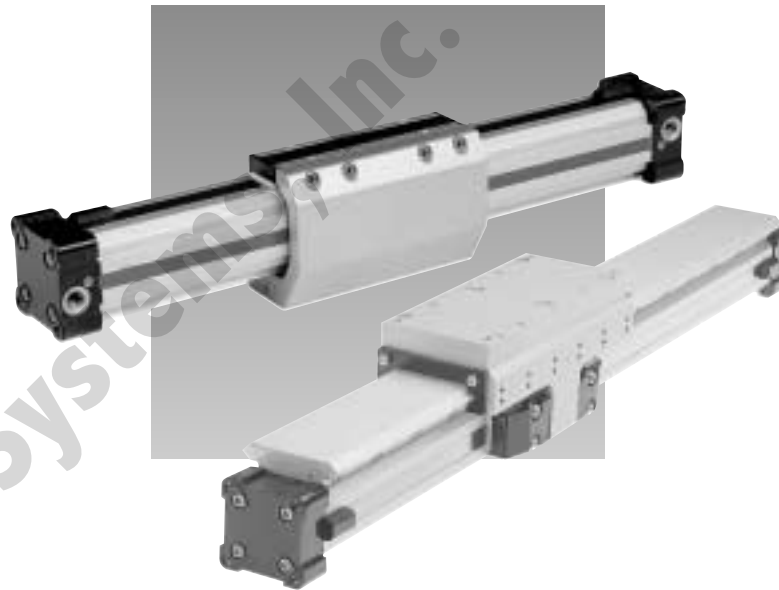


PNEUMATIC
GROUP

Brakes

ORTMAN SYSTEM PLUS

HOLDING DEVICES AND BRAKES
FOR OSP-P



OSP

— ORTMAN
— SYSTEM
— PLUS

Holding Devices and Brakes

Holding Device

for pneumatic linear drive
Series OSP-P
Piston diameters 25 - 80 mm.
See page 35



Versions:

- ACTIVE Brake
- Plain bearing guide with integrated Holding Device
- Aluminum roller guide with integrated Holding Device
- Plain bearing guide with PASSIVE Brake
- Aluminum roller guide with PASSIVE Brake

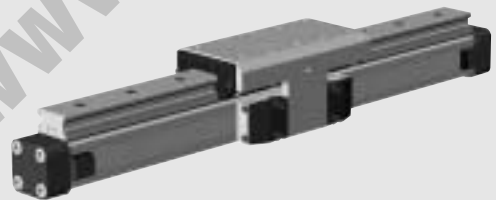
Slideline with Brake

Plain bearing guide Slideline - SL
with integrated Active Brake
Piston diameters 25 - 50 mm.
See page 21



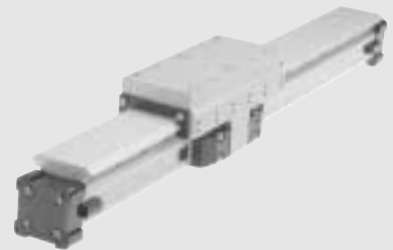
Proline with Brake

Aluminum roller guide
Proline - PL with
integrated Active Brake
Piston diameters 25 - 50 mm.
See page 31



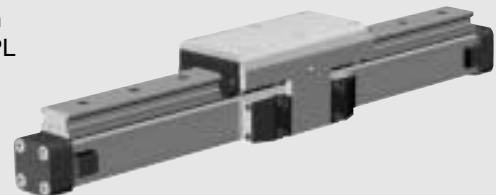
Multibrake with Slideline

Multi-Brake – Passive Brake
with plainbearing guide
Slideline - SL
Piston diameter 25 - 80 mm.
See page 39

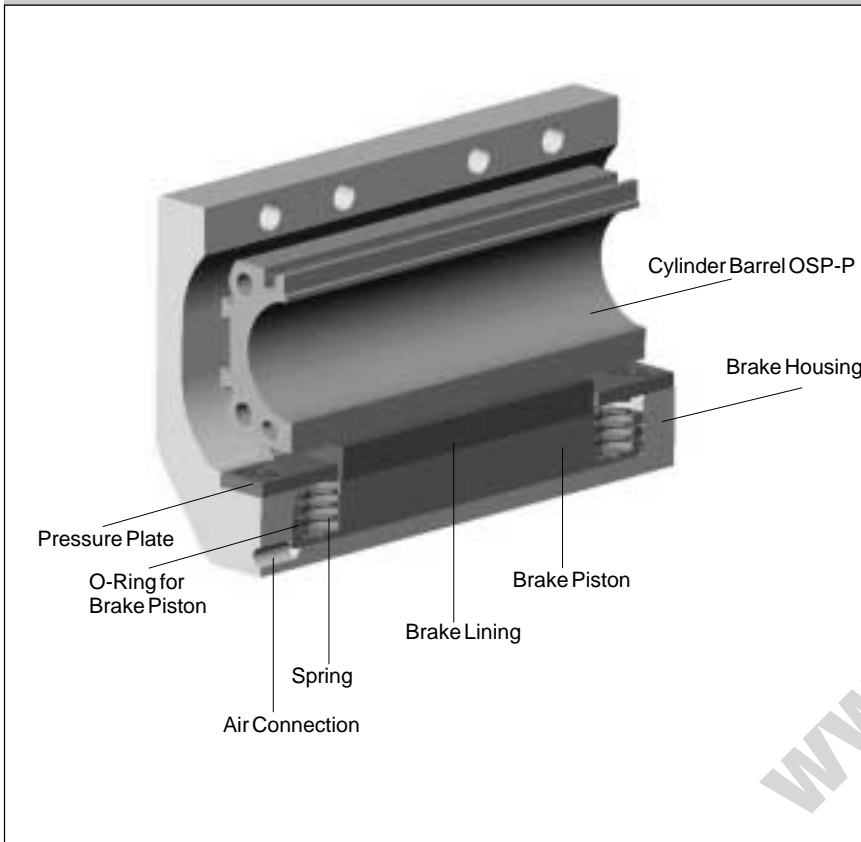


Multibrake with Proline

Multi-Brake – Passive Brake with
aluminum roller guide Proline - PL
Piston diameters 25 - 50 mm.
See page 43



Function



Position Holding Device

OSP
—ORTMAN
—SYSTEM
—PLUS

**Series AB 25 to 80
for linear drive**
• **Series OSP-P**

Features:

- Actuated by pressurization
- Released by spring actuation
- Completely stainless version
- Holds position, even under changing load conditions

For further technical data, please refer to the data sheets for linear drives OSP-P (page 13)

