Pneumatic Linear Drives OSP-L

ORIGA SYSTEM PLUS

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

Parker

ENGINEERING YOUR SUCCESS.

Contents
Linear Drives

OSP
ORIGA
SYSTEM
PLUS

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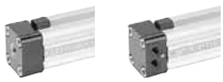
Air Connection on the End-face or both at One End ● Series OSP-L	
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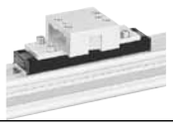
Clevis Mounting ● Series OSP-L	
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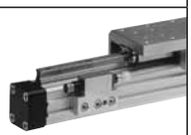
Variable Stop VS ● Series OSP-L with Linear Guide STL	

Modular Components Overview

Rodless Cylinder Series OSP-L

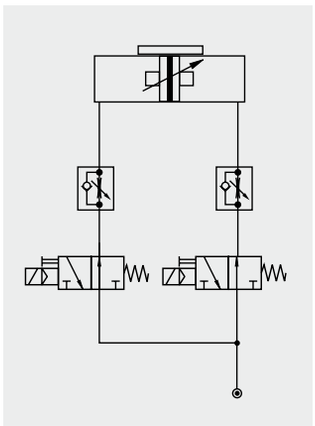
Linear Drives	OSP-L25	OSP-L32	OSP-L40	OSP-L50	OSP-L63
Theoretical force at 6 bar [N]	295	483	754	in progress	in progress
Effective force at 6 bar [N]	250	420	640		
Max. Velocity v [m/s]	4	4	4		
Magnetic piston (three sides)	❑	❑	❑		
Lubrication - Prelubricated	❑	❑	❑		
Multiple air ports (4 x 90°)	❑	❑	❑		
Both Air Connections at End-face	❍	❍	❍		
Air Connection on the End-face	❍	❍	❍		
Cushioning	❑	❑	❑		
Cushioning length [mm]	17	20	27		
Stroke length [mm] ▲	1 - 6000	1 - 6000	1 - 6000		
Pressure range p_{max} [bar]	8.0	8.0	8.0		
Temperature range [°C] ✻	-20 – + 80	-20 – + 80	-20 – + 80		
Stainless steel parts	❍	❍	❍		
Clevis Mounting	❍	❍	❍		
Duplex Connection / Multiplex Connection	❍	❍	❍		
Tandem piston	❍	❍	❍		
Basic Cylinder					
F [N]	300	450	750		
Mx [Nm]	1.5	3	6		
My [Nm]	15	30	60		
Mz [Nm]	3	5	8		
Slideline					
F [N]	675	925	1500		
Mx [Nm]	14	29	50		
My [Nm]	34	60	110		
Mz [Nm]	34	60	110		
Starline					
F [N]	3100	3100	4000 - 7500		
Mx [Nm]	50	62	150		
My [Nm]	110	160	400		
Mz [Nm]	110	160	400		
– variable Stop	❍	❍	❍		
Magnetic Switches					
Standard Version	❍	❍	❍		
T-Nut Version	❍	❍	❍		
Integrated valves 3/2 WV NO VOE	❍	❍	❍		
Mountings					
End Cap Mounting / Mid-Section Support	❍	❍	❍		
Inversion Mounting	❍	❍	❍		
Adaptor Profile / T-Nut Profile	❍	❍	❍		

❑ = Standard version ▲ = longer strokes on request ✻ = other temperature ranges on request

❍ = Option ✕ = not applicable

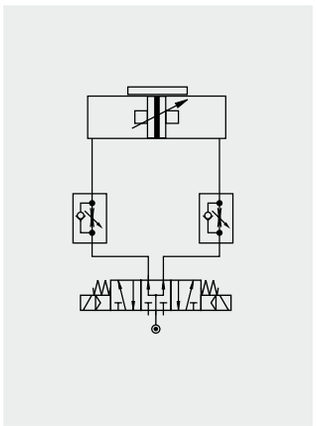
Examples

CONTROL EXAMPLES FOR OSP-L



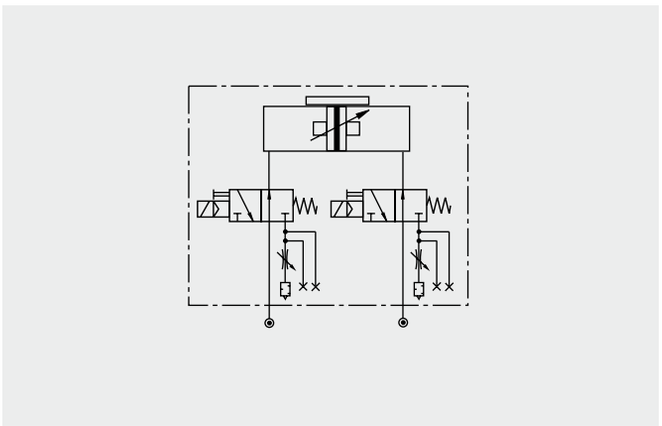
Circuit diagram for end of stroke application. Intermediate positioning is also possible.

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



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

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

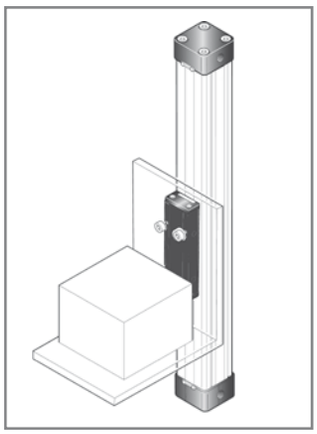


The optional integrated VOE Valves offer optimal control, and allow accurate positioning of intermediate positions and the lowest possible speeds.

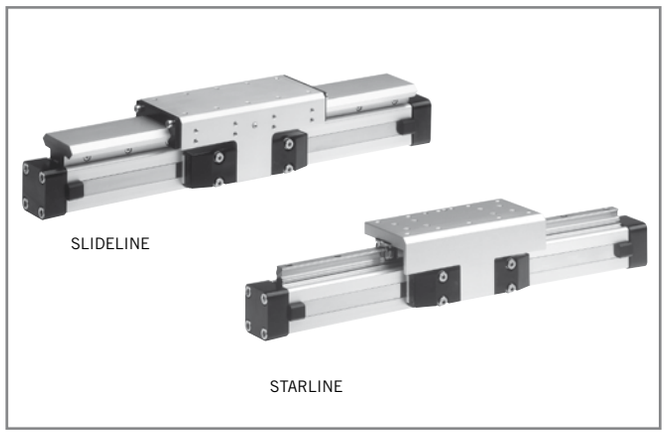
Examples

OSP-L APPLICATION EXAMPLES

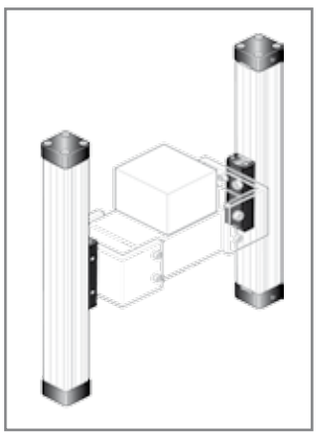
ORIGA SYSTEM PLUS – rodless linear drives offer maximum flexibility for any application.



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

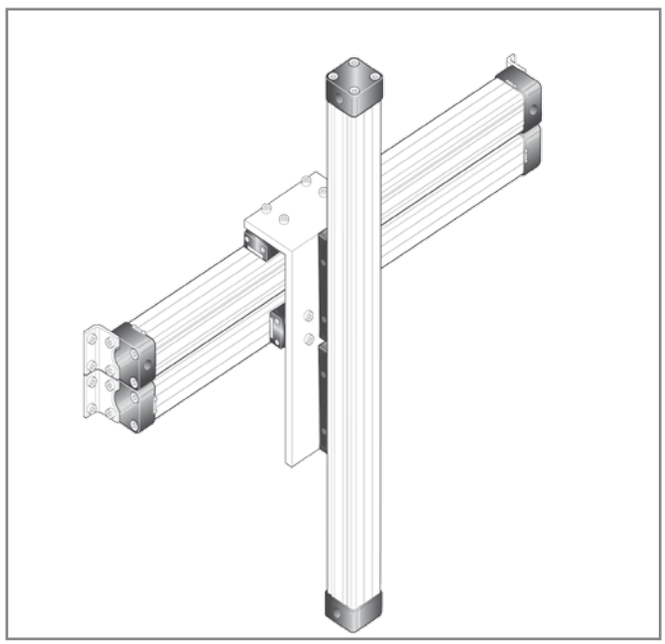


Integrated guides offer optimal guidance for applications requiring high performance, easy assembly and maintenance free operation.

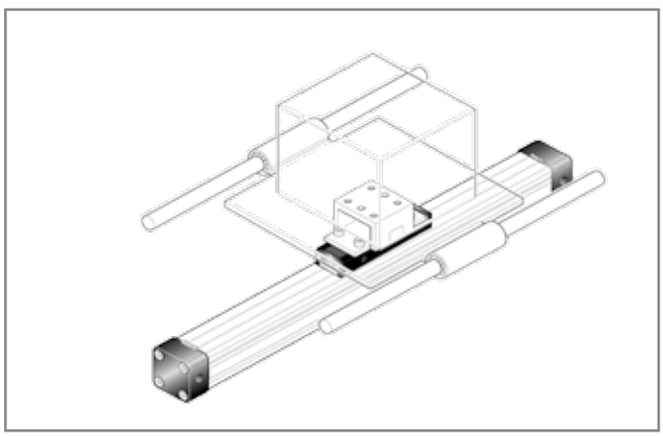


The mechanical design of the OSP-L allows synchronised movement of two cylinders.

Optimal system performance by combining multi-axis cylinder combinations.

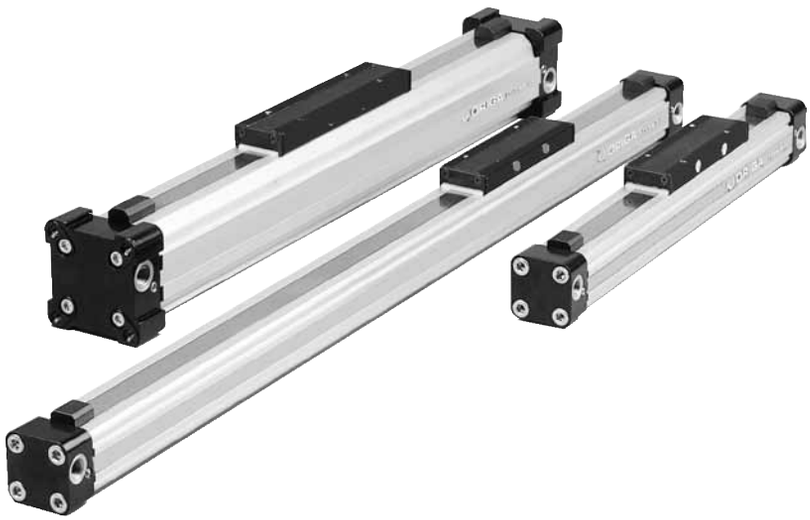


When using external guides, the clevis mounting is used to compensate for deviations in parallelism.



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

Rodless Pneumatic Cylinders
Series OSP-L



Contents Standard Cylinders

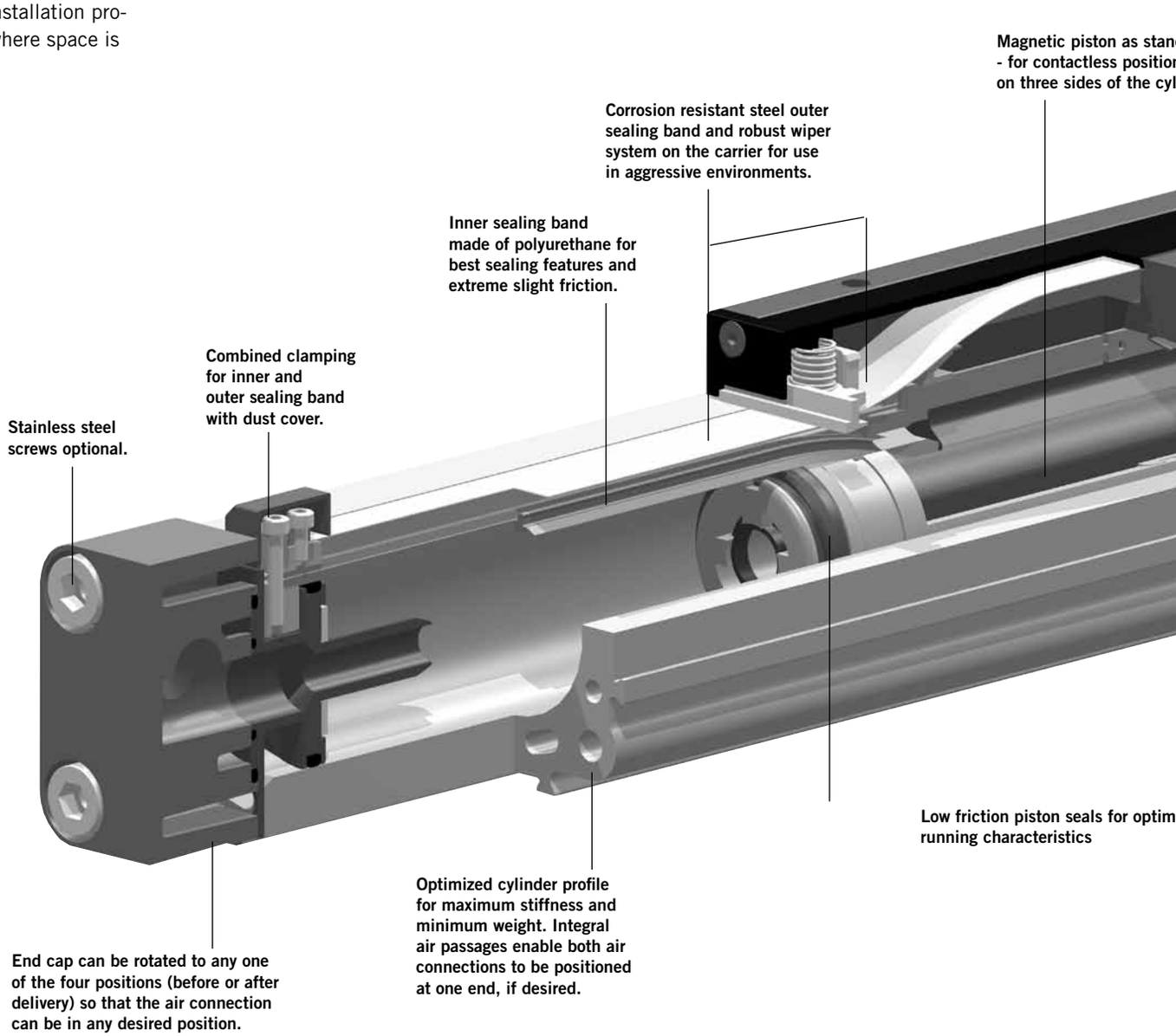
ORIGA SYSTEM PLUS
– INNOVATION FROM A PROVEN DESIGN

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.



SLIDELINE
Cost-effective plain bearing guide for medium 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.

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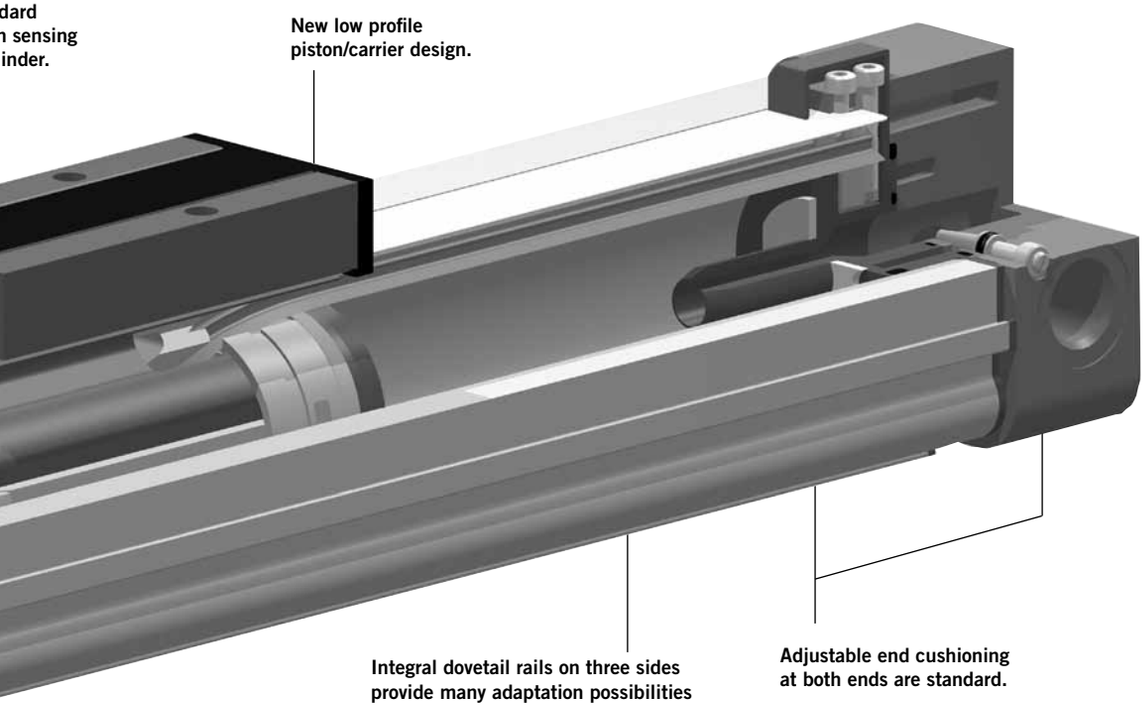
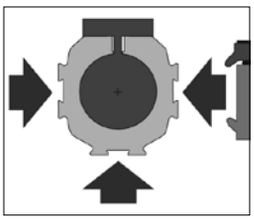
New low profile piston/carrier design.



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

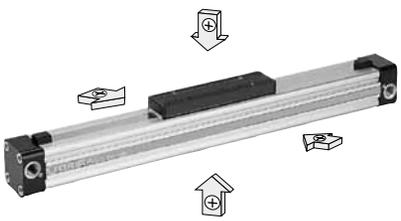
Install the OSP-L System to simplify design work! The files are compatible with all popular CAD systems and package hardware.

