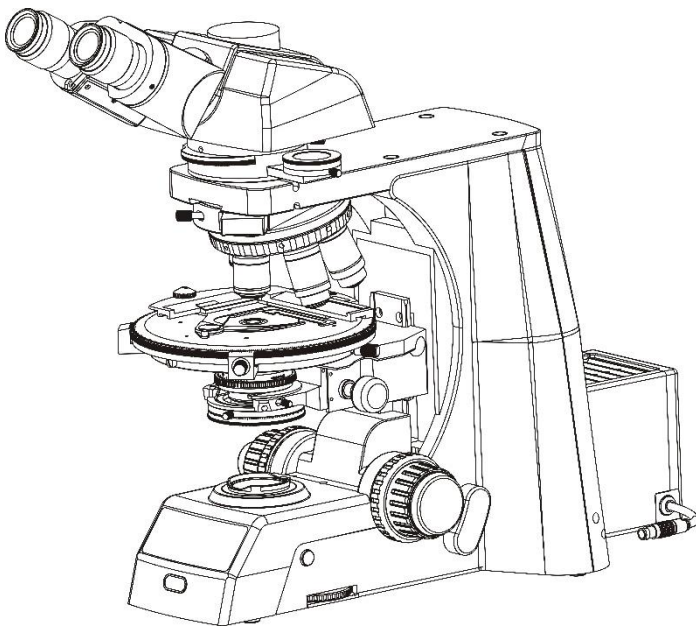
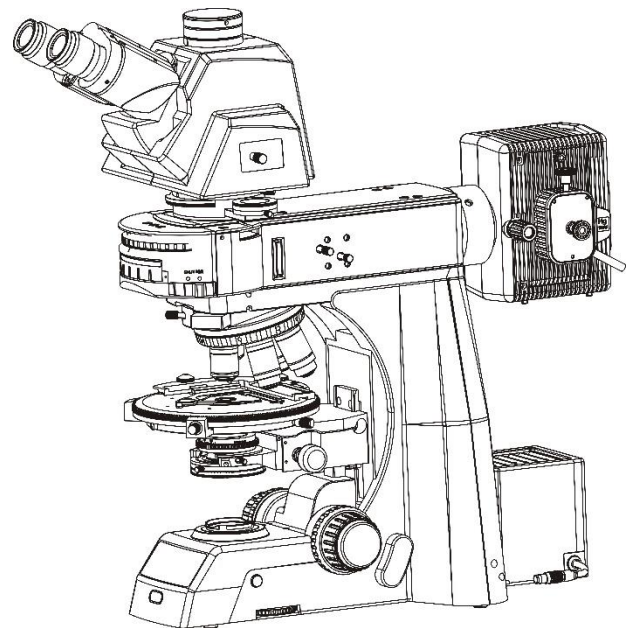


# BS-5095 Research Polarizing Microscope

## Instruction Manual



BS-5095



BS-5095RF/TRF




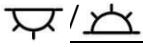
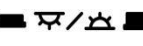





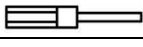

This manual is applicable to BS-5095 laboratory biological microscopes. In order to ensure safety, perform optimally with the instrument, and make you fully familiar with the use of this microscope, we recommend that you read the manual thoroughly and carefully before operating the microscope.

Notice Before Use .....	2
1. Name of each part .....	4
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## Notice Before Use

### I . Safety signs

The following signs are on the microscope. Find out what these symbols mean and always use the microscope in the safest way.

Sign	Significance
	Indicates that the main power switch is on.
	Indicates that the main power switch is off.
	Indicates that ground is here.
	Indicates on/down illumination.
	Indicates that the upper/ under light source illumination when the button is pressed/not pressed.
	Represents the trash can.
	F.S represents diaphragm,  represents the opening direction of the diaphragm,  represents the narrowing direction of the diaphragm.
ECO	Indicates that the person walks the light off switch.
	Represents a photo symbol.
	Indicates use a wrench here.
	Indicates the light strong small direction, the small head is the light weakening, the big head is the light to become stronger.
CE	Indicates CE certification.

### II . Safety precautions

- Care should be taken when opening the box, to prevent the lens glass stick to fingerprints, sweat stains and other impact observation, to prevent the lens and other accessories fall damage.
- Avoid placing the microscope in areas with direct sunlight, high or high humidity, dust, and vulnerability to strong vibrations, ensuring that the stage is flat, horizontal and strong enough.
- When a moving microscope is required, one hand hooks into the slot above the rack and one hand holds the front bottom of the frame.
- If a bacterial solution or water is splashed on a load station, objective or observation tube, immediately pull out the power cord and dry the solution or water to ensure that the microscope is dry. Otherwise, it is possible to damage the instrument.
- To avoid blocking natural convection air for cooling, make sure that the left, right, top, and back of the microscope are at least 10 cm from walls and other objects.
- Ground the unit to avoid lightning strikes.
-  To ensure safety, make sure that the main switch is in an "O"(off) state and that the power is switched off while waiting for the bulb and light chamber to cool down completely before replacing the halogen lamp or fuse. Input voltage check: The input voltage indicated on the back of the microscope is consistent with the supply voltage, otherwise it will cause serious damage to the microscope.
- Use the special wires provided by the Company.

### III. Maintenance and maintenance

1. All lenses are tuned and do not disassemble themselves.
2. Objective converter and coarse micro-focusing mechanism, the structure is precise, please do not easily disassemble.
3. The instrument should be kept clean, dust removed every day, clean should pay special attention not to contaminate optics, objective lenses every other month to ask professionals to clean.
4. Smudges on the lens, such as fingerprints and grease, can be wiped with a small amount of ether (70%) and alcohol (30%) mixed solution on the lenspaper.  
**⚠ Solvents such as ether and alcohol are highly flammable, do not carry out a variety of electrical equipment power switch operation, at the same time can not approach the open fire, please ensure indoor ventilation.**
5. Do not use organic solvents to wipe non-optics of the microscope, if cleaning, use a neutral detergent.
6. When using, if the microscope is wet with liquid, cut off the power supply immediately and dry it.
7. Never disassemble any part of the microscope, which can affect the function of the microscope or reduce the performance of the microscope.
8. The instrument should be placed in a cool, dry place, when the microscope is not used, the use of a dust cover. Be sure to wait for the light chamber to cool down before the cover is on.
9. The environmental requirements for the use of microscopes:
  - a) Indoor use;
  - b) Ambient temperature range: 10°C~35°C;
  - c) Maximum relative humidity: 80% when the temperature reaches 31°C, 70% When the temperature is reduced linearly to 34°C, 60% the temperature reaches 37°C, 50%When the temperature reaches 40°C.
10. Microscope storage and transport environment requirements:
  - a) Ambient temperature range: -40°C~+70°C
  - b) Relative humidity range: 10% to 100%.
  - c) Air pressure range: 500hpa-1060hp

#### Warning:

Failure to operate the microscope in the manner specified in this manual may compromise the safety of the user. In addition, the microscope may be damaged. The microscope should always be operated in accordance with this instruction.

© This microscope does not cause radiation, electromagnetic interference, etc. To the surrounding environment, in accordance with UL certification standards.

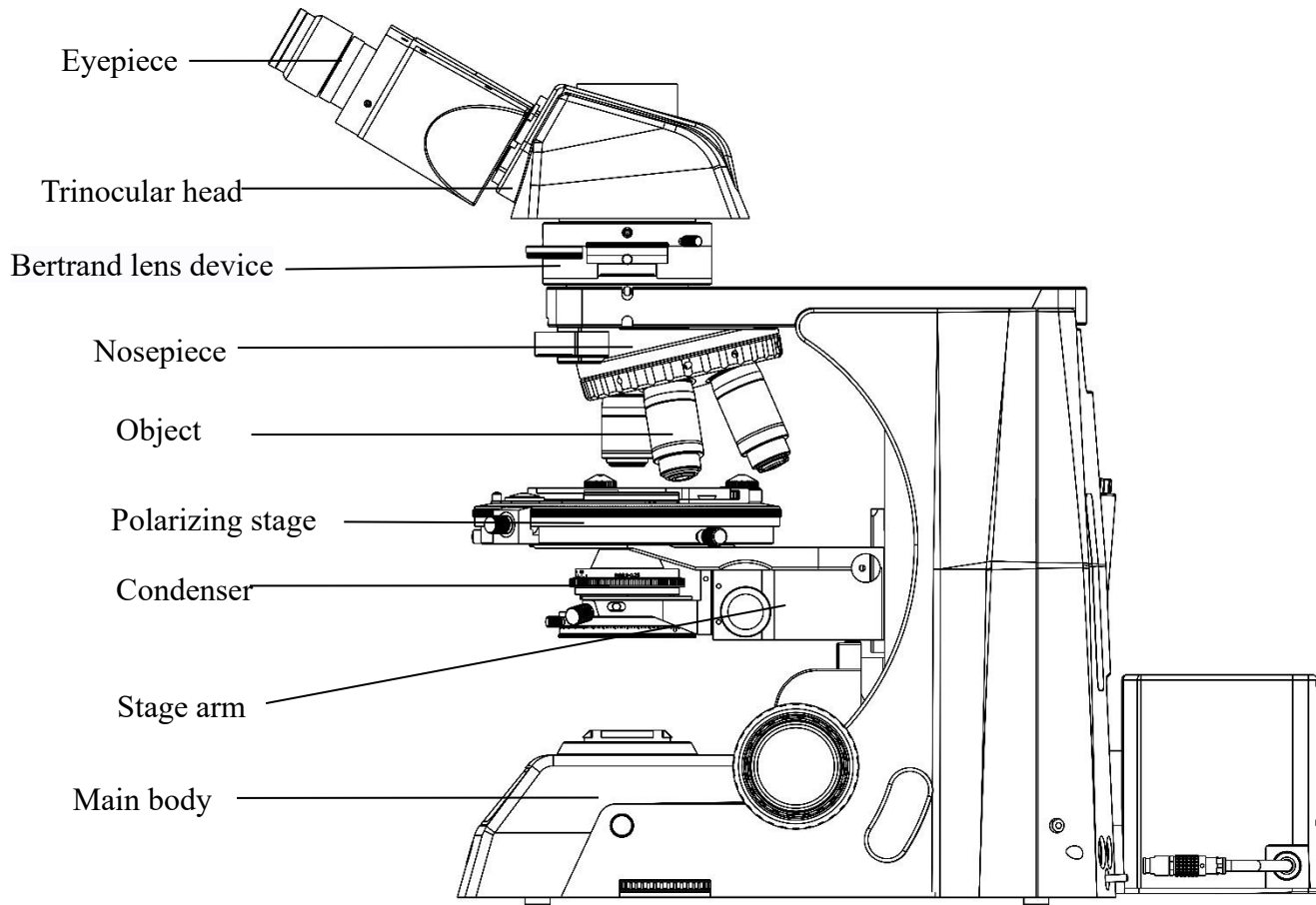
This manual uses the following symbols label prominent text:

⚠ The indication that the warning stake in this instruction manual will result in personal injury to the operator and/or damage to the instrument (including objects near the instrument).

★ Indicates that failure to follow this instruction will cause damage to the instrument.

© Indicates a comment (to operate and maintain at easy.)

