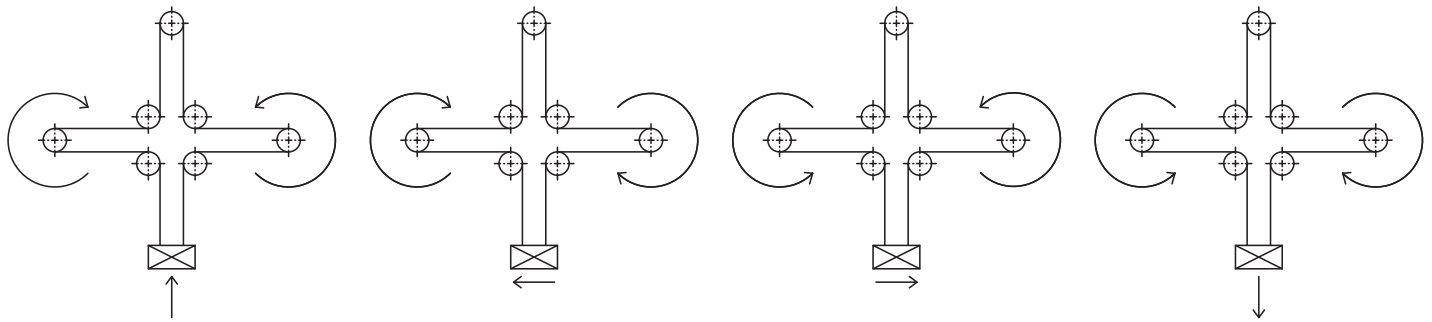


# Positioning system ELZI 30, 40, 60

## Specifications



3.1

### Function:

X/Z gantry consisting of a double guide in the horizontal X level and a vertical Z axis. The belt is fixed and tensioned at the load end. The unit is driven by a rotating belt, which remains connected through various deflection points. The movement is realised by two motors. The coordinate lies diagonal to the deflection points of the X axes and the Z axis.

Advantage: Only small masses are moved and thus it is possible to achieve high accelerations.

### Fitting position:

As required, max. length for x-axes 2000mm, for z-axis 1000mm

### Unit mounting:

By tapped holes in the bearing block, mounting sets.

### Belt type:

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

Forces and torques	Size	ELZI 30		ELZI 40		ELZI 60	
	Forces/torques	static	dynam.	static	dynam.	static	dynam.
$F_x$ (N)		390	350	894	800	1900	1800
$F_z$ (N)		180	160	1200	900	1600	1200
$M_x$ (Nm)		15	9	25	20	67	43
$M_y$ (Nm)		20	13	32	22	90	70
$M_z$ (Nm)		23	18	35	25	120	100
<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 $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$							
<b>No-load torque horizontal movement</b>							
	Nm	2 x 0,4		2 x 0,6		2 x 1,1	
<b>Speed</b>							
	(m/s) max	2		4		5	
<b>Tensile force (please use necessarily the Mulco life-time calculation, see Chapter 5.2 Page 2)</b>							
	permanent (N)	390		894		1900	
	0,2 s (N)	480		1000		2090	
<b>Geometrical moments of inertia of aluminium profile</b>							
	$I_x$ mm <sup>4</sup> [X-/Z-Achse]	0,31x10 <sup>5</sup> / 0,41x10 <sup>5</sup>		1,12x10 <sup>5</sup> / 1,32x10 <sup>5</sup>		4,06x10 <sup>5</sup> / 6,79x10 <sup>5</sup>	
	$I_y$ mm <sup>4</sup> [X-/Z-Achse]	1,70x10 <sup>5</sup> / 0,40x10 <sup>5</sup>		7,20x10 <sup>5</sup> / 1,34x10 <sup>5</sup>		24,3x10 <sup>5</sup> / 6,97x10 <sup>5</sup>	
	E-Modulus N/mm <sup>2</sup>	70000		70000		70000	

For lifetime calculation of rollers you have to use only our CD-ROM or homepage!

