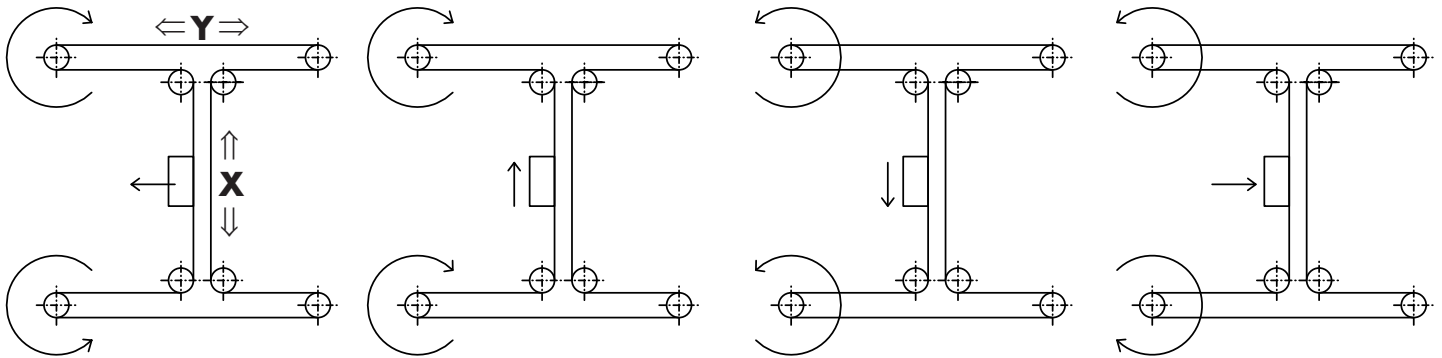


Positioning system ELZU 30, 40, 60, 60S, 80, 80S, 100

Surface portal

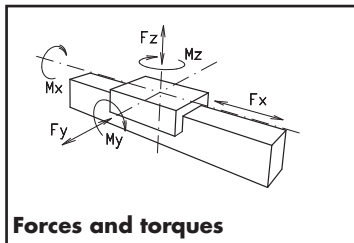
Specifications



Function:

Surface portal, consisting of 2 Y-axes and 1 X-axis, driven by one rotating belt. This belt runs around different deflection pulleys. Positioning is achieved by two motors. The coordinate is diagonal to the deflection points of the Y-axis.

Advantage: Only small weights are moved, thus enabling high accelerations to be achieved.



Forces and torques

Fitting position:

As required. Max. length and width 3.000 mm.

Carriage mounting:

By T-slots.

Unit mounting:

By T-slots or tapped holes in the bearing block, mounting sets.

Belt type:

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

| Size | ELZU 30 | | ELZU 40 | | ELZU 60 | | ELZU 60 S | | ELZU 80 | | ELZU 80 S | | ELZU 100 | |
|--|--|---------|----------------------|---------|----------------------|---------|----------------------|---------|-----------------------|---------|-----------------------|---------|----------------------|---------|
| Forces/Torques | static | dynamic | static | dynamic | static | dynamic | static | dynamic | static | dynamic | static | dynamic | static | dynamic |
| F_x (N) | 200 | 180 | 390 | 350 | 894 | 800 | 894 | 800 | 1900 | 1800 | 1900 | 1800 | 4000 | 3800 |
| F_y (N) | 90 | 60 | 1200 | 700 | 3000 | 2000 | 4100 | 3100 | 3000 | 2000 | 4600 | 3600 | 8000 | 6500 |
| F_z (N) | 90 | 60 | 900 | 650 | 1700 | 1100 | 2160 | 1600 | 1700 | 1100 | 3000 | 1800 | 3600 | 2200 |
| M_x (Nm) | 10 | 5 | 25 | 20 | 67 | 43 | 88 | 65 | 90 | 55 | 170 | 140 | 300 | 230 |
| M_y (Nm) | 13 | 6 | 32 | 18 | 90 | 70 | 190 | 140 | 110 | 80 | 270 | 230 | 400 | 270 |
| M_z (Nm) | 14 | 7 | 35 | 25 | 120 | 100 | 230 | 170 | 150 | 120 | 300 | 220 | 750 | 500 |
| All forces and torques relate to the following: | | | | | | | | | | | | | | |
| existing values | $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$ | | | | | | | | | | | | | |
| table values | | | | | | | | | | | | | | |
| No-load torque | | | | | | | | | | | | | | |
| Nm | 0,2 | | 0,6 | | 1,2 | | 1,2 | | 1,8 | | 1,8 | | 2,6 | |
| Speed | | | | | | | | | | | | | | |
| (m/sec) max | 2 | | 4 | | 5 | | 5 | | 6 | | 6 | | 8 | |
| Tensile force | | | | | | | | | | | | | | |
| permanent (N) | 200 | | 390 | | 900 | | 900 | | 1900 | | 1900 | | 3600 | |
| 0,2 sec (N) | 280 | | 480 | | 1000 | | 1000 | | 2090 | | 2090 | | 4000 | |
| Geometrical moments of inertia of aluminium profile | | | | | | | | | | | | | | |
| I_x mm ⁴ | 4,09x10 ⁴ | | 1,32x10 ⁵ | | 6,79x10 ⁵ | | 6,79x10 ⁵ | | 18,99x10 ⁵ | | 18,99x10 ⁵ | | 44,4x10 ⁵ | |
| I_y mm ⁴ | 4,00x10 ⁴ | | 1,34x10 ⁵ | | 6,97x10 ⁵ | | 6,97x10 ⁵ | | 18,97x10 ⁵ | | 18,97x10 ⁵ | | 44,8x10 ⁵ | |
| E-Modulus N/mm ² | 70000 | | 70000 | | 70000 | | 70000 | | 70000 | | 70000 | | 70000 | |

