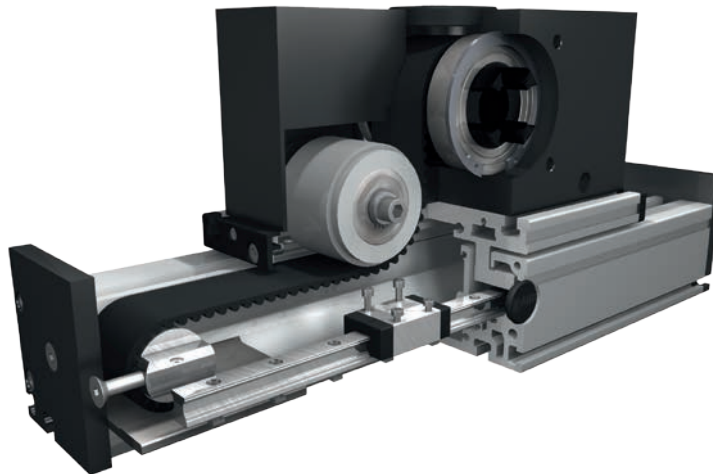


Belt drive



Function:

This linear unit consists of a rectangular aluminium profile with integrated rail guides. 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 6.000 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.

8.1

Forces and torques	Size	120		160		200	
	permitted dyn. Forces*	5000 km	10000 km	5000 km	10000 km	5000 km	10000 km
F_x (N)	1900	1800	4000	3800	5900	5750	
F_y (N)	1776	1405	2236	1775	15600	11080	
F_z (N)	2090	1650	5278	4189	20600	14600	
M_x (Nm)	81	64	282	224	1285	915	
M_y (Nm)	97	77	283	225	1375	980	
M_z (Nm)	96	76	300	238	1345	960	
C (N)		2310		7800		22800	
All forces and torques related to the following:							
existing values $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$							
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)		1,4		1,8		2,2	
Speed							
(m/s) max		5		5		5	
Tensile force							
permanent (N)		1900		4000		5900	
0,2 s (N)		2090		4300		6350	
Geometrical moments of inertia of aluminium profile							
I_x mm ⁴		5,61x10 ⁵		2,13x10 ⁶		48,07 x10 ⁵	
I_y mm ⁴		34,19x10 ⁵		12,33x10 ⁶		259,99 x10 ⁵	
Elastic modulus N/mm ²		70000		70000		70000	

* referred to lifetime

Formula: DSSZ

Driving torque:

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

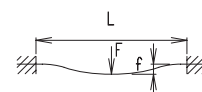
$$P_o = \frac{M_o \cdot n}{9550}$$

- 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:

$$f = \frac{F \cdot L^3}{E \cdot I \cdot T92}$$

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



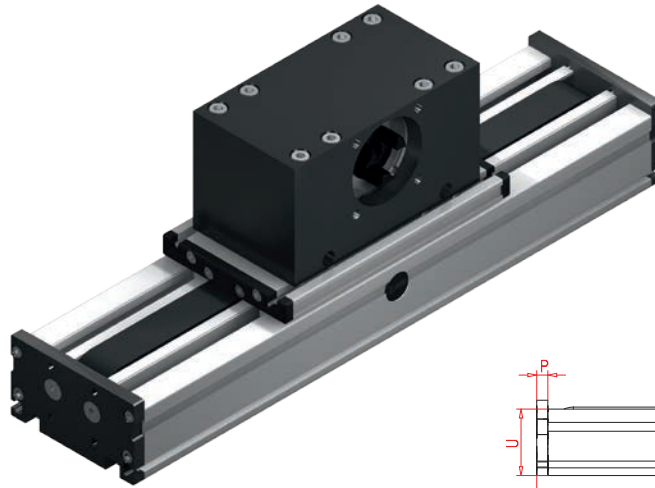
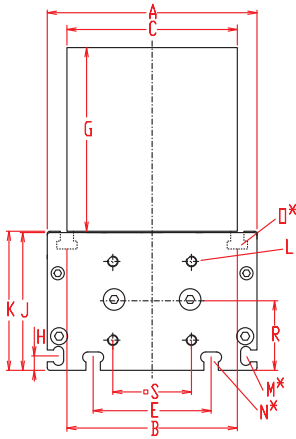
Nominal lifetime:

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

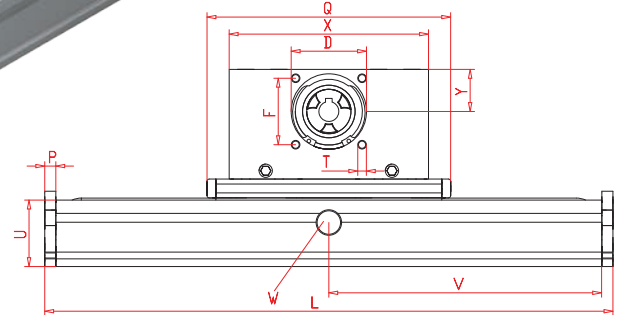
- L = Lifetime in meter
- C = Dynamic load factor (N)
- F = Middle load (N)

Positioning system DSSZ 120, 160, 200

Dimensions (mm)



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

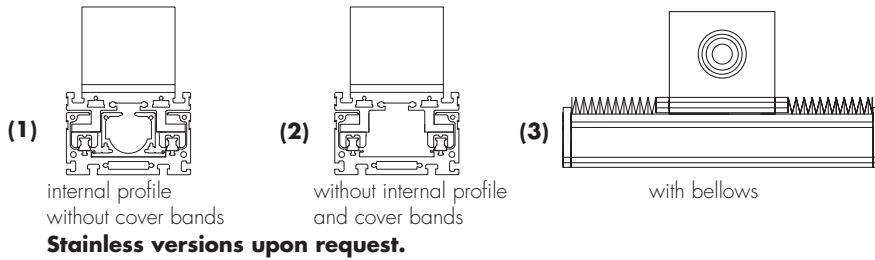


*For slide nuts refer to chapter 2.2 page 2

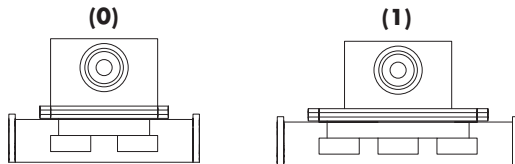
$V = Q + 100 \text{ mm}$ $W = \text{servicing position}$

Size	Basic length L	A	B	C	D	E	F	G	H	J	K	L for	M for	N for	O for	P	Q	R	S	T	U	X	Y	Basic weight	Weight per 100 mm
DSSZ 120	230	120	96	100	68	78	60	100	10	68	79	M 6	M 5	M 6	M 6	10	200	39	42	M 8	60	180	39	12,0 kg	1,2 kg
DSSZ 160	330	160	130	130	90	90	80	130	11	105	106	M 8	M 6	M 8	M 8	12	290	53	60	M 10	80	270	60	27,8 kg	1,8 kg
DSSZ 200	380	200	160	160	110	140	100	145	15	128	129	M 10	M 8	M 10	M 10	15	340	62,5	95	M 10	100	310	62	53,0 kg	2,6 kg

1 Choice of guide body profile:

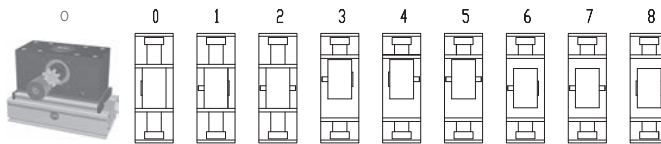


0 Choice of carriages:



Size	Version 0		Version 1	
	Q	L	Q	L
120	200	230	200	230
160	290	330	290	330
200	340	380	340	380

0 Drive version:



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 or tension sets (size 200).

Belt table

Code No.	Size	Belt	mm/rev.	Number of teeth
0 7	120	8M30	192	24
0 9	160	8M50	256	32
1 0	200	8M70	304	38

Shaft dimensions

Size	Shaft $\varnothing h6 \times \text{length}$	Key
120	18 x 45	6x6x40
160	22 x 45	6x6x40
200	30 x 55	8x7x50

Basic length + stroke = total length

DSSZ 160 1 1 0 0 0 9 1 01500

Pos. 1 2 3 4 5 6 7

Sample ordering code:

DSSZ160, body profile with internal profile without cover bands, standard carriage, coupling claws on one side, 1170 mm stroke

