

# Linear Modules with Intermediate Positions

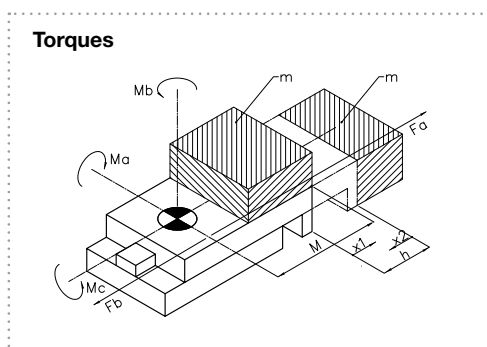
## Technical Data – Summary S-Series

		Pneumatic							
		LM 4 S ZA		LM 5 S ZA			LM 6 S ZA		
		S 60 ZA	S 90 ZA	S 60 ZA	S 90 ZA	S 120 ZA	S 60 ZA	S 120 ZA	S 180 ZA
Stroke lengths h [mm]:	0-30								
	0-60	•		•			•		
	0-90		•		•				
	0-120					•		•	
	0-180								•
Theor. force Fa/Fb [N]: (pneumatic design at 5 bar)	100/86	•	•						
	157/131			•	•	•			
	245/206						•	•	•
Max. permissible mass [kg]:	2	•	•						
	4			•	•	•			
	6						•	•	•
Cylinder diameter [mm]:	1x16	•	•						
	1x20			•	•	•			
	1x25						•	•	•
Air consumption per cycle at 5 bar and nominal stroke [NI]:		0.12	0.18	0.2	0.3	0.4	0.3	0.6	0.9
Weight [kg]:		0.8	0.9	1.2	1.4	1.6	2.1	2.6	3.2
Point of application of force for all torques [mm]:	M	65	70	70	75	75	105	120	120
Max. static Torques [Nm]:	Ma	20	20	25	25	25	60	60	80
	Mb	20	20	25	25	25	60	60	80
	Mc	30	30	80	80	80	100	100	100
Front stop range of adjustment [mm]:	x2	0-60	0-90	0-60	0-90	0-120	0-60	0-120	0-180
Rear stop range of adjustment [mm]:	x1	0-30	0-30	0-40	0-40	0-40	0-30	0-60	0-60
Repeat accuracy [mm]:		±0,01	±0,01	±0,01	±0,01	±0,01	±0,01	±0,01	±0,01

This applies to calculations:

\*  $M_a/M_{a \max} + M_b/M_{b \max} + M_c/M_{c \max} < 1$

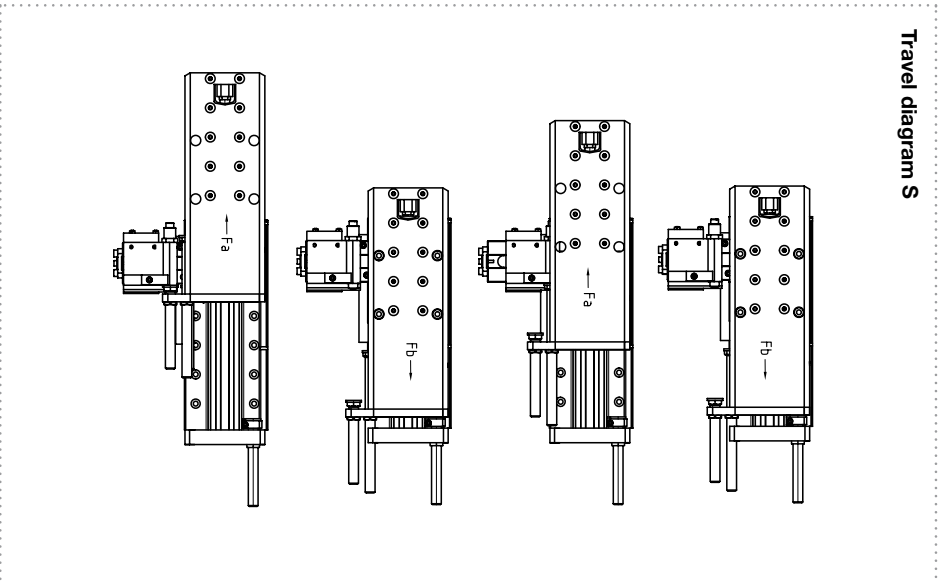
\* For stresses during the drive of the carriage  $M_{\max} = 20\% M_{\max \text{ static}}$



