

M-105 · M-106

Translation Stages with Crossed Roller Bearings

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M-106.10 translation stage with differential micrometer drive

- Travel Range to 18 mm
- All-Stainless-Steel Construction
- XY and XYZ Combinations
- Resolution to 0.1 µm
- Optional PiezoMike for 10 nm Resolution
- Optional Motor Drives

M-105 and M-106 are micrometer-driven translation stages with travel ranges of 18 mm and 5 mm, respectively. The carriage is spring preloaded against the micrometer tip for excellent repeatability and elimination of backlash. M-105 and M-106 stages are available in one-, two- or three-axis configurations. Precision crossed roller bearings guarantee straightness of travel of better than 2 µm. The M-106 is equipped with a differential micrometer drive providing resolution of 0.1 µm.

PiezoMike Option

Versions with PiezoMike drive provide additional 30 µm fine range for remotely controlled ultra-high-resolution (e.g. scanning or tracking, see page 7-86 for further details and recommended controllers).

The vertical stage in the XYZ assembly supports the load through the micrometer spindle (not the preload springs) providing excellent stability.

Motor Drive Upgrades

Two motor drives are available, the M-231.17 and the M 232.17 actuators (see page 7-80, page 7-81). Both provide resolution better than 0.1 µm.

Notes

See "Accessories", page 7-92 ff. for adapters, brackets, etc.

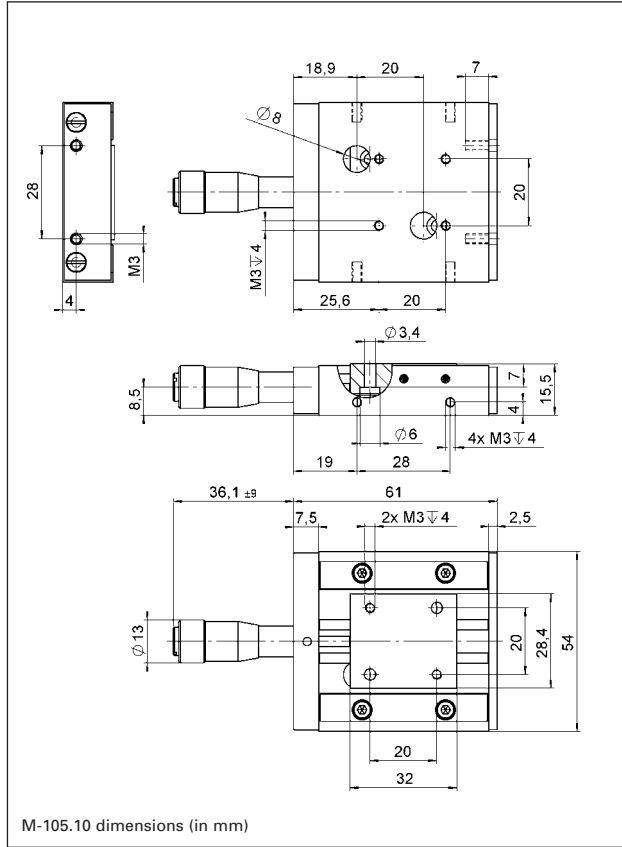
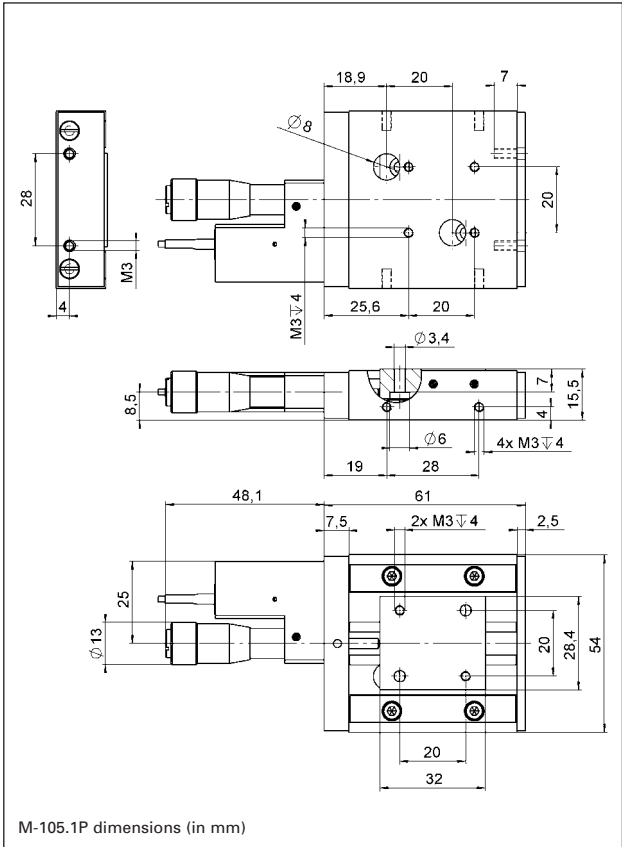
Technical Data

