



Guangzhou Micro-shot Technology Co., Ltd

MZ62

**Binocular Stereo Microscope
User Manual**



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MZ62 Binocular stereo microscope

Thank you for buying our product!

This instrument is a precision optical instrument. In order to ensure the service life of the instrument and the correct daily maintenance, you can read this manual carefully before using the instrument.

Warning

1. Before removing the stand, opening the light replacement door, or removing the light box, please make sure the power is switched off.
2. Do not use or place the instrument in hot, dank or dusty environment for a long time.

The appropriate working temperature is from 0 to 40°C

The relative humidity shall be 20% to 85% (25°C).

Attention: Do not soak the instrument into water or other liquids.

Attention: Do not put the provided accessories on the main frame or other transmission part.

Before reading

The manual is compiled based on the whole series, with some extra accessories and functions included. Please pick the instructions you need.

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I. Operation

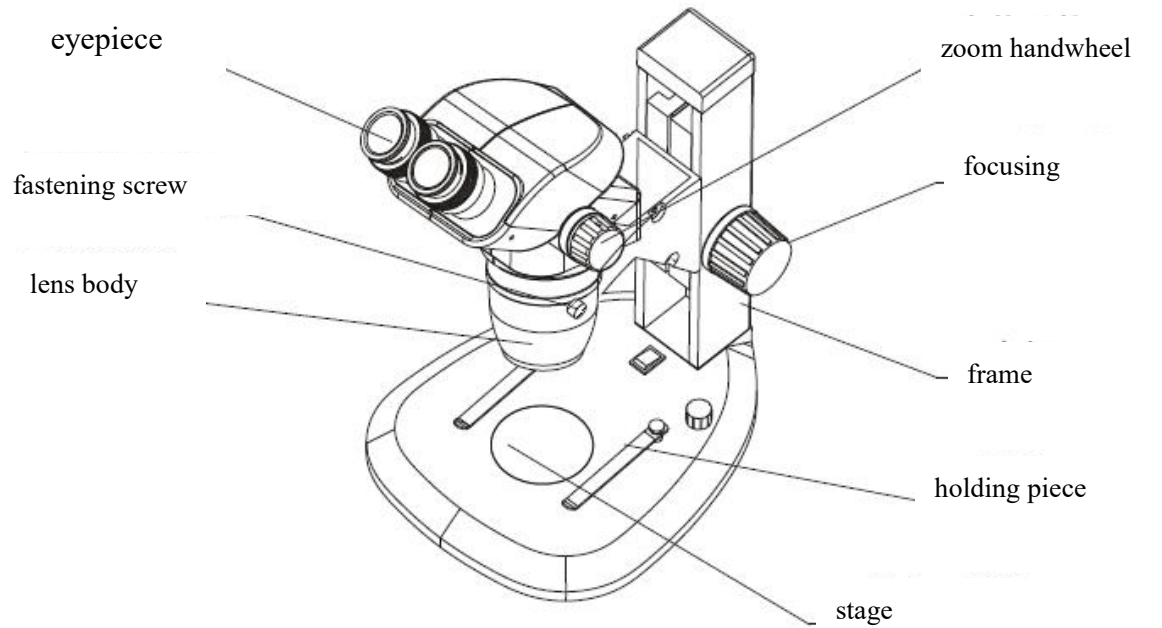
1. Microscope is a precision instrument, which shall be handled carefully to avoid of impact and collision.
2. The microscope shall not be directly exposed to the sun light. It shall be placed in a dry and clean environment to avoid high temperature and violent collision. The working environment requires: room temperature $0\text{ }^{\circ}\text{C} \sim 40\text{ }^{\circ}\text{C}$, maximum relative humidity 85%.
3. In order to get clear image, keep the lens from being stained or touched.
4. Check if the voltage of power supply fit the rated voltage.
5. It is not allowed to turn the left and right zooming knobs in the opposite direction simultaneous for errors might occur.
6. When using filming and camera equipment, to ensure the stability, the main body o of the microscope shall be settled upright with a incline of less than 3° .
7. When using the type C connector for a camera, the chip size should be smaller than 2/3", and the weight should be lighter than 2.5 kg.