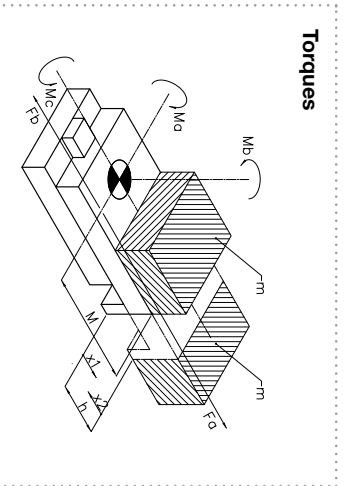
# Linear Modules with Intermediate Positions

## Technical Data – Summary

Travel diagram S



Torques



Load diagrams for S-Series, refer to page 37

# Linear Modules with Intermediate Positions

## LM 4 S ZA – Pneumatic Linear Module with Intermediate Position

### LM 4 S ZA



#### Technical data, stroke-independent

Cylinder diameter	1 x Ø16 mm	
Theor. force (at 5 bar)	Fa	100 N
	Fb	86 N
Max. speed	0,5 m/s	
Pneumatic connections	M5	
Medium	Compressed-air filtered, oiled or non-oiled	
Operating pressure range	3 to 7 bar	
Temperature range	0 – 60° C	
Repeat accuracy	+/-0.01 mm	
Max. permissible mass	2 kg	

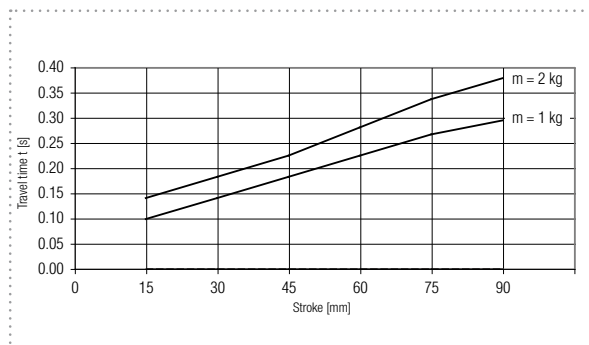
#### Technical data, stroke-dependent

See page 68

#### Permissible travel time $t$ relative to the stroke length and the additional mass $m$

The travel time  $t$  determined from the diagram may not be undershot.

Recommendation: When selecting the module, the travel time  $t$  should be assumed as being 20% more.