For life-time calculation of rollers use our CD-ROM or homepage!

Formula: ELZU

Driving torque:

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

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

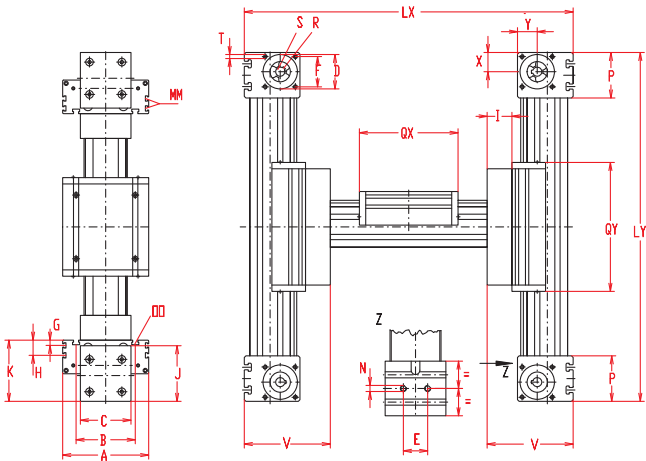
F = force (N)
 p = pulley action perimeter (mm)
 S_i = safety factor 1,2 ... 2
 M_{leer} = no-load torque (Nm)
 n = rpm pulley (min⁻¹)
 M_o = driving torque (Nm)
 P_o = motor power (KW)

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

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

Positioning system ELZU 30, 40, 60, 60S, 80, 80S, 100

Dimensions (mm)



3.1

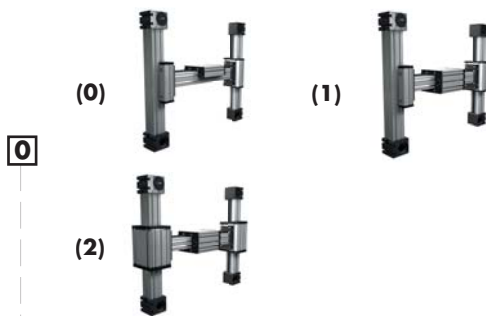
*For slide nuts refer to chapter 2.2 page 2