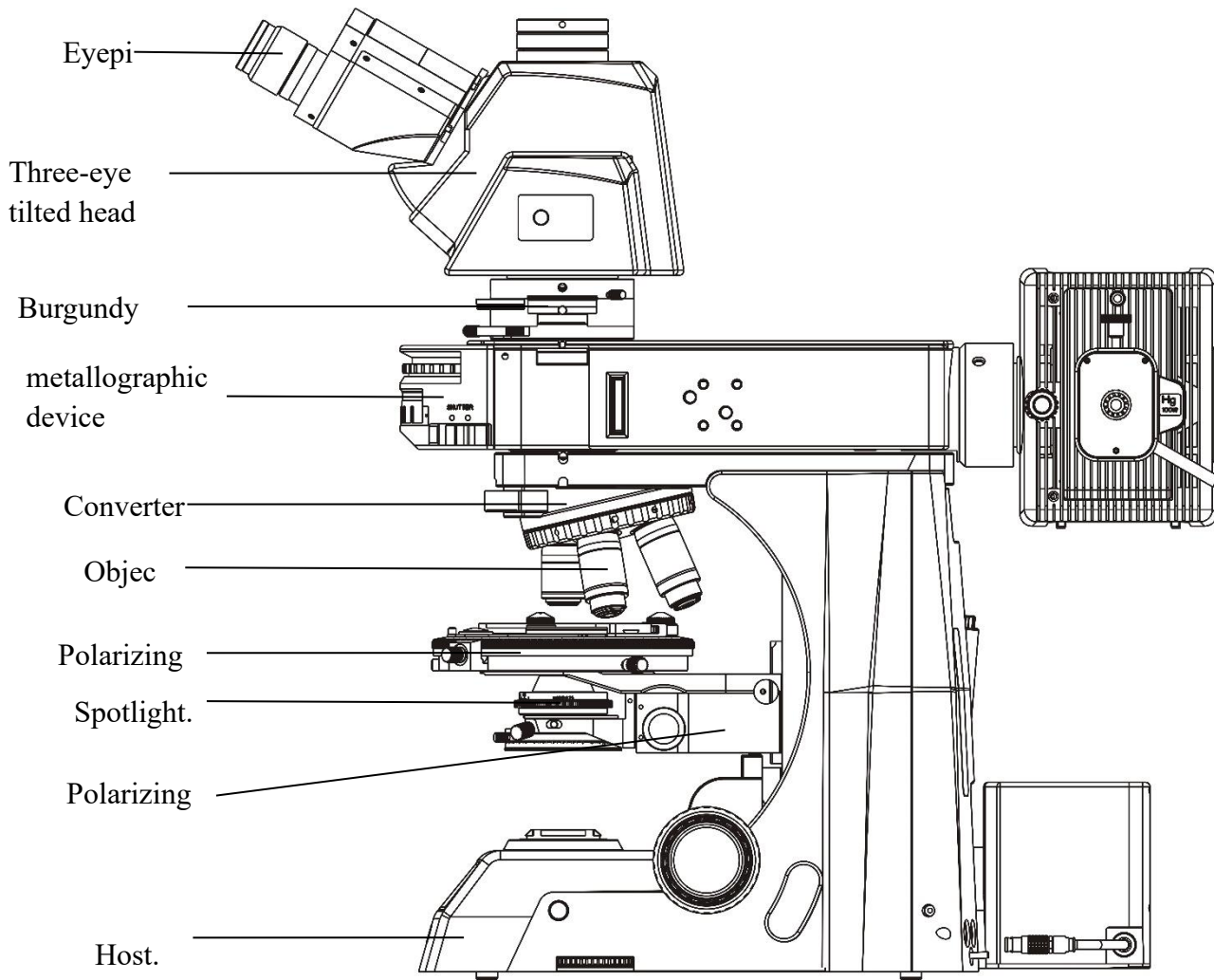
1. Name of each part



BS-5095

**1. Name of each part**

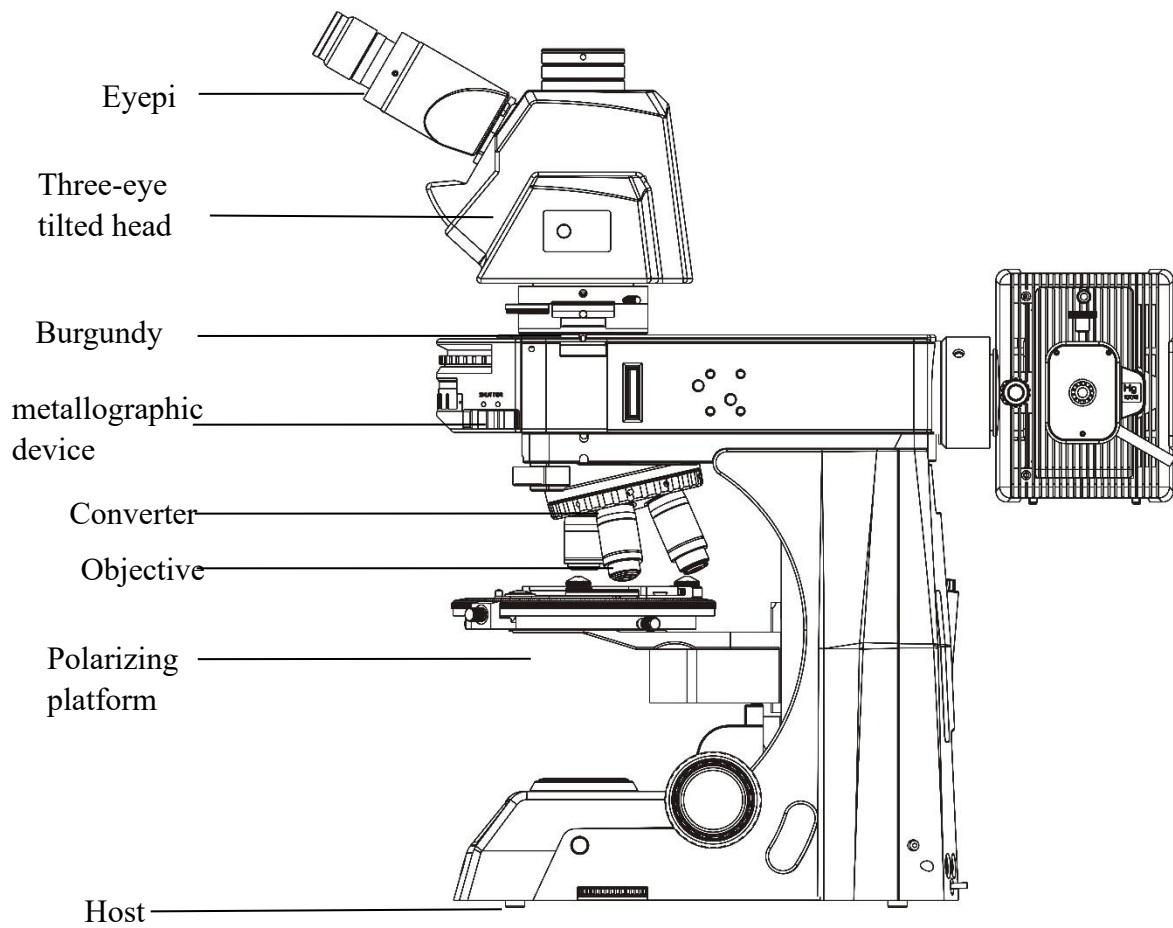
**BS-5095**



**BS-5095TRF**

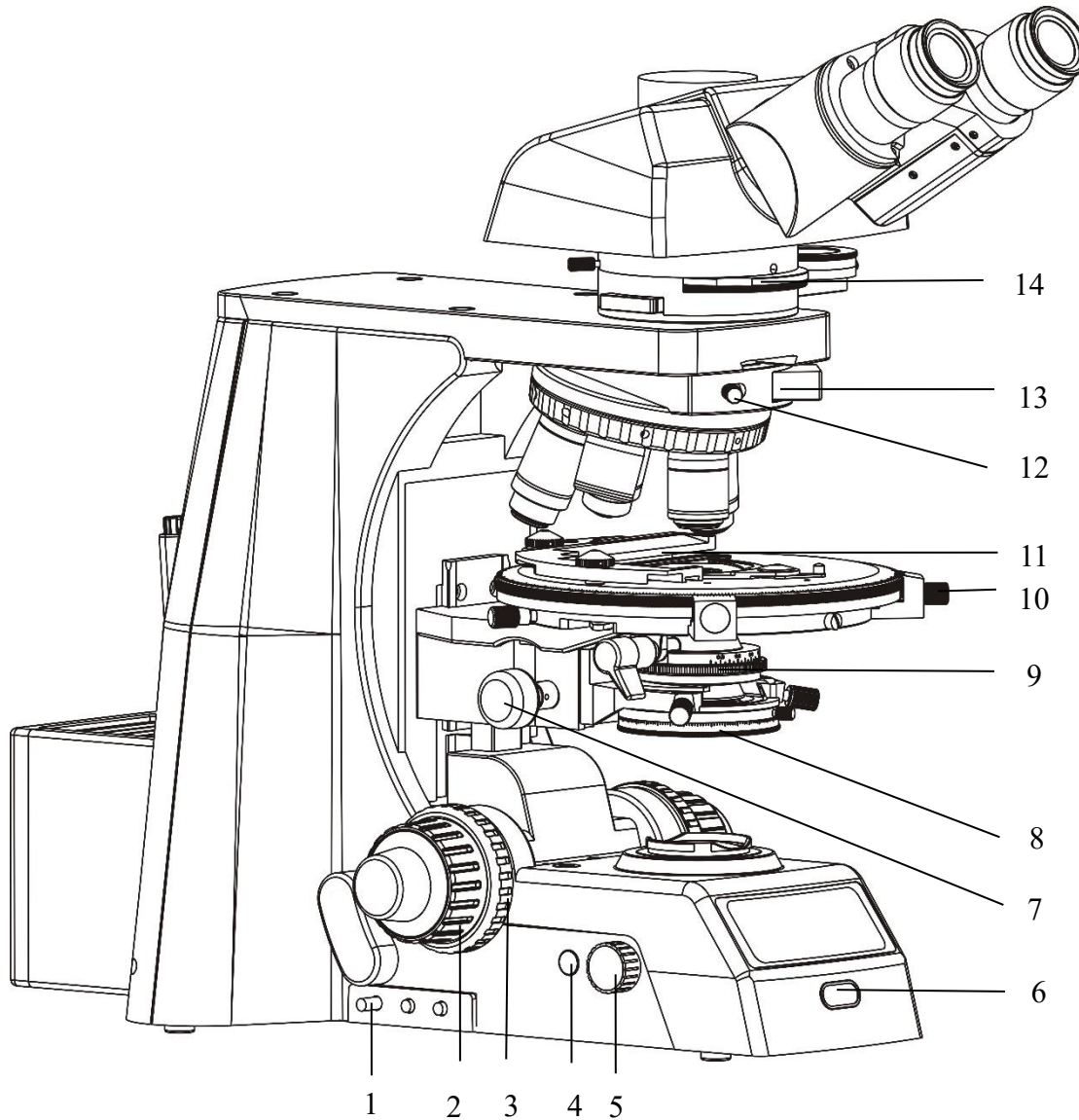
1. Name of each part

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BS-5095RF

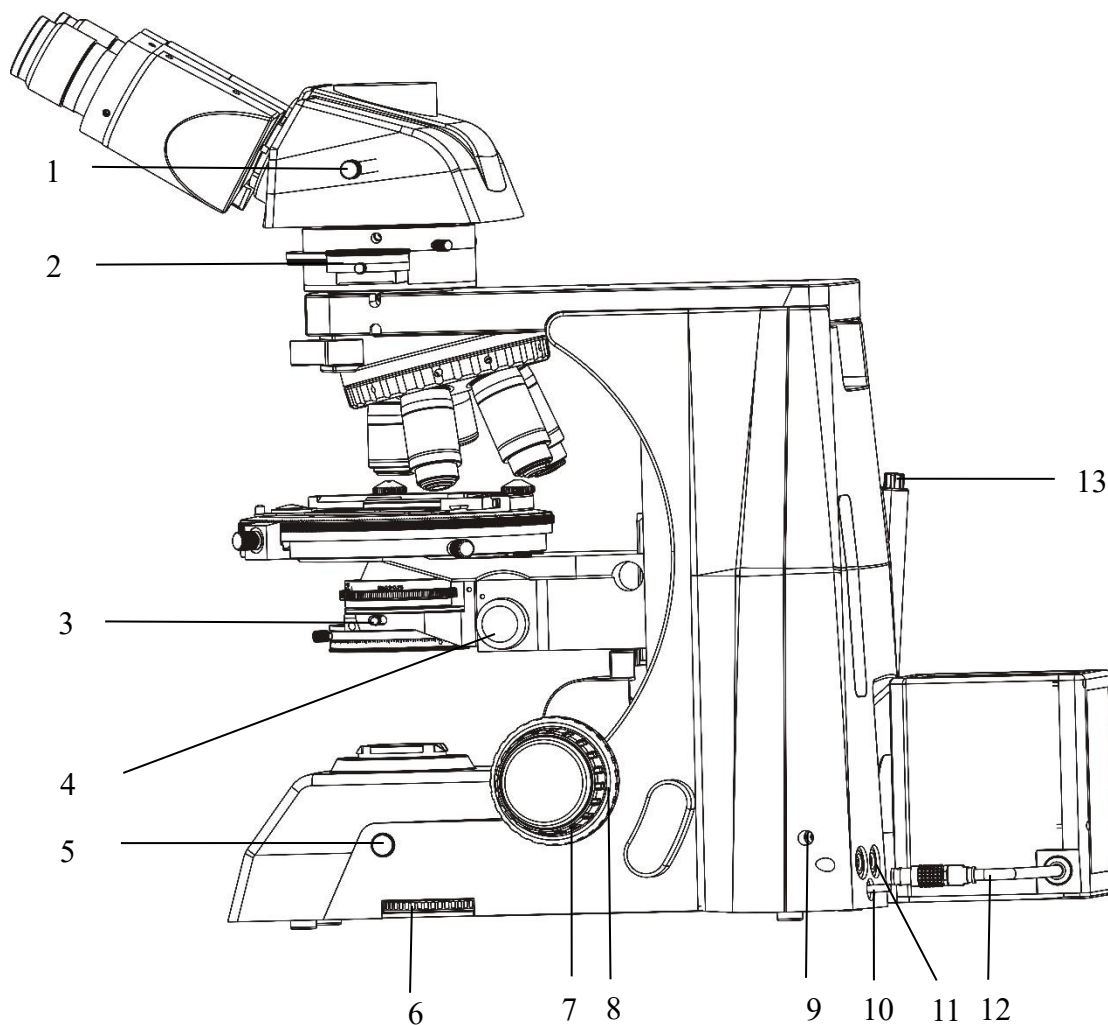
## 2. Overview of each part



BS-5095

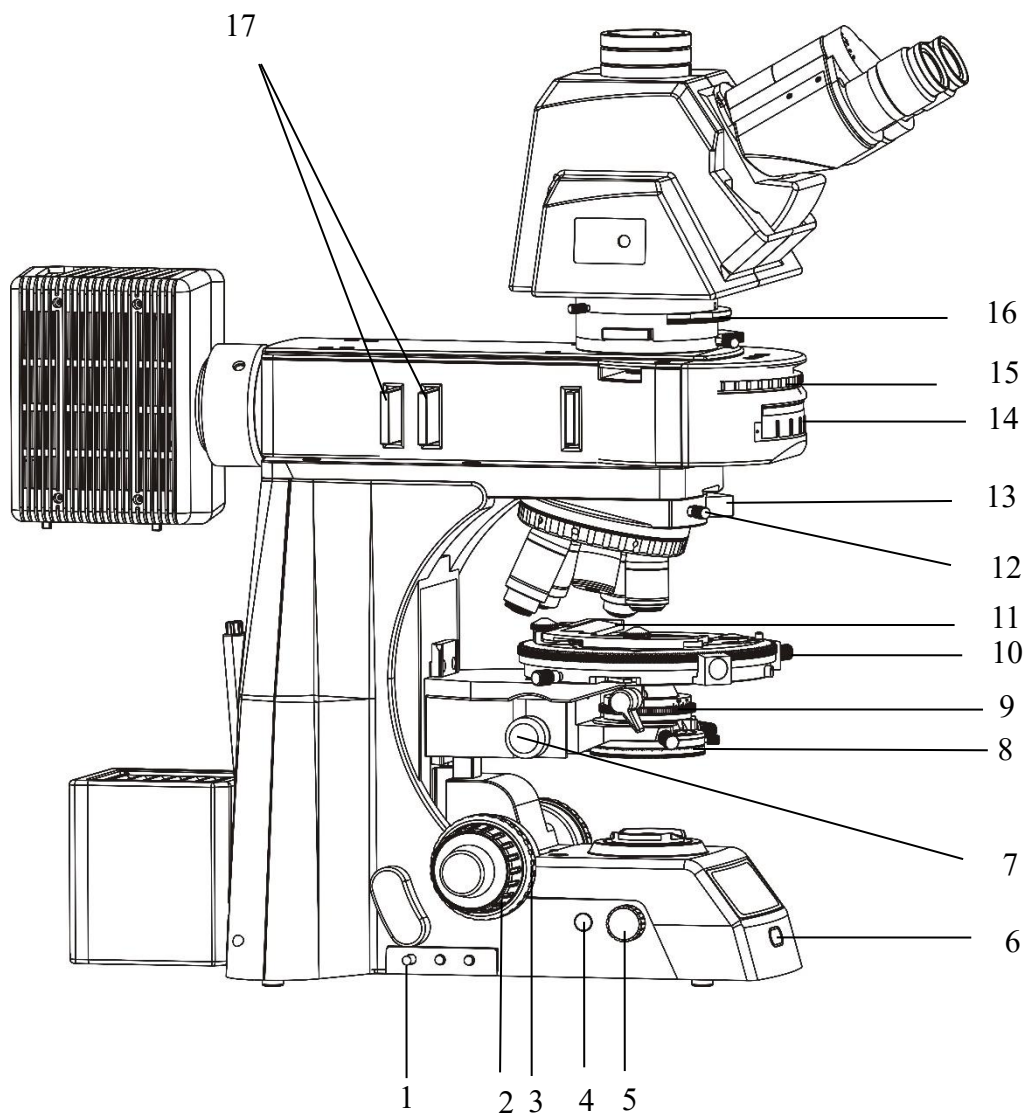
- |   |   |
|---|---|
| 1. Filter switch bar                      | 7. Polarizer                                |
| 2. Rough /fine-tuning lift handwheel      | 8. Condenser diaphragm adjusting ring       |
| 3. Focus the upper bit lock the handwheel | 9. Adjusting screw                          |
| 4. Light up and down the toggle button    | 10. Platform cursor                         |
| 5. Brightness adjustment knob             | 11. Extended function plug fastening screws |
| 6. "ECO" Infrared sensing device          | 12. Expansion function board                |
|   | 13. Burgundy mirror turntable               |





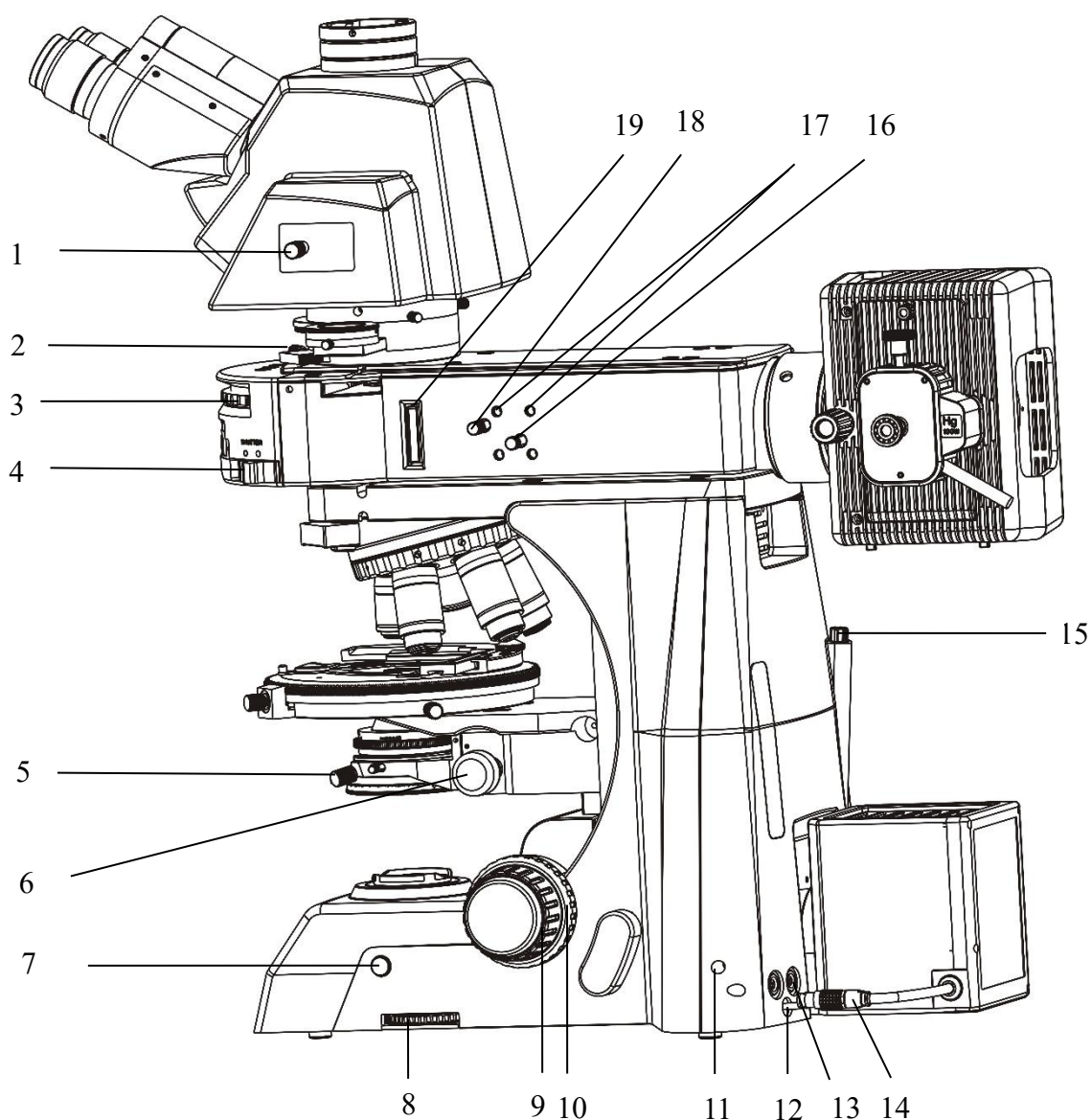
**BS-5095**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Observe the light path switch</li> <li>2. Analyzers</li> <li>3. Condenser fastening screw</li> <li>4. The height of the spotlight adjusts the handwheel.