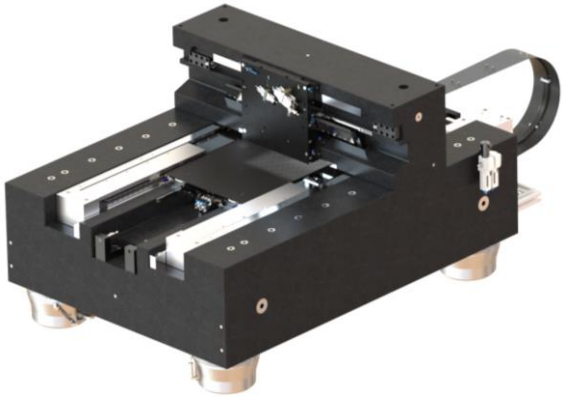
EZ-0730

EITZENBERGER
KINEMATIK MIT LUFT

Key Features

- Y/X Stage with Vakuum Chuck
- Ultra High Speed
- Impulse Decoupled X Stage
- Short Move and Settle Time
- Repeatability in nm Range
- Reduced weight due to carbon components



High Precision Impulse Decoupled Stage

Concept and Design

Intelligent design gives the EZ-0730 stage maximum rigidity and excellent repeatability, minimizing axis crosstalk.

Built-in features:

- Impulse decoupling to minimize crosstalk even at high accelerations.
- Weight optimization by using carbon for the lower slide.
- Use of carbon structures with thermal expansion close to 0 to minimize harmful temperature effects.
- Extremely rigid chuck due to integrated flat 11-zone vacuum clamping device with high-precision tip/tilt adjustment using sophisticated pressure membrane technology.
- Minimization of disturbance forces emanating from the energy chain due to novel drag chain concept.
- Ironless drives and high-precision scales (Heidenhain LIP6 G0).

The machine bed is made of granite. The axes can be customized according to the customer's requirements.

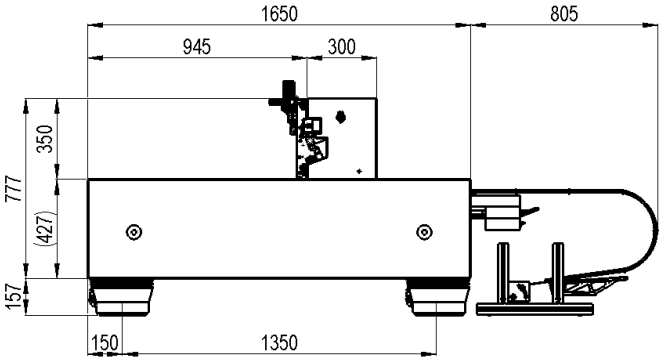
Applications

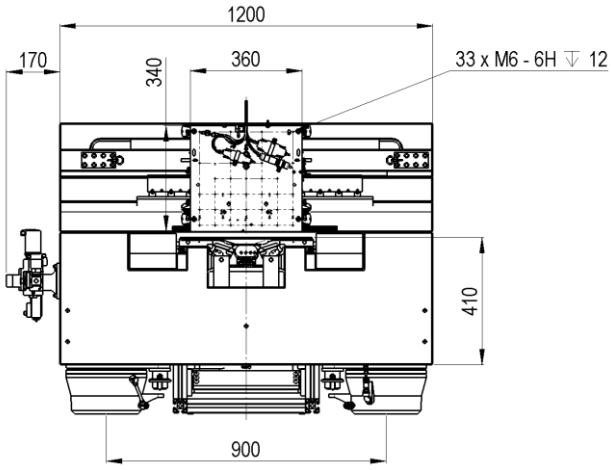
High-precision positioning, scanning, exposure, laser engraving, laser processes in general.

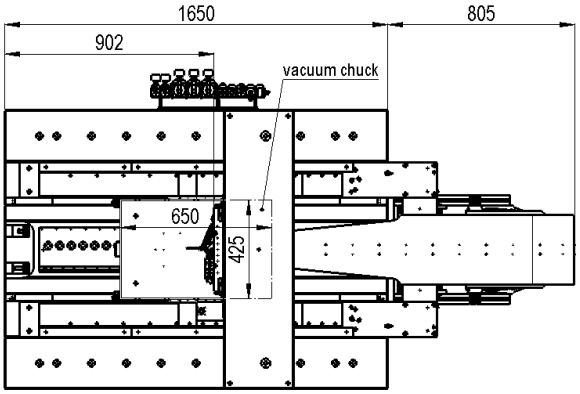
Drive Control

We offer the EZ-0730 stage with the following drive controller:

- Triamec







Specifications

Type	Unit	Value
Positioning Range	mm	850 x 500
Accuracy for Individual Axis, compensated	nm	< ±200
Differental Accuracy Y Axis, step to step (3σ)	nm	< 1
Repeatability (3σ, bidirectional)	nm	X < 40 / Y < 20
Position Stability Y at max. acceleration X	nm	< 20
Settle Time X-Axis (stoke 4 mm, position error < 20 nm)	msec	30
Horizontal Straightness	µm	< 2
Vertical Straightness (X Axis)	µm	< 3
Pitch	µrad	< ±4
Yaw	µrad	< ±3
Tip/Tilt Adjustment Range	mm	0.2
Tip/Tilt Adjustability	µrad	< 1
Max. Speed unloaded (X/Y)	mm/s	X = 1,500 / Y = 500
Max. Acceleration unloaded (X/Y)	mm/s^2	X = 80,000 / Y = 2,000

Mechanical Data	Unit	Value
Lower Axis (X)		active impulse decoupled
Dimension B x W x H (without drag chain, incl. air springs)	mm	1,280 x 1,880 x 950
Max. Payload (for dynamic applications)	kg	X = 5 / Y = 8
Moving Mass Upper Axis (Y)	kg	40
Moving Mass Lower Axis (X)	kg	26
Total Mass	kg	3,200

Encoder		Value
Type		incremental
Signal		1 Vpp, 4 µm signal periode

Drive	Unit	Value
Type		3-phase, synchronous, ironless
Intermediate Circuit Voltage	V_{DC}	up to 300
Constant Force X (2 Drives) / Y	N	564 / 58
Peak Force X / Y	A_{rms}	22.6 / 5.5
Back-EMK ph-ph X / Y	V/m/s	101 / 30
Force Constant	N/A	124 / 36.3

Interfaces and Environment	Unit	Value
Supply Pressure	bar	5
Air Consumption	Sl/min	35
MTBF	h	> 20.000
Limit Switch		PNP
Clean Room Suitability		applicable

Drive Control		Value
High end		Triamec

Subject to technical modifications and typographical errors.