II. Maintenance and service

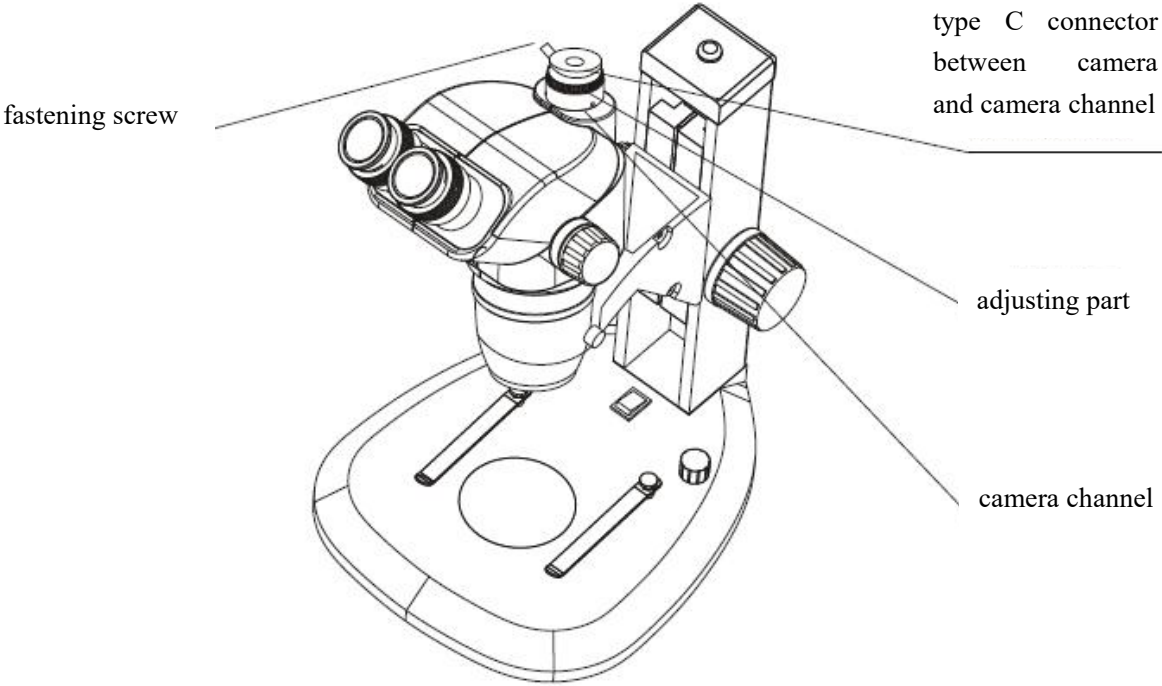
1. All the lens shall be kept clean. The tiny dusts can be blew away by a blowing balloon or wipe off by a cotton yarn. The oil stain and finger print, it can be gently wiped away by cotton yard with some 3:7 ethanol ether mixture.
2. The rest of the microscope, especially the plastic parts, should not be wiped with organic solvent, and should be cleaned with neutral detergent.
3. Do not dismantle a microscope by yourself so as not to make its performance worse.

Cover the microscope when it' s not in use and prevent it from dust. The microscope shall be kept in dry places and avoid of being rusted.

