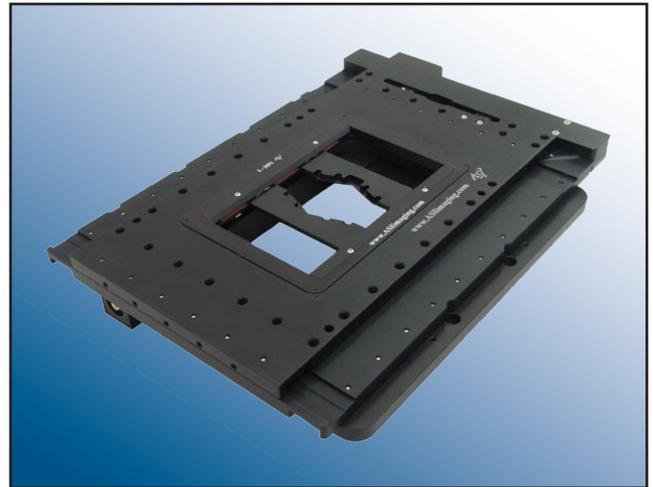




APPLIED SCIENTIFIC  
INSTRUMENTATION

## MS-2000 Flat Top XY Automated Stage

The MS-2000 Flat Top XY stage has been specifically designed to provide a high resolution, and highly repeatable, means of controlling the X, Y position of the microscope stage. The stage can be used in conjunction with ASI's proven line of Z-axis motor drives, each custom fitted to the microscope, for complete X, Y, and Z positioning. 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 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 and Y 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 x 16½ cm)
- Microprocessor control with RS-232 serial and USB communications
- Proven operation with many popular software packages
- Travel range will scan full well plate in most circumstances

### MS-2000 Options

- Piezo Top Plates with Z ranges of 150, 300, & 500 nm
- X and Y axes Linear Encoders for high-accuracy positioning
- 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

### Specifications for Standard Configuration

<b>XY axis range of travel</b>	120 mm x 75 mm
<b>XY axis resolution (encoder step)</b>	22 nm
<b>XY axis RMS repeatability</b>	< 700 nm
<b>XY axis maximum velocity</b>	7 mm /sec
<b>Max Recommended Load (*higher loads available upon request)</b>	5kg

*\*Shown with 6.35 mm pitch Lead Screw*



APPLIED SCIENTIFIC  
INSTRUMENTATION

# MS-2000 Flat Top XY Automated Stage

## 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	$\pm 3 \mu\text{m}$ per length of scale