

PZM-2000 OEM Manual Stage with Piezo Z-axis Top Plate

If you do not require automated XY movement, but do require automated Z-axis positioning for acquiring precise Z-axis stacks, then the PZM-2000 is the solution. On select models of inverted microscopes, ASI can modify or exchange your existing OEM stage with a PZM-2000 unit. We can procure a manual OEM stage for you, if necessary.

The PZM-2000 consists of ASI's proven piezo top plate mounted within your existing OEM stage. This requires a completely new top plate be machined for the OEM stage, however, this allows us to provide an elegant solution.

The optional PZM-C Controller compliments the ASI PZM-2000 piezo-Z manual microscope stage retrofit. The unit provides an LCD readout of position, an external focusing knob, RS-232 serial control, home & zeroing controls all in a small 6 x 4 inch footprint.

The PZM-2000 has been specifically designed to provide a high resolution, and highly repeatable, means of controlling the Z position of the microscope stage. The XY axes are manually controlled utilizing the original OEM stage controls. The piezo top plate of the stage accepts standard K-size slide inserts that are available for any sample, i.e., slides, Petrie dishes, multi-well plates, etc. The slide insert is moved in the Z-axis via a piezo element with a range of 100 μm and with nanometer accuracy (200 μm and 500 μm ranges are also available). By moving the sample in the Z-plane, any objective can be used, eliminating twisting wires or needed spacers as required when a piezo element is put onto a single objective. The piezo stage can be controlled remotely with a 0-10 volt D.C. analog input voltage, or optionally, with a PZM-2000 Controller or a calibrated manual ten-turn potentiometer.

Features

- Closed-loop control of Z-axes for precise, and highly repeatable focusing
- Nanometer-scale resolution, repeatability, and accuracy
- Proven operation with many popular software packages



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Specifications

XY axis range of travel	Standard OEM Stage
Z axis range of travel ($\pm 5\%$)	100 μm (200 μm and 500 μm versions optional)
Z axis resolution	1.5 nm
Z axis repeatability	± 1 nm
Z axis maximum velocity with settling time	5 mm/sec (~ 10 ms per move)
Z axis resonant frequency (unloaded)	> 1 KHz
Z axis top plate maximum load	500 grams
Z axis top plate stiffness ($\pm 20\%$)	3 N/ μm
Z axis top plate in-plane tilt (typical)	10 μrad



NANO-DRIVE™ Piezo Controller Specifications

Analog input (front panel BNC)	0.0 to 10.0 Vdc
Manual input (front panel Control Knob)	Ten-Turn Potentiometer
Stage interface	1.5 m cable with DB9 connector
Front panel adjustment	Sensor Offset
Output voltage range	-5 to +150 V
Output current	150 mA
Power requirement	120 VAC



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