I. Structure



Picture 1

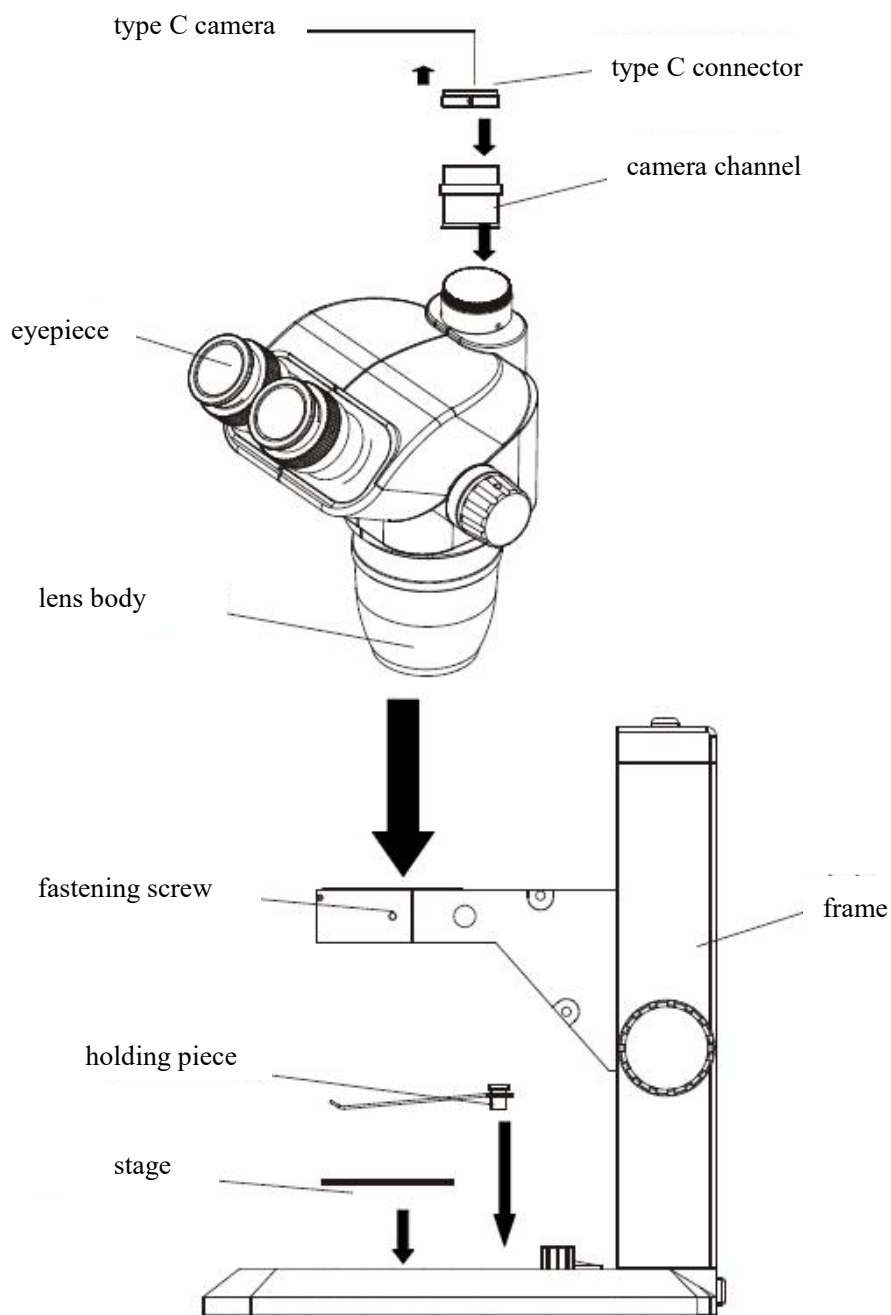


Picture 2

II. Installation diagram

The following is the installation diagram and the numbers stand for the installation sequence.

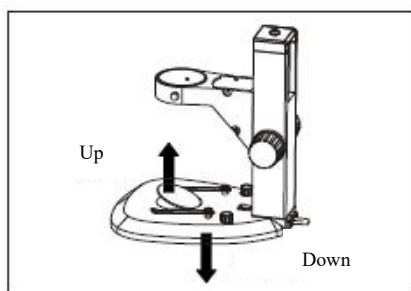
Before installation, make sure the connection surfaces are clean. When installing, prevent the surface of each lens from being dirty or scratched.



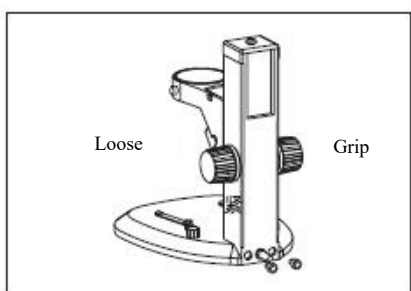
Picture 2

First connect the type C connector with the camera, and then fix the camera to the camera channel.