OPTIONS AND ACCESSORIES FOR SYSTEM VERSATILITY

SERIES OSP-L

STANDARD VERSIONS OSP-L25 to L63

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

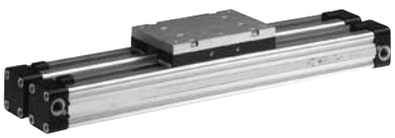
For simplified tubing connections and space saving.

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.



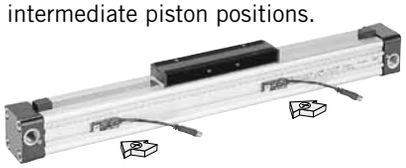
MULTIPLEX CONNECTION

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

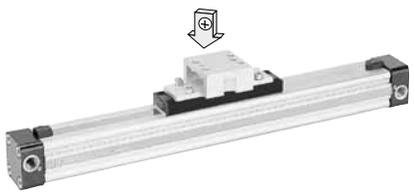
For electrical sensing of end and intermediate piston positions.



MOUNTINGS FOR OSP-L25 TO L63

CLEVIS MOUNTING

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

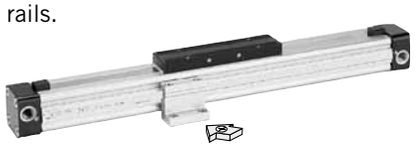


END CAP MOUNTING

For end-mounting of the cylinder.

MID-SECTION SUPPORT

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



INVERSION MOUNTING

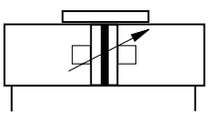
The inversion mounting transfers the driving force to the opposite side, e. g. for dirty environments.

Rodless Pneumatic Cylinder

ø 25-63 mm

OSP
ORIGA SYSTEM PLUS

Series OSP-L..



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

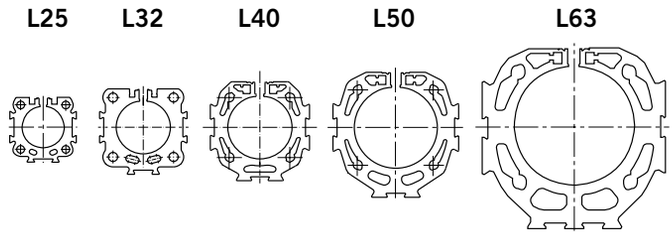
Special Versions:
- Stainless steel screws
- Both air connections on one end
- Air connection on the end-face
- Integrated Valves VOE

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	in progress	
OSP-L63		

Size Comparison



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

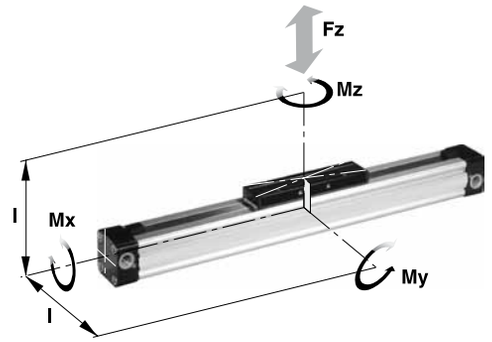
Loads, Forces and Moments

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.

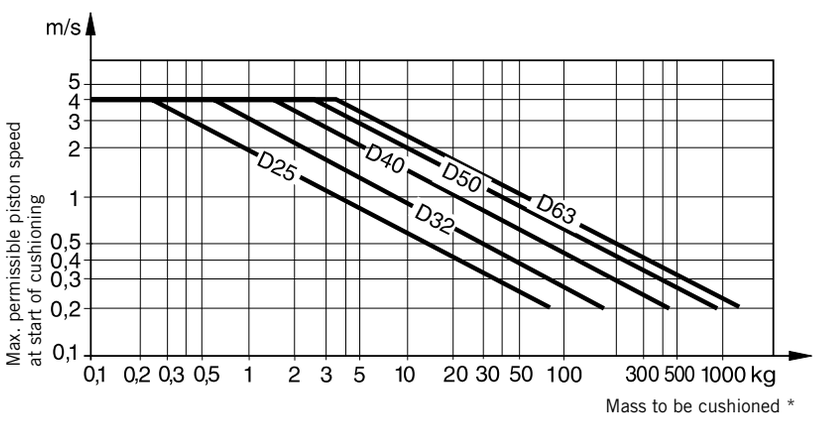


M = F ·l
Bending moments are calculated from the centre of the linear actuator

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-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	in progress						
OSP-L63							

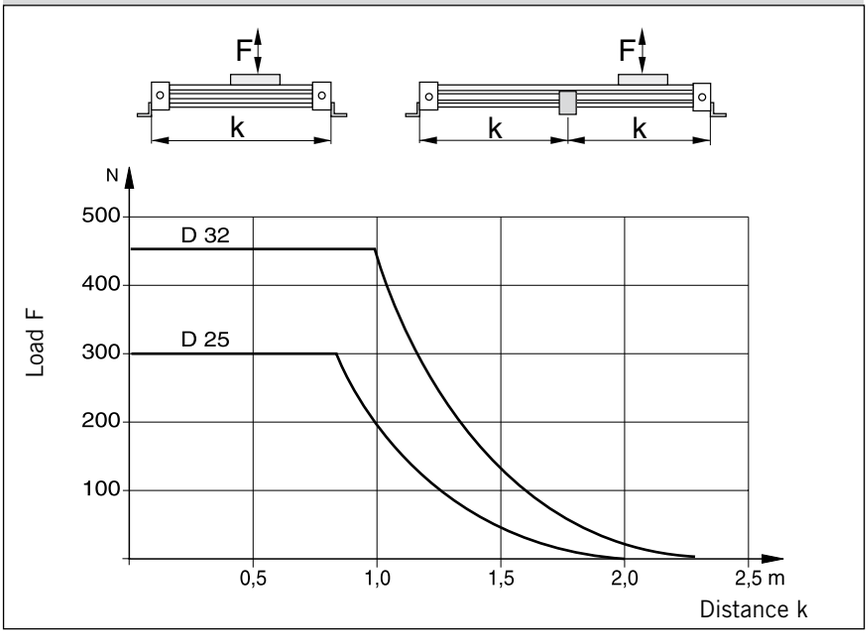
Cushioning Diagram

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.

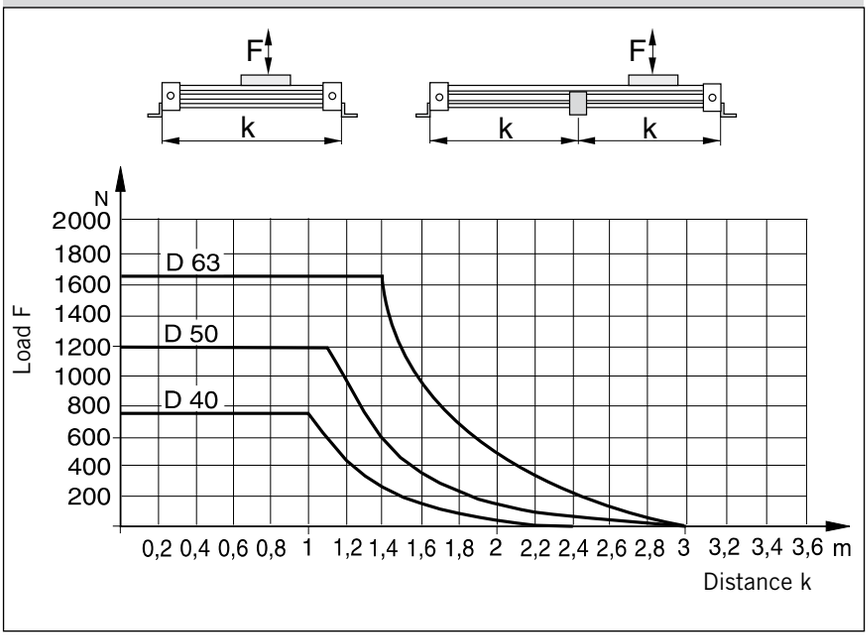


* For cylinders with linear guides or brakes, please be sure to take the mass of the carriage or the brake housing into account.

Permissible Support Spacings: OSP - L25 to L32



Permissible Support Spacings: OSP - L40 to L63



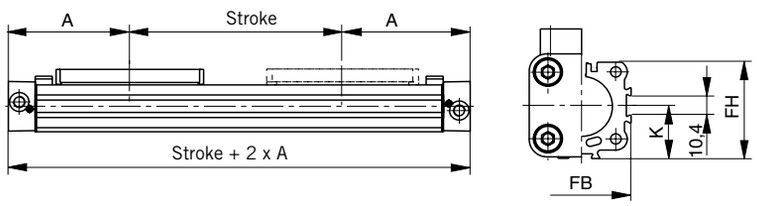
Mid-Section Supports

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.

Cylinder
Stroke and Dead Length A

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

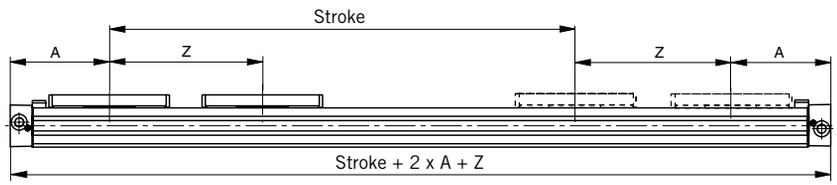
Dimensions of Basic Cylinder OSP - L25 to L63



Tandem Cylinder

Two pistons are fitted: dimension "Z" is optional. (Please note minimum distance "Z_{min}").

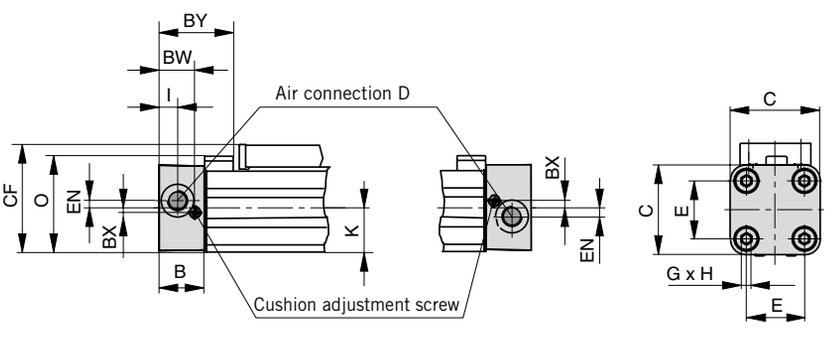
- Free choice of stroke length up to 6000 mm in 1 mm steps
- Longer strokes on request
- **Stroke length to order is stroke + dimension "Z"**



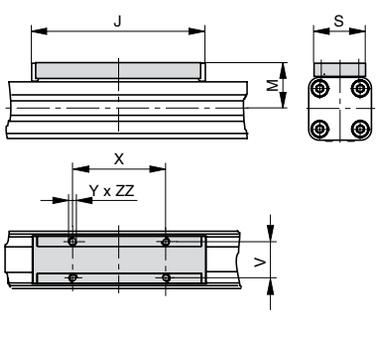
Please note:

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

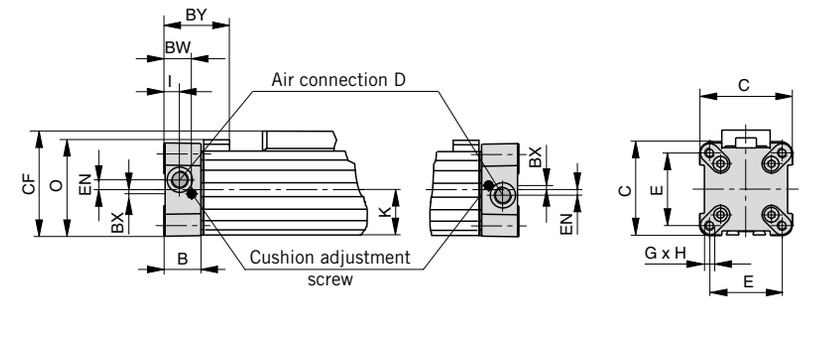
End Cap/Air Connection can be rotated 4 x 90° **Series OSP -L25 to L32**



Carrier
Series OSP-L25 to L63



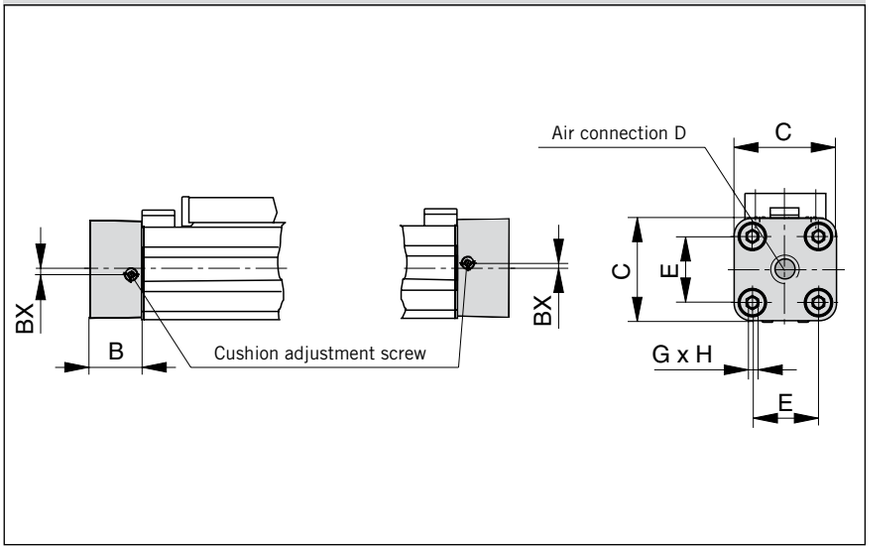
End Cap/Air Connection can be rotated 4 x 90° **Series OSP -L40 to L63**



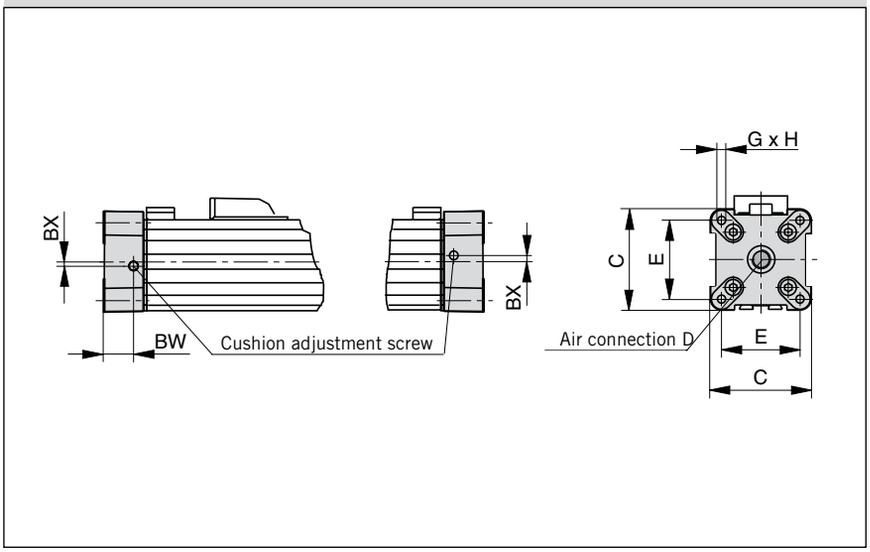
Dimension Table (mm)

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	in progress																								
OSP-L63																									

Series OSP-L25 to L32



Series OSP-L40 to L63



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.

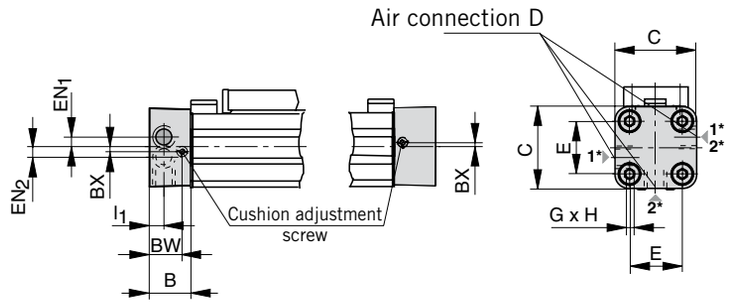
Dimension Table (mm)

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	in progress							
OSP-L63								

Both Air Connections at One End

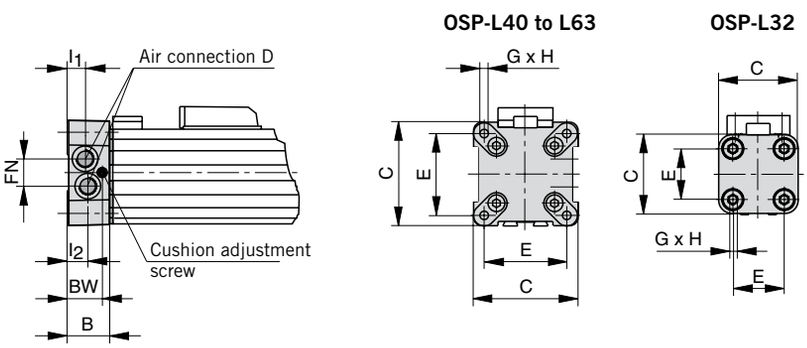
A special end cap with both air connections on one side is available for situations where shortage of space, simplicity of installation or the nature of the process make it desirable.
Air supply to the other end is via internal air passages (OSP-L25 to L63).

