

Active and Passive Brakes Series OSP-P



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Active Brakes and Passive Brakes

Active Brake
for pneumatic linear drive
Series OSP-P
Piston diameters 25 - 80 mm.

See pages 53-56



Versions:

- ACTIVE Brake
- Plain bearing guide with integrated ACTIVE Brake
- Aluminium roller guide with integrated ACTIVE Brake
- Plain bearing guide with PASSIVE Brake
- Aluminium roller guide with PASSIVE Brake

Slideline with Active Brake
Plain bearing guide SLIDELINE - SL
with integrated ACTIVE Brake
Piston diameters 25 - 50 mm.

See pages 33-34



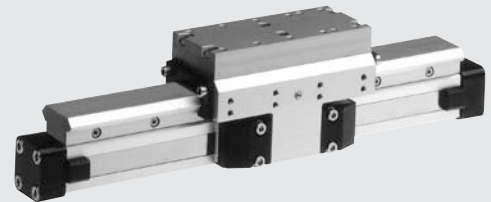
Proline with Active Brake
Aluminium roller guide
PROLINE - PL with
integrated ACTIVE Brake
Piston diameters 25 - 50 mm.

See pages 39-40



Multibrake with Slideline
MULTI BRAKE – PASSIVE Brake
with plainbearing guide
SLIDELINE - SL
Piston diameter 25 - 80 mm.

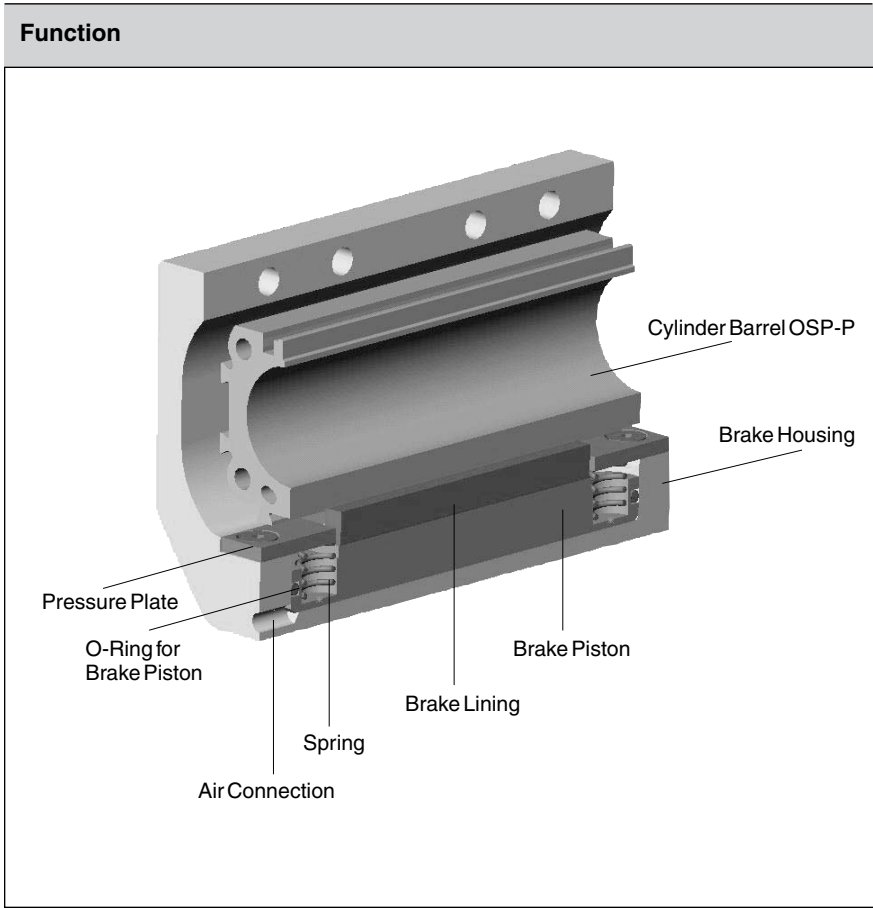
See pages 57-60



Multibrake with Proline
MULTI BRAKE – PASSIVE Brake
with aluminium roller guide
PROLINE - PL
Piston diameters 25 - 50 mm.

See pages 61-63





Active Brake



**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 15)

Note:

For combinations Active Brake AB + SFI-plus + Magnetic Switch contact our technical department please.

Forces and Weights

Series	For linear drive	Max. braking force [N] ⁽¹⁾	Brake pad way [mm]	Mass [kg]		Order No. Active brake
				Linear drive with brake 0 mm stroke	increase per 100mm stroke	
AB 25	OSP-P25	350	2.5	1.0	0.197	20806
AB 32	OSP-P32	590	2.5	2.02	0.354	20807
AB 40	OSP-P40	900	2.5	2.83	0.415	20808
AB 50	OSP-P50	1400	2.5	5.03	0.566	20809
AB 63	OSP-P63	2170	3.0	9.45	0.925	20810
AB 80	OSP-P80	4000	3.0	18.28	1.262	20811

