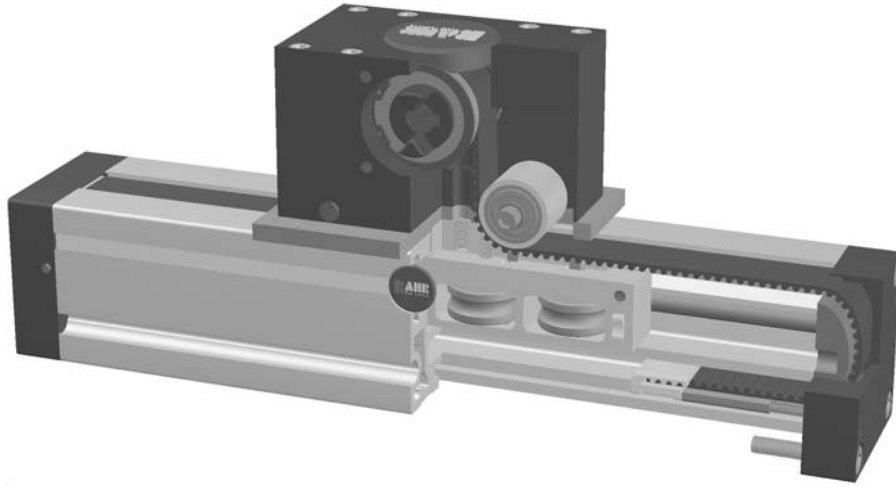


# Positioning system QLSZ 60, 80, 100

Specifications

Belt drive



5.1

**Function:**

This linear unit consists of an aluminium square profile with hardened steel guide rods. The carriage which has internal linear ball bearings that can be adjusted free of play is driven along the guide rods by a timing belt. The pulley has maintenance-free ball bearings. Belt tension can be readjusted by a simple tensioning device in one of the end blocks. This device can also be used for symmetrical adjustment of two or more linear units running parallel.



**Fitting position:**

As required. Max. length without joints 3.000 mm.

**Carriage mounting:**

By T-slots.

**Unit mounting:**

By T-slots or tapped holes in the bearing blocks, or mounting sets.

**Belt type:**

HTD with steel reinforcement, no backlash when changing direction, repeatability ± 0,1 mm.

Forces and torques	Size	60		80		100	
	Forces/Torques	static	dynamic	static	dynamic	static	dynamic
	F <sub>x</sub> (N)			894	800		
	F <sub>y</sub> (N)			1600	1240		
	F <sub>z</sub> (N)			1500	1200		
	M <sub>x</sub> (Nm)			50	40		
	M <sub>y</sub> (Nm)			100	80		
	M <sub>z</sub> (Nm)			75	60		
	<b>All forces and torques related to the following:</b>						
existing values		$\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$					
values of table							
<b>No-load torque</b>							
Nm				0,8			
<b>Speed</b>							
[m/sec] max				6			
<b>Tensile force</b>							
permanent (N)				1900			
0,2 sec (N)				2090			
<b>Geometrical moments of inertia of aluminium profile</b>							
I <sub>x</sub> mm <sup>4</sup>				16,5x10 <sup>5</sup>			
I <sub>y</sub> mm <sup>4</sup>				18,7x10 <sup>5</sup>			
E-Modul N/mm <sup>2</sup>				70000			

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

**Formula: QLZ**

Driving torque:

$$M_{\sigma} = \frac{F * P * S}{2000 * \pi} + M_{leer}$$

$$P_{\sigma} = \frac{M_{\sigma} * n}{9550}$$

- F = force (N)
- P = pulley action perimeter (mm)
- S = safety factor 1,2 ... 2
- M<sub>leer</sub> = no-load torque (Nm)
- n = rpm pulley (min<sup>-1</sup>)
- M<sub>σ</sub> = driving torque (Nm)
- P<sub>σ</sub> = motor power (KW)

