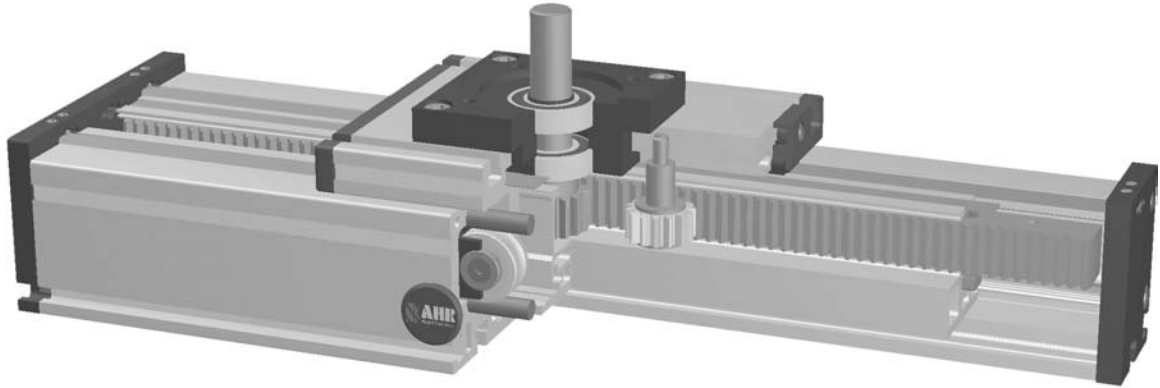


Positioning system DLZA 120, 160, 200

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.

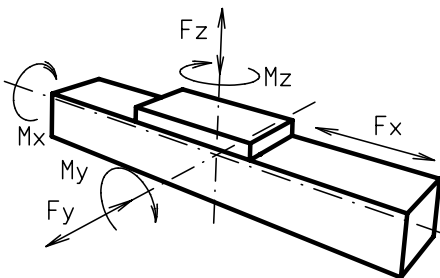
Rack: 6h23 Modul 2 (hardened and ground), repeatability ± 0,1 mm.

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	
	Forces/Torques	statisch	dynam.	statisch	dynam.	statisch	dynam.
F_x (N)				1900	1800		
F_y (N)				3000	2000		
F_z (N)				3500	2800		
M_x (Nm)				400	320		
M_y (Nm)				360	300		
M_z (Nm)				180	150		
All forces and torques related to the following:							
existing values		$\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$					
values of table							
No-load torque							
Nm				1,5			
Speed							
(m/sec) max				3			
Tensile force							
permanent (N)				1900			
0,2 sec (N)				2090			
Geometrical moments of inertia of aluminium profile							
I_x mm ⁴				22,2x10 ⁵			
I_y mm ⁴				122,0x10 ⁵			
Elastic modulus N/mm ²				70000			



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

Formula: DLZA

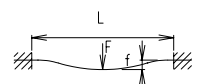
Driving torque:

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

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

- F = force (N)
- P = pulley action perimeter (mm)
- 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)

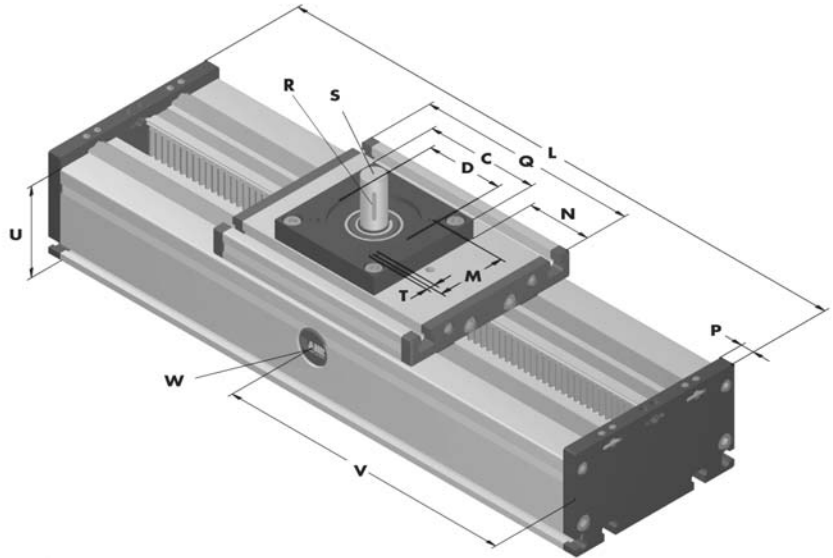
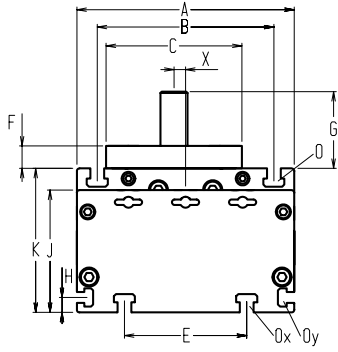
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$



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

Positioning system DLZA 120, 160, 200

Dimensions (mm)



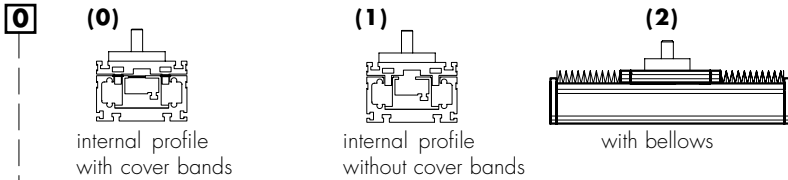
Increasing the carriage length will increase the basic length by the same amount.

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

Size □	Basic length L	A	B	C	D	E	F	G	H	J	K	M	N	O for	O _x for	O _y 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																								

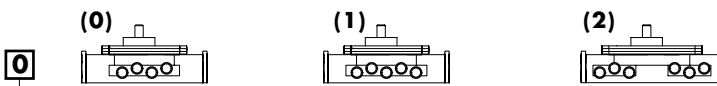
7.1

Choice of guide body profile:



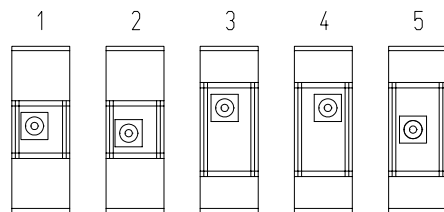
Stainless versions upon request.

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						

Position of drive:



Shaft dimensions

Size □	Shaft ø h6 x length	Key	Pinion	
			mm/rev.	Modul
120				
160	20 x 40	6x6x35	100,53	2
200				

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.

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.

