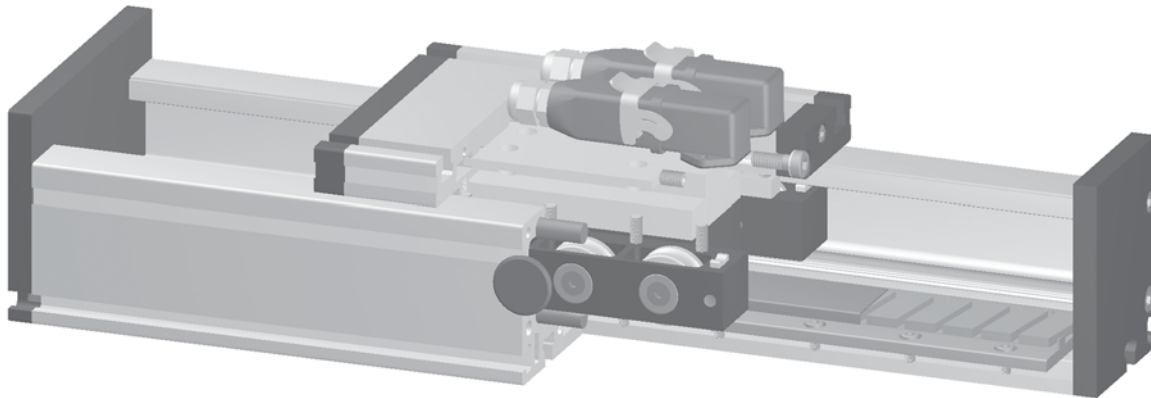


# Modular Linear Actuator DLM 120, 160, 200

Linear Motor Drive



### Function:

This unit consists of a rectangular aluminium profile with 2 integrated roller guides. The linear-motor DLM unit is based on the principle of a linear, synchronous AC motor.

The guiding profile is fitted with permanent magnets as stator. The carriage is fitted with the rotor. The magnetic attraction causes a force between carriage and guiding profile also in the absence of current. This force can be used for the initial tension of the bearings. Several carriages can be driven independently on one guiding profile.

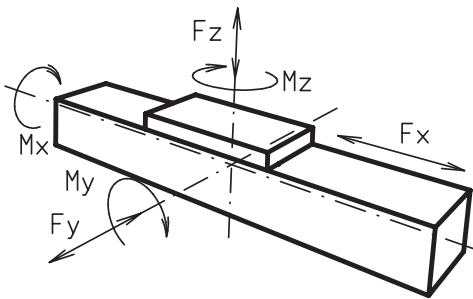
**Fitting length:** As required. Max. length 6,000 mm single/extrusion.

**Carriage mounting:** T-slots

**Unit mounting:** T-slots and mounting sets. The linear axis can be combined with any T-slot profile.

**Carriage support:** In the standard version, the carriage runs on 10 rollers which can be adjusted and serviced at a central servicing position. For longer carriages the number of rollers can be increased.  
Repeatability ± 0,05 mm. Repeated accuracy max. ± 0,05 bis 4.000 mm, ± 0,1 >4.000 mm.

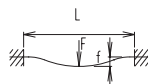
### Forces and torques



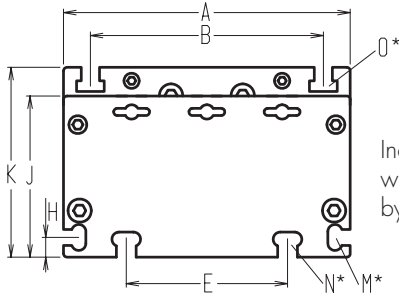
Size	120		160		200	
	static	dynamic	static	dynamic	static	dynamic
<b>Forces/Torques</b>						
$F_x$ (N)	1100	900	3000	2000	4400	3100
$F_z$ (N)	1250	1000	3500	2800	4900	4400
$M_x$ (Nm)	150	125	400	320	600	510
$M_y$ (Nm)	140	120	360	300	560	480
$M_z$ (Nm)	100	90	180	150	310	275
<b>Working traverse force <math>F_x</math></b>						
Motor size	1	2	1	2	1	2
Weight (kg)	3,1	5,0	8,2	12,5	12,7	18,2
permanent (N)	90	180	280	570	449	863
Max. (N) (1 sek.)	300	600	550	1100	745	1489
<b>Traverse force without current</b>						
N	3	5	5	8	7	11
<b>Speed</b>						
(m/sec) max	4		6		8	
<b>Geometrical moments of inertia of aluminium profile</b>						
$I_x$ mm <sup>4</sup>	6,6x10 <sup>5</sup>		22,2x10 <sup>5</sup>		63,8x10 <sup>5</sup>	
$I_y$ mm <sup>4</sup>	38,6x10 <sup>5</sup>		122,0x10 <sup>5</sup>		335,0x10 <sup>5</sup>	
Elastic modulus N/mm <sup>2</sup>	70000		70000		70000	

