



**Guangzhou Micro-shot Technology Co., Ltd**

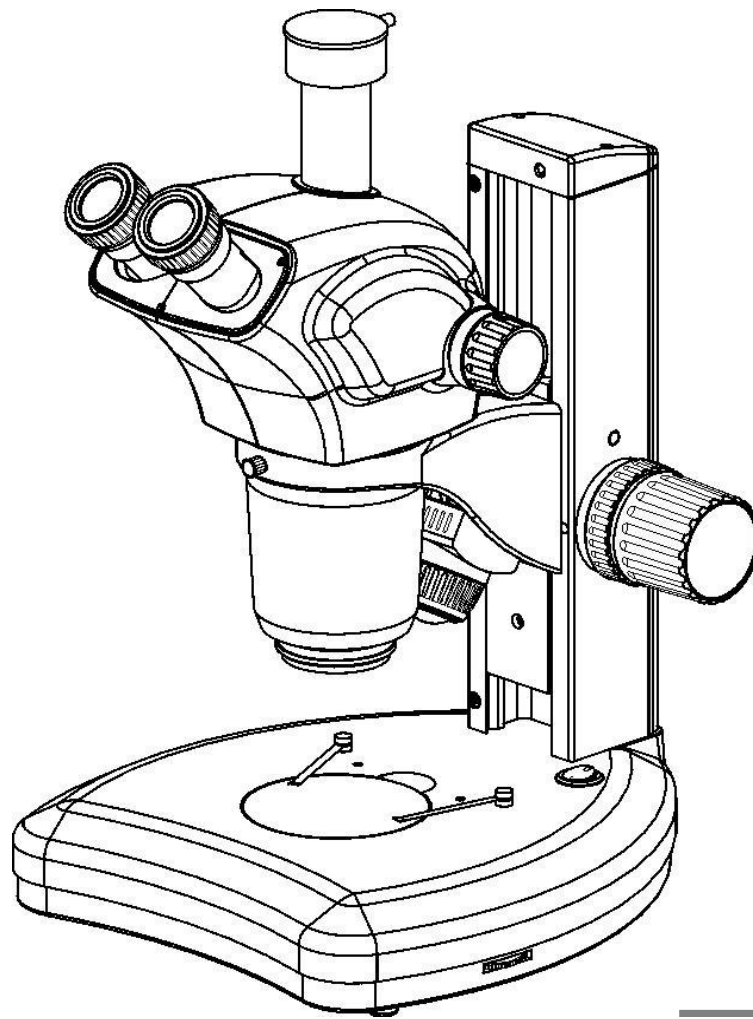
**MZ101**

**Stereo Microscope  
User Manual**



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**Stereo Microscope MZ101**

## Thank you for buying our product!

This unit is a precision optical instrument. Though with high safety design, wrong usage and overlook of this manual can do harm to you and your property. Thus, to ensure the life of this unit and maintain it properly, please read this manual carefully before operating.

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### Safety Reminder



**Warning!**

1. Be sure to turn off the power switch and remove the power cord before installing, replacing the bulb or fuse, plugging and unplugging the power supply.

To prevent electric shock or fire, be sure to turn off the power switch and remove the power cord before installing this unit, replacing the bulb or fuse, plugging and unplugging the power supply.



**Warning!**

#### 2. Do not disassemble

Except the removable parts mentioned herein, no part of this unit shall be removed, otherwise the performance of this unit may be reduced, or may cause an electric shock, injury or damage to this unit. Please contact the supplier if any fault occurs.



**Warning!**

#### 3. Input voltage

Check if the input voltage is consistent with your local voltage supply. If not, do not operate this unit and contact the supplier. Improper input voltage may cause a short circuit or fire thereby causes damage to this unit.



**Warning!**

#### 4. Use specific bulb, fuse and power cord

Use of an improper bulb, fuse or power cord may cause damage or fire to this unit. Any extended power cord used must be grounded (PE).



