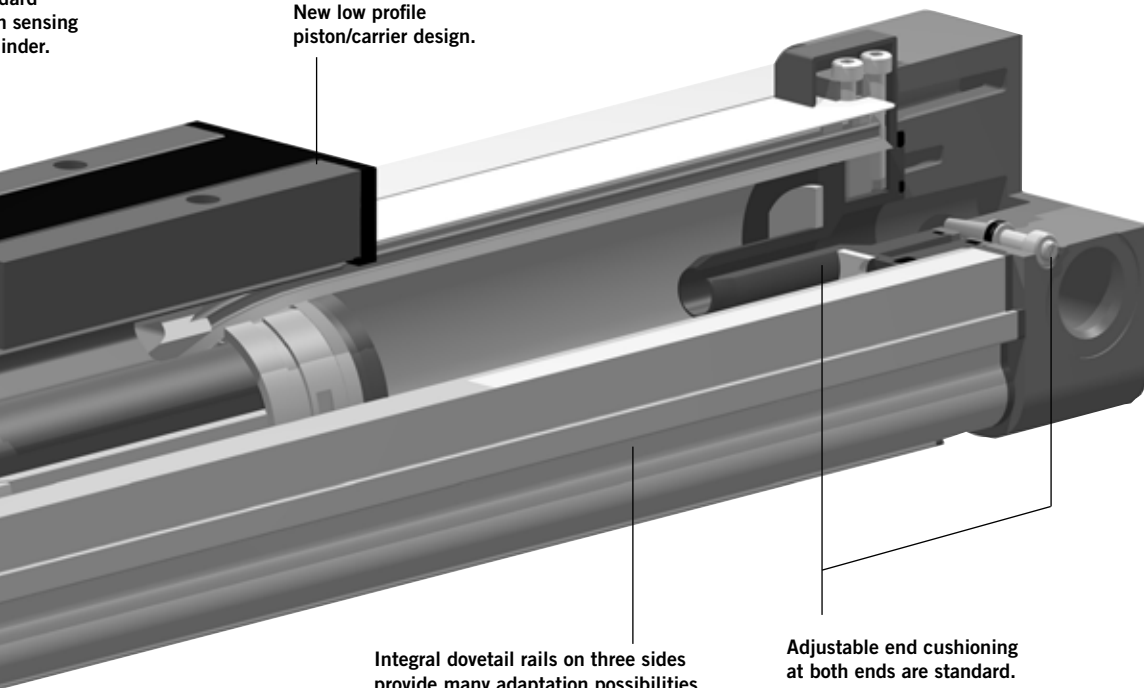
This solves many installation problems, especially where space is limited.

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



Standard
position sensing
cylinder.

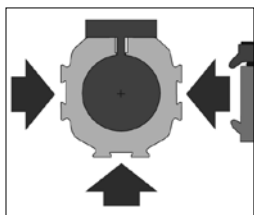
New low profile
piston/carrier design.



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

Adjustable end cushioning
at both ends are standard.

Modular system components
are simply clamped on.



ized

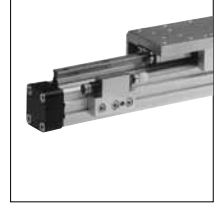
SLIDELINE
Combination with
linear guides
provides for heavier
loads.



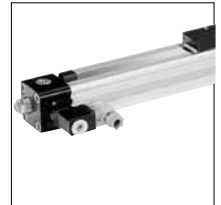
STARLINE
Recirculating ball
bearing guide for
very high loads and
precision.



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



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



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



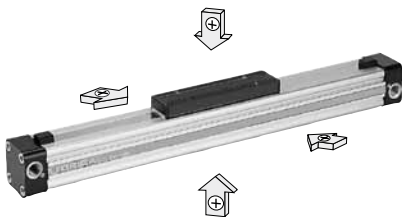
OPTIONS AND ACCESSORIES FOR SYSTEM VERSATILITY

SERIES OSP-L

STANDARD VERSIONS OSP-L25 to 63

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.



BASIC CYLINDER OPTIONS

The special design of the linear drive enables all emissions to be led away.

STAINLESS VERSION

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



END-FACE AIR CONNECTION

To solve special installation problems.



BOTH AIR CONNECTIONS AT ONE END

For simplified tubing connections and space saving.



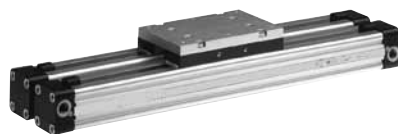
INTEGRATED VOE VALVES

The complete compact solution for optimal cylinder control.



DUPLEX CONNECTION

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



MULTIPLEX CONNECTION

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



ACCESSORIES

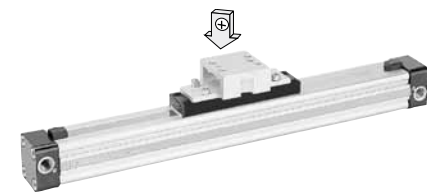
MAGNETIC SWITCHES TYPE RS, ES, RST, EST

For electrical sensing of end and intermediate piston positions.



CLEVIS MOUNTING

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



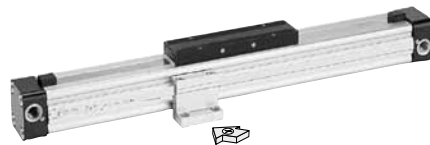
END CAP MOUNTING

For end-mounting of the cylinder.



MID-SECTION SUPPORT

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



INVERSION MOUNTING







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



The right to introduce technical modifications is reserved

Characteristics		Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description
General Features			
Type			Rodless cylinder
Series			OSP-L
System			Double-acting, with cushioning, position sensing capability
Mounting			See drawings
Air Connection			Threaded
Ambient temperature range	T _{min} T _{max}	°C °C	-20 +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)
Material	Cylinder Profile		Anodized aluminium
	Carrier (piston)		Anodized aluminium
	End caps		Aluminium, lacquered
	Sealing bands		Corrosion resistant steel (outerband) Polyurethane (inner band)
	Seals		Polyurethane, NBR
	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-L25	0.65	0.197
OSP-L32	1.44	0.354
OSP-L40	1.95	0.415
OSP-L50	3.53	0.566
OSP-L63	6.41	0.925

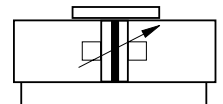
Size Comparison					
L25	L32	L40	L50	L63	
					

Rodless Pneumatic Cylinder

∅ 25-63 mm

OSP
ORIGA
SYSTEM
PLUS

Series OSP-L..



Standard Versions:

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

Special Versions:

- Stainless steel screws
- Both air connections on one end
- Air connection on the end-face
- Integrated Valves VOE



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

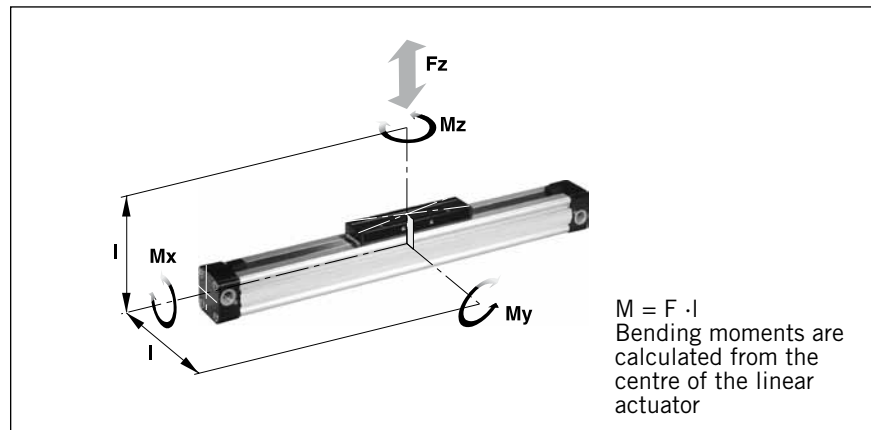
Loads, Forces and Moments

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.

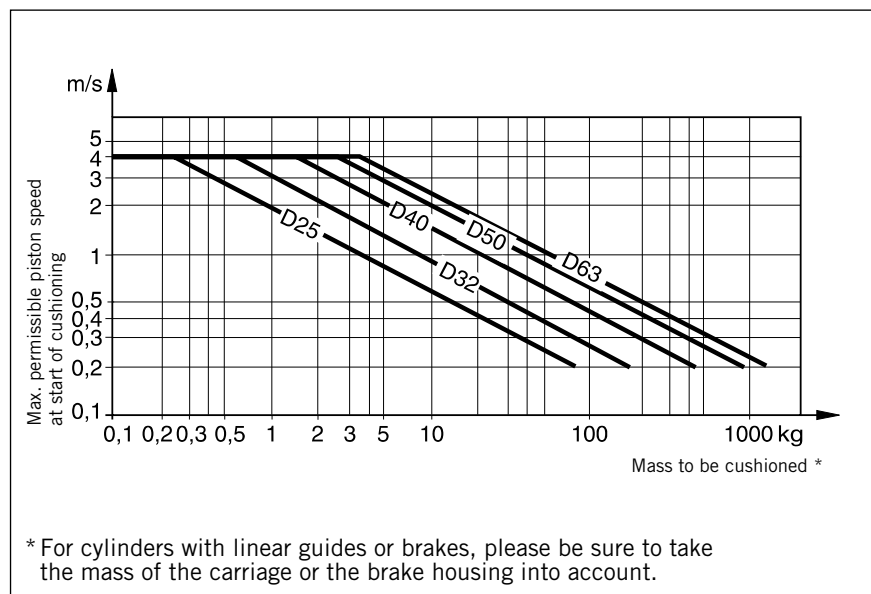


Cylinder-Series [mm Ø]	Theoretical Action Force at 6 bar [N]	effektive Action Force F_A at 6 bar [N]	max. Moments			max. Load F [N]	Cushion Length [mm]
			Mx [Nm]	My [Nm]	Mz [Nm]		
OSP-L25	295	250	1.5	15	3	300	17
OSP-L32	483	420	3	30	5	450	20
OSP-L40	754	640	6	60	8	750	27
OSP-L50	1178	1000	10	115	15	1200	30
OSP-L63	1870	1550	12	200	24	1650	32

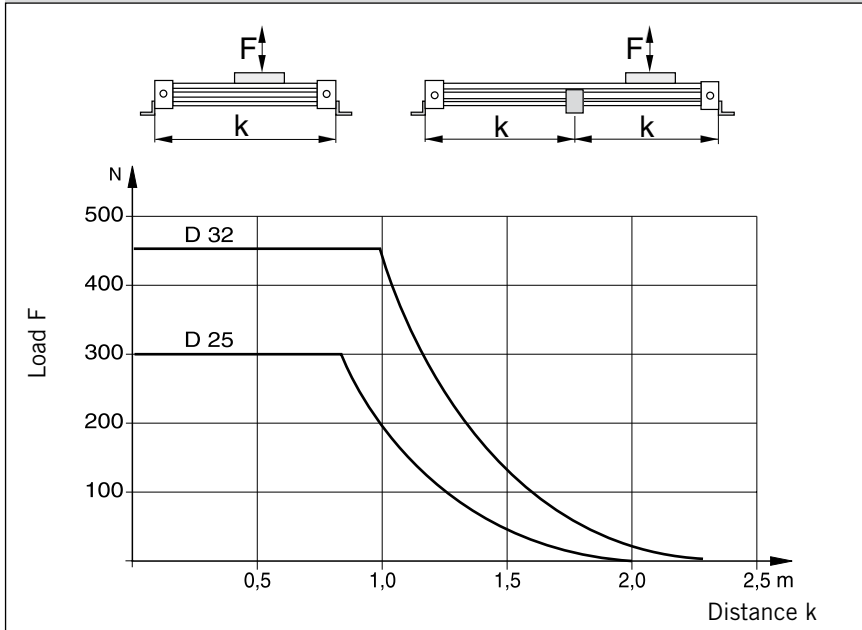
Cushioning Diagram

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



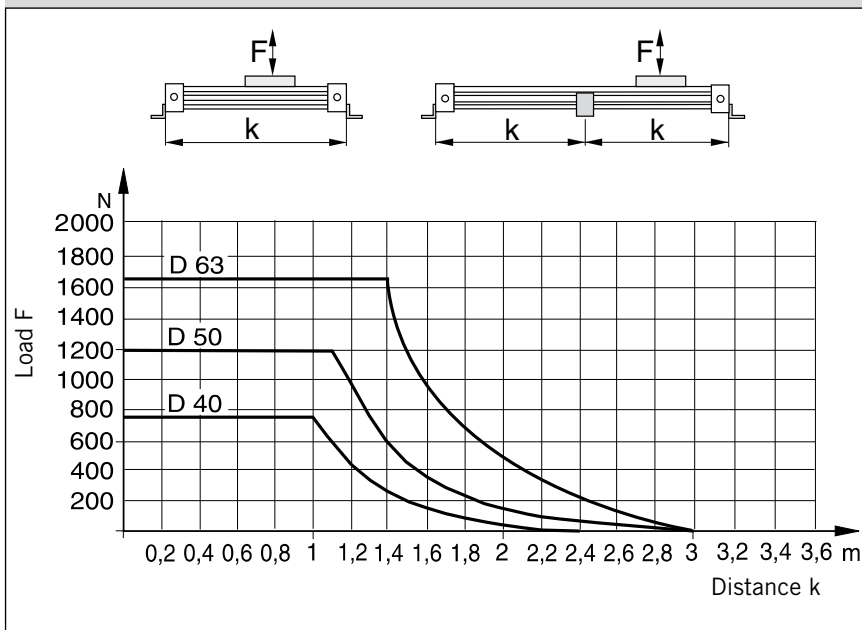
Permissible Support Spacings: OSP - L25 - L32



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.

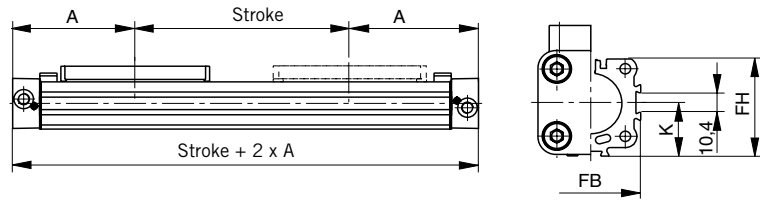
Permissible Support Spacings: OSP - L40 - L63



Cylinder Stroke and Dead Length A

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

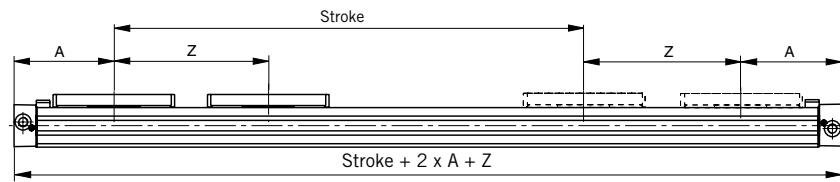
Dimensions of Basic Cylinder OSP - L25-L63



Tandem Cylinder

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

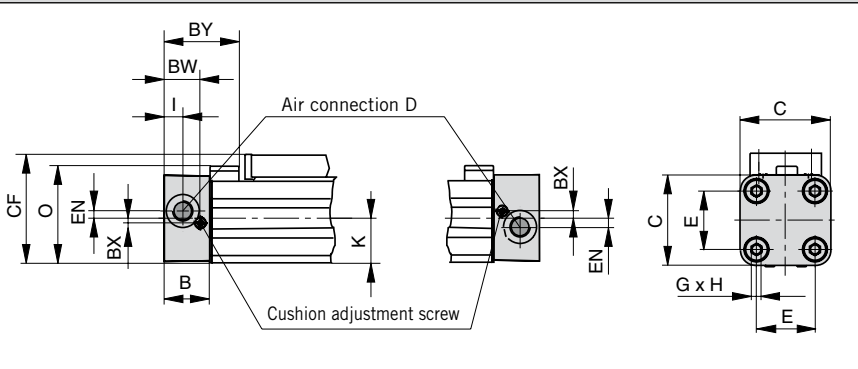
- Free choice of stroke length up to 6000 mm in 1 mm steps
- Longer strokes on request
- **Stroke length to order is stroke + dimension "Z"**



