



Biological Microscope

LB-64BIM

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1. Safety Measures

- Open the box carefully to avoid dropping or damaging accessories like the lens.
- Keep the instrument away from direct sunlight, high temperatures, humidity, dust, and environments with excessive shaking. Ensure that the stage is flat, horizontal, and firm.
- When moving the microscope, carry it by the handle and base with care.
- The lamp house and nearby parts can become very hot when the microscope is in use. Make sure there is enough space for proper ventilation and cooling.
- Ensure the instrument is properly earthed to prevent damage from lightning strikes.
- For safety, make sure the main switch is in the "0" (off) position and disconnect the power supply before replacing the lamp or fuse. If replacing the lamp during or immediately after use, allow the lamp bulb and lamp house to cool completely before handling them. (The specified lamp is S-LED lamp 1W.)
- Check the input voltage: Make sure the input voltage indicated on the back of the microscope matches the power supply voltage. Using the wrong voltage could cause serious damage to the instrument.
- Use the factory-supplied power cord.

2. Introduction

Biological Microscope LB-64BIM features an infinity optical system for high-quality imaging. It comes with 4X, 10X, 40X, and 100X objectives for clear and color-accurate observations. The coaxial coarse and fine focusing mechanism allows for smooth and reliable adjustments. Our microscope offers a double-layer mechanical stage for precise sample positioning in clinical and educational applications.

3. Features

- LED illumination with adjustable brightness
- Infinity plan achromatic objectives
- Mechanical stage with X-Y movement
- Durable construction for long-term use

4. Specifications

Model No.	LB-64BIM
Optical System	Infinity Optical System
Viewing Head	Binocular Head
Inclination	30° Inclined
Objective Type	Infinity Plan Achromatic
Objectives	4X, 10X, 40X, 100X
Eyepiece	Wide Field Eyepiece WF10X
Eyepiece Field	20 mm
Interpupillary Distance	48 to 75 mm
Stage Type	Double Layers Mechanical
Stage Dimensions	140 mm × 132 mm
Stage Moving Range	76 mm × 50 mm
Focusing Adjustment	Coaxial Coarse & Fine
Focusing Range	25 mm
Condenser Type	Sliding-in Centerable Condenser
Condenser	NA 1.25
Illumination Power	3W LED
Dimensions	395 × 395 × 625 mm
Weight	14 kg

5. Applications

Biological Microscope LB-64BIM is used for examining specimens in fields like biology, medicine, and research. It is widely applied in laboratories, hospitals, and educational institutions.

6. Instrument Introduction

Components Name

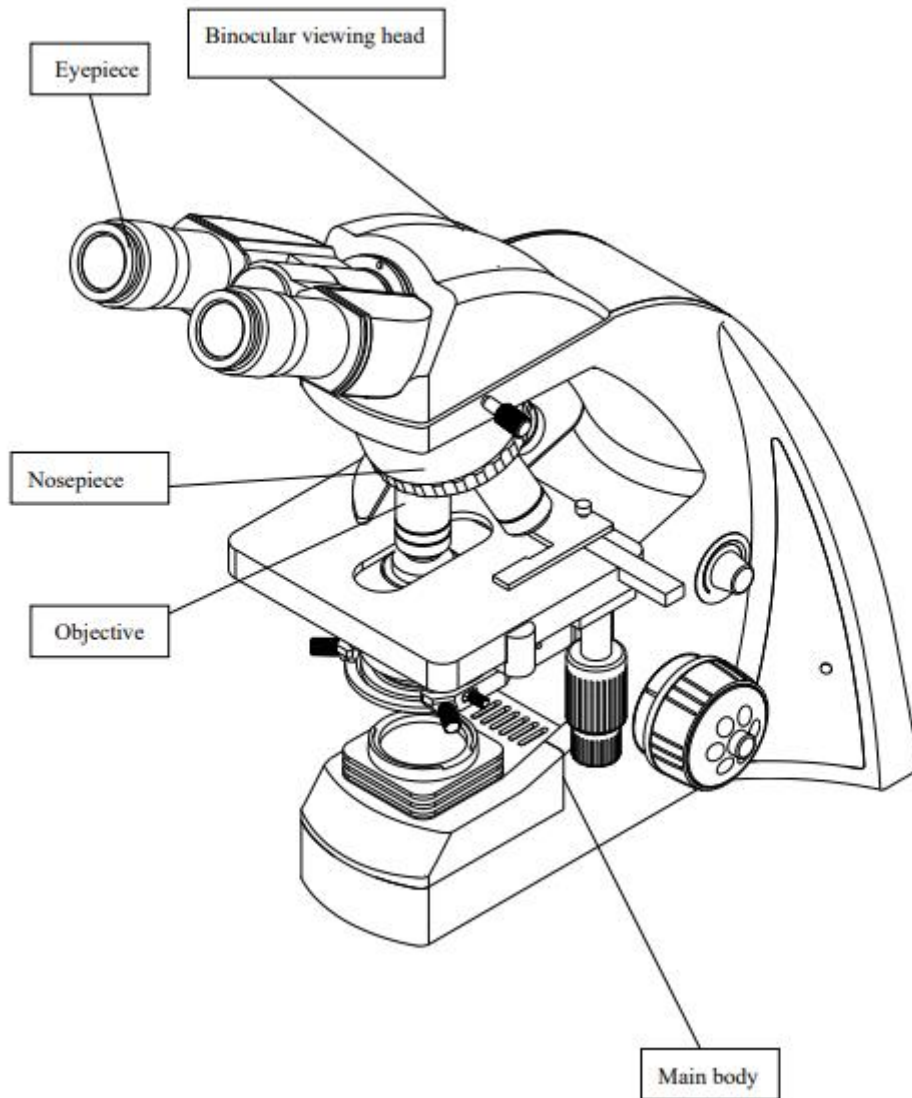


Figure 1

7. Installation

7.1 Assembly

Assembly Diagram

The following figure shows the sequence for installing the components. The numbers in the figure indicate the assembly steps.

