

EM-50 Series Zoom Stereo MANUAL

This manual expatiates the using method, troubleshooting, and maintenance about the microscope particularly. Please read it before using carefully. The manufacturer is entitled to amend or improve the instrument.

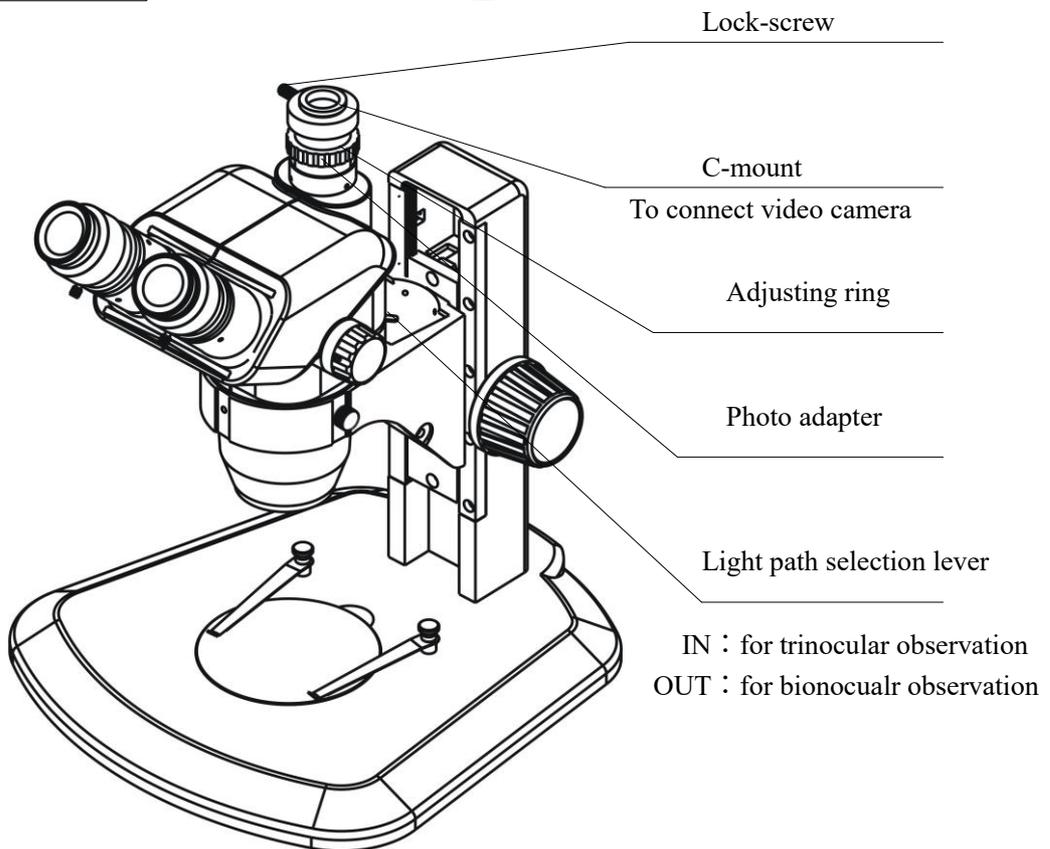
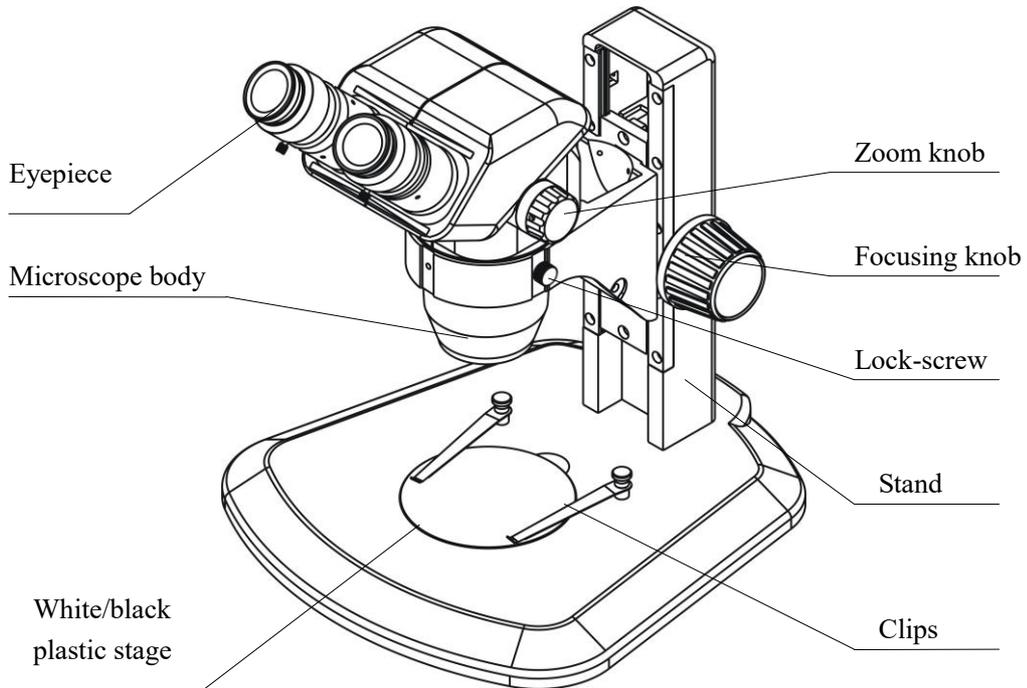
1. Operation