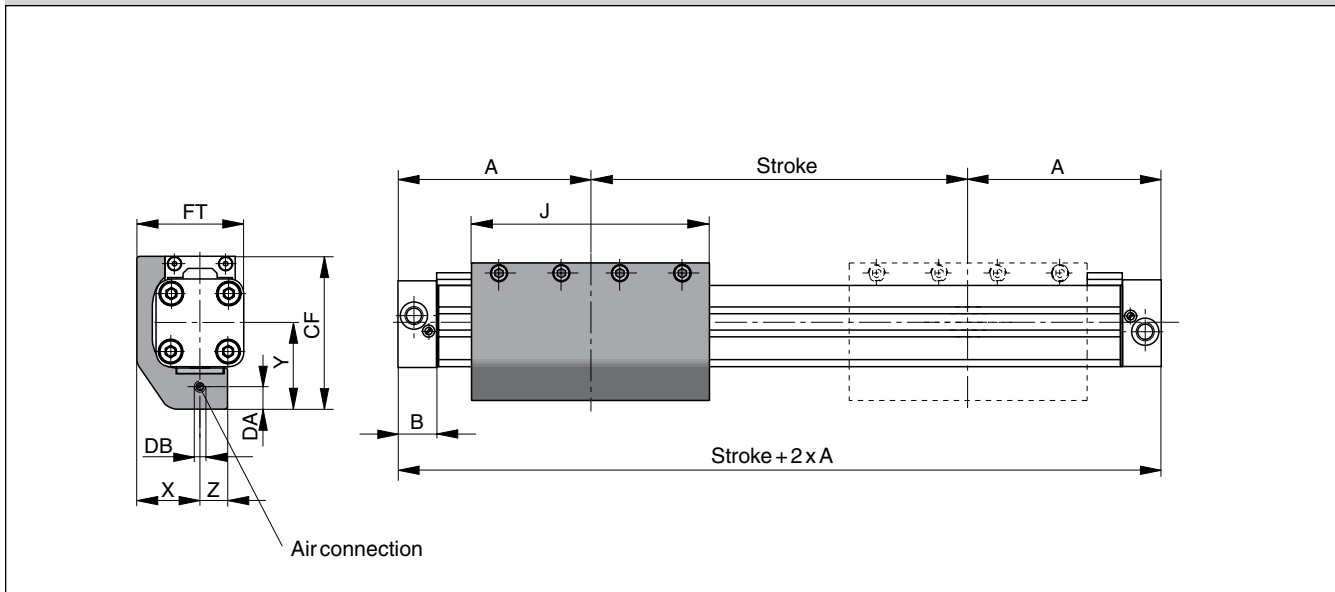
⁽¹⁾ – at 6 bar
 both chambers pressurized with 6 bar
 Braking surface dry
 – oil on the braking surface will reduce the braking force

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

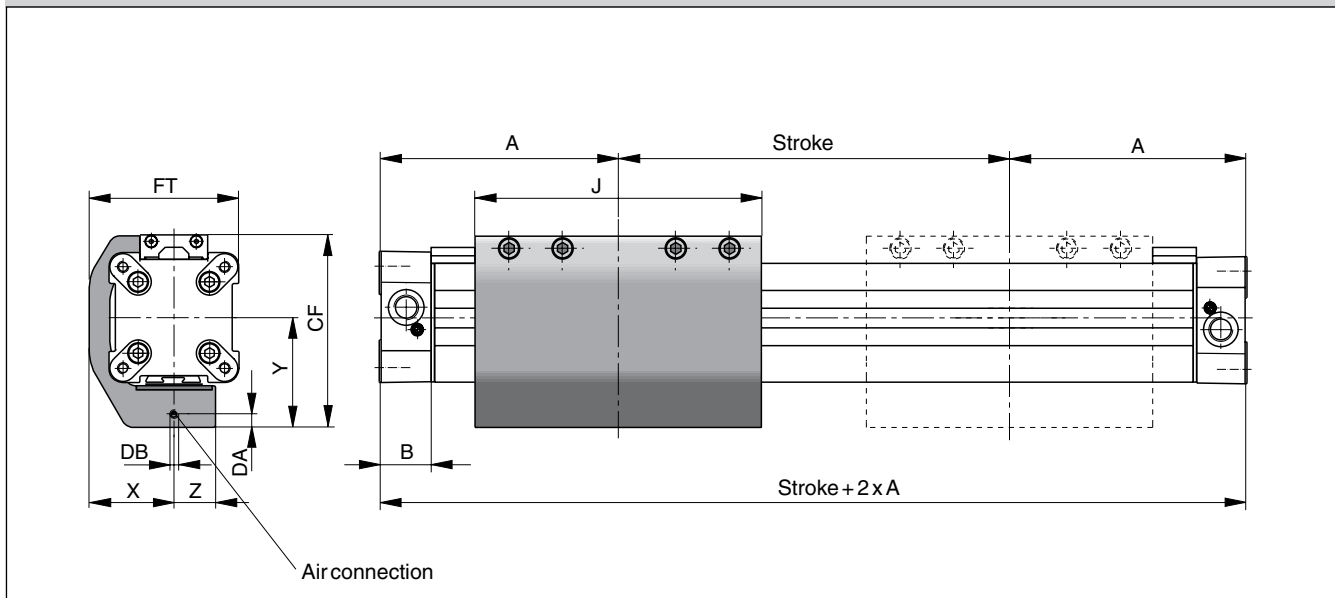
The right to introduce technical modifications is reserved



Series OSP-P25 and P32 with Active Brake AB



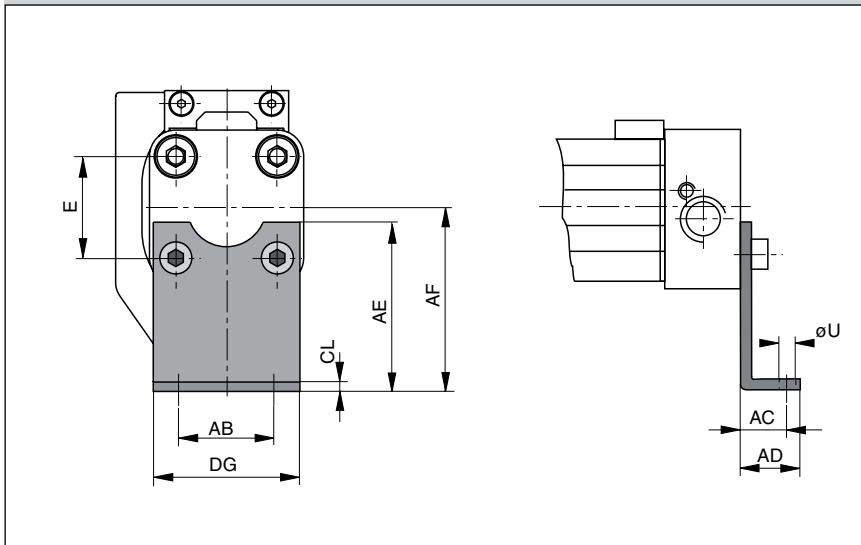
Series OSP-P40, P50, P63, P80 with Active Brake AB