</li> <li>5. Taking pictures</li> <li>6. The field diaphragm light size adjustment knob.</li> <li>7. Rough /fine-tuning handwheel.</li> </ol> | <ol style="list-style-type: none"> <li>8. Rough tension adjustment handwheel</li> <li>9. Light chamber fastening screws</li> <li>10. Ground screw</li> <li>11. Light room socket</li> <li>12. Light room plug</li> <li>13. Universal Wrench</li> </ol> |
|---|--|



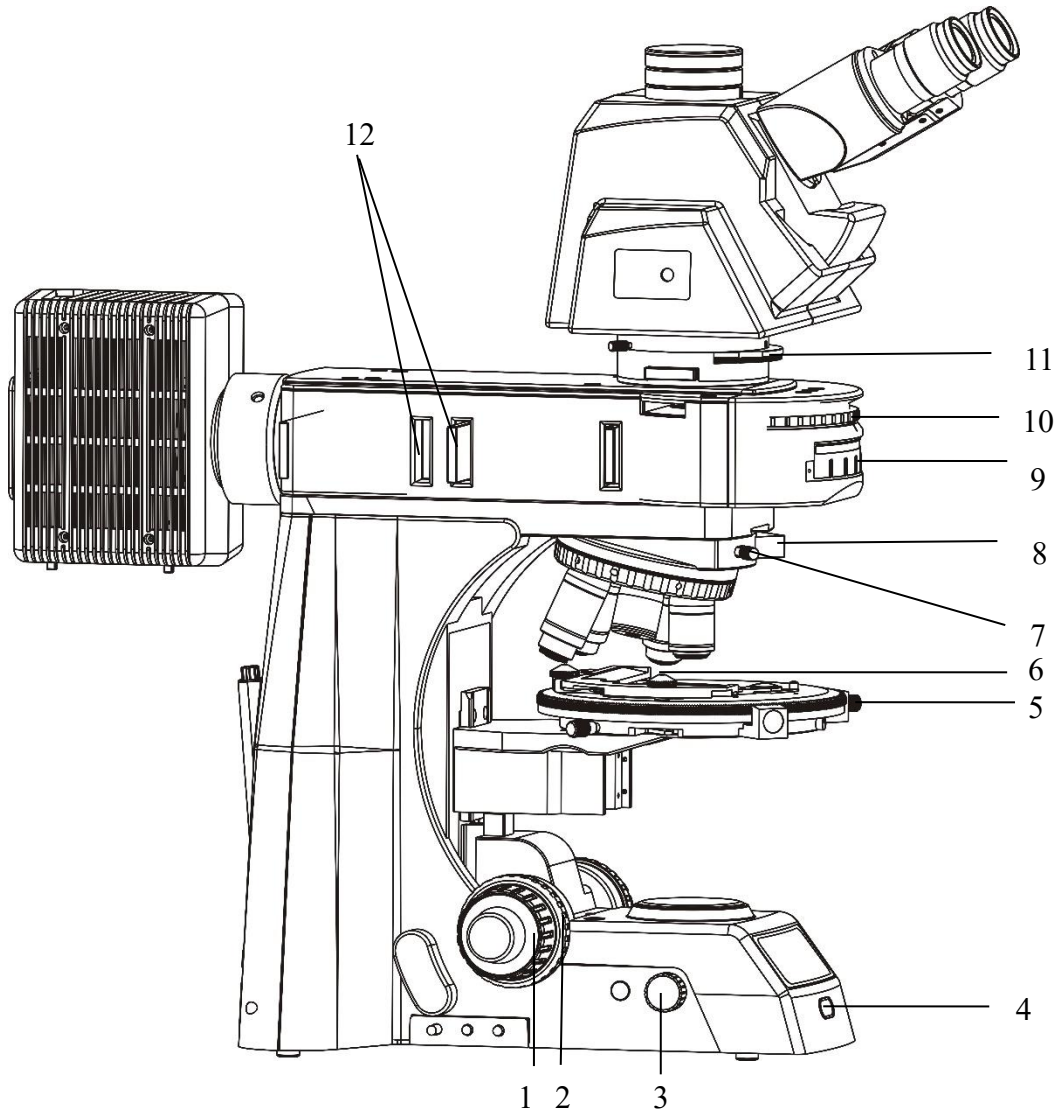
**BS-5095TRF**

- |   |   |
|---|---|
| 1. Filter switch bar                                | 10. Adjusting screw                           |
| 2. Rough /fine-tuning lift handwheel                | 11. Platform cursor                           |
| 3. Focus the upper bit lock the handwheel           | 12. Extended function board fastening screws  |
| 4. Light up and down the toggle button              | 13. Extended function board                   |
| 5. Brightness adjustment knob                       | 14. Labels                                    |
| 6. "ECO" Infrared sensing device                    | 15. Light and dark field switch turning wheel |
| 7. The height adjustment of the spotlight handwheel | 16. Burgundy Mirror Turntable                 |
| 8. Bias device                                      | 17. ND filter slot                            |
| 9. Condenser diaphragm adjusting ring               |   |