**Warning!**

#### 5. Protect this unit from high temperatures, dampness and foreign objects

To prevent short circuit or any other fault, do not expose this unit to any high temperatures or dampness environment for a prolonged period of time. A suitable operating environment is designated at a temperature of 5° C–35° C, and relative humidity of 20%–80% (at 25° C). If water splashes on this unit, turn off the power switch and remove the power cord immediately, and then wipe the water off with dry cloth. When any foreign object enters or drips onto this unit, please stop operating the unit and contact the supplier.



**Warning!**

#### 6. Heat of light source

The lighting bulb generates high temperatures during operation. Do not touch the collector lens or lamp box when the lamp is illuminated, and do not touch

the bulb within 30 minutes after the lamp goes out due to high temperatures arising from operation. When replacing the bulb, make sure it has cooled down properly (the lamp should be off for at least 30min).

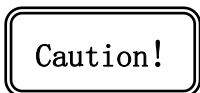
- ★ To prevent burn, do not touch the bulb when the lamp is illuminated or within 30min after it goes out.
- ★ To prevent fire, do not place any fibrous product, paper, flammable or explosive material (e.g., gasoline, petroleum ether, alcohol) near the halogen lamp housing or mercury lamp housing.



**Warning!**

### 7. Coarse/fine focusing knobs

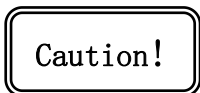
This unit employs a coarse/fine coaxial focusing mechanism. Do not turn the left/right coarse/fine focusing knob in the opposite direction. When the objectives lifting device reaches the limit of motion, do not continue to turn the coarse focusing knob, otherwise the focusing mechanism may be damaged.



### 8. Storage place

This unit is a precision optical instrument, and improper operation or storage may cause damage or its precision may be adversely affected. Consider the following when selecting a storage place:

- ※ Avoid placing the unit under direct sunlight, directly under interior lighting or any other bright place.
- ※ A suitable operating environment is designated at a temperature of 5° C-35° C, and relative humidity of 20%-80% (at 25° C). Do not expose this unit to high temperatures, dampness or dust for a prolonged period of time, otherwise mist or mold may develop or dust may deposit on the lens, thus cause damage to this unit and shortening its life.



### 9. Installation of bulb

Do not touch the glass surface of the bulb directly with bare hands. When mounting the bulb, wear gloves or wrap it with cotton material.

- ※ Wipe off any dirt on the surface of the bulb with a clean cotton fabric dipped in alcohol. If the dirt is not thoroughly removed, it would etch the surface of the bulb weakening its brightness and shortening its life.
- ※ Mount the bulb with care to avoid slipping off or injuries to your fingers.
- ※ When replacing the bulb, make sure its contact is intact. If its contact is damaged, the bulb may be disabled or short-circuited.

- ※ When replacing the bulb, the feet should be inserted into the holder as deeply as possible. If the feet are not tightly inserted, the bulb may go out or short circuit.

**Caution!**

#### **10. Instrument handling**

This precision optical instrument is heavy and should be handled with care. Strong impact and rough handling are strictly prohibited, it may cause damage to this unit.



#### **11. Environmental protection**

Please dispose the wastes from the packaging and operation of this unit by category such as cartoon, foam, plastic, bulb and etc. Do not discard the damaged mercury lamp carelessly in order to avoid creating environmental poll

# Content

<b>I. Instrument installation.....</b>	<b>1</b>
<b>II. Specification.....</b>	<b>1</b>
<b>III. Operation.....</b>	<b>2~4</b>
1. Brightness turn on and adjustment.....	2
2. Focusing system adjustment.....	2
3. Zoom observation operation.....	3
4. Trinocular photo operation.....	4
<b>IV. Instrument maintenance.....</b>	<b>4~6</b>
<b>V. Common faults and Solutions .....</b>	<b>6~7</b>