Forces and Weights

Series	For linear drive	Max. braking force [N] ⁽¹⁾	Brake pad way [mm]	Mass [kg]		
				Linear drive with brake 0 mm stroke	increase per 100mm stroke	brake*
AB 25	OSP-P25	350	2.5	1.0	0.197	0.35
AB 32	OSP-P32	590	2.5	2.02	0.354	0.58
AB 40	OSP-P40	900	2.5	2.83	0.415	0.88
AB 50	OSP-P50	1400	2.5	5.03	0.566	1.50
AB 63	OSP-P63	2170	3.0	9.45	0.925	3.04
AB 80	OSP-P80	4000	3.0	18.28	1.262	5.82

⁽¹⁾ – at 6 bar
both chambers pressurized with 6 bar
Braking surface dry
– oil on the braking surface will reduce the braking force

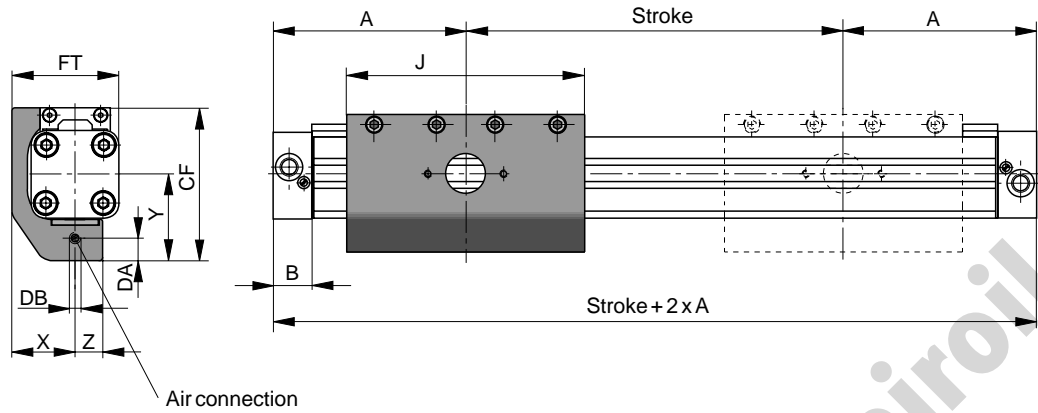
*** Please Note:**
The mass of the brake has to be added to the total moving mass when using the cushioning diagram.



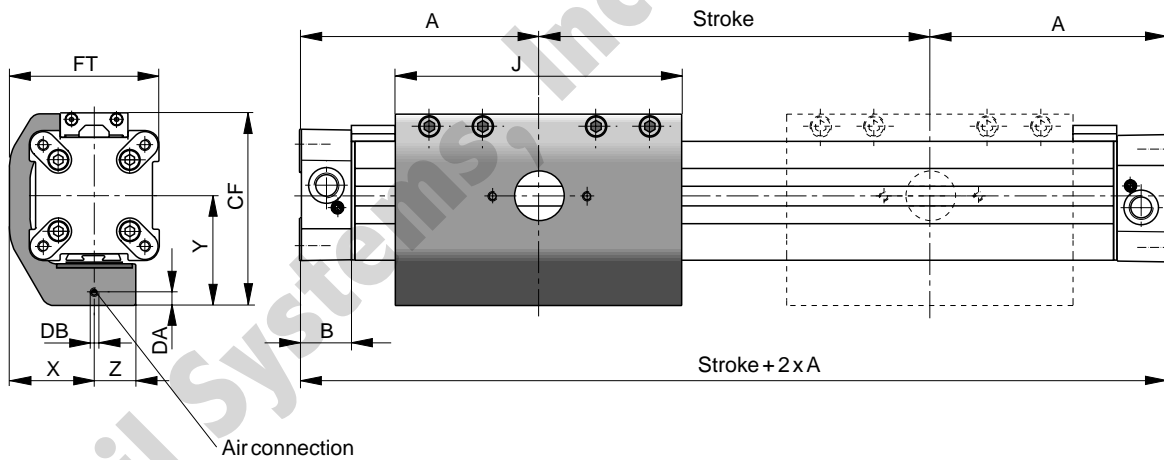
The right to introduce technical modifications is reserved

For additional information on loads, forces and moment, please refer to page 14

Series OSP-P25 and P32 with Holding Device



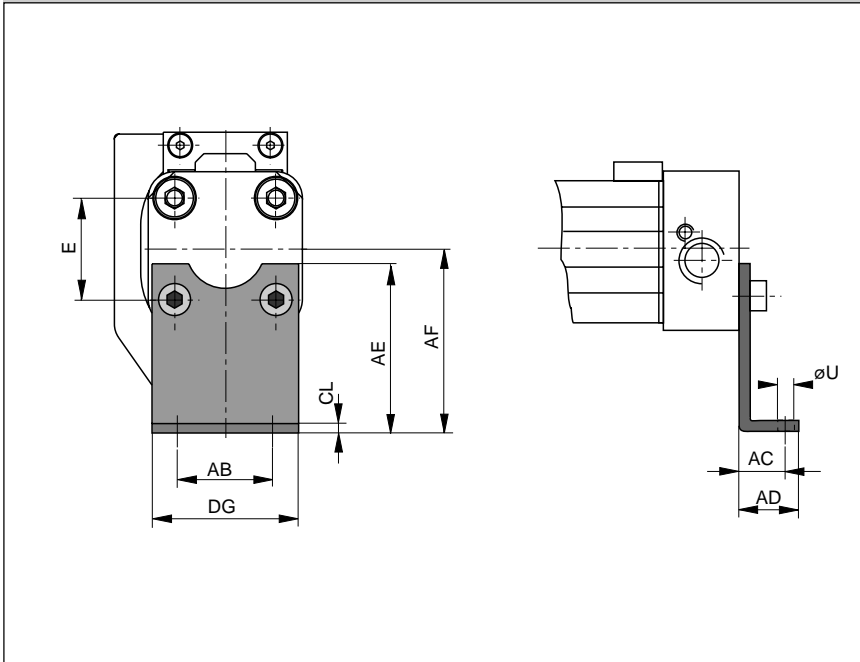
Series OSP-P40, P50, P63, P80 with Holding Device



Dimension Table (mm)

Series	A	B	J	X	Y	Z	CF	DA	DB	FT
AB 25	100	22	117	29.5	43	13	74	4	M5	50
AB 32	125	25.5	151.4	36	50	15	88	4	M5	62
AB 40	150	28	151.4	45	58	22	102	7	M5	79.5
AB 50	175	33	200	54	69.5	23	118.5	7.5	M5	97.5
AB 63	215	38	256	67	88	28	151	9	G1/8	120
AB 80	260	47	348	83	105	32	185	10	G1/8	149