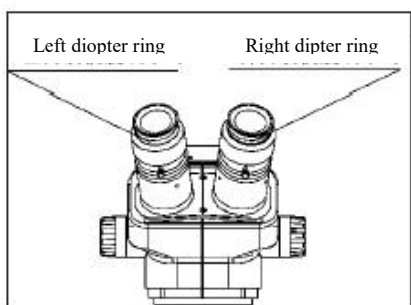
III. Operations



Picture 1



Picture 2



Picture 3

1. Using the stage

- (1) In most cases, the white side is upward. If the specimen is white or of other bright colors, you can turn the black side upward for better contrast.
- (2) When removing the stage or changing to the other side, press the support point of the stage and the opposite edge will be tilted. (Picture 1)

2. Fastening and loosening the adjustment

- (1) Hold one of the hand wheel and turn the other one, the adjustment can be gripped or loosened. (Picture 2)
- (2) Appropriately adjust the tightness of the focus adjustment, so the lens won't slide down by itself and the focus will be convenient.

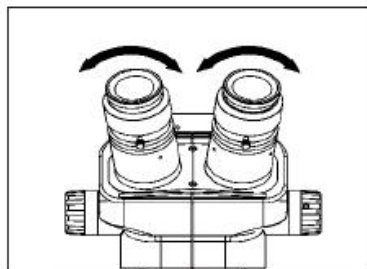
3. Placing a specimen

- (1) Put the specimen in the middle of the stage and hold down if necessary.
- (2) Illuminate the specimen with the light source

4. Adjusting the vision and focus

- (1) Turn the focus adjusting hand wheel to the maximum magnification
- (2) Turn the vision scale to 0.
- (3) Look through the right eyepiece and adjust the focus until the image is clear.
- (4) Turn the focus adjustment to the minimum magnification.
- (5) Look through the right eyepiece and rotate the vision adjusting ring until the image is clear.
- (6) Turn the focus adjustment to the maximum again and look through the right eyepiece. Repeat the step (3), (4) and (5) if the image is not clear.
- (7) Turn the focus adjustment to the minimum and look

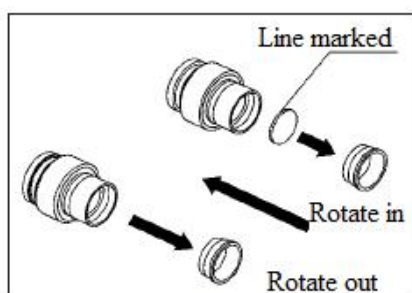
through the left eyepiece. Rotate the adjusting ring on the left eyepiece until the image is clear. (Picture 3)



Picture 4

5. Adjusting the pupil distance

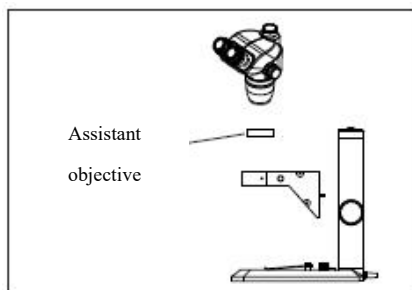
Hold the left and right eyepiece tubes by hand, push and pull the left and right eyepiece tubes in the direction shown by the arrow in Picture 4 until it is comfortable for binocular observation.



Picture 5

6. Installing and removing the reticle

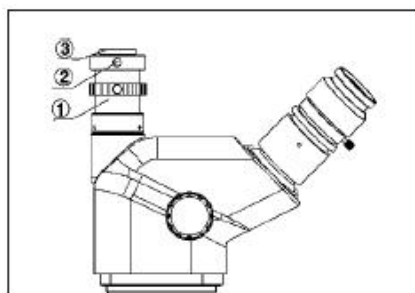
- (1) Rotate the pressing ring off.
- (2) Clean the cross divisional board, fix it in the pressing ring, with the scaled side upward.
- (3) Rotate the pressing ring in the eyepiece tightly.
- (4) When removing the cross divisional board, rotate the pressing ring off from eyepiece and take out the board, and preserve it with clean paper.



Picture 6

7. Using the auxiliary objective

- (1) Rotate the auxiliary objective into the microscope body through the screw thread downward.
- (2) The working distance of the 0.5x auxiliary objective lens is large, when observing with the 0.5x auxiliary objective lens, loosen the screw fixing the bracket with a 4mm Allen wrench, move the bracket up one hole and fix it on the mobile sliding seat again. (Picture 6)
- (3) The above steps are unnecessary when using 0.75x auxiliary objective.