- Before installation, ensure that all components are clean and avoid scratching any parts or glass surfaces.
- Keep the hexagon wrench provided in a safe place. You will need it again when changing components.

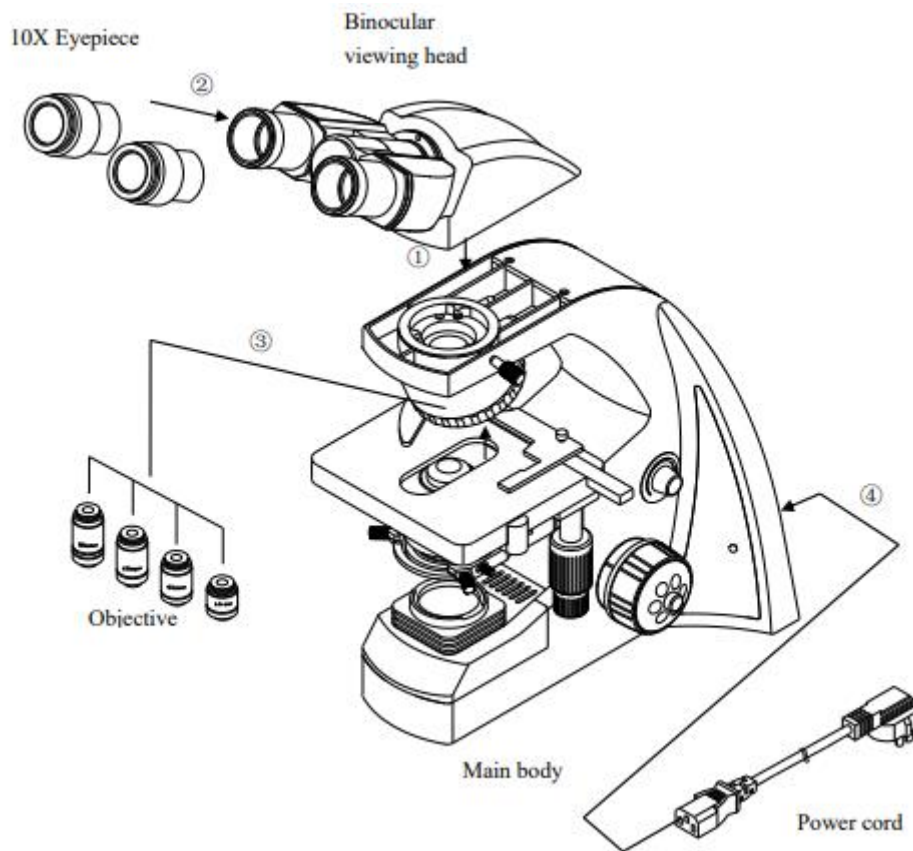


Figure 2

7.2 Assembly Procedure

7.2.1 Installing binocular viewing head

Insert the binocular viewing head into the microscope head, adjust it to the proper position, and then tighten the bolt to secure it.

