



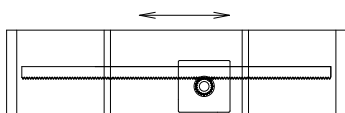
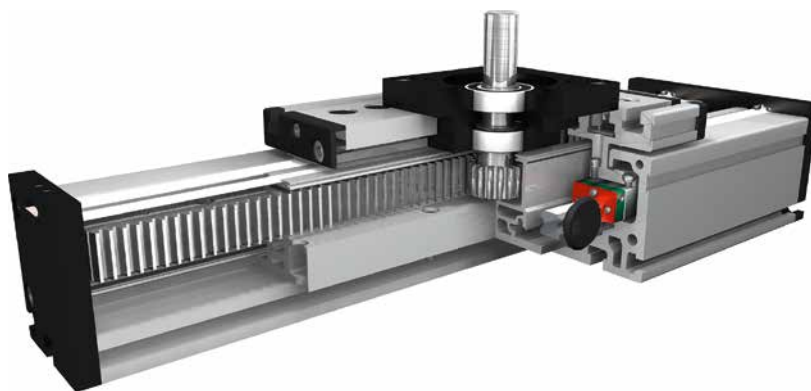


Linear system **DSZA 160, 200**

RACK AND PINION DRIVE

-  HIGH LOADS
-  HIGH DYNAMICS
-  LONG TRAVERSE PATH > 6000 MM
-  SPACE SAVING



Function:

This unit consists of a rectangular aluminium profile with 2 integrated rail guides. The carriage is driven by a pinion on 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. With this series, multi-part assembled units with long strokes can be realized.

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 4 runner blocks which can be serviced at a central servicing position. For longer carriages the number of runner blocks can be increased.

Forces and torques	Size	120		160		200	
	permitted dyn. Forces*	5000 km	10000 km	5000 km	10000 km	5000 km	10000 km
F_x (N)	894	800	1900	1800	4000	3800	
F_y (N)	1776	1405	5570	3900	15600	11080	
F_z (N)	2090	1650	7050	5020	20600	14600	
M_x (Nm)	81	64	358	255	1285	915	
M_y (Nm)	97	77	369	262	1375	980	
M_z (Nm)	96	76	364	258	1345	960	
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		2,0	
Nm with cover bands		1,6		2,1		4	
Speed							
(m/s) max		5		5		5	
Tensile force							
permanent (N)		900		1900		4000	
0,2 s (N)		1000		2090		4300	
Geometrical moments of inertia of aluminium profile							
I_y mm ⁴		5,61x10 ⁵		2,13x10 ⁶		4,81 x10 ⁶	
I_z mm ⁴		34,19x10 ⁵		12,33x10 ⁶		26,0 x10 ⁶	
Elastic modulus N/mm ²		70000		70000		70000	

* referred to life-time

Driving torque:

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

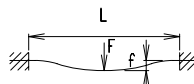
$$P_o = \frac{M_o \cdot n}{9550}$$

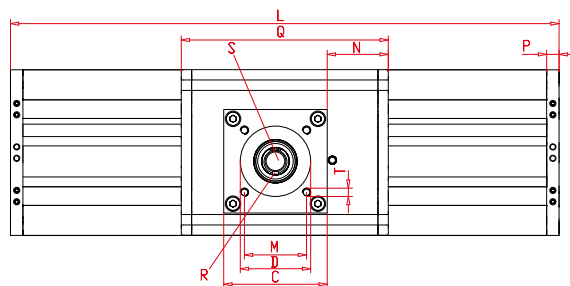
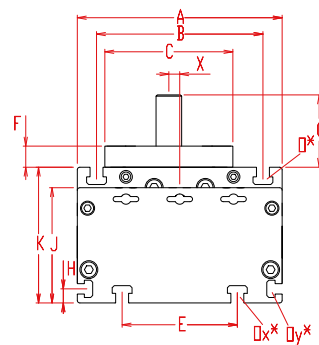
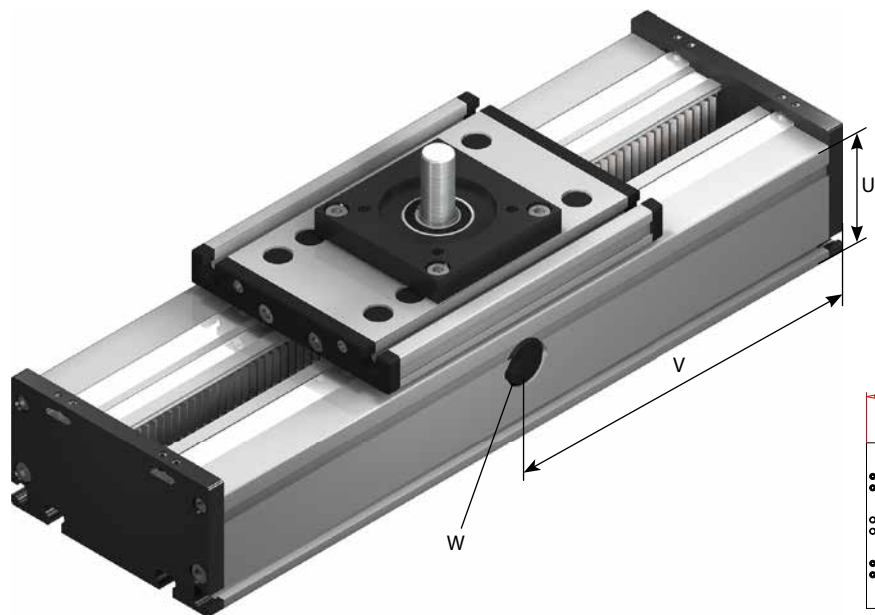
- F = force (N)
- P = pulley action perimeter (mm)
- S_i = safety factor 1,2 ... 2
- M_n = no-load torque (Nm)
- n = rpm pulley (min⁻¹)
- M_o = driving torque (Nm)
- P_o = motor power (KW)

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)



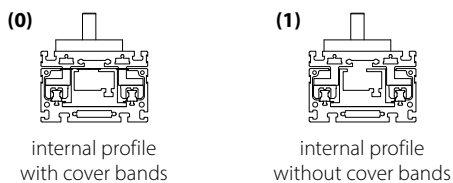


V = Q + 100 mm
W = servicing position

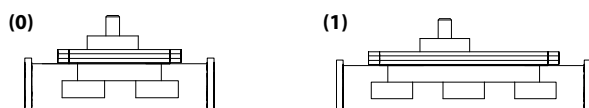
Increasing the carriage length will increase the basic length by the same amount.

Size	Basic length L	A	B	C	D ±0,05	E	F	G	H	J	K	M	N	O for	Ox for	Oy for	P	Q	T for	U	X	Basic weight	Weight per 100 mm
DSZA 160	250	160	130	100	68	90	16,5	56,5	11	90	106	60	62	M 8	M 8	M 6	12	224	M 8	80	8,5	9,4 kg	2,15 kg
DSZA 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	9	28,9 kg	7,10 kg

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

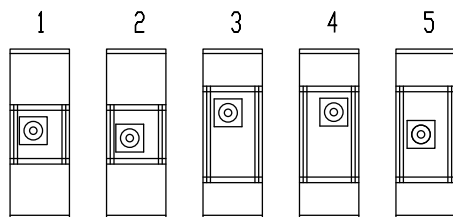


0 Choice of carriage:



Size	Version 0		Version 1	
	Q	L	Q	L
160	224	250	360	390
200	270	320	320	360

1 Drive version:



Shaft dimensions:

Size	Shaft ø h6 x length	Key	Pinion	
	S	R	mm/U	Modul
160	20 x 40	6x6x35	100,53	2
200	18 x 26	6x6x20	94,25	2

DSZA 160 1 0 0 1 0 0 1 1500 — Basic length + stroke = total length

Pos. 1 2 3 4 5 6 7

Sample ordering code:
DSZA 160 with internal profile and cover bands, standard carriage, 1250mm stroke.