G508/G508T Polarizing Microscope Operation Manual

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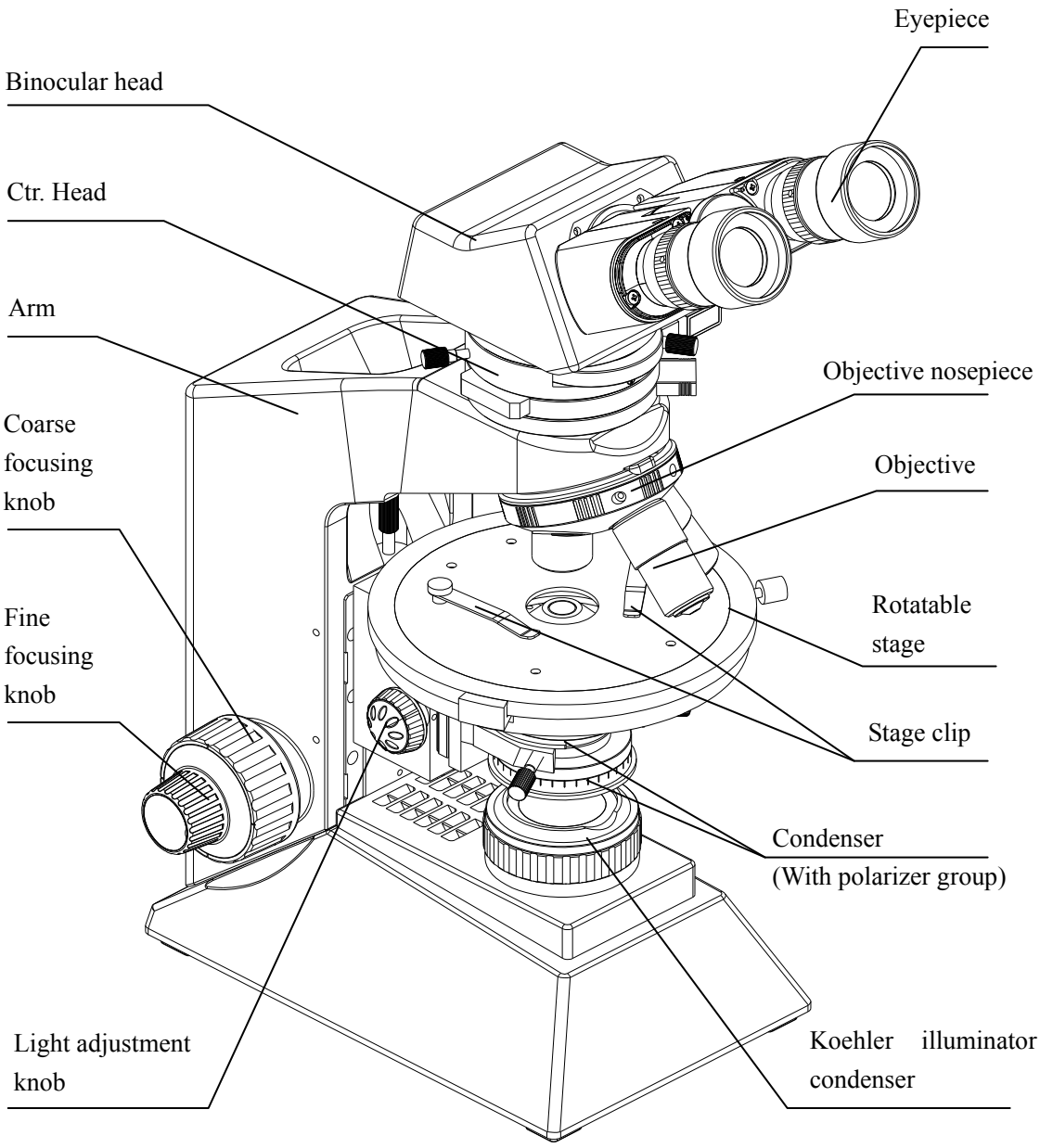
