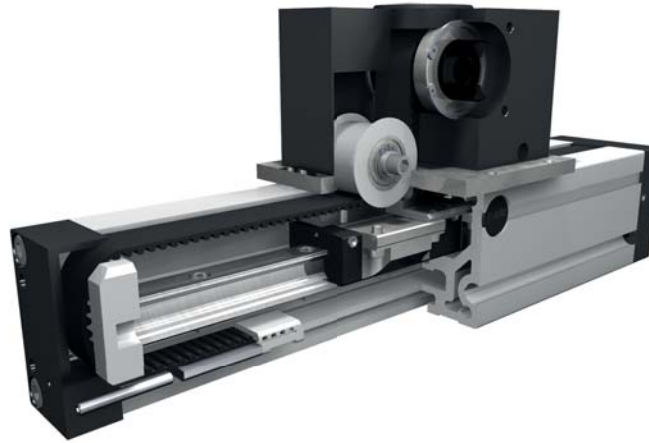


# Positioning system QSSZ 60, 80, 100

## Belt drive



### Function:

This linear unit consists of a square aluminium profile with integrated rail guidance. The carriage, which has runner blocks, is driven by a timing belt. Each standard pulley includes a coupling claw on one side and is equipped with maintenance-free ball bearings. 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.

**Fitting position:** As required. Max. length 3.000 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 performance:** HTD with steel reinforcement, no backlash when changing direction, repeatability  $\pm 0,1$  mm.

**Carriage support:** In the standard version, the carriage runs on 2 runner blocks which can be serviced at a central servicing position. For longer carriages the number of runner blocks can be increased.

Size	60	80	100
<b>permitted dyn. forces*</b>		5000 km	10000 km
$F_x$ (N)		894	800
$F_y$ (N)		3570	2550
$F_z$ (N)		8500	6050
$M_x$ (Nm)		107	75
$M_y$ (Nm)		310	222
$M_z$ (Nm)		296	210
C (N)		18800	
<b>All forces and torques related to the following:</b>			
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			
<b>No-load torque</b>			
Nm		1,4	
<b>Speed</b>			
(m/sec) max		5	
<b>Tensile force</b>			
permanent (N)		900	
0,2 sec (N)		1000	
<b>Geometrical moments of inertia of aluminium profile</b>			
$I_x$ mm <sup>4</sup>		16,5x10 <sup>5</sup>	
$I_y$ mm <sup>4</sup>		18,7x10 <sup>5</sup>	
Elastic modulus N/mm <sup>2</sup>		70000	

\* referred to life-time

### Formula: QSSZ

Driving torque:

$$M_o = \frac{F \cdot p \cdot S_1}{2000 \cdot \pi} + M_{leer}$$

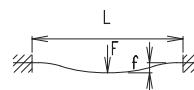
$$P_o = \frac{M_o \cdot n}{9550}$$

F = force (N)  
 P = pulley action perimeter (mm)  
 $S_1$  = safety factor 1,2 ... 2  
 $M_{leer}$  = no-load torque (Nm)  
 n = rpm pulley (min<sup>-1</sup>)  
 $M_o$  = 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/mm<sup>2</sup>)  
 I = second moment of area (mm<sup>4</sup>)

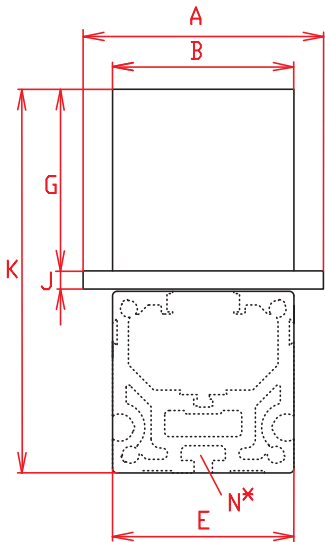


Nominal lifetime:

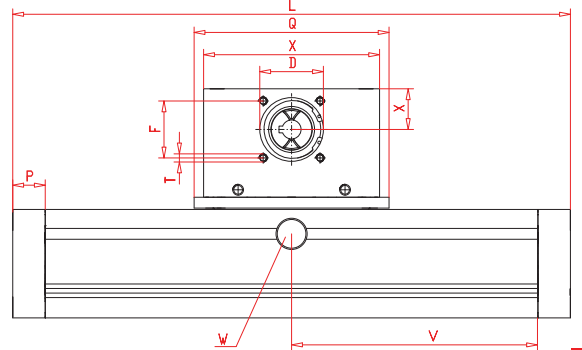
$$L = \left( \frac{C}{F} \right)^3 \times 10^5$$

L = Lifetime in meters  
 C = Dynamic load factor (N)  
 F = Medium load (N)

# Positioning system QSSZ 60, 80, 100



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	D	E	F	G	J	K	N for	P	Q	T	X	Y	Basic weight	Weight per 100 mm
QSSZ 60																	
QSSZ 80	200	106	80	47	80	42	80	8	169	M 6	24	144	M 6	130	30	5,7 kg	1,02 kg
QSSZ 100																	

6.1

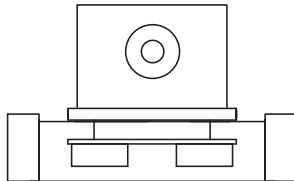


**0** Choice of guide body profile:  
(0) Standard (1) stainless screws

Choice of carriages:

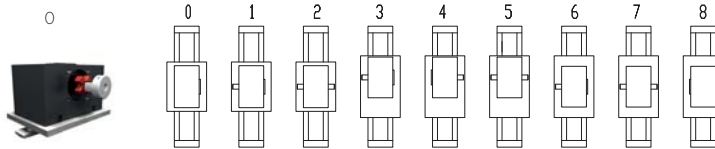
**0**

(0)



Coupling - Selection of shaft mounting:

**0**



Size	Shaft $\varnothing h6 \times \text{length}$	Key
60		
80	14 x 35	5x5x28
100		

8 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.

Belt table

Code No.	Size	Belt	Pulley	
			mm/rev.	Number of teeth
<b>0 7</b>	80	5M25	130	26

Basic length + stroke = total length

For additional accessories refer to chapter 2.2 – 4.2

QSSZ 80 1 0 0 0 0 7 1 01500  
Pos. 1 2 3 4 5 6 7

Sample ordering code:  
QSSZ80, standard body profile, standard carriage, coupling claw on one side, 1300 mm stroke