Series OSP – P25 and P32 with Holding Device: Type A3



End Cap Mountings

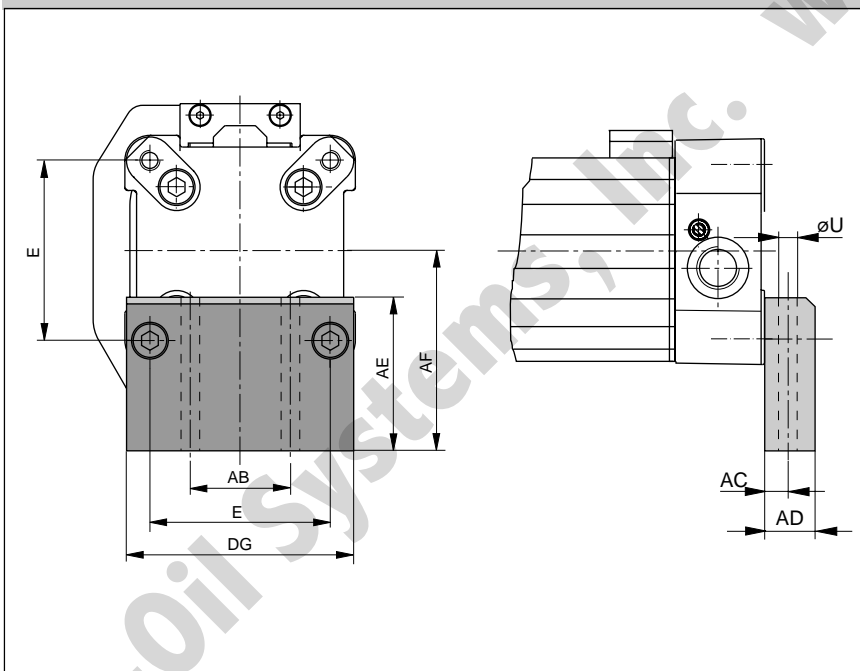
On the end-face of each cylinder end cap there are four threaded holes for mounting the cylinder. The hole layout is square, so that the mounting can be fitted to the bottom, top or either side.

Material: Series OSP-P25, P32:
Galvanized steel

The mountings are supplied in pairs.



Series OSP – P40 , P50, P63, P80 with Holding Device AB: Type C3



Material: Series OSP-P40,P50,
P63, P80:
Anodized aluminum

The mountings are supplied in pairs.

Stainless-steel version on request.



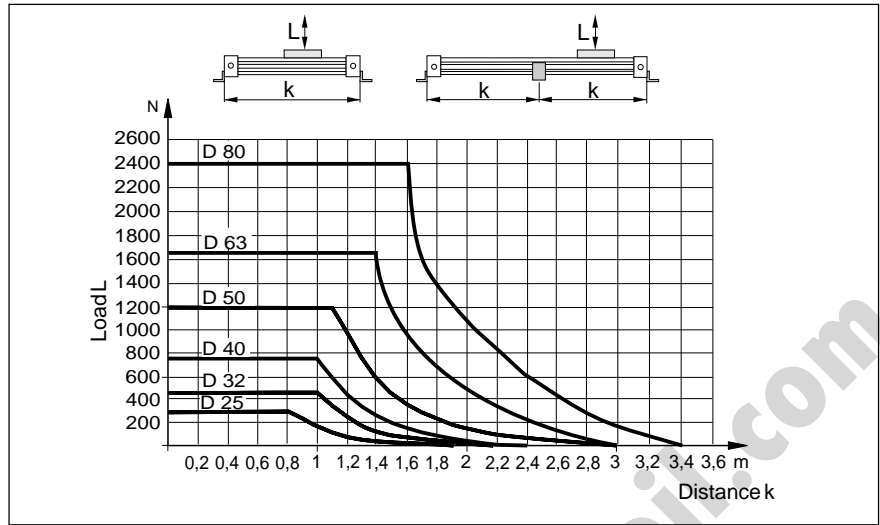
Dimension Table (mm)

Series	E	øU	AB	AC	AD	AE	AF	CL	DG	Order No.	
										Type A3	Type C3
AB 25	27	5.8	27	16	22	45	49	2.5	39	OSP-2060	–
AB 32	36	6.6	36	18	26	42	52	3	50	OSP-3060	–
AB 40	54	9	30	12.5	24	46	60	–	68	–	OSP-20339
AB 50	70	9	40	12.5	24	54	72	–	86	–	OSP-20350
AB 63	78	11	48	15	30	76	93	–	104	–	OSP-20821
AB 80	96	14	60	17.5	35	88	110	–	130	–	OSP-20822

Mid-Section Support

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

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



Mid-Section Supports

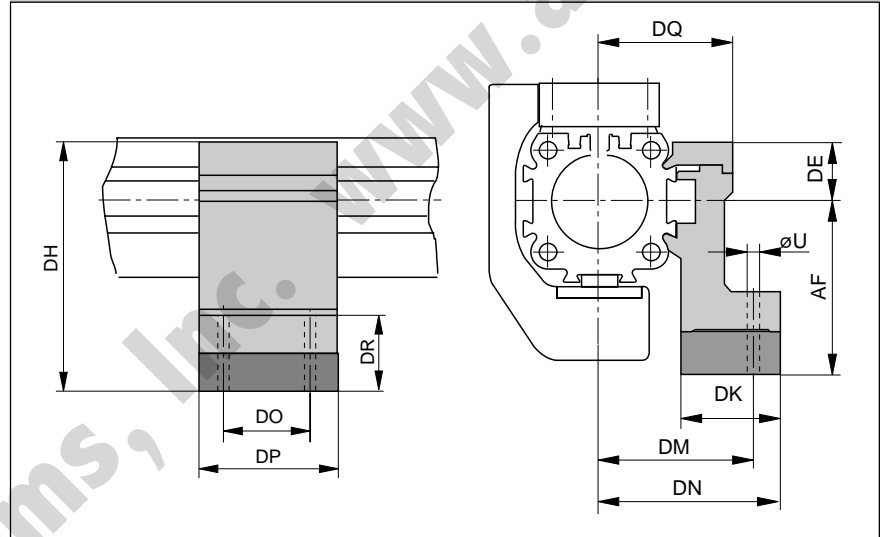
Note to Type E3:

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

Stainless-steel version available on request.



