



APPLIED SCIENTIFIC
INSTRUMENTATION

MS-2000 XYZ Automated Stage

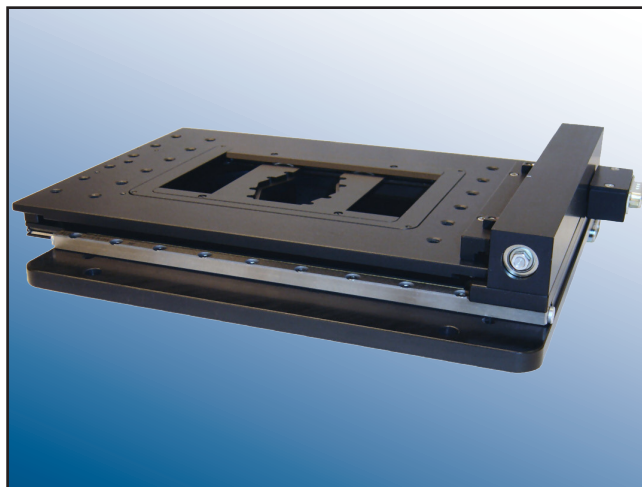
The MS-2000 XYZ stage has been specifically designed to provide a high resolution, and highly repeatable, means of controlling the X, Y, and Z position of the microscope stage. All axes derive their precise control through the use of closed-loop DC servomotors employing high-resolution rotary encoders for positioning feedback. By using closed-loop control of the stage position, there is no chance that the stage will become lost, as can occur with open-loop micro-stepped stages after a number of moves and direction changes. The MS-2000 XY stage utilizes crossed-roller slides, a high-precision lead screw, and zero-backlash miniature geared DC servomotors for smooth and accurate motion. The Z-axis drive also uses ASI's proven line of closed-loop motor drives, each custom fitted to the microscope. The microprocessor-controlled MS-2000 control unit provides for RS-232 and USB communication with a host computer.

Features

- Closed-loop DC servo control of the X, Y, and Z-axes for precise positioning and highly repeatable focusing
- Wide dynamic speed range with XY joystick control
- Utilizes ASI's proven Z-axis drives
- Z-axis clutch for easy switching between manual and motor-driven focus control
- Backlit LCD display shows X, Y, and Z coordinates
- "Zero" and "Home" button for simple stand-alone operations
- Compact ergonomic tabletop control unit size is 6"D x 9"W x 3"H (9 x 23 16½ cm)
- Microprocessor control with RS-232 serial and USB communications
- Proven operation with many popular software packages

MS-2000 Options

- X, Y, and Z-axis Linear Encoders for high-accuracy positioning and focus control
- Larger stage top plate for attachment of micromanipulators, microinjectors, etc.
- Stage Wings for even more room for attachments
- Auto-Focus for stages with ASI Z-axis drives (requires NTSC, PAL, or S-Video analog signal)
- Other lead screw pitches are available



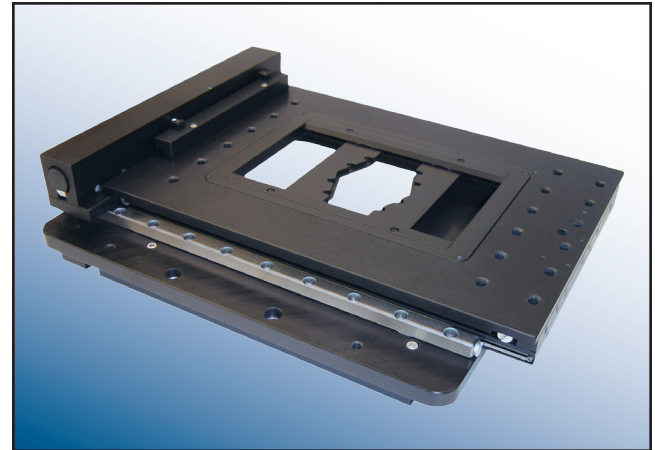


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Product Compatibility

- Leica – DMI3000, DMI4000, DMI5000, DMI6000, DMIRB, DMIRBE, DMIRE, DMIRE2
- Nikon – Diaphot TMD, Diaphot 200, Diaphot 300, Diaphot Eclipse TE200, Diaphot Eclipse TE300, Diaphot Eclipse TE2000, Eclipse Ti
- Olympus – BX50WI, IMT-2, IX50, IX51, IX70, IX71, IX81
- Zeiss – Axiovert 35, Axiovert 100, Axiovert 100M, Axiovert 135, Axiovert 135M, Axiovert 200, Axiovert 200M, Axio Observer



Specifications for Standard Configuration

| | |
|--|-----------------|
| XY axis range of travel | 120 mm x 110 mm |
| XY axis resolution (encoder step) | 22 nm |
| XY axis RMS repeatability | < 700 nm |
| XY axis maximum velocity | 7 mm /sec |
| Z axis resolution (encoder step) | 50 nm |
| Z axis repeatability | ± 100 nm |
| Z axis maximum velocity | 0.6 mm /sec |

**Shown with 6.35 mm pitch Lead Screw*

Lead Screw Options

| Lead Screw Pitch Options | Rotary Encoder Resolution | Maximum Speed |
|--------------------------|---------------------------|---------------|
| 25.40 mm (Ultra-coarse) | 88 nm | 28 mm/sec |
| 12.70 mm (Super-coarse) | 44 nm | 14 mm/sec |
| 6.35 mm (Standard) | 22 nm | 7 mm/sec |
| 1.59 mm (Fine) | 5.5 nm | 1.75 mm/sec |
| 0.635 mm (Extra-fine) | 2.2 nm | 0.7 mm/sec |

Linear Encoder Options

| Axis | Resolution | Scale Accuracy |
|----------------------------|------------|----------------------------|
| XY | 10 nm | ± 3 µm per length of scale |
| Z (12 mm and 25 mm stroke) | 50 nm | 0.025 µm per mm |