

# User Manual

## Binocular Stereo Microscope

Model XG225B20L8C02



[MicroscopeNet.com](http://MicroscopeNet.com)

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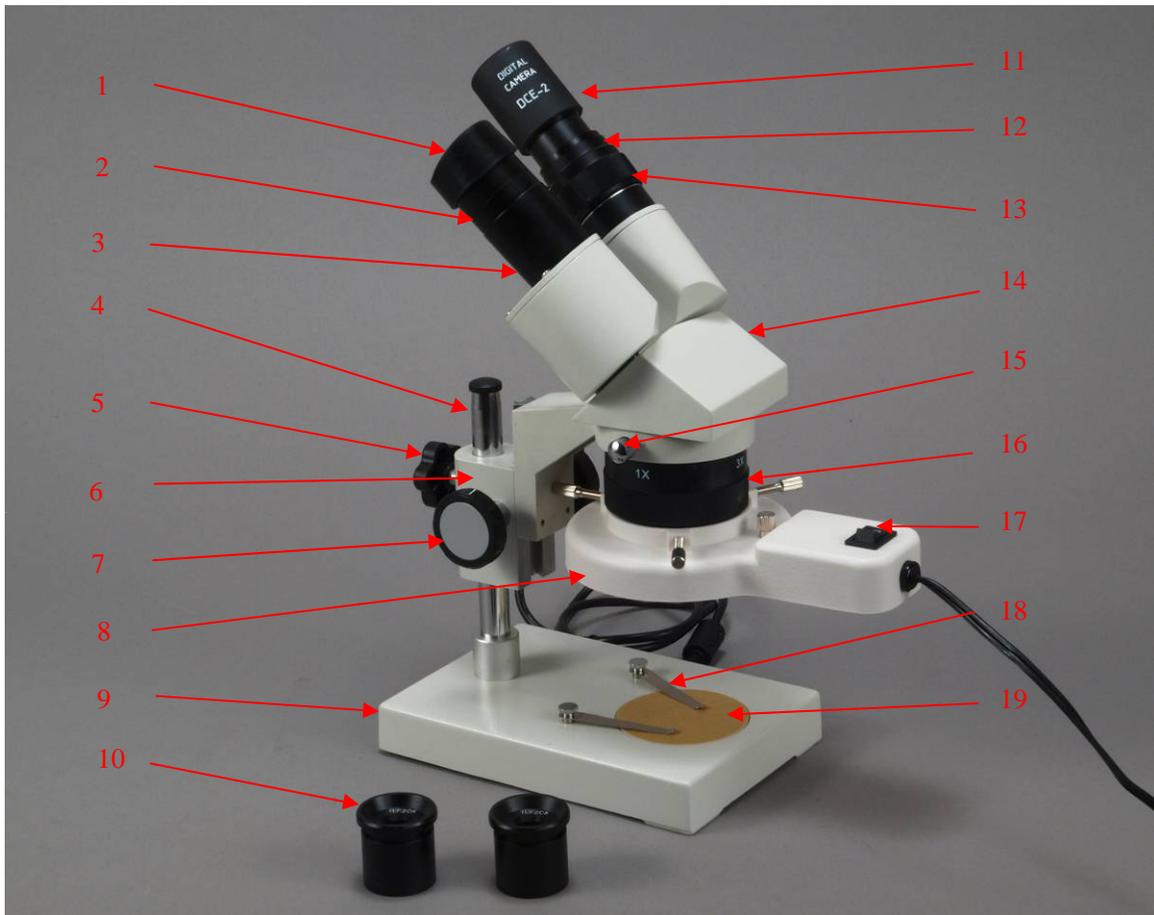
## i. Caution

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 (i.e. objectives or 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 that the microscope is located on a smooth, level and firm surface.

## ii. Care and Maintenance

1. Do not attempt to disassemble any component including 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. Rubber Eyeguard
2. Eyepiece WF 10X/20
3. Eyepiece Tube
4. Stand Post
5. Focusing Assembly Lock Knob
6. Focusing Assembly
7. Focus Knob
8. Fluorescent Ring Light
9. Microscope Base
10. Eyepiece WF 20/10

11. USB Digital Camera with 0.5x built-in reduction lens
12. Eyepiece Tube Conversion Adapter
13. Diopter Adjusting Ring
14. Binocular Head
15. Body Lock Thumb Screw
16. Objective Housing (objectives inside)
17. Ring Light Power Switch
18. Stage Clip
19. Stage Plate

## 2 Installation

### 2.1 Mounting the fluorescent ring light

- 1) Take off the objective cover (the black piece on the bottom).
- 2) Attach the ring light on the housing of the objectives with tube-side facing down.
- 3) Tighten the 3 screws.

### 2.2 Replacing the Eyepieces

- 1) Loosen the eyepiece lock screw (a small screw on the side of the eyepiece tube) on one of the eyepiece tubes.
- 2) Remove the original eyepiece from the eyepiece tube.
- 3) Insert the desired eyepiece into the eyepiece tube.
- 4) Tighten the eyepiece tube screw.
- 5) Do the same steps for another eyepiece.