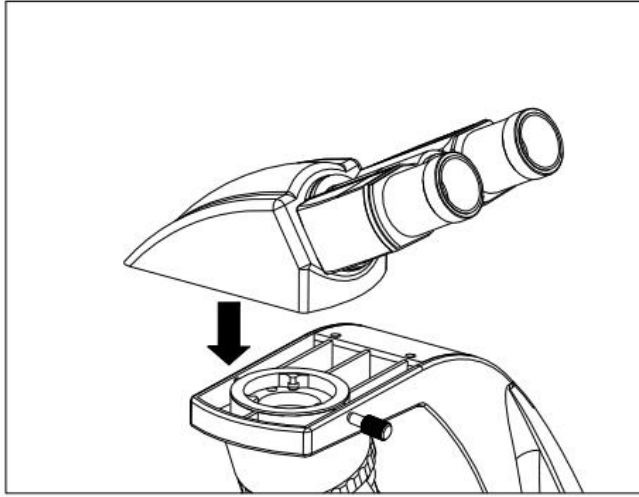


Figure 3

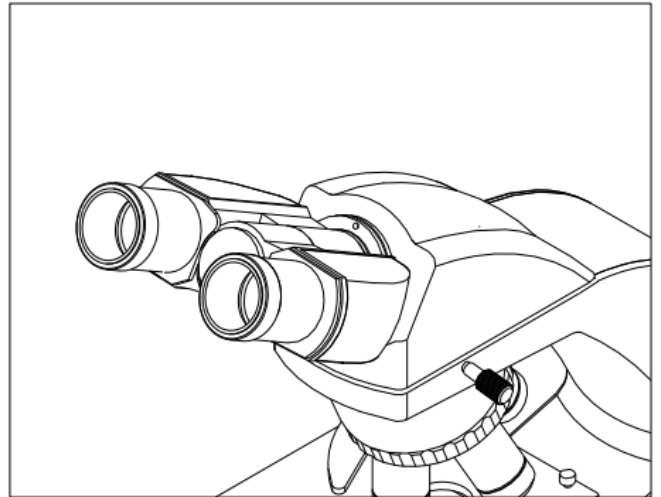


Figure 4

7.2.2 Installing the eyepiece

Insert the eyepiece into the eyepiece tube until they are fully seated, as shown in Fig. 6.

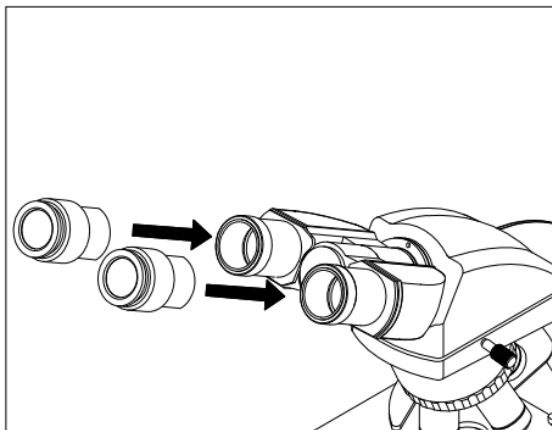


Figure 5

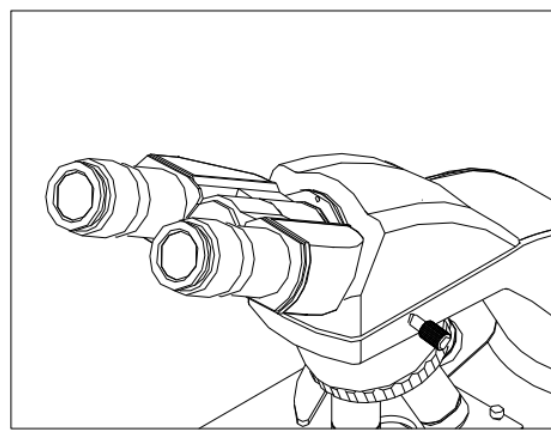


Figure 6

7.2.3 Installing the objective

1. Adjust the coarse focus knob until the mechanical stage support reaches its lowest position.
2. Insert the objective into the nosepiece from the left or right side, then rotate the nosepiece clockwise and mount the other objectives in sequence, from low to high magnification.

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Installing the objectives this way will make it easier to change magnification during use.

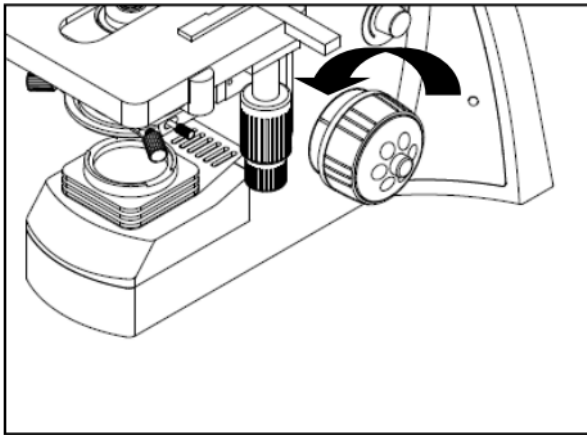


Figure 7

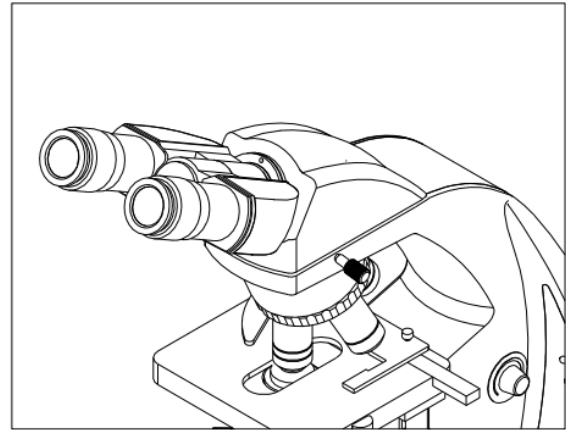


Figure 8

- Clean the objective regularly, as the lens is susceptible to dust.
- When operating, start with the 10× magnification objective to locate and focus on the specimen, then switch to a higher magnification objective if necessary.
- When replacing the objective, slowly rotate the nosepiece until you hear a 'click,' indicating that the objective is securely in place.

7.2.4 Mounting the Filters

Place the required filter in front of the condenser.

- The filter of the standard outfit is green.

7.2.5 Connecting the Power Cord

- The cables and cords are fragile when bent or twisted; never subject the power cord to excessive force.
1. Set the main switch ① to an "0" (off) state before connecting the power cord.
 2. Insert the plugs ② into the power jack ③ of the microscope safely.
 3. Plug the power cord ④ into the power supply receptacle ⑤. Make sure the connection is well.
- Always use the supplied power cord. If it is lost or damaged, kindly use a replacement with the same specifications.
 - A wide range of voltage , like 100V~240V, is acceptable for this microscope.