Series OSP-P25 to P80 with Holding Device: Type E3 (Mounting from above / below with through-bolt)



Dimension Table (mm)

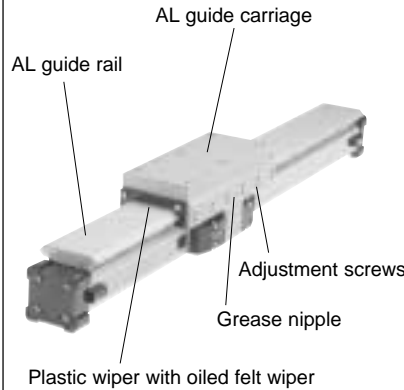
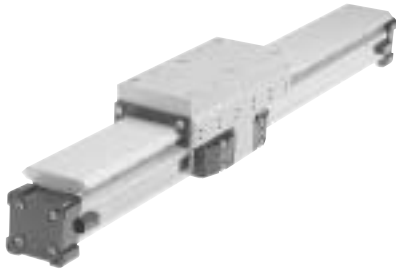
Series	U	AF	DE	DH	DK	DM	DN	DO	DP	DQ	DR	Order No. Type 3
AB 25	5,5	49	16	65	26	40	47,5	36	50	34,5	35	OSP-20353
AB 32	5,5	52	16	68	27	46	54,5	36	50	40,5	32	OSP-20356
AB 40	7	60	23	83	34	53	60	45	60	45	32	OSP-20359
AB 50	7	72	23	95	34	59	67	45	60	52	31	OSP-20362
AB 63	9	93	34	127	44	73	83	45	65	63	48	OSP-20453
AB 80	11	110	39,5	149,5	63	97	112	55	80	81	53	OSP-20819

Accessories for linear drives with Holding Device – please order separately

Description	For details information, see page
Clevis mounting	51
Adaptor profile	58
T-Nut profile	59
Sensors (can only be mounted opposite of the brake housing)	62
Displacement measuring system SFI	66

Versions

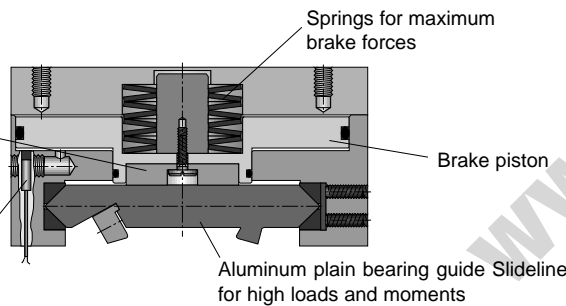
for pneumatic Linear Drive:
Series OSP-P



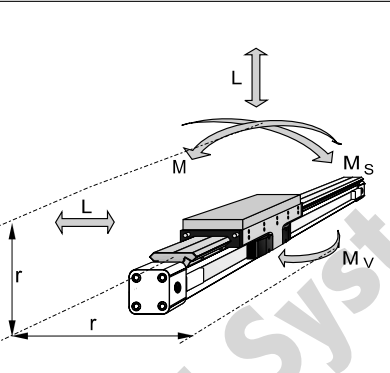
Function

Wear resistant brake lining, for long service life

Sensor for wear indication (option)



Loads, Forces and Moments



Technical Data:

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

Load and moment data are based on speeds $v < 0.2$ m/s.

Operating pressure 4,5 - 8 bar
A pressure of 4,5 bar is required to release the brake.

For further technical information, please refer to the data sheets for linear drives OSP-P (page 13)

Multi-Brake with Plain Bearing Guide Slideline SL

OSP
— ORTMAN
— SYSTEM
— PLUS

Series MB-SL 25 to 80
for Linear Drive
• Series OSP-P

Features:

- Brake operated by spring actuation
- Brake release by pressurization
- Corrosion resistant as standard
- Optional sensor to indicate brake lining wear
- Anodized aluminum rail, with prism shaped slide elements
- Adjustable plastic slide elements
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideway
- Replenishable guide lubrication by integrated grease nipples
- Blocking function in case of pressure loss
- Intermediate stops possible

Function:

The Multi-Brake is a passive device. When the air pressure is removed the brake is actuated and movement of the cylinder is blocked. The brake is released by pressurization. The high friction, wear resistant brake linings allow the Multi-Brake to be used as a dynamic brake to stop cylinder movement in the shortest possible time. The powerful springs also allow the Multi-Brake to be used effectively in positioning applications.

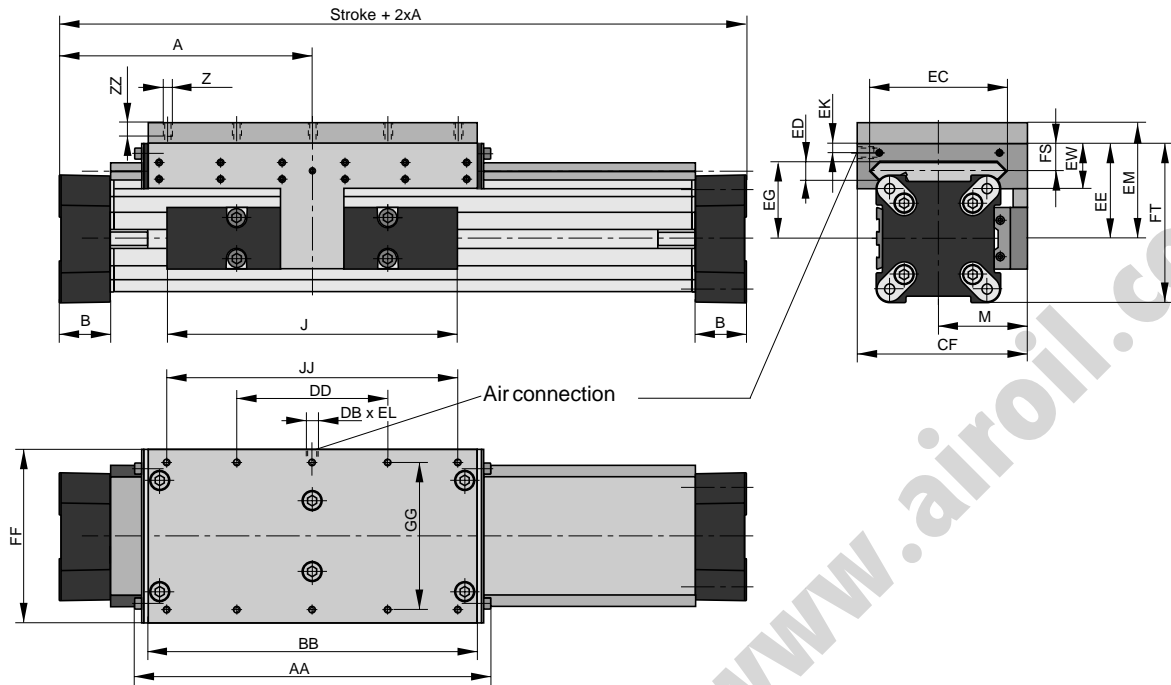
Series	For linear drive	Max. moments [Nm]			Max. loads [N]	Max. brake force [N] ¹⁾	Mass of linear drive with guide [kg]		Mass* guide carriage [kg]
		M	Ms	Mv			with 0 mm stroke	increase pro 100 mm str.	
MB-SL 25	OSP-P25	34	14	34	675	470	2.04	0.39	1.10
MB-SL 32	OSP-P32	60	29	60	925	790	3.82	0.65	1.79
MB-SL 40	OSP-P40	110	50	110	1500	1200	5.16	0.78	2.34
MB-SL 50	OSP-P50	180	77	180	2000	1870	8.29	0.97	3.63
MB-SL 63	OSP-P63	260	120	260	2500	2900	13.31	1.47	4.97
MB-SL 80	OSP-P80	260	120	260	2500	2900	17.36	1.81	4.97

