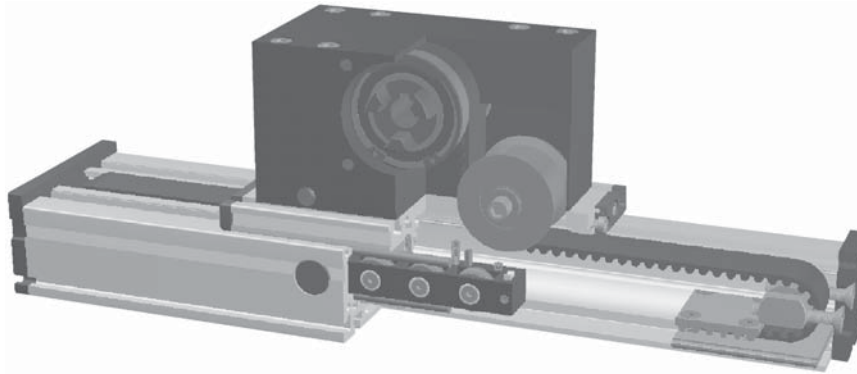


Modular Linear Actuator DLSZ 120, 160, 200

Belt Drive



Function:

This linear unit consists of a rectangular aluminium profile with integrated, hardened steel guide rods. The carriage which has roller bearings that can be adjusted free of play is driven along the guide rods by a timing belt. Each standard pulley includes a jaw coupling on one side and is equipped with maintenance-free ball bearings. 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.

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.

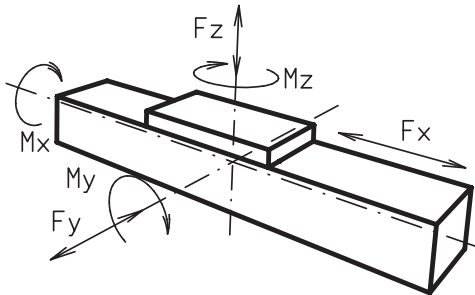
Belt performance: HTD with steel reinforcement, no backlash when changing direction, repeatability $\pm 0,1$ mm.

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)		1900	1800	4000	3800	5900	5750
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		1,1		1,5		1,8	
Speed							
(m/sec) max		4		6		8	
Tensile force							
permanent (N)		1900		4000		5900	
0,2 sec (N)		2090		4300		6350	
Geometrical moments of inertia of aluminium profile							
I_x mm ⁴		6,6x10 ⁵		2,22x10 ⁶		6,38x10 ⁶	
I_y mm ⁴		38,6x10 ⁵		12,20x10 ⁶		33,5x10 ⁶	
Elastic modulus N/mm ²		70000		70000		70000	



Formula: DLSZ

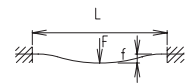
Driving torque:

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

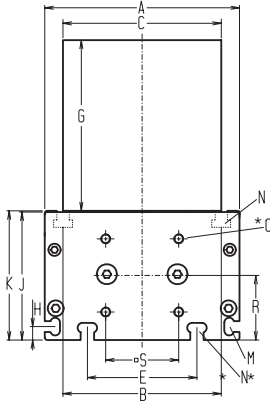
$$P_o = \frac{M_o \cdot n}{9550}$$

F = force (N)
 P = thread pitch (mm)
 S_i = safety factor 1,2 ... 2
 M_{leer} = no-load torque (Nm)
 n = rpm of screw (min⁻¹)
 M_o = driving torque (Nm)
 P_o = motor power (KW)

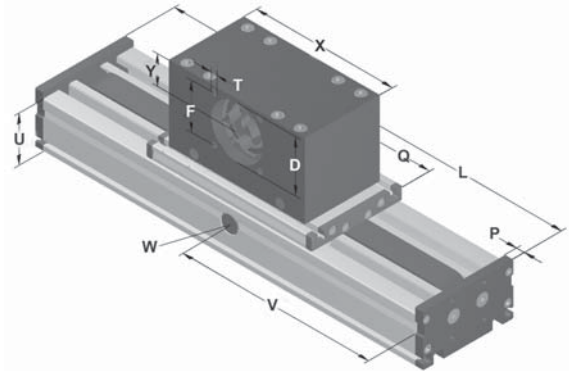
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$



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.