## I .Instrument installation

- (1) Unpack the package, take out the package of the whole machine, tear off the adhesive tape, and take out the relevant parts or main machine.
- (2) After taking out the host, remove the relevant supporting package and dust cover (bag).
- (3) Take out the equipped microscope frame, trinocular body 17, table panel 13, specimen holder 15, power adapter, eyepiece 1 and other accessories.
- (4) Loosen the locking screw 19, install the three eyepiece body on the frame, and tighten the locking screw.
- (5) Insert the eyepiece 1 into the eyepiece tube.
- (6) Install the table 13 and the specimen holder 14 on the frame body.
- (7) Connect the power adapter and connect the power cord to the appropriate power socket.
- (8) Check whether the above installation is reliable and safe.
- (9) Check and sort out the accessories and tools attached to the package, and store them properly to avoid omission.

## II.Specification

Eyepiece	Wide field WF10X ,FN:22mm
Objective	Continuous zoom
	Zoom range: 0.7~6.3(Zoom radio: 1:9)
	Working distance: 110mm
Field of view	$\Phi 33.8 \sim \Phi 3.49$
Total magnification	7X~63X
Effective moving range	220mm
Basement size	310mmX280mm
Illumination	Reflected: 3W high brightness LED
	Transmitted: 5W high brightness LED

Eyepiece	Wide field WF10X ,FN:22mm
Adapter	1X

### III.Operation

#### 1. Brightness turn on and adjustment

Turn on the main power switch 4 of the microscope (turn the switch to "-"), indicating the lighting system starts to work. Rotate the lighting knob 5 / 6 to adjust the brightness of reflected / transmitted light, so that the field brightness is suitable for visual observation, and the angle of reflected lighting 3 can be adjusted. If additional lighting devices (round lamp, LED round lamp, etc) are used, the device can be fixed on the lens tube 7. See Figure 2.

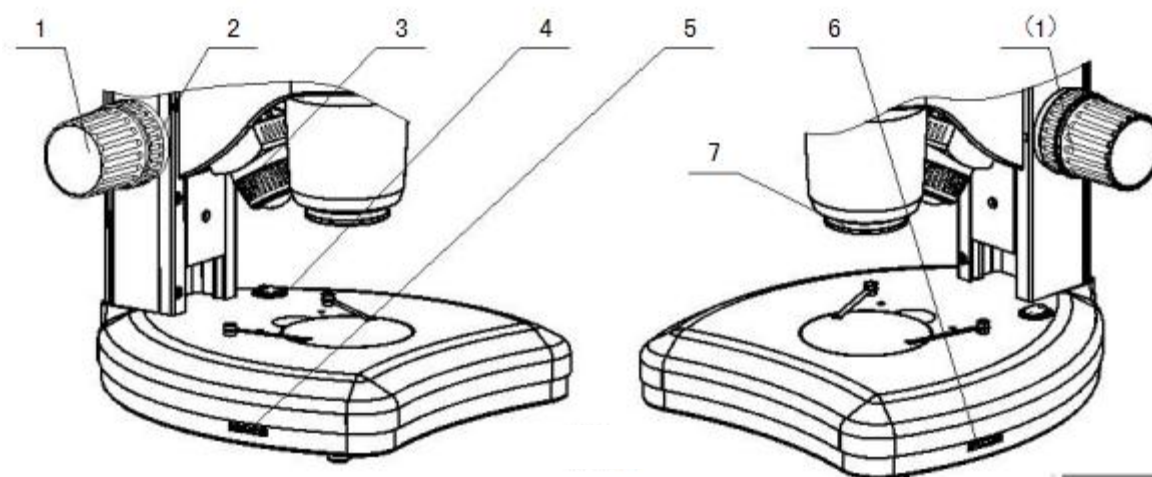


Figure 2

#### Caution

Try not to keep the brightness adjustment knob in the brightest position for a long time, so as not to reduce the service life of the bulb! When not using the instrument, it is advisable to adjust the brightness adjustment knob to the low position, which is conducive to the functional protection of the instrument and electrical appliances.