| Size | Basic length | | A | B | C | D | E | F | G | H | I | J | K | MM for | N for | OO for | P | Qx | Qy | T | V | X | Y | Basic weight | Weight per 100 mm |
|----------|--------------|-----|-----|-----|-----|----|----|----|------|----|----|-----|-----|--------|-------|--------|-----|-----|-----|------|-----|------|------|--------------|-------------------|
| | Lx | Ly | | | | | | | | | | | | | | | | | | | | | | | |
| ELZU 30 | 240 | 210 | 70 | 56 | 42 | 28 | 13 | 25 | - | - | 27 | 44 | 47 | - | M 5 | M 6 | 36 | 82 | 126 | M 5 | 74 | 16 | 16 | 6,3 kg | 0,13 kg |
| ELZU 40 | 304 | 250 | 100 | 66 | 58 | 37 | 18 | 32 | - | - | 26 | 58 | 64 | - | M 6 | M 6 | 49 | 124 | 149 | M 5 | 90 | 20,5 | 20,5 | 6,8 kg | 0,24 kg |
| ELZU 60 | 426 | 330 | 144 | 96 | 80 | 47 | 30 | 42 | - | - | 33 | 82 | 90 | - | M 8 | M 8 | 59 | 168 | 210 | M 6 | 123 | 27 | 26 | 14,7 kg | 0,62 kg |
| ELZU 60S | 450 | 330 | 170 | 108 | 80 | 47 | 30 | 42 | - | - | 33 | 82 | 94 | - | M 8 | M 8 | 59 | 194 | 210 | M 6 | 127 | 27 | 26 | 17,7 kg | 0,62 kg |
| ELZU 80 | 535 | 435 | 170 | 117 | 100 | 68 | 40 | 60 | 10 | 30 | 44 | 110 | 121 | M 6 | M 10 | M 10 | 90 | 195 | 245 | M 8 | 165 | 39 | 38 | 31,0 kg | 1,00 kg |
| ELZU 80S | 555 | 455 | 190 | 126 | 100 | 68 | 40 | 60 | 12,5 | 30 | 44 | 110 | 122 | M 6 | M 10 | M 8 | 90 | 214 | 265 | M 8 | 167 | 39 | 38 | 32,0 kg | 1,00 kg |
| ELZU 100 | 758 | 590 | 230 | 155 | 130 | 90 | 50 | 80 | - | 29 | 69 | 135 | 154 | M 10 | M 12 | M 10 | 110 | 300 | 360 | M 10 | 223 | 50 | 50 | 47,3 kg | 1,40 kg |

Choice of guide body profile:

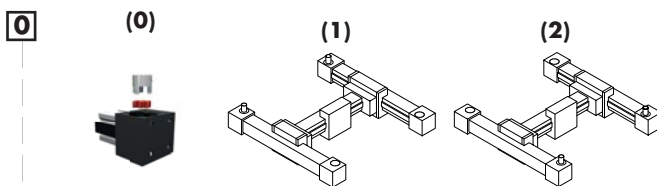
- 0** (0) Standard (1) stainless guide rods (2) stainless guide rods and screws (3) stainless guide rods, rollers and screws

Choice of carriages:



| Size | Version 1 | | | | Version 2 | | | |
|------|-----------|-----|-----|-----|-----------|-----|-----|-----|
| | Qx | Lx | Qy | Ly | Qx | Lx | Qy | Ly |
| 30 | 94 | 252 | 126 | 210 | 94 | 252 | 138 | 222 |
| 40 | 138 | 320 | 147 | 250 | 138 | 320 | 163 | 266 |
| 60 | 184 | 442 | 210 | 330 | 184 | 442 | 226 | 346 |
| 60S | 214 | 468 | 210 | 330 | 214 | 468 | 226 | 350 |
| 80 | 210 | 551 | 244 | 435 | 210 | 551 | 260 | 451 |
| 80S | 234 | 575 | 264 | 455 | 234 | 575 | 284 | 475 |
| 100 | 316 | 774 | 360 | 590 | 316 | 774 | 376 | 606 |

Selection of shaft mounting:



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.

Belt table

| Code No. | Size | Belt | mm/rev. | Number of teeth |
|----------|--------|------|---------|-----------------|
| 0 1 | 30 | 3M12 | 75 | 25 |
| 0 3 | 40 | 5M15 | 100 | 20 |
| 0 4 | 60 [S] | 5M25 | 130 | 26 |
| 0 7 | 80 [S] | 8M30 | 192 | 24 |
| 0 9 | 100 | 8M50 | 256 | 32 |

Shaft dimensions

| Size | Shaft $\varnothing h6 \times$ length | Key |
|--------|--------------------------------------|--------|
| 30 | 6 x 15 | 2x2x12 |
| 40 | 10 x 27 | 3x3x25 |
| 60 [S] | 14 x 35 | 5x5x28 |
| 80 [S] | 18 x 45 | 6x6x40 |
| 100 | 22 x 45 | 6x6x40 |

X-Axis Basic length + stroke = total length

Y-Axes Basic length + stroke = total length

ELZU 60 7 0 0 0 0 4 1 01500

ELZU 60 8 0 0 0 0 4 1 00700

Pos. 1 2 3 4 5 6 7

Sample ordering code:

ELZU 60 with standard body profile, standard carriage, coupling claw on one side, stroke X = 1074 / Y = 370 mm

For combination kits and connecting elements refer to chapter 2.2