8. Operations

8.1 Adjustment Set Diagram

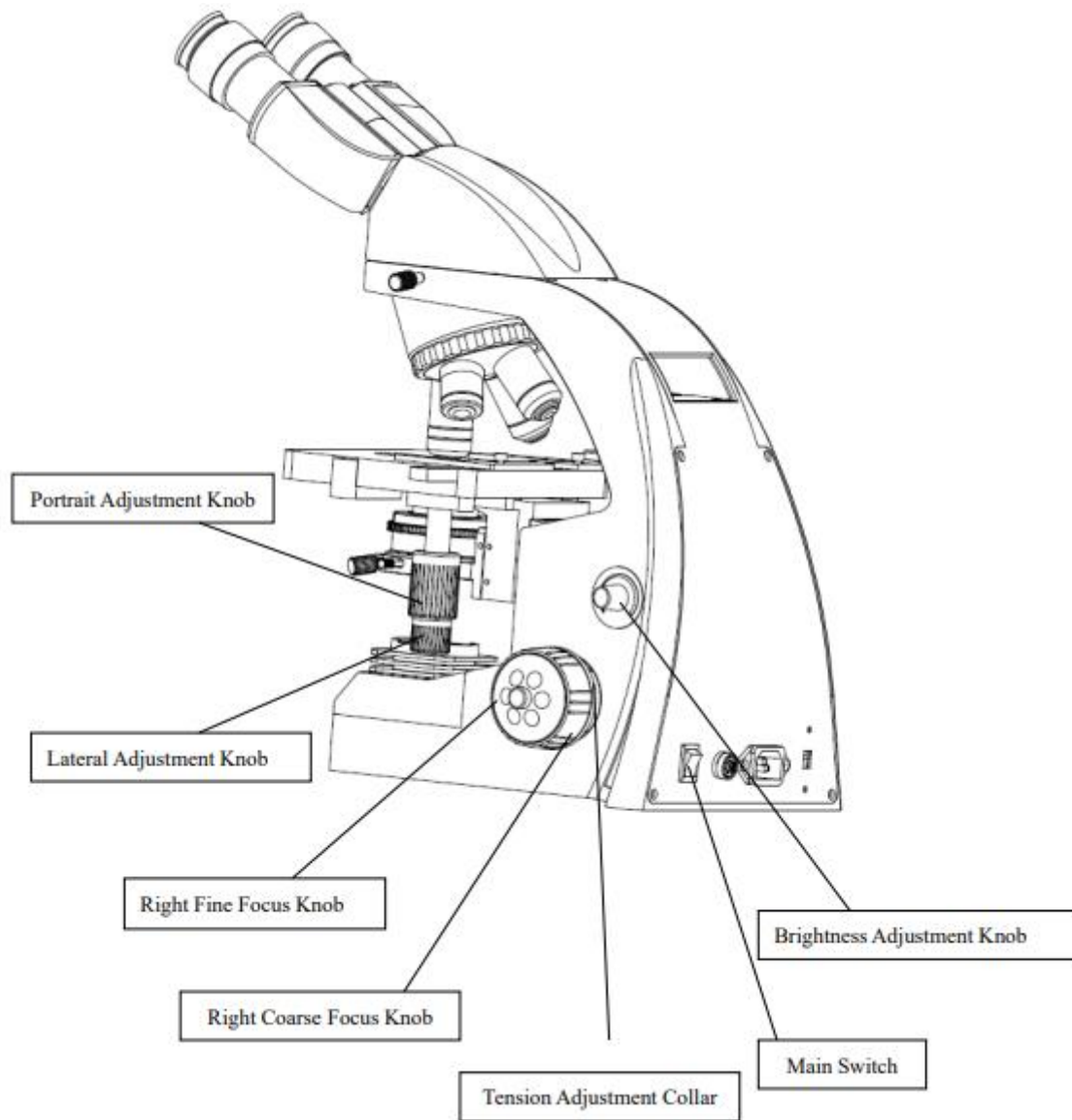


Figure 9

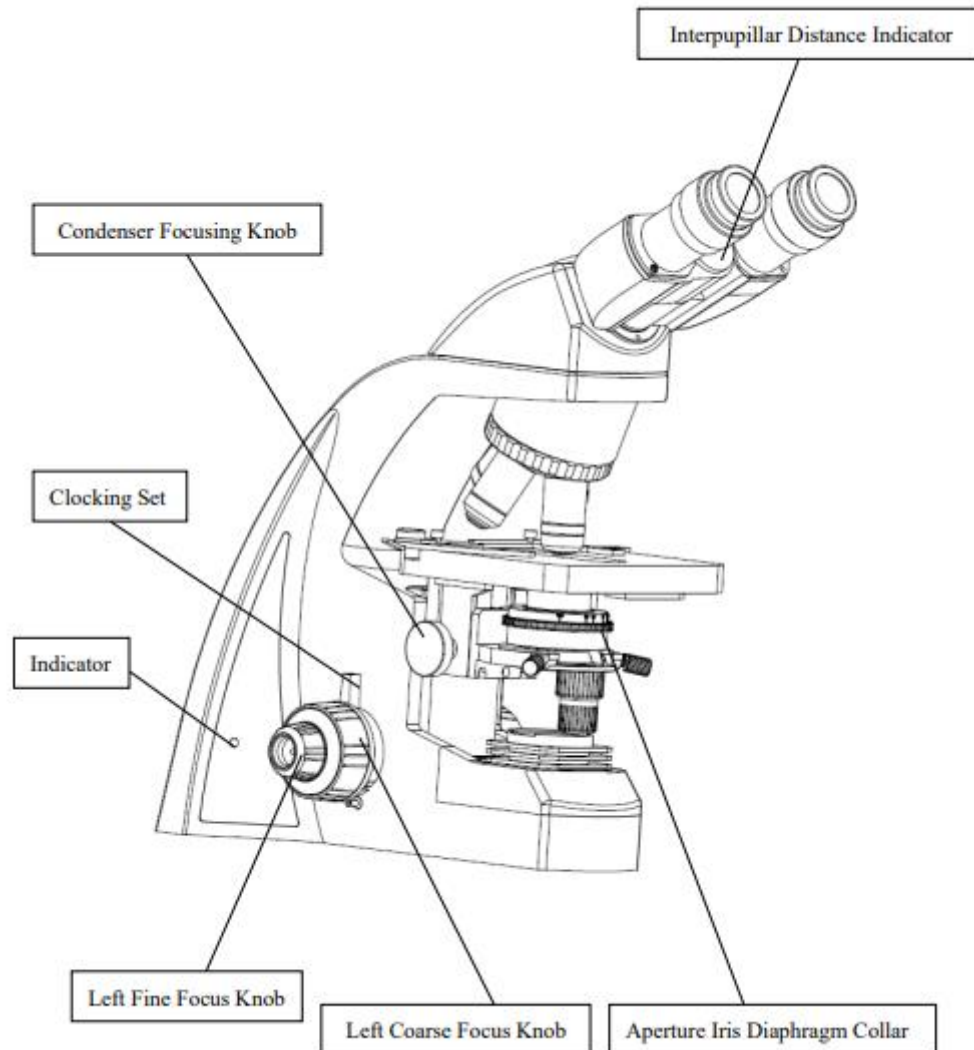


Figure 10

8.2 Operation

8.2.1 Brightness Adjustment

1. Connect the power cord and set the main switch to the " - " (ON) position.
2. Turning the brightness adjustment knob clockwise increases the voltage and brightness; turning it in the opposite direction decreases the voltage and brightness.

Using the microscope with low voltage in the voltage range can prolong the service life of the bulb.

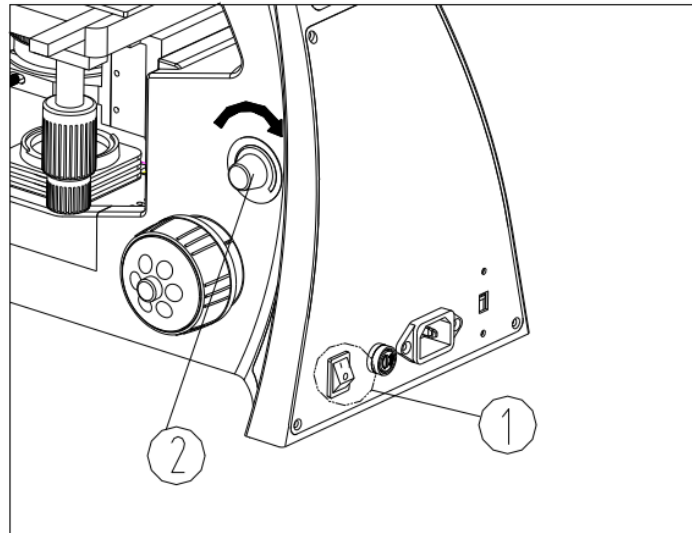


Figure 11

8.2.2 Placing the specimen

1. Place the specimen ① in the center of the mechanical stage and use the stage clips to secure it.
