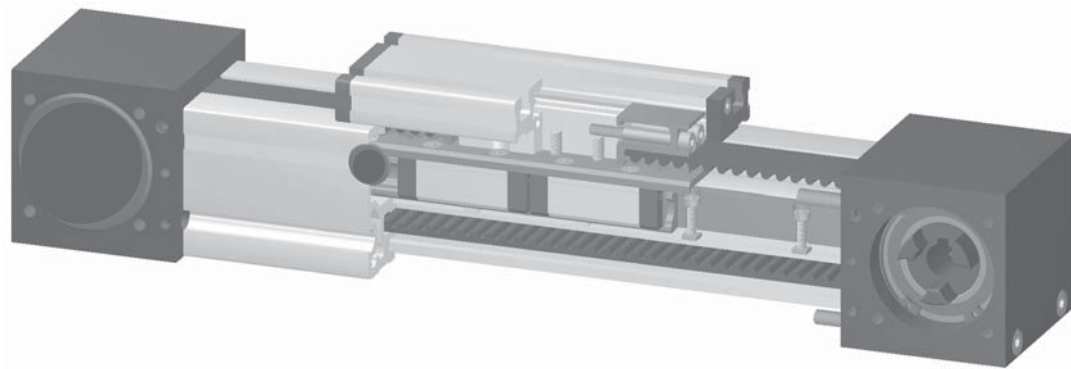


Modular Linear Actuator QSZ 60, 80, 100

Profile Rail – Belt Driven



Function:

This unit consists of a square aluminium profile with an integrated profile rail. The carriage is moved by a belt drive. Each standard pulley includes one jaw coupling on one side. 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 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:

In the standard version, the carriage runs on two runner blocks which can be adjusted and serviced at a central servicing position. For longer carriages the number of runner blocks can be increased.

5

Forces and torques	Size	60		80		100		
	Forces/Torques	static	dynamic	static	dynamic	static	dynamic	
	F_x (N)	894	800	1900	1800	4000	3800	
	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)	900		1900		4000			
0,2 sec (N)	1000		2090		4300			
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: QSZ

Driving torque:

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

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

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

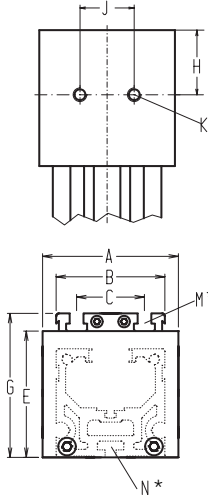
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

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

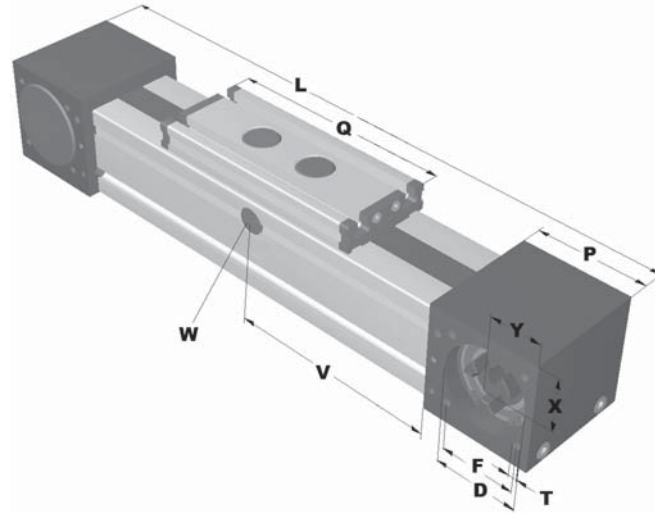
Nominal lifetime:

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

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.

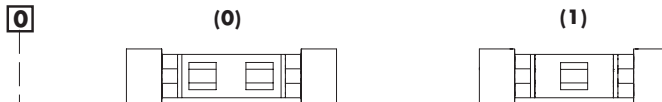


*For T-nuts refer to the accessory section W = servicing position

Size	Basic length L	A	B	C	D	E	F	G	H	J	K	N	M	P	Q	T	X	Y	Basic weight	Additional Weight per 100 mm
QSZ 60	300	80	60	36	47	63	42	79	29,5	30	M8	M5	M6	59	177	M6	27	26	3,5 kg	0,53 kg
QSZ 80	430	100	80	50	68	93	60	106	47,5	40	M10	M6	M8	90	232	M8	45	40	10,4 kg	1,02 kg
QSZ 100	510	130	100	66	90	110	80	129	55	50	M12	M10	M10	110	268	M10	49	50	15,9 kg	1,77 kg

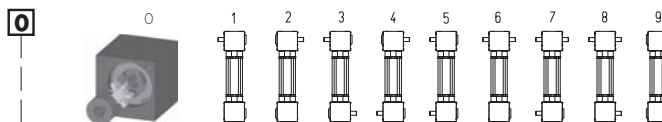
Choice of guide body profile:
 (0) standard (1) stainless screws

Choice of carriages:



Size	Version 0		Version 1	
	Q	L	Q	L
60	177	300	152	280
80	232	430	196	390
100	268	510	260	500

Coupling - Selection of shaft mounting:



Size	Shaft ø h6 x length	Key
60	14 x 35	5x5x28
80	18 x 45	6x6x40
100	22 x 45	6x6x40

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
0 3	60	5M25	130	26
0 4	80	8M30	176	22
0 7	100	8M50	224	28

Basic length + stroke = total length

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

Sample ordering code:
QSZ80 with standard body profile, standard carriage, jaw coupling on one side, 1070 mm stroke