#### 2. Focusing system adjustment

(1) Focusing is realized by the focusing hand wheel 1 on both sides of the frame body, and the mirror body can be lowered and raised by rotating the hand wheel.



(2) Adjustment of the tightness of the focusing hand wheel: before the instrument leaves the factory, the focusing hand wheel has been preset to a position with moderate tightness. If you want to adjust its tightness, you can adjust the tightness adjusting hand wheel 2. Clockwise rotation can make the focusing hand wheel turn lighter, otherwise it will make the focusing hand wheel turn heavier. See Figure 2.

**Caution**

When the focusing hand wheel is adjusted too much, it may cause operation discomfort.

### 3. Zoom observation operation

The difference in binocular vision of different users can be corrected by adjusting the visibility adjusting ring 1 located on the eyepiece (see Figure 3).

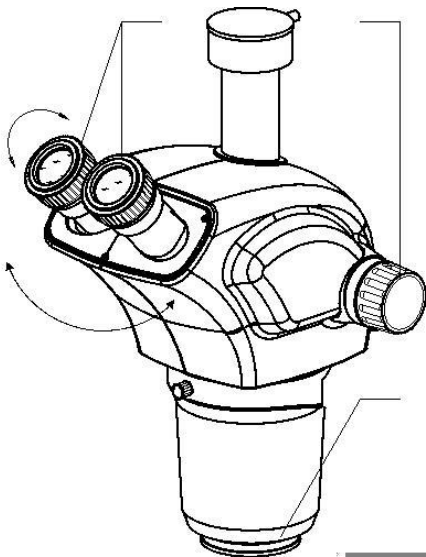


Figure 3

(1) Turn the diopter circle of the right eyepiece to the "0" position, observe through the right eyepiece and rotate the zoom handwheel 2 to 7x. Rotate the focusing hand wheel to make the specimen image clear; observe through the left eyepiece, and rotate the vision adjusting circle of the left eyepiece until the specimen image is clear; rotate the zoom hand wheel to 0.7x, if the image is not clear, do not adjust the focusing hand wheel first, observe the right eyepiece and adjust the right vision adjusting circle to make the image

clear; then observe the left eyepiece and adjust the left vision adjusting circle to make the image clear, then rotate the zoom wheel to make the image clear .When the hand wheel reaches 7x, if the image is not clear, turn the focusing hand wheel to make the specimen clear, through the above adjustment, clear image can be obtained from 0.7x to 7x.

(2)Proper pupil distance can bring comfortable observation effect. The adjustment of pupil distance is realized by "rotation" of binocular lens, refer to Fig. 3.

(3)If you need to use an additional objective lens to change the magnification, you can screw it directly into the objective lens 3, as shown in Figure 3.

#### 4. Trinocular photo operation

The three eyepieces of the instrument can switch between visual observation and imaging freely. First, loosen the fastening screw 2, remove the dust cover 1, then install the camera or camera equipment on the adapter of the trinocular and lock the fastening screw 2. First, observe the sample with binocular eyepiece, and focus to make the image clear, then pull out the visual / photo switch rod 3, then the micro image of the sample can be displayed on the display device, such as the image is not clear, the handwheel or the CCD connector (adjustable) can be fine adjusted, in order to ensure that the display direction of the binocular observation and the trinocular imaging is consistent, it may be necessary to adjust the installation of the photographic or photographic equipment Direction. See Figure 4.

