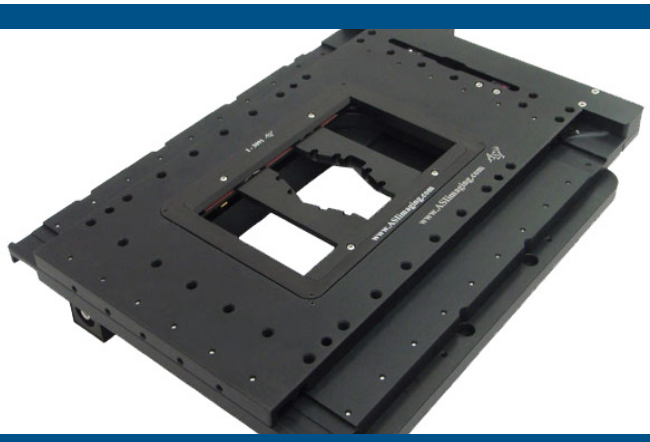
APPLIED SCIENTIFIC INSTRUMENTATION

MS-2000 Flat Top XY Automated Stage



The MS-2000 XY stage has been 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 servo motors 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 servo motors 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.

MS-2000 Options

- Linear encoders for high-accuracy positioning
- Larger stage top plate for attachment of micromanipulators, microinjectors, etc.
- Stage wings for even more room for attachments
- Autofocus for stages with ASI Z-axis drives (requires NTSC, PAL, or S-Video analog signal)
- Other lead screw pitches are available

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
- Proven operation with many popular software packages
- Travel range will scan full well plate in most circumstances

Specifications for Standard Configuration

X- and Y-axes range of travel	120 mm x 75 mm
X- and Y-axes resolution (encoder step)	22 nm
X- and Y-axes RMS repeatability	< 700 nm
X- and Y-axes maximum velocity	7 mm /s

**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/s
12.70 mm (Super-coarse)	44 nm	14 mm/s
6.35 mm (Standard)	22 nm	7 mm/s
1.59 mm (Fine)	5.5 nm	1.75 mm/s
0.635 mm (Extra-fine)	2.2 nm	0.7 mm/s

Linear Encoder Options

Axis	Resolution	Scale Accuracy
XY	10 nm	± 3 µm per length of scale