- 1.1 As the microscope is precision instruments, it should be taken carefully and avoid impact during transportation.
- 1.2 The microscope should be set in dry and clean place. Do not expose in the sun directly and avoid high temperature and violent vibration. The environment temperature should be 0 ~40 and the humidity should be 85%.
- 1.3 To keep the image clearly, do not leave finger prints or stains on lens.
- 1.4 Please make sure the voltage of power supply is consistent to microscope 's before using.
- 1.5 Do not adjust the right and left focusing knob to opposite direction simultaneity, otherwise it will with trouble.
- 1.6 When using the photo and video camera device, make sure the microscope body is less than 3° to the vertical direction.
- 1.7 When using CTV adapter to get video, make sure the CCD receiving surface is less than 2/3 and its weight not heavier than 2.5kg.

2. Maintenance

- 2.1 All lenses should be kept cleanly. Use air or lens cloth to clear dust; Use cotton pledget with 3:7 ethanol and aether mixed to clear spot and fingerprint.
- 2.2 Never use organic solution to clean the surface of microscope, especially the plastic parts. If necessary, please choose neutral detergent.
- 2.3 Do not disassemble or assemble the microscope yourself to avoid damaging the capability.
- 2.4 After using, put on dust cover to protect microscope and put in dry place to prevent rust.

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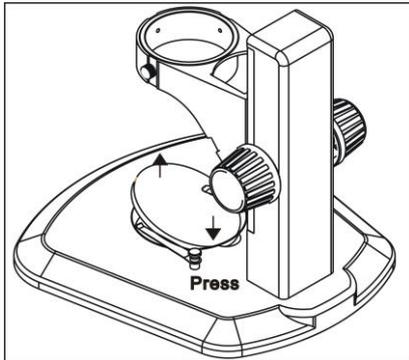


Fig 1

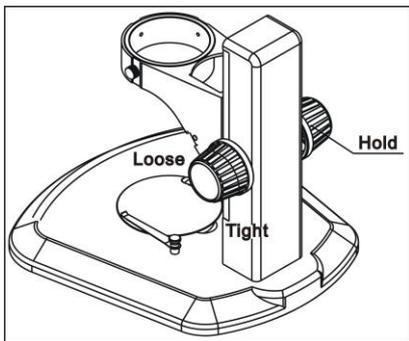


Fig 2

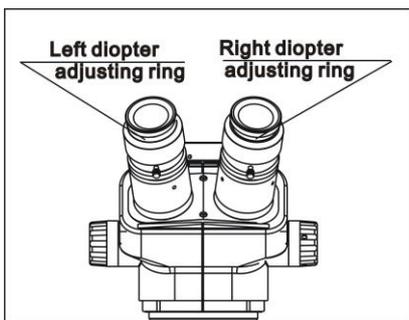


Fig 3

Use white/black plastic stage

- (1) Usually, the white side is used up to objective. If the specimen is white or in bright color, please let black side up to make image more clearly.
- (2) To take off the stage, please press the supporting point (shows in Fig 1). (Fig 1)

Adjust focus tension

- (1) Hold one side of knob and turn other one to adjust focus tension. Tension is depend on the turning direction of other side of knob. (Fig 2)
- (2) Suitable tension can prevent the focusing arm slipping down during observation and comfortable for adjusting.

