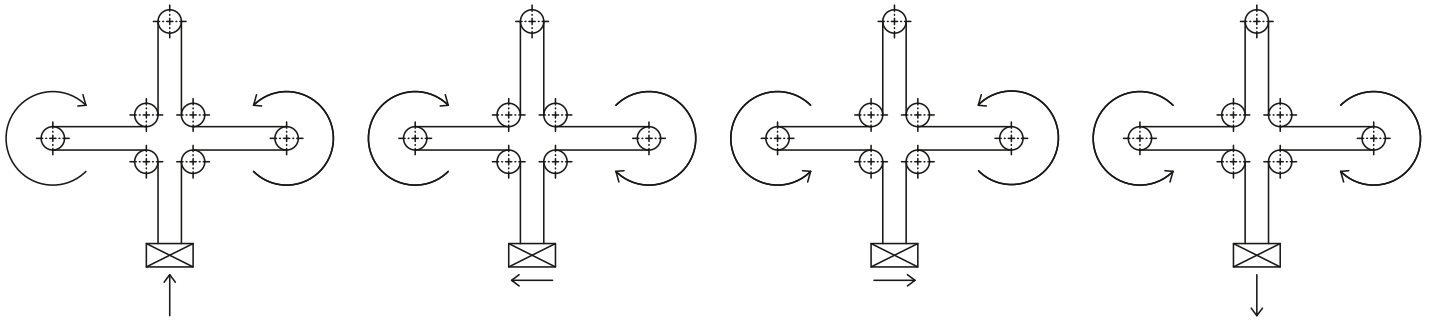


3.1



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 |
| All forces and torques relate to the following: | | | | | | | |
| existing values $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$ | | | | | | | |
| No-load torque horizontal movement | | | | | | | |
| Nm | | 2 x 0,4 | | 2 x 0,6 | | 2 x 1,1 | |
| Speed | | | | | | | |
| (m/s) max | | 2 | | 4 | | 5 | |
| Tensile force (please use necessarily the Mulco life-time calculation, see Chapter 4.2) | | | | | | | |
| permanent (N) | | 390 | | 894 | | 1900 | |
| 0,2 s (N) | | 480 | | 1000 | | 2090 | |
| Geometrical moments of inertia of aluminium profile | | | | | | | |
| I_x mm ⁴ [X-/Z-Achse] | | 0,31x10 ⁵ / 0,41x10 ⁵ | | 1,12x10 ⁵ / 1,32x10 ⁵ | | 4,06x10 ⁵ / 6,79x10 ⁵ | |
| I_y mm ⁴ [X-/Z-Achse] | | 1,70x10 ⁵ / 0,40x10 ⁵ | | 7,20x10 ⁵ / 1,34x10 ⁵ | | 24,3x10 ⁵ / 6,97x10 ⁵ | |
| E-Modulus N/mm ² | | 70000 | | 70000 | | 70000 | |

For life-time calculation of rollers use our homepage.

Driving torque:

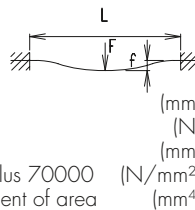
$$M_o = \frac{F \cdot P \cdot S_i}{2000 \cdot \pi} + M_n$$

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

- 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⁻¹)
- M_o = driving torque (Nm)
- P_o = motor power (KW)

Deflection:

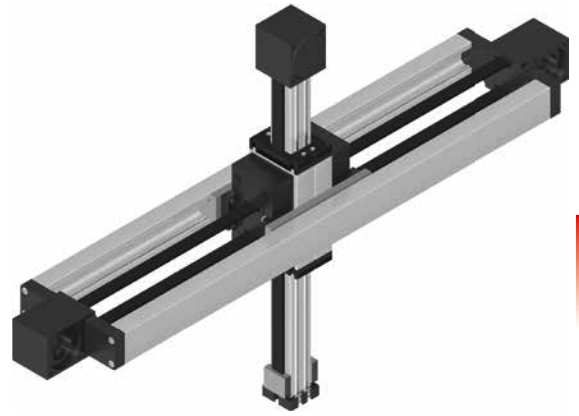
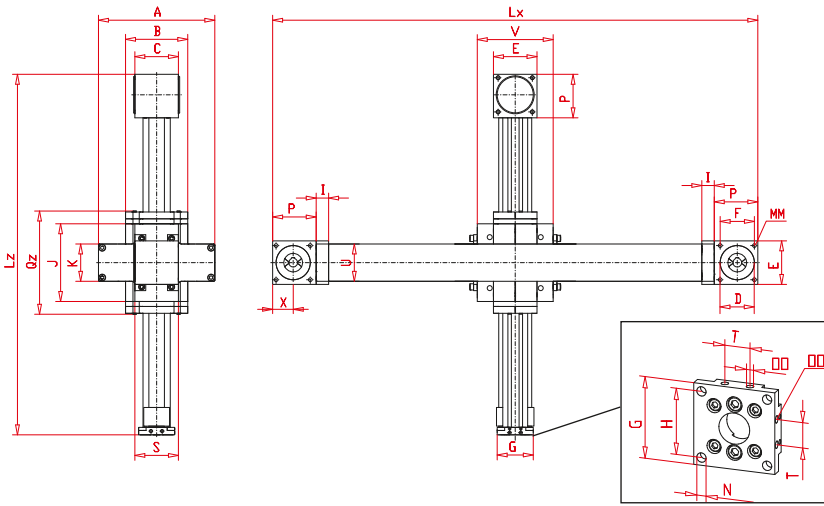
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$



- f = deflection (mm)
- F = load (N)
- L = free length (mm)
- E = elastic modulus 70000 (N/mm²)
- I = second moment of area (mm⁴)

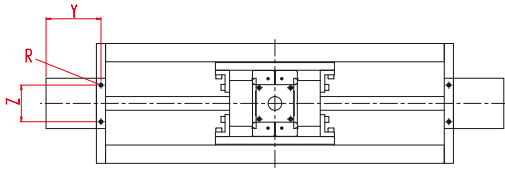
Positioning system ELZI 30, 40, 60

Dimensions (mm)



3.1

Endpiece for gripper



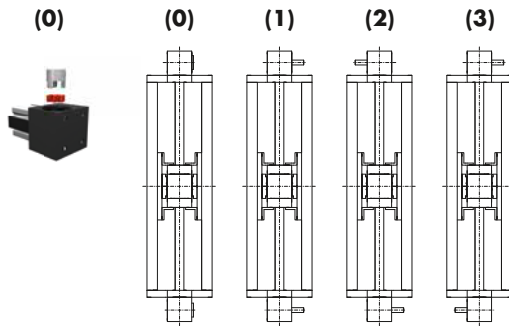
| Size | X-Axis | | Z-Axis | |
|-----------|----------|-------------|---------|-------------|
| | Profile | moving mass | Profile | moving mass |
| 30 | 2 x UL40 | 4,5 kg | EL30 | 1,0 kg |
| 40 | 2 x UL60 | 7,0 kg | EL40 | 2,4 kg |
| 60 | 2 X UL80 | 19,0 kg | EL60 | 6,5 kg |

| Size | Basic length | | A | B | C | D -0,05 | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ELZI 30 | 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 |
| ELZI 40 | 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 |
| ELZI 60 | 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 |
|------------|-----------|------|---------|-----------------|
| 0 3 | 30 | 5M15 | 120 | 24 |
| 0 4 | 40 | 5M25 | 160 | 32 |
| 0 6 | 60 | 8M30 | 224 | 28 |

Shaft dimensions / Coupling claw

| Size | Shaft ø h6 x length | Key | Coupling |
|-----------|------------------------|--------|----------|
| 30 | 10x27 | 3x3x25 | 9 |
| 40 | 14x35 | 5x5x28 | 14 |
| 60 | 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

