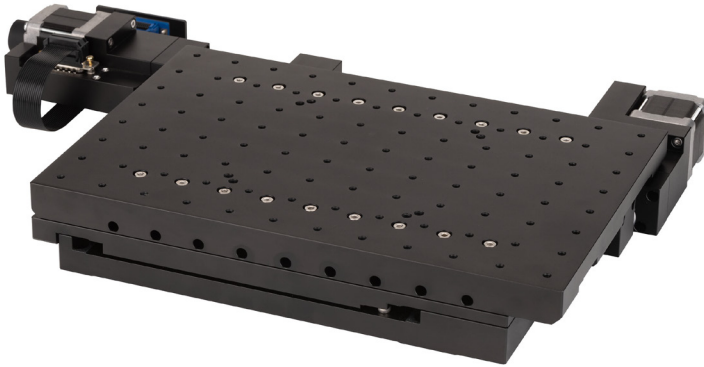


Motorized OEM XY Stage

Low Price with High Quantities



M-971

- XY stage for the price-sensitive applications
- Precise stepper motors
- Crossed roller guides
- Limit and reference point switches (Hall effect)

XY stage for the price-sensitive OEM market

The M-971 is integrated into systems for inspection, lithography, or biomedical engineering and is optimized for optical microscopy. It was specially developed to meet the requirements of price-sensitive OEM markets. Proven and cost-optimized components form its basis:

- The design of the guides which includes several short crossed roller guides distributes the load evenly over a large surface and ensures high stiffness and good travel accuracy.
- The drivetrain is based on a widely used linear stage from PI. Its reliability and long lifetime have been proven in use for years.
- By using stepper motors, encoders can be dispensed with and a simple stepper motor controller can be used. The XY stage is equipped with limit and reference switches to ensure fast and precise referencing and safety during operation.

Specifications

Motion and positioning	Unit	Tolerance	M-971.01
Active axes			X, Y
Travel range in X	mm		50
Travel range in Y	mm		25
System resolution in X	nm		2.5
System resolution in Y	nm		2.5
Minimum incremental motion in X	μm	typ.	0.2
Minimum incremental motion in Y	μm	typ.	0.2
Unidirectional repeatability in X	μm	typ.	1
Unidirectional repeatability in Y	μm	typ.	1
Backlash in X	μm	typ.	6
Backlash in Y	μm	typ.	6
Velocity in X	mm/s	max.	10
Velocity in Y	mm/s	max.	10
Reference switch			Hall effect
Reference switch repeatability	μm	typ.	1
Limit switch			Hall effect
Rotational crosstalk in θY with motion in X	μrad	typ.	±50
Rotational crosstalk in θZ with motion in X	μrad	typ.	±50
Rotational crosstalk in θX with motion in Y	μrad	typ.	±50
Rotational crosstalk in θZ with motion in Y	μrad	typ.	±50

Mechanical properties	Unit	Tolerance	M-971.01
Drive screw type			Leadscrew
Drive screw pitch	mm		1
Guide type			Crossed roller guide
Drive force in X	N		50
Drive force in Y	N		50
Holding force in X, passive	N		200
Holding force in Y, passive	N		200
Load capacity	N		200
Overall mass	g	±5 %	8460

Drive properties	Unit	Tolerance	M-971.01
Motor type			Stepper motor
Nominal current, RMS	A	max.	1.2
Resistance	Ω		2.6
Inductance	mH		1.9
Motor resolution	Full steps/rev.		400

Miscellaneous	Unit	Tolerance	M-971.01
Material			Aluminum, black anodized
Connector			2 × D-sub 15-pin (m)
Recommended controllers/drivers			C-663.11 C-663.12

Ordering Information

M-971.01

OEM-XY stage, 50 mm × 25 mm travel range, stepper motor, Hall effect limit switches

Please note, this product is only available in quantities of 100 or more. For customer-specific adaptations, please contact PI.