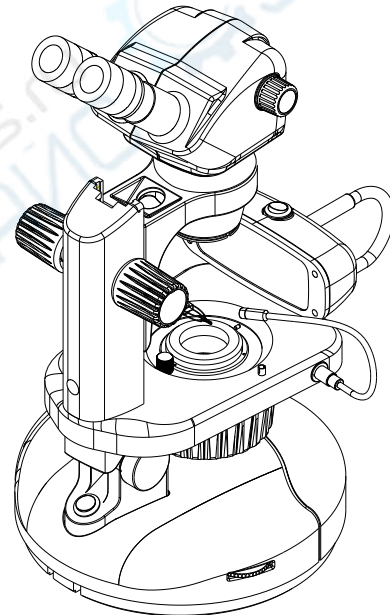




A24.1001

Gem Microscope

Instruction Manual



It is recommended strongly that you study this manual thoroughly before using the microscope. Retain this manual in an easily accessible place near the work desk for future.

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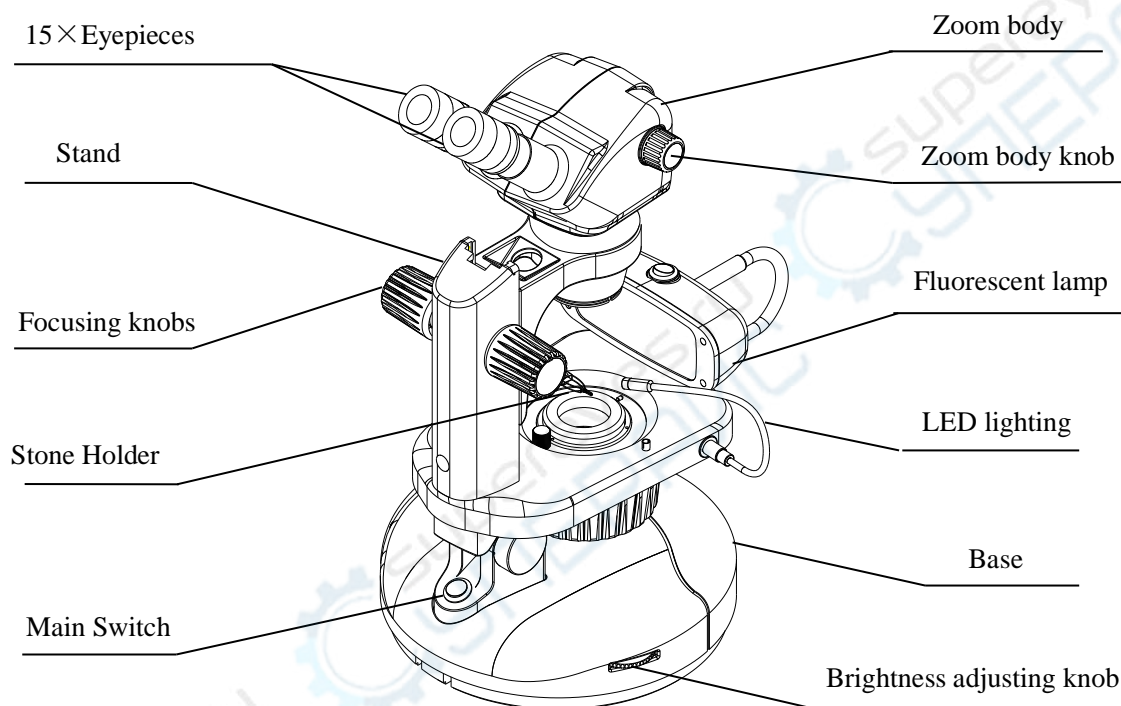
1. Safety Precaution

1. Carefully open the box, avoid the accessories, like lens, dropping to ground and being damaged.
2. Check the input voltage, be sure the input voltage which marked on the microscope is consistent with the power supply voltage, otherwise it will bring a serious damage to the instrument.
3. Do keep the instrument out of direct sunlight, high temperature or humidity, dusty and easy shaking environment. Make sure the table is smooth, horizontal and firm enough.
4. When moving the instrument, please use two hands to grip with the arm and the base of the microscope.
5. Make sure the instrument is earthed, to avoid lighting strike.
6. Do not disassemble any part of the microscope, especially the electrical parts on the bottom side as this may result in electric shock.
7. Use the factory supplied power cord, please.

2. Maintenance and Storage

1. All the lenses have been well checked and adjusted. It is forbidden to disassemble them yourself.
2. The binocular viewing head and focusing unit have a compact and precise frame; please don't disassemble them as possibly as you can.
3. Keep the instrument clean, wipe dust regularly, and be attention to avoid contaminating the optical elements especially.
4. The contaminations on the prism, as fingerprint and oil, could be gently wiped with a piece of soft cloth or tissue paper, gauze which has been immersed in pure alcohol or ether. **(Note that the alcohol and ether are highly flammable, do keep them away from the fire or potential sources of electrical sparks, and use them in a drafty room as possible as you can.)**
5. Do not attempt to use organic solvents to clean the microscope components other than the glass components. To clean them, use a lint-free, soft cloth slightly moistened with a diluted neutral detergent.

