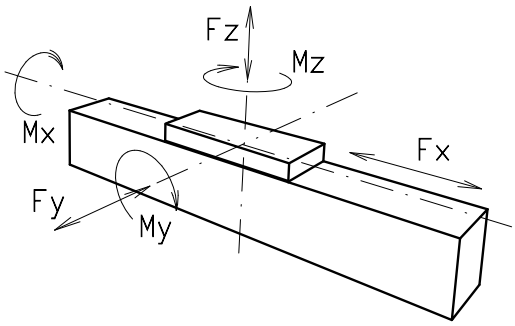
Positioning system DLSZ 120, 160, 200

Belt drive

Function:
This linear unit consists of a rectangular aluminium profile with integrated, hardened steel guide rods. The carriage, which has linear ball bearings that can be adjusted free of play, is driven along the guide rods by a timing belt. Each standard pulley includes a coupling claw 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 position: As required. Max. length 6.000 mm without joints.
Carriage mounting: By T-slots.
Unit mounting: By 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 ± 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.

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
All forces and torques related to the following: existing values / table values: $\frac{Fy}{Fy_{dyn}} + \frac{Fz}{Fz_{dyn}} + \frac{Mx}{Mx_{dyn}} + \frac{My}{My_{dyn}} + \frac{Mz}{Mz_{dyn}} \leq 1$						
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	$6{,}6 \times 10^5$		$2{,}22 \times 10^6$		$6{,}38 \times 10^6$	
I_y mm^4	$38{,}6 \times 10^5$		$12{,}20 \times 10^6$		$33{,}5 \times 10^6$	
Elastic modulus N/mm^2	70000		70000		70000	

For life-time calculation of rollers use our CD-ROM or homepage!

Formula: DLSZ

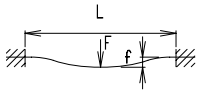
Driving torque:

$$M_a = \frac{F * P * S_i}{2000 * \pi} + M_{leer}$$

$$P_a = \frac{M_a * n}{9550}$$

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_a	= driving torque	(Nm)
P_a	= motor power	(KW)

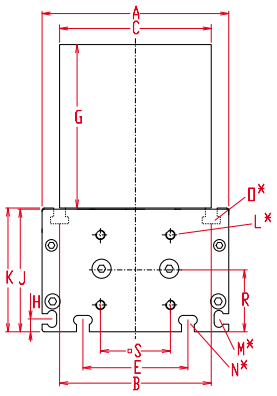
$$f = \frac{F * L^3}{E * I * 192}$$



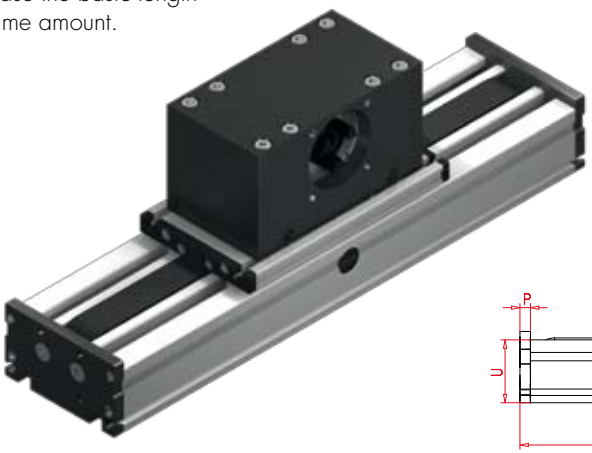
f= deflection	(mm)
F= load	(N)
L= free length	(mm)
E= elastic modulus 70000	(N/mm^2)
I= second moment of area	(mm^4)

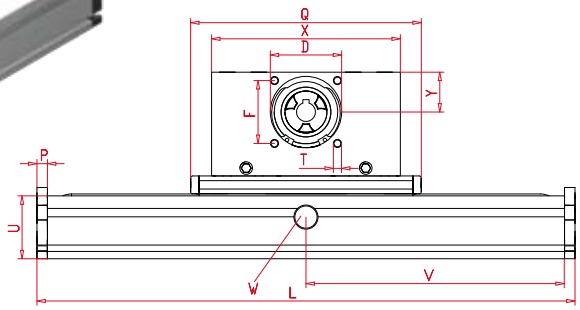
Positioning system DLSZ 120, 160, 200

Dimensions (mm)



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





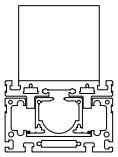
*For slide nuts refer to chapter 2.2 page 2 V = Q + 100 mm W = servicing position

Size ❒	Basic length L	A	B	C	D	E	F	G	H	J	K	L	M for	N for	O for	P	Q	R	S	T	U	X	Y	Basic weight	Weight per 100 mm
DLSZ 120	230	120	96	100	68	78	60	100	10	68	79	M 6	M 5	M 6	M 6	10	200	39	42	M 8	60	180	39	12,0 kg	1,2 kg
DLSZ 160	330	160	130	130	90	90	80	130	11	105	106	M 8	M 6	M 8	M 8	12	290	53	60	M 10	80	270	60	27,0 kg	1,8 kg
DLSZ 200	380	200	160	160	110	140	100	145	15	128	129	M 10	M 8	M 10	M 10	15	340	69	95	M 10	100	310	62	53,0 kg	2,6 kg

Choice of guide body profile:

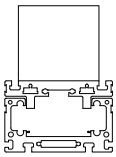
1

(1)



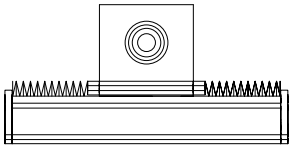
internal profile without cover bands

(2)



without internal profile and cover bands

(3)



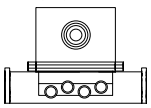
with bellows

Stainless versions upon request.

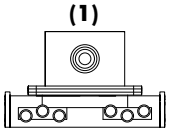
Choice of carriages:

0

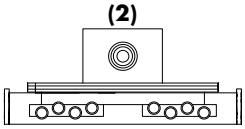
(0)



(1)



(2)

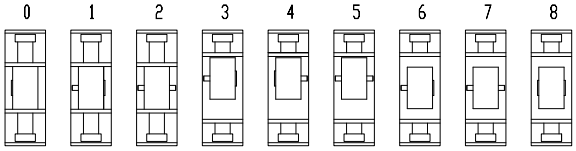


Size	Version 0		Version 1		Version 2	
	Q	L	Q	L	Q	L
120	200	230	>280	>310	>360	>390
160	290	330	>390	>430	>490	>530
200	340	380	>480	>520	>610	>650

Drive version:

0

0



8 is as 0, but with coupling claws on both sides. The standard version is supplied without shaft. A shaft can be retrofitted by inserting it into the pulley bore and securing it with 2 locking rings or tension sets (size 160 and 200).

Belt table

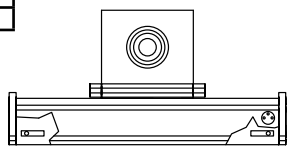
Code No.		Size	Belt	mm/rev.	Number of teeth
0	**7**	120	8M30	192	24
0	**9**	160	8M50	256	32
1	**0**	200	8M70	304	38

Shaft dimensions

Size	Shaft ø h6 x length	Key
120	18 x 45	6x6x40
160	22 x 45	6x6x40
200	30 x 55	8x7x50

Basic length + stroke = total length

DLSZ	120	1	1	0	0	0	7	2	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. For additional accessories refer to chapter 2.2 – 4.2.

Sample ordering code:
DLSZ120, body profile with internal profile without cover bands, standard carriage, coupling claws on one side, 1270 mm stroke