


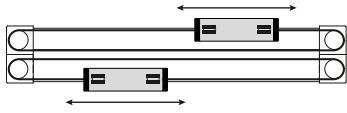
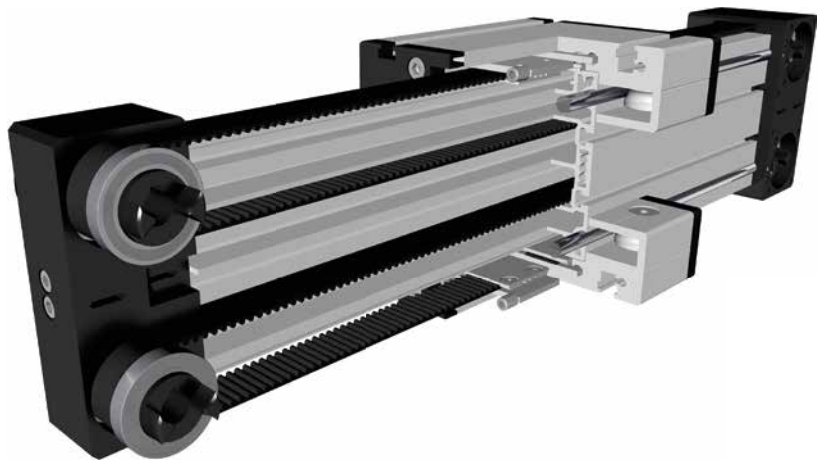


# Linear system **ELZD 60 (S) W**

## BELT DRIVE WITH TWO SEPARATELY DRIVEN CARRIAGES

-  HIGHER PROFILE STABILITY
-  INDEPENDENT CARRIAGES
-  HIGHER FORCE FIXTURE

3.1



**Function:**

The guide body consists of an aluminium square profile with lateral, parallel, form-fit, internal hardened steel rods. Two carriages, which are driven individually by a timing belt, move along the guide body independently of one another. Due to the rectangular profile high torques and loads can be taken up. In addition, a very high stability and low deflection are ensured for long axis systems. The belt tension can be easily readjusted via a tensioning device within the carriage. This device also helps to adjust the symmetry of the carriages in applications where two parallel linear units are used.

**Fitting position:**

As required. Max. length 3.000 mm without joints.

**Carriage mounting:**

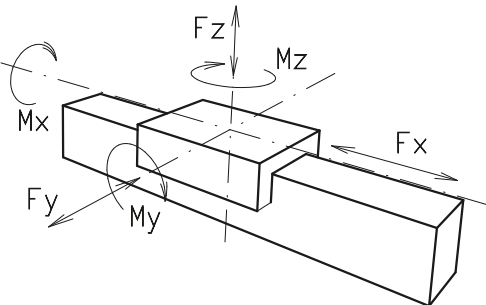
By T-slots.

**Unit mounting:**

By T-slots or mounting sets.

**Belt type:**

HTD with steel reinforcement, no backlash when changing direction, repeatability: ± 0,1 mm.

Forces and torques	Size	60		60 S	
	Forces/Torques	static	dynamic	static	dynamic
	$F_x$ (N)	894	800	894	800
	$F_y$ (N)	3000	2000	4100	3100
	$F_z$ (N)	1700	1100	2160	1600
	$M_x$ (Nm)	67	43	88	65
	$M_y$ (Nm)	90	70	190	140
	$M_z$ (Nm)	120	100	230	170
	<b>All forces and torques relate 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	0,6		0,7		
<b>Speed</b>					
(m/s) max	5		7		
<b>Tensile force</b>					
permanent (N)	900		900		
0,2 s (N)	1000		1000		
<b>Geometrical moments of inertia of aluminium profile</b>					
$I_x$ mm <sup>4</sup>	2,8 x 10 <sup>6</sup>		2,8 x 10 <sup>6</sup>		
$I_y$ mm <sup>4</sup>	9,6 x 10 <sup>5</sup>		9,6 x 10 <sup>5</sup>		
E-Modulus N/mm <sup>2</sup>	70000		70000		

For life-time calculation of rollers use our homepage.