Set specimen

- (1) Set the specimen to the center of stage. If necessary, please clamp by clips.
- (2) Turn on light.

Adjust diopter and focus

- (1) Turn the zoom knob to the Max. Magnification.
- (2) Adjust both diopter adjusting ring to zero.
- (3) Observe through right eyepiece, if the image is not clear, please turn focusing knob to make it clear.
- (4) Turn the zoom knob to the Mix. Magnification.
- (5) Observe through right eyepiece, if the image is not clear, please adjust right diopter adjusting ring to make it clear. (Fig 3)
- (6) Turn the zoom knob to the Max. magnification and observe through right eyepiece, if the image is still not clear, please repeat the step (3), (4), (5) till the image clear.
- (7) Turn the zoom knob to Mix. Magnification and observe through left, if the image is not clear, please adjust left diopter adjusting ring to make it clear. (Fig 3)

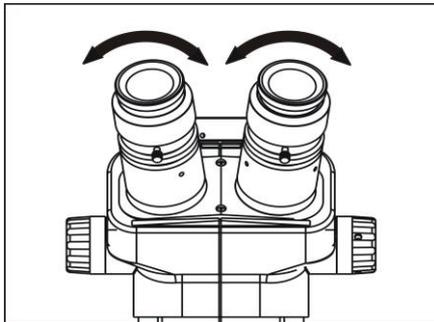


Fig 4

Adjust interpupillary
Hold both eyepiece tube and slide as Fig 4 shows till suitable.

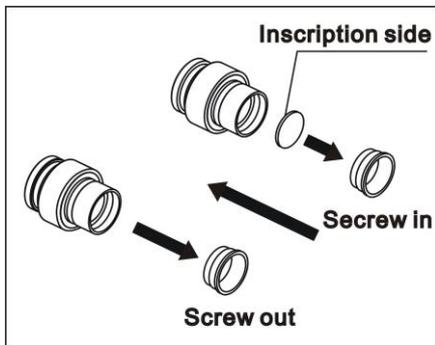


Fig 5

Mount and remove micrometer

- (1) Take off the mounting ring from eyepiece. (Fig 5)
- (2) Clean the micrometer and mount it into mounting ring, make sure the inscription side up. (Fig 5)
- (3) Mount the mounting ring into eyepiece.
- (4) To remove the micrometer, please take off the mounting ring first. Then take out the micrometer and wrap it with clean and soft paper for storage.

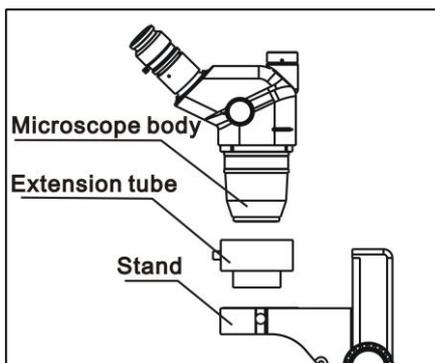


Fig 6

Use auxiliary lens

- (1) Mount the auxiliary into microscope body.
 - (2) As the working distance of 0.5X auxiliary lens is much long, please use extension tube when use 0.5X auxiliary lens. (Fig 6)
- ☒ It does not need extension tube when use 0.75X auxiliary lens.
 - ☒ As the working distance of 0.3X and 0.4X auxiliary lens is too long, they can not use together with the base B6 and BL1.

Mount C-mount and TV device

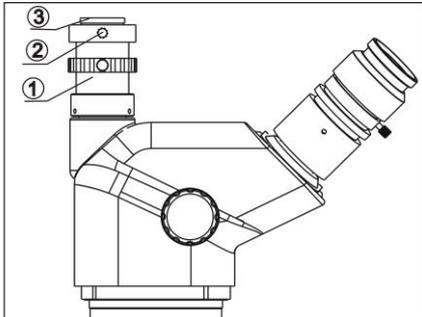


Fig 7

- (1) Screw video tube ① into M28 hole of tri-tube. (Fig 7)
- (2) Loose the lock-screw ② on TV tube, and take off the C-mount ③ from tube.
- (3) Screw the C-mount into video camera.
- (4) Connect the video camera with TV tube and lock by screw ②.

