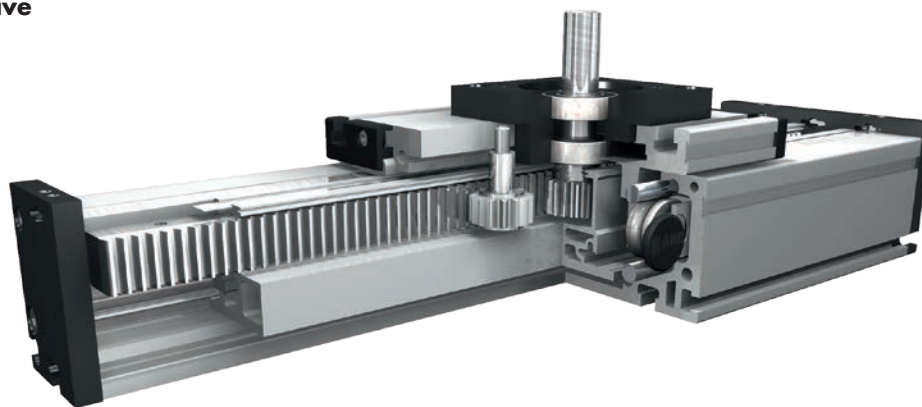


Positioning system DLZA 120, 160, 200

Specifications

Rack and pinion drive



Function:

This unit consists of a rectangular aluminium profile with 2 integrated roller guides. The carriage, which has internal linear ball bearings that can be adjusted free of play, is driven along the guide rods by a high precision rack. The rack and pinion system is suitable for highly dynamic servo operation and ideal for lifting movements. The pinion is equipped with maintenance-free ball bearings. The rack is lubricated by a toothed felt wheel.

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.

Rack:

6h23 Modul 2 (hardened and ground), repeatability ± 0,1 mm.

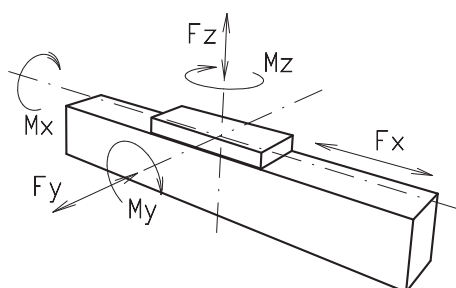
Carriage support:

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.

7.1



Forces and torques



Size	120		160		200	
	static	dynam.	static	dynam.	static	dynam.
Forces/Torques						
F_x (N)			1900	1800	4000	3800
F_y (N)			3000	2000	4400	3100
F_z (N)			3500	2800	4900	4400
M_x (Nm)			400	320	600	510
M_y (Nm)			360	300	560	480
M_z (Nm)			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			1,5		2,6	
Speed						
(m/s) max			3		5,0	
Tensile force						
permanent (N)			1900		3000	
Geometrical moments of inertia of aluminium profile						
I_x mm ⁴			22,2x10 ⁵		63,8x10 ⁵	
I_y mm ⁴			122,0x10 ⁵		335x10 ⁵	
Elastic modulus N/mm ²			70000		70000	

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

Formula: DLZA

Driving torque:

$$M_o = \frac{F * P * S_s}{2000 * \pi} + M_{leer}$$

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

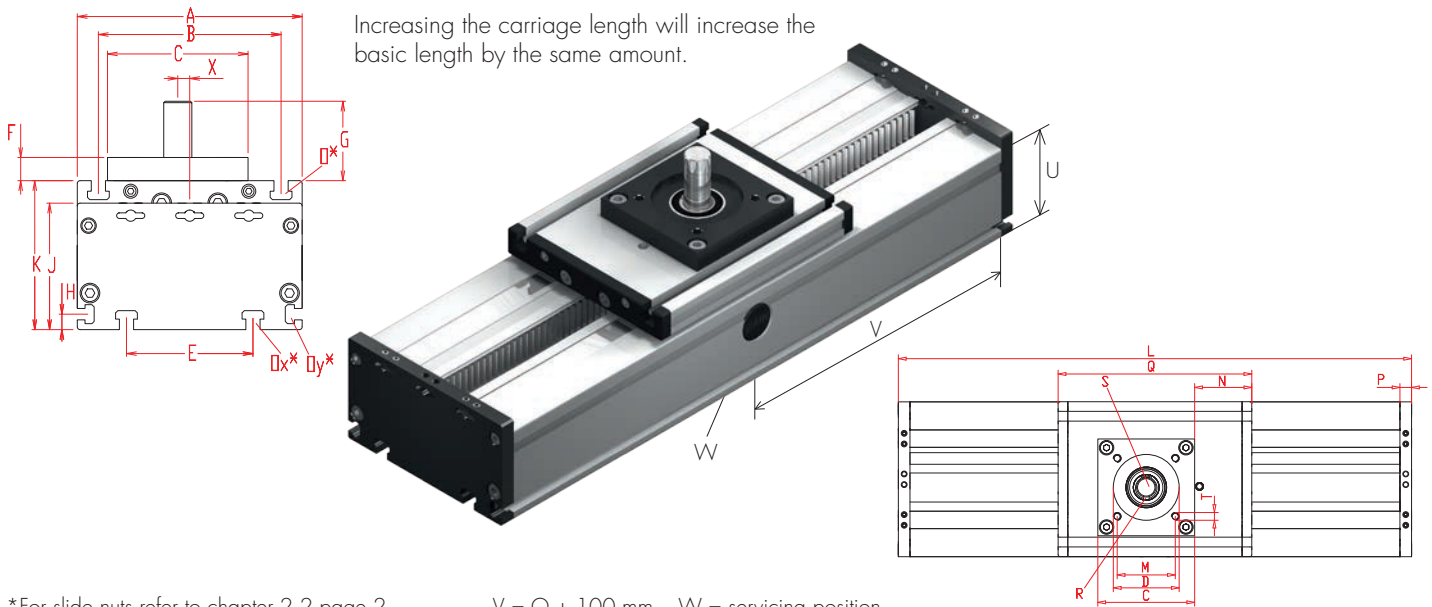
- F = force (N)
- P = pulley action perimeter (mm)
- S_s = safety factor 1,2 ... 2
- M_{leer} = no-load torque (Nm)
- n = rpm pulley (min⁻¹)
- M_o = driving torque (Nm)
- P_o = motor power (KW)

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

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

Positioning system DLZA 120, 160, 200

Dimensions (mm)



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

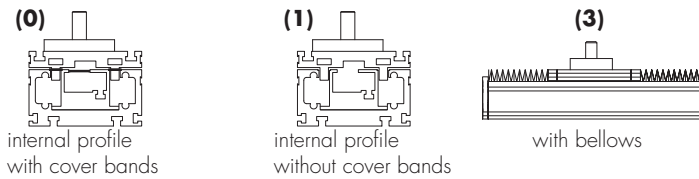
*For slide nuts refer to chapter 2.2 page 2

$V = Q + 100 \text{ mm}$ $W = \text{servicing position}$

Size	Basic length L	A	B	C	D	E	F	G	H	J	K	M	N	O for	Ox for	Oy for	P	Q	T for	U	X	Basic weight	Weight per 100 mm	
DLZA 120																								
DLZA 160	240	160	130	100	68	90	16,5	56,5	11	90	106	60	59	M 8	M 8	M 6	12	200	M 8	80	8,5	13,0 kg	2,10 kg	
DLZA 200	320	200	160	120	90	140	20	45	15	110	129	80	95	M 10	M 10	M 8	15	270	M 8	100	5	28,9 kg	6,15 kg	

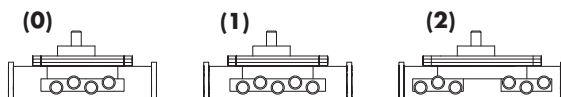
7.1

0 Choice of guide body profile:



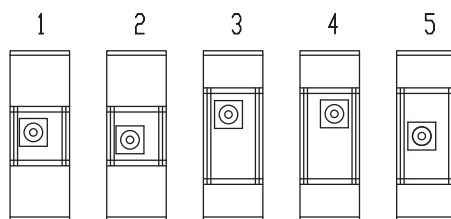
Stainless versions upon request.

0 Choice of carriage:



Size □	Version 0		Version 1		Version 2	
	Q	L	Q	L	Q	L
120						
160	200	240	250	290	>300	>340
200	270	320	330	380	>410	>460

1 Drive version:



Shaft dimensions

Size □	Shaft ∅ h6 x length	Key R	Pinion	
			mm/rev.	Modul
120				
160	20 x 40	6x6x35	100,53	2
200	18 x 25	6x6x20	94,25	2

Basic length + stroke = total length

DLZA	160	1	0	0	1	0	0	1	01500
	Pos. 1	2	3	4	5	6	7		

Sample ordering code:

DLZA160 with internal profile and cover bands, standard carriage, 1260 mm stroke.