Series OSP-L25



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

Series OSP-L32 to L63

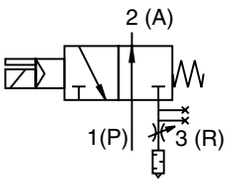
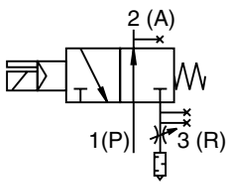


Dimension Table (mm)

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	in progress												
OSP-L63													

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

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

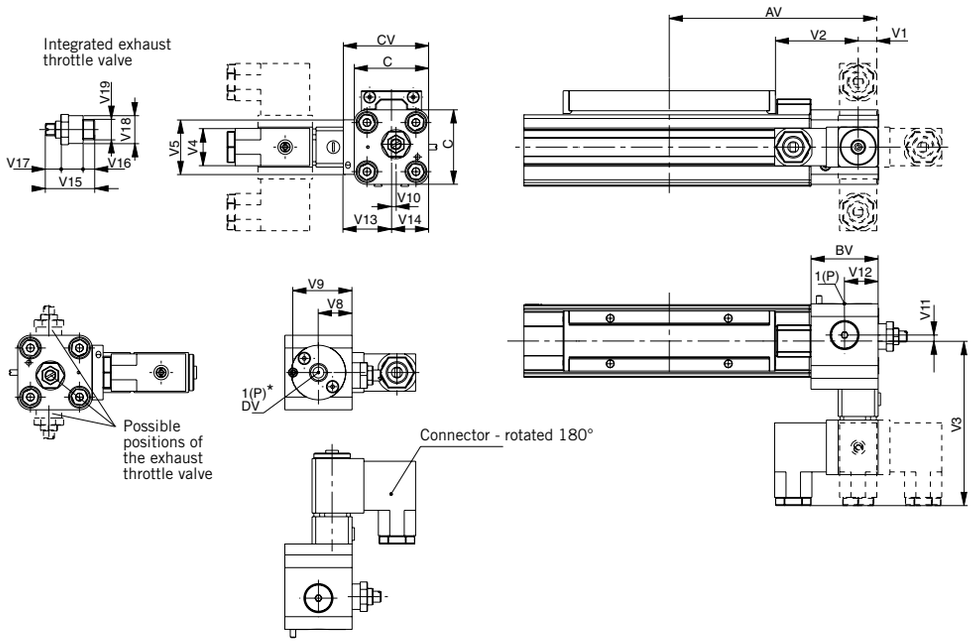
Integrated 3/2 Way Valves VOE

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!

Dimensions VOE Valves OSP-L25 and L32

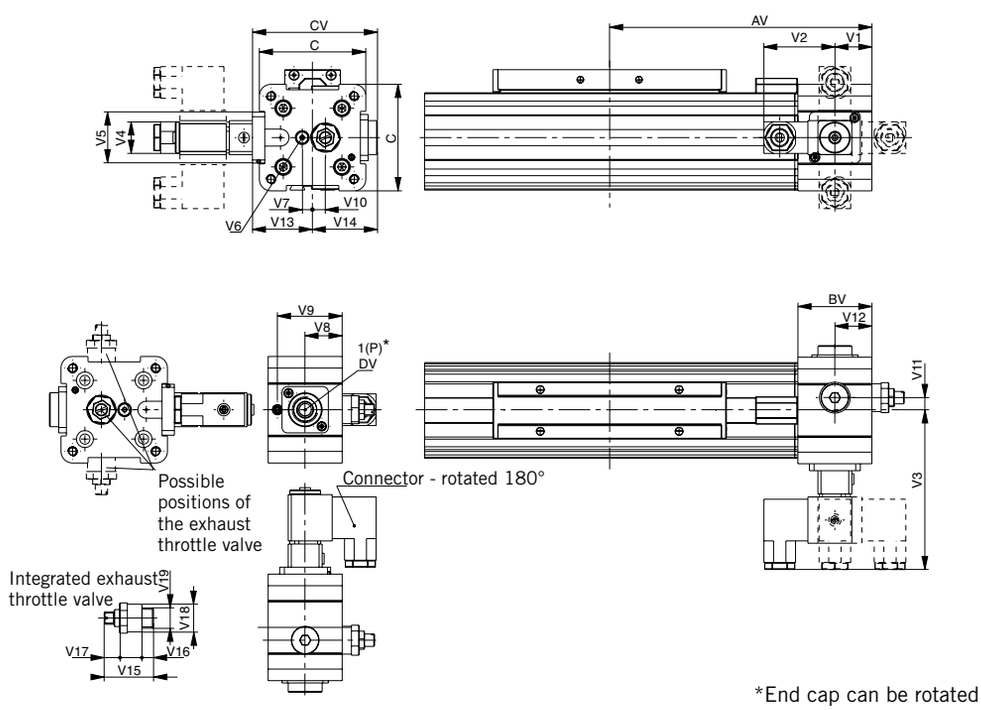


* End cap can be rotated 4x90°

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	in progress																							

Order Instructions – Basic Cylinder

1-4	5+6	7	8	9	10	11	12-16	17	18	19	20	21	22	23	24	25
OSPL	25	0	0	0	0	0	01100	0	0	0	0	0	0	**0**	**0**	0

Piston-Ø
25
32
40
in progress
in progress

Stroke
in mm (5 digits)

Piston Mounting	
0	without
1	clevis mounting

add. Guide Carriage	
0	without

Measuring system	
0	without

Screws	
0	standard
1	Stainless

Cushioning	
0	standard
1	max. length

Version / Piston	
0	standard
1	Tandem

Lubrication	
0	standard

End cap position	
0	l+r 0° = in front
1	l+r 90° = underneath
2	l+r 180° = at the back
3	l+r 270° = same side as outerband
4	l 90° = underneath; r 0° = in front
5	l 180° = at the back; r 0° = in front
6	l 270° = same side as outerband; r 0° = in front
7	l 0° = in front; r 90° = underneath
8	l 180° = at the back; r 90° = underneath
9	l 270° = same side as outerband; r 90° = underneath
A	l 0° = in front; r 180° = at the back
B	l 90° = underneath; r 180° = at the back
C	l 270° = same side as outerband; r 180° = at the back
D	l 0° = in front; r 270° = same side as outerband
E	l 90° = underneath; r 270° = same side as outerband
F	l 180° = at the back; r 270° = same side as outerband

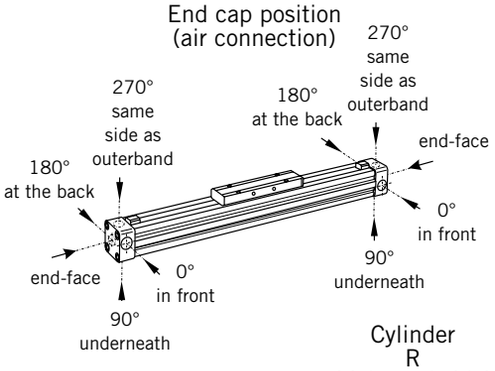
Guides/ Brakes/ Inversion	
0	without
M	Inversion Ø 16-80
N	Duplex Ø 25,32,40,50

Cover / Cable Channel	
0	standard
1	Cable channel
2	Cable channel two-sided

Air Connection	
0	standard
1	end face
2	both at one end
3	left standard right end face
4	right standard left end face
A	3/2 Way valve VOE 24 V = Ø 25,32,40,50
B	3/2 Way valve VOE 230 V~ / 110 V= Ø 25,32,40,50
C	3/2 Way valve VOE 48 V = Ø 25,32,40,50
E	3/2 Way valve VOE 110 V~ Ø 25,32,40,50

Seals	
0	standard

End cap position (air connection)



Cylinder L (left end side)

Cylinder R (right end side)

Accessories - please order separately

Description	Further information see
End Cap Mountings	**Page 38**
Mid-Section Support	**Page 39**
Adaptor Profile	**Page 48**
T-Slot Profile	**Page 49**
Connection Profile	**Page 50**
Multiplex Connection	**Page 52**
Magnetic Switches	**Page 53 and page 57**

Linear Guides
Series OSP-L

Contents

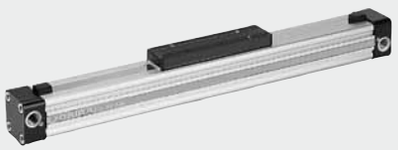
OSP
ORIGA SYSTEM PLUS

Linear Guides

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

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

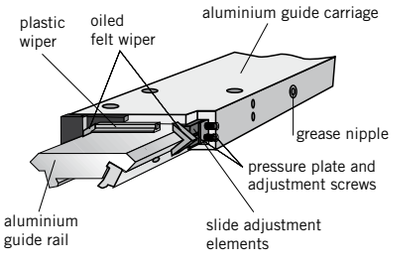
Plain Bearing Guide SLIDELINE

OSP ORIGA SYSTEM PLUS

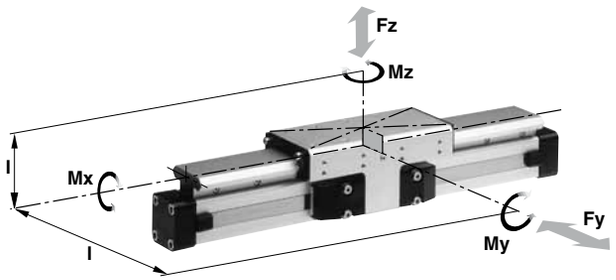
Series SL 25 to 63
for Linear-drive
• Series OSP-L

Versions

for pneumatic 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)

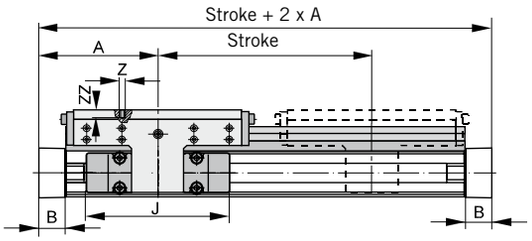
[1] Corrosion resistant fixtures available on request

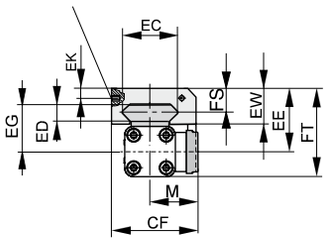
Series SL	For linear drive	Max. moments [Nm]			Max. loads [N]	Mass of linear drive with guide [kg]		Mass * of guide carriage [kg]	Order No. SLIDELINE [1] Guide without cylinder
		Mx	My	Mz	Fy,Fz	with 0 mm stroke	increase per 100 mm stroke		
SL25	OSP-L25	14	34	34	675	1.55	0.39	0.61	**20342FIL**
SL32	OSP-L32	29	60	60	925	2.98	0.65	0.95	**20196FIL**
SL40	OSP-L40	50	110	110	1500	4.05	0.78	1.22	**20343FIL**
SL50	OSP-L50	in progress							
SL63	OSP-L63								

Mountings see page 40-42

Dimensions

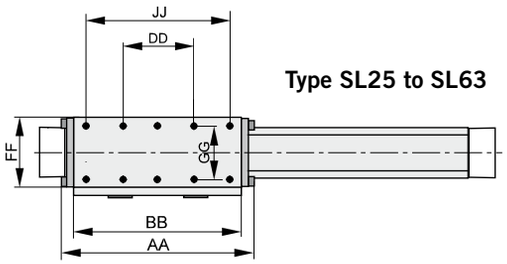
Series OSP-L





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)

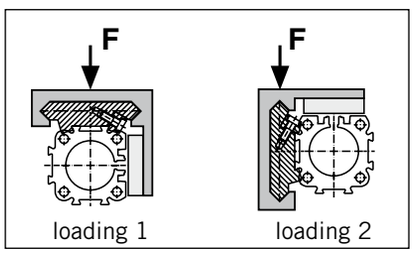
Series	A	B	J	M	Z	AA	BB	DD	CF	EC	ED	EE	EG	EW	FF	FT	FS	GG	JJ	ZZ
SL 25	100	22	117	40,5	M6	162	142	60	72,5	47	12	53	39	30	64	73,5	20	50	120	12
SL 32	125	25,5	152	49	M6	205	185	80	91	67	14	62	48	33	84	88	21	64	160	12
SL 40	150	28	152	55	M6	240	220	100	102	77	14	64	50	34	94	98,5	1,5	78	200	12
SL 50	in progress																			
SL 63																				

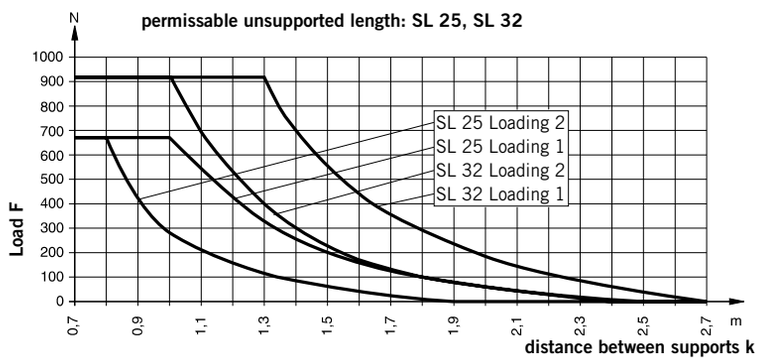
Mid-Section Support

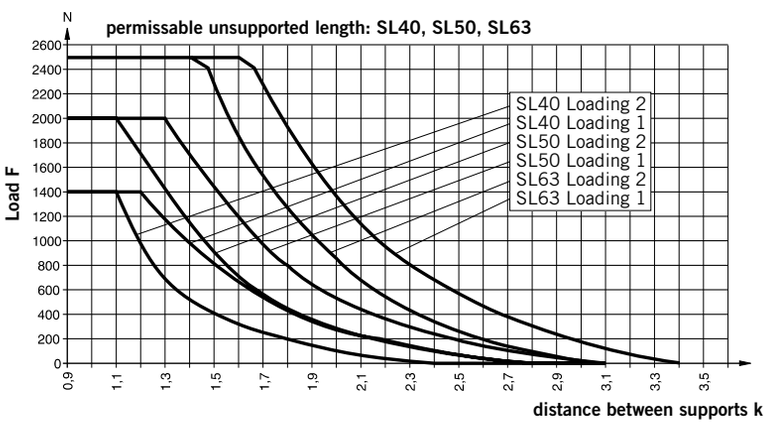
(For versions, see page 39)

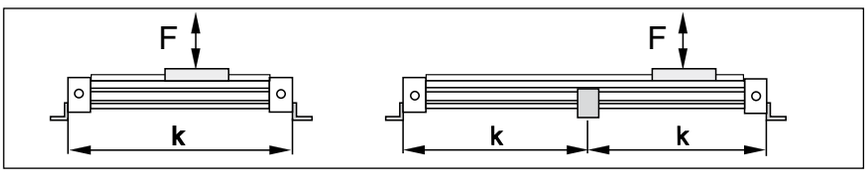
Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading.
A distinction must be drawn between loading 1 and loading 2.
Deflection of 0.5 mm max.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

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









Order Instructions – SLIDELINE

1-4	5+6	7	8	9	10	11	12-16	17	18	19	20	21	22	23	24	25
OSPL	25	0	0	0	0	0	01100	0	0	0	0	0	0	**0**	**0**	0

Piston-Ø

25
32
40
in progress
in progress

Stroke

in mm (5 digits)

Piston Mounting

0	without

Measuring system

0	without

Screws

0	standard
1	Stainless

Cushioning

0	standard

Version / Piston

0	standard
1	Tandem

Lubrication

0	standard

End cap position

0	l+r 0° = in front
1	l+r 90° = underneath
2	l+r 180° = at the back
3	l+r 270° = same side as outerband
4	l 90° = underneath; r 0° = in front
5	l 180° = at the back; r 0° = in front
6	l 270° = same side as outerband; r 0° = in front
7	l 0° = in front; r 90° = underneath
8	l 180° = at the back; r 90° = underneath
9	l 270° = same side as outerband; r 90° = underneath
A	l 0° = in front; r 180° = at the back
B	l 90° = underneath; r 180° = at the back
C	l 270° = same side as outerband; r 180° = at the back
D	l 0° = in front; r 270° = same side as outerband
E	l 90° = underneath; r 270° = same side as outerband
F	l 180° = at the back; r 270° = same side as outerband

Guides/ Brakes/ Inversion

0	without
2	Slideline SL Ø 25-63

Cover / Cable Channel

0	standard
1	Cable channel
2	Cable channel two-sided

Air Connection

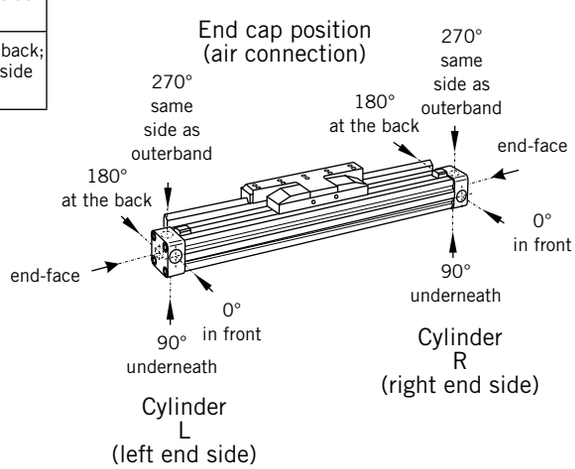
0	standard
1	end face
2	both at one end
3	left standard right end face
4	right standard left end face
A	3/2 Way valve VOE 24 V = Ø 25,32,40,50
B	3/2 Way valve VOE 230 V~ / 110 V= Ø 25,32,40,50
C	3/2 Way valve VOE 48 V = Ø 25,32,40,50
E	3/2 Way valve VOE 110 V~ Ø 25,32,40,50

Seals

0	standard

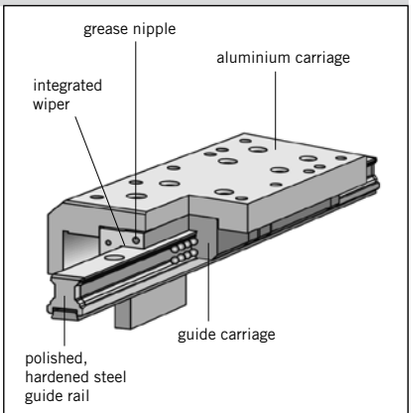
add. Guide Carriage

0	without
2	Guide Carriage Slideline SL Ø 25-63

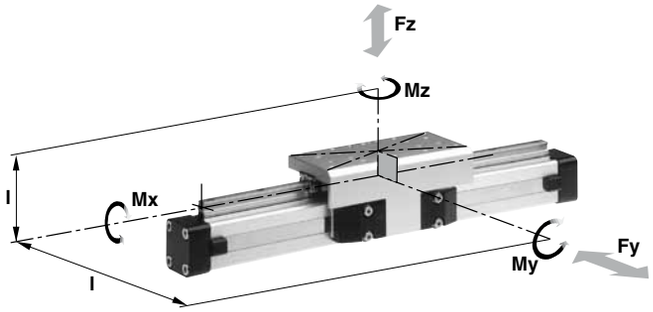


Versions

for pneumatic linear drive:
Series OSP-L



Loads, Forces and Moments



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

$$\frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} + \frac{Fy}{Fy_{1max}} + \frac{Fz}{Fz_{max}} \leq 1$$

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.