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 Active Brake AB:Type A3



End Cap Mountings

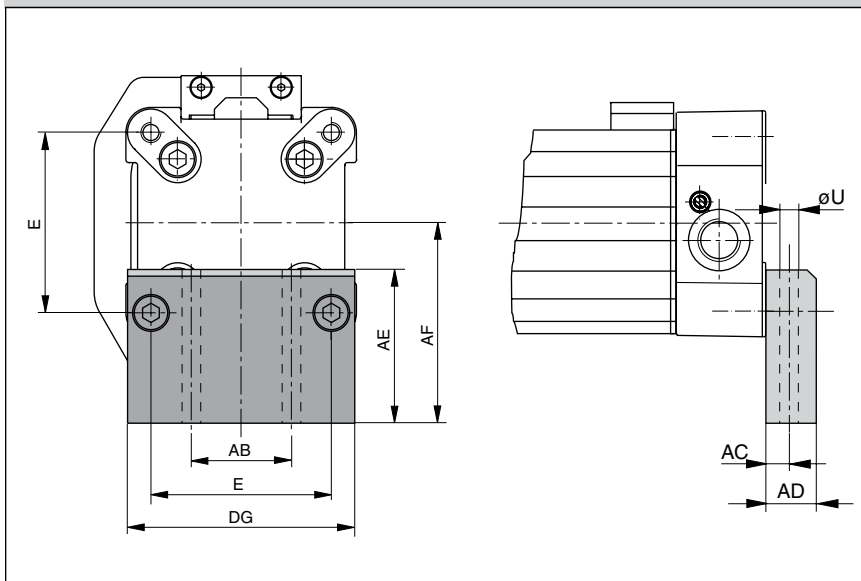
On the end-face of each cylinder end cap there are four threaded holes for mounting the cylinder. The hole layout is square, so that the mounting can be fitted to the bottom, top or either side.

Material: Series OSP-P25, P32:
Galvanized steel

The mountings are supplied in pairs.



Series OSP – P40 , P50, P63, P80 with Active Brake AB:Type C3



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

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	2060	–
AB 32	36	6.6	36	18	26	42	52	3	50	3060	–
AB 40	54	9	30	12.5	24	46	60	–	68	–	20339
AB 50	70	9	40	12.5	24	54	72	–	86	–	20350
AB 63	78	11	48	15	30	76	93	–	104	–	20821
AB 80	96	14	60	17.5	35	88	110	–	130	–	20822

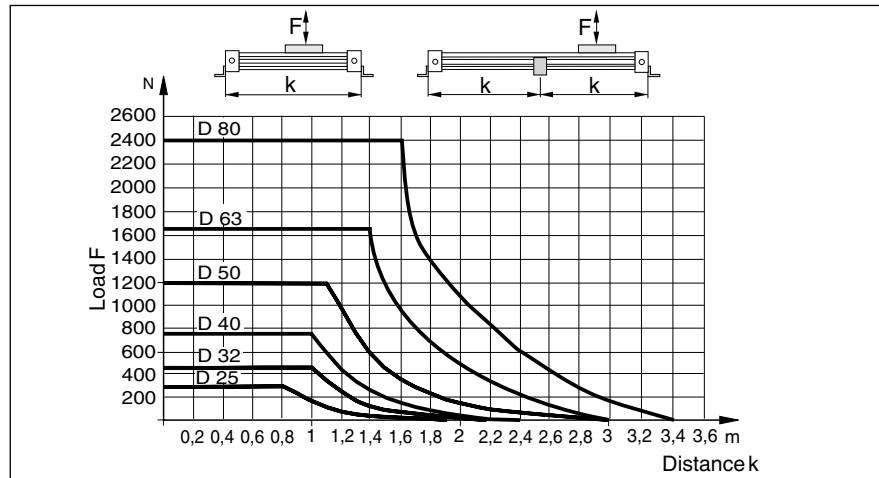
Mid Section Supports

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 0.5 mm max. between supports is permissible.

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



Mid Section Supports

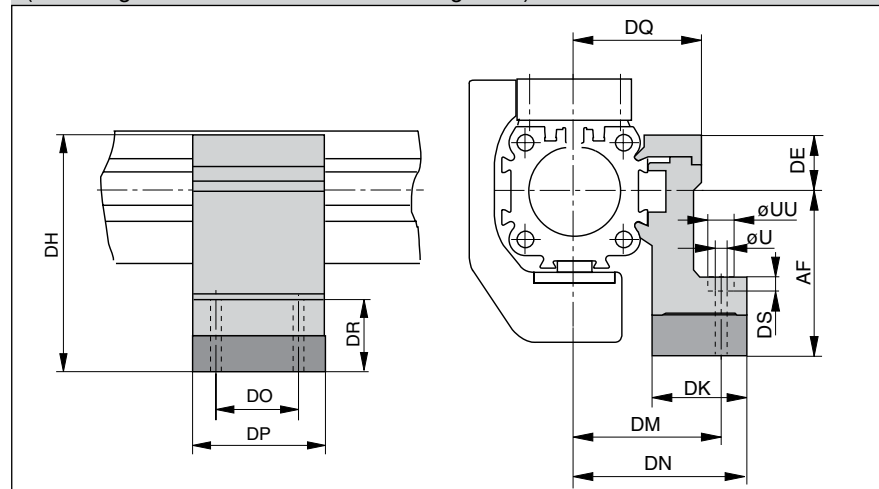
Note to Type E3:

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

Stainless steel version available on request.