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

* Please note:

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

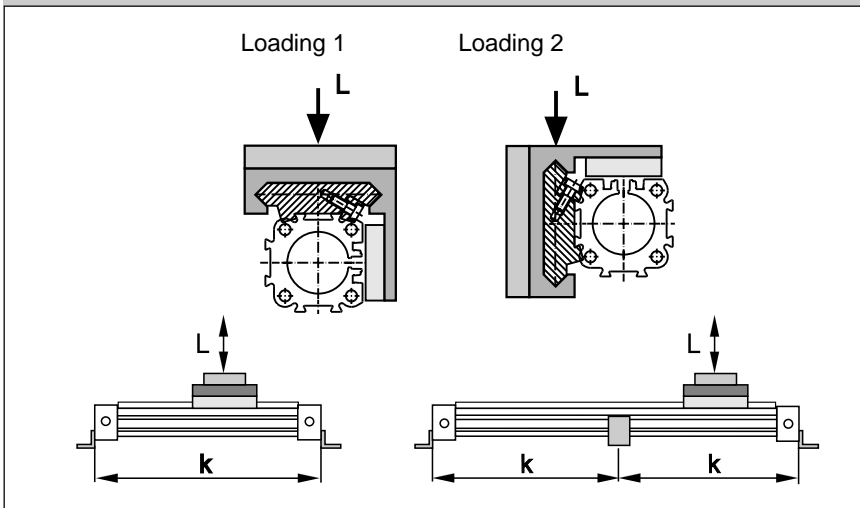
Series OSP-P with Passive Brake MB



Dimension Table (mm)

Series	A	B	J	M	Z	AA	BB	DB	DD	CF	EC	ED	EE	EG	EK	EL	EM	EW	FF	FT	FS	GG	JJ	ZZ
MB-SL25	100	22	117	40,5	M6	162	142	M5	60	72.5	47	12	53	39	9	5	73	30	64	73.5	20	50	120	12
MB-SL32	125	25.5	152	49	M6	205	185	G1/8	80	91	67	14	62	48	7	10	82	33	84	88	21	64	160	12
MB-SL40	150	28	152	55	M6	240	220	G1/8	100	102	77	14	64	50	6.5	10	84	34	94	98.5	21.5	78	200	12
MB-SL50	175	33	200	62	M6	284	264	G1/8	120	117	94	14	75	56	10	12	95	39	110	118.5	26	90	240	12
MB-SL63	215	38	256	79	M8	312	292	G1/8	130	152	116	18	86	66	11	12	106	46	152	139	29	120	260	13
MB-SL80	260	47	348	96	M8	312	292	G1/8	130	169	116	18	99	79	11	12	119	46	152	165	29	120	260	13