Recirculating Ball Bearing Guide STARLINE

OSP
ORIGA SYSTEM PLUS

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

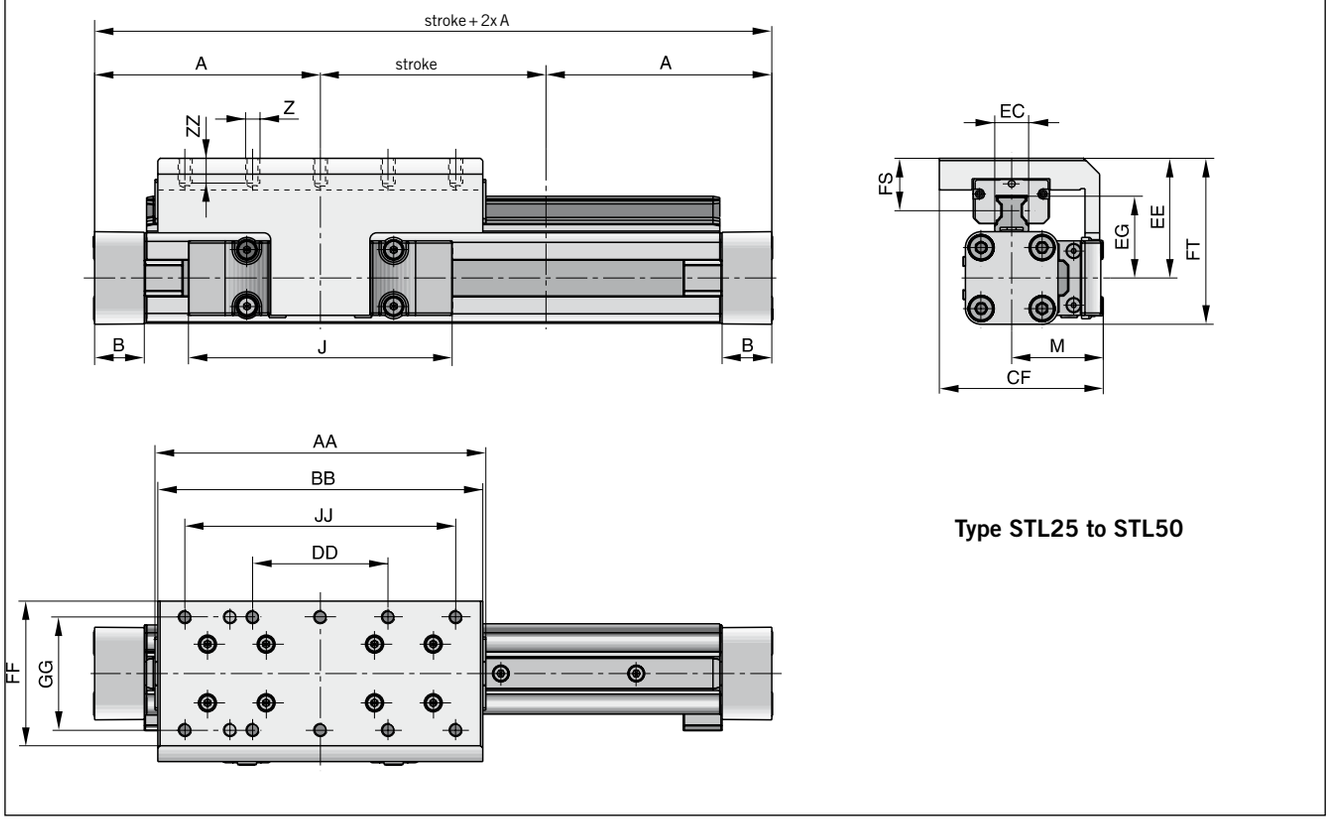
Features:
- Polished and hardened steel guide rail
- For very high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm
- Anodized aluminium guide carriage
  – dimensions compatible with OSP-L guides SLIDELINE
- Installation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

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

Series STL	For linear drive	Max. moments [Nm]			Max. loads [N]		Mass of linear drive with guide [kg]		Mass * of guide carriage [kg]	Order No. STARLINE Guide without cylinder
		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	**21112FIL**
STL32	OSP-L32	62	160	160	3100	3100	2.934	0.526	1.181	**21113FIL**
STL40	OSP-L40	150	400	400	4000	7500	4.452	0.701	1.901	**21114FIL**
STL50	OSP-L50	in progress								**21115FIL**

Mountings see page 40-42

Dimensions Series OSP-L STL25 to STL50



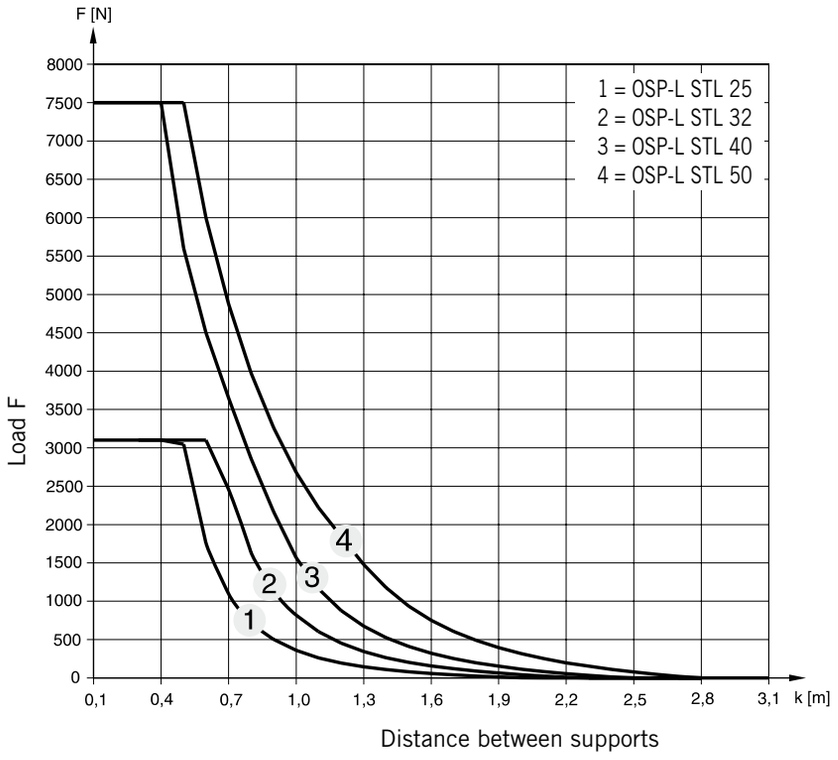
Type STL25 to STL50

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						in progress												

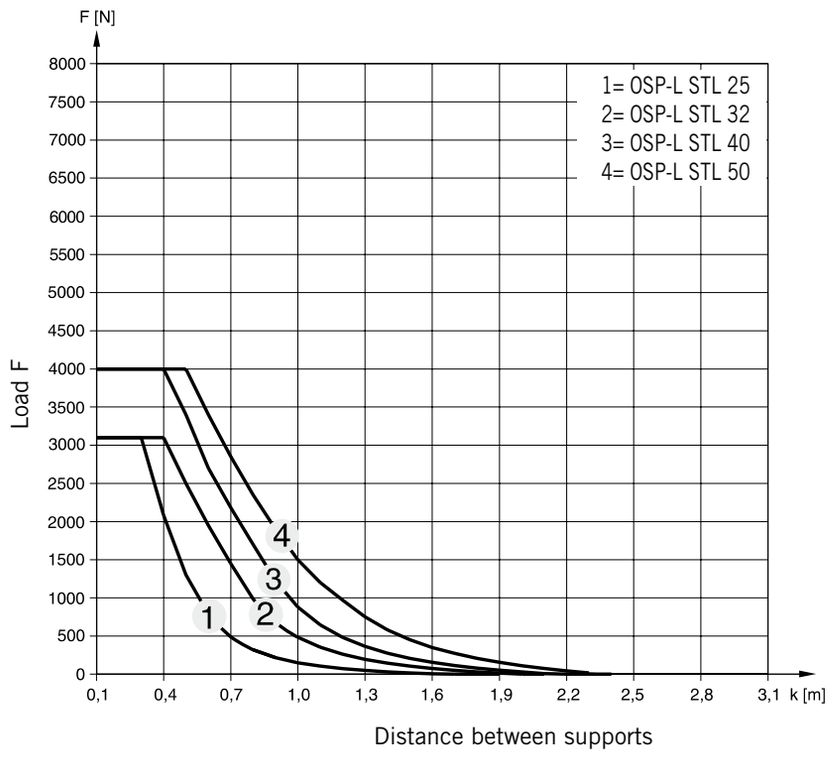
Permissible Unsupported Length STL25 to STL50

Loading 1 – Top carrier



Permissible Unsupported Length STL25 to STL50

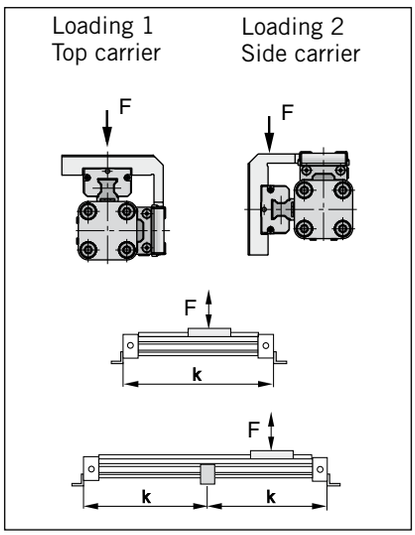
Loading 2 – Side carrier



Mid-Section Support

(For versions, see page 45)

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.

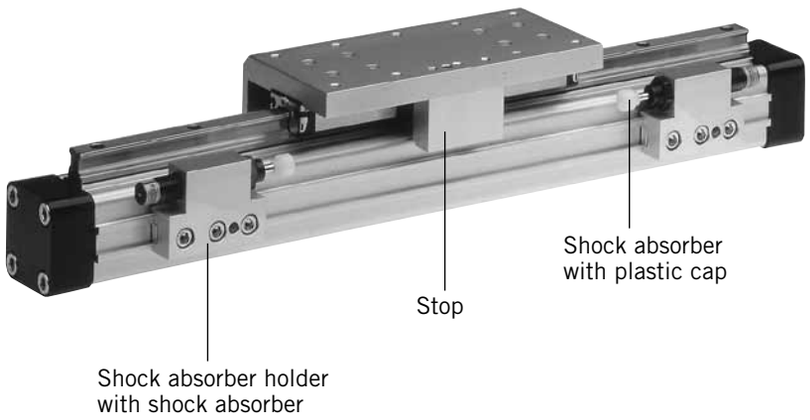
Variable Stop

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

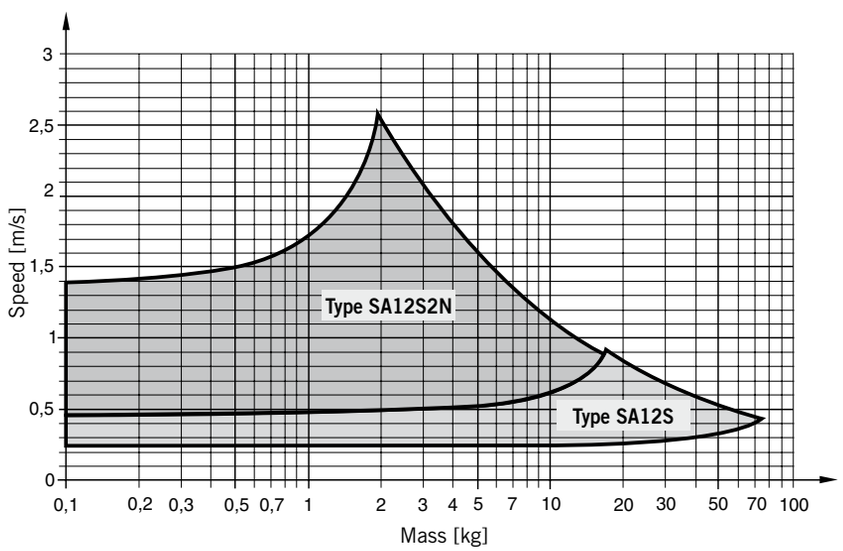


Shock Absorber Selection

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

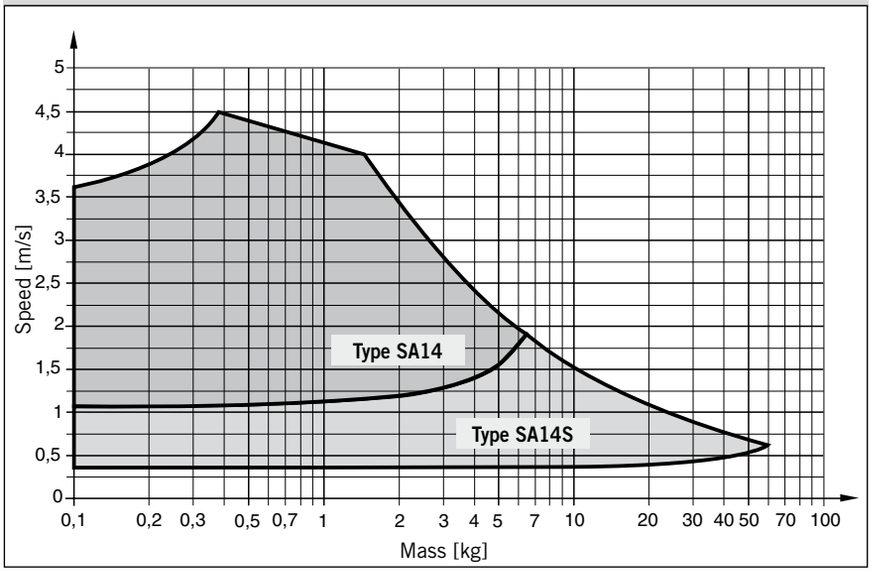
The mass of the carrier itself must be taken into account.

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



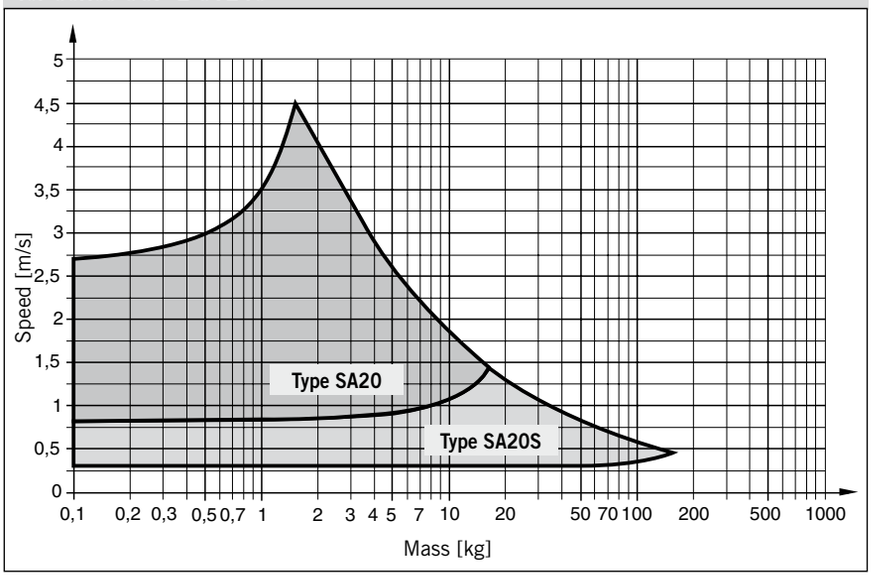
The values relate to an effective driving force of 250 N (6 bar)

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



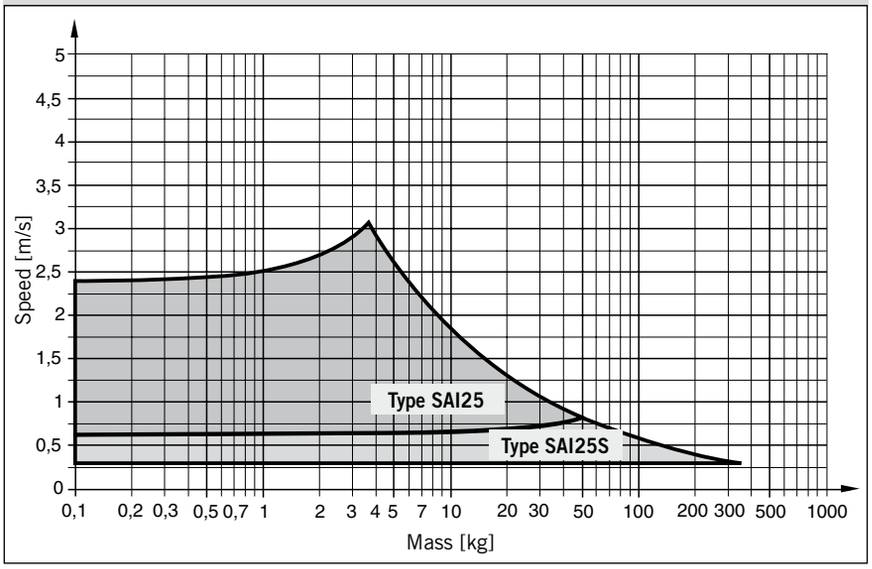
The values relate to an effective driving force of 420 N (6 bar)