Models	M-105.10*	M-105.1P*	M-106.10*	Units	Notes see page 7-106
Travel range	18	18	5	mm	
Piezo fine travel range	-	30	-	µm	
Min. incremental motion (piezo drive) -		0.01	-	µm	A4
Min. incremental motion (micrometer drive) **	1	1	0.1	µm	A4
Backlash	2	2	2	µm	
Straightness	2	2	2	µm	
Flatness	2	2	2	µm	
Max. normal load capacity	10	10	10	kg	B1
Max. push/pull force	20 / 4	20 / 4	20 / 4	N	B2
Max. lateral force	4	4	4	N	
Drive	M-626.00	P-854.00	M-653.00		
Micrometer pitch	0.5	0.5	0.4 / 0.02	mm/rev.	
Weight	0.32	0.38	0.33	kg	
Body material	St	St	St		L
Recommended piezo driver (codes explained see page 6-11)	-	A, C, G	-		

* Versions M-105.2x, M-106.2x and M-106.x0 are combinations of the basic .1x versions.
 ** Motorized versions achieve up to 100 nm.

Ordering Information

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|---|--|
| M-105.10
Translation Stage, 18 mm | M-105.2B
XY Translation Stage, Basic Unit, order drives separately |
| M-105.11
Translation Stage, 18 mm w/ Lockable Micrometer | M-105.3BA
XYZ Translation Stage, Basic Unit (includes M-105.VB1, top mount Z-bracket), order drives separately |
| M-105.20
XY Translation Stage, 18 mm | M-105.3BB
XYZ Translation Stage, Basic Unit (includes M-009.10, side mount Z-bracket), order drives separately |
| M-105.30
XYZ Translation Stage, 18 mm (includes M-009.10, side mount Z-bracket) | Accessories |
| M-105.1P
Translation Stage, 18 mm, PiezoMike Drive | M-231.17
High-Resolution Closed-Loop DC-Mike Actuator |
| M-105.2P
XY Translation Stage, 18 mm, PiezoMike Drive | M-232.17
Compact High Resolution Closed-Loop DC-Mike Actuator |
| M-105.3P
XYZ Translation Stage, 18 mm, PiezoMike Drive (includes M-009.10, side mount Z-bracket) | M-009.10
Z-axis Mounting Bracket for Vertical Mount of M-105/6 (attaches to side of M-105) |
| M-106.10
Translation Stage, 5 mm, Differential Micrometer | M-105.VB1
Z-axis Mounting Bracket for Vertical Mount of M-105/6 (attaches to top of M-105) |
| M-106.20
XY Translation Stage, 5 mm, Differential Micrometer | M-009.20
Mounting Bracket for Mounting P-280 PZT NanoPositioning Systems or F-010 Fiber Holders |
| M-106.30
XYZ Translation Stage, 5 mm, Differential Micrometer (includes M-009.10, side mount Z-bracket) | M-009.30
Z-axis Mounting Bracket for Vertical Mount of M-105/6 Stages on PI Standard Hole Pattern |
| M-105.1B
Translation Stage, Basic Unit, order drives separately | Ask about custom designs! |



Piezo Actuators

Nanopositioning & Scanning Systems

Active Optics / Steering Mirrors

Tutorial: Piezo-electrics in Positioning

Capacitive Position Sensors

Piezo Drivers & Nanopositioning Controllers

Hexapods / Micropositioning

Photonics Alignment Solutions

Motion Controllers

Ceramic Linear Motors & Stages

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