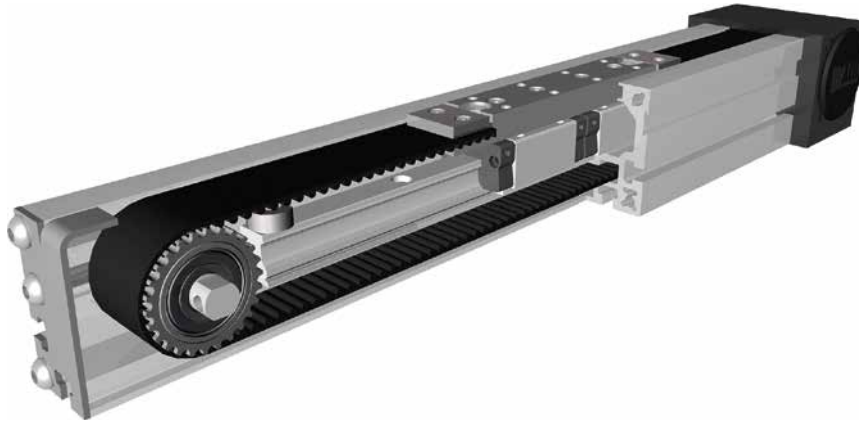


# Positioning system LSZ 60, 80

## Belt drive



### Function:

The guide body consists of an aluminium square profile with an integrated rail guide. The carriage is moved by means of a revolving interior timing belt. At the front face there is a timing belt deflection unit with integrated coupling claws integrated on two sides. The opposite front face is provided with a plate containing a tensioning device for the timing belt.

### Mounting position:

Variable, max. one-piece-length: 6.000 mm.

### Carriage connection:

By threaded holes.

### Fixation:

By T-slots and mounting sets. The linear axis can be combined with any T-slot profile.

### Timing belt:

HTD with reinforcing steel mesh, no backlash when changing direction, repeatability ± 0.1 mm.

### Carriage support:

In the standard version the carriage is positioned on two runner blocks which can be readjusted and maintained at each central servicing position. Two grease nipples at the carriage enable relubrication of the positioning system.

Forces and torques	Size	60		80	
	permitted dyn. Forces*	5000 km	10000 km	5000 km	10000 km
$F_x$ (N)	894	800	1900	1800	
$F_y$ (N)	1410	990	3570	2550	
$F_z$ (N)	3520	2500	8500	6050	
$M_x$ (Nm)	33	23	107	75	
$M_y$ (Nm)	104	73	310	222	
$M_z$ (Nm)	100	70	296	210	
<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	0,6		1,0		
<b>Speed</b>					
(m/s) max	5		5		
<b>Tensile force</b>					
Dauer (N)	900		1900		
0,2 s (N)	1000		2090		
<b>Geometrical moments of inertia of aluminium profile</b>					
$I_x$ mm <sup>4</sup>	4,37x10 <sup>5</sup>		14,6x10 <sup>5</sup>		
$I_y$ mm <sup>4</sup>	5,78x10 <sup>5</sup>		17,1x10 <sup>5</sup>		
Elastic modulus N/mm <sup>2</sup>	70000		70000		

\* referred to lifetime

## 16.1

Driving torque:

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

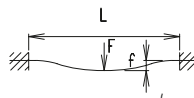
$$P_o = \frac{M_o \cdot n}{9550}$$

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

Deflection:

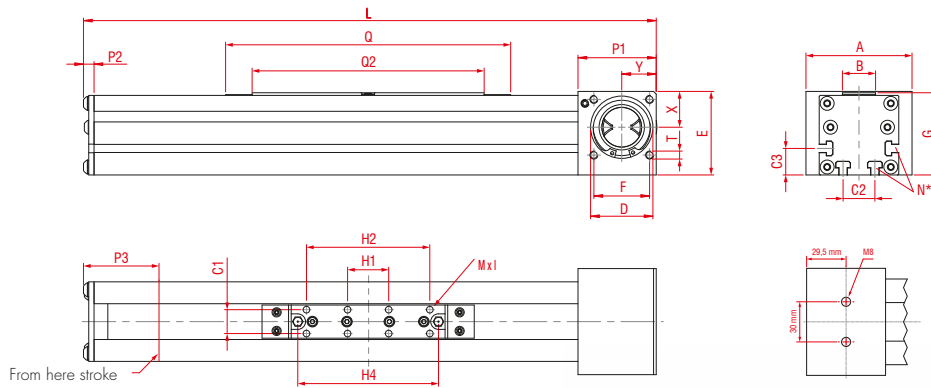
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