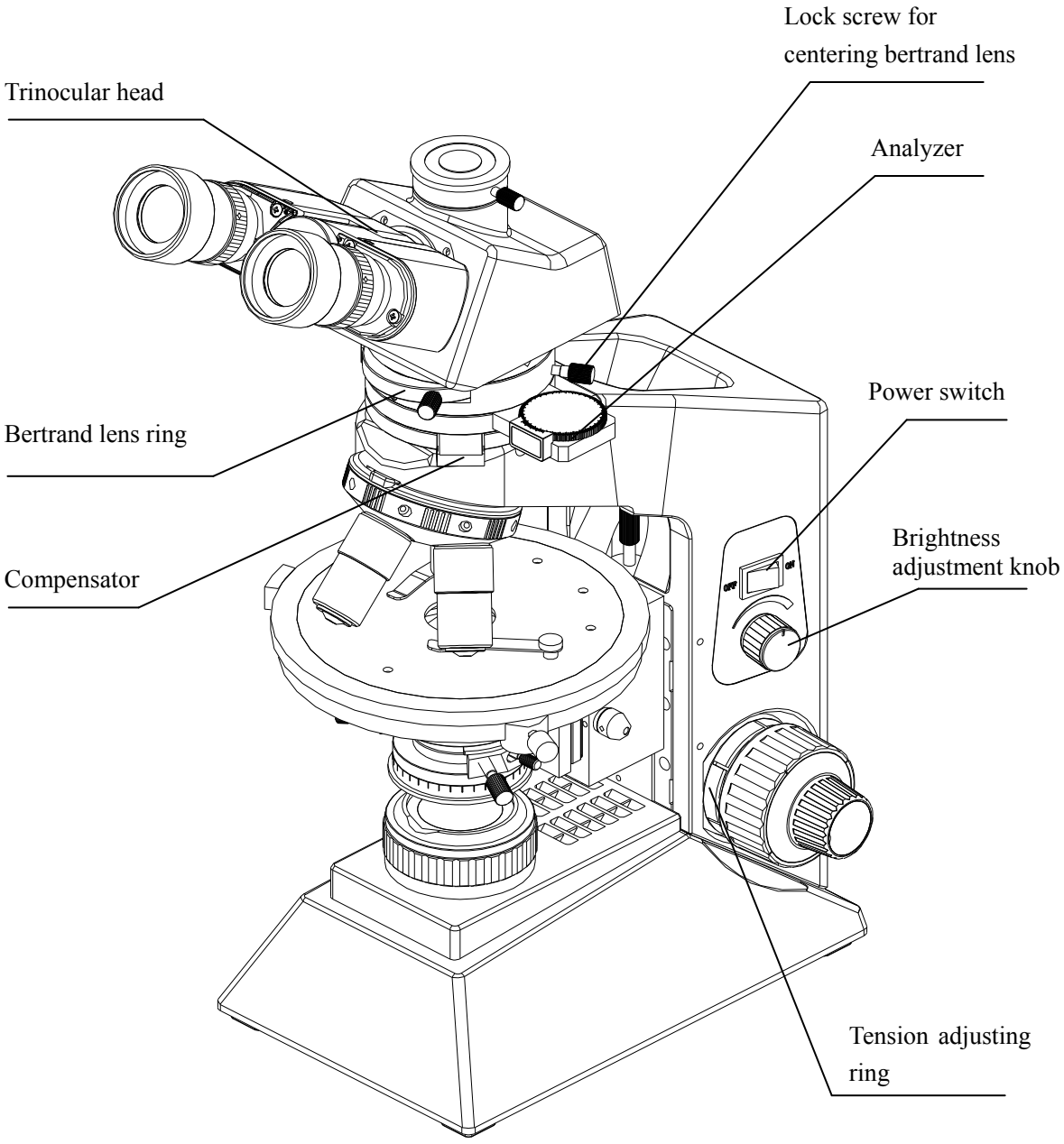
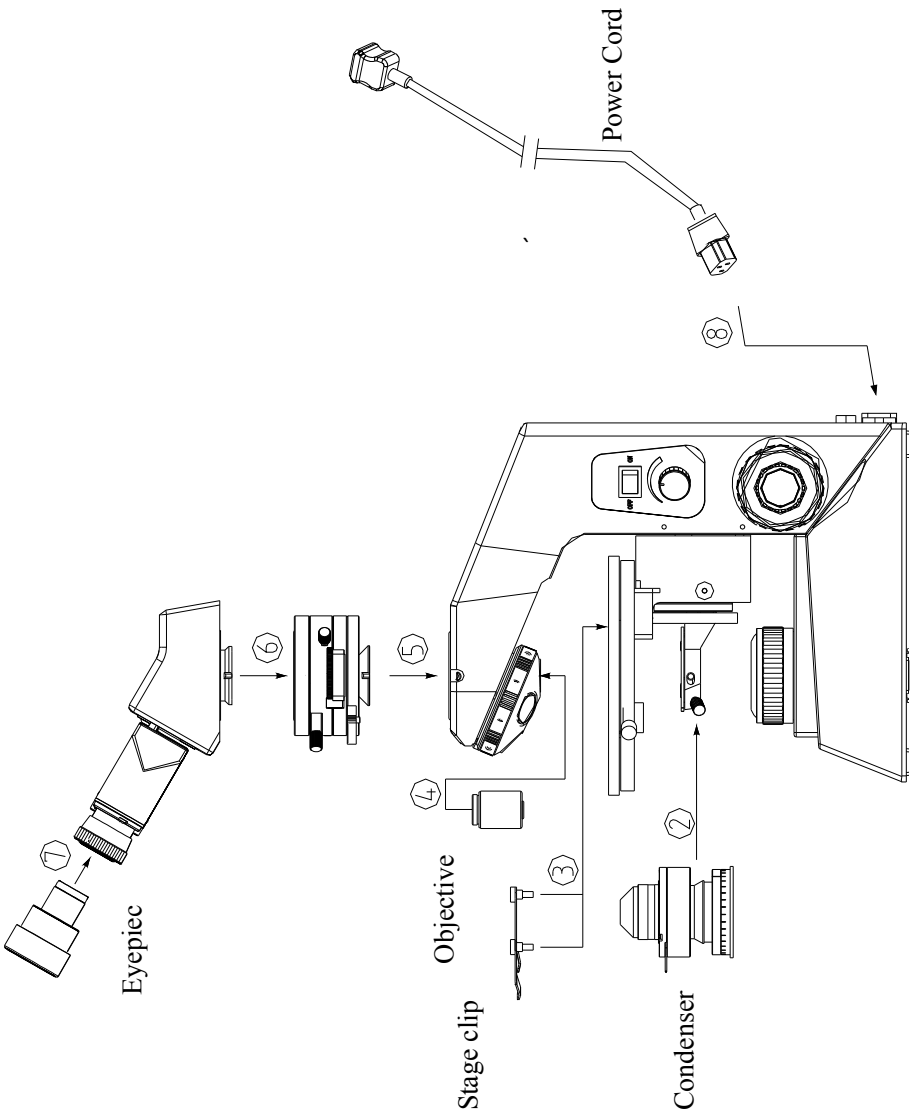
1. Components G508