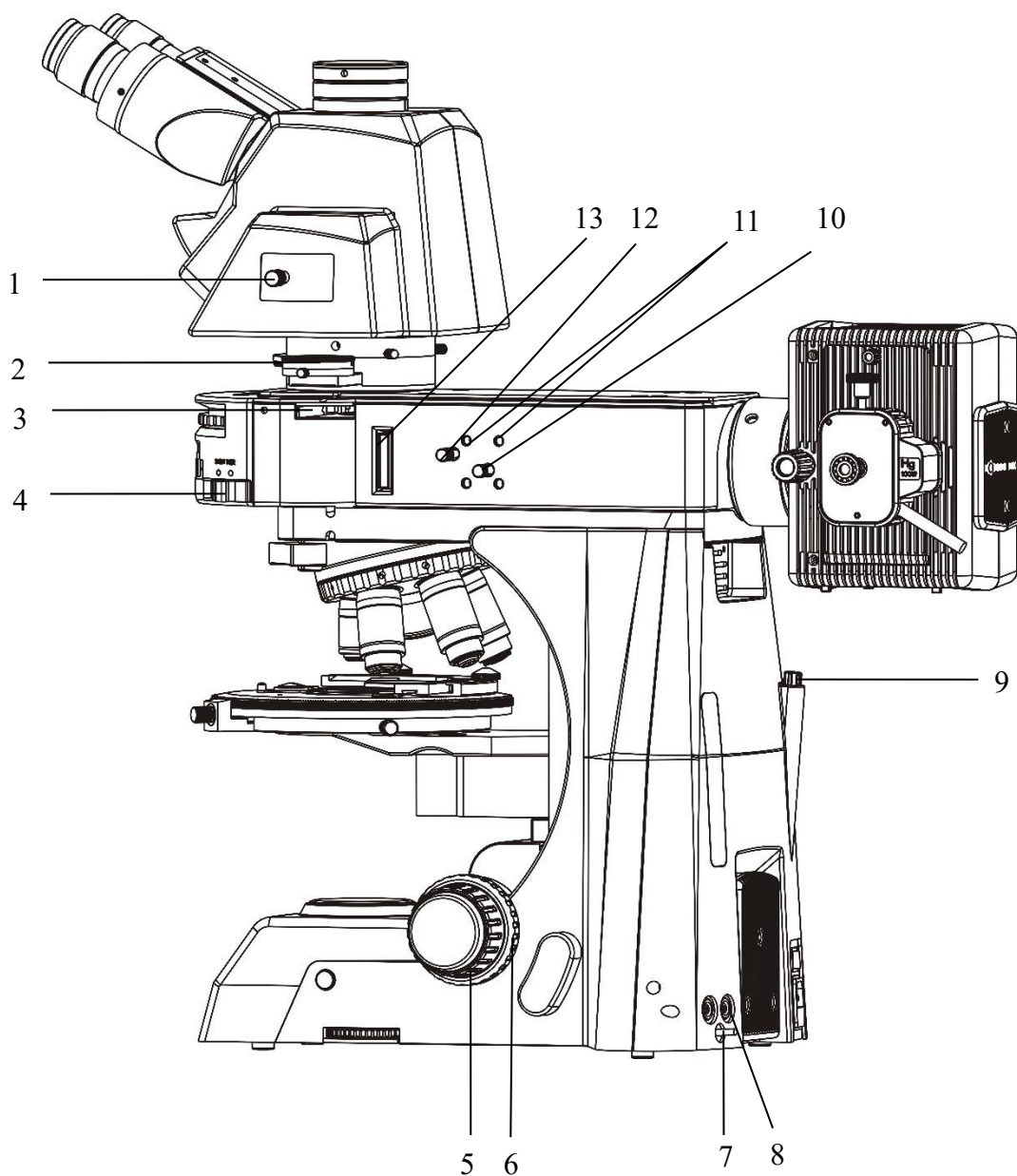
**BS-5095TRF**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Observe the light road switch</li> <li>2. Analyzers</li> <li>3. The analyzers slot</li> <li>4. Light gate switch button</li> <li>5. Condenser fastening screw</li> <li>6. The height of the spotlight adjusts the handwheel</li> <li>7. Taking pictures</li> <li>8. The field diaphragm light size adjustment knob</li> <li>9. Rough fine-tuning handwheel</li> <li>10. Rough lying loosens the handwheel</li> </ol> | <ol style="list-style-type: none"> <li>11. Light chamber fastening screws</li> <li>12. Ground screw</li> <li>13. Light room socket</li> <li>14. Light room plug</li> <li>15. Universal wrench</li> <li>16. The upper illumination aperture diaphragm adjusts lever</li> <li>17. Diaphragm adjusting screw</li> <li>18. The upper illumination field diaphragm adjustment lever</li> <li>19. Polarizer slot</li> </ol> |
|--|---|



BS-5095RF

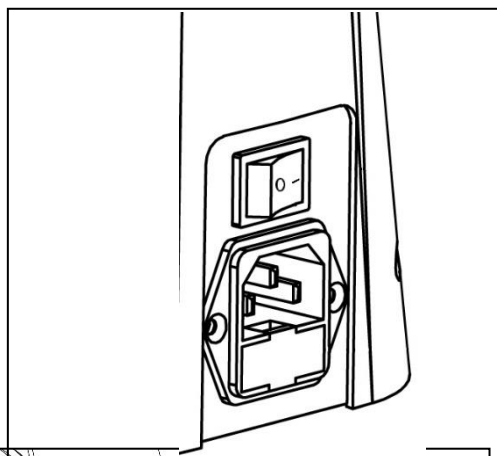
- |  |   |
|--|---|
| 1. Rough /fine-tuning lift handwheel           | 7. Extended function board fastening screws |
| 2. Focus the upper gear bit Lock the handwheel | 8. Extended function board                  |
| 3. Brightness adjustment knob                  | 9. Labels                                   |
| 4. "ECO" Infrared sensing device               | 10. Light / dark field switch switch        |
| 5. Adjusting screw                             | 11. Burgundy mirror turntable               |
| 6. Polarizer                                   | 12. ND filter slot                          |



BS-5095RF

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>1. Observe the light road switch</li> <li>2. analyzers</li> <li>3. analyzer slot</li> <li>4. Light gate switch button</li> <li>5. Rough/ fine-tuning handwheel</li> <li>6. Rough tension adjustment handwheel</li> <li>7. Ground screw</li> </ul> | <ul style="list-style-type: none"> <li>8. Light room socket</li> <li>9. Universal Wrench</li> <li>10. The upper illumination aperture diaphragm adjusts lever</li> <li>11. Diaphragm adjusting screw</li> <li>12. The upper illumination field diaphragm adjustment lever</li> <li>13. The polarizers slot</li> </ul> |
|--|---|

### 3. Adjustment and operation



#### 3-1 Turn on the power (Figure 1)

Turn on the power and dial the main switch (as shown) on the back of the microscope body to the "-" (on) state.

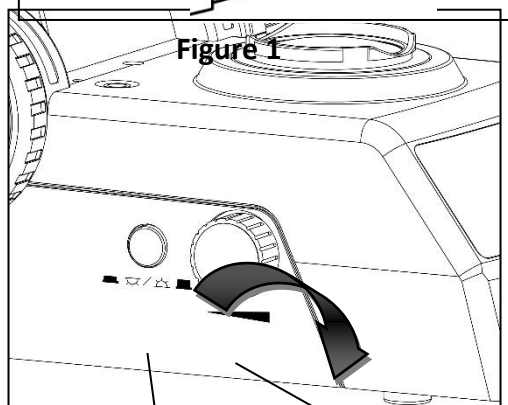




Figure 2

#### 3-2 Adjust light intensity and switch up and down light source (Figure 2)

1. As the direction of the figure 2 arrow rotates, the light source weakens and the light source is enhanced in reverse.
2. As in Figure 2, when the upper and lower light toggle button is pushed in the state of the upper light source state, as shown in the figure ; when the upper and lower light toggle button is pushed in the state of the lower light source state, as shown in the figure .

Dim the handwheel.



Switch levers from up and down the light source.

Figure 2

#### 3-3 Light socket (Figure 3)

The 3 lamp source socket and the plug have red dots on the figure 3, and before the plug is inserted into the socket, the direction should be adjusted until the red dot aligns in the same direction.

◇ Note that the silk screen on the left and right sockets corresponds to the upper and lower light switch buttons. As

shown in the figure:  for the upper and lower light light switch button push-in state corresponding to the upper and lower light source switch ingest state, for the lower light light circuit  socket, with the upper and lower light source switch button ejection status.

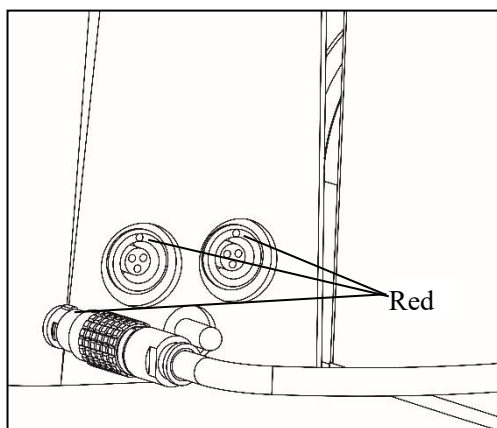


Figure 3

★ If you find that the upper and lower light switching levers are not in the same state as the illustration, check that the upper and lower light plugs are inserted into the appropriate socket as shown.

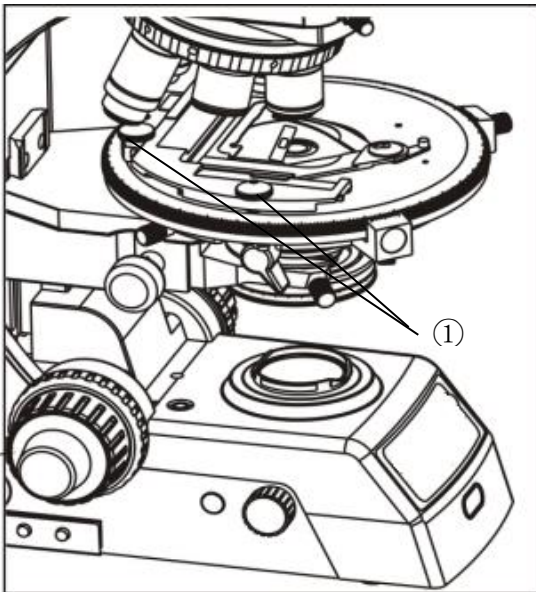


Figure 4

**3-4 Specimen placement (figure 4)**

Slowly push the cover slide up into the moving ruler and gently clamp the carrier slide.

Move the sample to the desired position by ① on The Rotating Figure 4.

★ Be careful when replacing objective lenses. The objective mirror may touch the specimen when the objective mirror needs to be replaced after viewing the specimen with a objective at a short working distance.

◎ Before observation, it is necessary to adjust the light axis and the core colocation of the rotating carrier. Refer to sections 3-22 for adjustment.

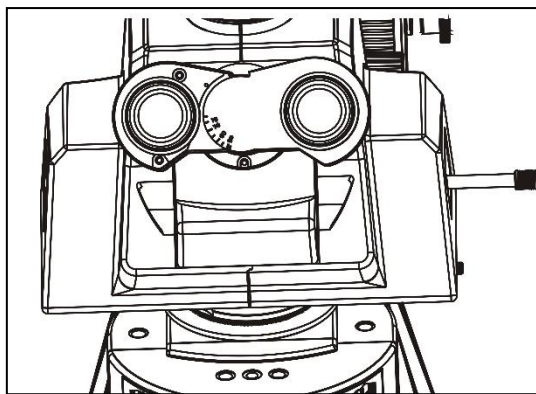


Figure 5

**3-5 Adjusting the pitch (figure 5)**

The pitch range is 47mm to 78mm. When looking at the eyes, hold the left and right prism seat around the axis rotation, to adjust the pitch, until the eye observation, left and right viewing the occasion two as one, observe the comfort so far.