Loading



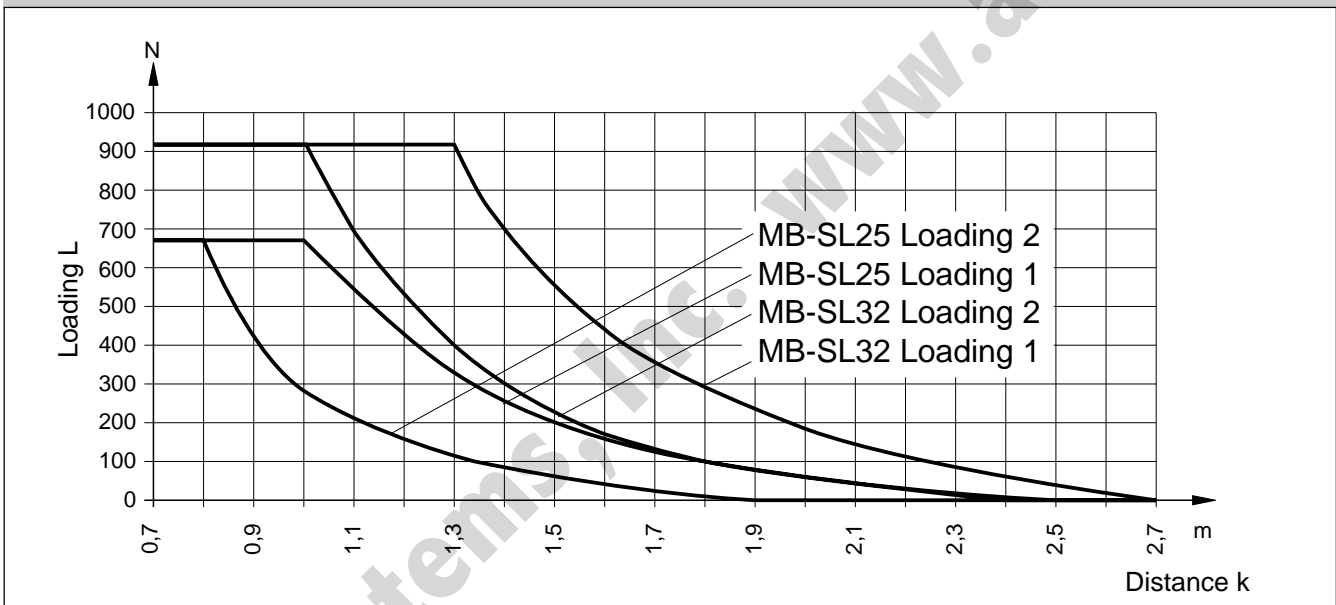
Mid-Section Support

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

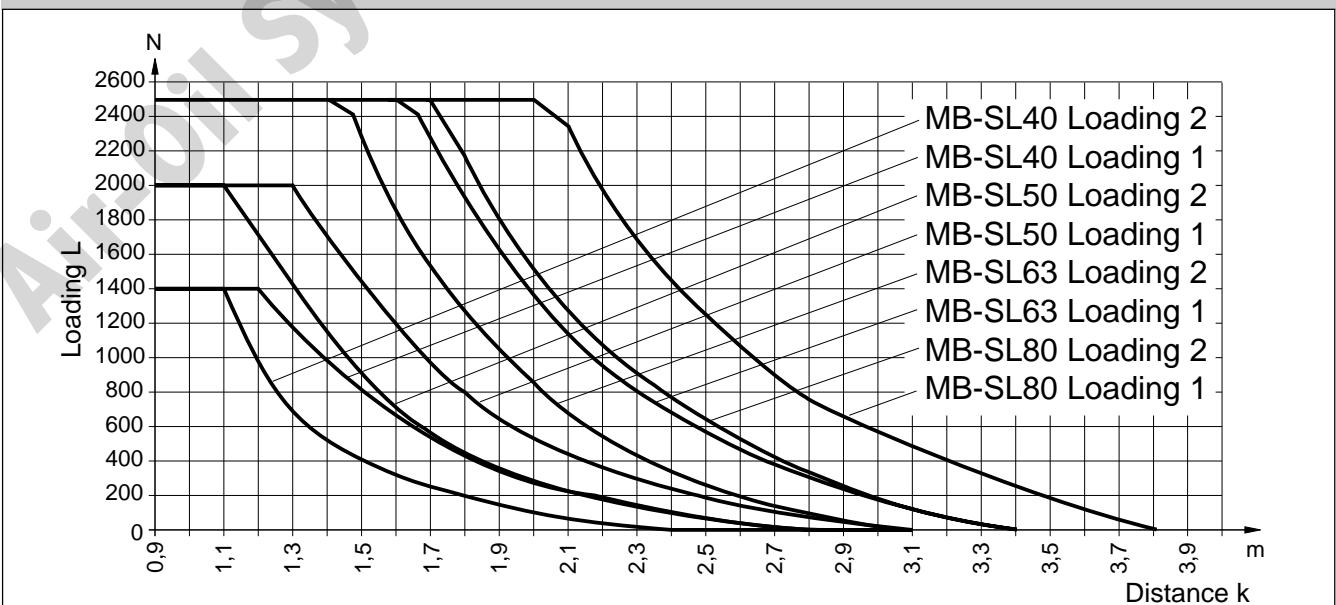
Note:

For speeds $v > 0,5$ m/s the distance between supports should not exceed 1 m.

Permissible Unsupported Length MB-SL25, MB-SL32

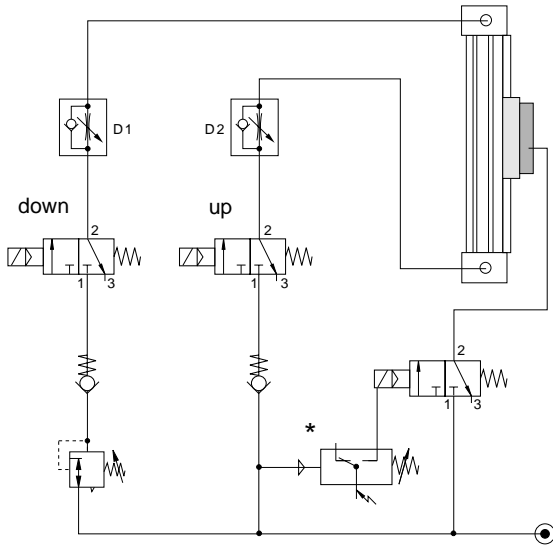


Permissible Unsupported Length MB-SL40, MB-SL50, MB-SL63 und MB-SL80

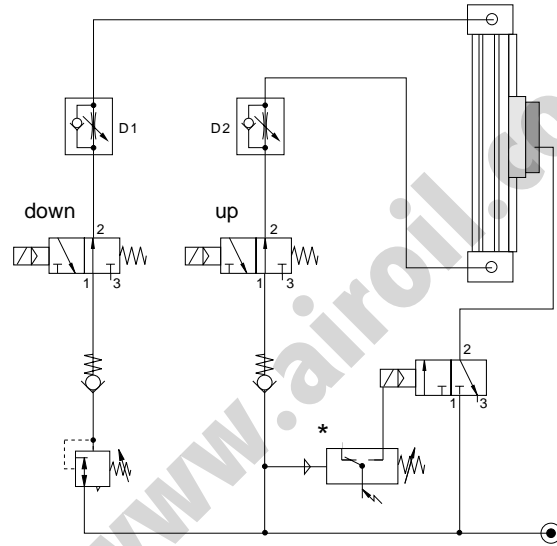


Application Example - Vertical Application

Control of a cylinder with 3/2 way valves.
Basic position – **exhausted**



Control of a cylinder with 3/2 way valves.
Basic position – **pressurized**



Control Examples

Under normal operating circumstances the pressure switch is closed and the air flows through the 3/2 way solenoid valves from port 1 to 2, thus lifting the brake from the rail (operating condition). The brake is pressurized by means of a 3/2 way valve in combination with a pressure switch. When there is a pressure loss, the brake is actuated by the pressure switch.

When the air pressure is restored to both cylinder chambers, the brake is lifted and the linear drive can be moved again.

The speed regulating valves D1 and D2 control the speed of the linear drive, and have no influence on the brake. The two non-return valves give the system a higher stability.

The pressure regulating valve is used to compensate for the downward force in this vertical application.

Please note:

Before the brake is lifted, make sure that both air chambers of the linear drive are pressurized. Small diameter tubing, fittings and valves with a nominal diameter, and tubing that is too long all change the reaction time of the brake!

*Tip:

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

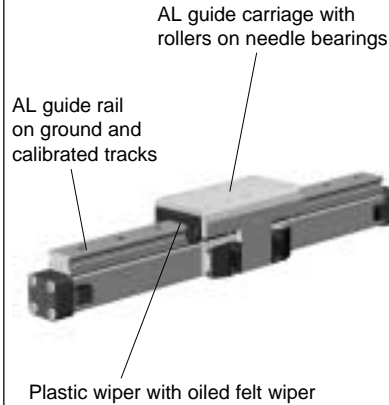
For accessories, such as tubing and fittings, please refer to our separate catalog.

