

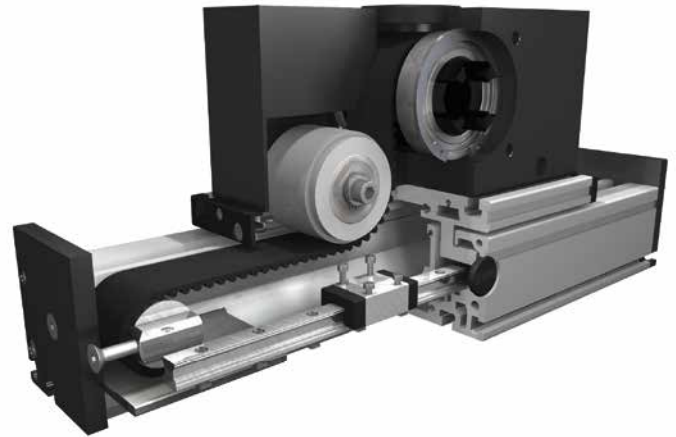
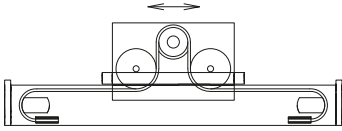
# Linear system **DSSZ 120, 160, 200**

## 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  $\pm 0,1$  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	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
<b>All forces and torques related to the following:</b>							
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							
<b>No-load torque</b>							
(Nm)	1,4		1,8		2,2		
<b>Speed</b>							
(m/s) max	5		5		5		
<b>Tensile force</b>							
permanent (N)	1900		4000		5900		
0,2 s (N)	2090		4300		6350		
<b>Geometrical moments of inertia of aluminium profile</b>							
$I_x$ mm <sup>4</sup>	5,61x10 <sup>5</sup>		2,13x10 <sup>6</sup>		48,07 x10 <sup>5</sup>		
$I_y$ mm <sup>4</sup>	34,19x10 <sup>5</sup>		12,33x10 <sup>6</sup>		259,99 x10 <sup>5</sup>		
Elastic modulus N/mm <sup>2</sup>	70000		70000		70000		

For life-time calculation use our homepage.

\* referred to life-time

Driving torque:

$$M_o = \frac{F \cdot P \cdot S_i}{2000 \cdot \pi} + M_n$$

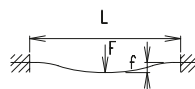
$$P_o = \frac{M_o \cdot n}{9550}$$

F = force (N)  
 P = pulley action perimeter (mm)  
 S<sub>i</sub> = safety factor 1,2 ... 2  
 M<sub>n</sub> = no-load torque (Nm)  
 n = rpm pulley (min<sup>-1</sup>)  
 M<sub>o</sub> = driving torque (Nm)  
 P<sub>o</sub> = motor power (KW)

Deflection:

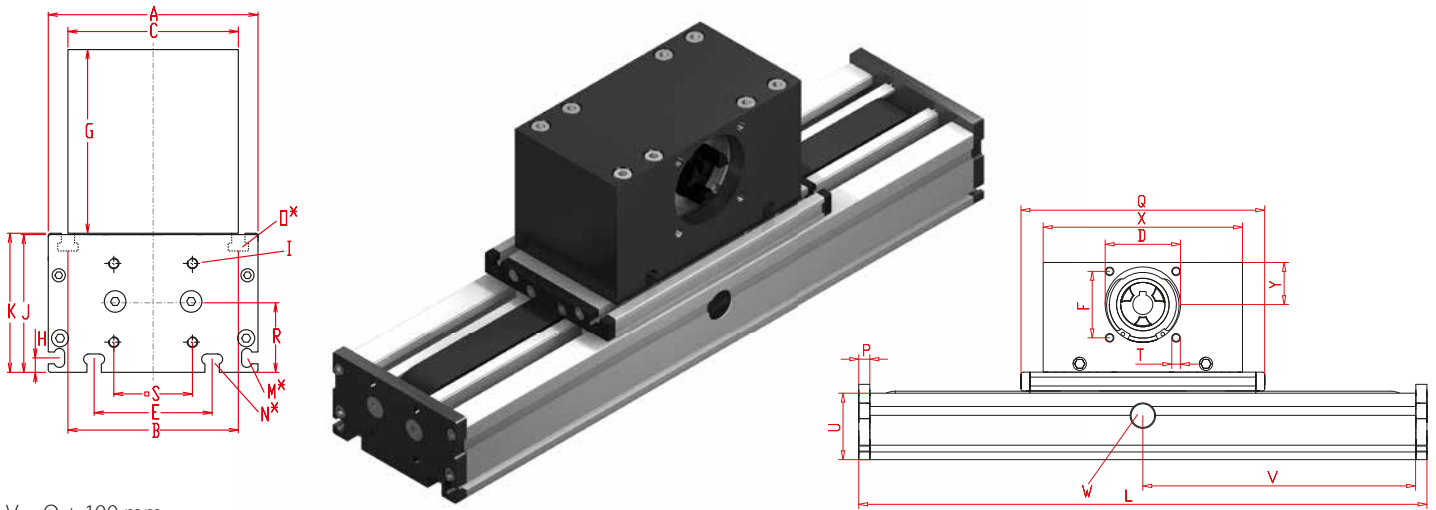
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

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



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

Dimensions (mm)



$V = Q + 100 \text{ mm}$

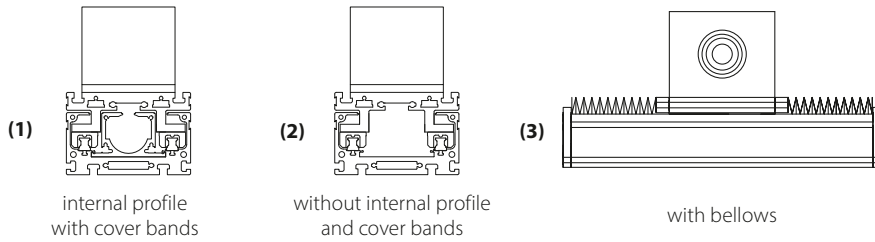
W = servicing position

\*For slide nuts refer to chapter 2.2 page 2

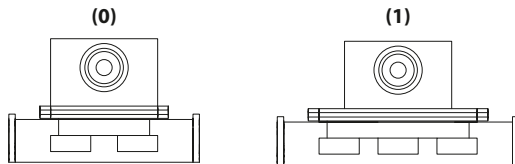
Increasing the carriage length will increase the basic length by the same amount.

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
<b>DSSZ 120</b>	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
<b>DSSZ 160</b>	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
<b>DSSZ 200</b>	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.

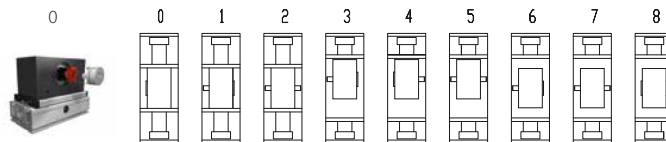


**0 Choice of carriages:**



Size	Version 0		Version 1	
	Q	L	Q	L
<b>120</b>	200	230	200	230
<b>160</b>	290	330	290	330
<b>200</b>	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
<b>0 7</b>	<b>120</b>	8M30	192	24
<b>0 9</b>	<b>160</b>	8M50	256	32
<b>1 0</b>	<b>200</b>	8M70	304	38

**Shaft dimensions:**

Size	Shaft ø h6 x length	Key
<b>120</b>	18 x 45	6x6x40
<b>160</b>	22 x 45	6x6x40
<b>200</b>	30 x 55	8x7x50

**DSSZ 160 1 1 0 0 0 9 1 1500**

Basic length + stroke = total length

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