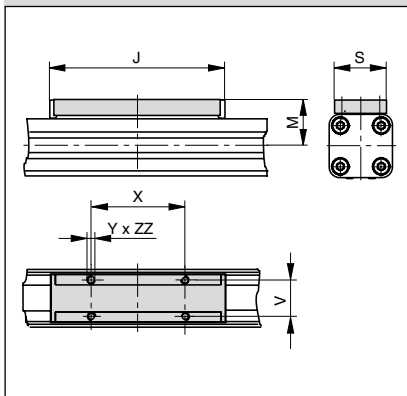
Please note:

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

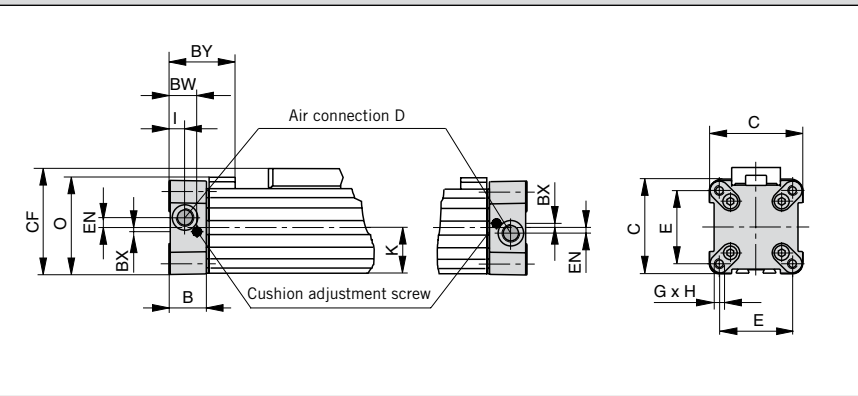
End Cap/Air Connection can be rotated 4 x 90° Series OSP-L25 to L32



Carrier Series OSP-L25 to L63



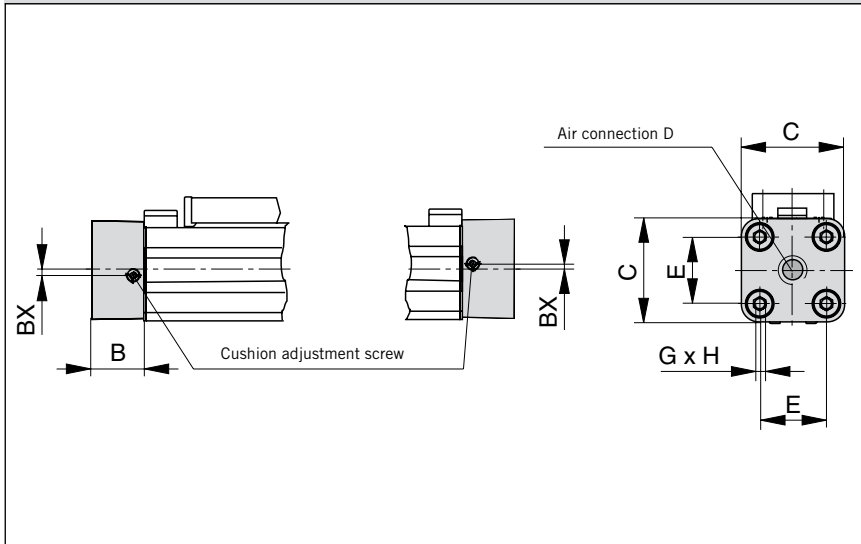
End Cap/Air Connection can be rotated 4 x 90° Series OSP-L40 to L63



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-L25	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-L32	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-L40	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-L50	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-L63	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	

Series OSP-L25 to L32

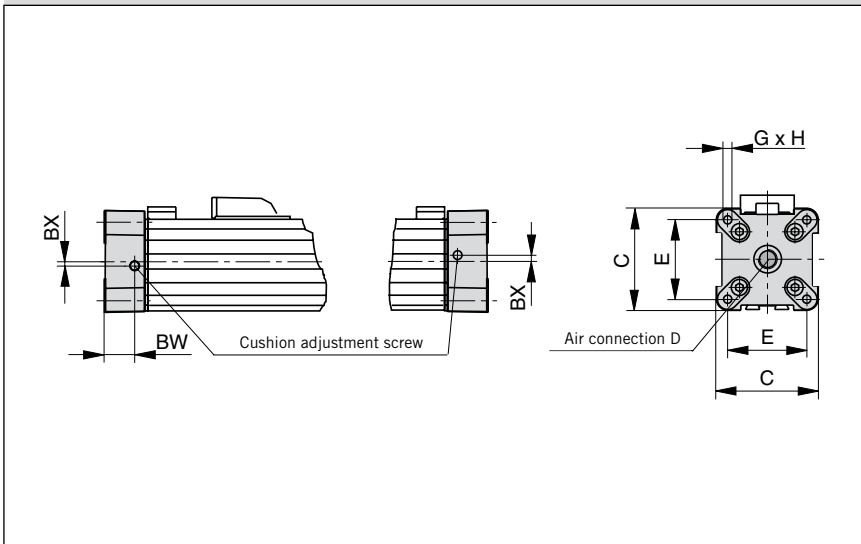


Air Connection on the End-face

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-L40 to L63



Dimension Table (mm)

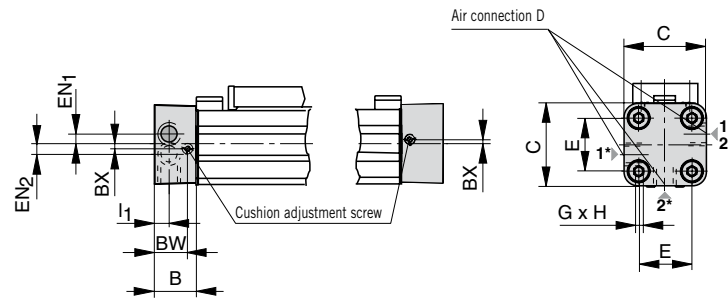
Cylinder Series	B	C	D	E	G	H	BX	BW
OSP-L25	22	41	G1/8	27	M5	15	2.2	17.5
OSP-L32	25.5	52	G1/4	36	M6	15	2.5	20.5
OSP-L40	28	69	G1/4	54	M6	15	3	21
OSP-L50	33	87	G1/4	70	M6	15	–	27
OSP-L63	38	106	G3/8	78	M8	21	–	30

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-L25 to L63).

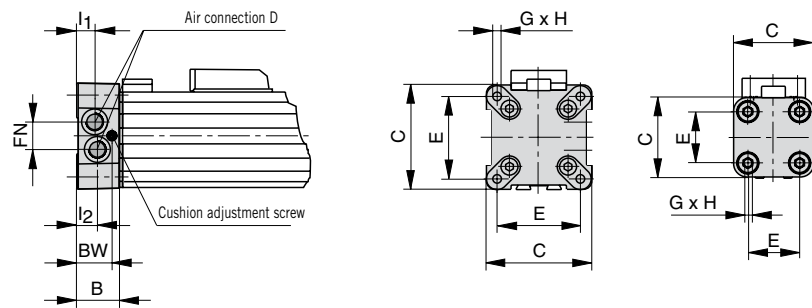


Series OSP-L25



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

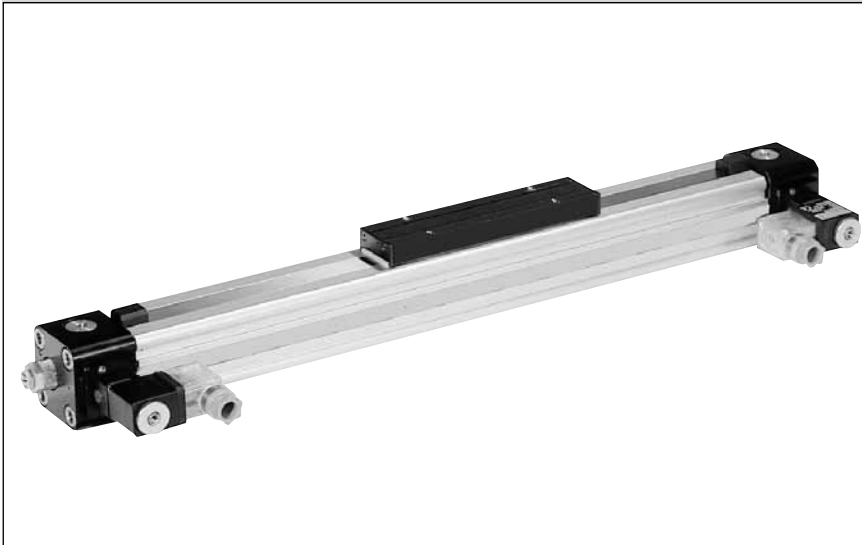
Series OSP-L32 to L63



Dimension Table (mm)

Cylinder Series	B	C	D	E	G	H	I ₁	I ₂	BX	BW	EN ₁	EN ₂	FN
OSP-L25	22	41	G1/8	27	M5	15	9	-	2.2	17.5	3.6	3.9	-
OSP-L32	25.5	52	G1/8	36	M6	15	12.2	10.5	-	20.5	-	-	15.2
OSP-L40	28	69	G1/8	54	M6	15	12	12	-	21	-	-	17
OSP-L50	33	87	G1/4	70	M6	15	14.5	14.5	-	27	-	-	22
OSP-L63	38	106	G3/8	78	M8	21	16.5	13.5	-	30	-	-	25

Integrated 3/2 Way Valves VOE Series OSP-L25, L32, L40 and L50



Integrated 3/2 Way Valves VOE

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

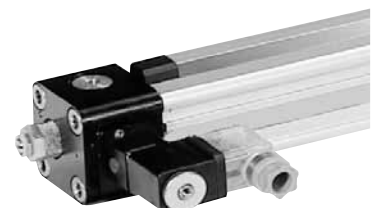
Characteristics:

- Complete compact solution
- Various connection possibilities:
Free choice of air connection with rotating end caps with VOE valves, Air connection can be rotated 4 x 90°, Solenoid can be rotated 4 x 90°, Pilot valve can be rotated 180°
- High piston velocities can be achieved with max. 3 exhaust ports
- Minimal installation requirements
- Requires just one air connection per valve
- Optimal control of the OSP-L 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!

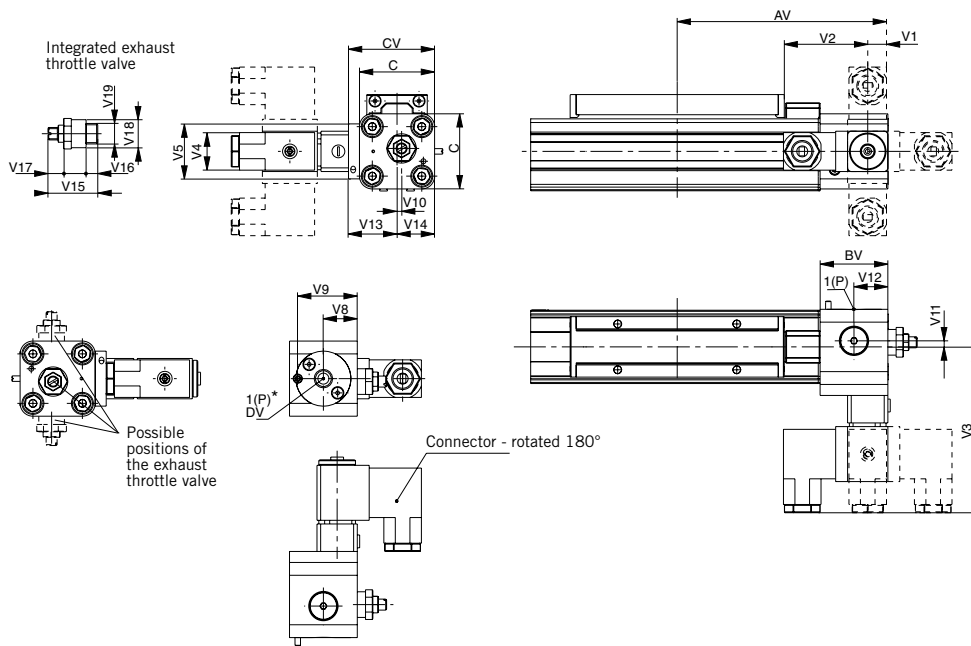
Characteristics 3/2 Way Valves VOE

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-L25 and L32

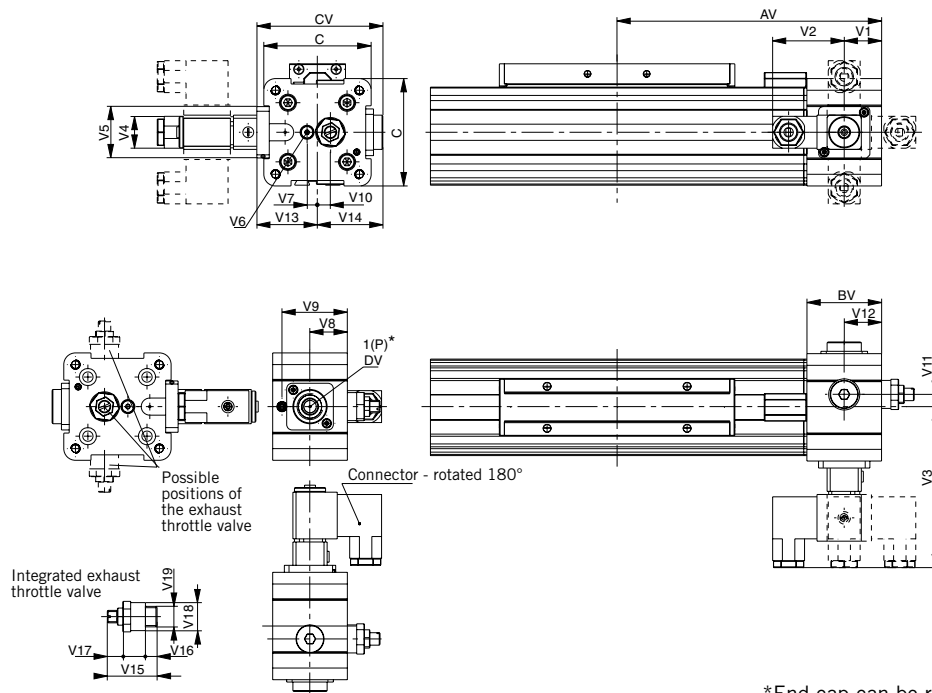


* End cap can be rotated 4x90°

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-L25	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-L32	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-L40 and L50



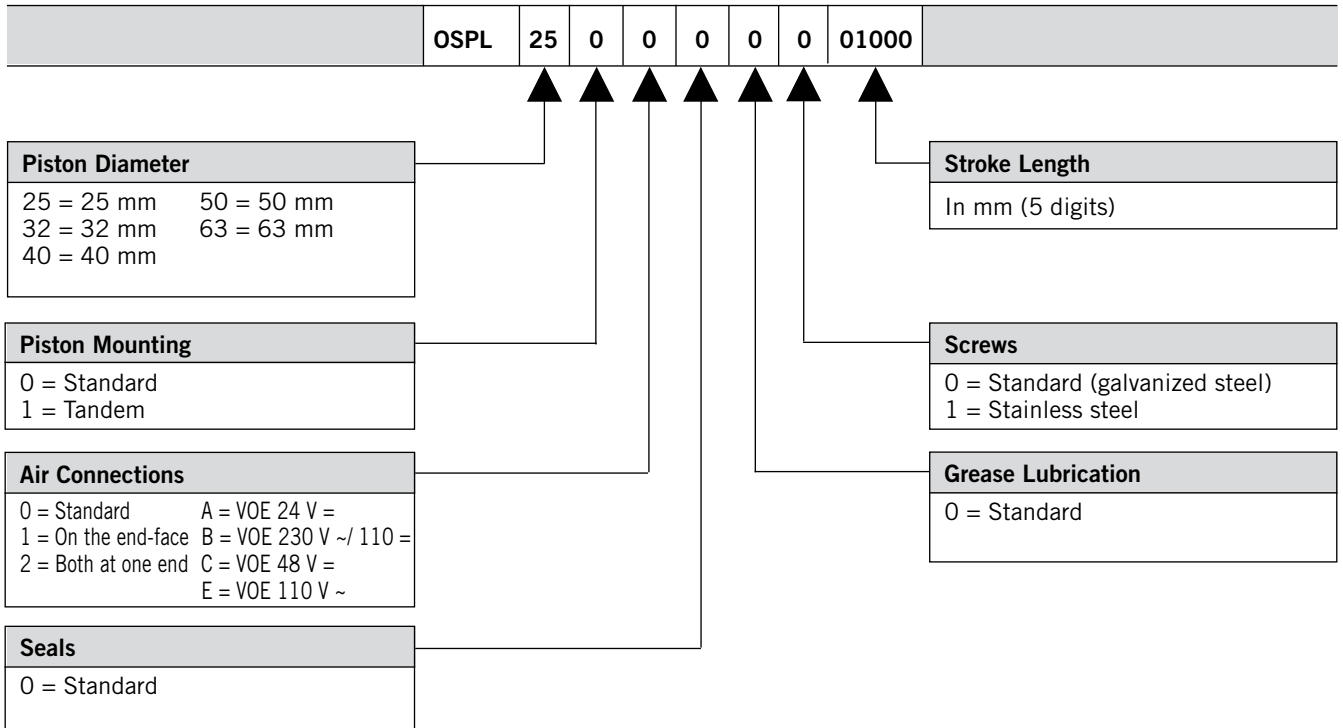
*End cap can be rotated 4x90°

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-L40	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-L50	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 page
Clevis Mounting	33
End Cap Mountings	34
Mid-Section Support	35
Inversion Mounting	43
Adaptor Profile	44
T-Slot Profile	45
Adaptor Profile	46
Duplex Connection	47
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Magnetic Switches, Standard Version	49-51
Cable Cover	52
T-Slot Magnetic Switches	53-56

Linear Guides Series OSP-L



Contents

Description	Page
Overview	21
Plain bearing guide SLIDELINE	23
Recirculating Ball Bearing Guide STARLINE	25

Linear Guides

Adaptive modular system

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

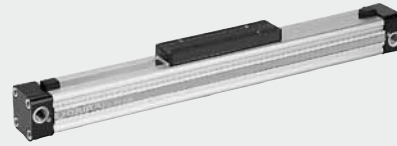
Advantages:

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

STANDARD Cylinder OSP-L

with integral guidance

Piston diameters 25-63 mm



SLIDELINE

The cost-effective plain bearing guide for medium loads.