Series OSP-P25 to P80 with Active Brake AB: Type E3
(Mounting from above / below with through-bolt)

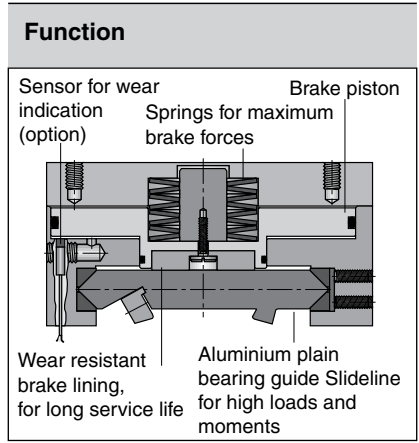
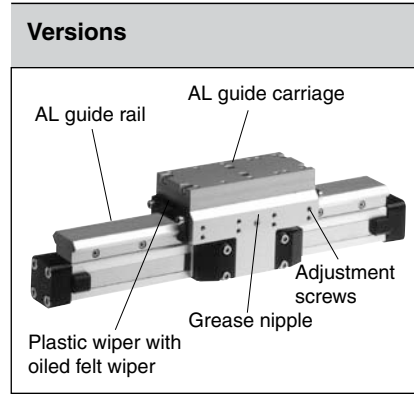


Dimension Table (mm)

Series	U	UU	AF	DE	DH	DK	DM	DN	DO	DP	DQ	DR	DS	Order No. Type E3
AB 25	5.5	10	49	16	65	26	40	47.5	36	50	34.5	35	5.7	20353
AB 32	5.5	10	52	16	68	27	46	54.5	36	50	40.5	32	5.7	20356
AB 40	7	—	60	23	83	34	53	60	45	60	45	32	—	20359
AB 50	7	—	72	23	95	34	59	67	45	60	52	31	—	20362
AB 63	9	—	93	34	127	44	73	83	45	65	63	48	—	20453
AB 80	11	—	110	39.5	149.5	63	97	112	55	80	81	53	—	20819

Accessories for linear drives with Active Brakes – please order separately

Description	For detailed information, page no.
Clevis mounting	68
Adaptor profile	79
T-groove profile	80
Connection profile	81
Magnetic switch (can only be mounted opposite of the brake housing)	84-86, 88-94
Incremental displacement measuring system SFI-plus	97-99



Multi-Brake Passive Brake with plain bearing guide Slideline SL



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

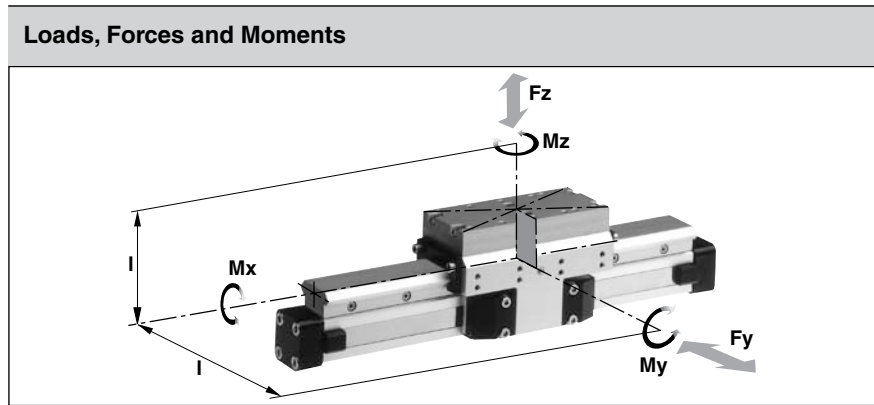
Function:

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.

Features:

- Brake operated by spring actuation
- Brake release by pressurization
- Optional sensor to indicate brake lining wear
- Anodized aluminium 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



Technical Data:

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

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 15)

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

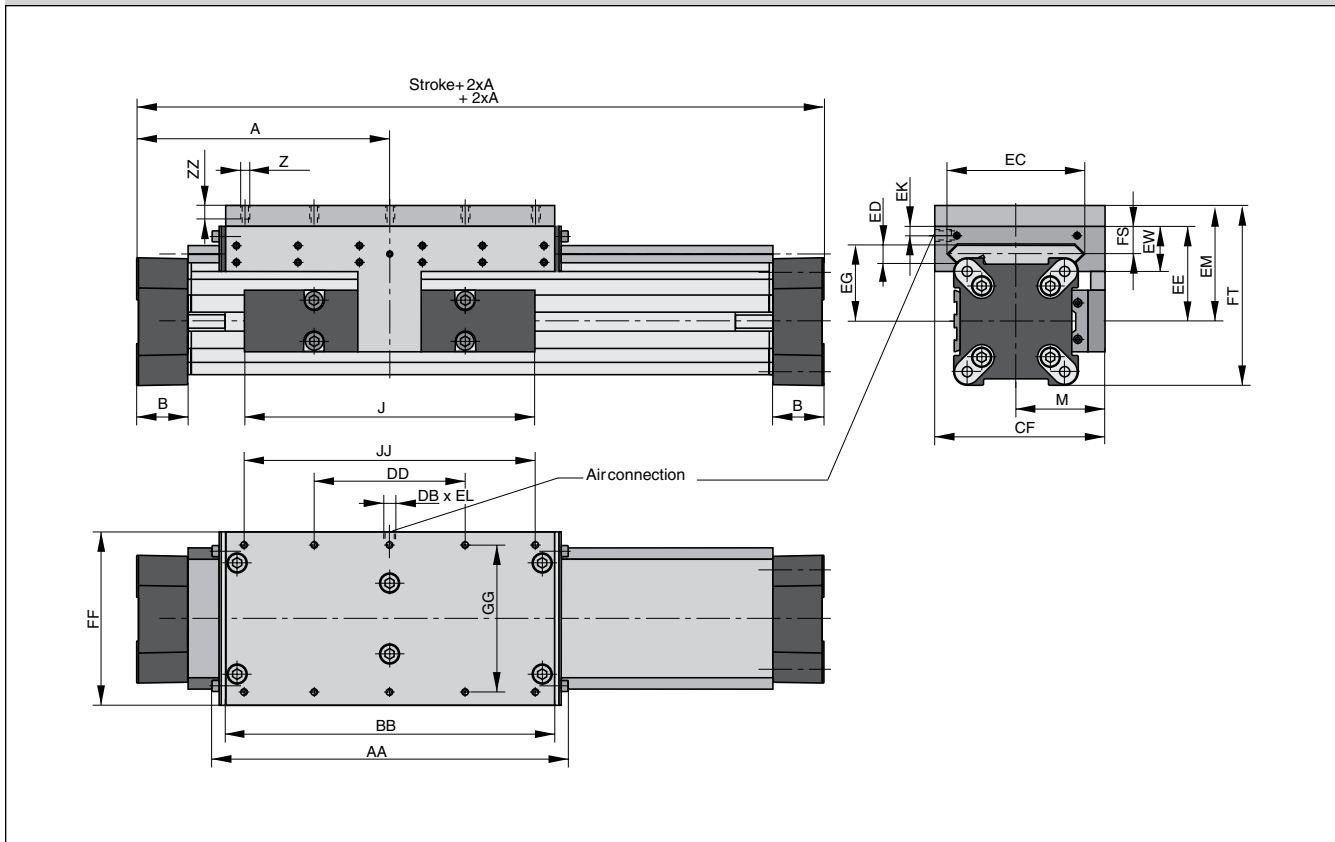
* **Please note:** in the cushioning diagram, the mass of the guide carriage has to be added to the total moving mass.

