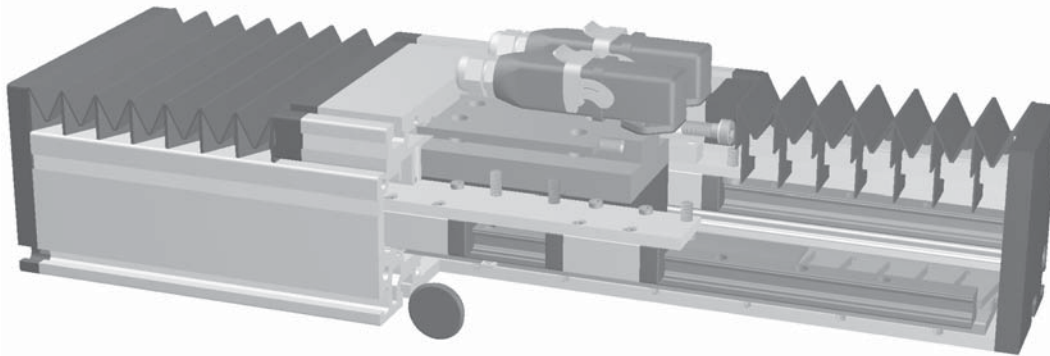


Modular Linear Actuator DSM 160, 200

Linear Motor Drive



Function:

This unit consists of a rectangular aluminium profile with 2 profile rail guides. The linear motor DIM 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 position: As required. Max. length 6,000 mm single/extrusion.

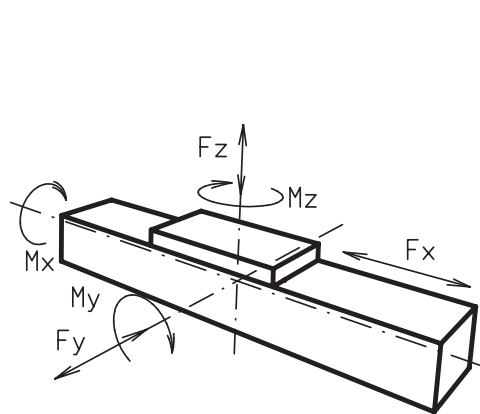
Carriage mounting: T-slots

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 4 runner blocks which can be serviced at a central servicing position. For longer carriages the number of runner blocks can be increased.

Repeatability $\pm 0,05$ mm. Repeated accuracy max. $\pm 0,05$ mm bis 4.000 mm, $\pm 0,1$ >4.000 mm.

Forces and torques



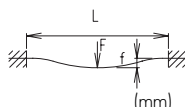
| Size | 160 | | 200 | |
|--|------------------------|----------|------------------------|----------|
| Forces/Torques | 5000 km | 10000 km | 5000 km | 10000 km |
| F_x (N)* | 2236 | 1175 | 5155 | 4092 |
| F_y (N)* | 5278 | 4189 | 11311 | 8977 |
| M_x (Nm)* | 282 | 224 | 752 | 597 |
| M_y (Nm)* | 283 | 225 | 813 | 646 |
| M_z (Nm)* | 300 | 238 | 862 | 684 |
| Working traverse force F_x | | | | |
| Motor size | 1 | 2 | 1 | 2 |
| weight (kg) | 8,2 | 12,5 | 13,2 | 19,2 |
| permanent (N) | 280 | 570 | 449 | 863 |
| Max. (N) 1sec. | 550 | 1100 | 745 | 1489 |
| Traverse force without current | | | | |
| | 30 | | 40 | |
| Geometrical moments of inertia of aluminium profile | | | | |
| I_x mm ⁴ | 2,13 x 10 ⁶ | | 6,38 x 10 ⁶ | |
| I_y mm ⁴ | 12,3 x 10 ⁶ | | 33,5 x 10 ⁶ | |
| Elastic modulus N/mm ² | 70000 | | 70000 | |

Formula: DSM

Deflection:

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

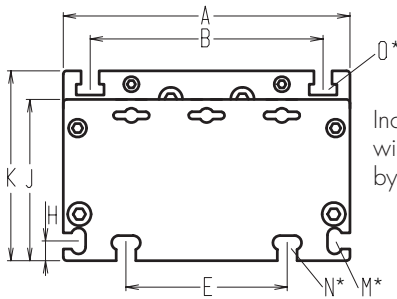
f = deflection (mm)
 F = load (N)
 L = free length (mm)
 E = elastic modulus 70000 (N/mm²)
 I = second moment of area (mm⁴)



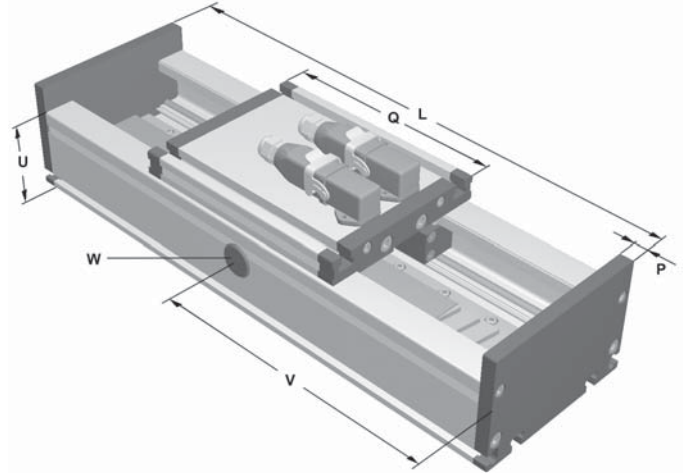
Nominal lifetime:

$$L = \left(\frac{C}{F} \right)^3 \times 10^5$$

C = Dynamic load factor (N)
 F = Middle load (N)



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



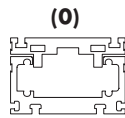
*For T-nuts refer to accessory section

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 |
|---------|--|-----|-----|-----|----|-----|-----|----|-----|-----|----|------------------------|-----|-----------------------------------|---------------------------------------|
| DSM 160 | 365 / 550 | 160 | 130 | 90 | 11 | 105 | 106 | M6 | M8 | M8 | 12 | 305/490 | 80 | 15,2/21,7 kg | 2,0 kg |
| DSM 200 | 460 / 560 | 200 | 160 | 140 | 15 | 110 | 129 | M8 | M10 | M10 | 15 | 410/490 | 100 | 28,2 / 37,1 kg | 3,3 kg |

Choice of guide body profile:

0



without internal profile
and cover bands

(3)

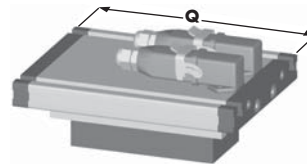


with bellows

Stainless guide body profile upon request.

Motor size: (1)

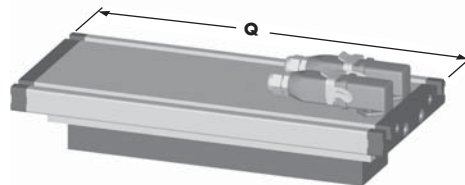
choice of carriages
2x2 wagon



1

Motor size: (2)

choice of carriages
2x2 wagon



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

DSM 160 0 0 0 0 0 0 1 01500
Pos. 1 2 3 4 5 6 7

Sample ordering code:

DSM160, standard body profile, motor size 1, 1135 mm stroke