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



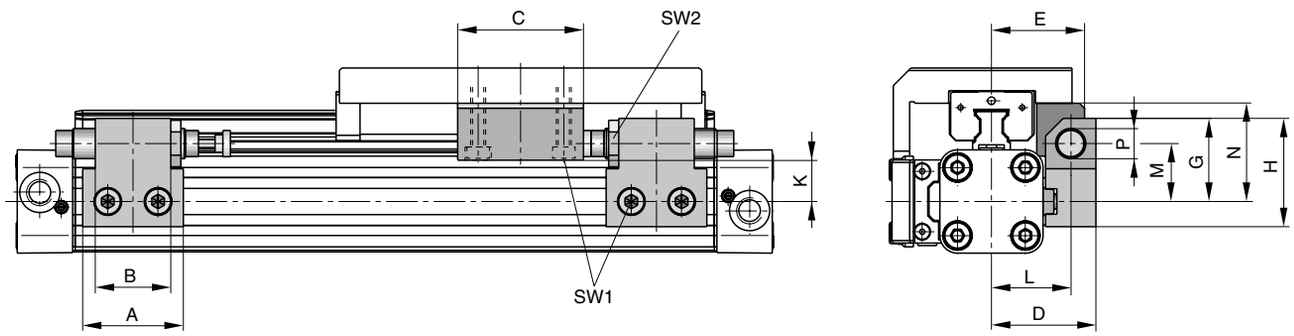
The values relate to an effective driving force of 640 N (6 bar)

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)

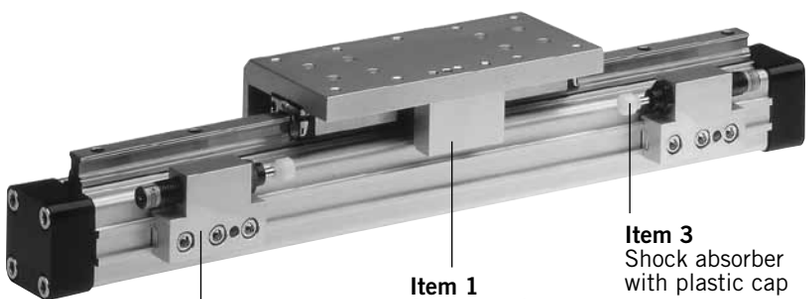
Dimensions – Variable Stop Type VS25 to VS50



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

Series	Type	A	B	C	D	E	G	H	K	L	M	N	P	SW1	SW2
OSP-STL25	**VS25**	40	30	50	41.5	37	33	43	18	31.5	23	39	M12x1	5	16
OSP-STL32	**VS32**	60	40	50	45.5	42	35	45	19	35.5	25	48	M14x1.5	5	17
OSP-STL40	**VS40**	84	52	60	64	59	48	63	25.6	50	34	58.6	M20x1.5	5	24
OSP-STL50	**VS50**	in progress													

Order Information – Variable Stop Type VS25 to VS50



Item 1
Stop complete
with fittings

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

Item 3
Shock absorber
with plastic cap

Order Instructions – Variable Stop Type VS25 to VS50

without cylinder and without guide

Item	Description	Size							
		VS25		**VS32**		**VS40**		**VS50**	
		Type	**Order-No.**	**Type**	**Order-No.**	**Type**	**Order-No.**	**Type**	**Order-No.**
1	Stop, complete	–	**21197FIL**	–	**21198FIL**	–	**21199FIL**	**in progress**	
2	Shock absorber holder complete	–	**21202FIL**	–	**21203FIL**	–	**21204FIL**		
3 *	Shock absorber, soft	**SA12S2N**	**7723FIL**	**SA14**	**7708FIL**	**SA20**	**7710FIL**		
	Shock absorber, hard	**SA12S**	**7707FIL**	**SA14S**	**7709FIL**	**SA20S**	**7711FIL**		

*** Shock absorber with plastic cap**

Note: Order instructions for VS in combination with the cylinder and guide see page 33, pos. 18

Order Instructions – STARLINE

1-4	5+6	7	8	9	10	11	12-16	17	18	19	20	21	22	23	24	25
OSPL	25	0	0	0	0	0	01100	0	0	0	0	0	0	**0**	**0**	0

Piston-Ø
25
32
40
in progress

Version / Piston	
0	standard
1	Tandem

Air Connection	
0	standard
1	end face
2	both at one end
3	left standard right end face
4	right standard left end face
A	3/2 Way valve VOE 24 V = Ø 25,32,40,50
B	3/2 Way valve VOE 230 V~ / 110 V= Ø 25,32,40,50
C	3/2 Way valve VOE 48 V = Ø 25,32,40,50
E	3/2 Way valve VOE 110 V~ Ø 25,32,40,50

Seals	
0	standard

Lubrication	
0	standard

Screws	
0	standard

Stroke
in mm (5 digits)

End cap position	
0	l+r 0° = in front
1	l+r 90° = underneath
2	l+r 180° = at the back
3	l+r 270° = same side as outerband
4	l 90° = underneath; r 0° = in front
5	l 180° = at the back; r 0° = in front
6	l 270° = same side as outerband; r 0° = in front
7	l 0° = in front; r 90° = underneath
8	l 180° = at the back; r 90° = underneath
9	l 270° = same side as outerband; r 90° = underneath
A	l 0° = in front; r 180° = at the back
B	l 90° = underneath; r 180° = at the back
C	l 270° = same side as outerband; r 180° = at the back
D	l 0° = in front; r 270° = same side as outerband
E	l 90° = underneath; r 270° = same side as outerband
F	l 180° = at the back; r 270° = same side as outerband

Cushioning	
0	standard
1	max. length
2	variable stop complete VS soft left for Starline
3	variable stop complete VS hard left for Starline,
4	variable stop complete VS soft right for Starline
5	variable stop complete VS hard right for Starline
6	variable stop complete VS soft both sides for Starline
7	variable stop complete VS hard both sides for Starline

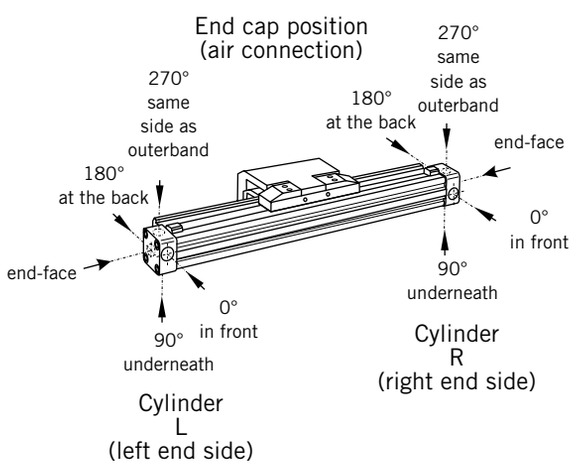
Piston Mounting	
0	without

Guides/ Brakes/ Inversion	
0	without
B	Starline STL

add. Guide Carriage	
0	without
E	Guide Carriage Starline STL

Cover / Cable Channel	
0	standard
1	Cable channel
2	Cable channel two-sided

Measuring system	
0	without



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

Contents

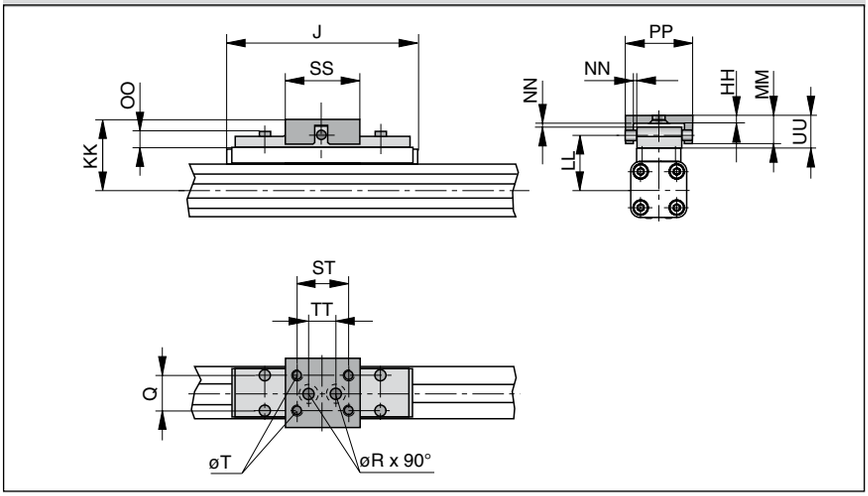
Linear Drive Acccessories for Series OSP-L	
Description	
Clevis Mounting 	Page 37
End Cap Mountings 	Page 38
End Cap Mountings (for Linear Drives with guides) 	Page 41, 43, 44
Mid-Section Support 	Page 39
Mid-Section Support (for Linear Drives with guides) 	Page 42, 45, 46
Inversion Mounting 	Page 47
Adaptor Profile 	Page 48
T-Slot Profile 	Page 49
Connection Profile 	Page 50
Dulex Connection 	Page 51
Multiplex Connection 	Page 52
Magnetic Switch, standard version 	Page 53
Magnetic Switch for T-Nut mounting 	Page 57
Cable cover 	Page 56

Linear Drive Accessories

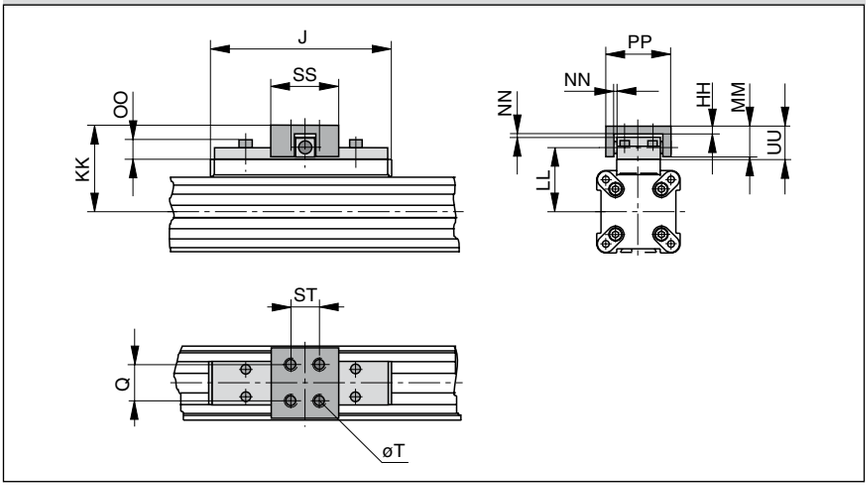
ø 25-63 mm

Clevis Mounting

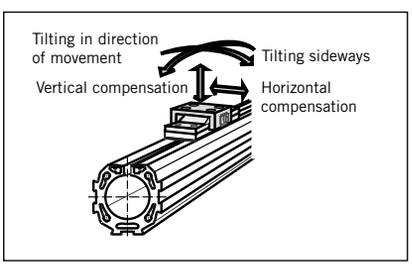
Series OSP-L25 to L32



Series OSP-L40 to L63



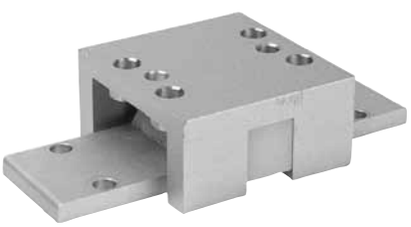
Please note:
When using additional inversion mountings, take into account the dimensions.



For Linear-drive
- **Series OSP-L**

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.



Dimension Table (mm) — **Order instructions in combination with basic cylinder see page 19, Pos. 19**

Series	J	Q	T	øR	HH	KK	LL	MM	NN*	OO	PP	SS	ST	TT	UU	Order No. Standard	Order No. Stainless
OSP-L25	117	16	M5	5.5	3.5	52	39	19	2	9	38	40	30	16	21	**20005FIL**	**20092FIL**
OSP-L32	152	25	M6	6.6	6	68	50	28	2	13	62	60	46	40	30	**20096FIL**	**20094FIL**
OSP-L40	152	25	M6	–	6	74	56	28	2	13	62	60	46	–	30	**20024FIL**	**20093FIL**
OSP-L50	in progress																
OSP-L63																	

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

Linear Drive Accessories

ø 25-63 mm
End Cap Mountings

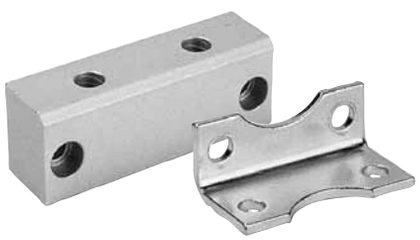
OSP
ORIGA SYSTEM PLUS

For Linear-drive
- **Series OSP-L**

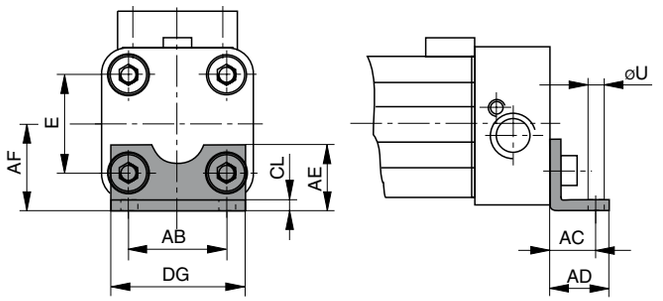
On the end-face of each end cap there are four threaded holes for mounting the actuator.
The hole layout is square, so that the mounting can be fitted to the bottom, top or either side, regardless of the position chosen for the air connection.

Material:
Series OSP-L25 – L32:
Galvanised steel.
Series OSP-L40 – L63:
Anodized aluminium.

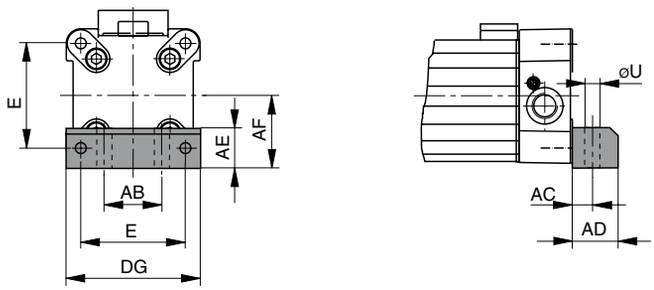
The mountings are supplied in pairs.



Series OSP-L25 to L32: Type A1



Series OSP-L40 to L63: Type C1

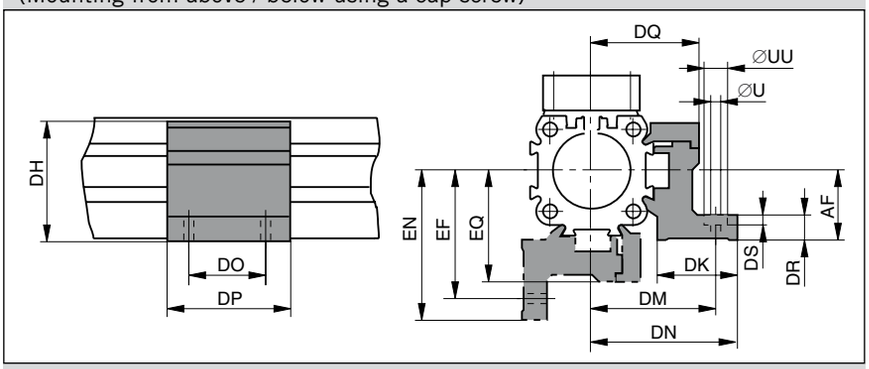


Dimension Table (mm)

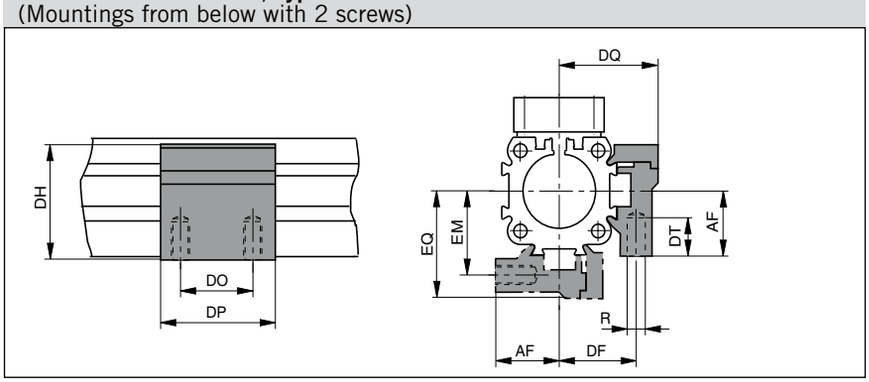
For Series	E	ØU	AB	AC	AD	AE	AF	CL	DG	Order No. (* Type A1	Order No. (* Type C1
OSP-L25	27	5.8	27	16	22	18	22	2.5	39	**2010FIL**	–
OSP-L32	36	6.6	36	18	26	20	30	3	50	**3010FIL**	–
OSP-L40	54	9	30	12.5	24	24	38	–	68	–	**4010FIL**
OSP-L50	**in progress**										
OSP-L63											

(* = Pair

Series OSP-L25 to L63: Type E1
(Mounting from above / below using a cap screw)



Series OSP-L25 to L63, Type D1
(Mountings from below with 2 screws)



Linear Drive Accessories

ø 25-63 mm Mid-Section Support

OSP
ORIGA SYSTEM PLUS

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 to 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	Order No. 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	**20009FIL**	**20008FIL**
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	**20158FIL**	**20157FIL**
OSP-L40	M6	7	–	38	35	61	34	53	60	45	60	45	10	–	11	56	38	63	48	**20028FIL**	**20027FIL**
OSP-L50	in progress																				
OSP-L63																					

Linear Drive Accessories

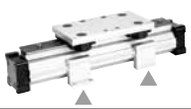
Mountings for Linear Drives fitted with OSP-L-Guides

OSP
ORIGA SYSTEM PLUS

For Linear-drives
- **Series OSP-L**

Note:
For mountings and mid-section supports for linear drives with recirculating ball bearing guide STARLINE see pages 43 to 46.

