

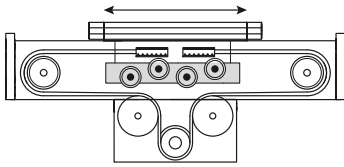
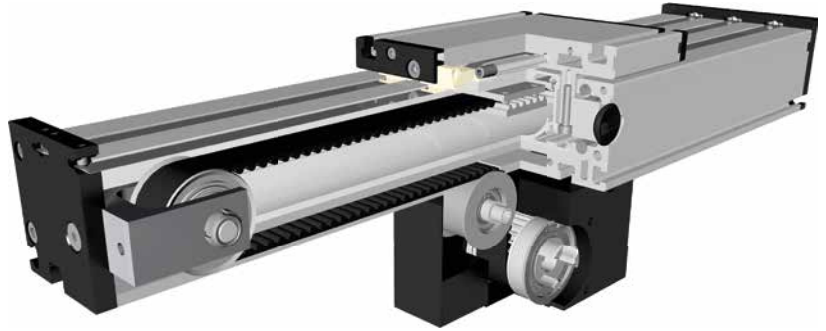
Linear system **DLZS 120, 160, 200**

BELT DRIVE

Ω OMEGA SYSTEM

I VERTICAL INSTALLATION POSITION

L LIFTING SYSTEM



Function:

This unit consists of a rectangular aluminium profile with 2 integrated roller guides. The carriage is moved by a belt drive. An innovation is that the toothed belt is diverted within a drive block positioned centrally. The result is an enormous compactness with regard to the overall system length. The toothed drive pulley has a coupling claw in the standard version. 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. Use: compact and space-saving system with variable position of the drive block.

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 type:

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.

8.1

Forces and torques	Size	120		160		200	
	Forces/Torques	static	dynamic	static	dynamic.	static	dynamic.
F_z (N)		894	800	1900	1800	4000	3800
F_y (N)		1100	900	3000	2000	4400	3100
F_x (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 $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$							
No-load torque							
Nm without cover bands		1,2		1,5		1,8	
Nm with cover bands		1,6		2,1		4	
Speed							
(m/s) max		4		6		8	
Tensile force							
permanent (N)		900		1900		4000	
0,2 s (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	

For life-time calculation of rollers use our homepage.

Driving torque:

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

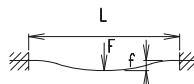
$$P_o = \frac{M_o \cdot n}{9550}$$

- 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:

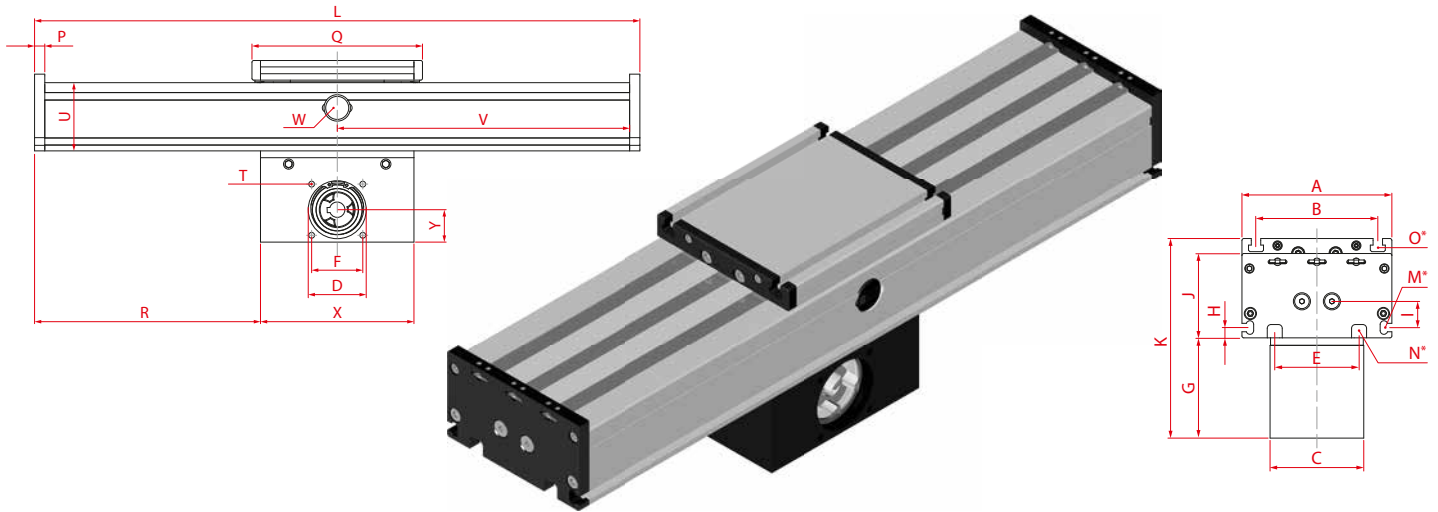
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

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



Linear system DLZS 120, 160, 200

Dimensions (mm)



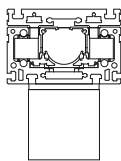
V = Q + 100 mm W = servicing position

*For slide nuts refer to chapter 2.2 page 2

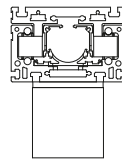
Increasing the carriage length will increase the basic length by the same amount.

Size	Basic length L	A	B	C	D -0,05	E	F	G	H	I	J	K	M for	N for	O for	P	Q	R	T	U	X	Y	Basic weight	Weight per 100 mm
DLZS 120	210	120	96	80	47	78	42	84,5	10	18,7	68	163	M5	M6	M6	10	156	40	M6	60	130	30	6,1 kg	0,85 kg
DLZS 160	300	160	130	100	66	90	60	107	11	39	90	213	M6	M8	M8	12	200	25	M8	80	180	38	14,9 kg	1,5 kg
DLZS 200	380	200	160	130	90	140	80	146	15	48,5	110	275	M8	M10	M10	15	270	55	M10	100	270	60	30,8 kg	2,1 kg

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

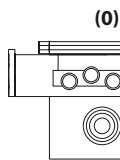


(0) internal profile with cover bands

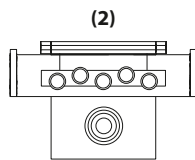


(1) internal profile without cover bands

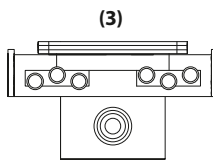
0 Choice of carriage:



(0)



(2)



(3)

Size	Version 0		Version 2		Version 3	
	Q	L	Q	L	Q	L
120	156	210	196	216	236	256
160	200	300	250	300	>300	>330
200	270	380	330	380	>410	>470

0 Drive version:



0



1



3



4



5

5 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 200).

Belt table:

Code No.	Size	Belt	mm/rev.	Number of teeth
0 4	120	5M 25	130	26
0 7	160	8M 30	192	24
0 9	200	8M 50	256	32

Shaft dimensions / Coupling claw:

Size	Shaft ø h6 x length	Key	Coupling
120	14 x 35	5x5x28	14
160	18 x 45	6x6x40	19
200	22 x 45	6x6x40	24

DLZS 160 1 0 0 0 0 7 1 1500 — Basic length + stroke = total length
Pos. 1 2 3 4 5 6 7

Sample ordering code:

DLZS160 with internal profile and cover bands, standard carriage, coupling claw on one side, 1200 mm stroke.