Piston diameters 25 – 63 mm



STARLINE

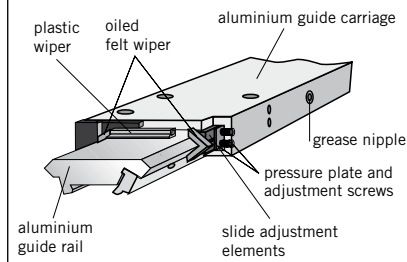
Recirculating ball bearing guide for very high loads and precision

Piston diameters 25 – 50 mm



Versions

for pneumatic linear drive:
Series OSP-L

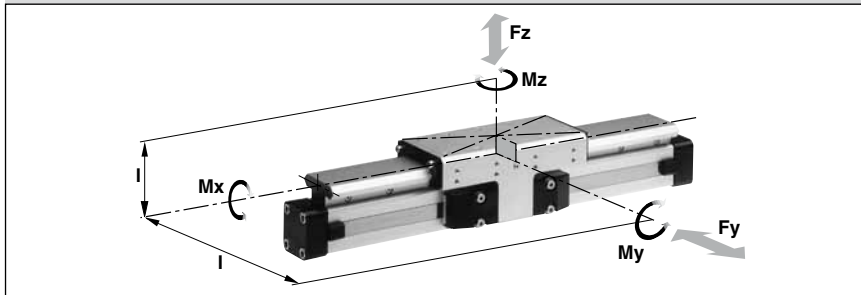


Plain Bearing Guide SLIDELINE

OSP
— ORIGA
— SYSTEM
— PLUS

Series SL 25 to 63
for Linear-drive
• Series OSP-L

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.

Features:

- Anodised aluminium guide rail with prism-shaped slideway arrangement
- Adjustable plastic slide elements
- 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)

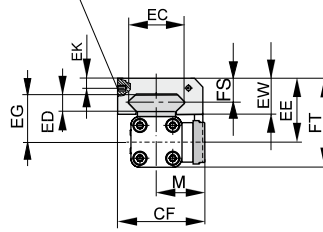
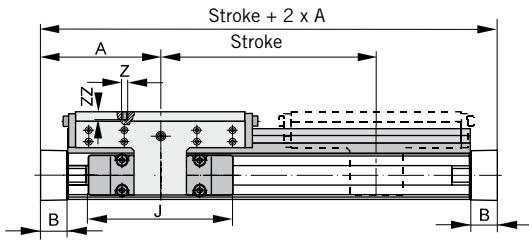
²⁾ Corrosion resistant fixtures available on request

Series	For linear drive	Max. moments [Nm]			Max. loads [N]	Mass of linear drive with guide [kg]		Mass * of guide [kg]	Order No. SLIDELINE ²⁾ for OSP-L
		Mx	My	Mz	Fy, Fz	with 0 mm stroke	increase per 100 mm stroke		
SL25	OSP-L25	14	34	34	675	1.55	0.39	0.61	20342
SL32	OSP-L32	29	60	60	925	2.98	0.65	0.95	20196
SL40	OSP-L40	50	110	110	1500	4.05	0.78	1.22	20343
SL50	OSP-L50	77	180	180	2000	6.72	0.97	2.06	20195
SL63	OSP-L63	120	260	260	2500	11.66	1.47	3.32	20853

Mountings see page 36-38

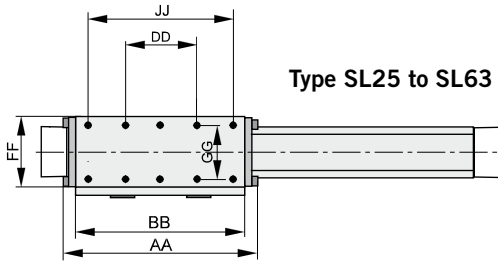
Dimensions

Series OSP-L



For further mounting elements and options see accessories.

For further information and technical data see linear drives OSP-L



Type SL25 to SL63

Dimension Table (mm)

Series	A	B	J	M	Z	AA	BB	DD	CF	EC	ED	EE	EG	EW	FF	FT	FS	GG	JJ	ZZ
SL25	100	22	117	40,5	M6	162	142	60	72,5	47	12	53	39	30	64	73,5	20	50	120	12
SL32	125	25,5	152	49	M6	205	185	80	91	67	14	62	48	33	84	88	21	64	160	12
SL40	150	28	152	55	M6	240	220	100	102	77	14	64	50	34	94	98,5	1,5	78	200	12
SL50	175	33	200	62	M6	284	264	120	117	94	14	75	56	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

Mid-Section Support

(For versions, see page 38)

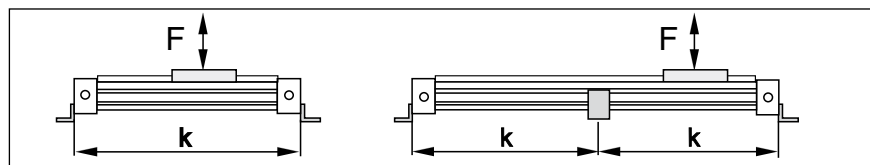
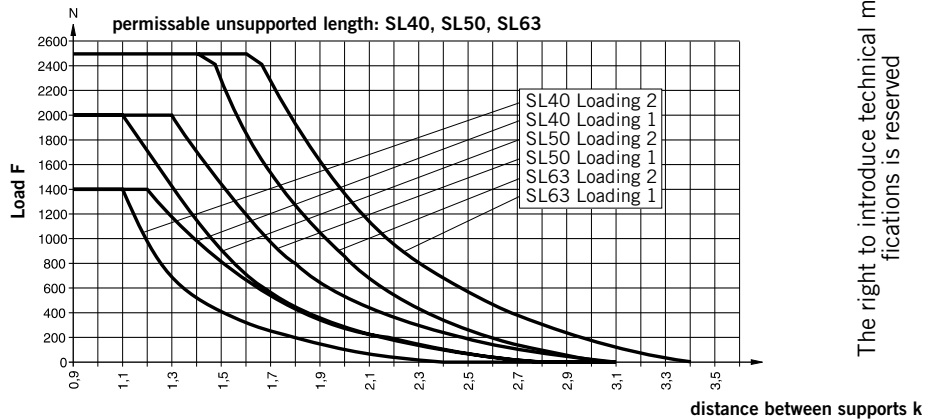
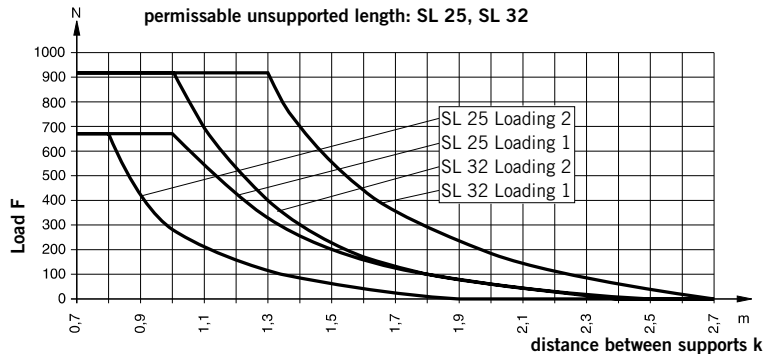
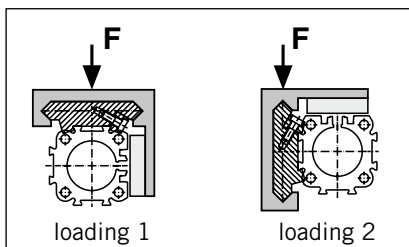
Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading.

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

Deflection of 0.5 mm max. between supports is permissible.

Note:

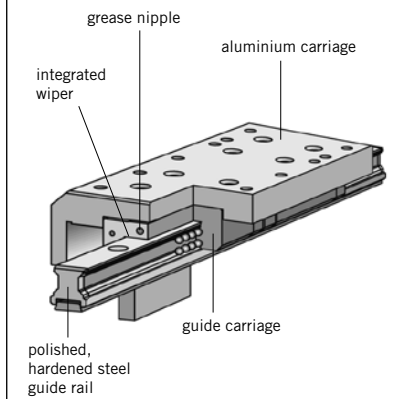
For speeds $v > 0.5$ m/s the distance between supports should not exceed 1 m.



The right to introduce technical modifications is reserved

Versions

for pneumatic linear drive:
Series OSP-L

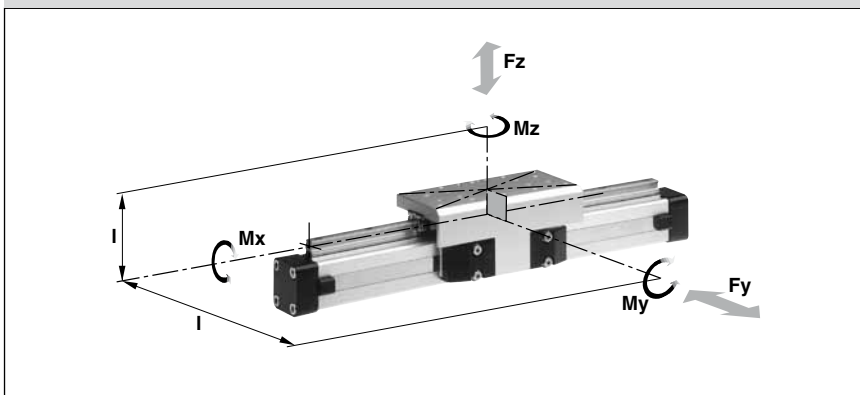


Recirculating Ball Bearing Guide STARLINE

OSP
— ORIGA
— SYSTEM
— PLUS

Series STL 25 to 50
for Linear Drive Series OSP-L

Loads, Forces and Moments



Features:

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

Technical Data

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

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

The sum of the loads should not exceed >1

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

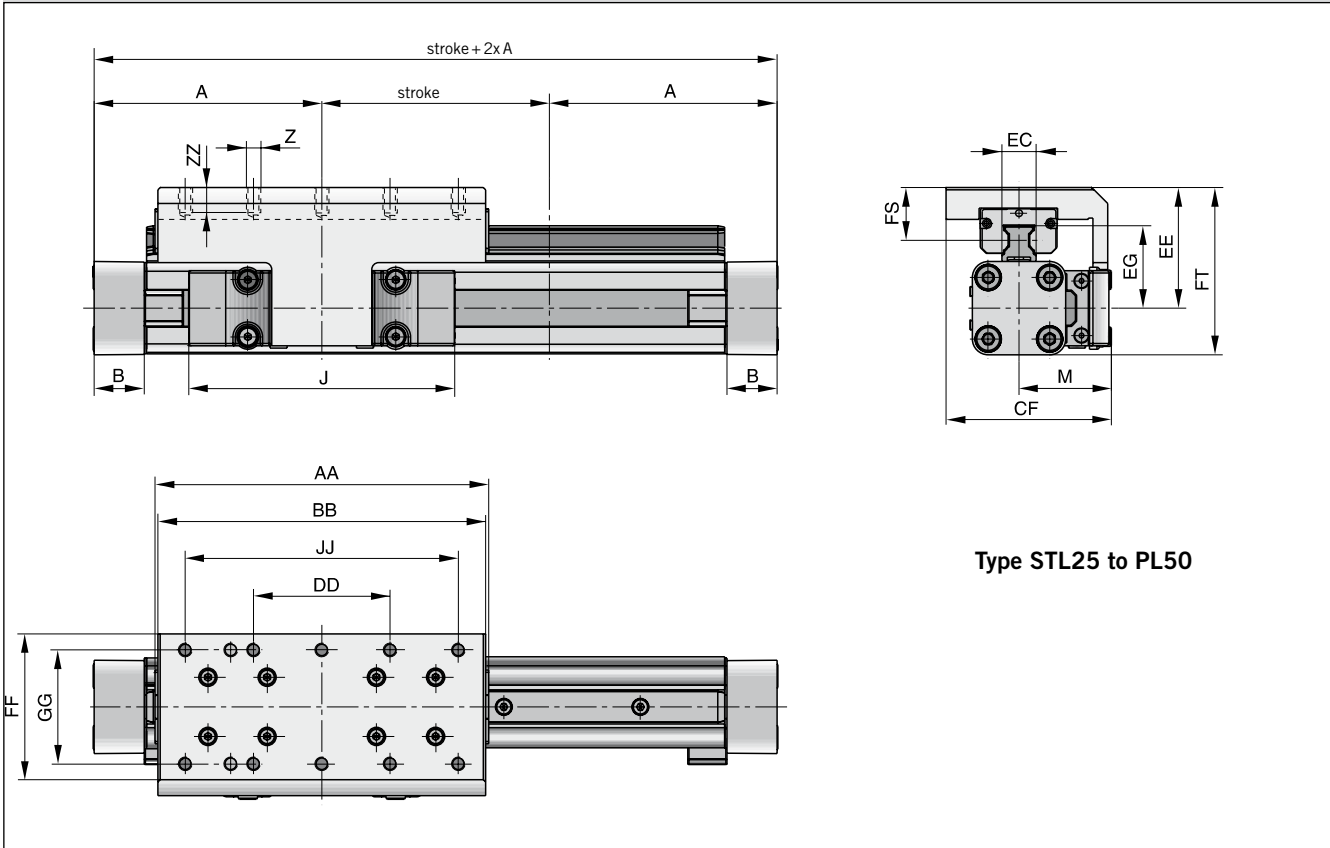
* Please note:

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

Series	For linear drive	Max. moments [Nm]			Max. loads [N]		Mass of linear drive with guide [kg]		Mass * of guide carriage [kg]	Order No. STARLINE for OSP-L
		Mx	My	Mz	Fy	Fz	with 0 mm stroke	increase per 100 mm stroke		
STL25	OSP-L25	50	110	110	3100	3100	1.733	0.369	0.835	21112
STL32	OSP-L32	62	160	160	3100	3100	2.934	0.526	1.181	21113
STL40	OSP-L40	150	400	400	4000	7500	4.452	0.701	1.901	21114
STL50	OSP-L50	210	580	580	4000	7500	7.361	0.936	2.880	21115