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

End cap mountings*

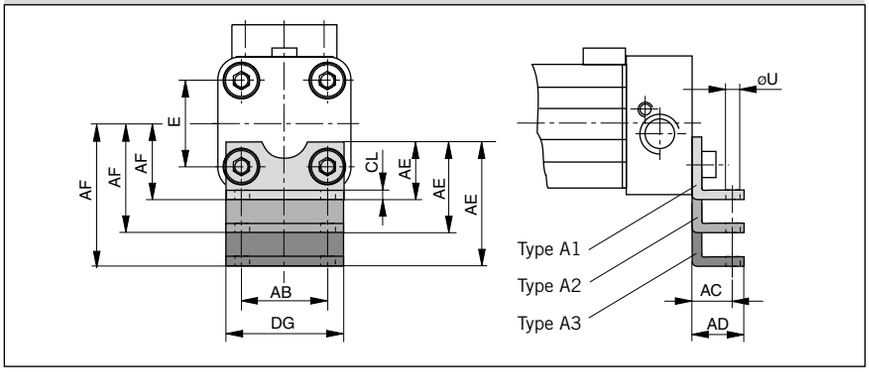
Four internal screw threads are located in the end faces of all OSP-L actuators for mounting the drive unit. End cap mountings may be secured across any two adjacent screws.

Material: Series OSP-L25, L32: Galvanised steel

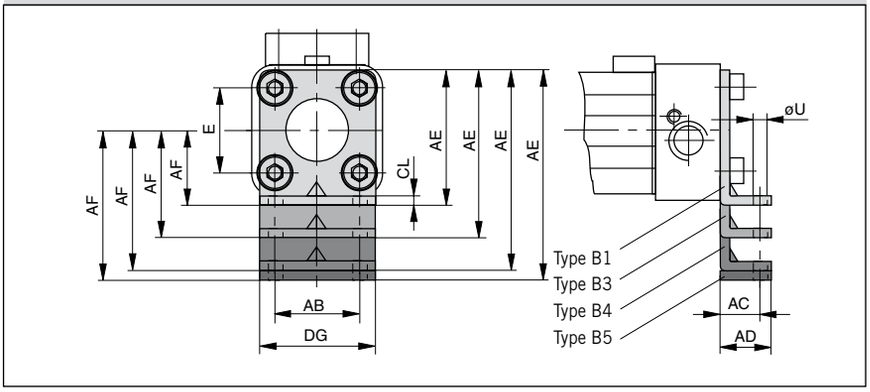
Series OSP-L40, L50, L63: Anodized aluminium

The mountings are supplied in pairs.

Series OSP-L25, L32: Type A



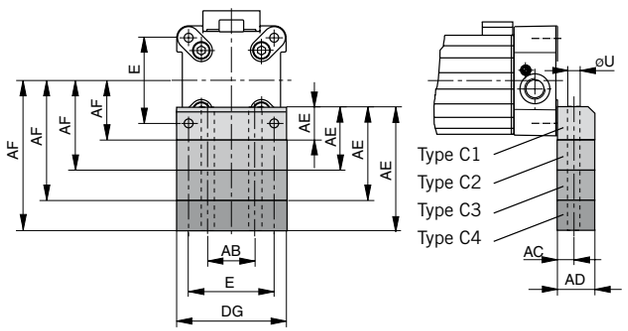
Series OSP-L25, L32: Type B



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	–	in progress		22	30	–	in progress	
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			–	–	38		
C2	–	–	37			–	–	51		
C3	–	–	46			–	–	60		
C4	–	–	56			–	–	70		

Series OSP-L40, L50, L63: Type C



Dimension Table (mm)

For 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	in progress						
OSP-L63							

* see mounting instructions

Mid-Section Support

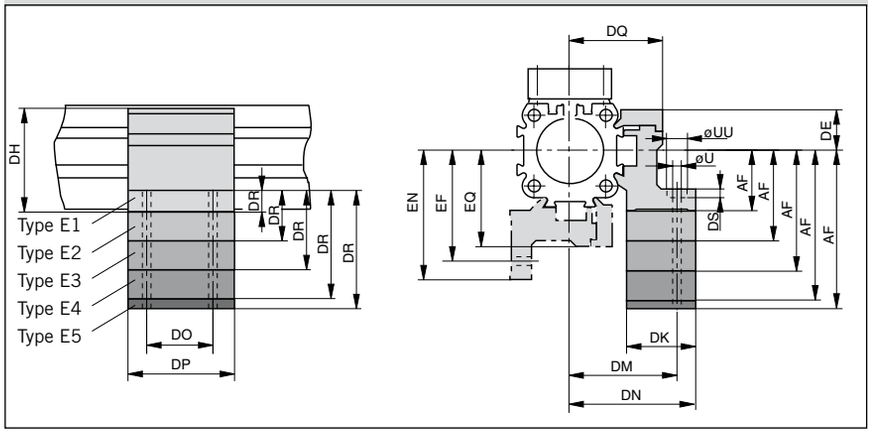
Information regarding type E1 and D1:

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.

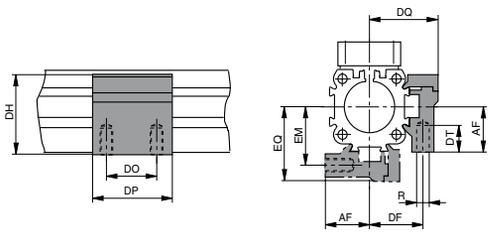
See layout information

Stainless steel version on request.

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



Series OSP-L25 to L63: 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	–	–	–	in progress		22	30	38	in progress	
E1	8	10	10			22	30	38		
E2	23	24	23			37	44	51		
E3	35	32	32			49	52	60		
E4	46	40	42			60	60	70		
E5	–	45	–			–	65	–		

Dimension Table (mm)

Series	R	U	UU	DE	DF	DH	DK	DM	DN	DO	DP	DQ	DS	DT	EF	EM	EN	EQ
OSP-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	in progress																	
OSP-L63																		

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 *)	2010FIL	3010FIL	–		
A2 *)	2040FIL	3040FIL	–		
A3 *)	2060FIL	3060FIL	–		
B1 *)	20311FIL	20313FIL	–		
B4 *)	20312FIL	20314FIL	–		
B5 *)	–	20976FIL	–		
C1 *)	–	–	4010FIL	in progress	
C2 *)	–	–	20338FIL		
C3 *)	–	–	20339FIL		
C4 *)	–	–	20340FIL		
D1	20008FIL	20157FIL	20027FIL		
E1	20009FIL	20158FIL	20028FIL		
E2	20352FIL	20355FIL	20358FIL		
E3	20353FIL	20356FIL	20359FIL		
E4	20354FIL	20357FIL	20360FIL		
E5	–	20977FIL	–		

*) Pair

Linear Drive Accessories

Ø 25 to 32 mm
End Cap Mounting
Type: B

for Linear Drives with Recirculating Ball Bearing Guide

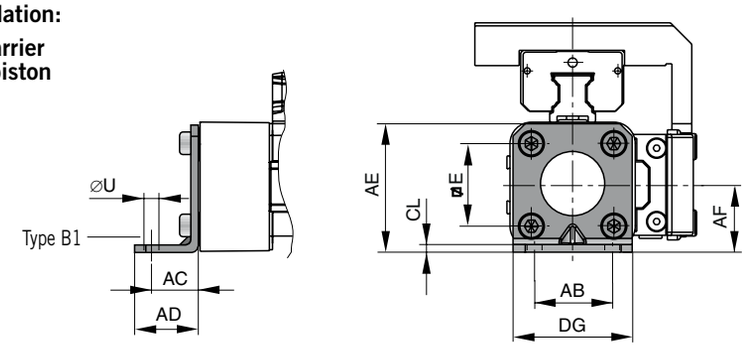
- **Series OSP-L STL**

Material:
Galvanised steel
Anodized aluminium

The mountings are supplied in pairs.

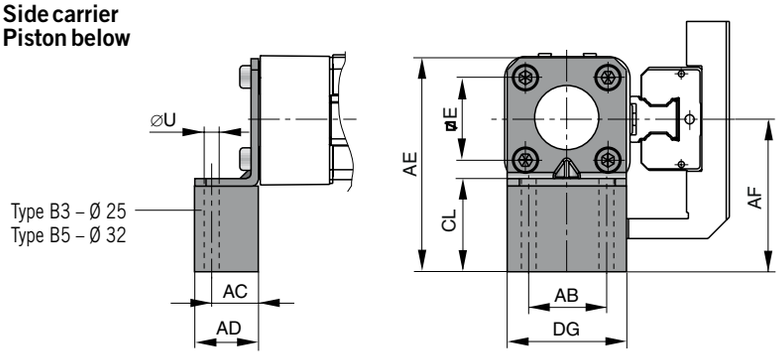
Series OSP-L STL25, STL32 : Type B1

Installation:
Top carrier
Side piston



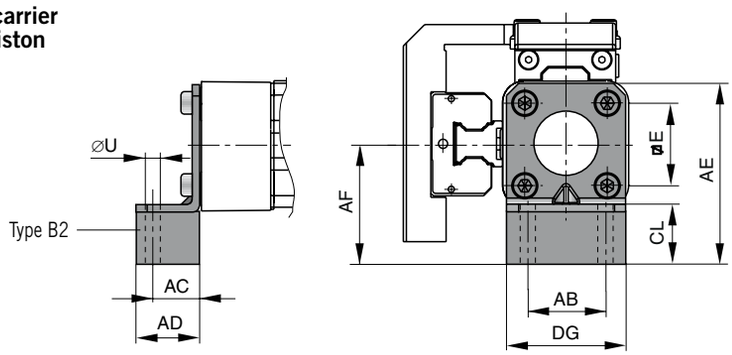
Series OSP-L STL25, STL32: Type B3 (Ø 32:B5)

Installation:
Side carrier
Piston below



Series OSP-L STL25, STL32: Type B2

Installation:
Side carrier
Top piston



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

For Series	Mounting Type	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	20311FIL
	B2	27	5.8	27	16	22	57	37	17.5	39	21138FIL
	B3	27	5.8	27	16	22	69	49	29.5	39	21139FIL
OSP-L STL32	B1	36	6.6	36	18	26	55	30	3	50	20313FIL
	B2	36	6.6	36	18	26	69	44	17	50	21140FIL
	B5	36	6.6	36	18	26	90	65	9	50	21141FIL

Ø 40 to 50 mm End Cap Mounting Type: C

for Linear Drives with Recirculating Ball Bearing Guide

- **Series OSP-L STL**

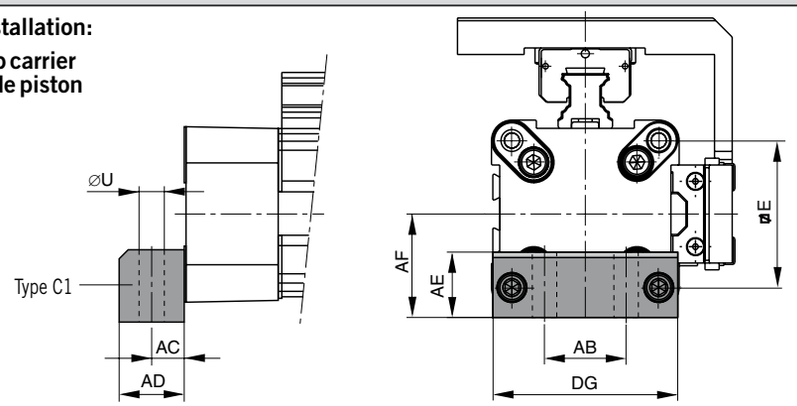
Material:

Anodized aluminium

The mountings are supplied in pairs.

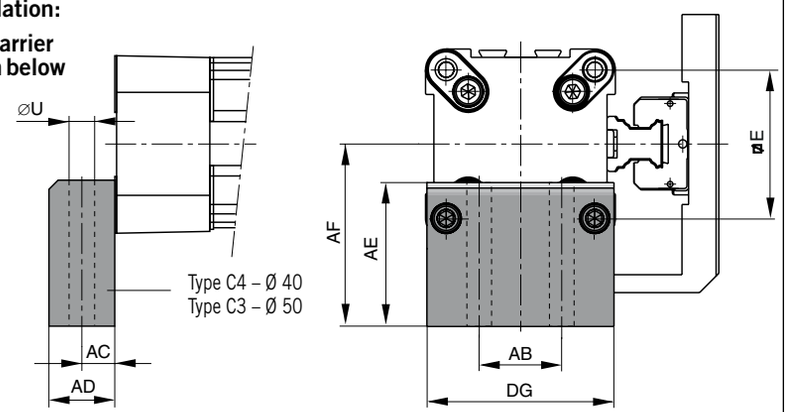
Series OSP-L STL40, STL50: Type C1

Installation:
Top carrier
Side piston



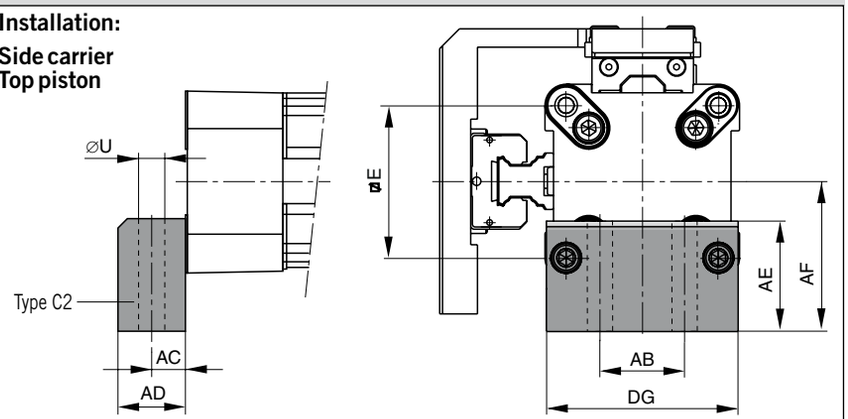
Series OSP-L STL40, STL50: Type C4 (Ø 50: C3)

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

For Series	Mounting Type	E	ØU	AB	AC	AD	AE	AF	DG	Order No. (pair)
OSP-L STL40	C1	54	9	30	12.5	24	24	38	68	4010FIL
	C2	54	9	30	12.5	24	37	51	68	20338FIL
	C4	54	9	30	12.5	24	56	70	68	20340FIL
OSP-L STL50	C1			in progress						
	C2									
	C3									

Linear Drive Accessories

Ø 25 to 50
Mid-Section Support
Type: D1ST

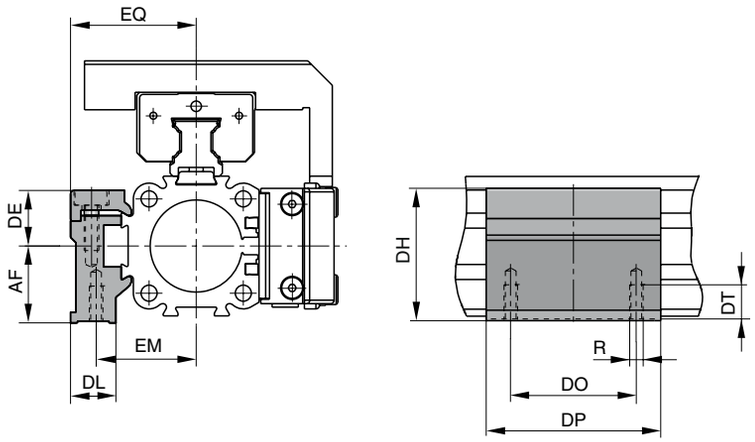
for Linear Drives with Recirculating Ball Bearing Guide

- **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.

Series OSP-L STL25 to STL50: Type D1ST

Mountings from below with 2 screws



Dimension Table (mm) Mid-Section Support D1ST

For 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	**21126FIL**
STL32	**D1ST**	M5	30	16	46	13	36	60	10	35.5	43	**21127FIL**
STL40	**D1ST**	M6	38	23	61	19	45	60	11	38	48	**21128FIL**
STL50	**D1ST**	in progress										

Order example: Type D1ST25 Order No. 21126FIL

Mid-Section Support
Type: E1ST to E5ST

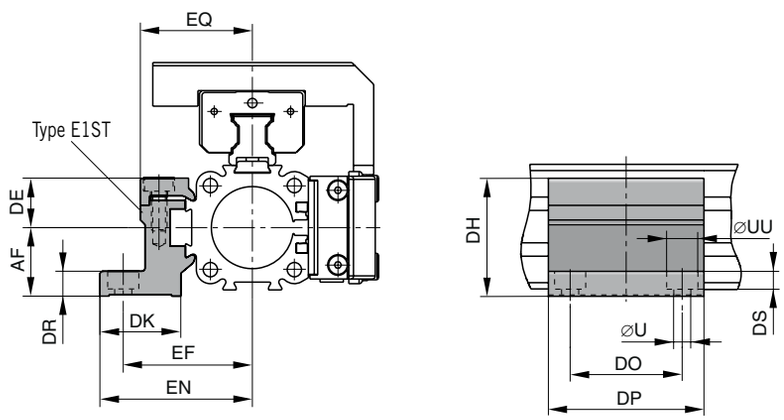
for Linear Drives with Recirculating Ball Bearing Guide

