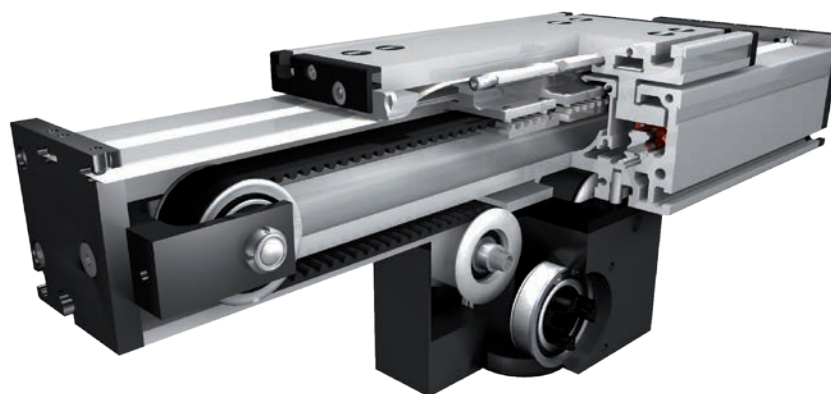


Positioning system DSZS 160

Specifications

Belt drive



Function:

This unit consists of a rectangular aluminium profile with 2 integrated rail guidess. 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. Alternatively, the opening can also delivered without cover bands.

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

8.1

Forces and torques	Size	120		160		200	
		permitted dyn. Forces*			5000 km	10000 km	5000 km
	F _x (N)			1900	1800		
	F _y (N)			5570	3900		
	F _z (N)			7050	5020		
	M _x (Nm)			358	255		
	M _y (Nm)			369	262		
	M _z (Nm)			364	258		
	C (N)			7800			
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			1,5			
	Nm with cover bands			2,1			
Speed							
	(m/s) max			5			
Tensile force							
	permanent (N)			1900			
	0,2 s (N)			2090			
Geometrical moments of inertia of aluminium profile							
	I _x mm ⁴			21,32x10 ⁵			
	I _y mm ⁴			123,36x10 ⁵			
	Elastic modulus N/mm ²			70000			

* referred to life-time

Formula: DSZS

Driving torque:

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

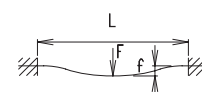
$$P_o = \frac{M_o \cdot n}{9550}$$

- F = force (N)
- P = pulley action perimeter (mm)
- S₁ = 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)

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
- I = second moment of area (mm⁴)



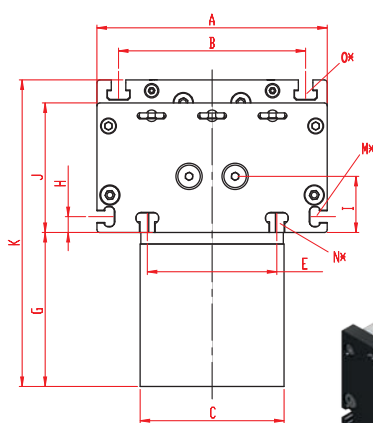
Nominal lifetime:

$$L = \left(\frac{C}{F} \right)^3 \times 10^5$$

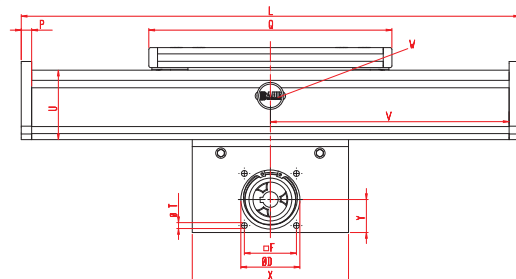
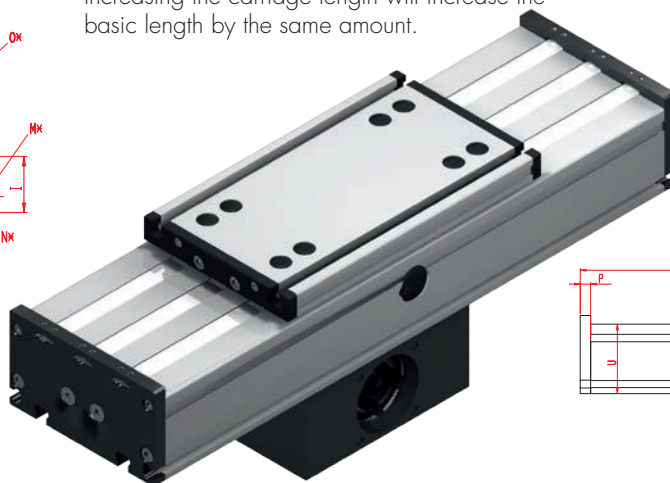
- L = Lifetime in meter
- C = Dynamic load factor (N)
- F = Middle load (N)

Positioning system DSZS 160

Dimensions (mm)



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

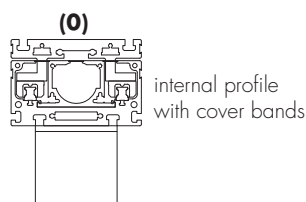


*For slide nuts refer to chapter 2.2 page 2

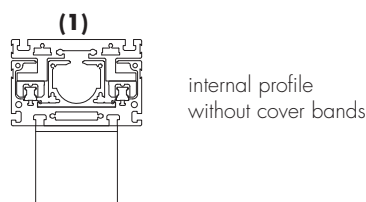
$V = Q + 100 \text{ mm}$ $W = \text{servicing position}$

Size	Basic length L	A	B	C	D	E	F	G	H	I	J	K	M for	N for	O for	P	Q	T	U	X	Y	Basic weight	Weight per 100 mm	
DSZS 120																								
DSZS 160	310	160	130	100	68	90	60	107	11	39	90	213	M 6	M 8	M 8	12	280	M 8	80	180	38	23,0 kg	1,9 kg	
DSZS 200																								

0 Choice of guide body profile:



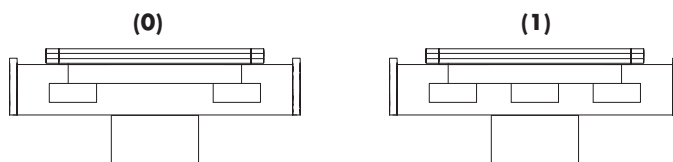
(0) internal profile with cover bands



(1) internal profile without cover bands

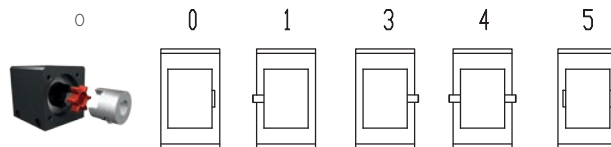
Stainless versions upon request.

0 Choice of carriages:



Size	Version 0		Version 1	
	Q	L	Q	L
120				
160	280	310	280	310
200				

0 Drive version:



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	5M25		
0 7	160	8M30	192	24
0 9	200	8M50		

Shaft dimensions / Coupling claw

Size	Shaft $\varnothing h6 \times \text{length}$	Key	Coupling
120			
160	18 x 45	6x6x40	19
200			

DSZS 160 1 0 0 0 0 7 1 01500 — Basic length + stroke = total length

Pos. 1 2 3 4 5 6 7

Sample ordering code:

DSZS160 with internal profile and cover bands, standard carriage, coupling claw on one side, 1190 mm stroke.

