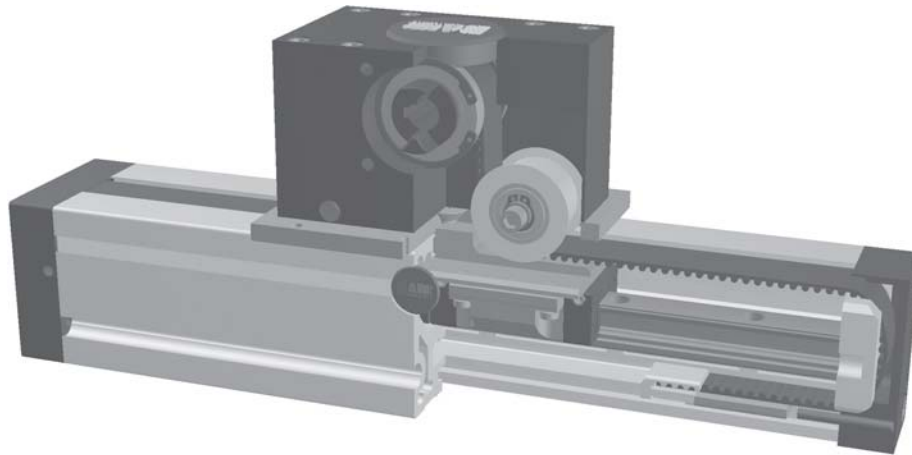


Positioning system QSSZ 60, 80, 100

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.

6.1

Fitting position:

As required. Max. length 3.000 mm without joints.

Carriage mounting:

By T-slots.

Unit mounting:

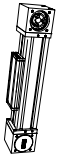
By T-slots and mounting sets. The linear axis can be combined with any T-slot profile.

Belt performance:

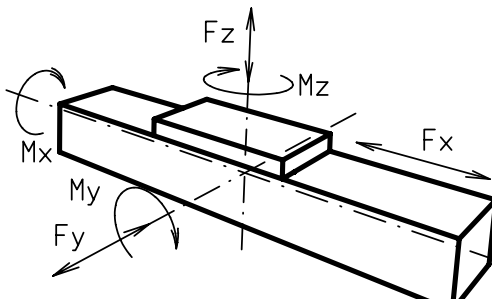
HTD with steel reinforcement, no backlash when changing direction, repeatability ± 0,1 mm.

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 | 60 | | 80 | | 100 | |
|--|------------------------|---------------------|----------|----------------------|----------|----------------------|----------|
| | permitted dyn. Forces* | 5000 km | 10000 km | 5000 km | 10000 km | 5000 km | 10000 km |
| F_x (N) | | 390 | 350 | 894 | 800 | 1900 | 1800 |
| F_y (N) | | 274 | 218 | 567 | 450 | 916 | 727 |
| F_z (N) | | 2991 | 2374 | 4955 | 3933 | 7146 | 5671 |
| M_x (Nm) | | 18 | 14 | 41 | 33 | 70 | 56 |
| $M_y = M_z$ (Nm) | | 54 | 43 | 121 | 96 | 197 | 157 |
| All forces and torques related to the following: | | | | | | | |
| existing values $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$ | | | | | | | |
| values of table | | | | | | | |
| No-load torque | | | | | | | |
| Nm | | 1,0 | | 1,4 | | 1,8 | |
| Speed | | | | | | | |
| (m/sec) max | | 5 | | 5 | | 5 | |
| Tensile force | | | | | | | |
| permanent (N) | | 390 | | 900 | | 1900 | |
| 0,2 sec (N) | | 480 | | 1000 | | 2090 | |
| Geometrical moments of inertia of aluminium profile | | | | | | | |
| I_x mm ⁴ | | 4,3x10 ⁵ | | 16,5x10 ⁵ | | 43,0x10 ⁵ | |
| I_y mm ⁴ | | 4,8x10 ⁵ | | 18,7x10 ⁵ | | 48,8x10 ⁵ | |
| Elastic modulus N/mm ² | | 70000 | | 70000 | | 70000 | |



* referred to life-time

Formula: QSSZ

Driving torque:

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

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

- F = force (N)
- P = pulley action perimeter (mm)
- S_s = 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 (N/mm²)
- I = second moment of area (mm⁴)

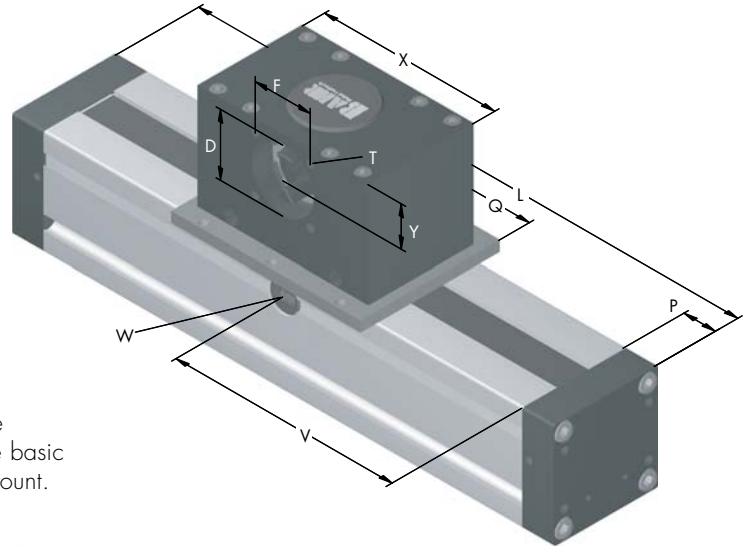
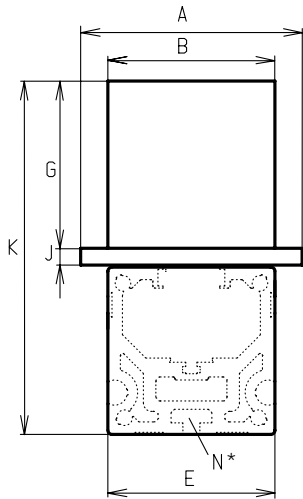
Nominal lifetime:

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

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



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

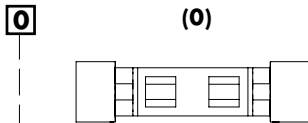
| Size | Basic length L | A | B | D | E | F | G | J | K | N for | P | Q | T | X | Y | Basic weight | Weight per 100 mm |
|----------|----------------|-----|----|----|----|----|----|---|-----|-------|----|-----|-----|-----|----|--------------|-------------------|
| QSSZ 60 | | | | | | | | | | | | | | | | | |
| 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

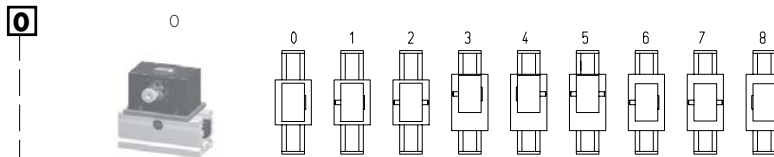


Choice of guide body profile:
 (0) Standard (1) stainless screws

Choice of carriages:



Coupling - Selection of shaft mounting:



| Size | Shaft ø 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

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

For additional accessories refer to chapter 2.2 – 4.2

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