- **Series OSP-L STL**

Series OSP-L STL25 to STL50: Type E1ST

Installation:
Top carrier
Side position

Mounting from above / below using a cap screw

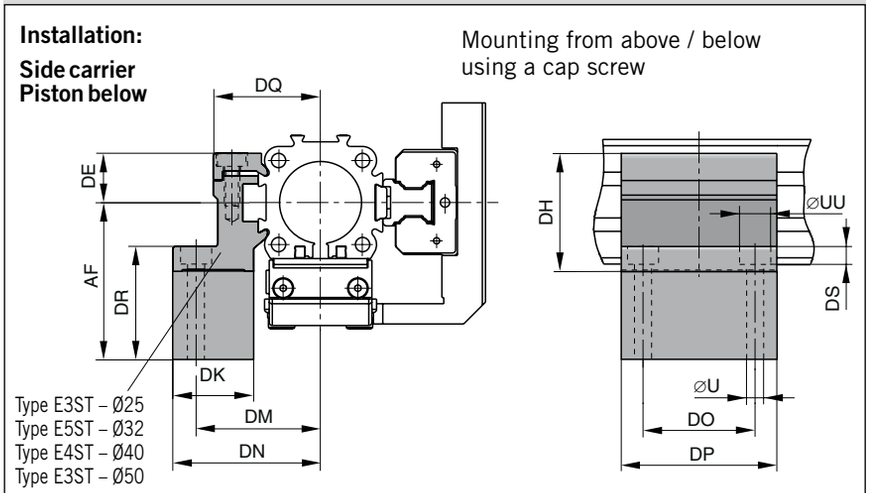


Mid-Section Support Type: E1ST to E5ST

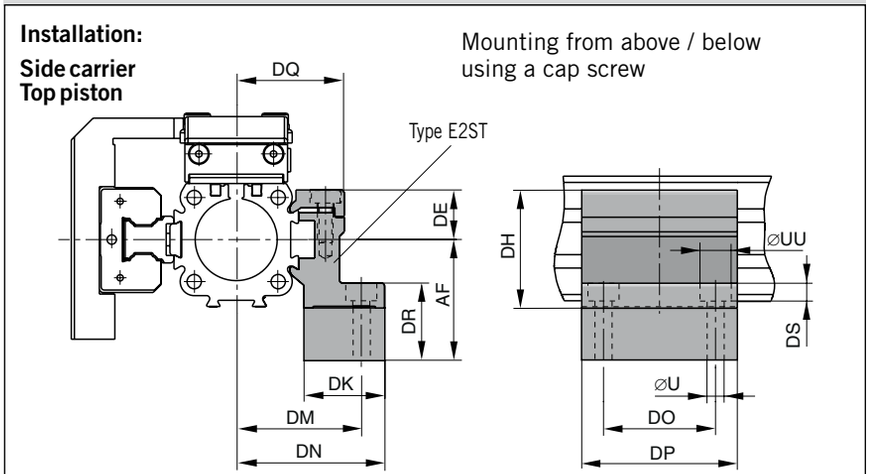
for Linear Drives with Recirculating Ball Bearing Guide

- **Series OSP-L STL**

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



Series OSP-L STL25 to STL50: Type E2ST



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

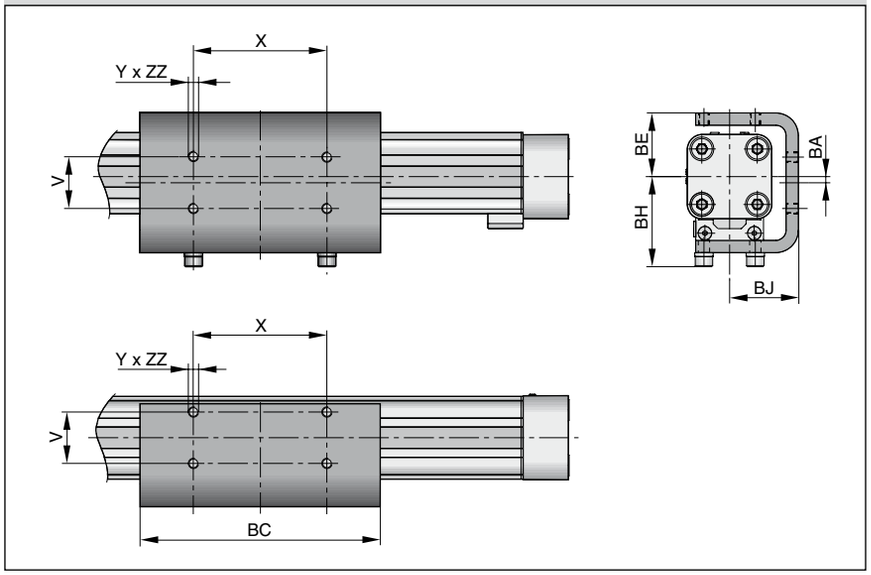
For Series OSP-L- ..	Mounting Type	ØU	ØUU	AF	DE	DH	DK	DM	DN	DO	DP	DR	DQ	DS	EF	EN	EQ	Order No.
STL25	**E1ST**	5.5	10	22	16	38	26	40	47.5	36	50	8	34.5	5.7	41.5	49	36	**21131FIL**
STL25	**E2ST**	5.5	10	37	16	38	26	40	47.5	36	50	23	34.5	5.7	41.5	49	36	**21143FIL**
STL25	**E3ST**	5.5	10	49	16	38	26	40	47.5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

Order sample: Type E1ST25 Order No. 21131FIL

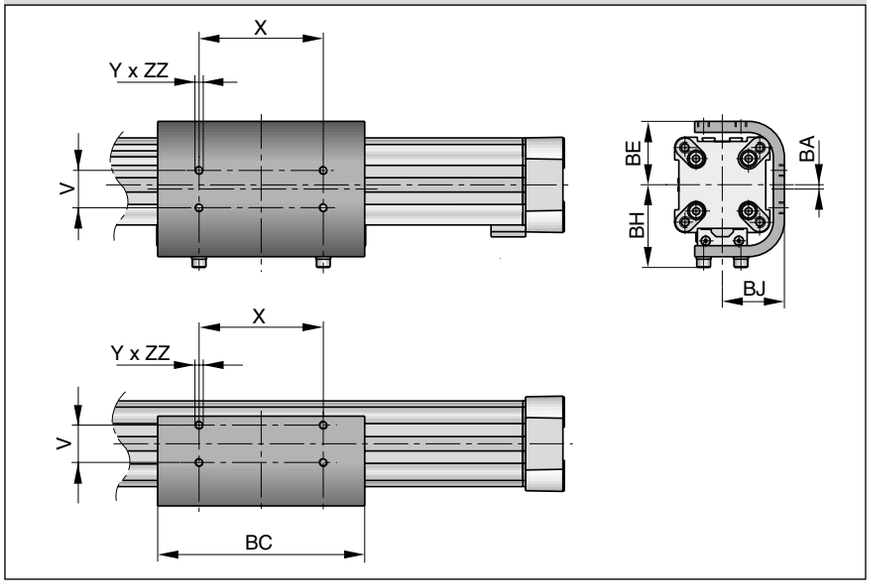
Linear Drive Accessories

ø 25-63 mm
Inversion Mounting

Series OSP-L25 to L32



Series OSP-L40 to L63



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 37.

Dimension Table (mm)

For series	V	X	Y	BA	BC	BE	BH	BJ	ZZ	Order No.
OSP-L25	25	65	M5	3	117	31	44	33.5	6	**20037FIL**
OSP-L32	27	90	M6	3	150	38	52	39.5	6	**20161FIL**
OSP-L40	27	90	M6	3	150	46	60	45	8	**20039FIL**
OSP-L50	in progress									
OSP-L63										

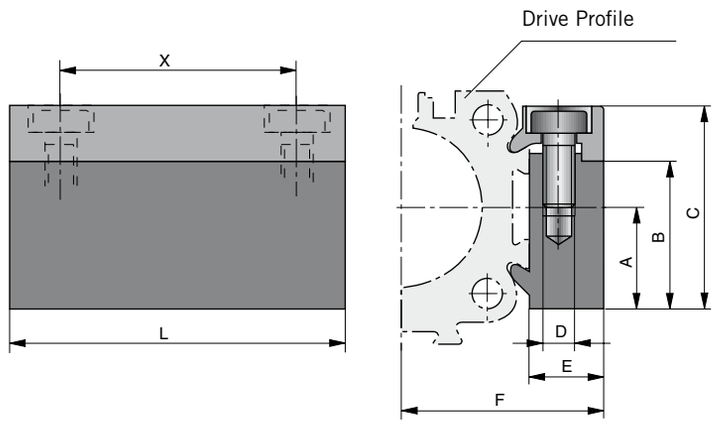
Linear Drive Accessories

ø 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

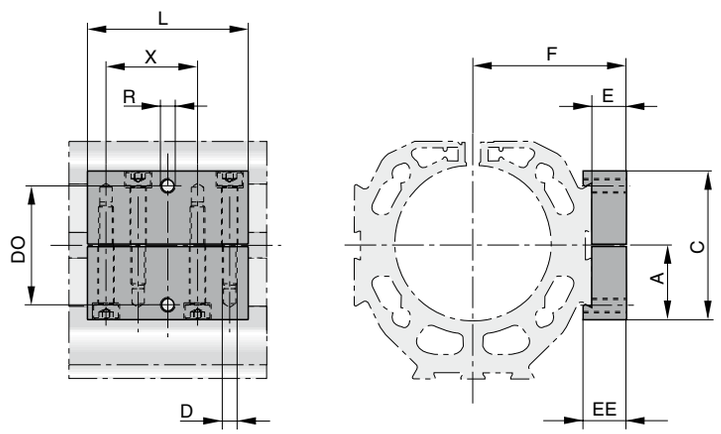
Series OSP-L25 to L50



Dimension Table (mm)

For 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	**20006FIL**	**20186FIL**
OSP-L32	16	23	32	M5	10.5	36.5	50	36	**20006FIL**	**20186FIL**
OSP-L40	20	33	43	M6	14	45	80	65	**20025FIL**	**20267FIL**
OSP-L50		in progress								

Series OSP-L63

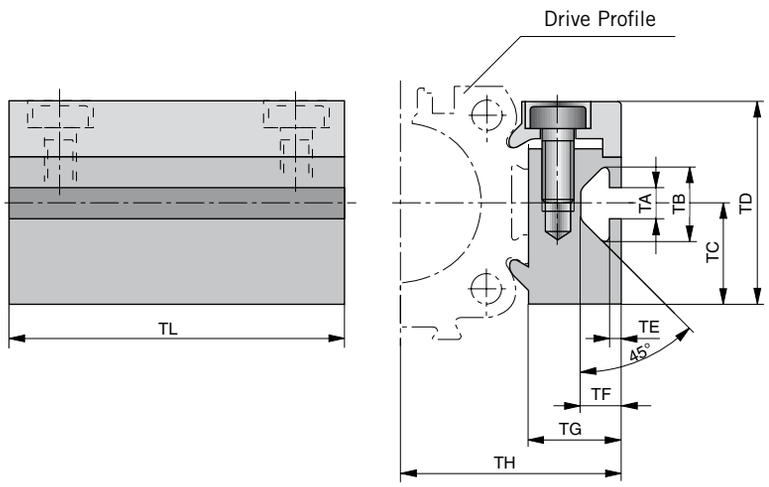


Dimension Table (mm)

For series	A	C	D	E	F	L	R	X	EE	DO	Order No.*
OSP-L63	in progress										

* Stainless version

Dimensions



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)

For Series	TA	TB	TC	TD	TE	TF	TG	TH	TL	Order No. Standard	Order No. Stainless
OSP-L25	5	11.5	16	32	1.8	6.4	14.5	34.5	50	**20007FIL**	**20187FIL**
OSP-L32	5	11.5	16	32	1.8	6.4	14.5	40.5	50	**20007FIL**	**20187FIL**
OSP-L40	8.2	20	20	43	4.5	12.3	20	51	80	**20026FIL**	**20268FIL**
OSP-L50	in progress										

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

For Series	T-nut St 5	T-nut St 8
OSP-L25-L32	●	
OSP-L40-L50		●

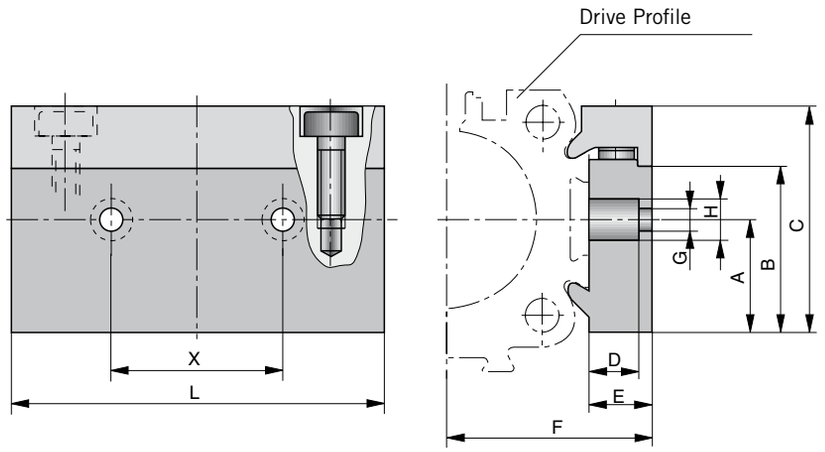
Linear Drive Accessories

ø 25-50 mm
Connection Profile

OSP
ORIGA SYSTEM PLUS

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

Dimensions

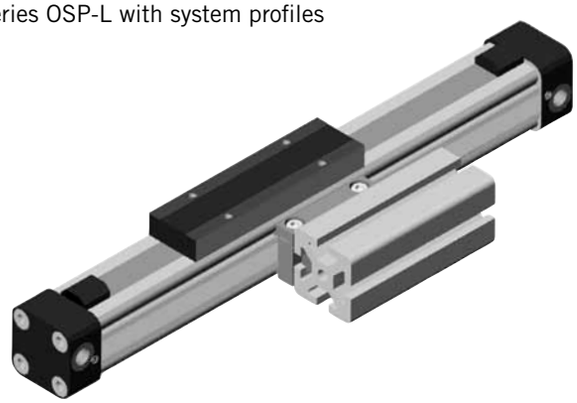


Dimension Table (mm)

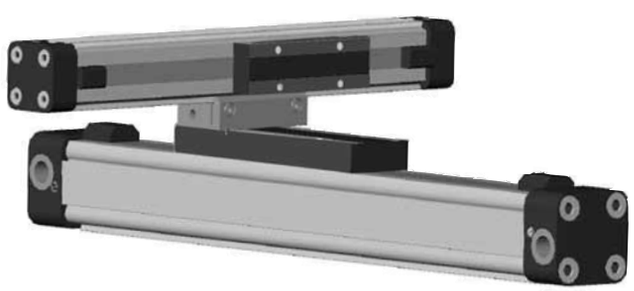
For series on the carrier of	for mounting	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**L**	**X**	**Order No.**
OSP-L25	OSP32-50	16	23	32	8.5	10.5	30.5	6.6	11	60	27	**20850 FIL**
OSP-L32	OSP32-50	16	23	32	8.5	10.5	36.5	6.6	11	60	27	**20850FIL**
OSP-L40	OSP32-50	20	33	43	8	14	45	6.6	11	60	27	**20851FIL**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

Possible Combinations

Combination of Series OSP-L with system profiles



Combination of Series OSP-L with Series OSP-L

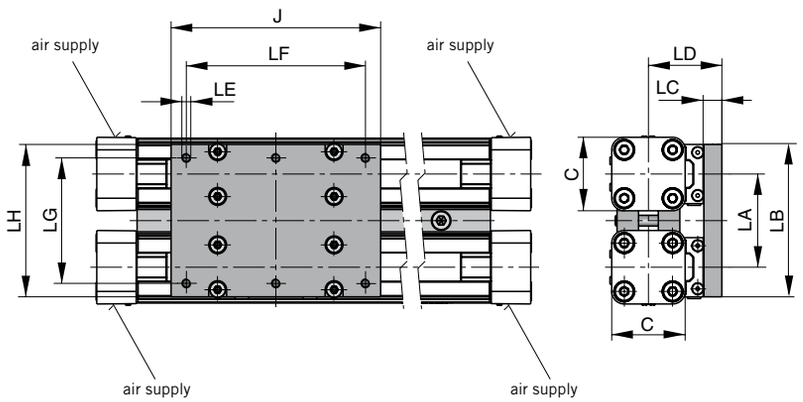


Linear Drive Accessories

ø 25-50 mm

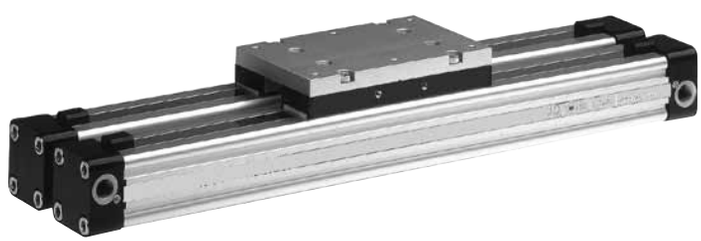
Duplex Connection

Dimensions



Dimension Table (mm)

For series	C	J	LA	LB	LC	LD	LE	LF	LG	LH	Order No. Standard	Order No. Stainless
OSP-L25	41	117	52	86	10	41	M5	100	70	85	**20153FIL**	**20194FIL**
OSP-L32	52	152	64	101	12	50	M6	130	80	100	**20290FIL**	**20291FIL**
OSP-L40	69	152	74	111	12	56	M6	130	90	110	**20156FIL**	**20276FIL**
OSP-L50	in progress											



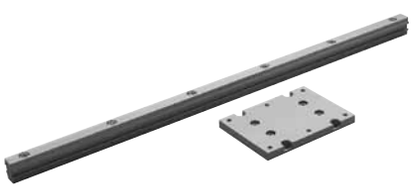
NOTE:
Order instructions in combination with basic cylinder see page 19, pos. 20

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.

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

OSP
ORIGA SYSTEM PLUS

For connection of cylinders of the Series OSP-L

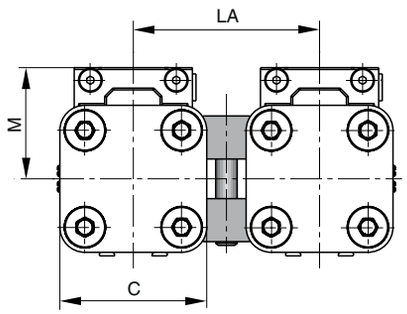
The multiplex connection combines two or more OSP-L cylinders of the same size into on unit.

Features
- The orientation of the carriers can be freely selected

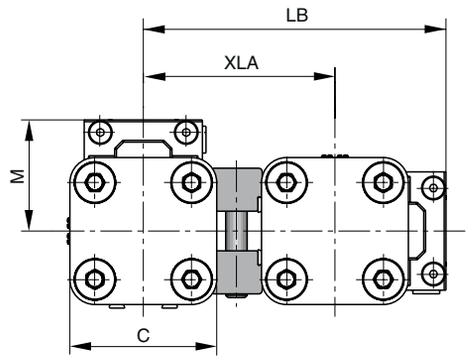
Included in delivery:
2 clamping profiles with clamping screws

Dimensions

Installation:
Top carrier/Top carrier



Installation:
Top carrier/Side carrier



Dimension Table (mm)

For series	C	M	LA	LB	XLA	Order No. Standard	Order No. Stainless
OSP-L25	41	31	52	84.5	53.5	**20035FIL**	**20193FIL**
OSP-L32	52	38	64	104.5	66.5	**20167FIL**	**20265FIL**
OSP-L40	69	44	74	121.5	77.5	**20036FIL**	**20275FIL**
OSP-L50	in progress						

Linear Drive Accessories

ø 25-63 mm Magnetic Switches

OSP
ORIGA SYSTEM PLUS

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 equpiment.