 2. Turn the portrait and lateral adjustment knob ② of the mechanical ruler, move the specimen to the required position.
- Be careful when changing the objective. If you finish the observation with the short working distance objective, and want to change another one, be careful of not letting the objective touch the specimen.

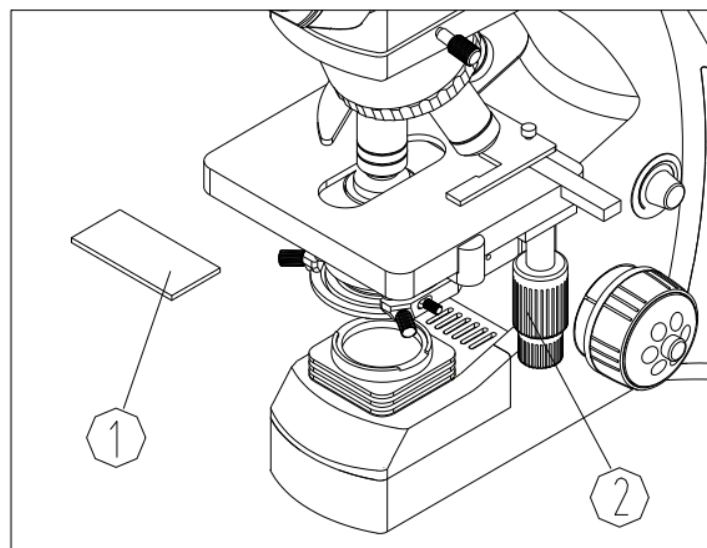


Figure 12

8.2.3 Focusing the Specimen

1. Focus the specimen with 10X objective. To avoid the objective touching the specimen during focusing, you should raise the mechanical stage to let the specimen close to the objective at first, then slowly separate them to bring the specimen to focus.