### 2.3 Installation the USB digital camera

- 1) Loosen the eyepiece lock screw (a small screw on the side of the eyepiece tube) on one of the eyepiece tubes.
- 2) Remove the original eyepiece from the eyepiece tube.
- 3) Insert the eyepiece tube conversion adapter (30.5mm) into the eyepiece tube
- 4) Insert the USB digital camera into the adapter.

### 2.4 Installation the USB digital camera driver and software

Find the mini disc in the package and follow the instruction on the disc.

## 3 Operation

### 3.1 Changing the stage plate color

Move the stage clips off the plate, and flip the white/black stage plate and move the stage clips back on.

### 3.2 Tension Adjustment of Focusing Knobs

- 1) Put the wrench supplied at the position shown in Fig. 1.
- 2) You can tighten the tension in either direction shown in fig.2. i.e. turning in either direction will tighten the tension and turning back when you reach either end will loosen the tension. If you continue turning, you will tighten the tension again.
- 3) Set the knob tension at the level that ensure no unintentional movement and easy to operate.



Fig.1

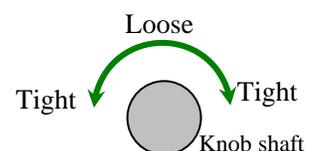


Fig.2

### 3.3 Placing the specimen

Put the specimen in the center of the stage plate, and hold the specimen with the stage clips if necessary.

### 3.4 Focusing

- 1) Turn the rotating objectives to put the desired the objectives (1X or 3X).
- 2) Loosen the focusing assembly lock knob to adjust the height of viewing head so that the distance between the objectives and specimen is about 80 mm. Then tighten up the focusing assembly lock knob.
- 3) Turn the focus knob until the specimen is in focus.

### 3.5 Adjusting Interpupillary Distance

While observing with both eyes, hold the left and right eyepiece tubes, swing inwards or outwards as shown in Fig. 3. The interpupillary distance is correct when the left and right fields of view converge completely into one image.



Fig.3

### 3.6 Adjusting Eyepiece Diopter

- 1) Using your right eye only, observe your specimen through the eyepiece and bring it into focus by adjusting the focus knob.
- 2) Then observe the specimen with your left eye only through the left eyepiece. If the specimen is not in focus, rotate the diopter adjusting ring shown in Fig. 4 until a sharp image is obtained.



Fig.4

## 4 Specifications

### General

Model	XG225B20L8C02
Total Magnifications	10X, 20X, 30X, 60X
Viewing Head	Binocular, inclined 45°, swiveling 360°
Eyepieces	WF10X/20, WF20/10
Objectives	Rotating 1X and 3X
Diopter Adjustment	On left eyepiece tube, ± 5dp
Interpupillary Distance	Adjustable, 2-3/16" ~ 2-15/16" ( 55mm – 75mm)
Working distance	3" (76mm)
Stage Plate	White/black plastic stage plate, 2-3/8" (60mm) in diameter
Focusing	Adjusting knobs on both sides, tension adjustable Focusing stroke: 1-11/16" (43mm) Moving range along the stand post: 2-7/16" (61mm)
Illumination	Fluorescent ring light, 8W Color Temperature: 6500 K
Power Supply	110V/60Hz for ring light
USB Digital Camera	Color, 640x480 pixels, 0.5x built-in reduction lens USB cord length: 4 feet (120cm) Support system: Windows 98, ME, 2000, XP, Vista 32-bit
Dimension	6-3/4" x 4-1/2" x 11-1/2" (17cm x 11.5cm x 29cm)
Net Weight	4.6 lb (2.1 kg)

### Eyepieces

Designation	Magnification	Field of View	Mount Size
Wide Field	10X	20mm	30.5mm
Wide Field	20X	10mm	

### Magnifications

Eyepiece	10X		20X	
	Objective	1X	3X	1X
Magnification	10X	30X	20X	60X

## 5 Troubleshooting

Symptom	Cause	Remedy
Totally dark in the view field	The cover of objectives is still on	Take off the cover of objectives
Darkness at the periphery or uneven brightness in the field of view	Rotating objectives are not in click stop position	Turn the objectives to click-stop position
Image is black screen through camera	No enough lighting or driver not installed properly	Check the camera manual
Image is totally white through camera	The light is too bright	Manually adjust the exposure in the software. See manual for details.
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
Can not focus	The focus block/objectives is too far away or too close to the specimen and out of the range of focus stroke	Adjust the height of the stand post so that the distance between the objectives and specimen is about 80mm.
Image moves while focusing	Specimen rises from stage surface	Secure the specimen
	Rotating objectives are not in the click-stop position	Turn the objectives to the click-stop position
Slippage of focus when using the focusing knob	The focusing knob tension is too loose	Tighten appropriately
Light does not light when switched on	No electrical power	Check the power outlet Check the cord connection
	Light tube burnt out	Replace the light tube