Nomenclature




Lock screw for
centering bertrand lens
Trinocular head
Analyzer
Power switch
Bertrand lens ring
Brightness
adjustment knob
Compensator
Tension adjusting
ring

2. Installation G508



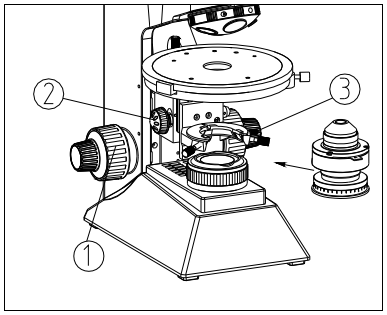


Fig. 5

Installing Condenser (may be pre-installed)

-Rotate the coarse focusing knob to raise stage to the highest level. (Fig.5)

-Rotate the condenser knob to lower the bracket of the condenser to the lowest position.

-Loosen the condenser lock-screw

- Push the condenser into the stand**.**

-Lock down the screw, and raise the condenser to the highest position

图 3
图 4

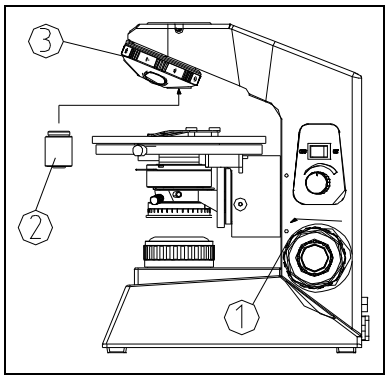


Fig. 7

Installing Objectives (may be pre-installed)

-Rotate the coarse focusing knob① to move the stage to the lowest position

-Install the objectives② into the nosepiece③ from the lowest magnification to the highest clockwise

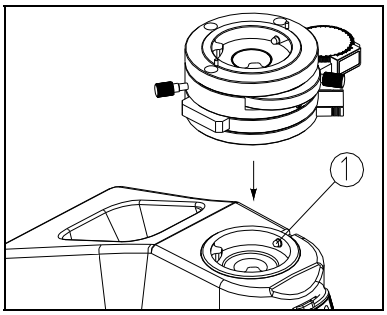


Fig. 8

Installing the Center Head

-Loosen the center head lock-screw① fully.

-Insert the coattail on the bottom of the head into the round hole of the stand

-Lock down the lock-screw. (Fig.8)

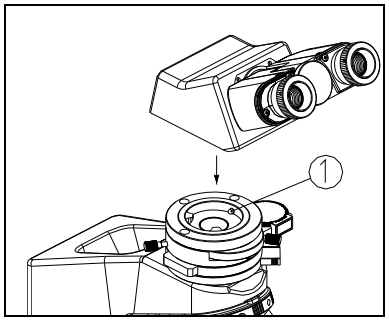


Fig. 9

Installing the Head

-Loosen the head lock-screw① fully.

-Insert the coattail on the bottom of the head to the round hole of the stand

Lock down the lock-screw. (Fig.9)

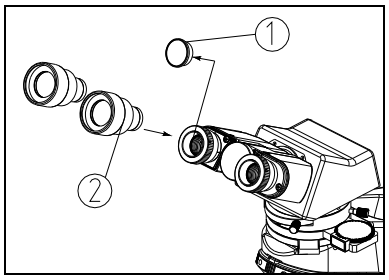


Fig. 10

Installing the Eyepieces

-Remove the cover of eyepiece tube①. (Fig. 10)

-Insert the eyepieces② into the eyepiece tube

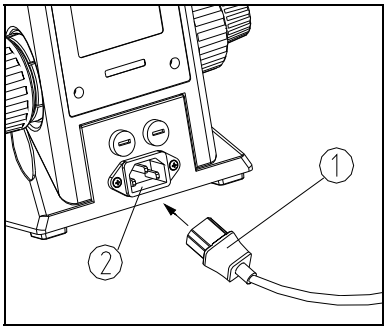


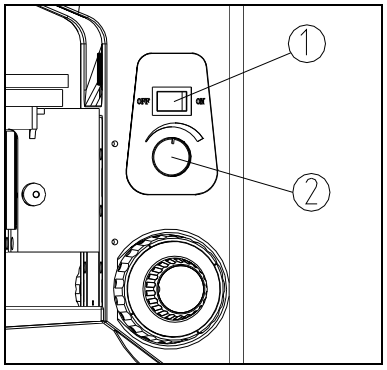
Fig. 11

Connect the Power Cord

Insert the connector① of power cord into the power socket②

Voltage range is 100~240V.