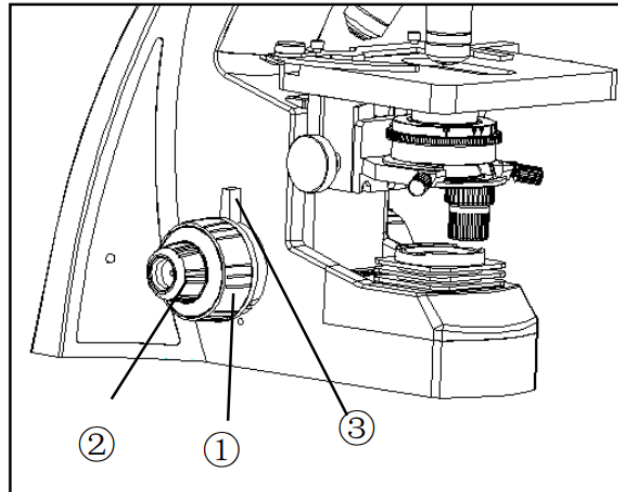


Figure 13

2. Turn the coarse focus knob ① conversely to lower the specimen and search images in the 10×ocular simultaneously, and then use the fine knob ② to focus. After that, you can replace them with other magnification objectives safely and focus without the risk of damaging the specimen.
- To see more convenient, you can use the locking set ③ to fix the stage in a vertical direction.

8.2.4 Condenser Adjustment

Turn the condenser focus knob to move the condenser up and down. Raise the condenser when using the high magnification objective and descend it when using the low magnification one.

- The condenser and the objective are coaxial. It has been adjusted before leaving the factory, so the user needn't adjust them by self.
- The highest position of the condenser has been adjusted too. It also needn't any user's operation.

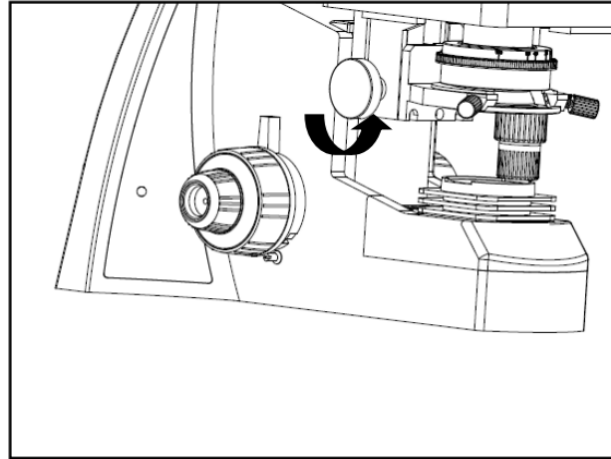


Figure 14

8.2.5 Aperture Iris Diaphragm Adjustment

Turn the aperture iris diaphragm collar ① to adjust the aperture iris diaphragm.

- The aperture iris diaphragm is designed for the adjustment of the numerical aperture, not for the brightness.
- Generally, setting the aperture iris diaphragm to 70- 80% of the N.A. of the objective in use will provide an image with good contrast. If you want to observe the image of the aperture iris diaphragm, remove one eyepiece and look through the tube. You will see a dark circle encroaching on the bottom of the tube.

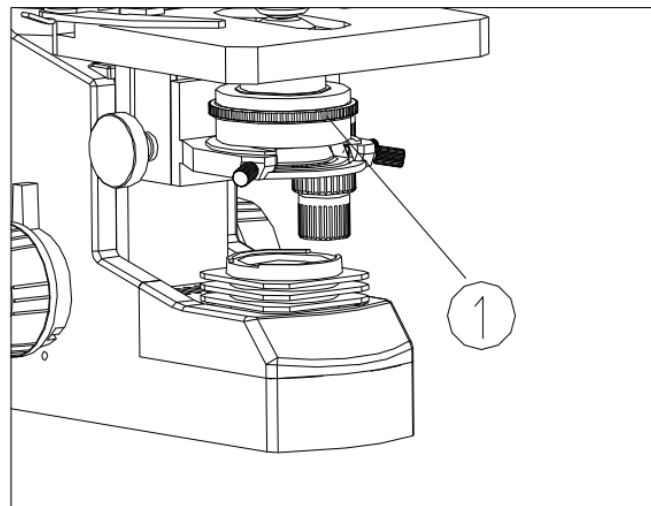


Figure 15

8.2.6 Adjusting the Interpupillary Distance

The interpupillary distance range is 48mm ~ 75mm.

While looking through the eyepieces, move both eyepieces until the left and right fields of view coincide completely.