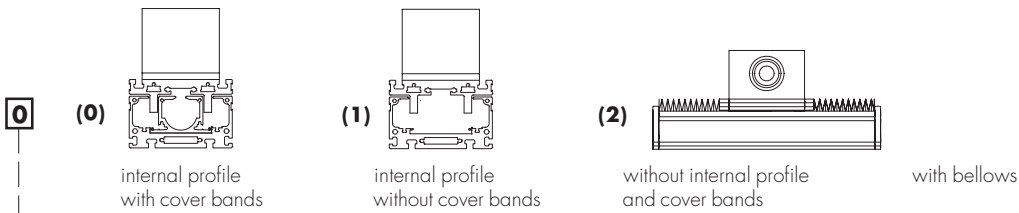


*For T-nuts refer to accessory section

W = servicing position

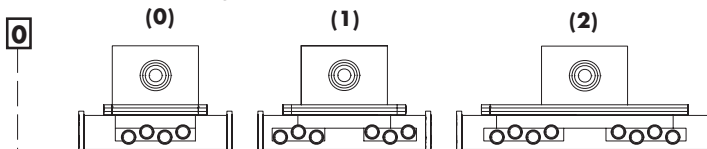
Size	Basic length L	A	B	C	D	E	F	G	H	J	K	M	N	O	P	Q	R	S	T	U	X	Y	Basic weight	Additional Weight per 100 mm
DLSZ 120	230	120	96	100	68	78	60	100	10	78	79	M5	M6	M6	10	200	39	42	M8	60	180	39	12,0 kg	1,2 kg
DLSZ 160	330	160	130	130	90	90	80	130	11	105	106	M6	M8	M8	12	290	53	60	M10	80	270	60	27,0 kg	1,8 kg
DLSZ 200	380	200	160	160	110	140	100	145	15	128	129	M8	M10	M10	15	340	69	95	M10	100	310	62	53,0 kg	2,6 kg

Choice of guide body profile:



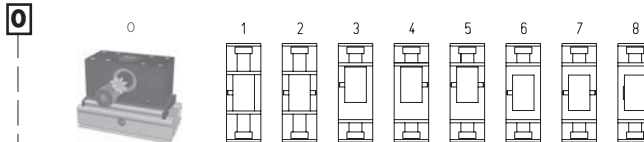
Stainless guide body profile upon request.

Choice of carriages:



Size	Version 0		Version 1		Version 2	
	Q	L	Q	L	Q	L
120	200	230	>280	>310	>360	>390
160	290	330	>390	>430	>490	>530
200	340	380	>480	>520	>610	>650

Coupling - Selection of shaft mounting:



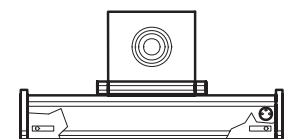
8 is as 0, but with jaw couplings on both sides. The standard version is supplied without shaft. A shaft can be retrofitted by inserting in the pulley bore and securing with 2 locking rings or tension sets (size 200).

Belt table

Code No.	Size	Belt	mm/rev.	Number of teeth
0 7	120	8M30	192	24
0 9	160	8M50	256	32
1 0	200	8M70	304	38

Shaft dimensions

Size	Shaft ø h6 x length	Key
120	18 x 45	6x6x40
160	22 x 45	6x6x40
200	30 x 55	8x7x44



Basic length + stroke = total length

DLSZ 120 1 0 0 0 0 7 2 01500

Sample ordering code:
DLSZ120, standard body profile, standard carriage, jaw couplings on one side, 1270 mm stroke

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.