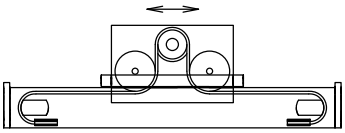
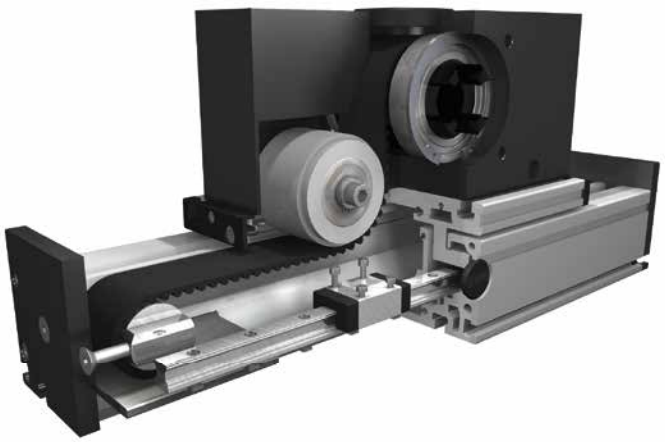
Linear system **DSSZ 120, 160, 200**

TECHNICAL SUMMARY
REFERENCE ONLY

BELT DRIVE

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

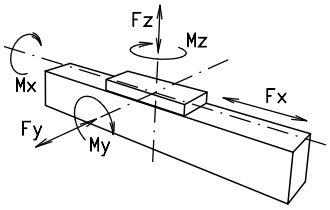




Function:
This linear unit consists of a rectangular aluminium profile with integrated rail guides. The carriage, which has runner blocks, is driven by a timing belt. Each standard pulley includes a coupling claw on one side and is equipped with maintenance-free ball bearings. Belt tension can be readjusted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

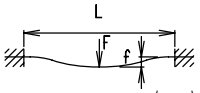
$$M_a = \frac{F * P * S_i}{2000 * \pi} + M_n$$

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

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:

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

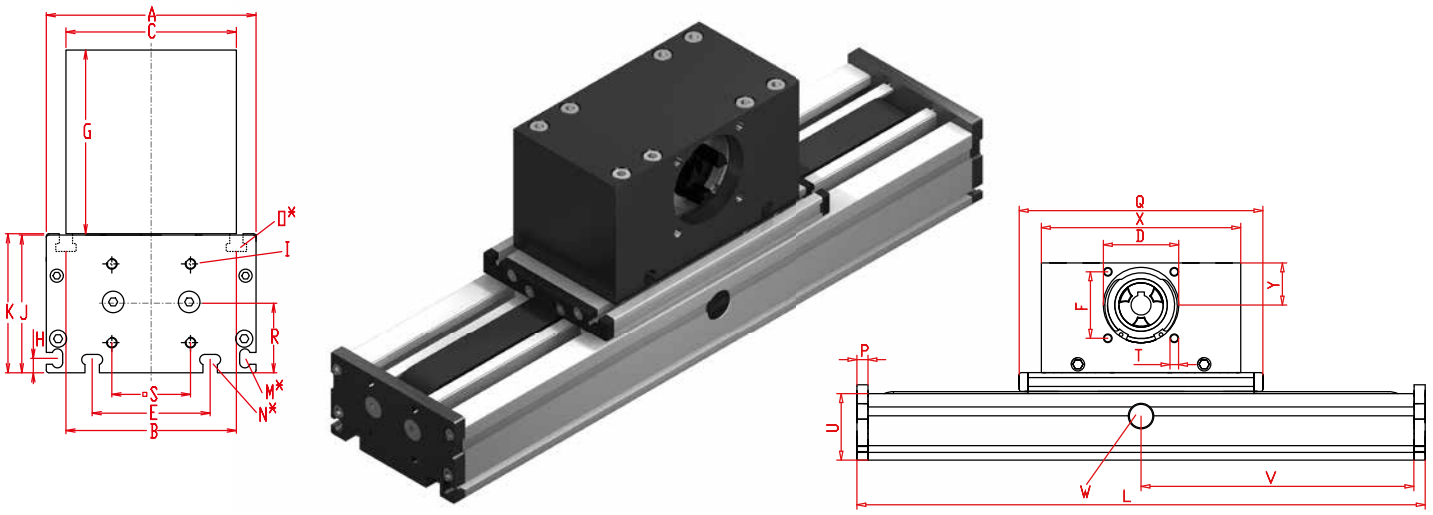


f = deflection (mm)
F = load (N)
L = free length (mm)
E = elastic modulus 70000 (N/mm^2)
I = second moment of area (mm^4)

Our policy is one of continued research and development.
We therefore reserve the right to amend,without notice, the specifications given in this document. © 2023 Bahr Modultechnik GmbH

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

Dimensions (mm)



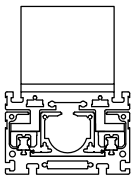
V = Q + 100 mm
W = servicing position

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

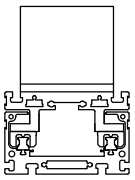
1 **Choice of guide body profile:** Stainless versions upon request.

(1)



internal profile
with cover bands

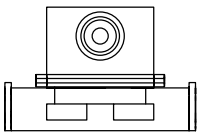
(2)



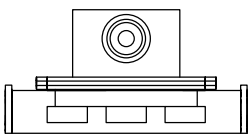
without internal profile
and cover bands

0 **Choice of carriages:**

(0)



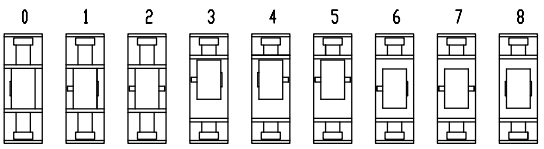
(1)



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



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

Our policy is one of continued research and development.
We therefore reserve the right to amend,without notice, the specifications given in this document. © 2023 Bahr Modultechnik GmbH