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

Characteristics

Characteristics	Unit	Description	
Electrical Characteristics		**Type RS**	**Type ES**
Switching ouput		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		3×10^6, up to 6×10^6 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.

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 separatly, or use the Order No. for the complete Type ES with 5 m cable.

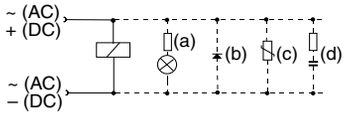
Magnetic Switches RS and ES

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

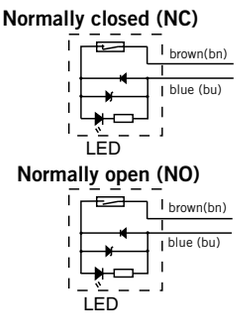
In the switching of inductive loads such as relays, solenoid valves and lifting magnets, voltage peaks (transients) are generated which must be suppressed by protective diodes, RC loops or varistors.

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

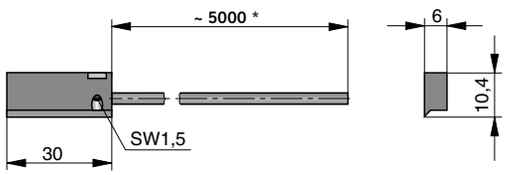


For the type ES, external protective circuits are not normally needed.

Electrical Connection, Type RS

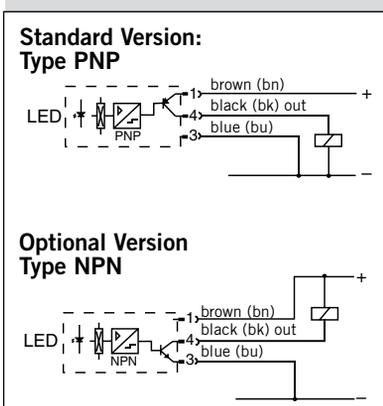


Dimensions (mm) – Type RS-K

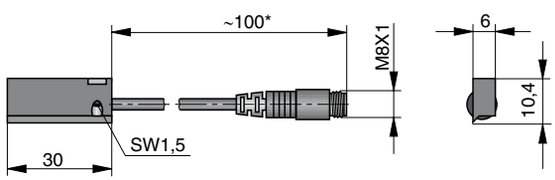


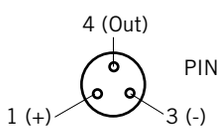
* Length with possible minus tolerance, see chart below

Electrical Connection, Type ES



Dimensions (mm) – Type ES-S





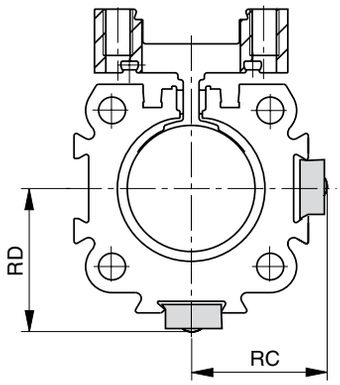
PIN assignment (view of pins) according to DIN EN 50044

* Length with possible minus tolerance, see chart below

Length of connection cable with length tolerance

Magnetic Switch Order No.	Nominal cable length	Length tolerance
KL3045FIL	5000 mm	– 50 mm
KL3048	5000 mm	– 50 mm
KL3054FIL	100 mm	– 20 mm
KL3060FIL	145 mm	± 5 mm

Dimensions Series OSP-L25 to L63



Serie	Dimensions [mm]	
	RC	**RD**
OSP-L25	25	27
OSP-L32	31	34
OSP-L40	36	39
OSP-L50	in progress	
OSP-L63		

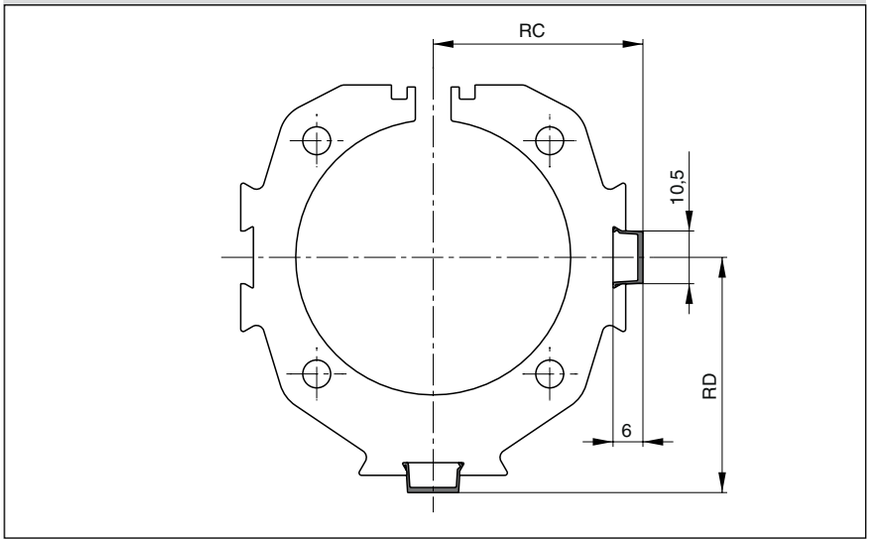
Order Instructions

Series	**Order No.**					
	RS Closer Normaly open	**RS Opener** Normaly closed	**ES**		**ES** complete with 5 m cable	
			PNP	**NPN**	**PNP**	**NPN**
OSP-L25 up to **OSP-L63**	**Type:** **RS-K** **KL3045FIL**	**Type:** **RS-K** **KL3048**	**Type:** **ES-S** **KL3054FIL**	**Type:** **ES-S** **KL3060FIL**	**Type:** **ES-S** **10750FIL**	**Type:** **ES-S** **10751FIL**
Cable 5 m with connector and with open end for magnetic switches Type ES-S			**4041FIL**			

Linear Drive Accessories

ø 25-63 mm
Cable Cover

Dimensions (mm)

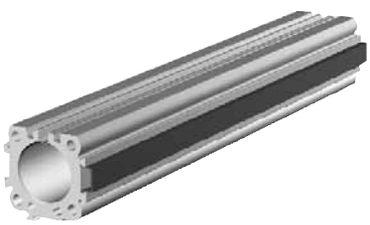


For clean guidance of magnetic switch cables along the cylinder body.
Contains a maximum of 3 cables with diameter 3 mm.

Material: Plastic
Colour: Red
Temperature Range: –10 to +80°C

Dimension Table (mm) and Order Instructions

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



Characteristics		Series P8S-GR P8S-GE	Series P8S-GP
Characteristics	Unit	Description	
Electrical Characteristics			
Switching output / -function		Reed / NO Reed / NC	PNP / NO
Electrical configuration		2-wire	3-wire
Display LED yellow		yes (not Reed NC)	
Operating voltage Ub	V	10 - 30 AC/DC	10 - 30 DC
Ripple of Ub	%	≤10	≤ 10
Voltage drop	V	≤3	≤2
Power consumption @ Ub = 24 V switched on, without load	mA	-	≤ 10
Permanent current	mA	≤500	≤200
Breaking capacity	W	≤6	-
Switchable capacity load @ 100 W @ 24 V DC	nF	100	-
Switching frequency	Hz	≤400	≤1,000
Time delay before availability (on/off)	ms	1.5 / 0.5	0.5 / 0.5
Repeatability	mm	≤0.2	≤0.2
Switching distance	mm	approx. 15	approx. 15
Hysteresis	mm	2	2
EMC following EN 60947-5-2		yes	yes
Lifetime		≥20 x 10^6 cycles	unlimited
Short-circuit protection		-	yes
Reverse polarity prot.		-	yes
Power-up pulse suppression		-	yes
Protection for inductive load		-	yes
ATEX -Certification		-	on request
Mechanical Characteristics			
Housing		PA12	
Cable type		PUR / black	
Cable cross section	mm^2	2 x 0.14	3 x 0.14
Bending radius fixed	mm	≥30	
Bending radius moving	mm	≥45	
Ambient			
Protection class to EN 60529	IP	68	
Ambient temperature range 1)	°C	- 30 to + 80	
Vibration to EN 60068-2-6	G	30, 11 ms, 10 to 55 Hz, 1 mm	
Shock to EN 60068-2-27	G	50, 11 ms	

[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

OSP
ORIGA SYSTEM PLUS

Typ RST
EST

The next generation of T-slot switches is appealing due to its ease of attachment without the use of special tools. Due to the new electronics, the hysteresis is especially narrow, allowing for a highly accurate switching point.

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

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

The magnetic switches are attached with an adapter directly in the dovetail groove of the OSP cylinder.

The possible operating speed of the load carrier or carrier bolt must account for the minimum response time of downstream devices. Accordingly, the switching distance is included in the calculation.

$$\text{Minimum response time} = \frac{\text{Switching distance}}{\text{Overrun speed}}$$

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.

A cable with connector and open end can be ordered separately.

Magnetic Switches RST and EST

Electrical Service Life, Protective Measures

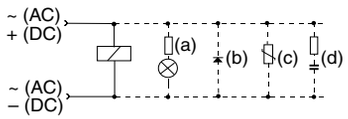
Magnetic switches are sensitive to excessive currents and inductions. With high switching frequencies and inductive loads such as relays, solenoid valves or lifting magnets, service life will be greatly reduced.

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

In the switching of inductive loads such as relays, solenoid valves and lifting magnets, voltage peaks (transients) are generated which must be suppressed by protective diodes, RC loops or varistors.

Connection Examples

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

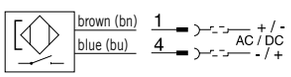


For the type EST, external protective circuits are not normally needed.

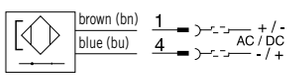
Electrical Connection Type RST-K

Reed 2-wire

Normally open



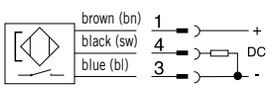
Normally closed



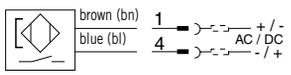
Electrical Connection Type EST-K

PNP 3-wire

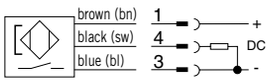
Normally open



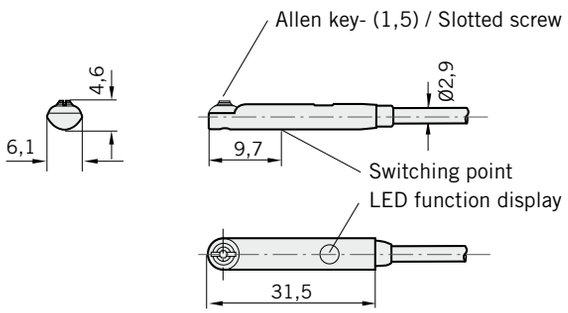
Electrical Connection Type RST-S

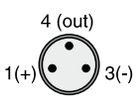


Electrical Connection Type EST-S



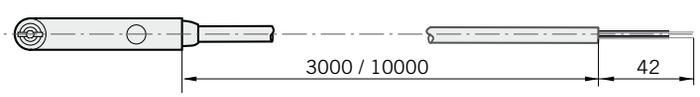
Dimensions (mm) - Typ RST-K, EST-K - Series P8S



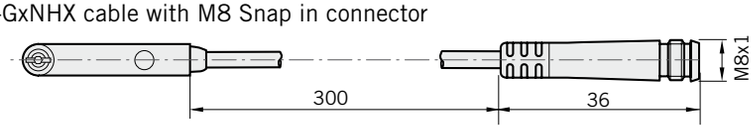


PIN assignment
(view of pins)
to DIN EN 50044

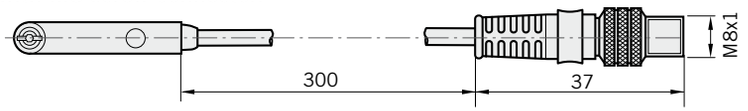
P8S-GxFLX, P8S-GxFOX, P8S-GxFTX, P8S-GxFKX cable with open end



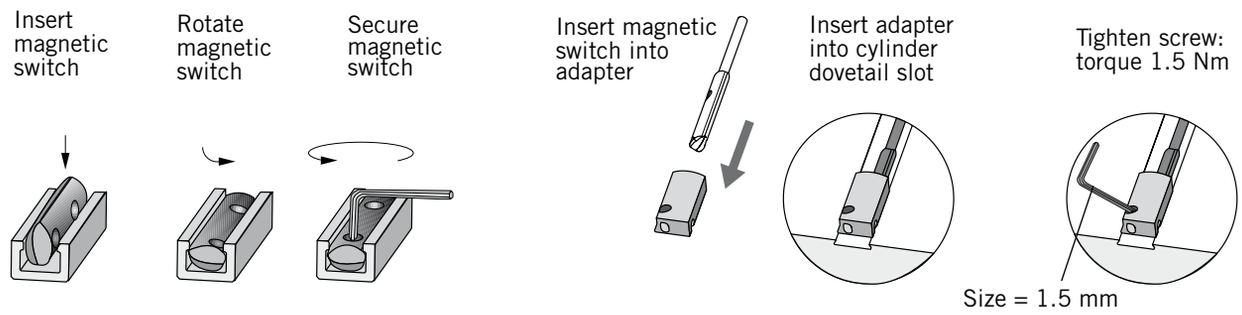
P8S-GxSHX, P8S-GxNHX cable with M8 Snap in connector



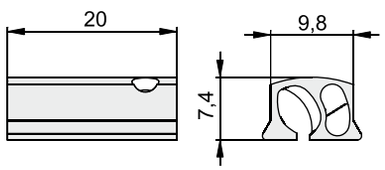
P8S-GxCHX cable with M8 screw connectorr



Installation instructions for the RST/EST magnetic switches series P8S



Dimensions adapters for RST/EST magnetic switch series P8S **for OSP-L25 - L63**



Order Instructions			
Version	Voltage	**Type**	**Order No.**
Magnetic switch, reed contact, normally open, LED indicator, cable 3 m	10-30 V AC / DC	**RST-K**	**P8S-GRFLX**
Magnetic switch, reed contact, normally open, LED indicator, cable 10 m	10-30 V AC / DC	**RST-K**	**P8S-GRFTX**
Magnetic switch, reed contact, normally open, snap connector M8, LED indicator cable 0.3 m	10-30 V AC / DC	**RST-S**	**P8S-GRSHX**
Magnetic switch, reed contact, normally open, screw connector M8, LED indicator cable 0.3 m	10-30 V AC / DC	**RST-S**	**P8S-GRCHX**
Magnetic switch, reed contact, normally closed, cable 10 m	10-30 V AC / DC	**RST-K**	**P8S-GEFKX**
Magnetic switch, electronic, PNP LED indicator cable 3 m	10-30 V DC	**EST-K**	**P8S-GPFLX**
Magnetic switch, electronic, PNP LED indicator cable 10 m	10-30 V DC	**EST-K**	**P8S-GPFTX**
Magnetic switch, electronic, PNP snap connector M8, LED indicator cable 0.3 m	10-30 V DC	**EST-S**	**P8S-GPSHX**
Magnetic switch, electronic, PNP screw connector M8, LED indicator cable 0.3 m	10-30 V DC	**EST-S**	**P8S-GPCHX**

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 – L63 (pack of 10)		**KL 3333**

The right to introduce technical modifications is reserved

Total Overview of Options (not all of them can be combined !)

1-4	5+6	7	8	9	10	11	12-16	
OSPL	25	0	0	0	0	0	01100	

Piston-Ø
25
32
40
in progress
in progress

Version / Piston	
0	standard
1	Tandem

Air Connection	
0	standard
1	end face
2	both at one end
3	left standard right end face
4	right standard left end face
A	3/2 way valve VOE 24 V= Ø 25,32,40,50
B	3/2 way valve VOE 230 ~/ 110 V= Ø 25,32,40,50
C	3/2 way valve VOE 48 V= Ø 25,32,40,50
E	3/2 way valve VOE 110 V~ Ø 25,32,40,50

Seals	
0	standard

Lubrication	
0	standard

Screws	
0	standard
1	stainless

Stroke
in mm (5 digits)

	17	18	19	20	21	22	**23**	**24**	25
	0	0	0	0	0	0	**0**	**0**	0

End cap position	
0	L+R 0° = in front
1	L+R 90° = underneath
2	L+R 180° = at the back
3	L+R 270° = same side as outerband
4	L 90° = underneath R 0° = in front
5	L 180° = at the back R 0° = in front
6	L 270° = same side as outerband R 0° = in front
7	L 0° = in front R 90° = underneath
8	L 180° = at the back R 90° = underneath
9	L 270° = same side as outerband R 90° = underneath
A	L 0° = in front R 180° = at the back
B	L 90° = underneath R 180° = at the back
C	L 270° = same side as outerband R 180° = at the back
D	L 0° = in front R 270° = same side as outerband
E	L 90° = underneath R 270° = same side as outerband
F	L 180° = at the back R 270° = same side as outerband

Cushioning	
0	standard
1	max. length
2	variable stop complete VS soft left only for Starline
3	variable stop complete VS hard left only for Starline
4	variable stop complete VS soft right only for Starline
5	variable stop complete VS hard right only for Starline
6	variable stop complete VS soft both sides only for Starline
7	variable stop complete VS hard both sides only for Starline

Piston Mounting	
0	without
1	Clevis mounting

Guides/ Brakes/ Inversion	
0	without
2	Slideline SLXX
B	Starline STLXX
M	Inversion
N	Duplex

add. Guide Carriage	
0	without
2	Guide Carriage Slideline SLXX
B	Guide Carriage Starline STLXX

Cover / Cable Channel	
0	standard
1	Cable channel
2	Cable channel two-sided

Measuring system	
0	without

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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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