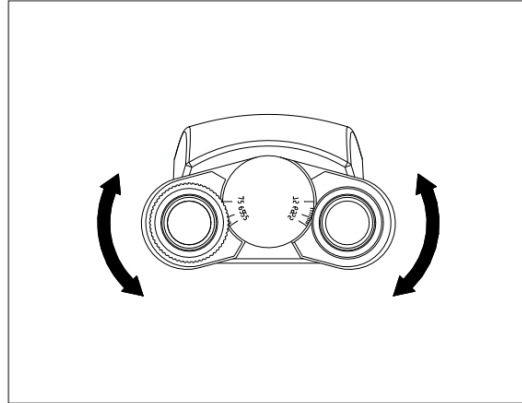


Figure 16

8.2.7 Adjusting the Diopter

1. Turn the eyepiece ① to adjust the diopter while looking through it.
 - The diopter range of the eyepiece is ± 5 diopter. The number aligned to the line on the viewing head is the diopter in use.

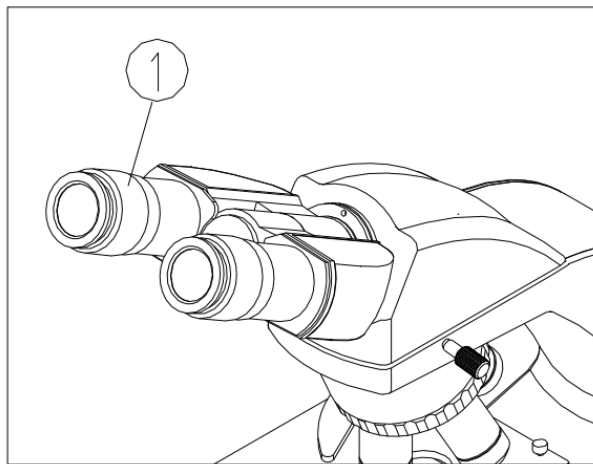


Figure 17

8.2.8 Adjusting the tension adjustment collar

Turn the tension adjustment collar ① with your fingers. When the collar is turned in the direction of the arrow, tension of the coarse adjustment knob ② increases. Turning the collar in the opposite direction decreases the tension.

If the nosepiece descends on its own or if the specimen gets out of focus quickly even when it is brought into focus using the fine adjustment knob ③, it means the tension of the coarse adjustment knob is too low. Turn the collar in the direction of the arrow to increase the tension.

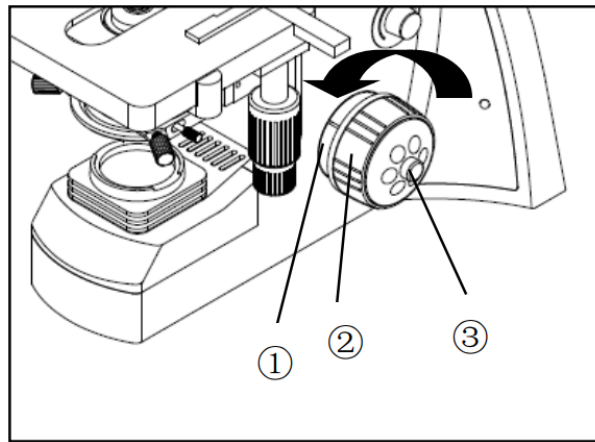


Figure 18

9. Maintenance

- The lenses have been properly adjusted. Kindly do not remove or adjust them yourself.
- The nosepiece and the coarse and fine focusing mechanisms are delicate. Do not attempt to disassemble them.
- Keep the instrument clean and avoid contaminating the optical elements when removing dust.
- To remove contaminants such as fingerprints and oil smudges from the prism, gently wipe with a soft cloth, tissue paper, or gauze soaked in pure alcohol or ether. (Note: Alcohol and ether are highly flammable. Keep them away from fire or electrical sparks and use them in a well-ventilated area.)
- Do not use organic solvents to clean any parts of the microscope except the glass components. For cleaning, use a lint-free, soft cloth lightly moistened with a diluted neutral detergent.
- If the microscope is splashed with liquid, immediately cut off the power and wipe away the spill.
- Do not disassemble any parts of the microscope, as this could impair its function or reduce performance.
- Store the instrument in a cool, dry place. When not in use, cover the microscope with a dust cover. Ensure the lamp socket is cool before covering the microscope.

10. Troubleshooting

10.1 Optical System

Trouble	Cause	Solution
1. The edge of the field of view is dark or the brightness is not uniform.	The nosepiece is not in the located position (objective and light path not coaxial).	Locate the nosepiece properly where it clicks.
	The surface of the lamp becomes black.	Change a new lamp bulb.
	A lens (the objective, condenser, eyepiece or collector) is dirty.	Clean it thoroughly.
2. Dirt or dust is visible in the field of view.	Dirt/dust on the specimen.	Replace with a clean specimen.
	Dirt/dust on the eyepieces.	Clean them.
3. Visibility is poor; Image is not sharp; Contrast is poor; Details are indistinct.	Specimen is not covered.	Add cover glass on it.
	The thickness of the cover glass is not suitable.	Use standard cover glass with thickness of 0.17mm.
	Specimen is placed reversely.	Turn it over.
	Dry objective has oil on it. (Especially for 40X objectives)	Wipe the oil.
	A lens (the objective, condenser, eyepiece or collector) is dirty.	Clean it.
	Immersion oil is not used with the 100x objective.	Use specified oil.
	Air bubbles existed in the immersion oil.	Eliminate the bubble.
	The aperture iris diaphragm is stopped down too far.	Adjust the aperture iris diaphragm properly.
4. One side of the image is blurred.	Dirt or dust on the eyepiece.	Clean it.
	The condenser is not properly centered.	Center the condenser with the centering screw.
	The nosepiece is not properly engaged.	Engage the nosepiece properly.
5. The image shifts during focusing.	The specimen is not clamped.	Clamp it with stage clips.
	The specimen slips on the stage.	Fix it.