Driving torque:

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

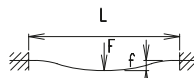
$$P_o = \frac{M_o \cdot n}{9550}$$

- F = force (N)
- P = pulley action perimeter (mm)
- $S_i$  = safety factor 1,2 ... 2
- $M_n$  = no-load torque (Nm)
- n = rpm pulley (min<sup>-1</sup>)
- $M_o$  = driving torque (Nm)
- $P_o$  = 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>)

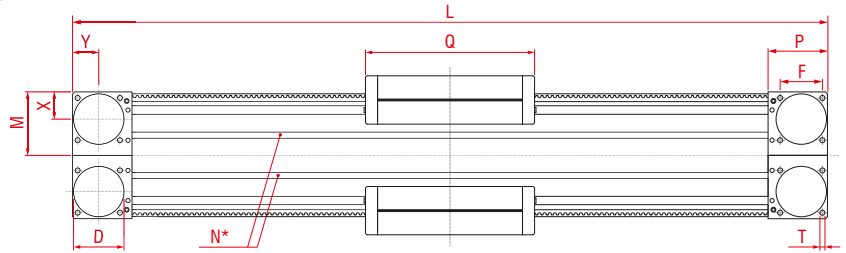
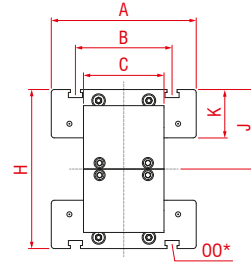
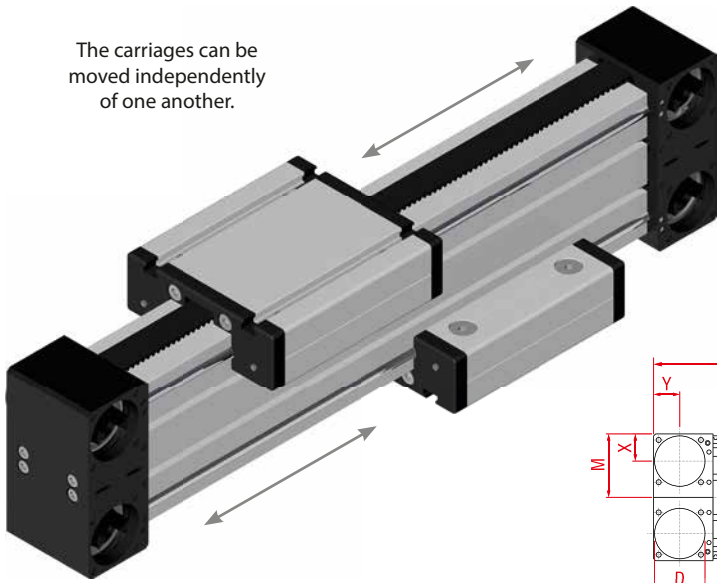


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Dimensions (mm)

3.1

The carriages can be moved independently of one another.



\*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	F	H	J	K	M	N for	OO for	P	Q	T	X	Y	Basic weight	Weight per 100 mm
ELZD 60 W	290	144	96	80	47	42	158	79	48	71	M5	M8	59	168	M6	27	26	9,6 kg	1,0 kg
ELZD 60S W	315	170	108	80	47	42	166	83	52	71	M5	M8	59	194	M6	27	26	11,6 kg	1,0 kg

**0 Choice of guide body profile:**

- (0) Standard (2) corrosion-protected guide rods and screws
- (4) expanded corrosion-protected version (depending on the availability of components)

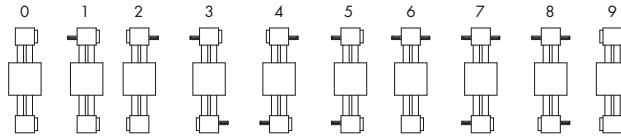
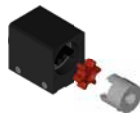
**0 Choice of carriages:**

(0)

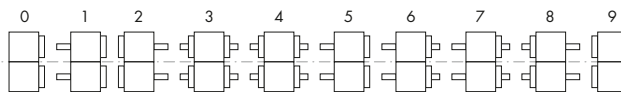


**0 Drive version:**

(0)

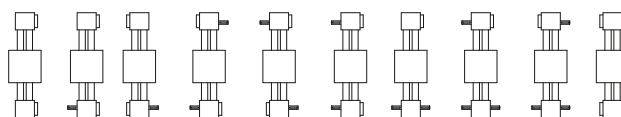


**Top drive version:**  
Version 9 is the same as 0, but with double sided coupling claw.



**Mirror plane**  
Drive version (top and bottom identical)

(0)



**Bottom drive version:**  
Version 9 is the same as 0, but with double sided coupling claw.

**Belt table:**

Code No.	Size	Belt	mm/rev.	Number of teeth
0 4	60 (S)	5M25	130	26

**Shaft dimensions / Coupling claw:**

Size	Shaft ø h6 x length	Key	Coupling
60 (S)	14 x 35	5x5x28	14

**ELZD 60 W 1 0 0 0 0 4 1 1500**

Pos. 1 2 3 4 5 6 7

Basic length + stroke = total length

For combination kits and connecting elements refer to chapter 2.2

Sample ordering code:

ELZD 60 W, standard body profile, standard carriage, coupling claw on one side, 1210 mm stroke