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

Series	For linear drive	Max. moments [Nm]			Max. loads [N] Ly, Lz	Max. brake force [N] ¹⁾	Mass of linear drive with guide [kg]		Mass* guide carriage [kg]	Order No. – MB-SL	
		Mx	My	Mz			with 0 mm stroke	increase per 100 mm stroke		without sensor	with sensor for wear indication
MB-SL 25	OSP-P25	14	34	34	675	470	2.04	0.39	1.10	20796	on request
MB-SL 32	OSP-P32	29	60	60	925	790	3.82	0.65	1.79	20797	on request
MB-SL 40	OSP-P40	50	110	110	1500	1200	5.16	0.78	2.34	20798	on request
MB-SL 50	OSP-P50	77	180	180	2000	1870	8.29	0.97	3.63	20799	on request
MB-SL 63	OSP-P63	120	260	260	2500	2900	13.31	1.47	4.97	20800	on request
MB-SL 80	OSP-P80	120	260	260	2500	2900	17.36	1.81	4.97	20846	on request

The right to introduce technical modifications is reserved

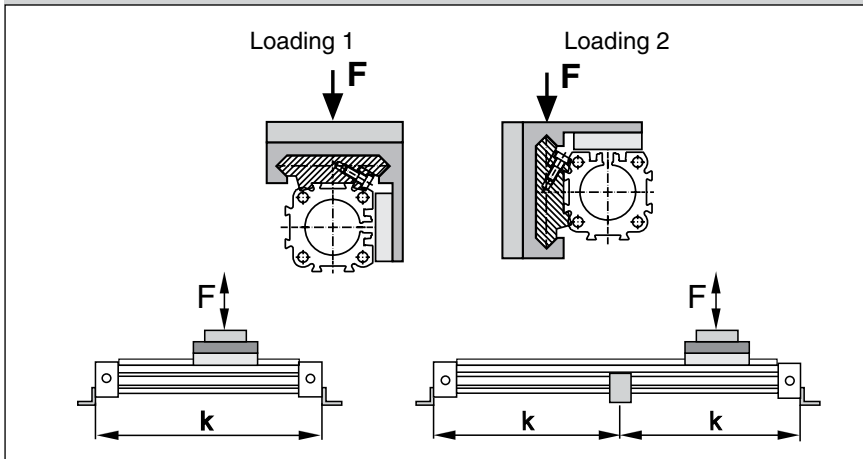
Series OSP-P with Passive Brake MB-SL



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	93.5	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	108	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	118.5	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	138.5	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	159	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	185	29	120	260	13

Loading



Mid Section Support

(for versions see page 77)

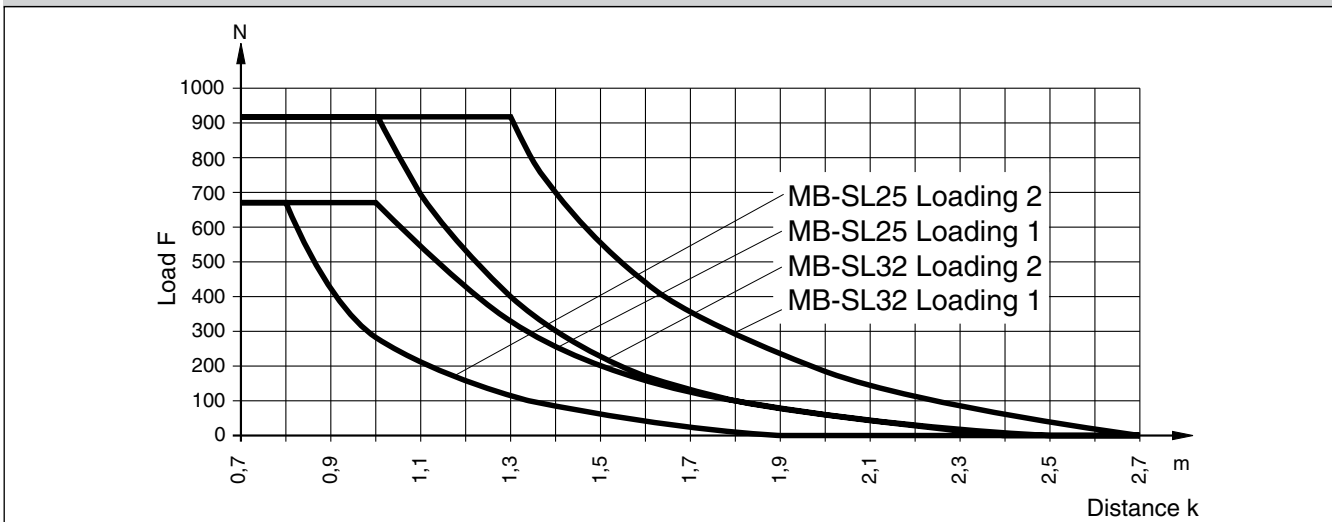
Mid section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive.

