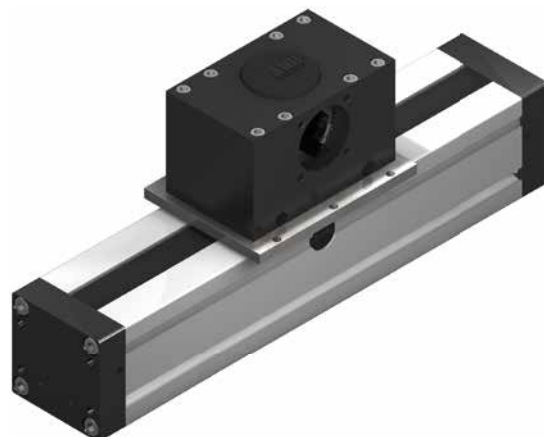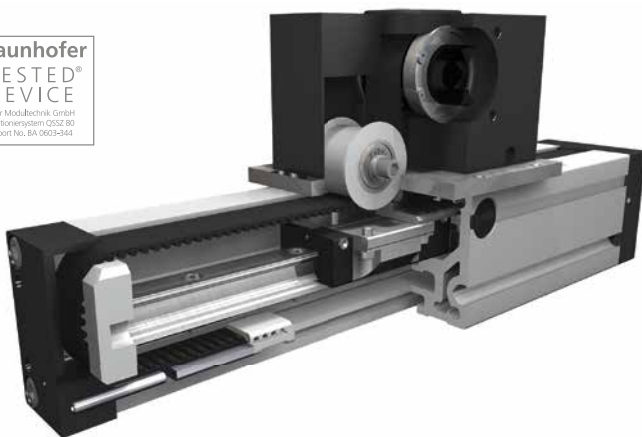# Positioning system QSSZ 60, 80

Belt drive

7.1

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.

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.
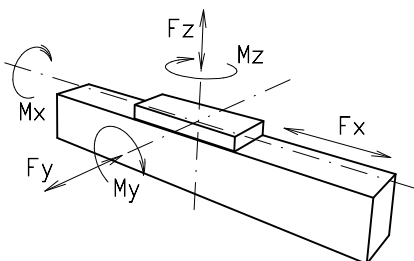**Belt performance:** HTD with steel reinforcement, no backlash when changing direction, repeatability ± 0,1 mm.
Carriage support: In the standard version, the carriage runs on 2 runner blocks which can be serviced at a central servicing position. For longer carriages the number of runner blocks can be increased.

Forces and torques

Size	60		80	
permitted dyn. forces*	5000 km	10000 km	5000 km	10000 km
F_x (N)	97	87	223	200
F_y (N)	350	240	890	630
F_z (N)	880	625	2100	1500
M_x (Nm)	8	6	26	18
M_y (Nm)	26	18	77	55
M_z (Nm)	25	17	74	52

All forces and torques related to the following:

existing values / table values

$$\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$$

No-load torque		
Nm	1,0	1,4
Speed		
(m/s) max	3	3
Tensile force		
permanent (N)	Lifetime calculation see the internet	
Geometrical moments of inertia of aluminium profile		
I_x mm^4		16,5x10^5
I_y mm^4		18,7x10^5
Elastic modulus N/mm²		70000

For life-time calculation use our homepage.

* referred to life-time
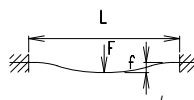
Driving torque:

$$M_a = \frac{F*P*S_i}{2000*\pi} + M_n$$

$$P_a = \frac{M_a*n}{9550}$$

F	= force	(N)
P	= pulley action perimeter	(mm)
Si	= safety factor 1,2 ... 2	
M_n	= no-load torque	(Nm)
n	= rpm pulley	(min^{-1})
M_a	= driving torque	(Nm)
P_a	= motor power	(KW)

Deflection:

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

f	= deflection	(mm)
F	= load	(N)
L	= free length	(mm)
E	= elastic modulus 70000	(N/mm²)
I	= second moment of area	(mm^4)