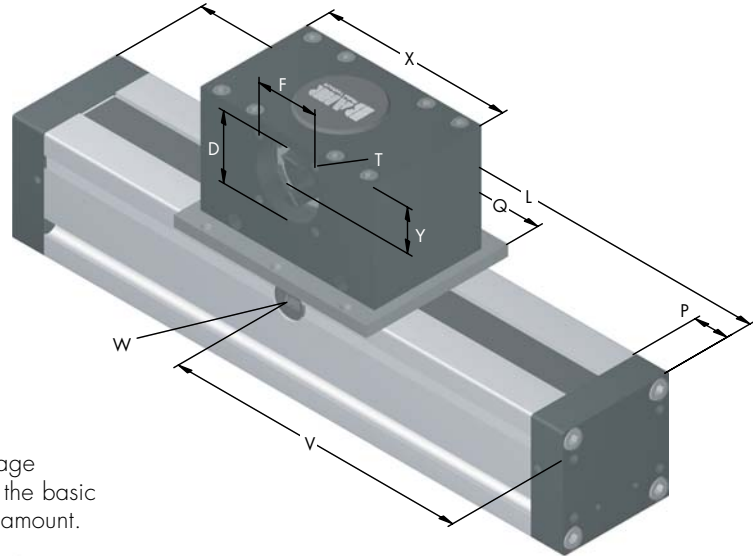
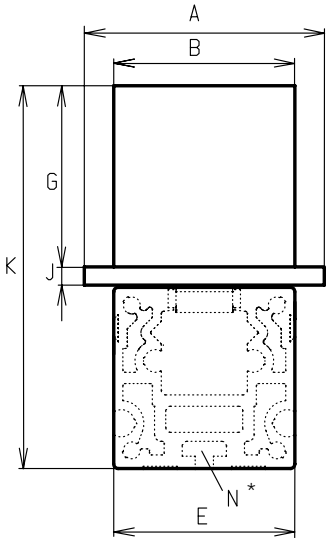
$$f = \frac{F * L^3}{E * I * 192}$$

- f = deflection (mm)
- F = load (N)
- L = free length (mm)
- E = elastic modulus 70000 (N/mm<sup>2</sup>)
- I = second moment of area (mm<sup>4</sup>)



# Positioning system QLSZ 60, 80, 100

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

$$V = Q + 100 \text{ mm}$$

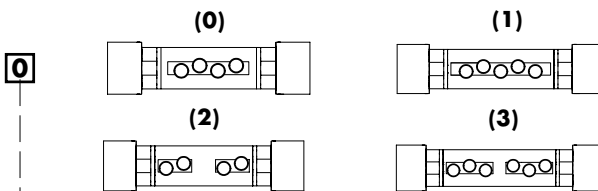
W = servicing position

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
QLSZ 60																	
QLSZ 80	200	106	80	47	80	42	80	8	169	M6	24	144	M6	130	30	5,2 kg	0,78 kg
QLSZ 100																	



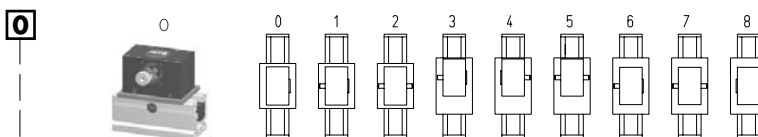
**Choice of guide body profile:**  
 (0) Standard  (1) stainless guide rods  (2) stainless guide rods and screws  (3) stainless guide rods, rollers and screws

**Choice of carriages:**



Size	Version 0		Version 1		Version 2		Version 3	
	Q	L	Q	L	Q	L	Q	L
60								
80	144	200	194	240	>244	>290	>244	>290
100								

**Coupling - Selection of shaft mounting:**



Size	Shaft $\varnothing$ h6 x 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 in the pulley bore and securing with 2 locking rings:

**Belt table**

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

Basic length + stroke = total length

For additional accessories refer to chapter 2.2 – 4.2

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

Sample ordering code:  
 QLSZ80, standard body profile, standard carriage, coupling claw on one side, 1300 mm stroke