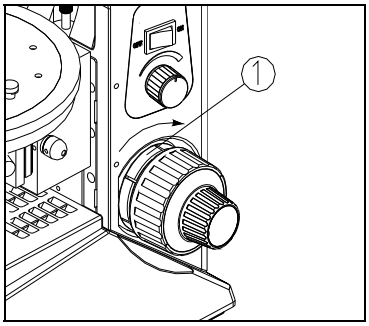
3. Operation G508



Setting Illuminations

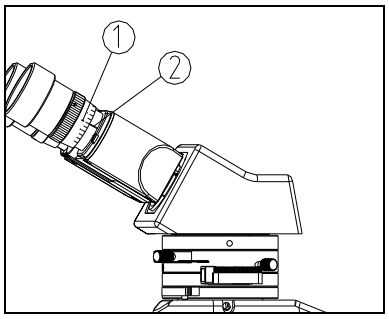
Put the power switch① to “ON”.

Adjust the light adjustment knob② until the illumination is comfortable for observation.



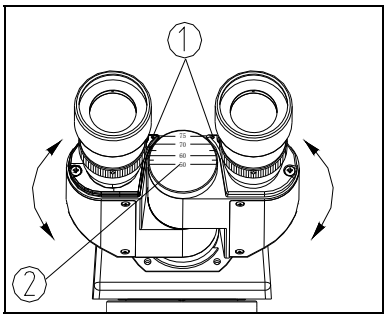
Adjust the Focusing Tension

Use tension adjustment ring① to adjust the focusing knob and make it comfortable to work with. If the tension ring is loose the stage will be sliding down and out of focus.



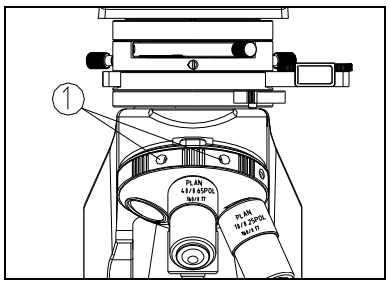
Diopter adjustment

Align the scale “0” of diopter adjustment ring① with the scale②, and then focus to get a clear image. Then observe through the other eyepiece, rotate the diopter adjustment ring until it is clear.



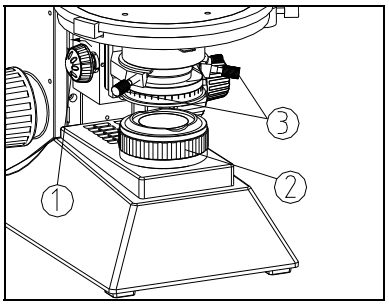
Adjust the Interpupillary Distance

Make the adjustments so you can comfortably see one image using both eyes



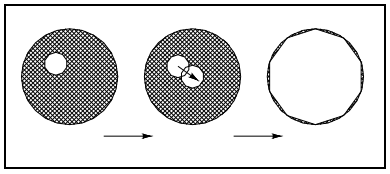
Centering objectives

The objectives have been pre-centered. The following instructions are for your information Insert two 1.5mm hex-key spanner into the hex-hole of the corresponding objective nosepiece ①. Adjusting the objective center, superimpose it with the rotary center of the rotatable stage.