Mountings see page 39-42

Dimensions Series OSP-L STL25 to STL 50

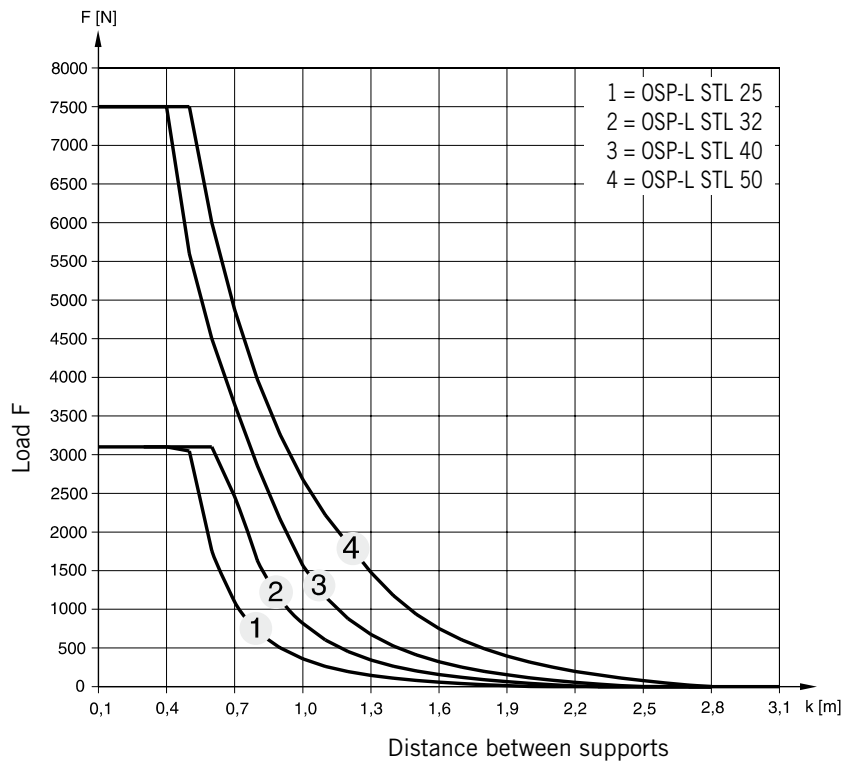


Dimension Table (mm) Series OSP-L STL25 to STL50

Series	A	B	J	M	Z	AA	BB	CF	DD	EC	EE	EG	FF	FS	FT	GG	JJ	ZZ
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

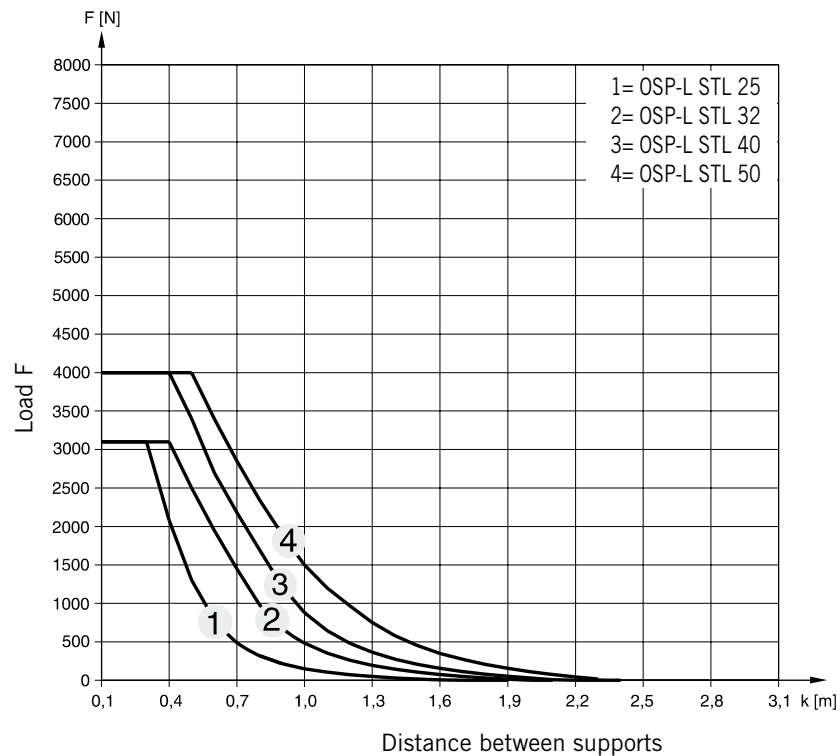
Permissible Unsupported Length STL25 to STL50

Loading 1 – Top carrier



Permissible Unsupported Length STL25 to STL50

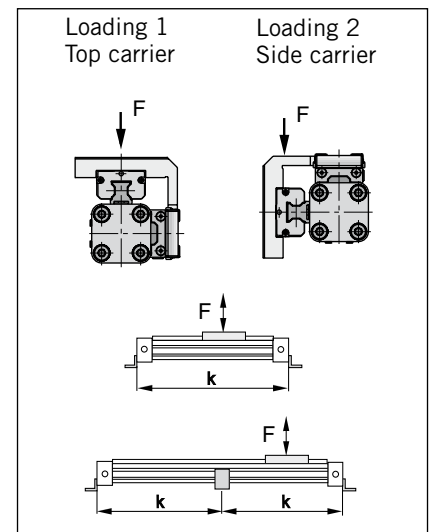
Loading 2 – Side carrier



Mid-Section Support

(For versions, see page 41)

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



Note:

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

Variable Stop

The variable stop Type VS provides simple stroke limitation.

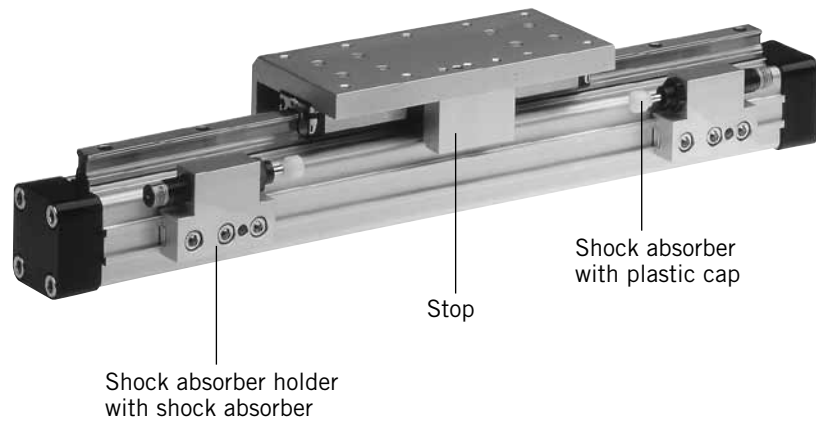
It can be retrofitted and positioned anywhere along the stroke length. For every cylinder diameter two types of shock absorber are available – see „Shock Absorber Selection“ below.

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

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

Variable Stop Type VS25 to VS50

Arrangement with two variable stops

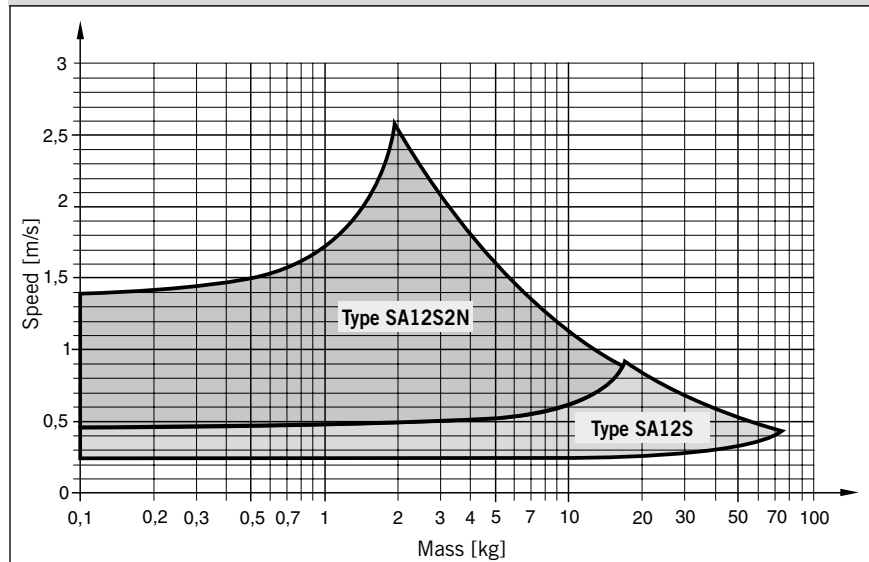


Shock Absorber Selection

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

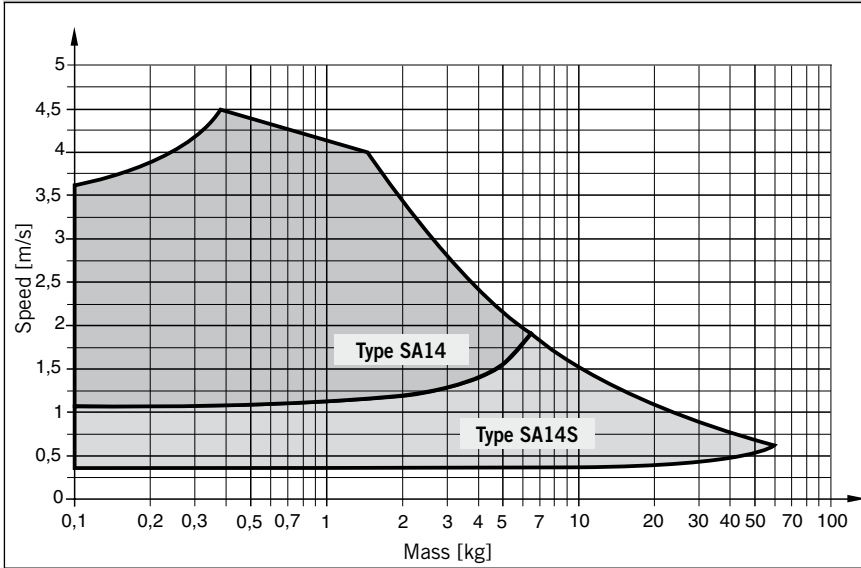
The mass of the carrier itself must be taken into account.

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



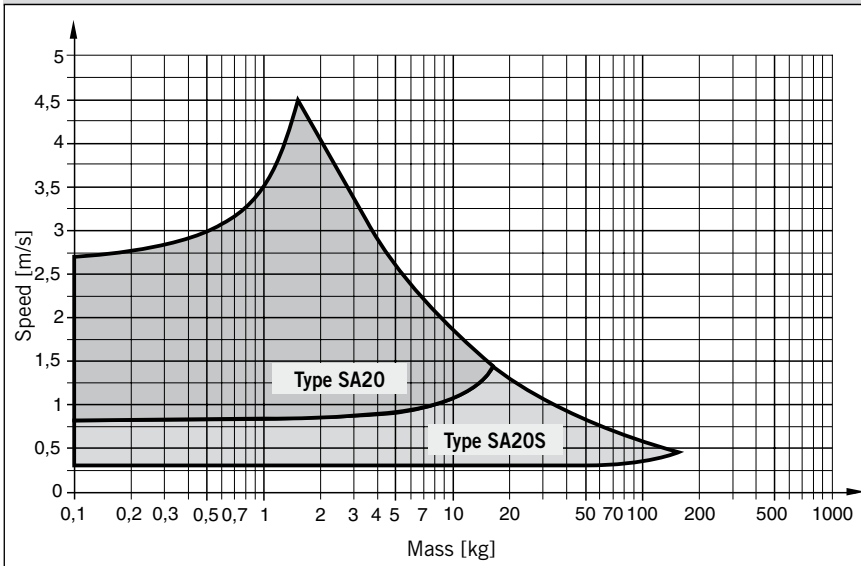
The values relate to an effective driving force of 250 N (6 bar)

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



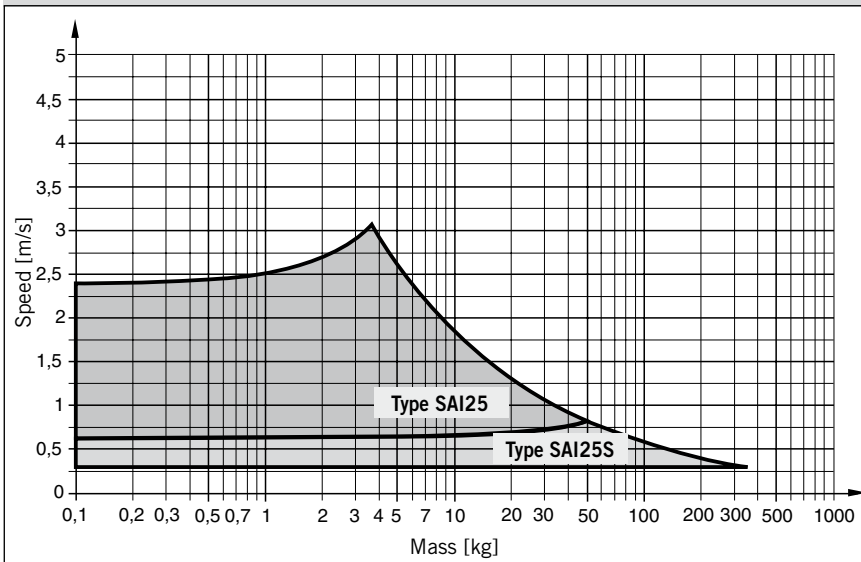
The values relate to an effective driving force of 420 N (6 bar)

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



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















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



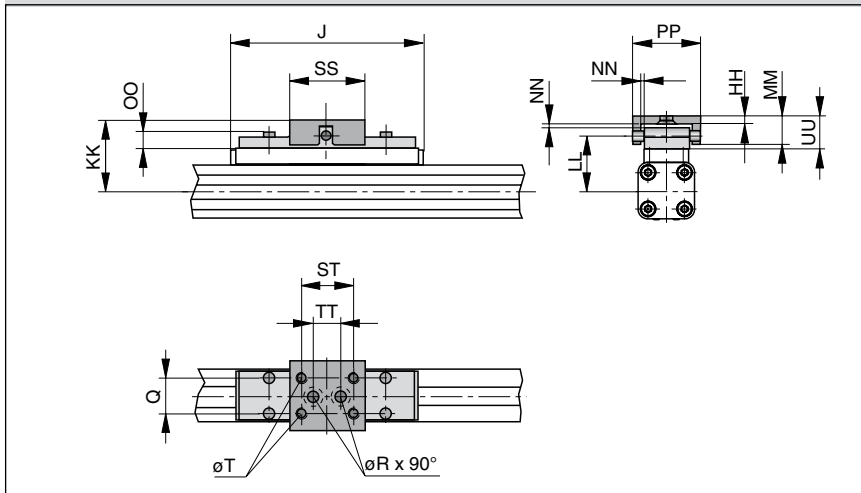
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Magnetic Switch for T-Nut mounting	53-56

Linear Drive Accessories for Series OSP-L

Description	
Clevis Mounting	
End Cap Mountings	
End Cap Mountings (for Linear Drives with guides)	
Mid-Section Support	
Mid-Section Support (for Linear Drives with guides)	
Inversion Mounting	
Adaptor Profile	
T-Slot Profile	
Connection Profile	
Dulex Connection	
Multiplex Connection	
Magnetic Switch, standard version	
Magnetic Switch for T-Nut mounting	
Cable cover	

Series OSP-L25 to 32



Linear Drive Accessories

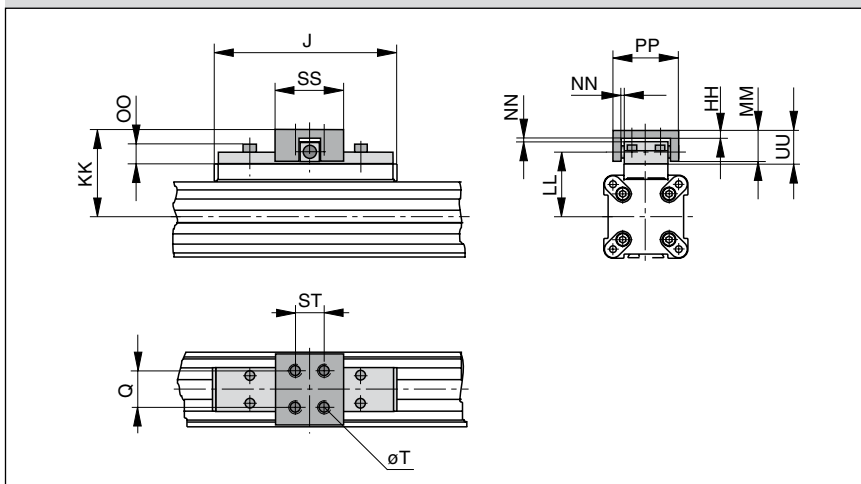
ø 25-63 mm

Clevis Mounting



For Linear-drive
• Series OSP-L

Series OSP-L40 to 63

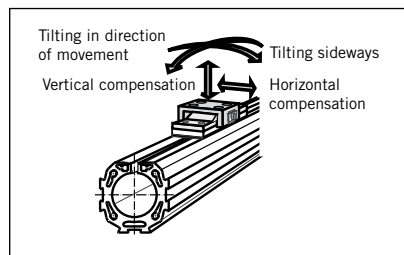


When external guides are used, parallelism deviations can lead to mechanical strain on the piston. This can be avoided by the use of a clevis mounting. In the drive direction, the mounting has very little play. Freedom of movement is provided as follows:

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

A stainless steel version is also available.

