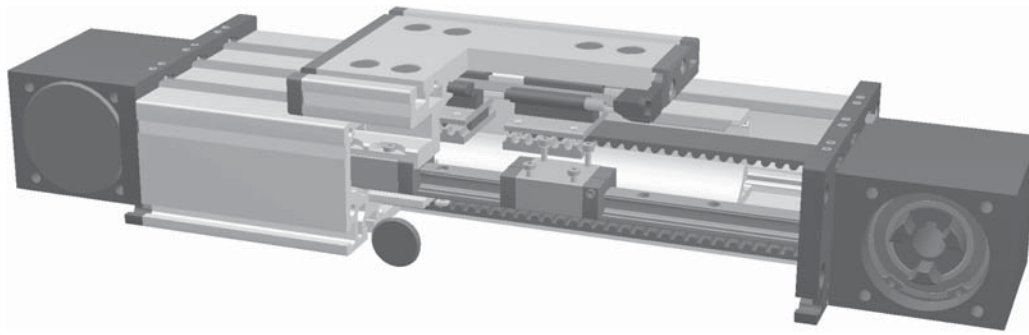


Modular Linear Actuator DSZ 160, 200

Internal Belt Drive, Profile Rail Guide



Function:

This unit consists of a rectangular aluminium profile with 2 integrated profile rail guides. The carriage is moved by a belt drive. Each standard pulley has got one jaw coupling on one side. Belt tension can be readjusted by a simple screw adjustment device in the carriage. This device can also be used for symmetrical adjustment of two or more linear units running parallel. The openings of the guide body are sealed with 3 stainless steel cover bands to protect the guide from splash water and dust. Alternatively, the opening can also be covered with a bellow or can be delivered without cover bands.

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.

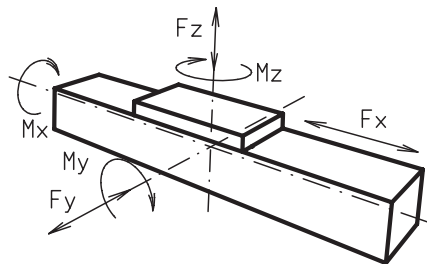
Belt type:

HTD with steel reinforcement, no backlash when changing direction, repeatability $\pm 0,1$ mm.

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.

Forces and torques	Size	160		200	
	Forces/Torques	5000 km	10000 km	5000 km	10000 km
F_x (N)		5000	4000	10000	8000
F_y (N)*		2236	1775	5155	4092
F_z (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
No-load torque					
without cover bands		1,5		2,0	
with cover bands		2,1		2,9	
Speed					
(m/sec) max		5		5	
Tensile force					
permanent (N)		1900		4000	
0,2 sec (N)		2090		4300	
Geometrical moments of inertia of aluminium profile					
I_x mm ⁴		21,3x10 ⁵		23x10 ⁵	
I_y mm ⁴		12,3x10 ⁵		27x10 ⁵	
Elastic modulus N/mm ²		70000		70000	



Formula: DSZ

Driving torque:

$$M_o = \frac{F \cdot P \cdot S_i}{2000 \cdot \pi} + M_{\text{no-load}}$$

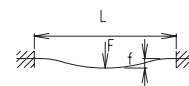
$$P_o = \frac{M_o \cdot n}{9550}$$

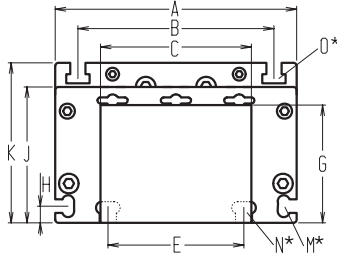
- F = force (N)
- P = pulley action perimeter (mm)
- S_i = safety factor 1,2 ... 2
- $M_{\text{no-load}}$ = no-load torque (Nm)
- n = rpm pulley (min⁻¹)
- M_o = driving torque (Nm)
- P_o = motor power (KW)

Deflection:

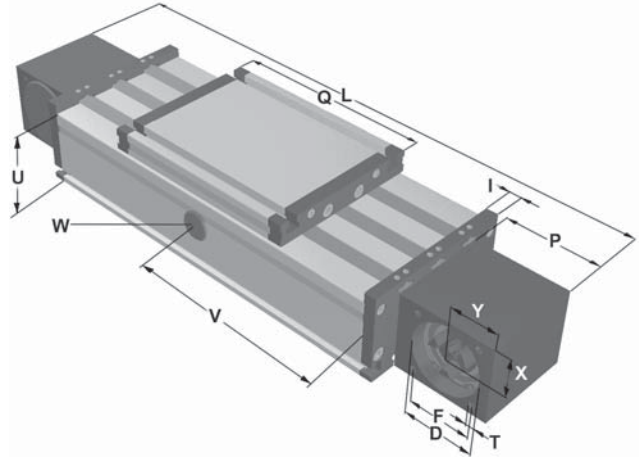
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

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





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



*For T-nuts refer to accessory section

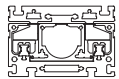
W = servicing position

Size	Basic length L	A	B	C	D	E	F	G	H	I	J	K	M	N	O	P	Q	T	U	X	Y	Basic weight	Additional Weight per 100 mm
DSZ 160	440	160	130	100	68	90	60	78	11	12	90	106	M6	M8	M8	95	200	M8	80	39	45	12,0 kg	1,9 kg
DSZ 200	540	200	160	130	90	140	80	97	15	15	110	129	M8	M10	M10	110	270	M10	100	49	50	21,3 kg	2,9 kg

Choice of guide body profile:

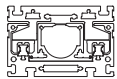
0

(0)



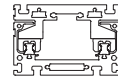
internal profile with cover bands

(1)



internal profile without cover bands

(2)



without internal profile and cover bands

(3)



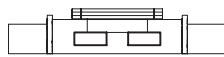
with bellows

Guide body profile with stainless screws upon request.

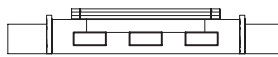
Choice of carriages:

0

(0)



(1)

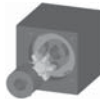


Size	Version 0		Version 1	
	Q	L	Q	L
160	200	440	>230	>470
200	270	530	>360	>410

Coupling - Selection of shaft mounting:

0

0



1



2



3



4



5



6



7



8



9



9 is as 0, but with jaw couplings on both sides.

The standard version is supplied without shaft. A shaft can be retrofitted by inserting in the pulley bore and securing with 2 locking rings or tension sets (size 200).

Belt table

Code No.	Size	Belt	mm/rev.	Number of teeth
0 7	160	8M30	176	22
0 8	160	8M50	176	22
0 8	200	8M50	224	28

Shaft dimensions

Size	Shaft ø h6 x length	Key
160(8M30)	18 x 45	6x6x40
160(8M50)	25 x 35	8x8x32
200(8M50)	22 x 45	6x6x40

Basic length + stroke = total length

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

Inductive proximity switch sets, which can be mounted inside of the square profile, are available as accessories. Coupling and a special plug are mounted from the outside. See accessory section.



Sample ordering code:

DSZ160 with internal profile and cover bands, standard carriage, jaw couplings on both sides, 1060 mm stroke.