



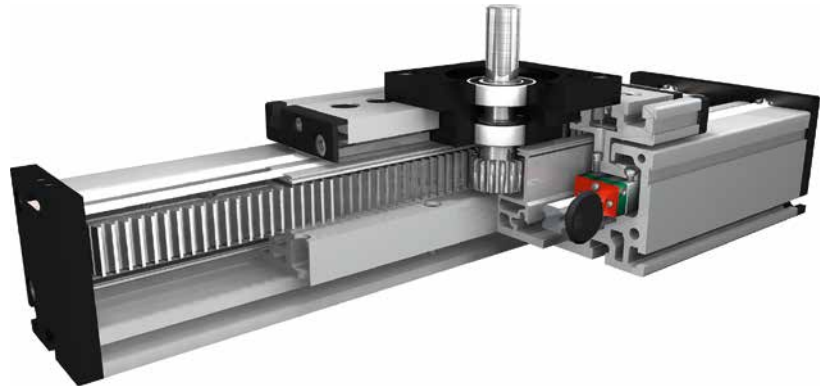
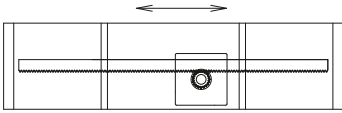


Linear system **DSZA 160, 200**

RACK AND PINION DRIVE

-  HIGH LOADS
-  HIGH DYNAMICS
-  LONG TRAVERSE PATH > 6000 MM
-  SPACE SAVING



Function:

This unit consists of a rectangular aluminium profile with 2 integrated rail guides. The carriage is driven by a pinion on a high precision rack. The rack and pinion system is suitable for highly dynamic servo operation and ideal for lifting movements. The pinion is equipped with maintenance-free ball bearings. The rack is lubricated by a toothed felt wheel. With this series, multi-part assembled units with long strokes can be realized.

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.

Rack:

6h23 Modul 2 (hardened and ground), 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) | | 894 | 800 | 1900 | 1800 | 4000 | 3800 |
| 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 |
| All forces and torques related 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 without cover bands | | 1,2 | | 1,5 | | 2,0 | |
| Nm with cover bands | | 1,6 | | 2,1 | | 4 | |
| Speed | | | | | | | |
| (m/s) max | | 5 | | 5 | | 5 | |
| Tensile force | | | | | | | |
| permanent (N) | | 900 | | 1900 | | 4000 | |
| 0,2 s (N) | | 1000 | | 2090 | | 4300 | |
| Geometrical moments of inertia of aluminium profile | | | | | | | |
| I_y mm ⁴ | | 5,61x10 ⁵ | | 2,13x10 ⁶ | | 4,81 x10 ⁶ | |
| I_z mm ⁴ | | 34,19x10 ⁵ | | 12,33x10 ⁶ | | 26,0 x10 ⁶ | |
| Elastic modulus N/mm ² | | 70000 | | 70000 | | 70000 | |

For life-time calculation use our homepage.

* referred to life-time

Driving torque:

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

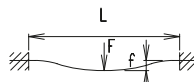
$$P_o = \frac{M_o \cdot n}{9550}$$

F = force (N)
 P = pulley action perimeter (mm)
 S_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:

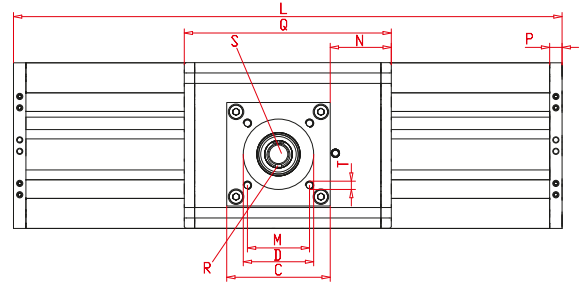
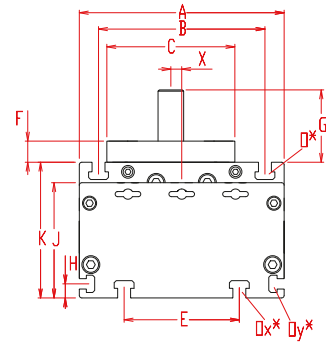
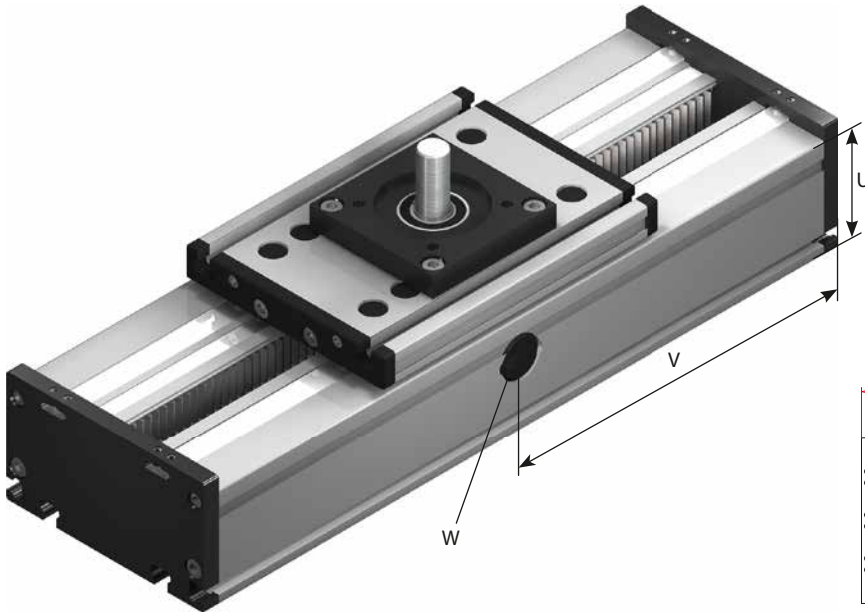
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