Please note:
When using additional inversion mountings, take into account the dimensions



Dimension Table (mm)																Order No.	
Series	J	Q	T	øR	HH	KK	LL	MM	NN*	OO	PP	SS	ST	TT	UU	Standard	Stainless
OSP-L25	117	16	M5	5.5	3.5	52	39	19	2	9	38	40	30	16	21	20005	20092
OSP-L32	152	25	M6	6.6	6	68	50	28	2	13	62	60	46	40	30	20096	20094
OSP-L40	152	25	M6	-	6	74	56	28	2	13	62	60	46	-	30	20024	20093
OSP-L50	200	25	M6	-	6	79	61	28	2	13	62	60	46	-	30	20097	20095
OSP-L63	256	37	M8	-	8	100	76	34	3	17	80	80	65	-	37	20466	20467

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

Linear Drive Accessories

∅ 25-63 mm End Cap Mountings



For Linear-drive
• Series OSP-L

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-L25 – L32:

Galvanised steel.

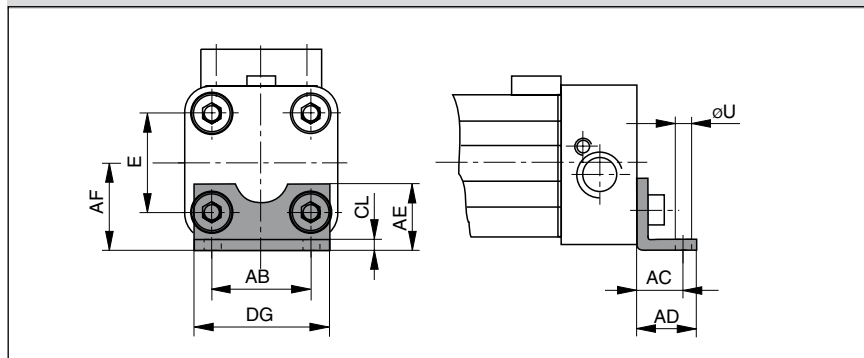
Series OSP-L40 – L63:

Anodized aluminium.

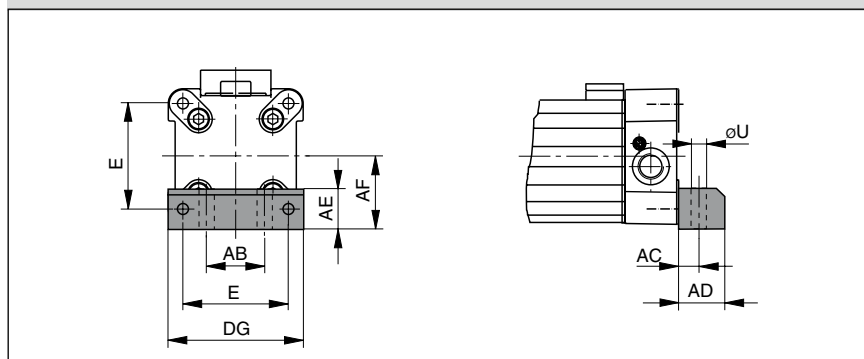
The mountings are supplied in pairs.



Series OSP-L25 to 32: Type A1



Series OSP-L40 to 63: Type C1

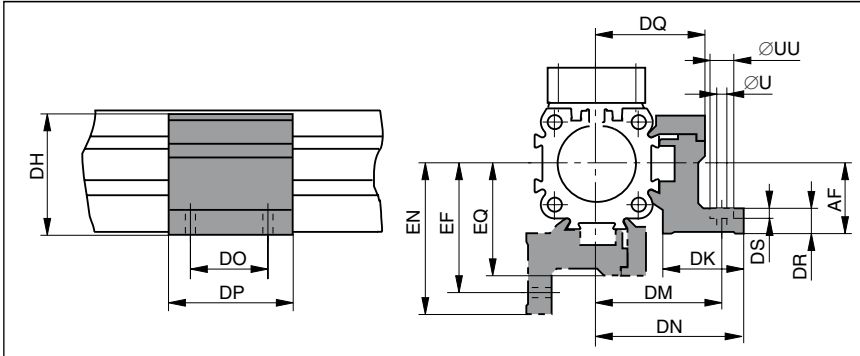


Dimension Table (mm)

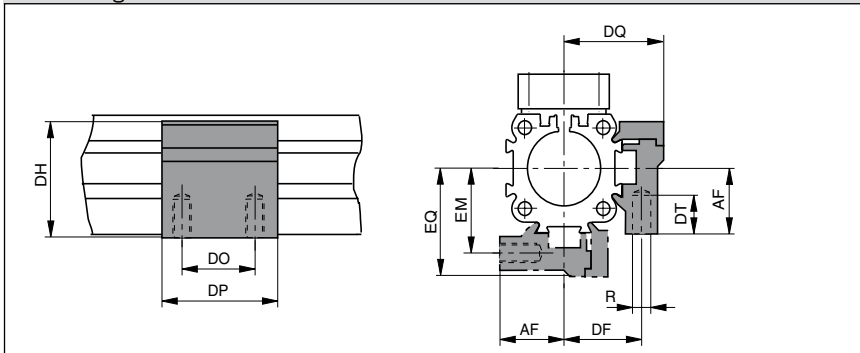
Series	E	∅U	AB	AC	AD	AE	AF	CL	DG	Order No. (*	
										Type A1	Type C1
OSP-L25	27	5.8	27	16	22	18	22	2.5	39	2010	–
OSP-L32	36	6.6	36	18	26	20	30	3	50	3010	–
OSP-L40	54	9	30	12.5	24	24	38	–	68	–	4010
OSP-L50	70	9	40	12.5	24	30	48	–	86	–	5010
OSP-L63	78	11	48	15	30	40	57	–	104	–	6010

(* = Pair)

Series OSP-L25-63: Type E1
(Mounting from above / below using a cap screw)



Series OSP-L25-63, Type D1
(Mountings from below with 2 screws)



Linear Drive Accessories

ø 25-63 mm

Mid-Section Support



For Linear-drive
• Series OSP-L

Note on Types E1 and D1 (L25-L63):
The mid-section support can also be mounted on the underside of the actuator, in which case its distance from the centre of the actuator is different.

Stainless steel version on demand.



Dimension Table (mm) – Series OSP-L25-L63																					
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-L25	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-L32	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-L40	M6	7	–	38	35	61	34	53	60	45	60	45	10	–	11	56	38	63	48	20028	20027
OSP-L50	M6	7	–	48	40	71	34	59	67	45	60	52	10	–	11	64	45	72	57	20163	20162
OSP-L63	M8	9	–	57	47.5	91	44	73	83	45	65	63	12	–	16	79	53.5	89	69	20452	20451

The right to introduce technical modifications is reserved





Linear Drive Accessories


Mountings for Linear Drives fitted with OSP-L-Guides

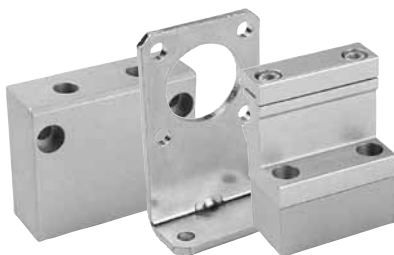


For Linear-drives
• Series OSP-L

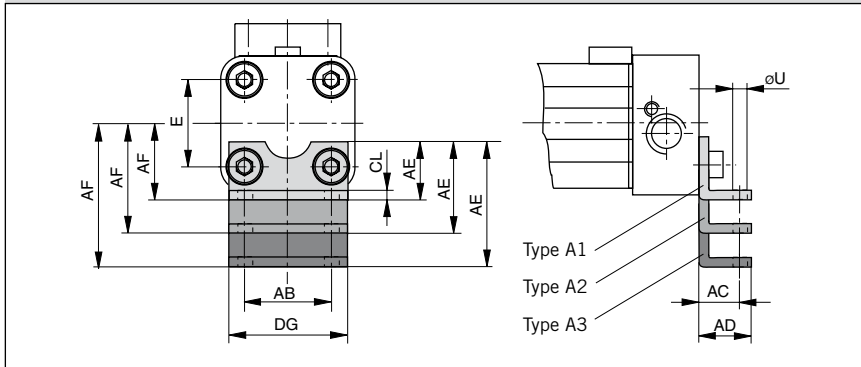
Note:
For mountings and mid-section supports for linear drives with recirculating ball bearing guide STARLINE see pages 39 to 41.

Overview						
Mounting Type	Type	Type – OSP-L Guide SLIDELINE				
		25	32	40	50	63 ¹⁾
End cap mounting 	Type A2	O	O			
	Type A3					
End cap mounting, reinforced 	Type B1	X	X			
	Type B4					
	Type B5					
End cap mounting 	Type C1			X	X	X
	Type C2			O	O	
	Type C3					O
	Type C4					
Mid section support, small Mid section support, wide 	Type D1	X	X	X	X	X
	Type E1	X	X	X	X	X
	Type E2	O	O	O	O	
	Type E3					O

- 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



Series OSP-L25, 32: Type A



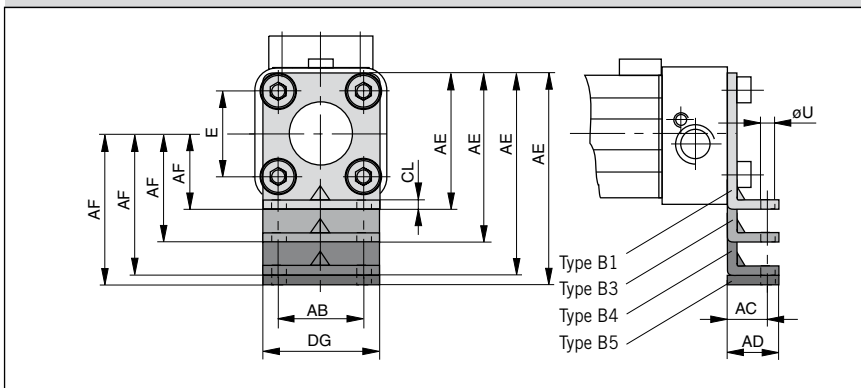
End cap mountings*

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

Material: Series OSP-L25, 32:
Galvanised steel
Series OSP-L-40,50, 63:
Anodized aluminium

The mountings are supplied in pairs.

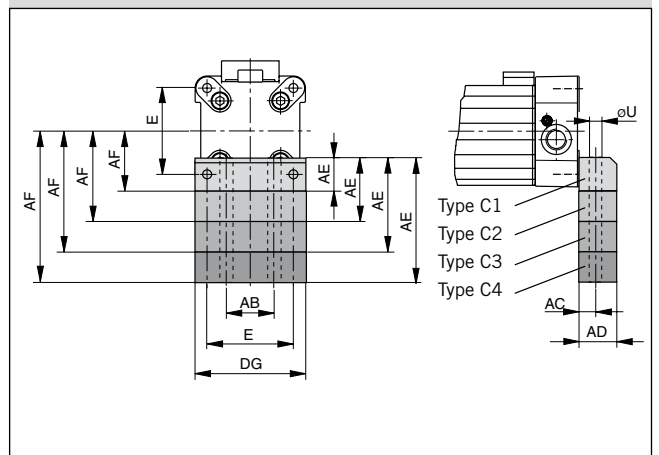
Series OSP-L25, 32: Type B



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

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

Series OSP-L40, 50, 63: Type C



Dimension Table (mm)

Series	E	øU	AB	AC	AD	CL	DG
OSP-L25	27	5.8	27	16	22	2.5	39
OSP-L32	36	6.6	36	18	26	3	50
OSP-L40	54	9	30	12.5	24	-	68
OSP-L50	70	9	40	12.5	24	-	86
OSP-L63	78	11	48	15	30	-	104

* see mounting instructions

Mid-Section Support

Information regarding type E1 and D1:

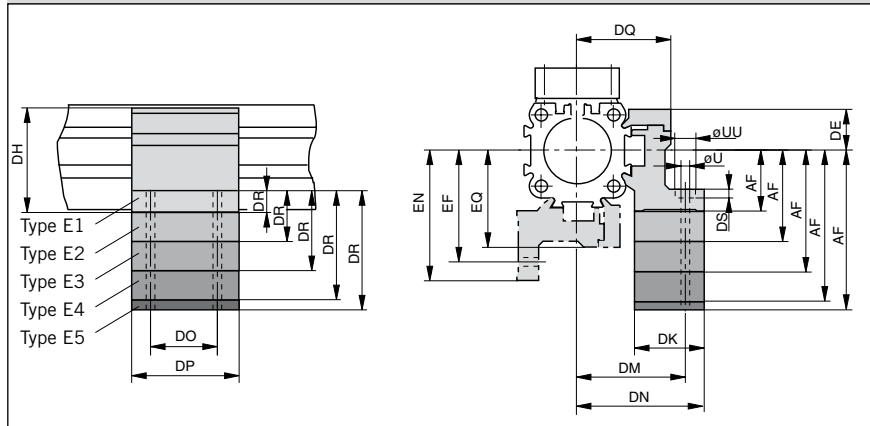
Mounting of the mid section supports is also possible on the lower side of the drive. In this case, please note the new centre line dimensions.

See layout information

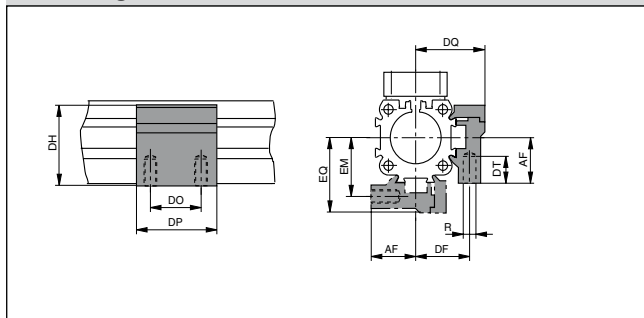
Stainless steel version on request.