Select light path

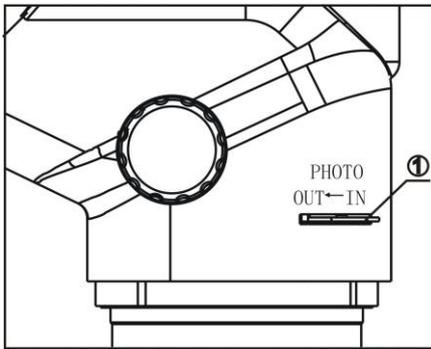


Fig 8

- (1) To observe through binocular, please turn the light path selection lever ① to "OUT". (Fig 8)
 - (2) If turn the light path selection lever ① to "IN", (Fig 8), you can observe through both binocular and trinocular.
- ☒ Whether the light path is to "OUT" or "IN", please make sure it is to the end.

Adjust TV device

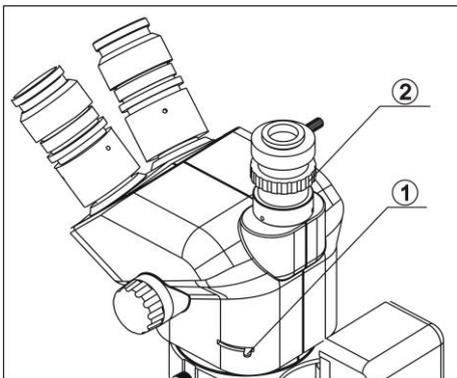


Fig 9

- (1) Turn the light path selection lever ① to "IN". (Fig 9)
- (2) Turn the zoom knob to the Max. magnification and observe through video camera and adjust focusing knob to make image clear.
- (3) Turn the zoom knob to the Mix. Magnification. If the image is not clear, please adjust the adjusting ring ② on video tube to make it clear.
- (4) Turn the zoom knob to Max. magnification again. If the image is still not clear, please repeat the step (2), (3) to make it clear within the whole zoom range.

Troubleshooting

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The performance of the microscope can't be made fully because of unfamiliar using, this table will give some advices:

Trouble	Cause	Remedy
1. Optical parts		
(1) brightness too bright or too dark	Adjustment of brightness is not correctly	Adjust it correctly
(2) dirt appears inside of view field	Dirt on specimen	Clean specimen
	Dirt on surface of eyepiece	Clean eyepiece
	Dirt on surface of objective	Clean objective
	Dirt on stage	Clean stage
(3) double image	Interpupillary is not right	Re-adjust the interpupillary
	Diopter is not right	Re-adjust the diopter
	Different magnification of both eyepiece	Use the same eyepiece
(4) image is not clear	Dirt on surface of objective	Clean objective
(5) image blur during focusing	Diopter is not right	Re-adjust the diopter
	Wrong focusing	Focus again
(6) incision image appears when observe through eyepiece or TV device	Light path selection lever is not at right position	Turn it to right position
(7) image is not clear on monitor during focusing	Wrong focus depth of video device	Re-adjust the focus depth by adjusting ring on TV adapter
2. Electrical parts		
(1) Bulb does not work	Wrong setting of bulb	Set the bulb correctly
	Bulb has burned out	Replace the bulb
	Fuse has burned out	Replace the fuse
	Dirt on the stage stopped the light path	Clean the stage
(2) Bulb burned out offen	Too high voltage from power supply	Use transformer to low down the voltage
	The bulb is not standard	Use standard bulb
(3) Fuse burned out offen	Too high voltage from power supply	Use transformer to low down the voltage

(4) light flickered out	Bulb is going to burn out	Replace the bulb
	The wires do not connect right	Connect it correctly
3. Focusing parts		
(1) Focusing knobs work stiff	Too tight of the focusing knobs	Loose it to suitable
(2) Image is not clear by the focusing arm slipping down during focusing	To loose of the focusing knobs	Tight it to suitable



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