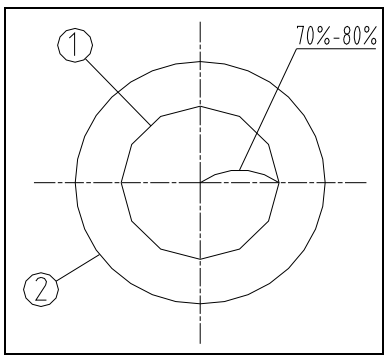
Center the Condenser

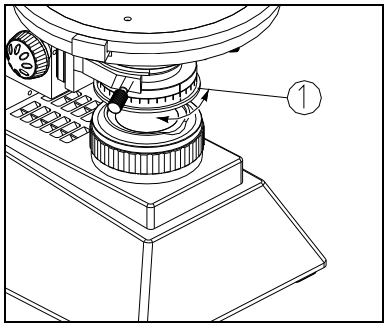
Rotate the condenser up-down knob ① to raise it to the highest position.
Rotate the objective 10X to the light path and focus on the specimen.
Rotate the field diaphragm adjustment ring ② to put the field diaphragm to the smallest position.
Rotate the condenser up-down knob①, and adjust the image to be clearest.
Adjust the center adjustment screw ③ and put the image to the center of the field of view.
Open the field diaphragm gradually. If the image is in the center all the time the condenser has been centered correctly.



Adjust the Field Diaphragm

By limiting diameter of the beam entering the condenser, the field diaphragm can prevent other light and strengthen the image reflection. When the image is just on the edge of the field of view, you can obtain the clearest image.





Adjust the Polarizer

Turn the adjusting ring of the polarizer ①, the vibrated direction of the polarizer could be adjusted, 360°rotatable, “0”reticle on adjusting ring should be leveled with reticle on adjusting base when observing.

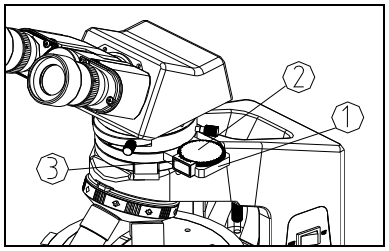


Fig. 25

Adjust the Analyzer

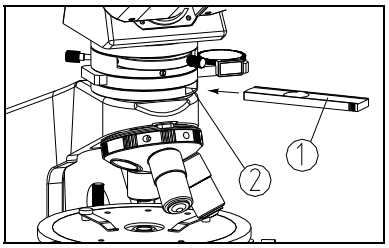
Insert the analyzer draw rod ① thoroughly, the analyzer shift in the optical way.

Turn the adjusting ring② of the analyzer, the vibrated direction of the analyzer could be adjusted, and it could also adjusted by pulling the draw rod ① ; A value of scale is 2°; the adjusting range is 90°.“0”reticle on the adjusting ring should be leveled with the “0”reticle of the vernier when observing. And a value of vernier is 6’.

For orthogonal polarization observation, insert the analyzer other than Bertrand lens, and make the vibration direction of polarizer be vertical with the analyzer.

Check H-V Location

The system would be in H-V location after the analyzer and the polarizer adjusting to “0”. Otherwise, it could be checked under the method as following: the stage without the sample, and taking off the eyepiece and objective, the analyzer adjusting to “0”, turning the polarizer, observing the brightness changing of view field in ocular tube, H-V located when it is darkest. At the same time, the polarizer should level to “0”.

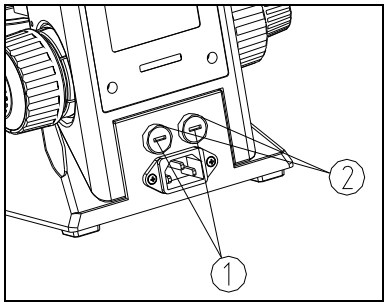


Adjust the Analyzer

The compensator① is insert the slot② of the midst head in 45° declined. The aspect which has alphabetic character is upper, the λ，λ/4 and dustproof board should insert thoroughly, and the quartz chock could also insert if necessary

Use the Rotatable Stage

Rotatable stage is the part of high accuracy so it cannot stand the impact and the user should turn it gently. The surface has printed with wearable plumbaginous coat. A value of scale on stage is 1°, a value of vernier is 6′, and the central light-pass aperture is ϕ26.5mm. The stage cannot turn when the bolt locking on.

