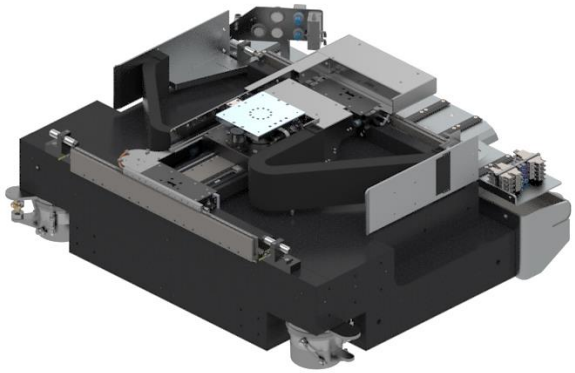
Key Features

- Travel Range 350 mm x 450 mm
- High Precision Coplanar Axis System
- Gantry with Vacuum Preload Slide
- Ideal for Positioning Tasks in the nm Range
- Max. Load 250 N
- Extensible with Dynamic Z-/C-Axis



High Precision Gantry Stage 350 x 450 mm

Concept and Design

The EZ-0715 Gantry Stage is designed for high precision applications.

Incremental measuring systems (Heidenhain LIP6 G0) and an optimized design allow a positioning accuracy of ± 250 nm and a repeatability of ± 25 nm for the single axes.

The vacuum-preloaded slide and optimized mass distribution enable high rigidity in the smallest installation space.

Ironless motors enable an acceleration of up to 10 m/s^2 and a travel speed of up to 1 m/s. The end position is detected by inductive sensors.

The slides are supplied with energy separately via symmetrically attached drag chains. The machine bed of the Gantry Stage is made of granite.

Both axes can be customized. The XY system can be expanded to include a Z- and/or C-Axis.

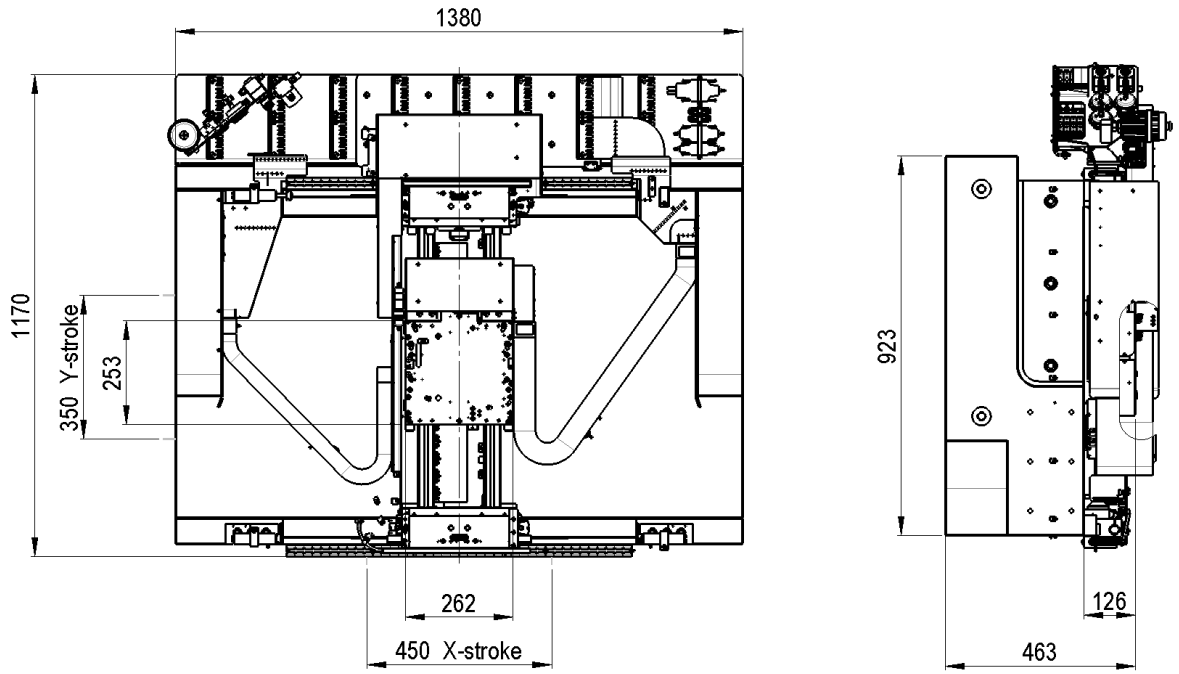
Applications

High-precision positioning tasks, scanning, exposure, laser engraving, laser processes in general.

Drive Control

We offer the EZ-0715 gantry stage with the following drive controllers:

- ACS Controller with NanoPWM Drive



Specifications

Type	Unit	Value
Stroke	mm	350 x 450
Accuracy for Single Axis, compensated [1]	nm	± 250
Repeatability (bidirectional) [2]	nm	± 20
Position Stability	nm	15
Vertikal Straightness, compensated	nm	± 250
Horizontal Straightness	µm	± 1.5
Pitch	µrad	5
Yaw X	µrad	1
Yaw Y	µrad	3
Max. Speed unloaded	m/s	0.5
Max. Acceleration unloaded	m/s^2	10

Mechanical Data	Unit	Value
Mounting Position		horizontal
Dimension L x W x H (ca.)	mm	1,170 x 1,380 x 463
Max. Load	kg	25
Moving Mass Upper Axis	kg	18
Moving Mass Lower Axis	kg	32
Total Mass	kg	1,300

Encoder		Value
Type [3]		incremental
Sensor Signal		1 Vpp, 4 µm signal period

Drive	Unit	Value
Type		3-phase, synchronous, iron-less
Max. Voltage ph-ph	V_{AC}	300
Continuous Force X (2 motors) / Y	N	1,200 / 340
Peak Force X/Y	A_{rms}	16.8 / 8.4
Back-EMK ph-ph	V/m/s	55.5
Force Constant	N/A	68

Interface and Environment	Unit	Value
Supply Pressure	bar	5
Air Consumption	Sl/min	20
MTBF	h	> 20,000
Limit Switch		PNP
Clean Room Suitability [4]		applicable

Drive Control		Value
High End		ACS NanoPWM

1) in the middle of travel
2) in quasi static mode
3) absolute encoder possible on request
4) depending on detail design

Subject to technical modifications and typographical errors.