

MFC-2000 Z-Axis Drive and Controller



The MFC-2000 has been specifically designed to provide a high resolution and highly repeatable, means of controlling the focus/Z position of the microscope stage. Precise control of the microscope's focus is obtained through the use of a closed-loop DC servomotor employing high resolution encoders for positioning feedback. By using closed-loop control of the focus position, there is no chance that the focus point can be lost as can occur with open-loop stepper motors.

Rather than a one-size-fits-all design, the Z-axis drive is custom designed for each microscope, and when installed, they become an integral part of the microscope. A switch located on the control console operates a clutch that disengages the motor drive from the fine focus shaft when the drive is not needed. When disengaged, the position still displays and is still available for interrogation by computer, and the microscope can be focused manually without any drag or twisting cables.

Installation of the Z-axis drive requires no modification to the microscope other than removal of the fine focus knob and replacement of a back plate or base plate, depending on the particular microscope. All of the necessary hardware components, tools and detailed instructions, including a videotape on installing the drive, are provided with every unit.

The microprocessor-controlled MFC-2000 control unit provides for RS-232 communication with a host computer. High-speed serial communication using USB is also possible.

Features

- Closed-loop DC servo control of z-axes for precise positioning and highly repeatable focusing
- Compact ergonomic tabletop control unit size is 6"D x 9"W x 3"H
- Backlit LCD display shows Z coordinates
- Utilizes ASI's proven Z-axis drives
- Microprocessor control with RS232-C serial communications
- Z-axis clutch for easy switching between manual and motor-driven focus control
- "Zero" and "Home" button for simple stand-alone operations
- USB serial computer interface

ASI Video Auto-Focus

Auto Focus option is available for stages with ASI Z-axis drives and requires a composite video signal (either NTSC or PAL).

Specifications for Standard Configuration

Z axis resolution (encoder step)	0.05 μm
Z axis repeatability	$\pm 0.1 \mu\text{m}$
Z axis maximum velocity	0.6mm/sec

Linear Encoder Options for Z-Axis

Type	Model	Resolution	Stroke
Heidenhain	MT 1271	50 nm	12 mm
Heidenhain	MT 2571	50 nm	25 mm

Product Compatibility

- Leica – Aristoplan, Diaplan, DM1000, DM2000, DM2500, DM4000, DM4500, DM5000, DM6000, DMIRB, DMIRBE, DMIRE, DMIRE2, DMLB, DMLS, DM-LFS, DMRB, DMRP, DMRXP, Laborlux-D, Laborlux-S, Microplan, Orthoplan
- Nikon – AZ100, Diaphot TMD, Diaphot 200, Diaphot 300, Diaphot Eclipse TE200, Diaphot Eclipse TE300, Diaphot Eclipse TE2000, Eclipse 80i, Eclipse 90i, Eclipse 400, Eclipse 600, Eclipse 600FN, Eclipse 800, Eclipse 1000, Eclipse Ti, Labophot, Microphot FXA, Microphot SA, Optiphot, Optiphot 1, Optiphot 2, Optiphot 200, Optiphot UD, SMZ800, SMZ1000, SMZ1500
- Olympus – AX70, BH2, BX41, BX50, BX50WI, BX51, BX51WI, BX60, BX61, BX61WI, IX50, IX51, IX70, IX71, MVX Stereo, MX50, SZX12 Stereo, SZX16 Stereo
- Zeiss – Axiomager, Axiolab, Axioplan, Axioplan II, Axiophot I, Axiophot II, Axioskop, Axioskop II, Axioskop FS, Axioskop FS II, Axiovert 35, Axiovert 100, Axiovert 100M, Axiovert 135M, Axiovert 200, Axio Observer, IMC 35, Standard 16, Universal

