

SZ-2000 Stereoscopic Zoom Microscope Automation



Based on ASI's proven DC servo motor technology, the SZ-2000 automates stereo zoom microscopes. The unit can be configured for motorized focus only, motorized focus with automated zoom control, or motorized focus with automated zoom control and an automated XY translation stage. The Z axis focus resolution varies slightly depending upon the model of the microscope, with 0.8 microns being the smallest step size available on a Nikon SMZ800, shown.

An optional pair of footswitches permits hands-free operation of any axis featuring an increment mode, with continuous motion after the switch has been held down for 1.5 seconds. The increment step size per footswitch tap is selectable as well as the continuous mode speed. The footswitch option offers operators a convenient and ergonomic means of controlling the microscope for routine tasks such as embryo transplanting.



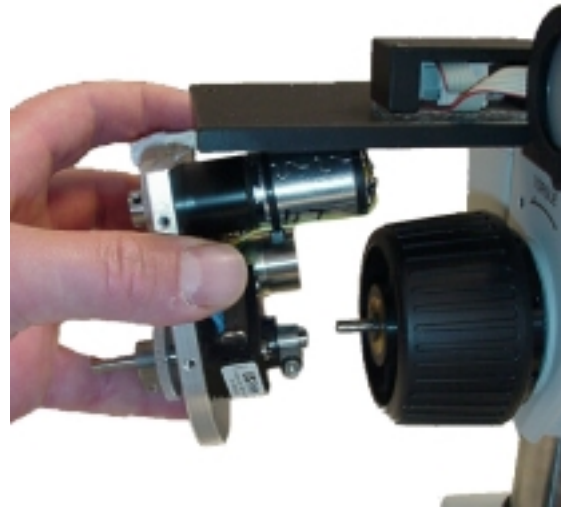
We Create Solutions

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Ultra precise DC servo motors and high resolution rotary encoders are used on all axes for smooth, error free operation. The Z-axis drive and automated zoom control are very easy to install and uses existing mount holes on the microscope so no modification of the microscope is necessary.

Since the ASI drive shaft clamps directly onto the microscope's fine focus shaft, the positioning is extremely accurate. A switch located on the control console operates a clutch that disengages the Z-drive motor drive from the fine focus shaft when the drive is not needed. When disengaged the microscope can be focused manually from both sides with the microscope's fine focus knobs. The position is continuously displayed and is still available for interrogation by computer. This feature lets the researcher note specific focus positions, or allows a computer to memorize them for later use in driving the Z-axis.

Precision gearing provides smooth control of the zoom function, and a precision DC servomotor with a built-in rotary encoder keeps track of positioning for error free operation.



Features

- ◆ Closed-loop DC servo control of all axes for precise positioning and highly repeatable focus and zoom
- ◆ Compact ergonomic tabletop control unit size is 6"D x 9"W x 3"H (9 x 23 x 16½ cm)
- ◆ Backlit LCD display shows coordinates
- ◆ Microprocessor control with RS-232 serial and USB communications
- ◆ Z-axis clutch for easy switching between manual and motor-driven focus control
- ◆ "Zero" and "Home" button for simple stand-alone operations

Specifications

Z axis resolution (encoder step)	0.8 µm
Z axis maximum velocity	12 mm/sec
XY axis range of travel*	100 mm x 100 mm
XY axis resolution (encoder step)*	0.088 µm
XY axis RMS repeatability*	< 0.7 µm
XY axis maximum velocity*	7 mm/sec

* Standard XY Stage Configuration with 6.35 mm pitch Lead Screws

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