

User Manual

Shop Measuring Microscope

Model M51X series



MicroscopeNet.com

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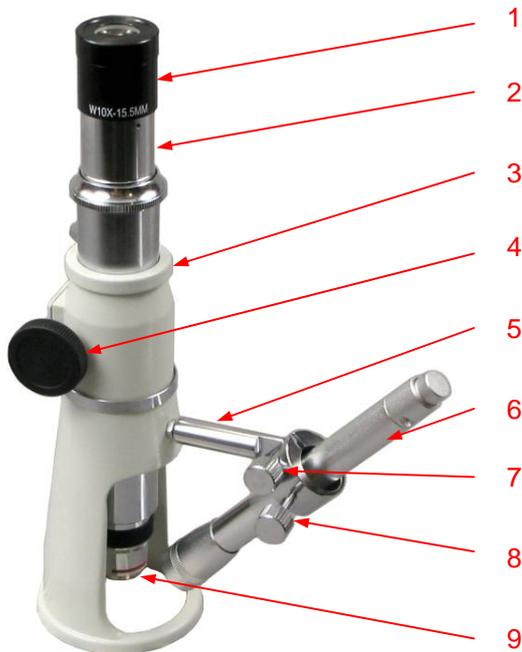
i. Caution

1. Open the shipping box carefully to prevent any accessory, like eyepieces, from dropping and being damaged.
2. Do not discard the shipping box. The box 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. Eyepiece
2. Eyepiece Tube
3. Limit Ring
4. Focusing Knob
5. Illumination Rack
6. Flashlight
7. Thumbscrew
8. Thumbscrew
9. Objective

Fig. 1

2 Installation

2.1 Installation of the eyepiece

- 1) Take off the cap on the eyepiece tube.
- 2) Insert the eyepiece into the eyepiece tube.

2.2 Installation of the flashlight (Fig.2)

- 1) Screw on the illumination rack (5); make sure the holder ring face down.
- 2) Tighten the screw nut with the wrench provided as shown in the figure 2.
- 3) Insert the flashlight (6) into the holder ring.
- 4) Adjust the angle and position of the flashlight, and then tighten the thumbscrew (7) and (8).



Fig. 2

2.3 Replacement of the objective (Fig.3 – Fig.7)

- 1) Turn the objective counter clockwise and take it off as shown in Fig.3 to Fig.5.



Fig.3

Fig.4

Fig.5

- 2) Screw on the objective that you want to use as show in Fig.6 and Fig.7.



Fig.6

Fig.7

3 Operation

3.1 Changing (installing) batteries

- 1) Take off the cap at the end of the flash light.
- 2) Put in 2 AAA batteries.
- 3) Put on and tighten the cap.

3.2 Placing the specimen

- 1) Clean the surface of the specimen.
- 2) Put the specimen on a table.
- 3) Put the microscope on the specimen.

Note: if you are working on the field or the specimen is big, you can put the microscope on the specimen directly.

3.3 Adjusting limit ring position

- 1) Put the microscope on a flat surface.
- 2) Loosen the thumbscrew on the limit ring (3).
- 3) Turn the focusing knob (14) to lower the objective till the distance between the objective and surface is less then the working distance.
- 4) Put the limit ring (3) at its lowest position and tighten its thumbscrew.

3.4 Focusing

- 1) Choose the desired the objective and install onto the microscope.
- 2) Turn the focusing knob (14) until the specimen is in focus.

3.5 Adjusting eyepiece diopter (Fig.8)

Turn the top part of the eyepiece, until a sharp image is obtained.



Fig.8

4 Specifications

Model	M512	M514	M510	M51B
Total Magnification	20X	40X	100X	20X, 40X, 100X
Eyepieces	W10X/15.5mm, diopter adjustable, with reticle			
Reticle	Scales with crosslines division			
	50um with 20X	25um with 40X	10um with 100X	50um with 20X 25um with 40X 10um with 100X
Objectives	DIN 2X/0.05,160/-	DIN 4X/0.1,160/0.17	DIN 10X/0.25, 160	DIN 2X/0.05,160/- DIN 4X/0.1,160/0.17 DIN 10X/0.25, 160
Focusing Mechanism	Rack and pinion, focusing knobs on both sides, with limit ring			
Working Distance	15 mm (9/16") with 20X	16.5 mm (5/8") with 40X	7.5 mm (5/16") with 100X	15 mm (9/16") with 20X 16.5 mm (5/8") with 40X 7.5 mm (5/16") with 100X
Field of View	8.5mm with 20X	4.2mm with 40X	1.8mm with 100X	8.5mm with 20X 4.2mm with 40X 1.8mm with 100X
Illumination	Flashlight, on 2 AAA batteries			
Dimension	Height: 24 cm (9-1/2") at highest condition with eyepiece on Bottom diameter: 6.3 cm (2-1/2")			
Net weight	0.7 kg (1 lb 8 oz)			