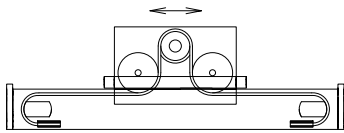
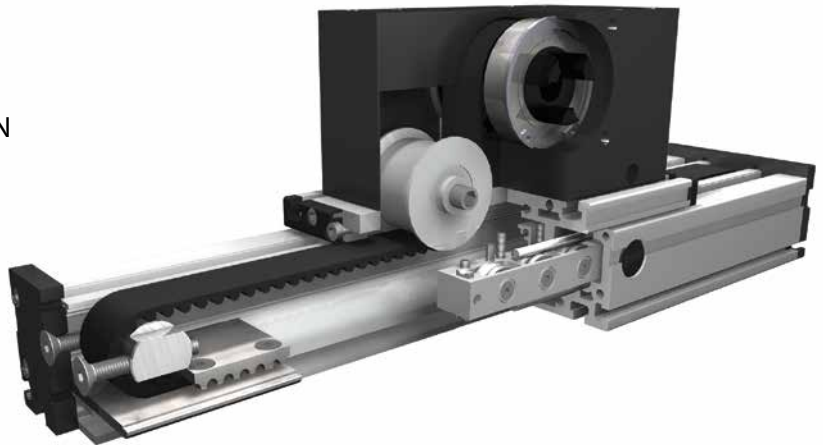


BELT DRIVE

OMEGA SYSTEM

HORIZONTAL INSTALLATION POSITION

OFF-CENTER LOADS

**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. Compared to conventional toothed belt drives, the drive connection is offset by 90°.

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 $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$ table values						
No-load torque							
Nm	1,1		1,5		1,8		
Speed							
(m/s) max	4		6		8		
Tensile force							
permanent (N)	1900		4000		5900		
0,2 s (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		

For life-time calculation of rollers use our homepage.

Driving torque:

$$M_o = \frac{F \cdot P \cdot S_i}{2000 \cdot \pi} + M_n$$

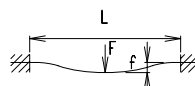
$$P_o = \frac{M_o \cdot n}{9550}$$

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

Deflection:

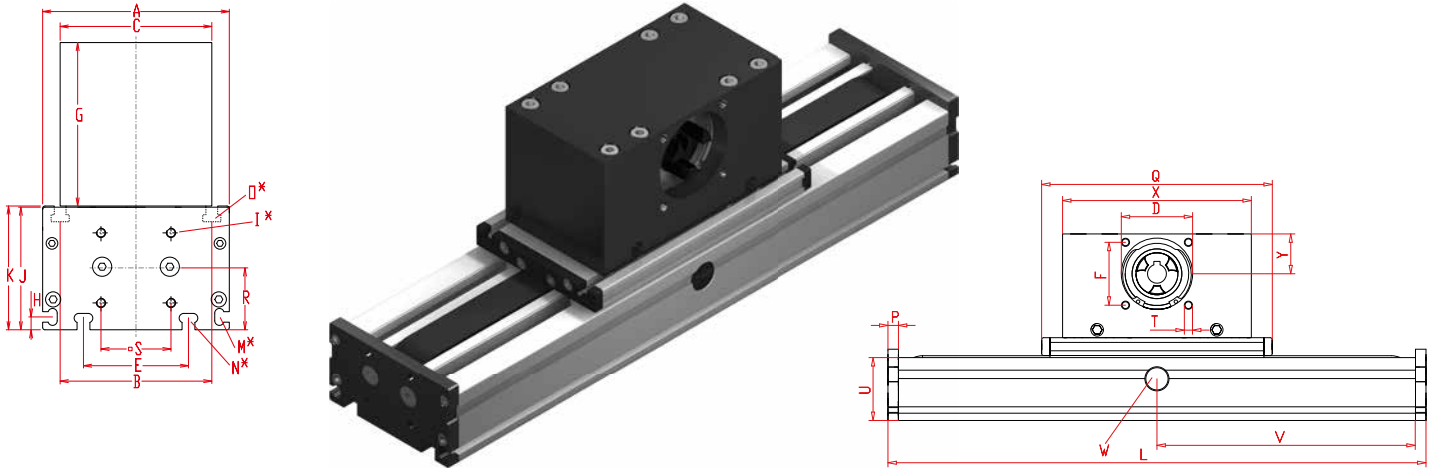
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

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



Linear system **DLSZ 120, 160, 200**

Dimensions (mm)



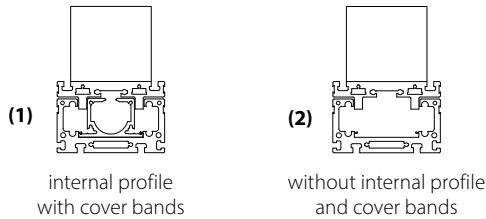
$V = Q + 100 \text{ mm}$

W = servicing position

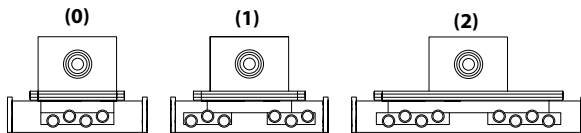
Increasing the carriage length will increase the basic length by the same amount.

Size	Basic length L	A	B	C	D -0,05	E	F	G	H	J	K	I for	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

1 Choice of guide body profile: Stainless versions upon request.

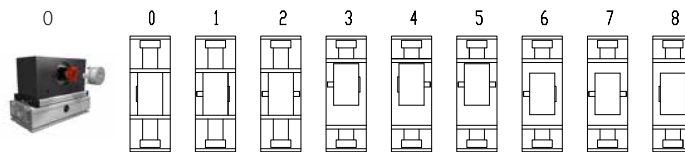


0 Choice of carriages:



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

0 Drive version:



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 / Coupling claw:

Size	Shaft ø h6 x length	Key	Coupling
120	18 x 45	6x6x40	19
160	22 x 45	6x6x40	24
200	30 x 55	8x7x50	28

DLSZ 120 1 1 0 0 0 7 2 1500 — Basic length + stroke = total length

Pos. 1 2 3 4 5 6 7

Sample ordering code:

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

