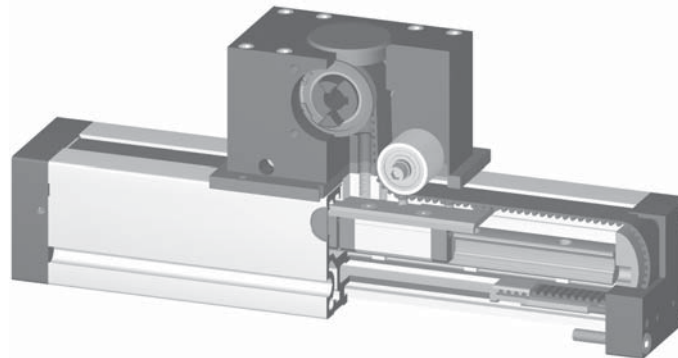


Modular Linear Actuator QSSZ 60, 80, 100

Profile Rail – Static Belt Drive

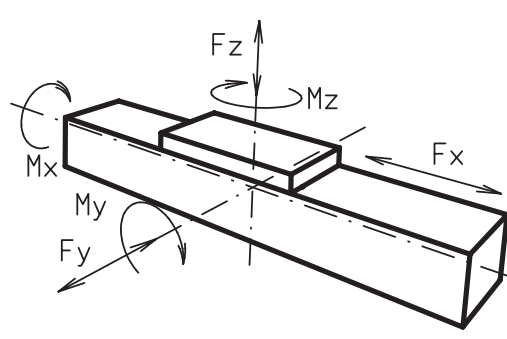


Function:

This linear unit consists of a square aluminium profile with integrated profile rail. The carriage which has runner blocks is driven by a timing belt. Each standard pulley includes a jaw coupling on one side and is equipped with maintenance-free ball bearings. Belt tension can be adjusted 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 length:** As required. Max. length 6,000 mm single/extrusion.
- Carriage mounting:** T-slots
- Unit mounting:** T-slots or tapped holes in the bearing block
- Belt performance:** HTD with steel reinforcement, no backlash when changing direction, repeatability $\pm 0,1$ mm.
- Carriage support:** The carriage runs on 4 rollers which can be adjusted and serviced

5

| Forces and torques | Size | 60 | | 80 | | 100 | | |
|---|-------------------------|--------|----------------------|--------|----------------------|--------|---------|--|
| | Forces/Torques | static | dynamic | static | dynamic | static | dynamic | |
|  | F_x (N) | 390 | 350 | 894 | 800 | 1900 | 1800 | |
| | Dyn. load factor C (N)* | 21870 | 12640 | 39530 | 30460 | 49250 | 36940 | |
| | $F_z = F_y = C$ (N)* | 21870 | 12640 | 39530 | 30460 | 49250 | 36940 | |
| | M_x (Nm)* | 210 | 119 | 502 | 388 | 696 | 518 | |
| | $M_y = M_z$ (Nm)* | 634 | 366 | 1482 | 1142 | 2093 | 1569 | |
| | 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 | | | |

* The given values refer to a nominal lifetime of 100.000 m

Formula: QSSZ

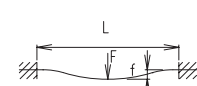
Driving torque:

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

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

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

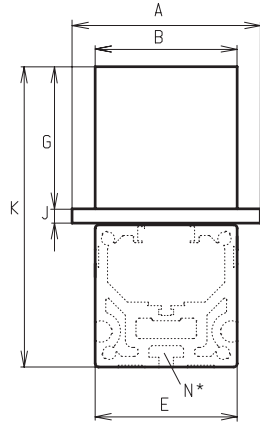
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$


- f = deflection (mm)
- F = load (N)
- L = free length (mm)
- E = elastic modulus 70000 (N/mm²)
- I = second moment of area (mm⁴)

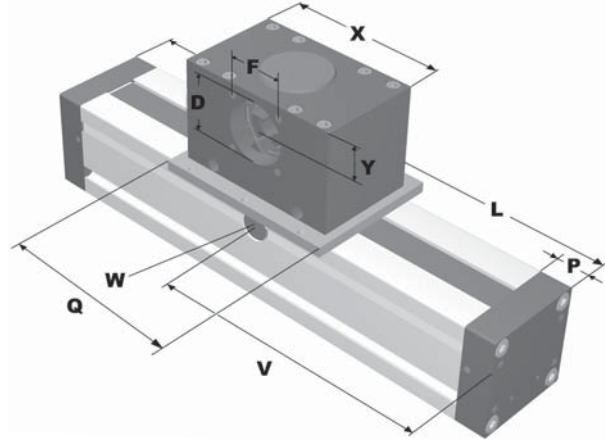
Nominal lifetime:

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

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



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

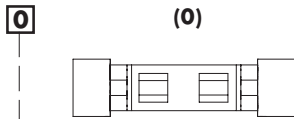


*For T-nuts refer to the accessory section W = servicing position

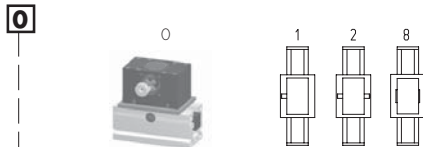
| Size | Basic length L | A | B | D | E | F | G | J | K | N | P | Q | T | X | Y | Basic weight | Additional Weight per 100 mm |
|----------|----------------|-----|-----|----|-----|----|-----|----|-----|------|-----|-----|-----|-----|----|--------------|------------------------------|
| QSSZ 60 | TBD | TBD | 60 | 37 | 60 | 32 | 65 | 8 | 133 | M 5 | TBD | TBD | M 5 | 110 | 20 | TBD | TBD |
| 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 | TBD | TBD | 100 | 68 | 100 | 60 | 100 | 10 | 210 | M 10 | TBD | TBD | M 8 | 180 | 39 | TBD | TBD |

0 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 | TBD | TBD |
| 80 | 14 x 35 | 5x5x28 |
| 100 | TBD | TBD |

9 is as 0, but with jaw couplings 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 |
| TBD | TBD | TBD | TBD | TBD |
| 0 7 | 80 | 5M2.5 | 130 | 26 |
| TBD | TBD | TBD | TBD | TBD |

Basic length + stroke = total length

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, jaw coupling on one side, 1300 mm stroke