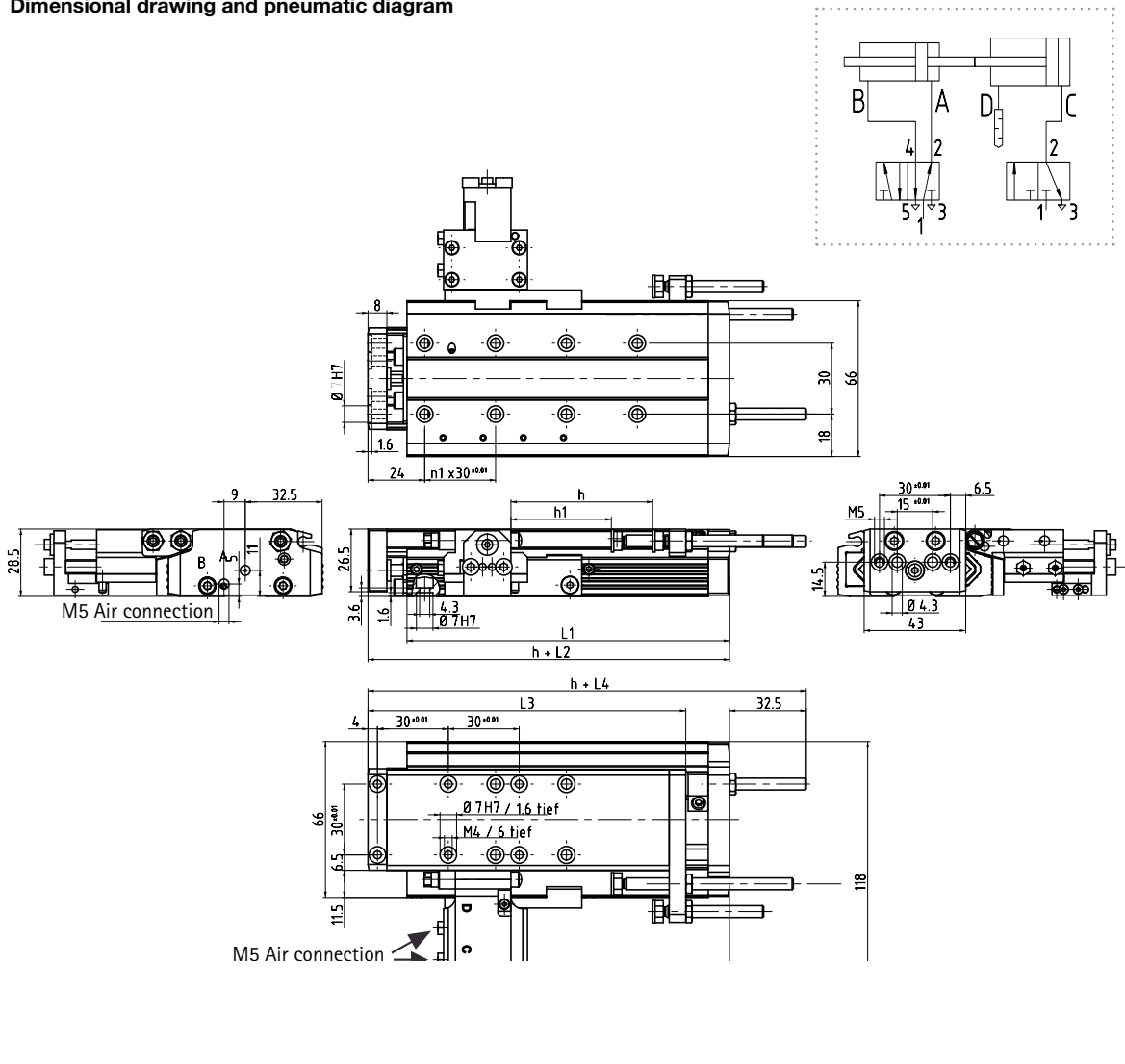


Permissible travel time  $t$  = travel time without valve switching time, at nominal pressure 6 bar.

# Linear Modules with Intermediate Positions

## LM 4 S-ZA – Pneumatic Linear Module with Intermediate Position

Dimensional drawing and pneumatic diagram



Designation	h	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	n <sub>1</sub>	n <sub>2</sub>
LM 4 S-60 ZA	60	136.5	153.0	134.5	185.5	3	0
LM 4 S-90 ZA	90	171	187.5	169.0	220.0	4	1

Designation	Order number
LM 4 S-60 ZA	303 9546
LM 4 S-90 ZA	303 9650

incl. hydraulic shock absorber  
and 4 centering rings Ø 10

### Accessories

Centering ring Ø 7	300 1521
Limit switch Ø 3	300 3162
Reed switch	300 1288 for flute
Centering coupling ZK 5/6	300 2478
Shock absorber	300 1386

See chapter Accessories

Overview

Linear Axes  
pneum. / electr.

Linear Modules  
pneum. / electr.

Linear Modules  
with Intermediate  
Positions

Rotary Modules

Grippers

Basic Elements

Accessories