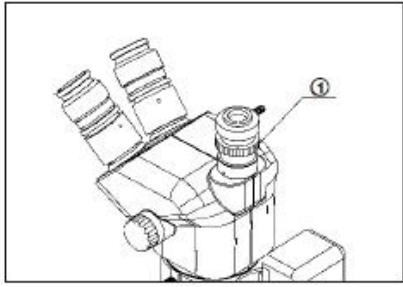


Picture 7

8. Installing the type C camera tube and digital camera

- (1) Rotate the bottom of the tube to the thread screw M28 until it's tight. (Picture 7)
- (2) Loosen the screw ② on the tube and take the connector ③ out.
- (3) Rotate the connector into the camera.

(4) Rotate the camera into the tube with connector together and tighten the crew ②.



Picture 8

9. Focusing the the digital camera

(1) Turn the focus adjustment to the maximum magnification until the image on the monitor is clear.

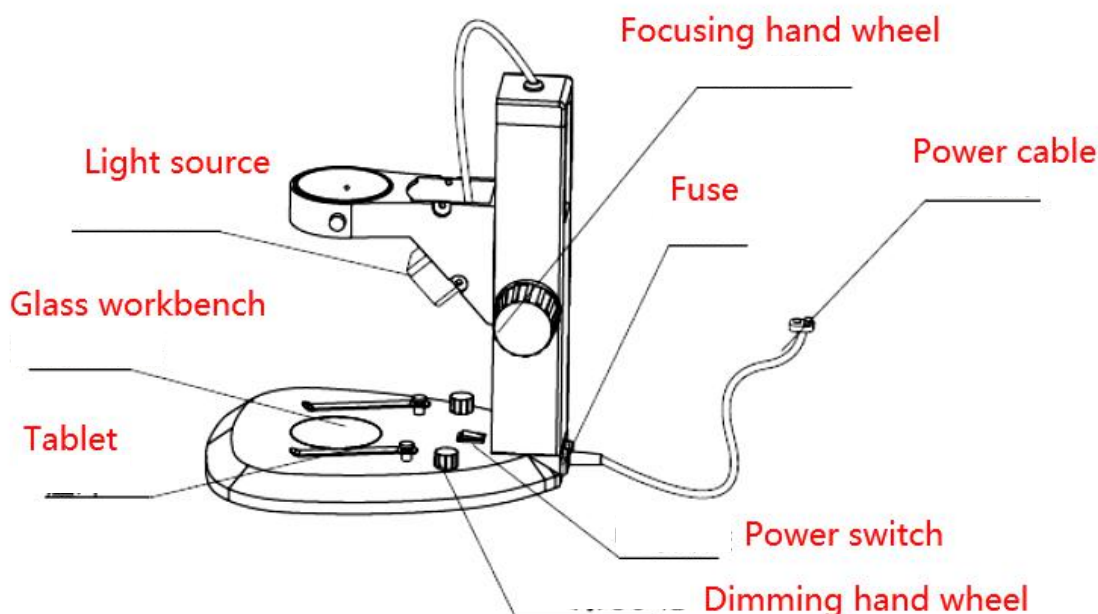
(2) Rotate the focus adjustment to the minimum magnification and the adjust the focusing ring on the camera tube ① until the image on the monitor is clear.

(3) Turn the focus adjustment to the maximum magnification and check if the image is clear. If not, repeat the step (1) and (2), until the image is clear.

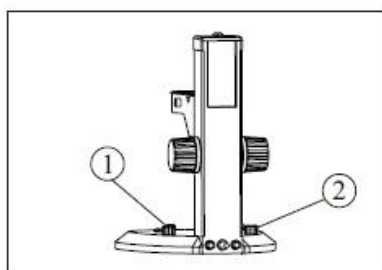
IV. Use of the base

- ★ Make sure that the power is turned off when replacing the fuse.
- ★ Make sure that the ground wire of the instrument properly grounds the instrument.
- ★ Black and white working board and frosted glass board each, diameter $\phi 95$ mm.

1. Each part name



2. Operating

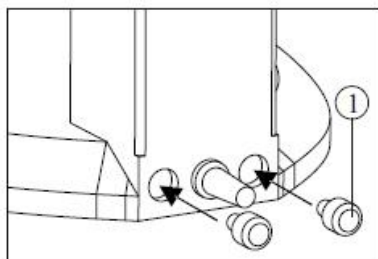


1. Adjust the brightness of the transmitted illumination of the base or the upper light source

As shown by the icons ①② on the base, the knob ① controls the upper light source, and the knob ② controls the lower light source. Turn the brightness adjustment knob, turn it clockwise to increase the brightness, and vice versa to decrease the brightness.

