

User Manual

Binocular Stereo Microscope

Model M428



MicroscopeNet.com

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i. Caution

1. Find the “UP” sign and place the Styrofoam container on your table or bench so that the arrow is pointing upward. Open the shipping carton carefully to prevent any accessory items, like eyepieces, from dropping and being damaged.
2. Do not discard the molded Styrofoam container. The container should be retained should the microscope ever requires reshipment.
3. Keep the instrument out of direct sunlight, high temperature or humidity, and dusty environments. Ensure the microscope is located on a smooth, level and firm surface.

ii. Care And Maintenance

1. Do not attempt to disassemble any components, like eyepieces, objectives or focusing assembly.
2. Keep the instrument clean; remove dirt and debris regularly. Accumulated dirt on metal surfaces should be cleaned with a damp cloth. More persistent dirt should be removed using a mild soap solution. **Do not use organic solvents for cleansing.**
3. The outer surface of the optics should be inspected and cleaned periodically using an air stream from an air bulb. If dirt remains on the optical surface, use a soft cloth or cotton swab dampened with a lens cleaning solution (available at camera stores). All optical lenses should be swabbed using a circular motion. A small amount of absorbent cotton wound on the end of a tapered stick makes a useful tool for cleaning recessed optical surfaces. Avoid using an excessive amount of solvents as this may cause problems with optical coatings or cemented optics or the flowing solvent may pick up grease making cleaning more difficult.
4. Store the instrument in a cool, dry environment. Cover the microscope with the dust cover when not in use.

1 Components Illustration



- 1. Diopter
- 2. Eyepiece
- 3. Eyepiece Tube
- 4. Viewing Head
- 5. Holding Ring
- 6. Set Screw

- 7. Objectives
- 8. Base
- 9. Stage
- 10. Zoom Knob
- 11. Stand Post
- 12. Upper Light

- 13. Focus Knob
- 14. Upper Light Switch/
Intensity Dial
- 15. Lower Light Switch/
Intensity Dial

2 Operation

2.1 Adjusting the illumination

- 1) Plug the power cord into a power outlet.
- 2) Turn the intensity dial (14) to switch on and adjust the brightness of upper (reflected) light.
- 3) Turn the intensity dial (15) to switch on and adjust the brightness of lower (transmitted) light.

2.2 Place the specimen

- 1) Put the specimen in the center of the stage plate (9).
- 2) Adjust the intensity dial of upper or lower light as necessary.

2.3 Focusing

- 1) Turn the zoom knob (10) to the lowest magnification 1X.
- 2) Turn the focus knob (13) until the specimen is in focus.
- 3) Turn the zoom knob (10) to the desired magnification.
- 4) If the image is not clear, turn the focus knob (13) slightly to get the specimen in focus.

2.4 Adjusting Interpupillary distance (Fig.1)

While observing with both eyes, hold the left and right eyepiece tubes (3) and slide in or out, and adjust the distance between your eyes and the eyepieces slightly.

The interpupillary distance is correct when the left and right fields of view converge completely into one image.

It may take some time to get the two view fields converge if you are not familiar with binocular observation.

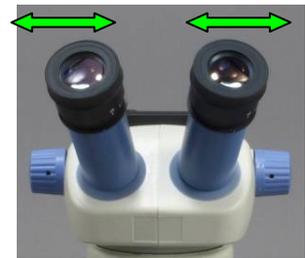


Fig. 1

2.5 Adjusting eyepiece diopter

- 1) Using your right eye only, observe your specimen through the right eyepiece and bring it into focus by adjusting the focus knob (13).
- 2) Then observe the specimen with your left eye only through the left eyepiece. If the specimen is not in focus, rotate the diopter ring (1) until a sharp image is obtained.
- 3) Since both sides are adjustable, you may also do the above in the opposite way, in other words, left eye first and right eye second.

2.6 Adjusting tension of focusing knobs (Fig.2)

The tightness of the tension has been pre-set at the factory. If the mechanical stage drops by itself, rotate the both focusing knobs with both hands to opposite directions at the same time to adjust the tension.

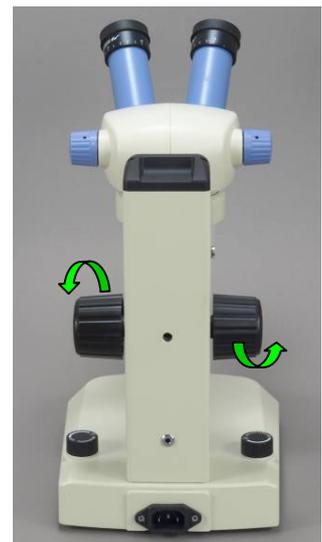


Fig. 2

3 Specifications

Model	M428
Total Magnification	Zoom 10X ~ 45X
Viewing Head	Binocular, inclined 45°, swiveling 360° Adjustable interpupillary distance 50 ~ 75mm (2" ~ 2-15/16")
Eyepieces	1 pair of wide field EW10X/22 Diopter adjustment on both eyepiece
Objectives	Zoom 1X ~ 4.5X Zoom ratio 1:4.5
Focusing Mechanism	Rack and pinion, focus knobs on both sides Range: 54 mm ~ 154 mm Tool free tension adjustment
Working Distance	100 mm (4")
Field of View	18.5 mm at 10X magnification 4.2 mm at 45X magnification
Stage Plate	Clear glass stage plate, 95 mm (3-3/4") in diameter White/Black plastic stage plate, 95 mm (3-3/4") in diameter
Illumination	Incident (upper): 12 LED with own switch/intensity knob Transmitted (lower): 7 LED with own switch/intensity knob
Power Supply	110V-240V, 50/60Hz, 0.5 A
Dimension	12-3/8" x 7-1/4" x 15-3/8" (31.5 cm x 18.5 cm x 39 cm)
Net weight	10 lb 5 oz (4.7 kg)

4 Troubleshooting Guide

Symptom	Cause	Remedy
Totally dark in the viewing field	The cover of objectives is still on	Take off the cover of objectives
Stains or dust on the field of view	Stains or dust on the eyepieces or objectives	Clean the lens with a camera cleaning kit
	Stains or dust on the specimen	Clean the specimen
Image moves while focusing	Specimen rises from stage surface	Secure the specimen
Lamp does not light when switched on	No electrical power	Check power outlet Check power cord connection
	Fuse blown out	Replace fuse