- 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>)

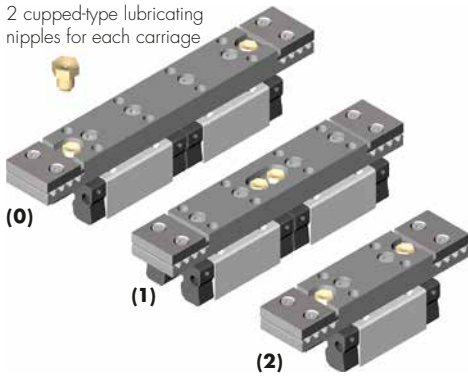


# Positioning system LSZ 60, 80

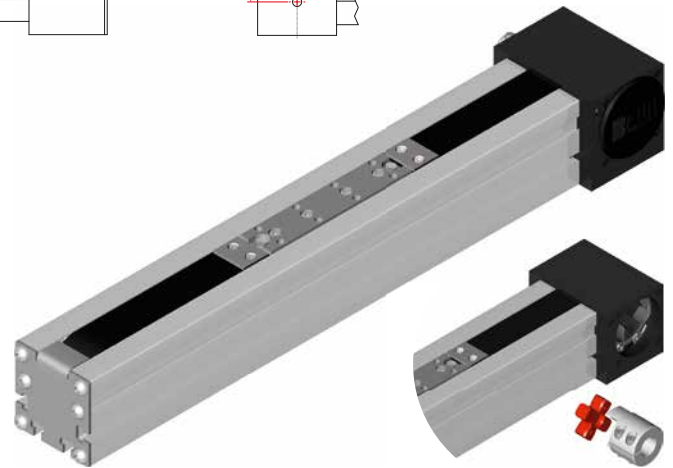
Dimensions (mm)



2 cupped-type lubricating nipples for each carriage



Hose connections available on request.



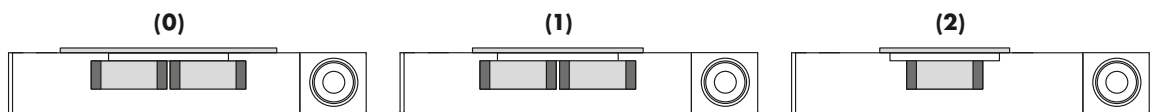
\*For slide nuts refer to chapter 2.2 page 2

Size □	A	B	C1	C2	C3	D -0,05	E	F □	G	Mx1	N for	P1	P2	P3	T for	X	Y	Weight per 100 mm
LSZ 60	80	25	18	24	20	47	63	42	62	M6x10	M5	59	6	55	M6	27	26	0,53 kg
LSZ 80	100	25	18	30	22	68	93	60	83	M6x12	M6	90	8	73	M8	45	40	0,87 kg

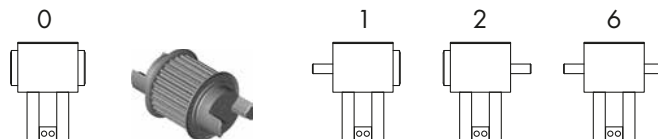
- 0 Choice of guide body profile:**  
**(0)** Standard **(1)** corrosion-protected screws  
**(4)** expanded corrosion-protected version (depending on the availability of components)

Carriage		L	Q	Q2	H1	H2	H4	Basic weight
LS 60	Version (0)	274	160	116	31	93	106	3,06 kg
	Version (1)	254	140	96	32	84	10	2,62 kg
	Version (2)	214	100	56	31	-	48	2,07 kg
LS 80	Version (0)	382	219	149	40	120	133	7,69 kg
	Version (1)	367	204	134	40	120	125	7,41 kg
	Version (2)	310	147	77	40	-	60,5	6,39 kg

**0 Choice of carriages:**



**0 Drive version:**



**Belt table:**

Code No.	Size	Belt	mm/rev.	Number of teeth
0 3	60	5M 30	130	26
0 7	80	8M 30	176	22

**Shaft dimensions / Coupling claw:**

Size	Shaft ∅ h6 x length	Feather key	Coupling
60	14 x 35	5x5x28	14
80	18 x 45	6x6x40	19

LSZ 60 1 0 0 0 0 3 1 01500 — Basic length + stroke = total length

Pos. 1 2 3 4 5 6 7

Sample ordering code:

LSZ60, standard body profile, standard carriage, double-sided coupling claw, 1226 mm stroke