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.

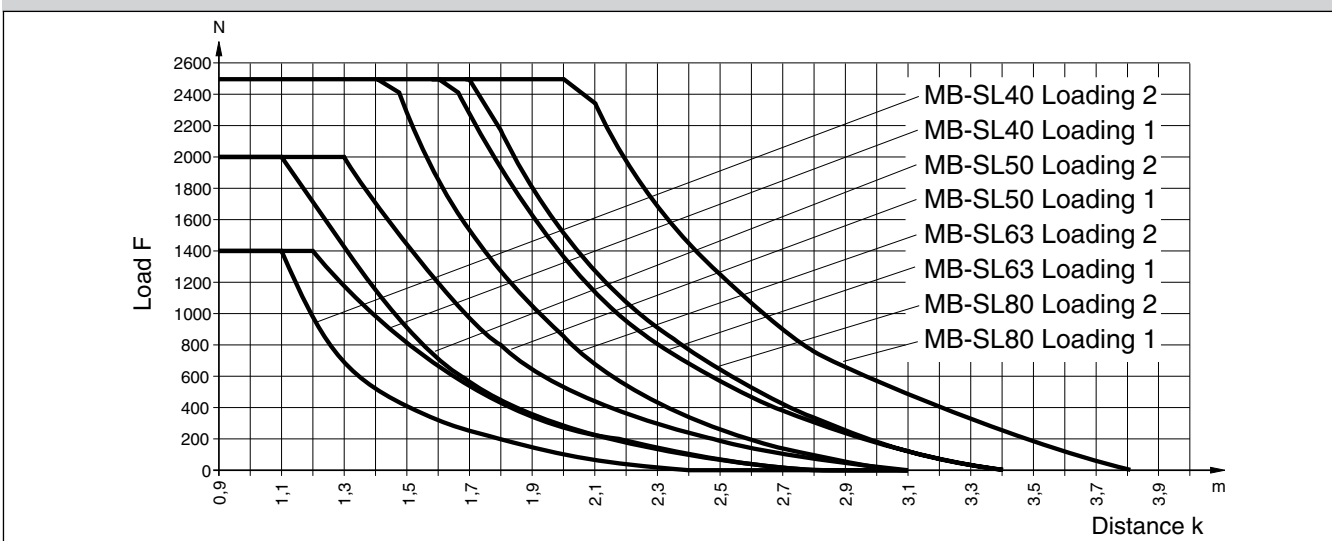
Note:

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

Permissible Unsupported Length MB-SL25, MB-SL32

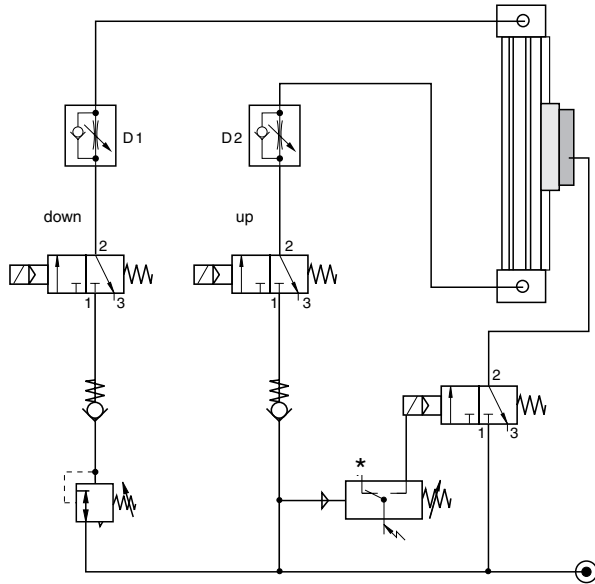


Permissible Unsupported Length MB-SL40, MB-SL50, MB-SL63 and MB-SL80

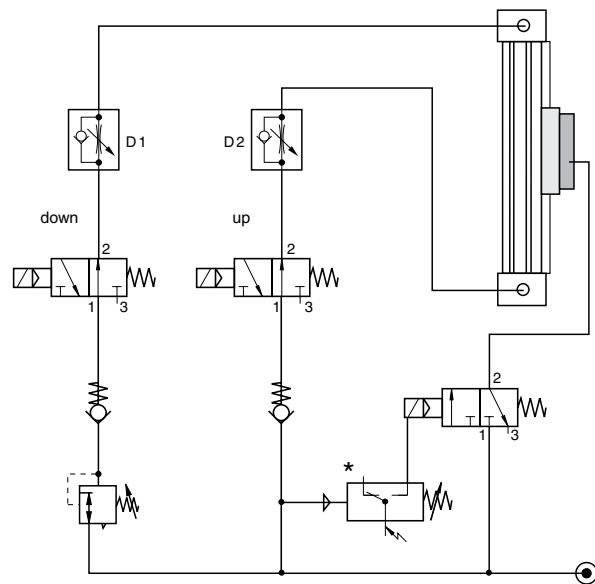


Application Example - Vertical Application

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:**

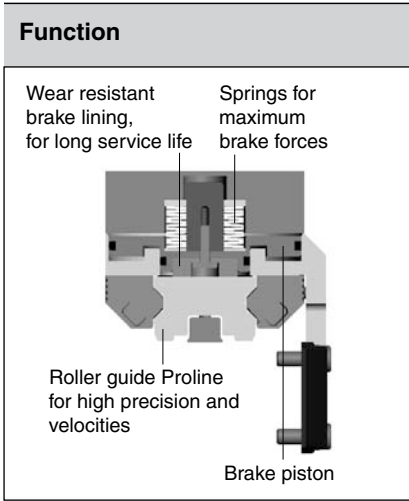
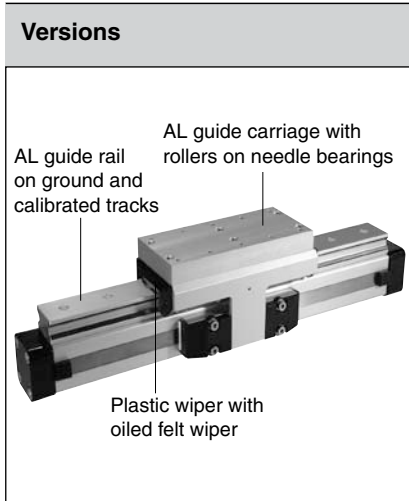
The pressure switch actuates the brake when the pressure drops below the set value.

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

Required Components

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

Contact factory for literature on the above valves/accessories



Multi-Brake Passive Brake with Aluminium Roller Guide Proline PL



Series MB-PL 25 to 50
for Linear-drive
• Series OSP-P

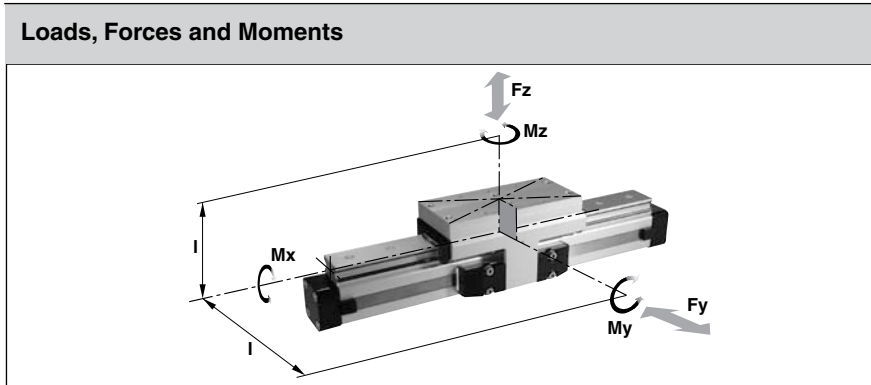
Function:

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.

Features:

- Brake operated by spring actuation
- Brake release by pressurization
- 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



Technical Data

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

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

The sum of the loads should not exceed >1. With a load factor of less than 1, service life is 8000 km

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

Operating Pressure 4.5 - 8 bar. A pressure of min. 4.5 bar release the brake.

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

*** Please note:**

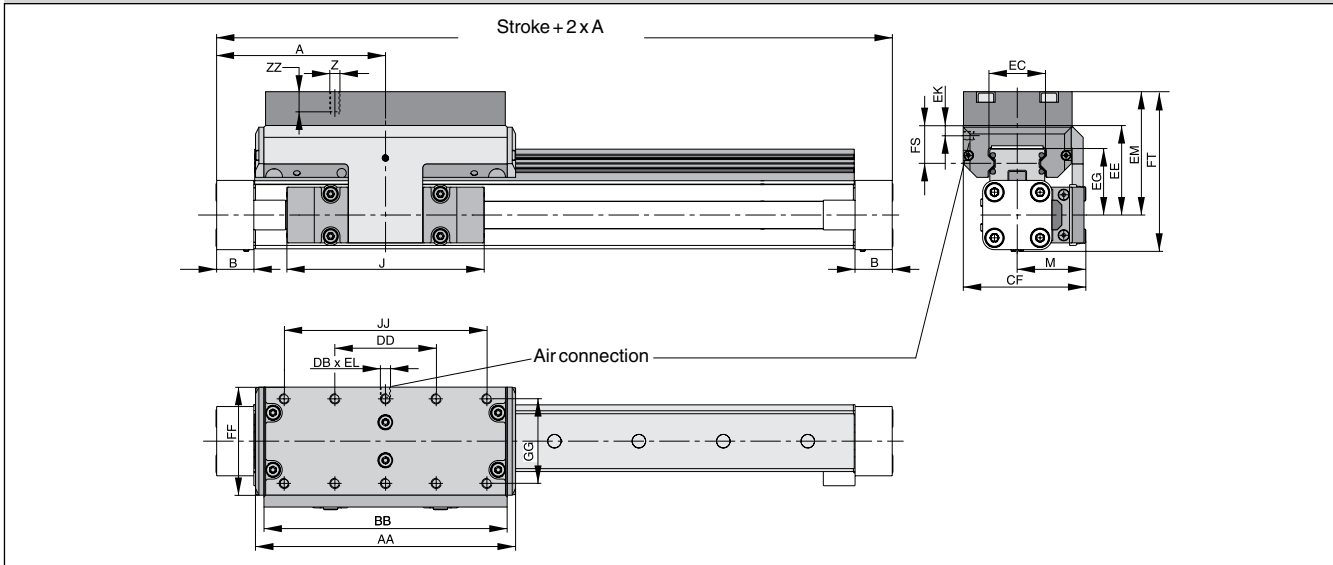
In the cushioning diagram, the mass of the guide carriage has to be added to the total moving mass.