2. Replace the fuse

- (1) Unscrew the fuse set ① from the back of the base with a flat-blade screwdriver.
- (2) Pull out the fuse from the fuse holder
- (3) To replace the fuse with a new one, proceed in the reverse order of the above.



V. Main Specifications

1. MZ62 Optical Specifications

Zoom magnification	Working distance (mm)	Eyepiece		Eyepiece (Optional)			
		WF10X(φ22mm)		WF15X (φ16mm)		WF20X (φ12mm)	
		Total magnification	Field of view	Total magnification	Field of view	Total magnification	Field of view
0.67X	105	6.7X	32.8	10.05X	23.9	13.4X	17.9
0.7X		7X	31.4	10.5X	22.86	14X	17.1
0.8X		8X	27.5	12X	20	16X	15
1X		10X	22	15X	16	20X	12
1.5X		15X	14.7	22.5X	10.7	30X	8
2X		20X	11	30X	8	40X	6
3X		30X	7.3	45X	5.3	60X	4
4X		40X	5.5	60X	4	80X	3
4.5X		45X	4.9	67.5X	3.6	90X	2.7

2. MZ62 Auxiliary Objective Specifications (Optional)

Auxiliary Objectives	Magnification	Working distance (mm)	Auxiliary Objectives	Magnification	Working distance (mm)
	0.3X	287		0.75X	117
	0.4X	217		1.5X	47
	0.5X	177		2X	26

★ Fixed working distance, does not change with the change of magnification.

★ After using auxiliary objective: Total magnification = Zoom magnification ×

Eyepiece magnification × Auxiliary objective magnification

Diameter of field of view(mm)= $\frac{\text{Eyepiece field of view}}{\text{Zoom magnification} \times \text{Auxiliary objective magnification}}$

The magnification of the negative = Zoom magnification (× Auxiliary objective magnification) × Eyepiece magnification

Magnification on camera = Zoom magnification (× Auxiliary objective magnification) × CTV

VI. Troubleshooting

Improper use can make the microscope perform poorly, the table below is some solutions.

Problems	Cause	Solutions
Optical system		
Lighting is too bright /dim	Improper brightness adjustment	Adjust the brightness correctly
Dirt in the field of view	Dirt on the sample	Clean sample
	Dirt on the eyepiece surface	Clean eyepiece
	Dirt on the objective surface	Clean objective
	Dirt on the work board surface	Clean work board
Two images don' t coincide	Incorrect interpupillary distance adjustment	Correct interpupillary distance
	Incorrect diopter adjustment	Correct diopter adjustment
	Left and right eyepieces have different magnifications	Install the same eyepiece
Imaging not clear	Dirt on the objective surface	Clean objective
Imaging not clear when zooming	Incorrect diopter adjustment	Correct diopter adjustment
	Incorrect focus	Correct focus
Imaging not clear on video monitor when zooming	Improper adjustment of the camera's depth of focus	Use the focus ring on the camera mount to correct
Electrical system		
No lighting when powered on	Incorrect bulb installation	Install the bulb correctly
	Light bulb burned out	Replace bulb
	Fuse burned out	Replace fuse
	An object on the work board blocked from the light	Clean work board
Bulbs burn out frequently	Too high local line voltage	Reduce voltage with a transformer
	Not using specified bulbs	Using specified bulbs
Fuses are often blown	Too high local line voltage	Reduce voltage with a transformer
Lights flicker	Light bulb is about to burn out	Replace bulb
	Bad wire connection	Connect the wires correctly
Focusing		

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Inflexible focus hand wheel	Too tight focusing hand wheel	Properly loosen it
Mirror body descends by itself, causing the image to be unclear	Too loose focusing hand wheel	Properly tighten it

MSHOT main products

Scientific grade camera, Microscope camera

Inverted, Upright, Stereo Fluorescence Microscopes

Polarizing, Metallurgical, Biological Microscope

**LED fluorescence illuminators for upright, inverted, stereo
microscope**

**Customization and modification of research microscopes
and microscope accessories**

For more microscope knowledge and skills, please visit our official website.