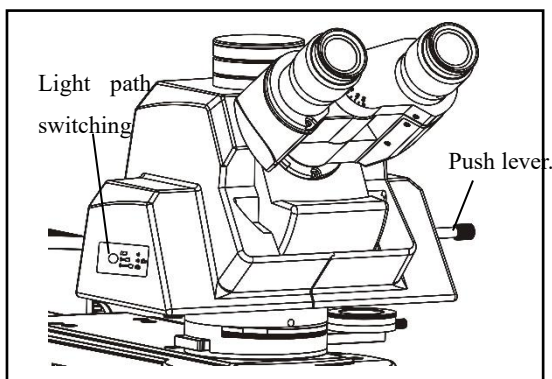





Figure 6

**3-6 3rd-gear optical circuit switch (Figure 6)**

Select the desired light path and light-strength ratio as shown in Figure 6.

Icon.	Operation.	Eye:Camera (%)
	The push lever is fully pushed in.	100: 0
	Push lever put in the middle.	20: 80
	The push lever is completely pulled out.	0: 100

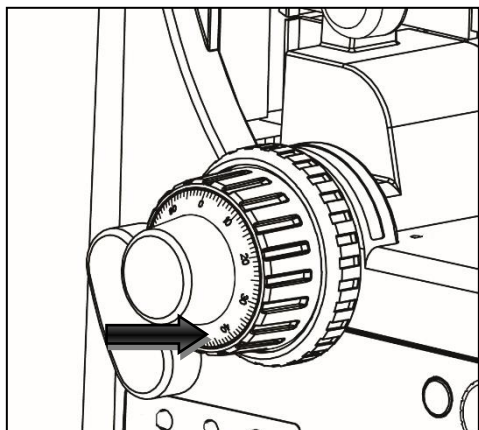


Figure 7

### 3-7 Focusing (Figure 6 -8)

1. When the camera device is not used.  
 Push the light-way switching push lever 6 (shown in Figure 6) completely for binocular observation. With 10× objective focus, in order to prevent specimens and objective spades, the mechanical carrier table should first rise, so that the specimen and objective close, and then slowly reverse the rotation of the rough hand wheel, so that the specimen dropped, while searching for images in the 10 × eyepiece, and finally with fine-tuning the focus wheel finely focus to the clarity. At this point, switch to another multiplier objective lens, can achieve focus without damaging the specimen

2. When a camera device is required.  
 Push the light-way switching push lever (shown in Figure 6) to the end, double-eye observation, image clearly, and then pull it out, which can be observed through the camera system.

★The micro-hand wheels on both sides are easy to remove, and the hand wheels are absorbed with strong magnetic suction. Simply, as shown by the arrow in the figure, hold down one end of the wheel to make the other up, and then gently pan from the end of the upturn. Assembly also requires only the center of the handwheel alignment in and in place. This feature makes the two spinners easy to swap from left to right to avoid the fine-tuning wheels touching the platform handle.

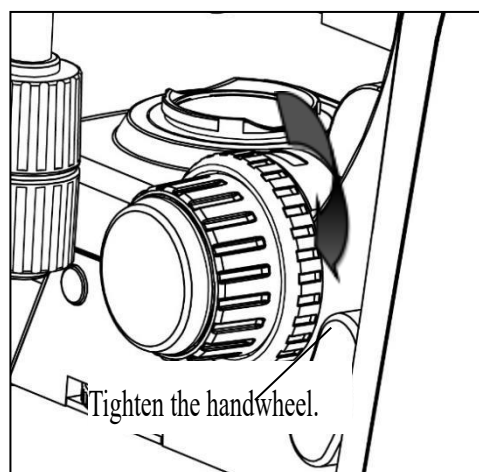


Figure 8

### 3-8 Focusing handwheel slacking adjustment (Figure 8)

The focusing loose handwheel 8 rotates in the direction shown by the Figure 8 arrow, and as the more the rotation, the tighter the focusing handwheel. The opposite is looser.

### 3-9 Focus upper limit (Figure 9)

In practical use, if you want to limit the height of the platform, that is, the upper limit position of focus, if you want to limit the lock, you can simply turn the locked handwheel in the direction of the Figure 8 arrow at the corresponding upper position.

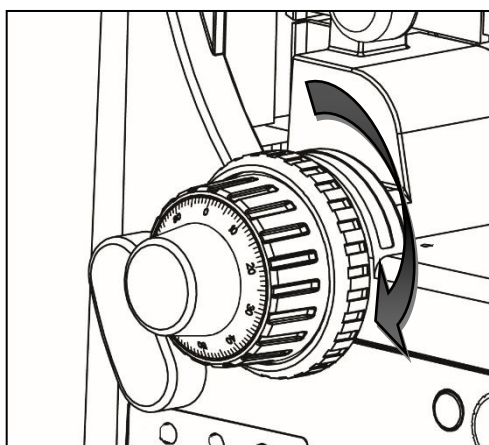


Figure 9



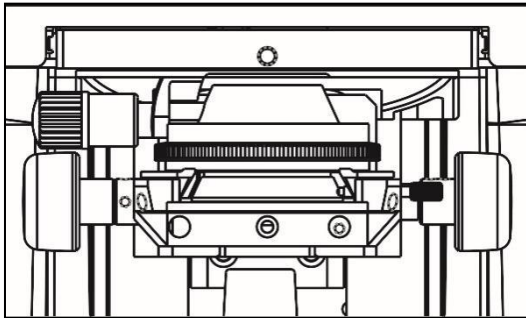


Figure 10

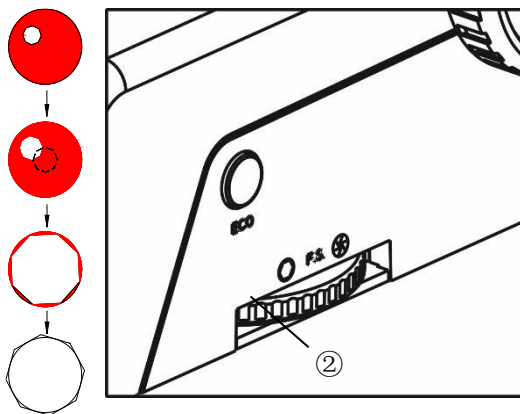


Figure 11

### 3-10 Swing-out condenser adjustment (Figure 10, 11)

- The center of the spotlight should be concentric with the objective optical axis, the product has been adjusted at the factory, the user does not have to adjust itself.
- The highest position of the spotlight mirror, has been adjusted at the factory, the user does not have to adjust itself.
- Turn the focus handwheel ① to move the spotlight mirror up and down, when using a high-gloss objective, the spotlight mirror rises, and when using a low-multiplier objective, the spotlight mirror can be lowered.

#### Spotlight pair:

1. Turn the spotlight to focus the handwheel ① and raise the spotlight to the highest position.
2. Focus the sample with a 10× objective lens.
3. Rotate the field-of-view light ring ② to reduce the field-of-view photopal image so that it is visible in the field of view.
4. Turn the spotlight to focus the handwheel ① to focus the field-of-view photo image.

5. Turn the two spotlight-to-center screws ③ with a universal adjustment wrench to move the field of view to the center of the field of view.

6. Gradually turn on the field of view, if the field-of-view light image is in the center and connected to the field of view, then the spotlight is correctly paired.

7. In practice, slightly increase the field of view, so that its image just cuts off the field of view.

#### 8. Adjustment of aperture light ④

Aperture light is designed for the adjustment of numerical aperture, not brightness adjustment. In general, a good image with sufficient contrast is obtained when the aperture light is turned on to 70 to 80% percent of the objective lens. To observe the aperture image, it is advisable to go under the eyepiece and look down from the eyepiece barrel to the object lens.

#### 9. The adjustment of the size of the field of view light

During operation, turn the field of view light turning circle ②, reduce the field of view, observe the field of view, if the light image blur, can turn the spotlight eyepiece focusing handwheel, lift the spotlight mirror carrier, so that the observation field of view light image clear, and then turn the field of view light, so that it is just adjusted to the eyepiece field, to reduce the complex, improve the quality of the image.

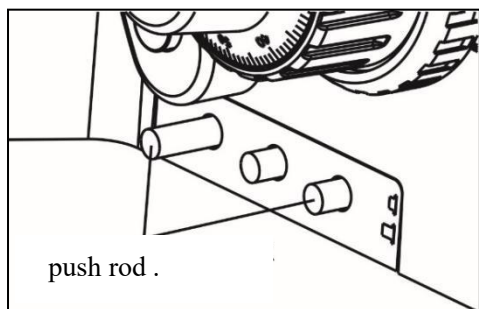


Figure 12

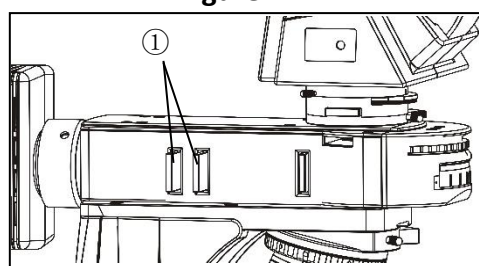


Figure 13

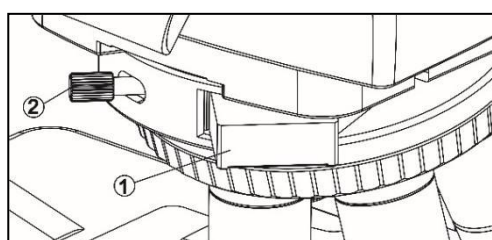


Figure 14

### 3-11 Use of color filters (figure 12)

As shown in Figure 12, when the push rod is pushed in, it is the color filter usage state, and when the putter is pushed out, it is the filter empty state. LBD is a color color filter with a color temperature filter, ND25 is a color filter with a light transmission rate of 25%, and ND6 is a color filter with a light transmission rate of 6 %.

When transmitting illumination, insert the filter module as needed at the filter slot position ① in Figure 13. The first positioning is empty, pushing until the second position, the color filter enters the light path.

Color filter.	Application.
Color temperature	Converts illuminated light into daylight for general observation and color photography
Green color filter	Increased contrast when viewed in black and white For black-and-white photography
Yellow color filter	Increases contrast when viewed on semiconductor sheets
The sand sheet	both light, but reduces light strength
ND6	Adjust light strength (transmission rate 6%)
ND25	Adjust light strength (pass rate 25%)

### 3-12 The use of extended function board (Figure 14)

As figure 14, a slot for the expansion panel is reserved on the converter, and the microscope mirror has been inserted into the slot with a normal light and dark field plate. To use other expansion function boards, simply spin the serial number ② out of release, pull out the standard light and dark field board, and then insert the expansion function board into the slot and tighten the screws of the serial number ②.

### 3-13 ECO function key (Figure 15)

After leaving the microscope for 15 minutes, the light will automatically turn off and the indicator will flash once every three seconds. When you come back and see the indicator light flashing, press ECO to re-activate the light and turn it on.

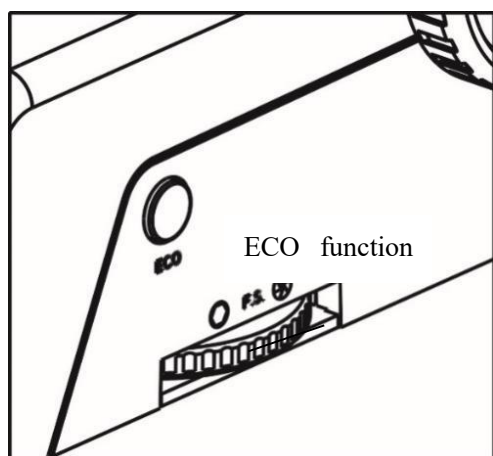


Figure 15

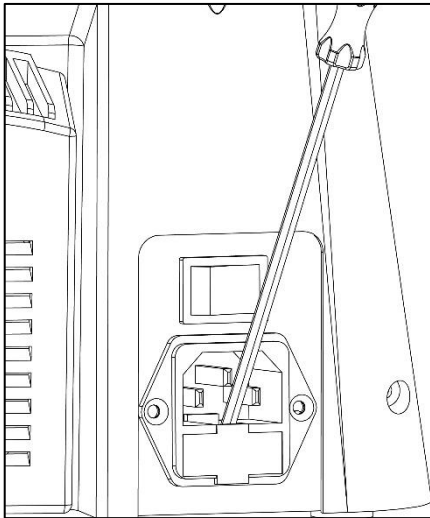


Figure 16

### 3-14 Fuse replacement(Figure 16)

The drawer of the fuse box is first opened with a universal adjustment wrench, as shown in Figure 16. As shown in Figure 17, gently top the fuse from the bottom to the top of the square hole under the fuse drawer with a universal adjustment wrench.

★The middle of the fuse is a thin glass, and carefully and gently operate when opening the fuse box drawer and ejecting the fuse.