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



Linear system **DSZA 160, 200**

Dimensions (mm)



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

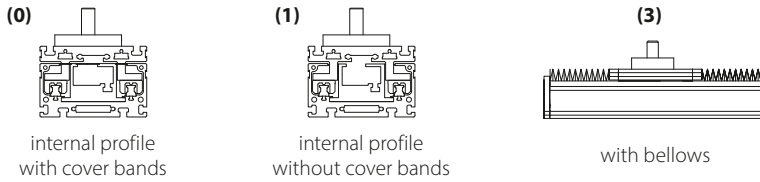
W = servicing position

*For slide nuts refer to chapter 2.2 page 2

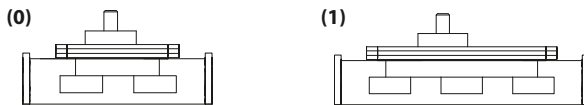
Increasing the carriage length will increase the basic length by the same amount.

| Size | Basic length L | A | B | C | D ±0,05 | E | F | G | H | J | K | M | N | O for | Ox for | Oy for | P | Q | T for | U | X | Basic weight | Weight per 100 mm |
|-----------------|----------------|-----|-----|-----|---------|-----|------|------|----|-----|-----|----|----|-------|--------|--------|----|-----|-------|-----|-----|--------------|-------------------|
| DSZA 160 | 250 | 160 | 130 | 100 | 68 | 90 | 16,5 | 56,5 | 11 | 90 | 106 | 60 | 62 | M 8 | M 8 | M 6 | 12 | 224 | M 8 | 80 | 8,5 | 9,4 kg | 2,15 kg |
| DSZA 200 | 320 | 200 | 160 | 120 | 90 | 140 | 20 | 45 | 15 | 110 | 129 | 80 | 95 | M 10 | M 10 | M 8 | 15 | 270 | M 8 | 100 | 9 | 28,9 kg | 7,10 kg |

0 Choice of guide body profile: Stainless versions upon request.

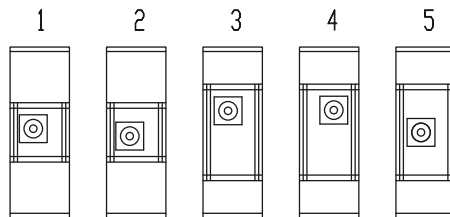


0 Choice of carriage:



| Size | Version 0 | | Version 1 | |
|------------|-----------|-----|-----------|-----|
| | Q | L | Q | L |
| 160 | 224 | 250 | 360 | 390 |
| 200 | 270 | 320 | 320 | 360 |

1 Drive version:



Shaft dimensions:

| Size | Shaft ø h6 x length | Key | Pinion | |
|------------|------------------------|--------|--------|-------|
| | S | R | mm/U | Modul |
| 160 | 20 x 40 | 6x6x35 | 100,53 | 2 |
| 200 | 18 x 26 | 6x6x20 | 94,25 | 2 |

DSZA 160 1 0 0 1 0 0 1 1500

Basic length + stroke = total length

Pos. 1 2 3 4 5 6 7

Sample ordering code:

DSZA 160 with internal profile and cover bands, standard carriage, 1250mm stroke.