Required Components

Way Valves
Port size
M5
G1/8
G1/4
G1/2
Pressure Regulating Valve
G1/8 - G3/8
P/E-Converter
Non-Return Valves
G1/8, G1/4
G3/8
Screw-in Speed Regulating Valves
M5 - G1/4

Versions

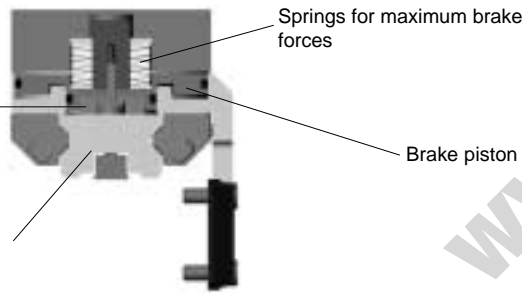
for pneumatic Linear Drive:
Series OSP-P



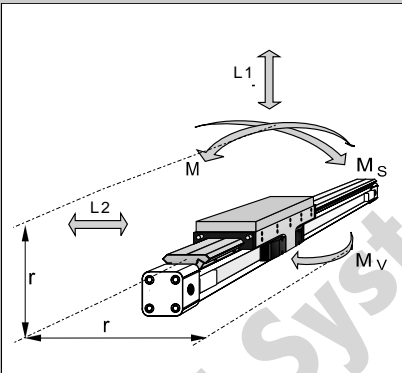
Function

Wear resistant brake lining, for long service life

Roller guide Proline for high precision and velocities



Loads, Forces and Moments



Technical Data

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

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

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.

Multi-Brake

with Aluminum Roller Guide Proline PL

OSP

— ORTMAN
— SYSTEM
— PLUS

Series MB-PL 25 to 50
for Linear Drive
· Series OSP-P

Features:

- Brake operated by spring actuation
- Brake release by pressurization
- Corrosion resistant as standard
- Optional sensor to indicate brake lining wear
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideway
- Blocking function in case of pressure loss
- Intermediate stops possible

Function:

The Multi-Brake is a passive device. When the air pressure is removed the brake is actuated and movement of the cylinder is blocked. The brake is released by pressurization. The high friction, wear resistant brake linings allow the Multi-Brake to be used as a dynamic brake to stop cylinder movement in the shortest possible time. The powerful springs also allow the Multi-Brake to be used effectively in positioning applications.

Operating Pressure 4,5 - 8 bar.
A pressure of min. 4,5 bar release the brake.

Series	For linear drive	Max. moments [Nm]			Max. loads [N] L1, L2	Max. brake force [N] ¹⁾	Mass of linear drive with guide [kg]		Mass* guide carriage [kg]
		M	Ms	Mv			with 0 mm stroke	increase pro 100 mm stroke	
MB-PL 25	OSP-P25	55	23	55	1210	315	2.14	0.40	1.24
MB-PL 32	OSP-P32	91	36	91	1460	490	4.08	0.62	2.02
MB-PL 40	OSP-P40	198	72	198	2600	715	5.46	0.70	2.82
MB-PL 50	OSP-P50	313	139	313	3890	1100	8.60	0.95	4.07

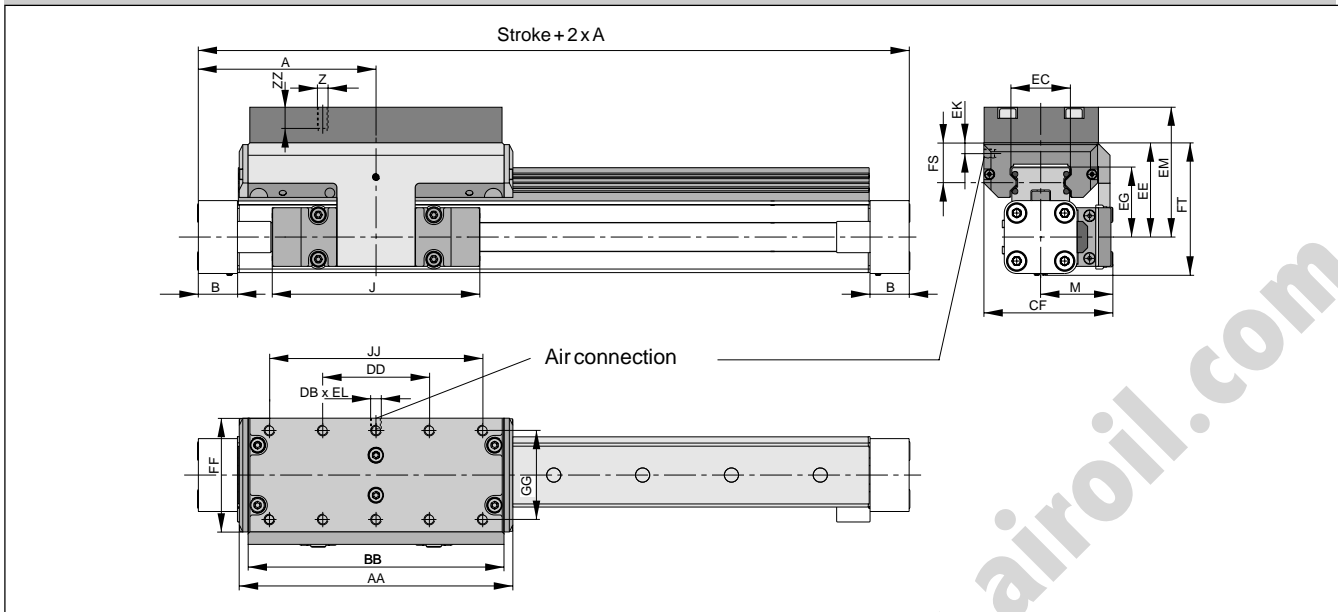
¹⁾ Braking surface dry – oil on the braking surface will reduce the braking force

* Please note:

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

The right to introduce technical modifications is reserved

Series OSP-P with Passive Brake MB-PL



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

Series	A	B	J	M	Z	AA	BB	DB	DD	CF	EC	EE	EG	EK	EL	EM	FF	FS	FT	GG	JJ	ZZ
MB-PL25	100	22	117	40.5	M6	154	144	M5	60	72.5	32.5	53	39	9	5	73	64	23	73.5	50	120	12
MB-PL32	125	25.5	152	49	M6	197	187	G1/8	80	91	42	62	48	7	10	82	84	25	88	64	160	12
MB-PL40	150	28	152	55	M6	232	222	G1/8	100	102	47	64	50.5	6.5	10	84	94	23.5	98.5	78	200	12
MB-PL50	175	33	200	62	M6	276	266	G1/8	120	117	63	75	57	10	12	95	110	29	118.5	90	240	16

