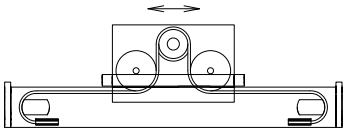
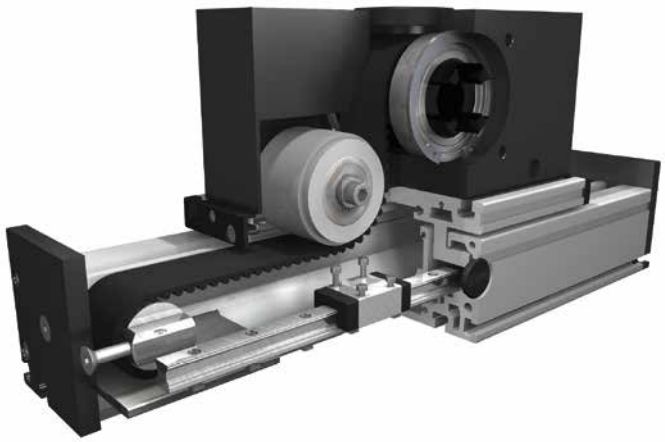
Linear system **DSSZ 120, 160, 200**

TECHNICAL SUMMARY
REFERENCE ONLY

BELT DRIVE

- OMEGA SYSTEM
- HORIZONTAL INSTALLATION POSITION
- OFF-CENTER LOADS

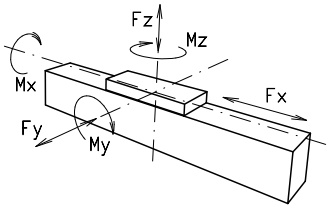




Function:
This linear unit consists of a rectangular aluminium profile with integrated rail guides. The carriage, which has runner blocks, is driven by a timing belt. Each standard pulley includes a coupling claw on one side and is equipped with maintenance-free ball bearings. Belt tension can be readjusted 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.

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	5570	3900	15600	11080
F_z (N)	2090	1650	7050	5020	20600	14600
M_x (Nm)	81	64	358	255	1285	915
M_y (Nm)	97	77	369	262	1375	980
M_z (Nm)	96	76	364	258	1345	960
All forces and torques related to the following: existing values / table values $\frac{Fy}{Fy_{dyn}} + \frac{Fz}{Fz_{dyn}} + \frac{Mx}{Mx_{dyn}} + \frac{My}{My_{dyn}} + \frac{Mz}{Mz_{dyn}} \leq 1$						
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 mm⁴	5,61x10⁵		2,13x10⁶		48,07 x10⁵	
I_y mm⁴	34,19x10⁵		12,33x10⁶		259,99 x10⁵	
Elastic modulus N/mm²	70000		70000		70000	

For life-time calculation use our homepage.

** referred to life-time*

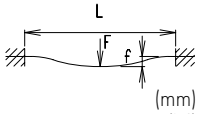
Driving torque:

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

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

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/mm^2)
I = second moment of area (mm^4)

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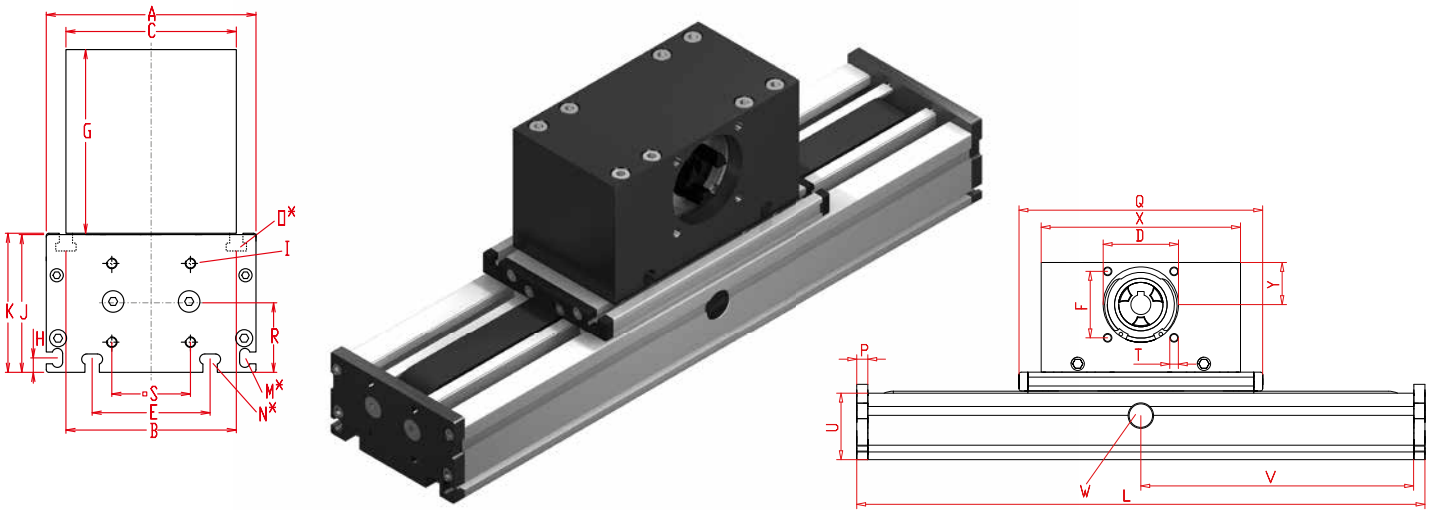


V = Q + 100 mm

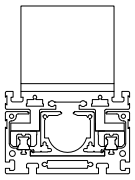
W = servicing position

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

Size	Basic length L	A	B	C	D -0,05	E	F	G	H	J	K	I 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	143	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

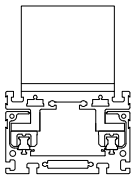
1 **Choice of guide body profile:** Stainless versions upon request.

(1)



internal profile with cover bands

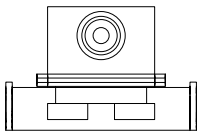
(2)



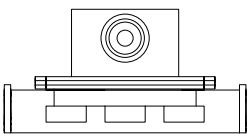
without internal profile and cover bands

0 **Choice of carriages:**

(0)



(1)

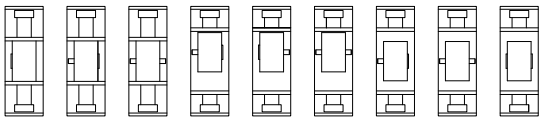


Size	Version 0		Version 1	
	Q	L	Q	L
120	200	230	200	230
160	290	330	290	330
200	340	380	340	380

0 **Drive version:**

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 ø h6 x length	Key
120	18 x 45	6x6x40
160	22 x 45	6x6x40
200	30 x 55	8x7x50

DSSZ	160	1	1	0	0	0	9	1	1500
	Pos.	1	2	3	4	5	6	7	

Basic length + stroke = total length

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