### Formula: DLM

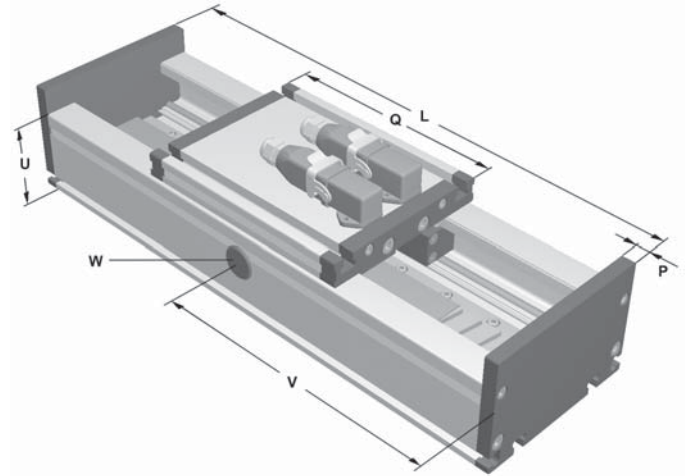
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$



f = deflection (mm)  
 F = load (N)  
 L = free length (mm)  
 E = elastic modulus 70000 (N/mm<sup>2</sup>)  
 I = second moment of area (mm<sup>4</sup>)



Increasing the carriage length will increase the basic length by the same amount.



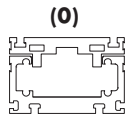
\*For Trnuts refer to accessory section

W = servicing position

Size	Basic length L Motor size 1/2	A	B	E	H	J	K	M	N	O	P	Q Motor size 1/2	U	Basic weight Motor size 1/2	Additional Weight per 100 mm
DLM 120	310/490	120	96	78	10	68	79	M5	M6	M6	10	276/456	60	6,0/7,4 kg	1,34 kg
DLM 160	365/550	160	130	90	11	90	106	M6	M8	M8	12	305/490	80	14,9/21,2 kg	1,81 kg
DLM 200	460/560	200	160	140	15	110	129	M8	M10	M10	15	410/490	100	22,5/29,2 kg	2,98 kg

**Choice of guide body profile:**

0



without internal profile and cover bands

3

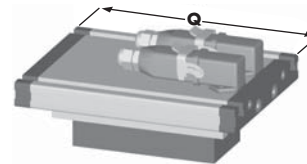


with bellows

**Stainless guide body profile upon request.**

**Motor size: (1)**

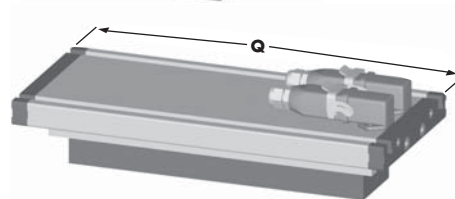
Choice of Carriages  
4x3 rolls



1

**Motor size: (2)**

Choice of Carriages  
4x3 rolls

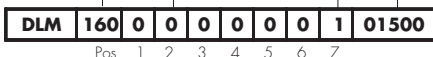


For standard carriage length see 'Q' in table.

The carriages can be delivered in any non-standard length upon request; the longer the carriage, the greater the load capacity. Digital - controllers and linear - encoder refer to accessory section.

1500

Basic length + stroke = total length



Sample ordering code:

DLM160, standard body profile, motor size 1, 1135 mm stroke.