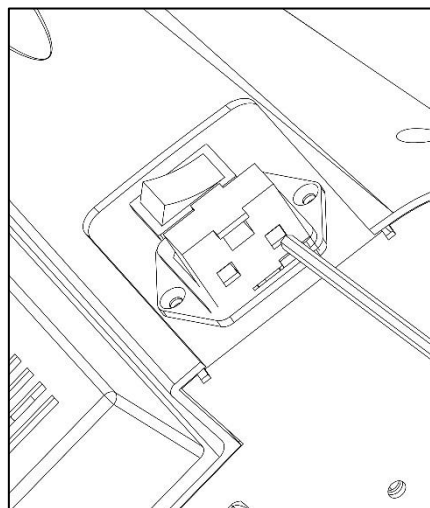


Figure 17

### 3-15 “ECO”The device (Figure 18)

As shown in Figure 18, the device can sense objects within 1 meter of its front.

When a person is observed, within 1 meter of its front, the unit appears as a red light, at which point the microscope light source does not go out.

The red light flashes when a person walks away and there is no other object within 1 meter of his or her front. The light source automatically goes out after this state lasts for a period of time. The duration defaults to 15 minutes and can be set according to user requirements in the companion software settings.

When the light is not on, the microscope light source is out. Press the “ECO” function key to restore the light on state.

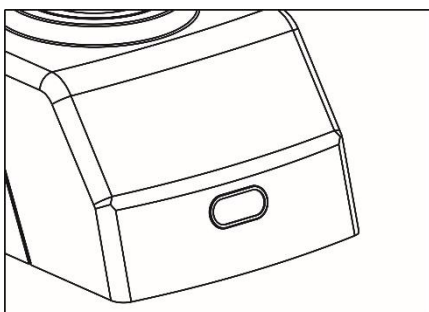


Figure 18

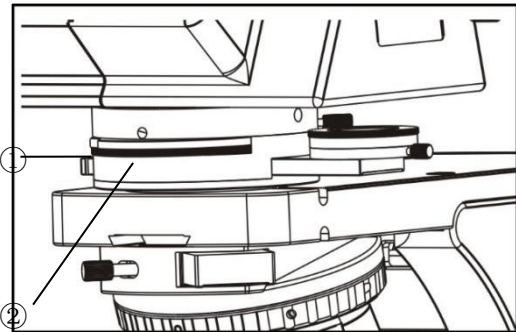


Figure 19

**3-16 The use of Bertrand lens (Figure 19)**

Rotating wheel ① can adjust Bertrand has mirror into or out of the light path. At the "O" position, the Burschner mirror moves out of the light path. At the "B" position, the Burschner mirror moves into the light path.

**3-17 Bertrand lens focusing (Figure 19)**

In order to make the interferometer image focus clearly, we can slightly rotate the brissenden lens focusing ring ② until the interferometer image can be clearly observed in the lens.

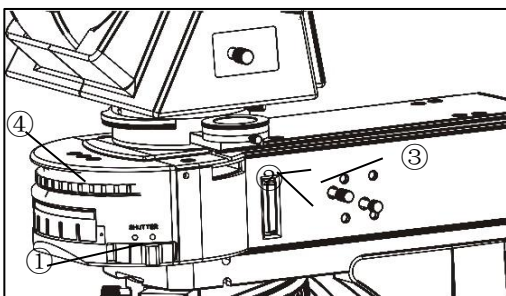


Figure 20

**3-18 Use optical path selection (Figure 20)**

According to the requirements of the optical path to be observed, rotate the spectroscopy assembly chamber (Figure 20) to the corresponding position.

BF1: Reflecting light field observation.

BF2: Reflection Light Field Observation (with Matte Sheet).

DF: Reflected light dark field observation.

⊙ When rotating the spectre mirror assembly, be sure to spin in place.

**3-19 Centering the field diaphragm (Figure 20, 21)**

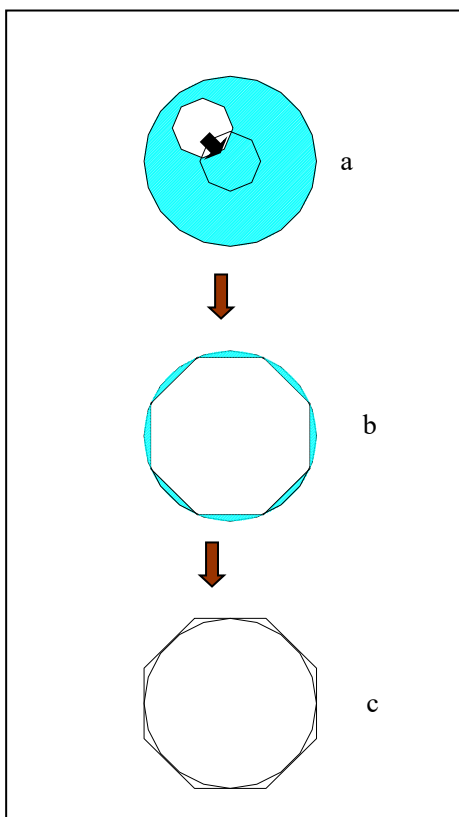


Figure 21

1. Turn the light gate ① to the "●" position.
2. Rotate the spectroscopy (turntable) to BF position.
3. Turn the light switch ① to the "O" position, keep the light path clear.
4. Turn the animal mirror converter so that the 10× objective enters the light path, then place the sample on the carrier table and focus the image roughly.
5. Place the field of view light on the lighting device with a push-pull lever ③ outward. Pull out until the light is the smallest diameter.
6. Insert the hexagon wrench into the middle screw ② of the field of view diaphragm so that the image of the diaphragm is in the center of the field of view. (Figure 21 shows the adjustment process).
7. Push the diaphragm switch ③, and open the diaphragm until the image of the diaphragm is connected to the periphery of the field of view. If the image is not correctly aligned, it is realigned.
8. Open the field diaphragm so that the image is in contact with the field of view (c in Figure 21).

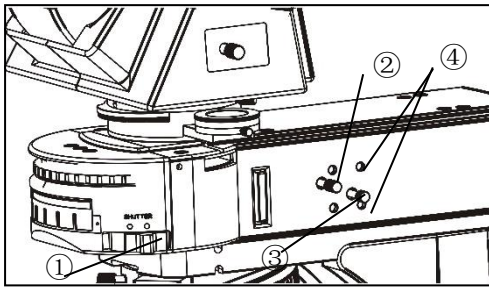


Figure 22

**Reflected light in the light field observation (Figure 22)**

The field of view light knob adjusts the lighting area to obtain a high contrast image.

Adjust the field of view light knob of the reflector (③ in Figure 20) until the light-light image is external to the field of view to shield unnecessary light.

**Reflected light in the dark field observation**

The field-of-view light knob must be pushed to fully open the field of view light.

**3-20 Use aperture diaphragm (Figure 23)**

1. Turn the light gate ① to the "●" position, close the light road.
2. Rotate the spectroscope (turntable) to BF position.
3. Turn the light gate ① to the "O" position. keep the light path clear.
4. Turn the animal mirror converter so that the 10× objective enters the light path, then place the sample on the carrier table and focus the image roughly.
5. Move the white alignment panel with the "cross" line until the "cross" is in the center of the field of view.
6. Turn the animal mirror converter and let the empty position into the light path.
7. Pull the aperture light putt ③ out to the lowest aperture diameter.
8. Pull out the field diaphragms switch ② to minimize the diameter of the field stop. At this point, you see the aperture image on the center plate.
9. Insert the hexagonal wrench into the screw and adjust the aperture diaphragm to match the "cross" image.

**Reflecting the bright field observation.**

Setting the aperture size between 70% and 80% of the objective value aperture (as shown in Figure 23) is generally the best viewing position.

**Reflected light in the dark field observation .**

The aperture light bar (Figure 22 (3)) must be pushed to open the aperture light beam.

- ◎ For some samples, close some aperture light, sometimes with both high contrast and low glare images. It is therefore recommended that you close some aperture light.

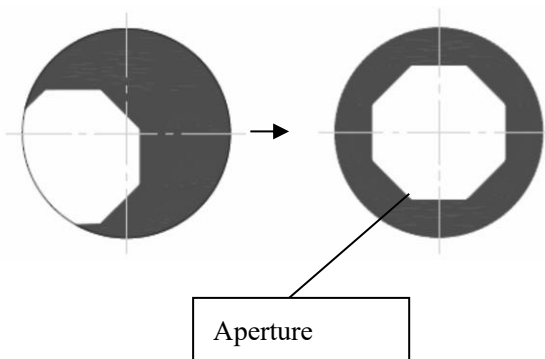


Figure 23

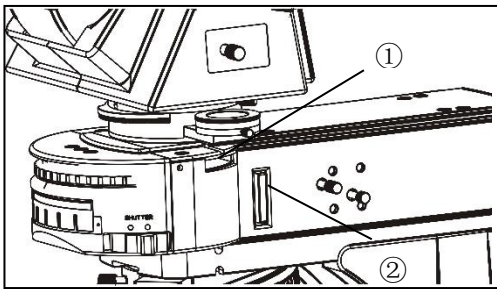


Figure 24

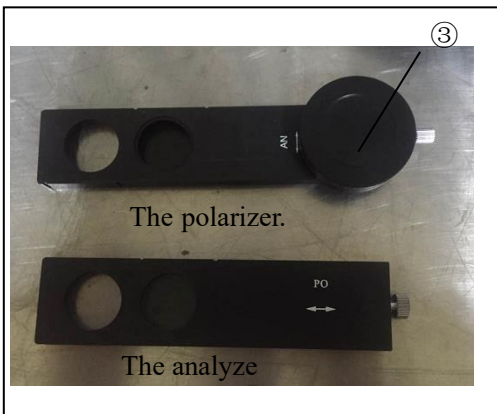


Figure 25

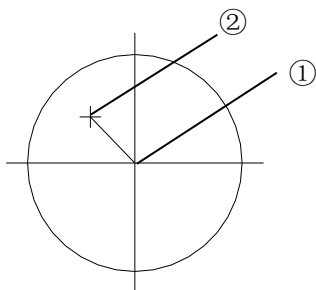


Figure 26

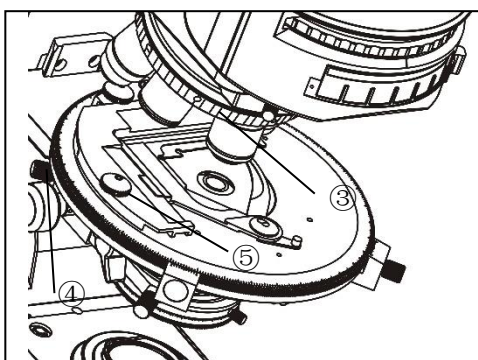


Figure 27

**3-21 Use the polarizer and the analyze (Figure 24)**

1. Face the screened surface of the polarizer (Figure 25) forward, insert the polarizer slot (② in Figure 24), and then move the polarizer into the light path.
2. Remove the dust cover and push the analyze (Figure 25) into the slot (① in Figure 24).
3. Turn the deflector turntable (③ in Figure 25) to find the darkest position in the field of view.

◎ When using a polarizer, the analyze is inserted into the Burgundy mirror. When using the gold phase unit, the analyze is inserted into the slot (① in Figure 24).

**3-22 Adjusting the objective light axis and stage center coincide (Figure 26, 27)**

The center of the objective converter screw hole is adjustable, and before the factory, the center of the objective light shaft and the stage is re-connected. Please don't tune it easily.

Note: The 10× objective mirror needs to be mounted on the converter's fixed mounting hole.

In use, if the objective light axis and the center of the stage are found to be offset, that is, the objective light axis does not coincide with the center of the stage, the following adjustments can be made:

1. First use the 10× objective to adjust the specimen clear, in the field of view (located in the center of the stage) to find a clear target point ①, so that it is located at the eyepiece crosshair intersection.
2. Turn the carrier station 180°, at which point the target is ②. Adjust the ⑤ on the gauge 使 to move the target point to half the distance from the original eyepiece crossbar (① and ② the midpoint), continue to adjust the alignment screws ④ on both sides of the platform, and move the target point to the intersection with the original eyepiece crosshairs.
3. Repeat step 2 until the target point is always at the eyepiece crosshair intersection when the load station is turned. At this point, the mechanical center of the stage coincides with the 10x objective optical axis.