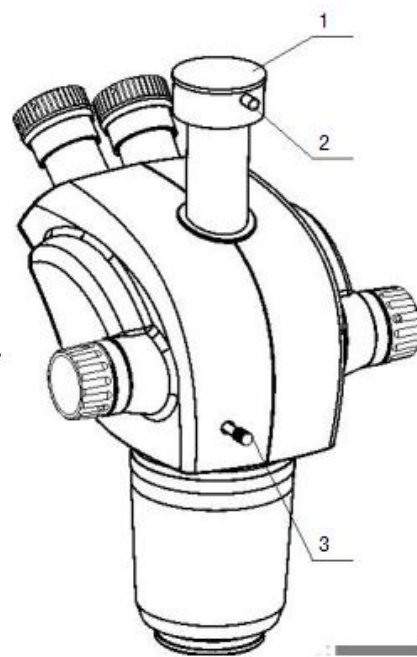


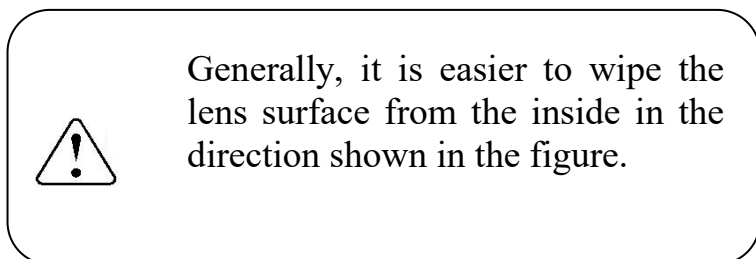
图 4

## IV.Instrument maintenance

(1)The power switch of the main engine is controlled by power supply. After observation or suspension of use, press the switch "O" to cut off the power supply, so as to avoid that the electrical components in the instrument are still in working state. When it is not used for a long time, the power adapter plug should be pulled out of the power socket and various connecting wires should be properly kept.

(2)The instrument shall be kept clean. Clean the oil on the lens and the fuselage with clean gauze (or silk cloth, absorbent cotton) dipped in a little alcohol, and cover the dust cover after it is completely cooled and dried.

(3)Clean the lens: blow off the dust on the lens with a blowing ball or a soft brush; use lens paper or a soft cloth to dip a little alcohol and ether mixture to gently wipe the heavy dirt and fingerprint (the mixing ratio of the two is about 20-30% alcohol, 70-80% ether).



Wrong



Correct

(4)Clean the instrument surface: it can be wiped with a clean soft cloth; heavy dirt can be wiped with a neutral detergent.

(5)Storage: when the microscope is not used for a long time, please turn off the power supply of the instrument, cool the bulb sufficiently, put the dust cover of the microscope on a dry, ventilated, clean place without acid and alkali vapor, so as to avoid lens mildew.

(6)Regular inspection: in order to maintain the performance of the microscope, the instrument shall be regularly inspected and maintained.

**Caution**

Do not use organic solvent (such as alcohol, ether and its diluent) to wipe, so as to prevent the paint on the surface of the instrument from falling off. It is recommended to apply a non corrosive coating to the moving part of the microscope before covering the dust cover.

## V. Common faults and Solutions

Fault	Cause of failure	Processing method
Electrical system		
No lighting in the field of view	Power switch is not turned on	Turn on the power switch
	Lighting bulb damaged	Replace the new bulb or send it to professional maintenance
	Power adapter is damaged	Check and send to professional maintenance
	Poor contact of electrical chassis connector	Check and send to professional maintenance
Optical system and imaging		
There is black shadow at the edge of the field of view or the illumination of the field of view is uneven, so the complete field of view cannot be observed	Position of reflected light illuminator is not correct	Adjust the position of the illuminator
	Mildew or grease on the surface of objective, eyepiece or condenser	Wipe the lens surface or replace it
Oil or dust found in the field of view	Oil or dust on eyepiece lens	Wipe eyepiece lens
Defocus or low resolution	Objective damage	Repair objective lens (need professional maintenance)
	Stains on the surface of objective lens or eyepiece lens	Wipe the objective lens or eyepiece lens
Image focal plane tilt (bright and dark)	Specimen not flat	Place the specimen on the stage
Mechanical system		

The image cannot be kept clear during observation	Self flow of focusing mechanism (automatic sliding)	Adjust the rough and fine adjusting hand wheel
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