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	The nosepiece is not in the right position.	Turn it to the “clicked” position.
6. The brightness is not enough.	The aperture iris diaphragm is too small.	Adjust it properly.
	The condenser is too low.	Adjust it properly.
	A lens (the objective, condenser, eyepiece or collector) is dirty.	Clean it.

10.2 Mechanical System

Trouble	Cause	Solution
1. Image cannot be focused.	When adjusting stage height, you forgot to reattach upper stopper screw.	Reattach upper stopper screw.
2. Objective contacts specimen before focus is obtained.	Specimen is mounted upside down.	Mount specimen correctly.
3. The specimen cannot be moved freely.	The slide is not clamped.	Clamp the slide firmly.
4. The field of view of one eye does not match that of the other.	Interpupillary distance is incorrect.	Adjust interpupillary distance.
5. Observation is tiring.	The diopter is not proper.	Adjust the diopter properly.
	The brightness of the illumination is not proper for eyes.	Adjust the lamp voltage.

10.3 Electrical System

Trouble	Cause	Solution
The lamp can't light when the switch is turned on.	No power.	Check the connection of the power Cord.
	The lamp burns out.	Replace it.
The lamp burns out suddenly.	Use a substandard lamp The voltage is too high.	Use the specified lamp to replace.
The brightness is not enough.	Use a substandard lamp. The voltage is too low.	Use the specified lamp increase the voltage.
The lamp flickers or the brightness is vertiginous.	The lamp is going to burn out.	Replace it.

11. Accessories

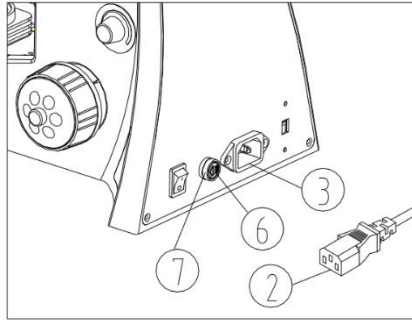
Optional Accessories

- Phase Contrast Kit
- Dark Field (Wet)
- Dark Field (Dry)
- Fluorescent Kit (B band)
- Heating Stage

12. Replacement

12.1 Replace the Fuse

Do remember to set the main switch ① to the state "0" (OFF) and unplug the power cord before replacing the fuse. Rotate the fuse ⑥ out of the holder ⑦ with the "--" type screwdriver, replace with a new fuse, then rotate it back to the holder



again.

Figure 19

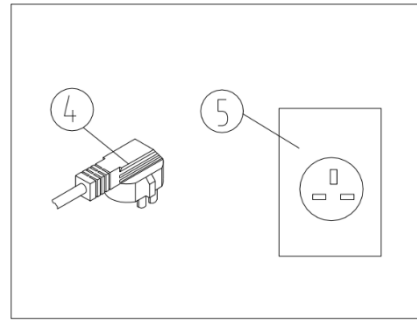


Figure 20

12.2 S-LED lamp Replacement

1. Generally, S-LED lamp is very durable, so it is not easy to damage. If it is unfortunately damaged, kindly purchase the S-LED (Fig.12) from your vendor.
2. Open the bottom plate ① by screwdriver, loosen screw ② to take the S-LED lamp ③ down and unplug the connector ⑥ from the breadboard. Mount new S-LED lamp, tighten screw ② and insert the connect ④ fully into the breadboard.
3. Mount the bottom plate back onto the microscope.

Note: Be careful to take the bottom plate down slowly in case that the wire of lamp is pulled apart.

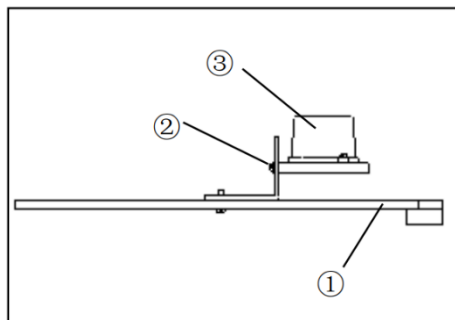


Figure 21

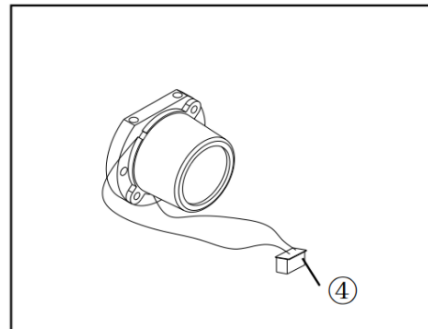


Figure 22



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