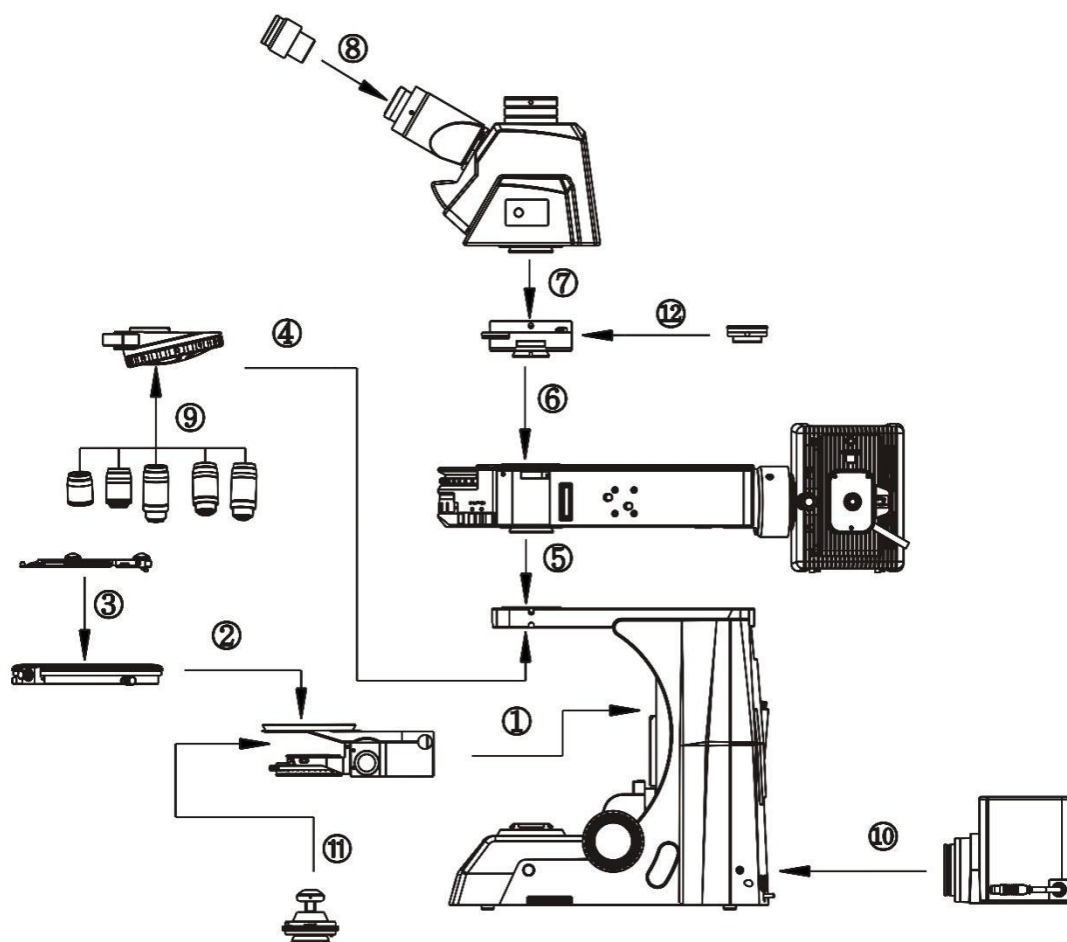
The light axis of the remaining objective mirror and the mechanical center of the stage are then recombined one by one by adjusting the medium screw ③ on the converter (each objective has 2 corresponding center adjustment holes).

### 4. Installation

#### 4-1 Installation illustration.

The following image shows the order in which the components are installed, and the numbers in the figure represent the installation steps.

- ★ Before installation, make sure that all components are free of dust and dirt. Do not scratch any components or glass surfaces.
- ★ Save the general-purpose wrench provided. You also need it when you replace a part.



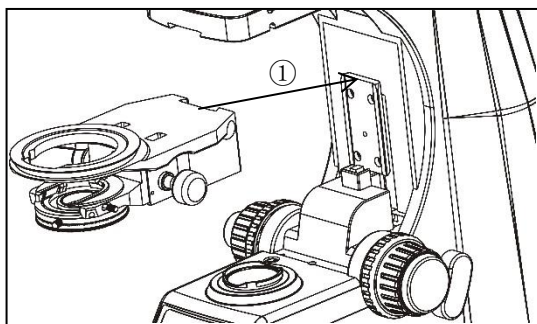


Figure 1

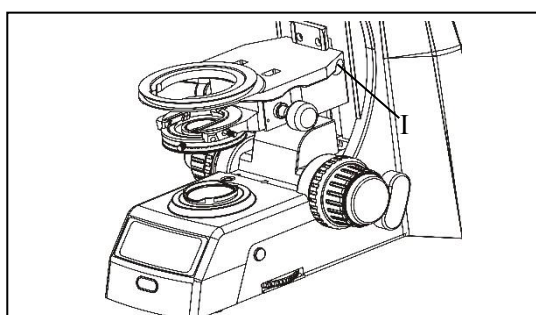


Figure 2

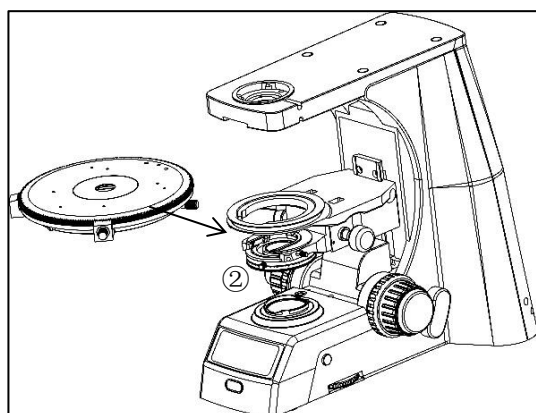


Figure 3

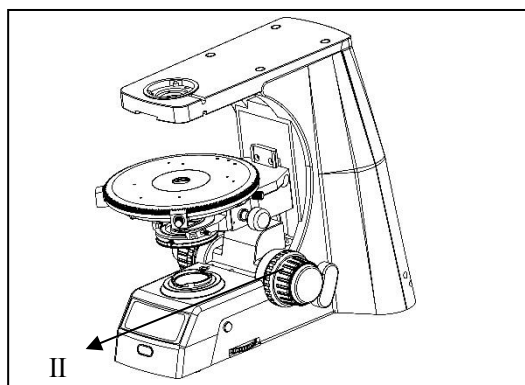


Figure 4

**4-2-1 Installation of mechanical carrier bays (Figure 1, 2)**

- ★ Rotating the coarse hand wheel causes the rack swallow tail to rise to the limit screw to expose the end face as shown, and then the platform carrier is installed in accordance with the path of Figure 1 serial number ①, aligning the swallowtail groove of the Chart 1 platform carrier with the swallowtail bulge of the rack, naturally sliding down until the lower limit screw is limited to the drop. Then tighten the screws at I in Figure 2 inward with a universal wrench with a microscope strap.

**4-2-2 Install the polarizing platform (figure 3, 4)**

- ★ The polarizing flat station is installed according to the path of the Sequence Number②of Figure 3, first the center of the stage hole is roughly aligned with the center of the bracket circle, and then the stage is placed down to the bracket positioning ring.
- ◇ After placing the flat table smoothly, tighten the screws at II in Figure 4 inwardsofar so that the flat table does not turn and shake.



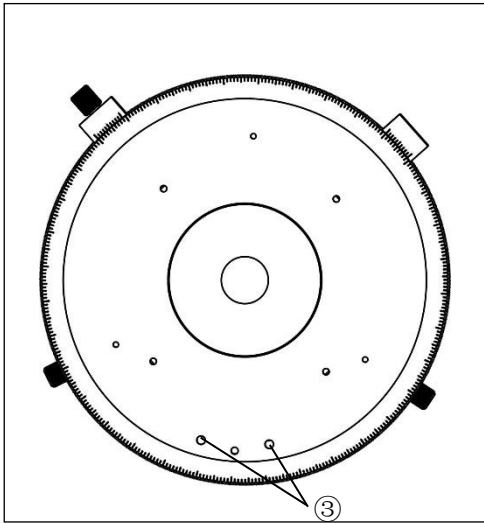


Figure 5

**4-2-3 Install the polarizing moving ruler (Figure 5)**

★ Install the polarizer moving ruler.

Insert the 2 positioning pins at the bottom of the polarizing gauge into the 2 positioning holes③ on the platform and tighten the tight screws with an inner hex wrench.

**4-2-4 Installation Nosepiece (Figure 6)**

Insert the converter into the swallowtail groove of the microscope shown ④ in Figure 6, push to the innermost, and tighten the screws at III with a universal wrench to secure them.

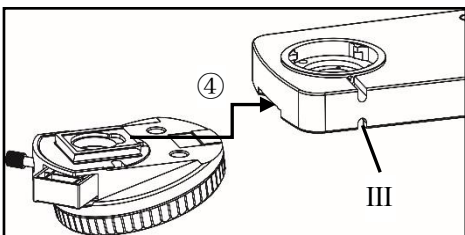


Figure 6

**4-2-5 Install metallographic device (Figure 7)**

Load the gold phase unit into the head of the microscope body in accordance with the mid-sequence number⑤ in Figure 7, transfer to the appropriate position, and tighten the screws (at IV in Figure 7) with a hex wrench to secure them.

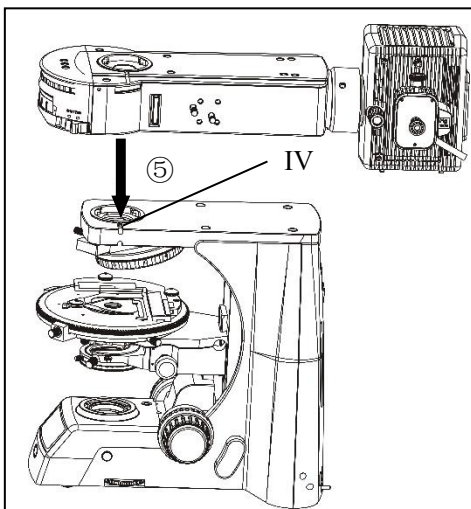


Figure 7

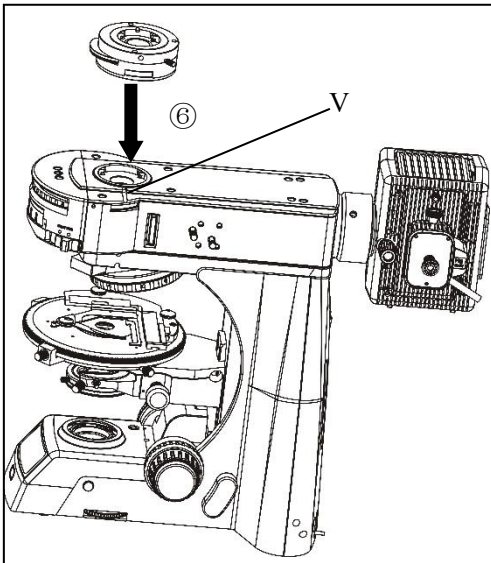


Figure 8

**4-2-6 Install Bertrand lens set (Figure 8)**

Load the Bourbon mirror into the head of the microscope body or the gold phase device in accordance with the medium sequence number ⑥ in Figure 8, transfer to the appropriate position and tighten the screw (At V. in figure 8) with a hex wrench to secure it.

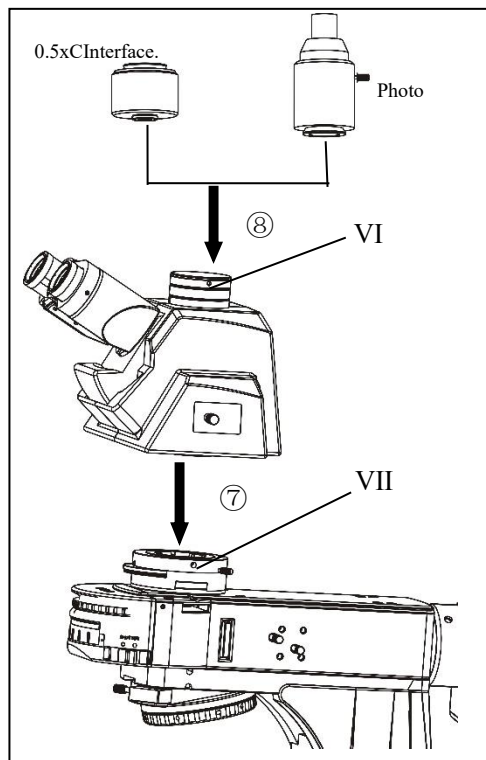


Figure 9

**4-2-7 Install observation head and photography accessories /0.5X C interface (Figure 9)**

1. Install the three-eye / tiltable three-eye observation head.  
Load the observation 9 head into the circular swallowtail of the microscope in accordance with the medium sequence number ⑦ in Figure 9, and tighten the screw at VI with an internal universal wrench to secure the observation head.

2. Install the photographic accessories /0.5X C interface **(optional)**.

The photographic attachment /0.5X C X interface is loaded into the three-eye attachment interface of the observation head in accordance with the path shown in figure 9 mid-series number ⑧, and then the screw at VII is tightened with the internal universal plate hand to secure the image attachment.

★In the process of installing the observation head, pay attention to one hand always hold the observation head to prevent falling, broken.