Series OSP-L25 to L63: Type E
(Mounting from above / below using a cap screw)



Series OSP-L25 to 63: 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					AF for size				
	25	32	40	50	63	25	32	40	50	63
D1	-	-	-	-	-	22	30	38	48	57
E1	8	10	10	10	12	22	30	38	48	57
E2	23	24	23	19	-	37	44	51	57	-
E3	35	32	32	34	48	49	52	60	72	93
E4	46	40	42	57	-	60	60	70	95	-
E5	-	45	-	-	-	-	65	-	-	-

Dimension Table (mm)

Series EQ	R	U	UU	DE	DF	DH	DK	DM	DN	DO	DP	DQ	DS	DT	EF	EM	EN	
OSP-L25	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-L32	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-L40	M6	7	-	23	35	61	34	53	60	45	60	45	-	11	56	38	63	48
OSP-L50	M6	7	-	23	40	71	34	59	67	45	60	52	-	11	64	45	72	57
OSP-L63	M8	9	-	34	47.5	91	44	73	83	45	65	63	-	16	79	53.5	89	

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

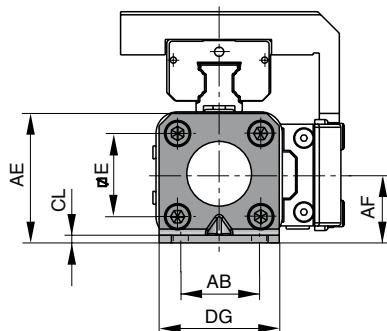
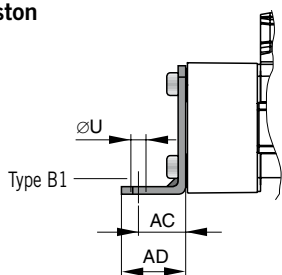
Mounting type (versions)	Order No. size				
	25	32	40	50	63
A1 *)	2010	3010	-	-	-
A2 *)	2040	3040	-	-	-
A3 *)	2060	3060	-	-	-
B1 *)	20311	20313	-	-	-
B4 *)	20312	20314	-	-	-
B5 *)	-	20976	-	-	-
C1 *)	-	-	4010	5010	6010
C2 *)	-	-	20338	20349	-
C3 *)	-	-	20339	20350	20821
C4 *)	-	-	20340	20351	-
D1	20008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

*) Pair

Series OSP-L STL25, STL32 : Type B1

Installation:

Top carrier
Side piston



Linear Drive Accessories

Ø 25 to 32 mm

End Cap Mounting

Type: B

for Linear Drives with
Recirculating Ball Bearing Guide

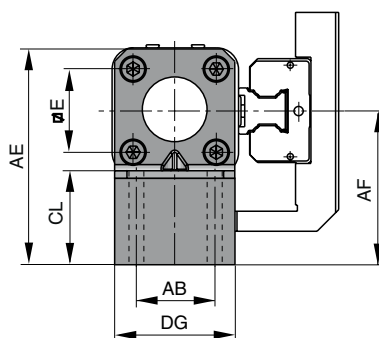
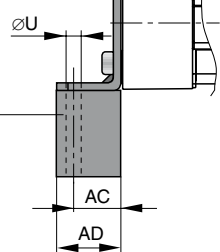
- Series OSP-L STL

Series OSP-L STL25, STL32: Type B3 (Ø 32:B5)

Installation:

Side carrier
Piston below

Type B3 – Ø 25
Type B5 – Ø 32



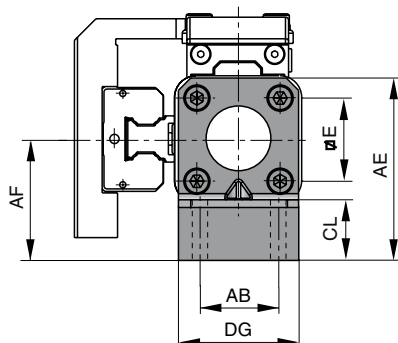
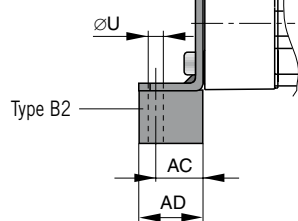
Material:
Galvanised steel
Anodized aluminium

The mountings are supplied in pairs.

Series OSP-L STL25, STL32: Type B2

Installation:

Side carrier
Top piston



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

Series Type	Mounting	E	ØU	AB	AC	AD	AE	AF	CL	DG	Order No. (pair)
OSP-L STL25	B1	27	5.8	27	16	22	42	22	2.5	39	20311
	B2	27	5.8	27	16	22	57	37	17.5	39	21138
	B3	27	5.8	27	16	22	69	49	29.5	39	21139
OSP-L STL32	B1	36	6.6	36	18	26	55	30	3	50	20313
	B2	36	6.6	36	18	26	69	44	17	50	21140
	B5	36	6.6	36	18	26	90	65	9	50	21141



Ø 40 to 50 mm End Cap Mounting Type: C

for Linear Drives with Recirculating
Ball Bearing Guide

- Series OSP-L STL

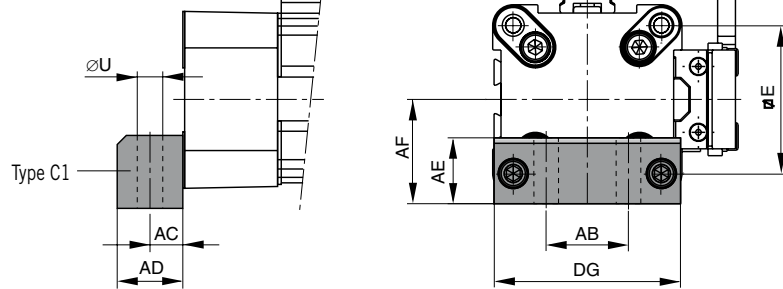
Material:

Anodized aluminium

The mountings are supplied in pairs.

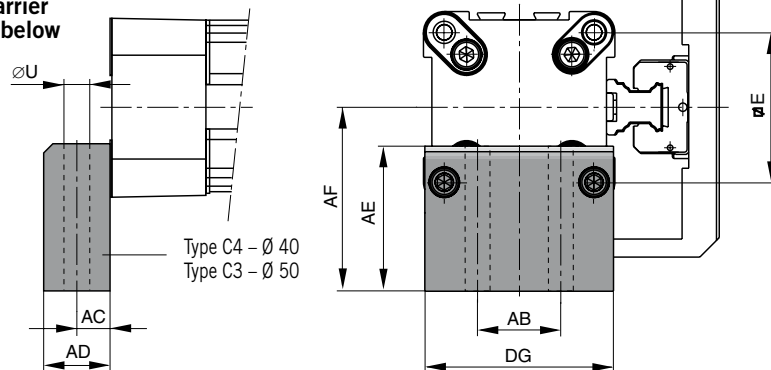
Series OSP-L STL40, STL50: Type C1

Installation:
Top carrier
Side piston



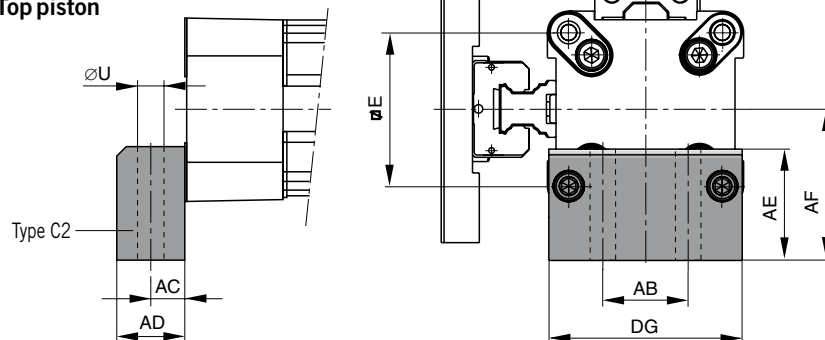
Series OSP-L STL40, STL50: Type C4 (Ø 50: C3)

Installation:
Side carrier
Piston below



Series OSP-L STL40, STL50: Type C2

Installation:
Side carrier
Top piston

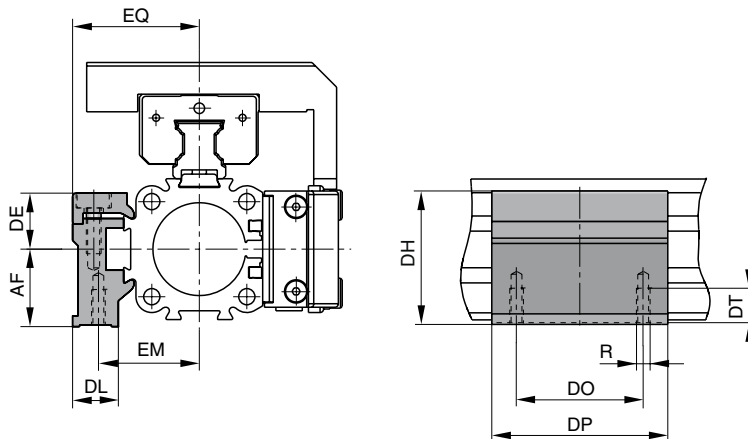


Dimension Table (mm) for End Cap Mounting Type: C1 to C4

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

Series OSP-L STL25 to STL50: Type D1ST

Mountings from below with 2 screws



Linear Drive Accessories

Ø 25 to 50

Mid-Section Support

Type: D1ST

for Linear Drives with Recirculating Ball Bearing Guide

- Series OSP-L STL

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.

Dimension Table (mm) Mid-Section Support D1ST

Series OSP-L.....	Mounting Type	R	AF	DE	DH	DL	DO	DP	DT	EM	EQ	Order No.
STL25	D1ST	M5	22	16	38	13	36	50	10	28.5	36	21126
STL32	D1ST	M5	30	16	46	13	36	60	10	35.5	43	21127
STL40	D1ST	M6	38	23	61	19	45	60	11	38	48	21128
STL50	D1ST	M6	48	23	71	19	45	60	11	45	57	21129

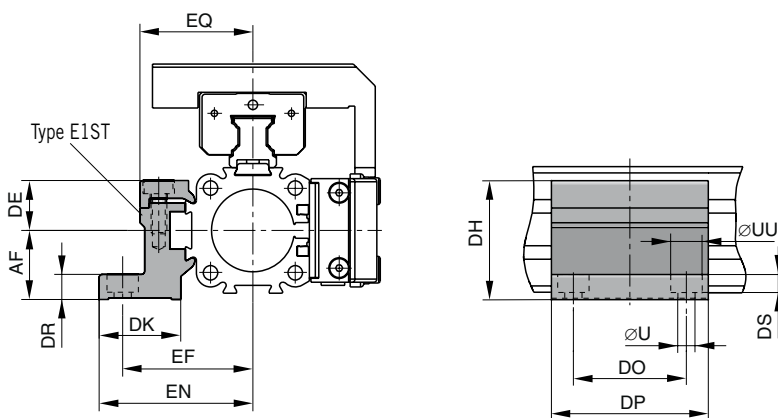
Order example: Type D1ST25 Order No. 21126



Series OSP-L STL25 to STL50: Type E1ST

Installation:
Top carrier
Side position

Mounting from above / below using a cap screw



Mid-Section Support

Type: E1ST to E5ST

for Linear Drives with Recirculating Ball Bearing Guide

- Series OSP-L STL



Mid-Section Support Type: E1ST to E5ST

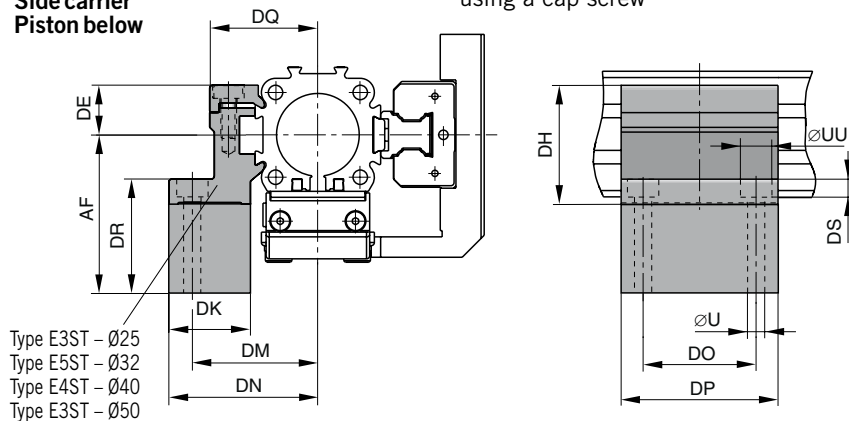
for Linear Drives with
Recirculating Ball Bearing Guide

- Series OSP-L STL

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

Installation:
Side carrier
Piston below

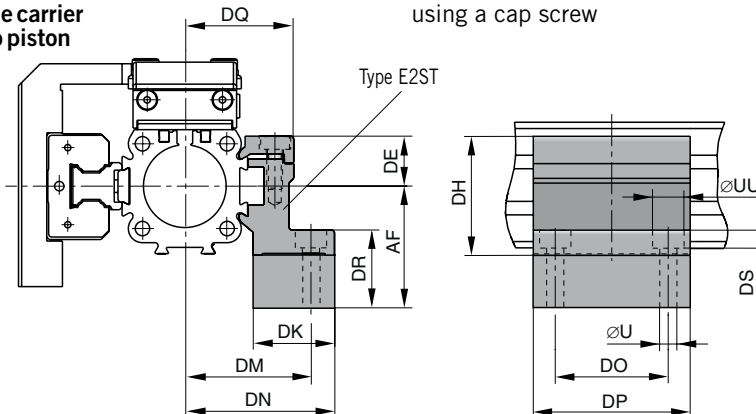
Mounting from above / below
using a cap screw



Series OSP-L STL25 to STL50: Type E2ST

Installation:
Side carrier
Top piston

Mounting from above / below
using a cap screw



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

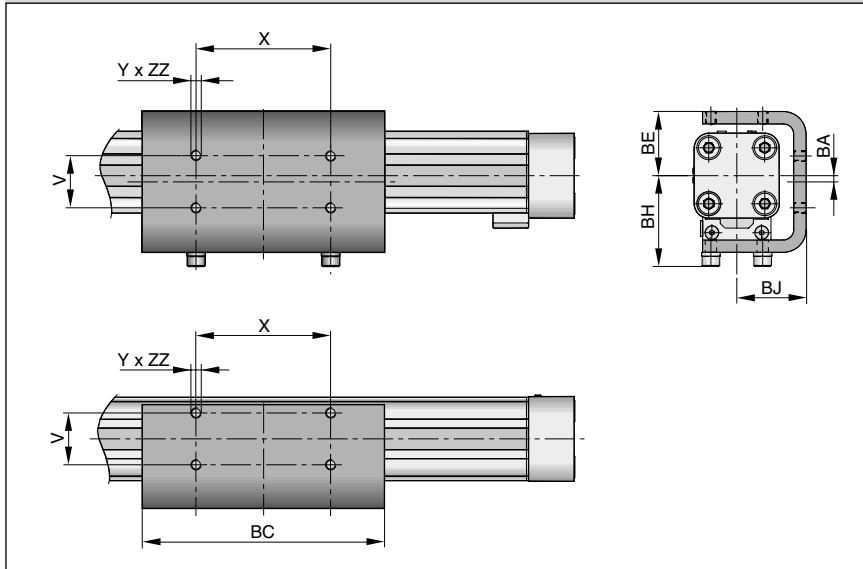
Series OSP-L- ...	Mounting Type	ØU	ØUU	AF	DE	DH	DK	DM	DN	DO	DP	DR	DQ	DS	EF	EN	EQ	Order No.
STL25	E1ST	5.5	10	22	16	38	26	40	47.5	36	50	8	34.5	5.7	41.5	49	36	21131
STL25	E2ST	5.5	10	37	16	38	26	40	47.5	36	50	23	34.5	5.7	41.5	49	36	21143
STL25	E3ST	5.5	10	49	16	38	26	40	47.5	36	50	35	34.5	5.7	41.5	49	36	21148
STL32	E1ST	5.5	10	30	16	46	27	46	54.5	36	60	10	40.5	5.7	48.5	57	43	21132
STL32	E2ST	5.5	10	44	16	46	27	46	54.5	36	60	24	40.5	5.7	48.5	57	43	21144
STL32	E5ST	5.5	10	65	16	46	27	46	54.5	36	60	45	40.5	5.7	48.5	57	43	21151
STL40	E1ST	7	-	38	23	61	34	53	60	45	60	10	45	-	56	63	48	21133
STL40	E2ST	7	-	51	23	61	34	53	60	45	60	23	45	-	56	63	48	21145
STL40	E4ST	7	-	70	23	61	34	53	60	45	60	42	45	-	56	63	48	21150
STL50	E1ST	7	-	48	23	71	34	59	67	45	60	10	52	-	64	72	57	21134
STL50	E2ST	7	-	57	23	71	34	59	67	45	60	19	52	-	64	72	57	21146
STL50	E3ST	7	-	72	23	71	34	59	67	45	60	34	52	-	64	72	57	21149

Order sample: Type E1ST25

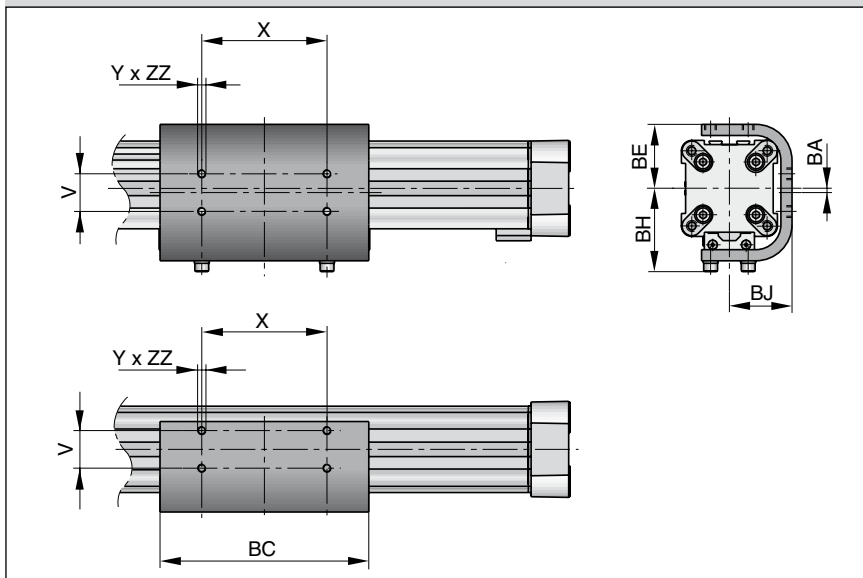
Order No. 21131

The right to introduce technical
modifications is reserved

Series OSP-L25 to 32



Series OSP-L40 to 63



Dimension Table (mm)

Series	V	X	Y	BA	BC	BE	BH	BJ	ZZ	Order No.
OSP-L25	25	65	M5	3	117	31	44	33.5	6	20037
OSP-L32	27	90	M6	3	150	38	52	39.5	6	20161
OSP-L40	27	90	M6	3	150	46	60	45	8	20039
OSP-L50	27	110	M6	1	200	55	65	52	8	20166
OSP-L63	34	140	M8	2.5	255	68	83.5	64	10	20459

Linear Drive Accessories

∅ 25-63 mm

Inversion Mounting



For Linear-drive
• Series OSP-L

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-L system such as **mid-section supports**, **magnetic switches** can still be mounted on the free side of the cylinder.