### Formula: ELZI

Driving torque:

$$M_o = \frac{F \cdot p \cdot S_i}{2000 \cdot \pi} + M_{leer}$$

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

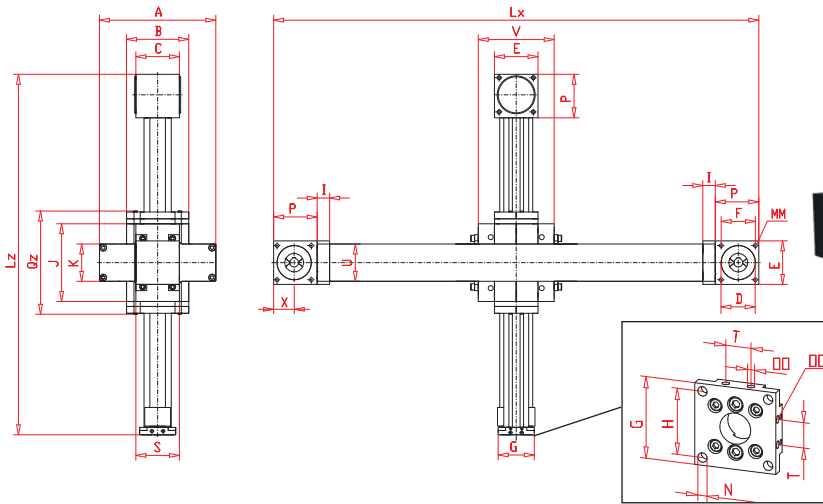
- F = force (N)
- P = pulley action perimeter (mm)
- $S_i$  = safety factor 1,2 ... 2
- $M_{leer}$  = no-load torque (Nm)
- n = rpm pulley (min<sup>-1</sup>)
- $M_o$  = driving torque (Nm)
- $P_o$  = motor power (KW)

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

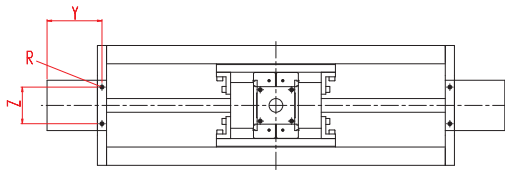
- f = deflection (mm)
- F = load (N)
- L = free length (mm)
- E = elastic modulus 70000 (N/mm<sup>2</sup>)
- I = second moment of area (mm<sup>4</sup>)

# Positioning system ELZI 30, 40, 60

Dimensions (mm)



Endpiece for gripper

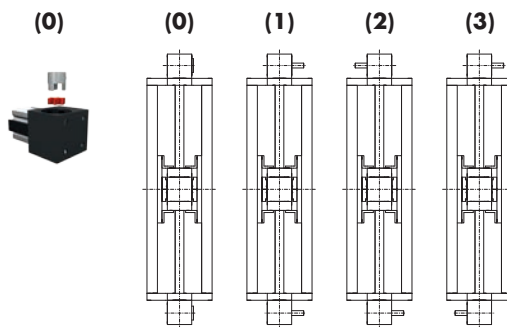


Size	X-Axis		Z-Axis	
	Profile	moving mass	Profile	moving mass
<b>30</b>	2 x UL40	4,5 kg	EL30	1,0 kg
<b>40</b>	2 x UL60	7,0 kg	EL40	2,4 kg
<b>60</b>	2 X UL80	19,0 kg	EL60	6,5 kg

Size	Basic length		A	B	C	D	E	F	G	H	I	J	K	MM for	ø N	OO for	P	Qz	R for	S	T	U	V	X	Y	Z	Basic weight	Weight per 100 mm X-/Z-axis
	Lx	Lz																										
<b>ELZI 30</b>	290	245	137	70	51	47	52	42	42	35	15	114	40	M6	4,2	M6	55	144	M6	60	-	40	112	26,5	62,5	35	5,20 kg	0,32/0,18 kg
<b>ELZI 40</b>	380	290	187	100	70	55	70	55	58	47	20	125	60	M6	6,6	M6	70	165	M8	70	18	60	122	33	80	50	11,5 kg	0,68/0,3 kg
<b>ELZI 60</b>	525	425	262	144	110	90	100	80	82	68	20	192	80	M10	8,5	M8	110	235	M10	100	30	80	198	50	120	80	33,0 kg	1,13/0,67 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** Drive version:



**Belt table**

Code No.	Size	Belt	mm/rev.	Number of teeth
<b>0 3</b>	<b>30</b>	5M15	120	24
<b>0 4</b>	<b>40</b>	5M25	160	32
<b>0 6</b>	<b>60</b>	8M30	224	28

**Shaft dimensions / Coupling claw**

Size	Shaft ø h6 x length	Key	Coupling
<b>30</b>	10x27	3x3x25	9
<b>40</b>	14x35	5x5x28	14
<b>60</b>	22x45	6x6x35	24

**X-Axis** Basic length + stroke = total length

**Y-Axes** Basic length + stroke = total length

ELZI 40 0 0 0 0 0 4 1 01500

ELZI 40 1 0 0 0 0 4 1 00700

Pos. 1 2 3 4 5 6 7

Sample ordering code:

ELZI 40, with standard body profile, coupling claw on one side, stroke X = 1120 / Z = 410mm

