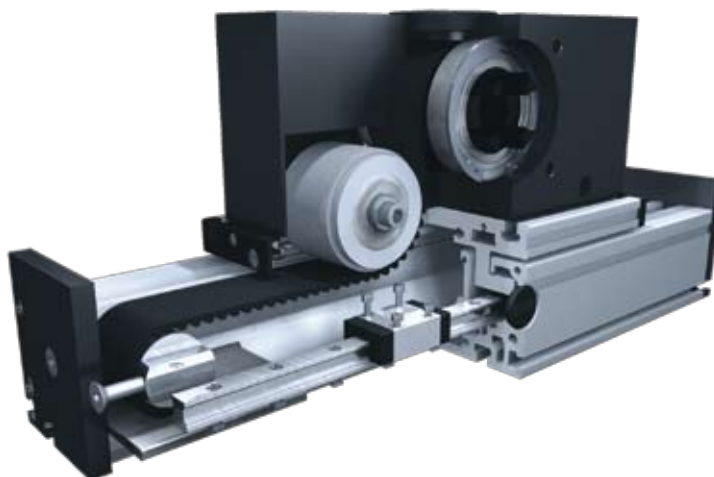


Belt drive

**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.

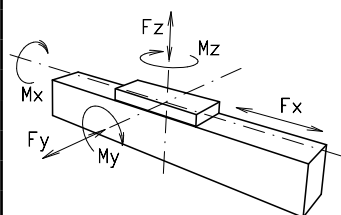
Fitting position: As required. Max. length 6.000 mm without joints.

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 $\pm 0,1$ 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	120		160		200	
	permitted dyn. Forces*	5000 km	10000 km	5000 km	10000 km	5000 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						
No-load torque						
(Nm)	1,4		1,8		2,2	
Speed						
(m/sec) max	5		5		5	
Tensile force						
permanent (N)	1900		4000		5900	
0,2 sec (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 life-time

Formula: DSSZ

Driving torque:

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

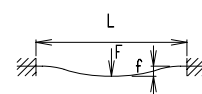
$$P_o = \frac{M_o \cdot n}{9550}$$

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:

$$f = \frac{F \cdot L^3}{E \cdot I \cdot T \cdot Q^2}$$

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



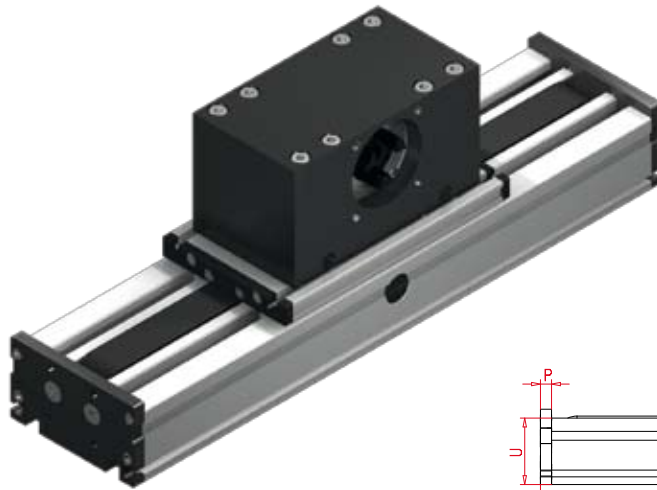
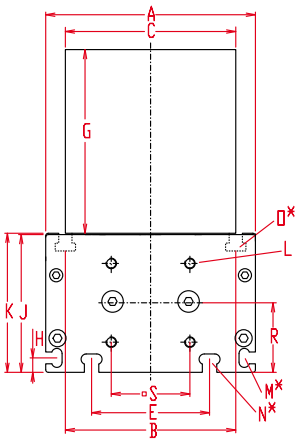
Nominal lifetime:

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

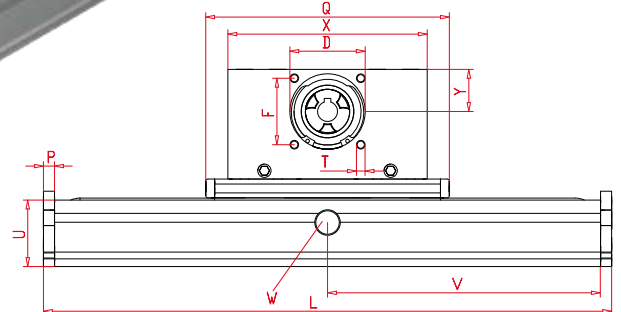
L = Lifetime in meter
 C = Dynamic load factor (N)
 F = Middle load (N)

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

Choice of guide body profile:

1

(1) internal profile without cover bands
Stainless versions upon request.

(2) without internal profile and cover bands

(3) with bellows

Choice of carriages:

0

(0) (1)

Size	Version 0		Version 1	
	Q	L	Q	L
120	200	230	200	230
160	290	330	>370	>410
200	340	380	360	400

Drive version:

0

0 0 1 2 3 4 5 6 7 8

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

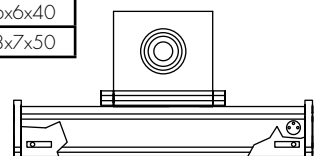
Basic length + stroke = total length

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



Inductive proximity switch sets, which can be mounted inside of the square profile, are available as accessories. Coupling and a special plug are mounted from the outside. For additional accessories refer to chapter 2.2 – 4.2.