IMPORTANT NOTE:
May be used in combination with **Clevis Mounting**, ref. dimensions at page 33.



Linear Drive Accessories

∅ 25-50 mm
Adaptor Profile



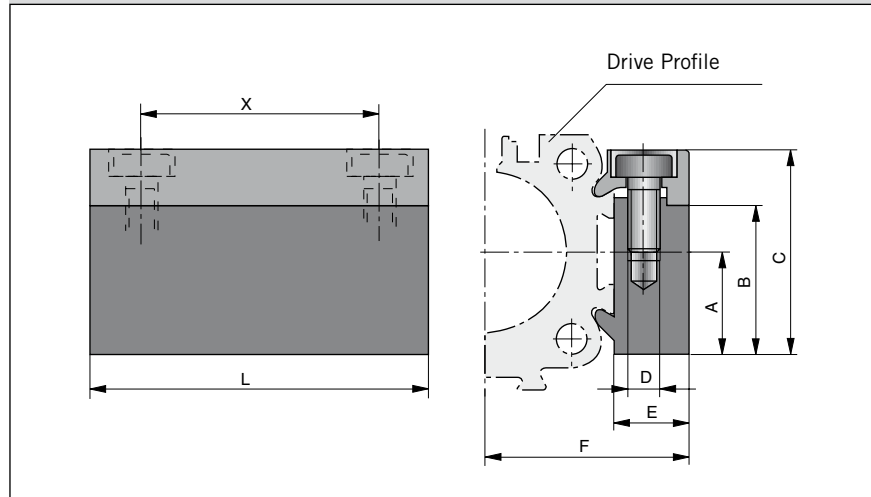
For Linear-drive
• Series OSP-L

Adaptor Profile OSP-L

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



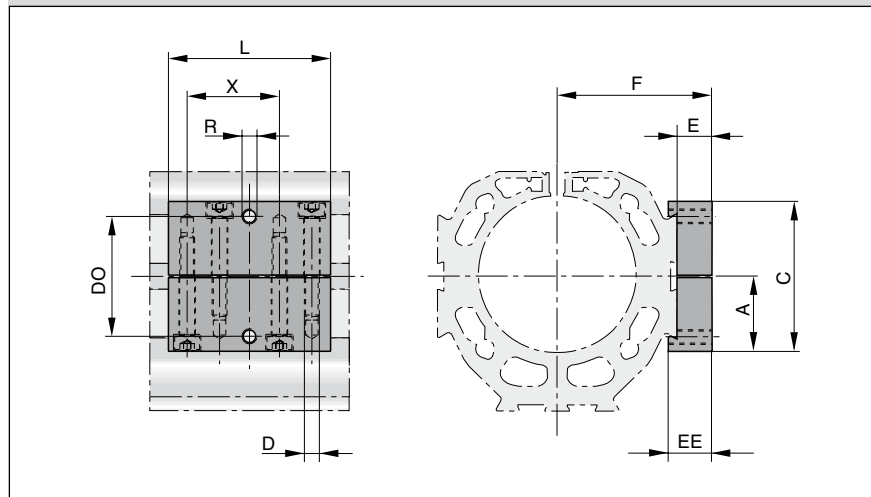
Series OSP-L25 to 50



Dimension Table (mm)

Series	A	B	C	D	E	F	L	X	Order No.	
									Standard	Stainless
OSP-L25	16	23	32	M5	10.5	30.5	50	36	20006	20186
OSP-L32	16	23	32	M5	10.5	36.5	50	36	20006	20186
OSP-L40	20	33	43	M6	14	45	80	65	20025	20267
OSP-L50	20	33	43	M6	14	52	80	65	20025	20267

Series OSP-L63

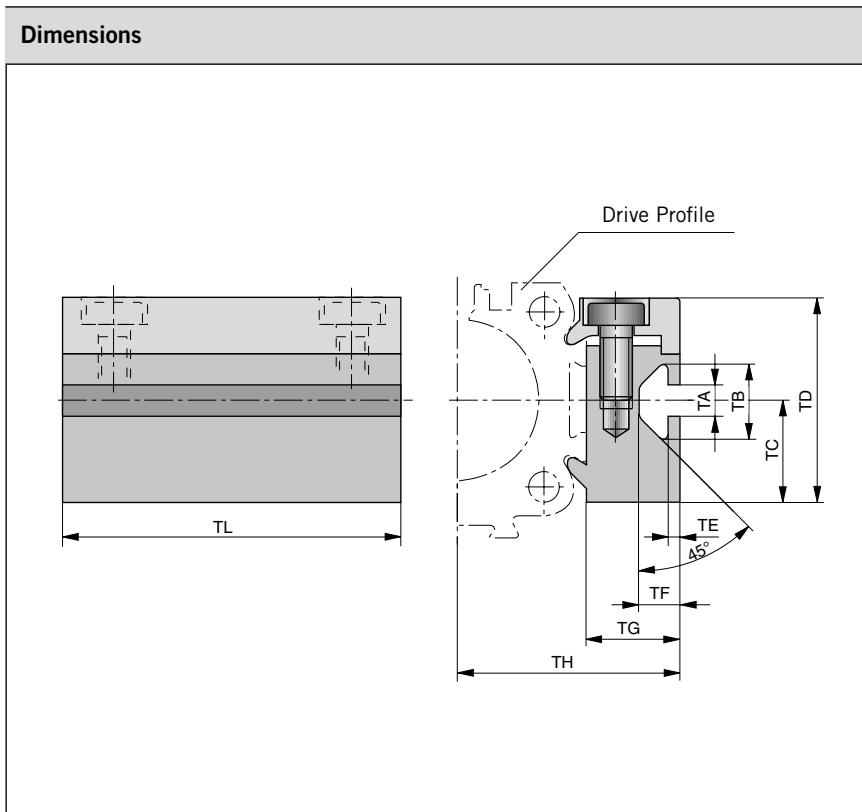


Dimension Table (mm)

Series	A	C	D	E	F	L	R	X	EE	DO	Order No.*
OSP-L63	30	60	M6	14	62	65	M6	37	17.5	48	20792Z

* Stainless version





Linear Drive Accessories

ø 25-50 mm

T-Slot Profile

OSP
ORIGA
SYSTEM
PLUS

For Linear-drive
• Series OSP-L

T-Slot Profile OSP-L

• 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-L25	5	11.5	16	32	1.8	6.4	14.5	34.5	50	20007	20187
OSP-L32	5	11.5	16	32	1.8	6.4	14.5	40.5	50	20007	20187
OSP-L40	8.2	20	20	43	4.5	12.3	20	51	80	20026	20268
OSP-L50	8.2	20	20	43	4.5	12.3	20	58	80	20026	20268

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

Cyl.-Series	T-nut St 5	T-nut St 8
OSP-L25-32	●	
OSP-L40-50		●

The right to introduce technical modifications is reserved



Linear Drive Accessories

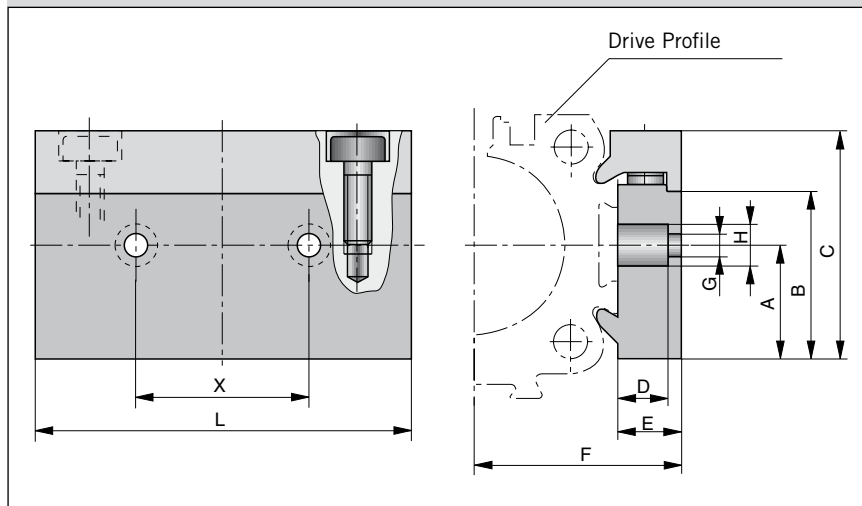
∅ 25-50 mm

Connection Profile



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

Dimensions

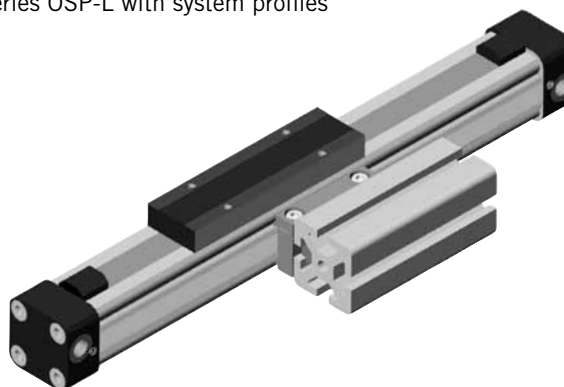


Dimension Table (mm)

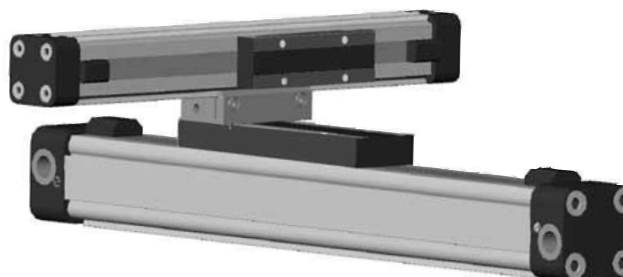
Cylinder Series	for mounting on the carrier of	A	B	C	D	E	F	G	H	L	X	Order No.
OSP-L25	OSP32-50	16	23	32	8.5	10.5	30.5	6.6	11	60	27	20850
OSP-L32	OSP32-50	16	23	32	8.5	10.5	36.5	6.6	11	60	27	20850
OSP-L40	OSP32-50	20	33	43	8	14	45	6.6	11	60	27	20851
OSP-L50	OSP32-50	20	33	43	8	14	52	6.6	11	60	27	20851

Possible Combinations

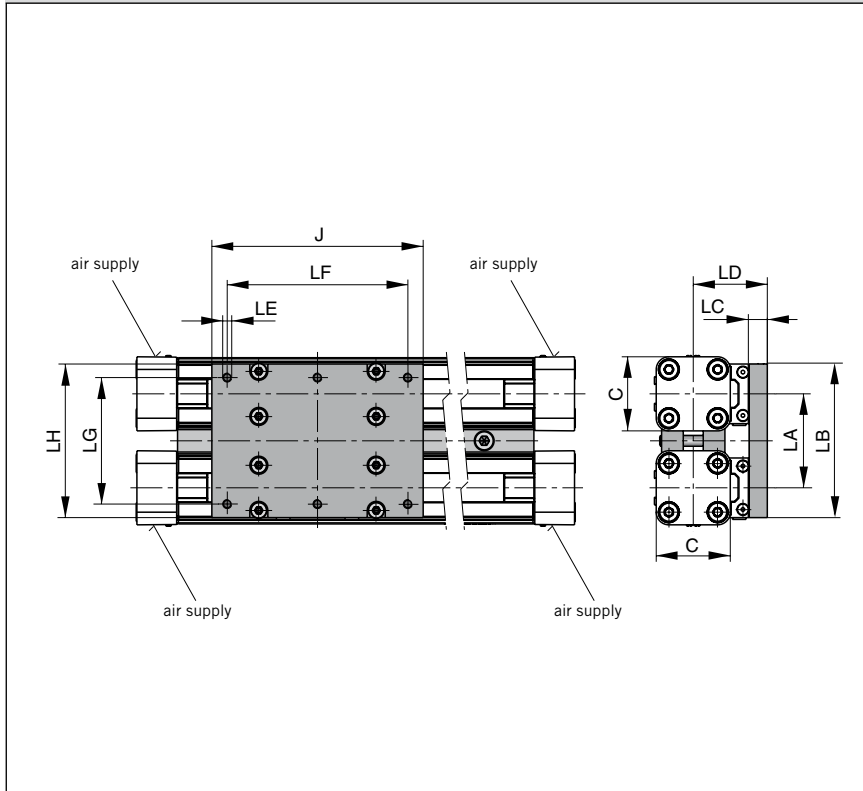
Combination of Series OSP-L with system profiles



Combination of Series OSP-L with Series OSP-L



Dimensions



Linear Drive Accessories

∅ 25-50 mm Duplex Connection

OSP
— ORIGA
— SYSTEM
— PLUS

For connection of cylinders of the Series OSP-L

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

Dimension Table (mm)

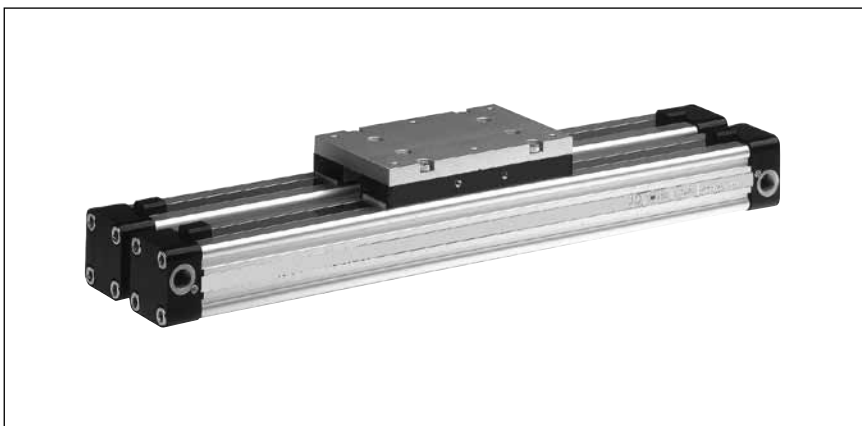
Cylinder Series	C	J	LA	LB	LC	LD	LE	LF	LG	LH	Order No.	
											Standard	Stainless
OSP-L25	41	117	52	86	10	41	M5	100	70	85	20153	20194
OSP-L32	52	152	64	101	12	50	M6	130	80	100	20290	20291
OSP-L40	69	152	74	111	12	56	M6	130	90	110	20156	20276
OSP-L50	87	200	88	125	12	61	M6	180	100	124	20292	20293