Series	For linear drive	Max. moments [Nm]			Max. loads [N] Fy, Fz	Max. brake force [N] ¹⁾	Mass of linear drive with guide [kg]		Mass* guide carriage [kg]	Order No. – MB-PL	
		Mx	My	Mz			with 0 mm stroke	increase per 100 mm stroke		without sensor	with sensor for wear indication
MB-PL25	OSP-P25	16	39	39	857	315	2.14	0.40	1.24	20864	on request
MB-PL32	OSP-P32	29	73	73	1171	490	4.08	0.62	2.02	20865	on request
MB-PL40	OSP-P40	57	158	158	2074	715	5.46	0.70	2.82	20866	on request
MB-PL50	OSP-P50	111	249	249	3111	1100	8.60	0.95	4.07	20867	on request

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

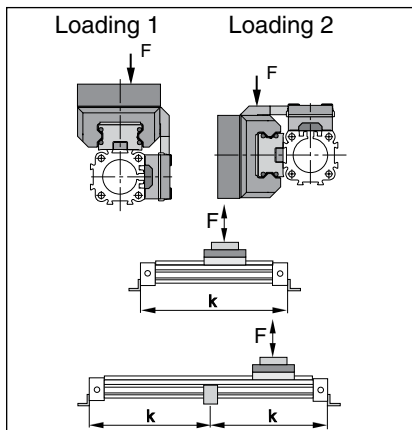
Series	A	B	J	M	Z	AA	BB	DB	DD	CF	EC	EE	EG	EK	EL	EM	FF	FS	FT	GG	JJ	ZZ
MB-PL25	100	22	117	40.5	M6	154	144	M5	60	72.5	32.5	53	39	9	5	73	64	23	93.5	50	120	12
MB-PL32	125	25.5	152	49	M6	197	187	G1/8	80	91	42	62	48	7	10	82	84	25	108	64	160	12
MB-PL40	150	28	152	55	M6	232	222	G1/8	100	102	47	64	50.5	6.5	10	84	94	23.5	118.5	78	200	12
MB-PL50	175	33	200	62	M6	276	266	G1/8	120	117	63	75	57	10	12	95	110	29	138.5	90	240	16

Mid Section Support

(for versions see page 71)

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.

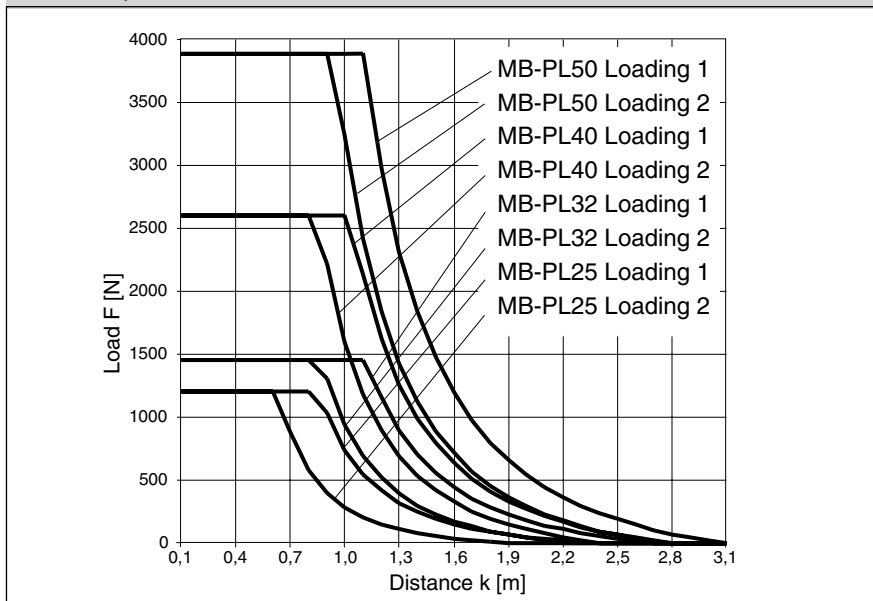
A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.



Note:

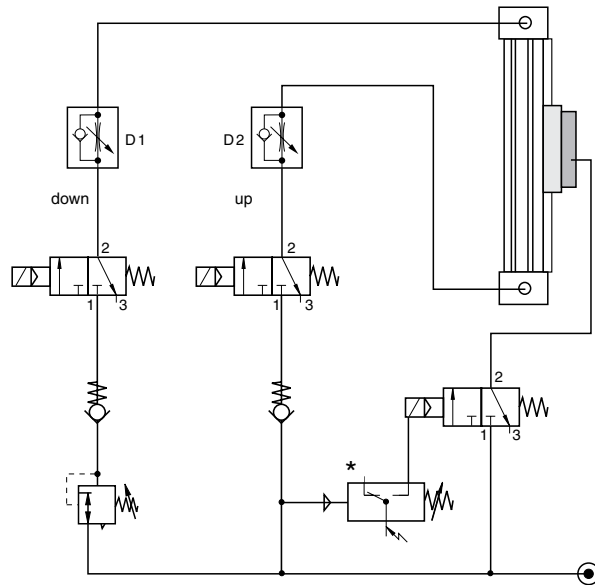
For speeds $v > 0.5$ m/s the distance between supports should not exceed 1 m.

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

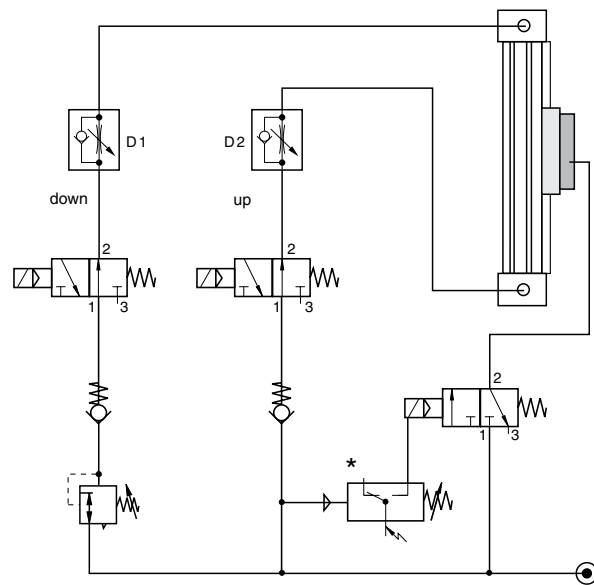


Application Example - Vertical Application

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).

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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 Valves
G1/8 - G3/8
Pneumatic Accessories
P/E-Switch
Non-Return Valves
G1/8 - G3/8
Screw-in Speed Regulating Valves
M5 - G1/4

Contact factory for literature on the above valves/accessories