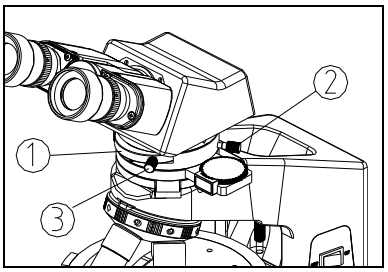


Replace the Fuse

Put the main switch to “OFF”(off) before replacing the fuse. Pull out the main wire. Screw off the fuse group① from the fuse base② with a “-” screwdriver. Install a new fuse and screw on the fuse base.

Specification: 250V，3.15A.

Use the Bertrand lens



Shifting in the optical way with objective（40X） and the polarizer, and the analyzer in H-V location

Put in the slice, then turning the coarse focusing knob until the image seems clear.

Rotating switch turntable ① of Bertrand lens. Locate it on “B”, shifting in the optical way with Bertrand lens. At that time, the “black cross” could see in the eyepiece, that is interference pattern. (observe by turning the stage)

Adjust centering bolt② of the Bertrand lens (turning both sides at the same time), adjusting the interference pattern to visual field center.

Turn adjusting ring of the aperture diaphragm on condenser group, turning the aperture diagram open.

Turning the focusing hand wheel③ of the Bertrand lens, adjusting the interference pattern in best estate.

4. Troubleshooting G508

As the performance of microscope can't play fully due to unfamiliar operations, the table below can provide some solutions.

Problem	Cause	Solution
Optical		
The bulb lit but the viewing field is dark, when doing Mono-polarizing observation	Field diaphragm is not large enough	Enlarge the field diaphragm
	Condenser is too low	Adjust the condenser
	Condenser is not centered	Center the condenser
The field of view is not in the darkest location when the analyser and the polarizer were in the H-V location	The bolt head did not push into the V slot when locking the midst head.	Adjusting the locking location
The side of the field of the view is dark or not even.	The nosepiece is not in the right position.	Turn the nosepiece into the right position.
	Stain or dust has accumulated on the condenser, objective, eyepieces, base lens.	Clean the lens
Stain or dust is observed in the field of view.	Stains have accumulated on the specimen.	Clean the specimen
	Stains have accumulated on the lens	Clean the lens
Unclear image	No cover glass on the specimen slide.	Add the cover glass.
	The cover glass is not standard.	Use a standard cover glass with thickness 0.17mm.
	The cover glass faces down.	Put the cover glass to face up.
	The immersion oil has accumulated on the dry objective	Clean thoroughly
	The aperture is not opened correctly.	Adjust the iris diaphragm.
	Stain or dust has accumulated on the lens in the inlet of the head	Clean the lens
	The condenser is not in the right position.	Adjust the condenser.

Problem	Cause	Solution
Optical		
One side of the field of view is dark or the image moves while focusing	The specimen slide is not fixed	Fix with clips
	The nosepiece is not in the right position.	Turn the nosepiece into the right position.
	Condenser centered incorrectly.	Center the condenser.
The eyes feel tired easily. The right field of view doesn't superpose with the left.	Interpupillary distance is wrong	Adjust the interpupillary distance
	Diopter adjustment is wrong.	Adjust the diopter
	The eyepieces for the right are different from the left	Use the same eyepieces
2. Mechanical		
Can not get the objective focused	The cover glass is not standard	Use a standard cover glass with thickness 0.17mm.
The objective touches the cover glass while turning the nosepiece	The cover glass is not standard	Use a standard cover glass with thickness 0.17mm.
Coarse focusing knob is too tight	Tension knob is too tight	Loosen a little
Stage slips down	Tension knob is too loose	Tighten a little
3. Electrical		
The bulb does not work	No power supply	Check the connection of the power cable
	The bulb burnt out	Replace it
The bulb flickers or the brightness is not stable	The bulb will burn out soon	Replace with a new one
	The wire doesn't connect all right	Connect correctly