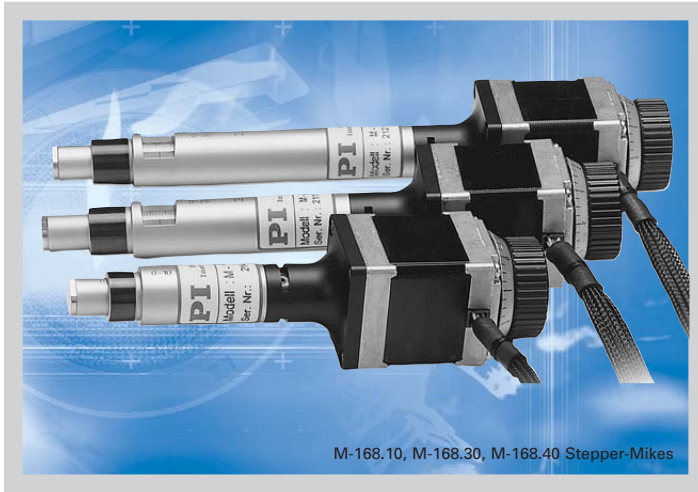


M-168

High-Resolution Stepper-Mike Actuators

>> Click <http://www.pi.ws/fwd/Micropositioning> for the Latest Specs on these Products



M-168.10, M-168.30, M-168.40 Stepper-Mikes

- 10, 25 & 50 mm Travel Ranges
- Resolution <0.1 μm
- 2- and 5-Phase Stepper Motor
- Manual Positioning Knob
- Sub-nm Resolution with Optional PZT Actuator
- >5,000 Hours MTBF

M-168 are compact, high-resolution linear actuators providing linear motion up to 50 mm with sub-micron resolution. They consist of a micrometer-drive with non-rotating tip driven by a 2000 half-step/revolution, 5-phase stepper motor or a 20,000 microstep/rev, 2-phase stepper motor.

with standard flat tips (see page 7-85 for spherical tips and other options).

High-Resolution Piezo Option

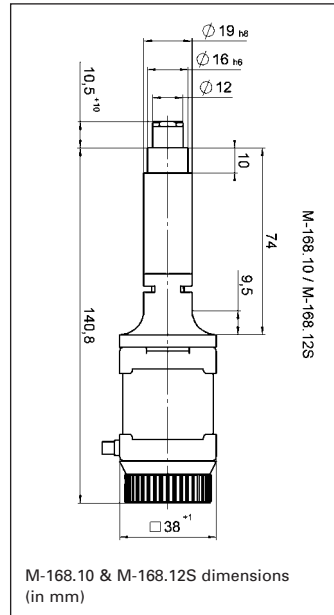
The optional piezo tip provides 20 μm travel with sub-nanometer resolution for dynamic scanning and tracking (see page 1-33).

Non-Rotating Tip

Compared to conventional rotating-tip micrometer drives, the non-rotating-tip design offers the following advantages:

- Elimination of torque-induced stage platform tilt
- Elimination of wear at the contact point
- Elimination of tip-angle-dependent wobble

M-168 Stepper-Mikes feature an extremely low-stiction, low-friction construction allowing for high resolution and repeatability. A manual positioning knob provides coarse resolution of 5 μm. All models come



Ordering Information

M-168.10
Stepper-Mike Actuator, 10 mm, 5-Phase Stepper

M-168.30
Stepper-Mike Actuator, 25 mm, 5-Phase Stepper

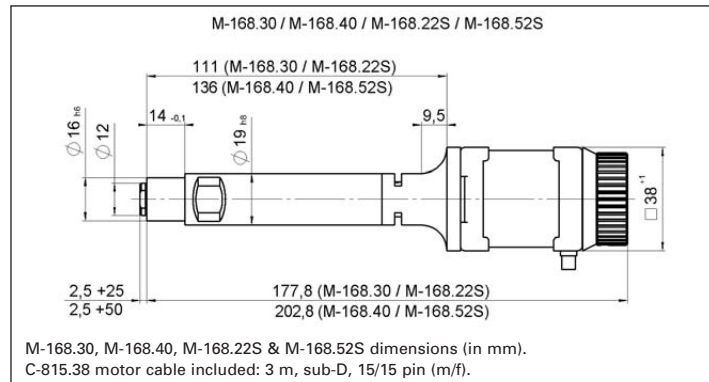
M-168.40
Stepper-Mike Actuator, 50 mm, 5-Phase Stepper

M-168.12S
Stepper-Mike Actuator, 10 mm, 2-Phase Stepper

M-168.22S
Stepper-Mike Actuator, 25 mm, 2-Phase Stepper

M-168.52S
Stepper-Mike Actuator, 50 mm, 2-Phase Stepper

Ask about custom designs!



Technical Data

Models	M-168.10	M-168.30	M-168.40	M-168.12S	M-168.22S	M-168.52S	Units	Notes
Travel range	10	25	50	10	25	50	mm	
Design resolution	0.25	0.25	0.25	0.025	0.025	0.025	μm	A3
Min. incremental motion	0.25	0.25	0.25	0.05	0.05	0.05	μm	A4
Unidirectional repeatability	0.25	0.25	0.25	0.1	0.1	0.1	μm	
Backlash	2	2	2	2	2	2	μm	
Max. velocity	3	3	3	5	5	5	mm/s	
Max. push/pull force	50	50	50	50	50	50	N	
Max. lateral force	0.02	0.02	0.02	0.02	0.02	0.02	N (at tip)	
Motor resolution	2000	2000	2000	20,000**	20,000**	20,000**	steps/rev.	
Drive screw pitch	0.5	0.5	0.5	0.5	0.5	0.5	mm	
Motor type	* 5-phase stepper	* 5-phase stepper	* 5-phase stepper	** 2-phase stepper	** 2-phase stepper	** 2-phase stepper		
Weight	0.4	0.45	0.5	0.4	0.45	0.5	kg	
Recommended motor controllers	-	-	-	C-600, C-630	C-600, C-630	C-600, C-630		D2

* 5-phase stepper, 24 V chopper voltage, 0.5 A / phase, 2000 half steps.
** 2-phase stepper, 24 V chopper voltage, max. 0.8 A / phase, 20,000 microsteps with C-600, C-630 controllers