Positioning system QSSZ 60, 80
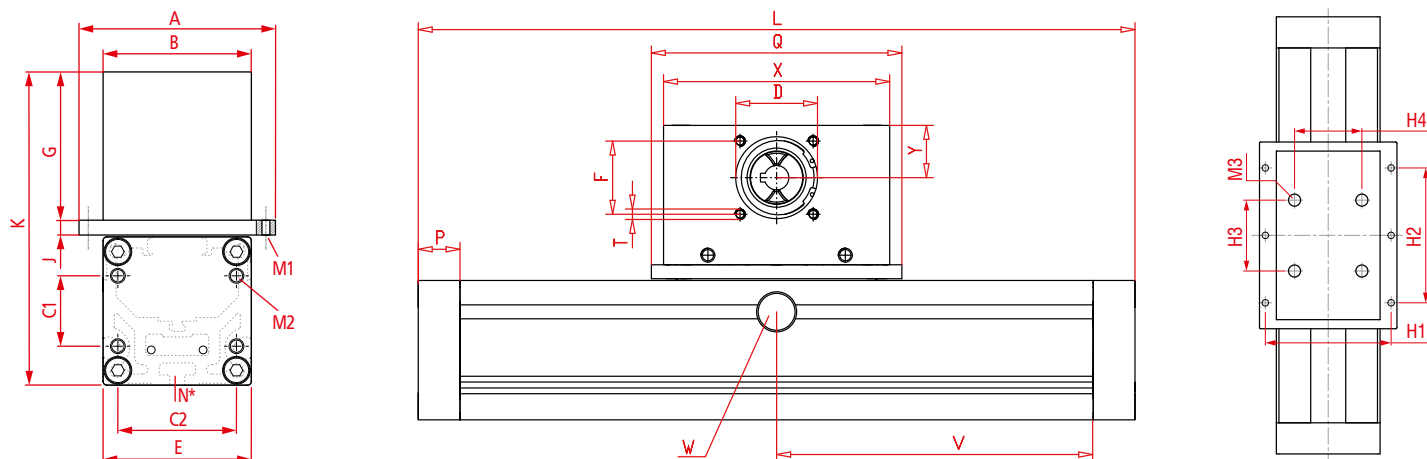
*For slide nuts refer to chapter 2.2 page 2   V = Q + 100 mm   W = servicing position

Size □	Basic length L	A	B	C1	C2	D -0,05	E	F	G	J	K	N for	P	Q	T	X	Y	Basic weight	Weight per 100 mm
QSSZ 60	168	60	60	28	48	37	60	32	65	7,50	134,5	M 5	20	124	M 5	110	20	3,30 kg	0,47 kg
QSSZ 80	200	106	80	38	62	47	80	42	80	8	169	M 6	24	144	M 6	130	30	5,90 kg	1,02 kg

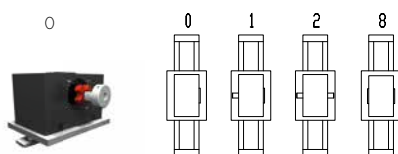| Size	H1	H2	H3	H4	M1	M2	M3
QSSZ 60	–	–	60	45	–	M6	M8
QSSZ 80	97	104	–	–	M6	M8	–

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

[0] Choice of carriages:

(0)
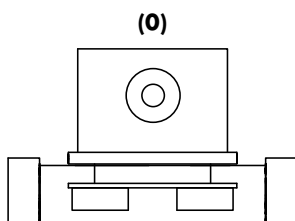
[0] Drive version:

Size	Shaft ø h6 x length	Key
60	10 x 27	3x3x25
80	14 x 35	5x5x28

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 it into the pulley bore and securing it with 2 locking rings.

Belt table / Coupling claw

Code No.		Size	Belt	Pulley		Coupling
				mm/rev.	Number of teeth	
0	3	60	5M15	100	20	9
0	7	80	5M25	130	26	14

Basic length + stroke = total length   For additional accessories refer to chapter 2.2 – 3.2

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, coupling claw on one side, 1300 mm stroke

7.1