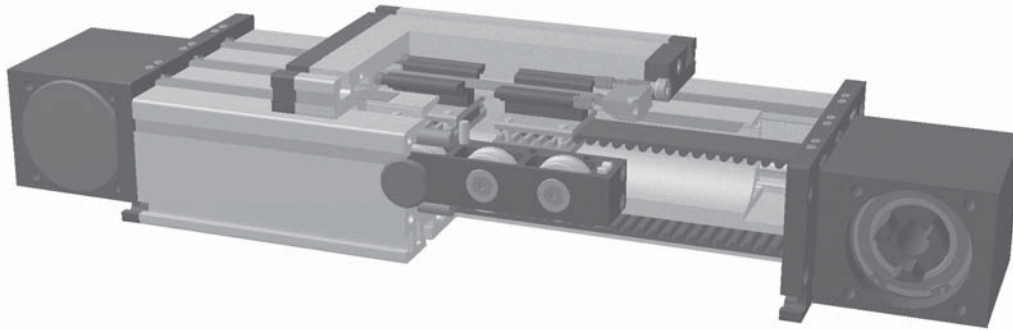


Modular Linear Actuator DLZ 120, 160, 200

Belt Drive



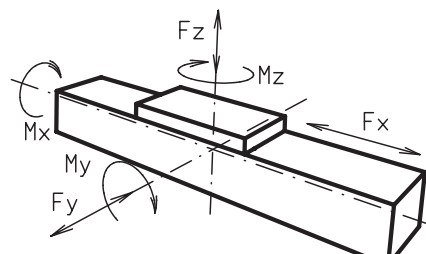
Function:

This unit consists of a rectangular aluminium profile with 2 integrated roller 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 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.
- 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 8 rollers which can be adjusted and serviced at a central servicing position. For longer carriages the number of rollers can be increased.



6

Forces and torques	Size	120		160		200	
	Forces/Torques	static	dynamic	static	dynamic	static	dynamic
	F_x (N)	894	800	1900	1800	4000	3800
	F_y (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
	No-load torque						
Nm	3,5		3,8		4,0		
Speed							
(m/sec) max	4		6		8		
Tensile force							
permanent (N)	900		1900		4000		
0,2 sec (N)	1000		2090		4300		
Geometrical moments of inertia of aluminium profile							
I_x mm ⁴	6,6x10 ⁵		22,2x10 ⁵		63,8x10 ⁵		
I_y mm ⁴	38,6x10 ⁵		122,0x10 ⁵		335x10 ⁵		
Elastic modulus N/mm ²	70000		70000		70000		

Formula: DLZ

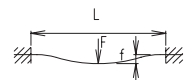
Driving torque:

$$M_o = \frac{F \cdot P \cdot S}{2000 \cdot \pi} + M_{\text{leer}}$$

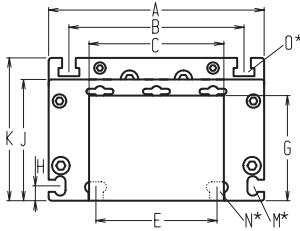
$$P_o = \frac{M_o \cdot n}{9550}$$

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

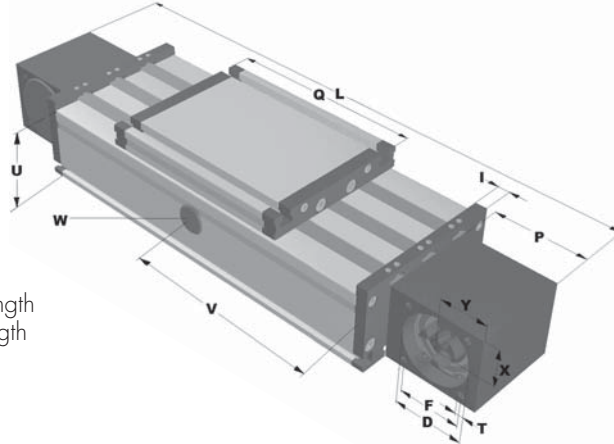
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$



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



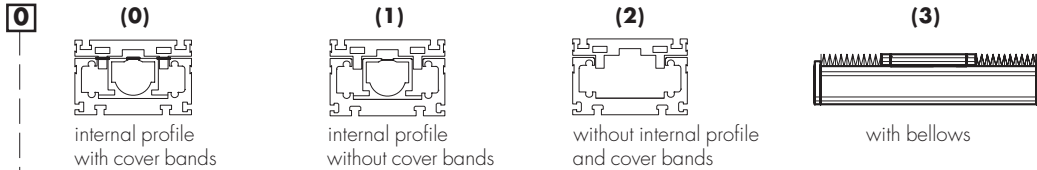
Increasing the carriage length will increase the basic length by the same amount.



*For T-nuts refer to accessory section W = servicing position

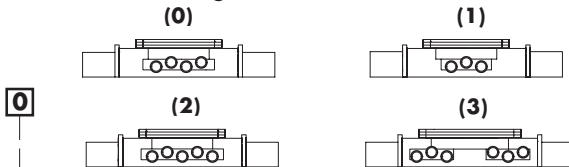
Size	Basic length L	A	B	C	D	E	F	G	H	I	J	K	M	N	O	P	Q	T	U	X	Y	Basic weight	Additional Weight per 100 mm
DLZA 120	330	120	96	80	47	78	42	60	10	10	68	79	M5	M6	M6	70	156	M6	60	30	35	5,1 Kg	0,85 Kg
DLZA 160	440	160	130	100	68	90	60	78	11	12	90	106	M6	M8	M8	95	200	M8	80	39	45	13,0 kg	1,69 kg
DLZA 200	540	200	160	130	90	140	80	97	15	15	110	129	M8	M10	M10	110	270	M10	100	49	50	23,4 kg	2,33 kg

Choice of guide body profile:



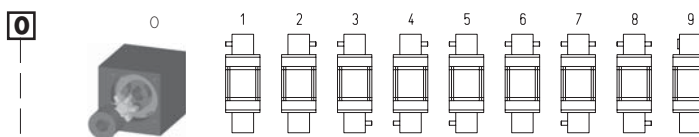
Stainless guide body profile upon request.

Choice of carriage:



Size	Version 0		Version 1		Version 2		Version 3	
	Q	L	Q	L	Q	L	Q	L
120	156	330	156	330	196	370	>236	>410
160	200	440	200	440	250	490	>300	>540
200	270	540	270	540	330	600	>410	>680

Coupling - Selection of shaft mounting:



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 4	120	5M25	130	26
0 7	160	8M30	176	22
0 8	160	8M50	176	22
0 9	200	8M50	224	28

Shaft dimensions

Size	Shaft ϕ h6 x length	Key
120	14 x 35	5x5x28
160	18 x 45	6x6x40
160(8M50)	25 x 35	8x8x32
200	22 x 45	6x6x40

Basic length + stroke = total length



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:
DLZ160 with internal profile and cover bands, standard carriage, jaw coupling on one side, 1060 mm stroke.