Features

- increased load and torque capacity
- higher driving forces

Included in delivery:

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



Linear Drive Accessories

ø 25-50 mm

Multiplex Connection



For connection of cylinders of the Series OSP-L

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

Features

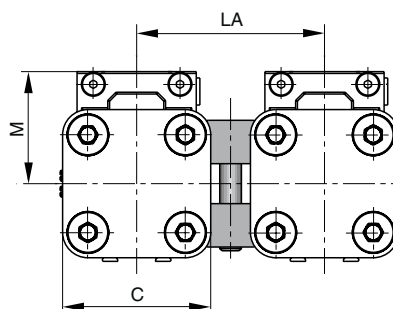
- The orientation of the carriers can be freely selected

Included in delivery:

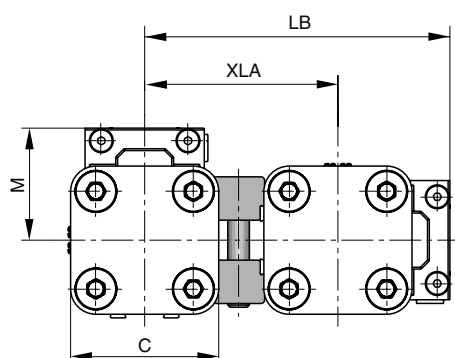
2 clamping profiles with clamping screws

Dimensions

Installation:
Top carrier/Top carrier

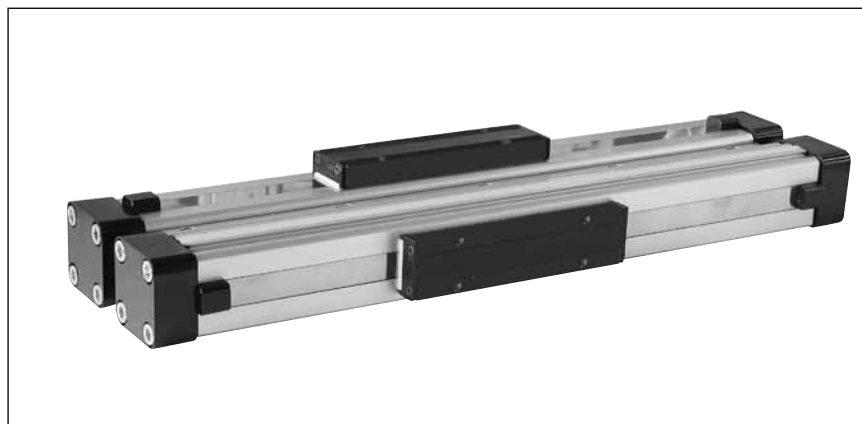


Installation:
Top carrier/Side carrier



Dimension Table (mm)

Cylinder Series	C	M	LA	LB	XLA	Order No.	
						Standard	Stainless
OSP-L25	41	31	52	84.5	53.5	20035	20193
OSP-L32	52	38	64	104.5	66.5	20167	20265
OSP-L40	69	44	74	121.5	77.5	20036	20275
OSP-L50	87	49	88	142.5	93.5	20168	20283



Characteristics			
Characteristics	Unit	Description	
Electrical Characteristics		Type RS	Type ES
Switching output		Reed	PNP, NPN
Operating voltage	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	mA	200	200
Max. switching capacity	VA (W)	10 VA	—
Power consumption without load	mA	—	< 20
Function indicator		LED, yellow	
Typical switching time	ms	On: < 2	On: < 2
Switch-off delay	ms	—	ca. 25
Pole reversal does not work		LED	—
Pole reversal protection		—	Built in
Short-circuit protection		—	Built in
Switchable capacity load	µF	0.1 at 100 Ω, 24 VDC	
Switching point accuracy	mm	± 0,2	
Switching distance	mm	ca. 15	ca. 15
Hysteresis for OSP	mm	ca. 8	ca. 3
Lifetime		3 x 10 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⁾	°C °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 25-63 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.

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

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



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.

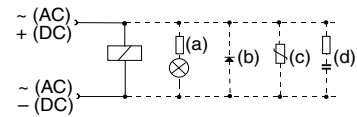
With **resistive and capacitive loads** with high switch-on current, such as light bulbs, a protective resistor should be fitted. This also applies to long cable lengths and voltages over 100 V.

In the switching of inductive loads such as relays, solenoid valves and

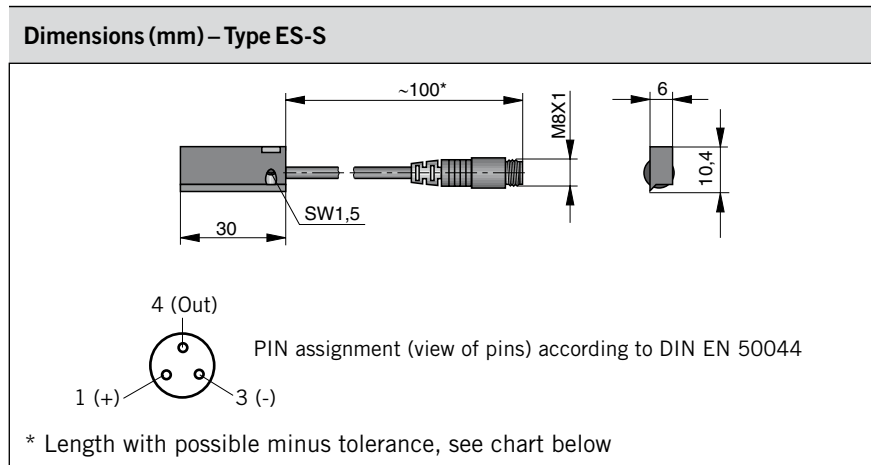
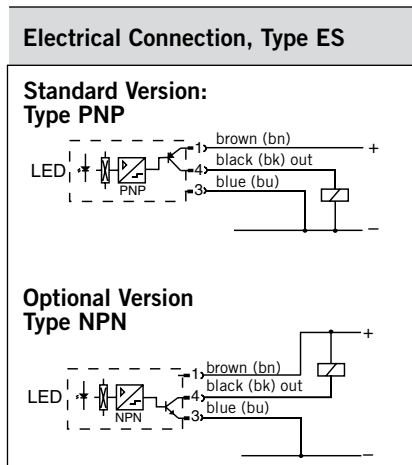
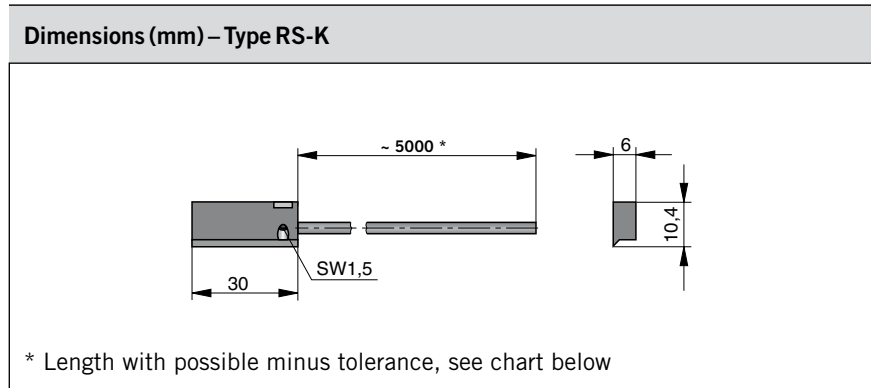
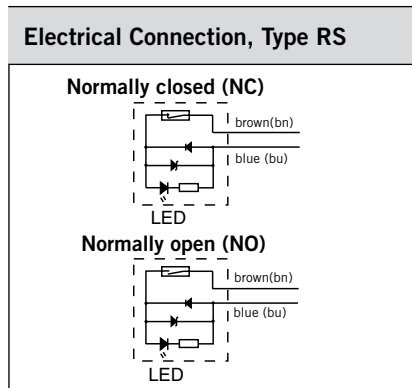
lifting magnets, voltage peaks (transients) are generated which must be suppressed by protective diodes, RC loops or varistors.

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

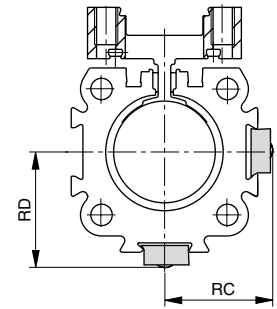


For the type ES, external protective circuits are not normally needed.



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-L25 to 63



Dimension Table (mm) and Order Instructions

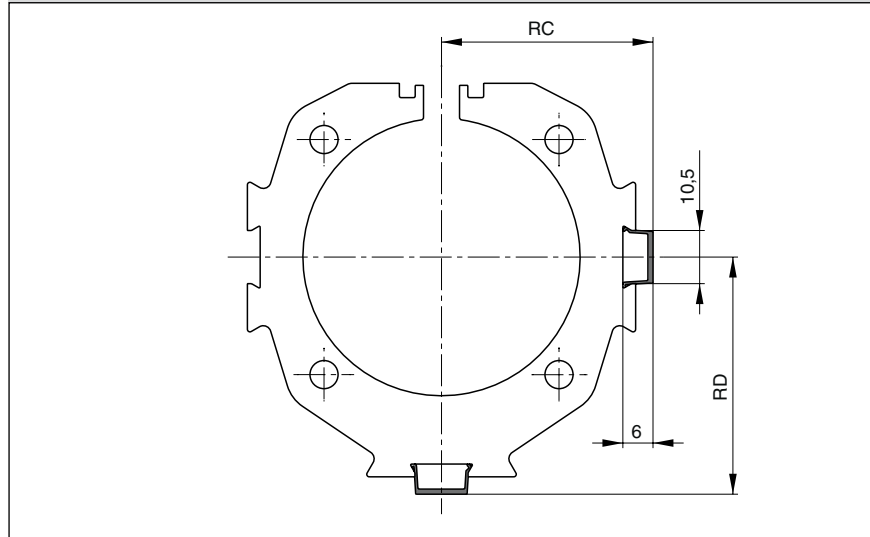
Serie			Order No.					
			RS closer Normally open	RS opener Normally closed	ES		ES compl. with 5 m cable	
	RC	RD	Type:	Type:	PNP	NPN	PNP	NPN
OSP-L25	25	27	KL3045	KL 3048	KL 3054	KL 3060	10750	10751
OSP-L32	31	34						
OSP-L40	36	39						
OSP-L50	43	48						
OSP-L63	53	59						
Cable 5 m with connector and with open end for magnetic switches Type ES-S					4041			

Linear Drive Accessories

∅ 25-63 mm
Cable Cover

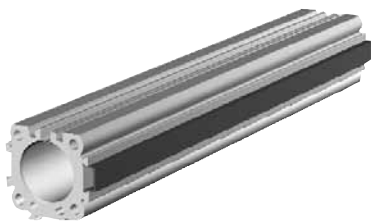
For clean guidance of magnetic switch cables along the cylinder body.
Contains a maximum of 3 cables with diameter 3 mm.
Material: Plastic
Colour: Red
Temperature Range: -10 to +80°C

Dimensions (mm)



Dimension Table (mm) and Order Instructions

Series	Dimensions (mm)		Order No.
	RC	RD	
OSP-L25	23.5	25.5	13039 Minimal length: 1m Max. profile length: 2m Multiple profiles can be used.
OSP-L32	29.5	32	
OSP-L40	34.5	37.5	
OSP-L50	41.5	46.5	
OSP-L63	51.5	57.5	



Characteristics			
Characteristics	Unit	Description	
Electrical Characteristics		Type RST	Type EST
Switching output		Reed	PNP
Operating voltage	V	10-30 AC/DC	10-30 DC
Ripple		-	≤10%
Voltage drop	V	≤3	≤2
Electrical configuration		2 wire	3 wire
Output function		normally open normally closed	normally open
Permanent current	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
Time delay before availability	ms	-	≤2
Reverse polarity prot.		yes	yes
Short-circuit protection		no	yes (pulsed)
Switchable capacity load	μF	0.1 at 100 Ω, 24 VDC	
Switching frequency	Hz	≤400	≤5 k
Repeatability	mm	≤0.2	≤0.2
Hysteresis	mm	≤1.5	≤1.5
EMC	EN	60947-5-2	
Lifetime		≥35 Mio. cycles with 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 on to magnetic switch)	
Shock resistance			
Vibration to EN 60068-2-6	G	15, 11 ms, 10 to 55 Hz, 1 mm	
Shock to EN 60068-2-27	G	50, 11 ms	
Bump to EN 60068-2-29	G	30, 11 ms, 1000 bumps each axis	

Linear Drive Accessories

∅ 25-63 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.

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

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

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



The right to introduce technical modifications is reserved

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

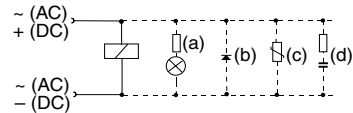
Magnetic switches are sensitive to excessive currents and inductions. With high switching frequencies and inductive loads such as relays, solenoid valves or lifting magnets, service life will be greatly reduced.

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

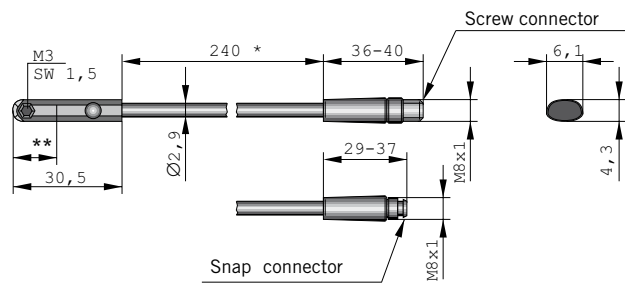
Electrical Connection Type EST-S

Dimensions (mm) – Type RST-K, EST-K

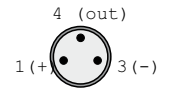
* Cable lengths available: 5000 mm ± 75 mm
2000 mm ± 40 mm

** 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



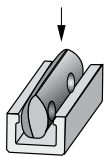
* ± 6 mm
 ** Switching point: Type RST-K Normally closed 14 mm
 Type RST-K Normally open 12.3 mm
 Type EST-K Normally open 8.1 mm



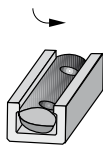
PIN assignment
 (view of pins)
 to DIN EN 50044

Installation

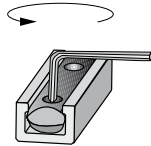
Insert magnetic switch



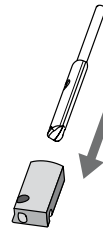
Rotate magnetic switch



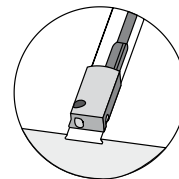
Secure magnetic switch



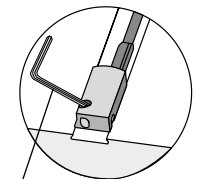
Insert magnetic switch into adapter



Insert adapter into cylinder dovetail slot

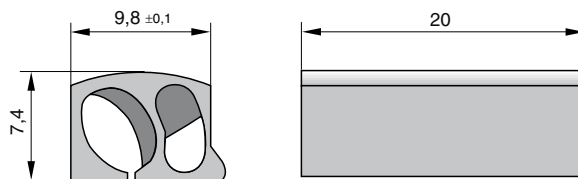


Tighten screw: torque 1.5 Nm



SW = 1.5 mm

Dimensions adapters for RST/EST magnetic switch – for type OSP-L25 – 63



Order Instructions			
Version	Voltage	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 T-slot magnetic switch for type OSP-L25 – 63.

Accessories		
Description	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	KC 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 RST/EST magnetic switch – for type OSP-L25 – 63 (pack of 10)		KL 3333

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The technical data stated in this catalog is to be observed by the user. The data stated may not be exceeded nor fallen short of. If such data is not stated then it may be assumed that there are no such upper or lower limits or restrictions for particular applications. In the case of unusual physical or chemical applications, consultation and clearances are to be obtained from Parker Origa

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

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

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

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

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

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

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

The following Directives are of particular significance to Parker Origa:

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

ORIGA products are excluded from the following EU Guidelines:

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

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