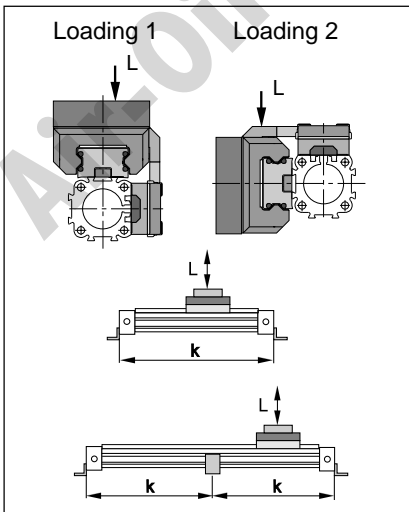
Mid-Section Support

(for versions see page 56)

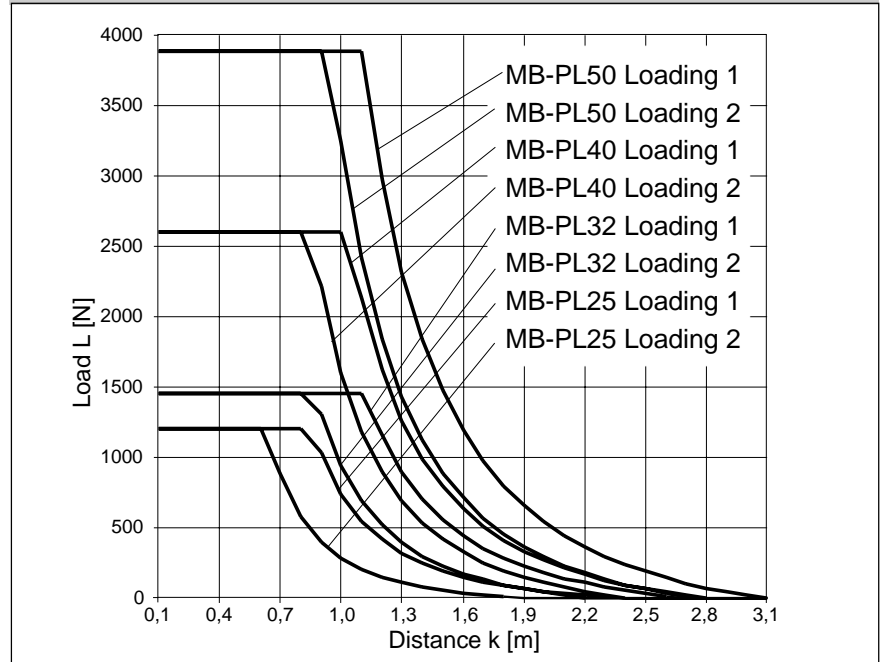
Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max.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

Note:

For speeds $v > 0,5$ m/s the distance between supports should not exceed 1 m.

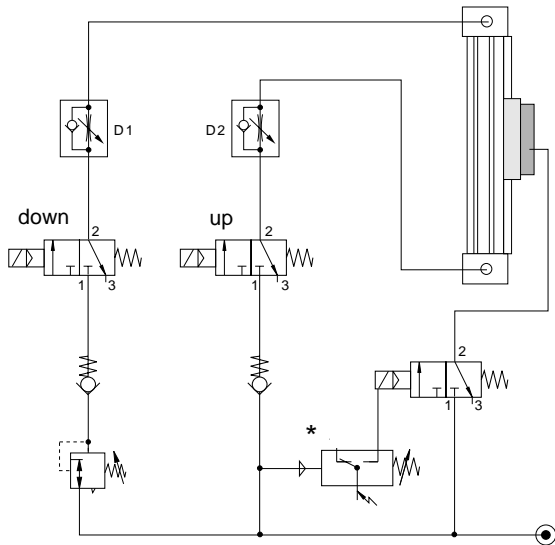


Permissible Unsupported Length OSP-P MB-PL25, MB-PL32, MB-PL40, MB-PL50

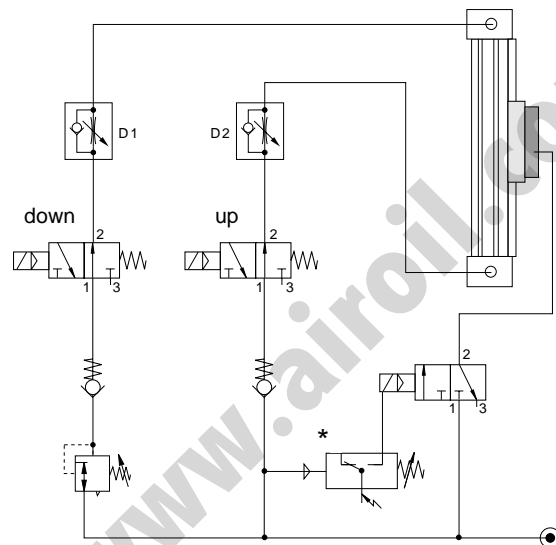


Application Example - Vertical Application

Control of a cylinder with 3/2 way valves.
Basic position – **exhausted**



Control of a cylinder with 3/2 way valves.
Basic position – **pressurized**



Control Examples

Under normal operating circumstances the pressure switch is closed and the air flows through the 3/2 way solenoid valves from port 1 to 2, thus lifting the brake from the rail (operating condition). The brake is pressurized by means of a 3/2 way valve in combination with a pressure switch. When there is a pressure loss, the brake is actuated by the pressure switch.

When the air pressure is restored to both cylinder chambers, the brake is lifted and the linear drive can be moved again.

The speed regulating valves D1 and D2 control the speed of the linear drive, and have no influence on the brake. The two non-return valves give the system a higher stability.

The pressure regulating valve is used to compensate for the downward force in this vertical application.

Please note:

Before the brake is lifted, make sure that both air chambers of the linear drive are pressurized. Small diameter tubing, fittings and valves with a nominal diameter, and tubing that is too long all change the reaction time of the brake!

***Tip:**

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

Required Components

Way Valves
Port size
M5
G1/8
G1/4
G1/2
Pressure Regulating Valve
G1/8 - G3/8
P/E-Converter
Non-Return Valves
G1/8, G1/4
G3/8
Screw-in Speed Regulating Valves
M5 - G1/4

Air-Oil Systems, Inc. www.airoil.com