★When the three-eye observation head is not used and the photographic accessories are not installed, please cover the three-eye attachment interface and the eyepiece interface with the corresponding dust cover to prevent ash.

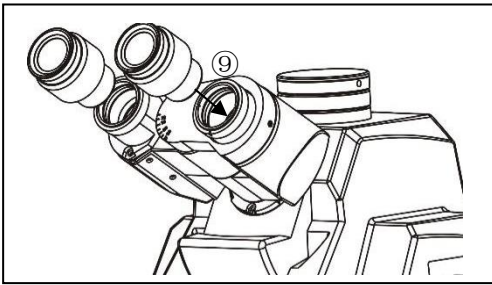


Figure 10

**4-2-8 Installation eyepiece (Figure 10)**

Insert the eyepiece in the observation head eyepiece barrel in the path of the mid-sequence number (9) Figure 10 until the end.

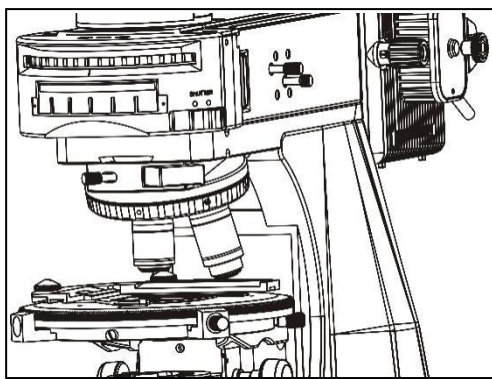


Figure 11

**4-2-9 Install objective lens (figure 11)**

1. Adjust the coarse-tuned handwheel until the mechanical carrier bench support unit drops to its low limit.
  2. According to the factory objective conversion key under the objective multiple label, press the object lens multiple you need to install the corresponding key, After the corresponding converter hole has been turned in place, and then spin into the corresponding objective.
- ◇ Installing the objective in this way ensures that the front lens of the spotlight is moved in and out correctly during use.

★ Clean the objective son regularly, and the objective lens is very sensitive to dust.

★ During operation, the sample is searched and focused with a 10 × objective, and then change to another objective lens with a different ratio as needed for observation.

★ When converting the objective mirror, turn the animal mirror converter until a "click" sound is heard to ensure that the desired objective enters the center of the light path.

**4-2-10 Install swing-out condense (Figure 12)**

Insert the path of the spotlight as shown in the 12 serial number ⑩ into the bracket until the screw number VIII. is stuck in the slot of the serial number VIII and pushed to the inside. Then screw the screw at serial number IX clockwise into to tighten the spotlight.

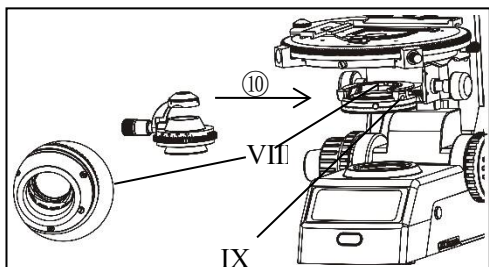


Figure 12

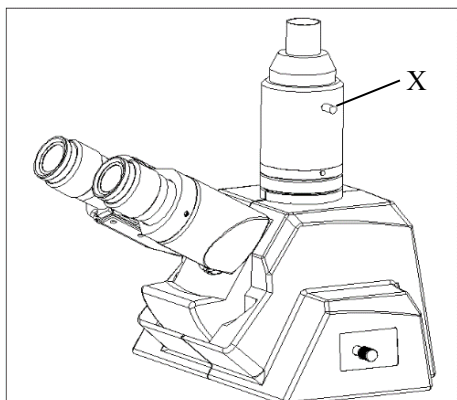


Figure 13

**4-2-11 Replace the camera interface (optional) (Figure 13 and 14)**

First, as shown in Figure 13, the screw at the serial number X is spun outwards in the direction of the arrow so that it no longer tops the camera interface, and then the camera interface is rotated out.

Then, as shown in Figure 14, the path of the camera interface in serial number ⑪ is rotated into the triple-barrel. To the appropriate position, then screw the serial number X into the position of the tight camera interface.

★The most suitable position of the camera interface is determined, can first be observed with eyepieces, the specimen is adjusted to a clear position, and then through the installation of the camera, to observe its imaging, while the camera interface position is adjusted accordingly, to the clearest position of imaging, and then spin the screw at the tight sequence number VIII.

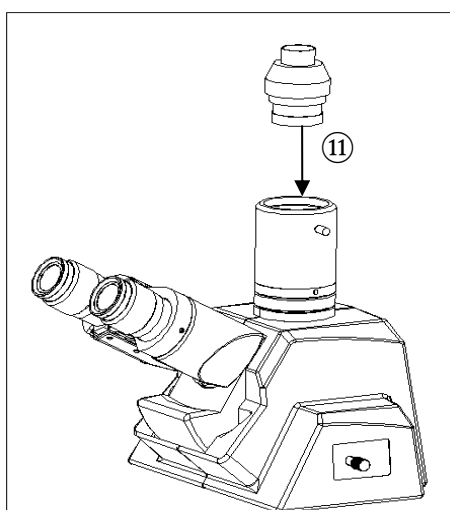


Figure 14

**4-2-12 Install the light box (figure.15)**

First insert the light box down the back of the frame base in the illustrated position in the sequence number ⑫ path in Figure 15.

Then use a universal wrench to tighten the fastening screws in the serial number XI. hole so that the light box does not loosen.

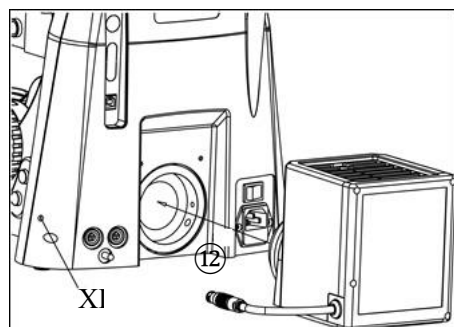


Figure 15

**4-2-13 Installation analyzers (Figure 16)**

Push the polarizer and analyzers into the slot in accordance with the path ⑬.

Note: Insert the polarizer and analyzers until you hear second click, the polarizer is not entering the light path, if you want to move the polarizing film out of the light path (holes above the plug plate into the light path) only need to be inserted into the position of the first click.

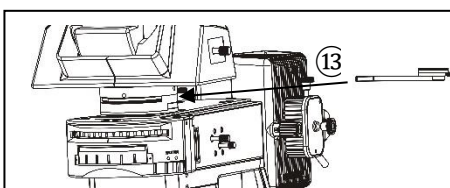


Figure 16

**5. Technical specifications**
**BS-5095**

## 5. Technical specifications

**5-1. The main technical specifications**

Optical system.	NIS60 Infinite Optical System.	BS-5095	BS-5095TRF	BS-5095RF
Observation head.	Trinocular viewing head, inclined at 30°, with a interpupillary distance of 47-78mm.	●		
	Variable angle tridonoms, 0 to 35 degrees tilted, with a pitch of 47-78mm.		●	●
Eyepiece.	10×/25mm eyepiece	●		
	10×/22mm eyepiece		●	●
Objective converter.	Laboratory polarizing objective converter .	●	●	●
Objective.	Stress-free objective 5×, 10×, 20×, 50×, 100×		●	●
	Stress-free objective 4×, 10×, 20×	●		
	Stress-free objective 40×, 100×	●	●	
Focusing mechanism.	Coax crude fine-tuning focus mechanism, fine-tuning grid value 0.001mm .	●	●	●
The carrier station.	Lab polarizing 30, Horizontal 30 platform, diameter of 190 platform unit, center adjustable; Moving ruler: vertical	●	●	●
Lighting.	Cora Lighting, 24V100W halogen lamps.	●	●	●
condenser.	Swinging condenser NA0.9/0.25 .	●	●	
metallographic device	Laboratory metallographic device.		●	●
compensator.	λGypsum test board assembly.	●	●	●
	λ/4 Mica test board assembly.			
	Quartz wedge assembly.			
	Empty test board.			
Filter.	Built-in Φ45 color temperature film ND6、ND25	●	●	
Color filter.	25 color temperature sheet, matte sheet.		●	●
Bertrand lens.		●	●	●
Analyzer	The rotating deflector is 0°-360°	●	●	●
Polarizers		●	●	●
Software.	Scopeimage 10.0 Software	○	○	○
Photo accessories		○	○	○
Camera receiver.	C Mount 1×	○	○	○
	C Mount 0.5×	○	○	○

Note: ● for standard configuration, ○ for the purchase of accessories

**5-2. Electrical parameters**

- 1) Input pressure: VAC100-240V 50/60 Hz
- 2) Fuse specification: T5AL250V.
- 3) Illumination: 24V 100W

## 6. Troubleshooting

### 6-1. Optical parts

Question .	The cause of .	Solution
The edges are dark or the field of view is uneven.	Converter is not in position (objective is not in the center of light path)	Go to the position (turn the animal mirror to get it right into the light path)
	The spotlight is not in the center.	Make it to the center.
	Dirt on the lens (refers to spotlights, objective lenses, eyepieces, photoscopes)	Wipe it clean.
There is dirt in the field of view.	Dirt on the lens (refers to spotlights, objective lenses, eyepieces, photoscopes)	Wipe it clean.
	There is dirt on the slide.	Wipe it clean.
	The spotlight position is too low.	Adjust the height of the spotlight.
The image quality is poor (low resolution, poor contrast).	There were no covered slides on the specimen.	Attach cover glass.
	The cover glass is too thick or too thin.	Use a cover slide with a standard thickness(0.17mm).
	The specimen is reversed below.	Flip back.
	There is oil immersion in the dry objective (especially 40X easy to have). )	Wipe it clean.
	Dirt on the lens (refers to spotlights, objective lenses, eyepieces, photoscopes)	Wipe it clean.
	The oil-immersed objective is not oil-soaked.	Use dipping oil.
	There are air bubbles in the oil immersion.	Put the animal mirror to eliminate the bubbles several times.
	Non-specified dipoil is used.	Use standard oil immersion.
	The aperture is too wide open.	It's a good one.
	There is dirt on the incident lens of the binoculars.	Wipe it clean.
	The aperture light is too small.	Open appropriately.
The spotlight position is too low.	Correct the position.	

One side of the image is dimmed.	The spotlight is not tilted at the center of the field of view or in the spotlight.	Refit the spotlight and carefully adjust it with the focus mirror tuning center screw.
	The converter is not located.	Turn it to fit.
	The specimen is in a floating shape.	Reliable reinforcement.
The image moves while focusing.	The specimen floats on the surface of the carrier station.	Should be placed securely.
	The converter is not located.	Turn it to fit.
The lighting is not bright enough.	The brightness is not adjusted accurately.	Adjust the dimming knob.
	The spotlight position is too low.	Correct its location.
	The spotlight is not in the center.	in.

**6-2. Mechanical part.**

<b>Question .</b>	<b>The cause of .</b>	<b>Solution</b>
The image with a high-fold objective cannot be focused.	The slide went the other wrong. The cover glass is too thick.	Flip the slide. Cover glass(0.17 mm) ) with a standard thickness.
The slide is exposed when the objective is converted from a low to a high.	The slide went the other wrong. The cover glass is too thick.	Flip the slide. Cover glass(0.17 mm) ) with a standard thickness.
The specimen does not move smoothly.	The slide holder is not reliably fastened.	It's really tight.
The binocular image does not coincide.	The pitch is not adjusted correctly.	Re-adjust.
Excessive eye fatigue.	There is no visual adjustment.	Adjust the view correctly.
	The lighting is not bright.	Adjust the lamp voltage.

**6-3. Electrical section.**

Symptoms	Reason.	Countermeasures.
Switch The bulb does not light when switch is on.	No power.	Check the connection of the wires.
	The bulb is not plugged in.	Insert correctly .
	The light bulb is broken.	Replace.
The light bulb suddenly burned out.	The voltage of the non-specified bulb used is too high.	Replace with a specified light bulb, and if the situation does not change after replacing the specified bulb, contact the maintenance department.
The lighting is not bright enough.	A non-specified bulb was used.	Replace with a specified light bulb.
	The voltage is too low.	Increase the voltage.
The bulb is flashing or the brightness is not stable.	The light bulb is going to break down.	Replace.
	The bulb is not plugged into the socket correctly.	Check and plug it in firmly.
The person leaves the set time and does not return the rear light to go off.	Within 1 meter there is something else in front of the unit.	Move something within 1 meter of the unit.

**After-sales service commitment:**

From the date of delivery of the microscope, within 36 months, if it is not due to improper operation, the company will provide free warranty and replacement parts if it cannot work normally due to product quality problems.

The company provides lifetime maintenance for this product, and provides long-term preferential price spare parts exceed the warranty period.