1.Name of Components

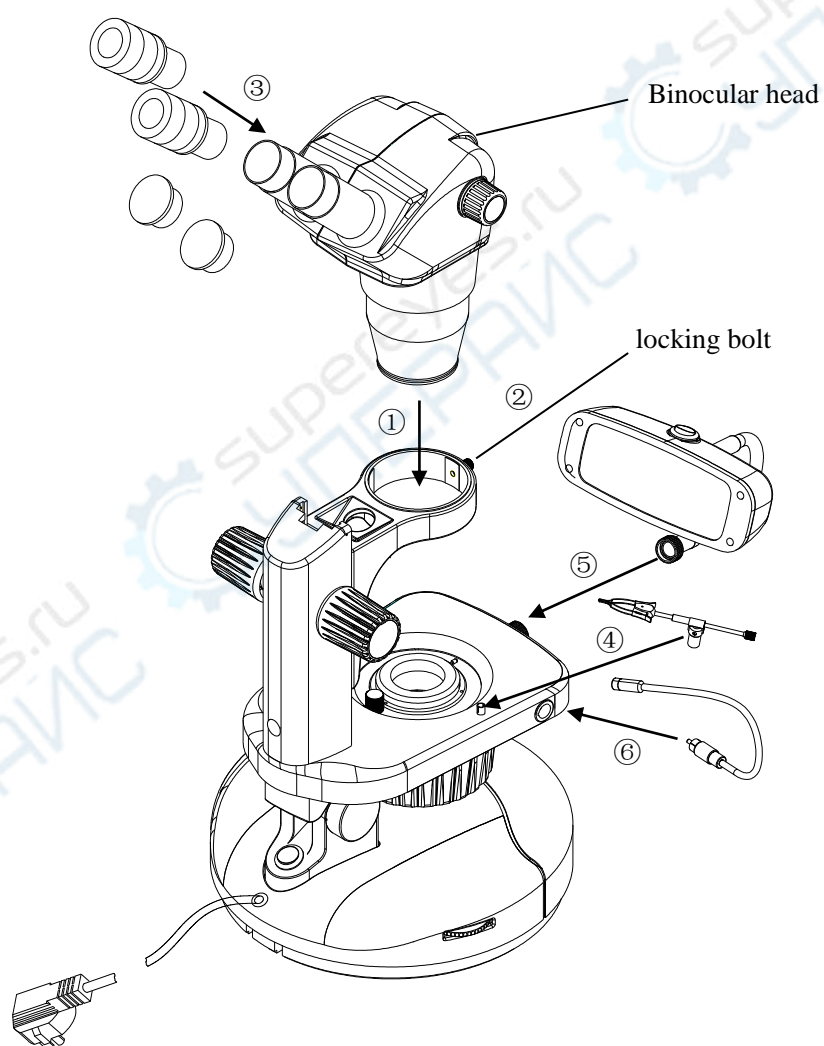


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2.1 Assembly Diagram

The diagram below shows how to assemble the various modules. The numbers indicate the order of assembly.

★When assembling the microscope, make sure that all parts are free of dust and dirt, and avoid scratching any parts or touching glass surfaces.



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2.2 Detailed Assembly Procedure

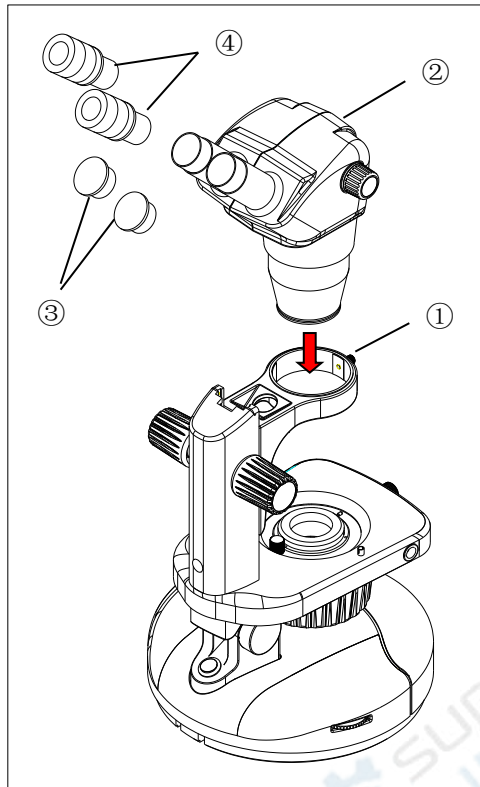


Fig. 1

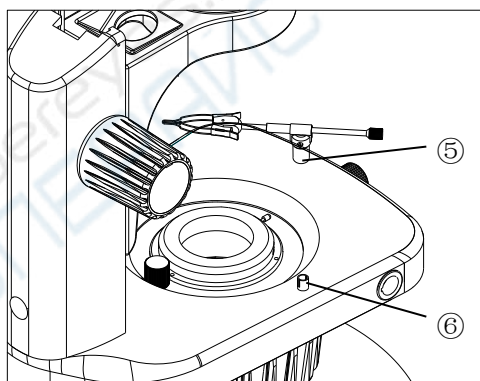


Fig. 2

2.2.1 Mounting zoom body (Fig. 1)

Loosen the clamping bolt ① on the stand and insert the zoom body ② into the bracket of the stand, then screw down the bolt ①.

2.2.2 Mounting eyepieces (Fig.1)

Remove the eyepiece dust caps ③ and rotating the adjustable eyepieces ④ while insert them into the eyepiece sleeves until they stops, as Fig.1 shows. Keep your eyes at the correct distance from eyepieces, and make the microscope even more comfortable to use.

2.2.3 Install stoneholder (Fig. 2)

The stage has two stoneholder mounts ⑥ where you attach the stoneholder ⑤.

Note:

Working Environment Requirement:

1. Ambient temperature: 5 ° C to 40 ° C. (41 ° F to 104 ° F), Maximum R.H: 85%.
2. High Temperature will result in a mildewing, dew and even ruinous instrument.
3. Avoid placing the instrument in a dusty environment. When ending your microscope operation, please cover it with the dust cover.
4. Lay the microscope in a plan and stable position, please.

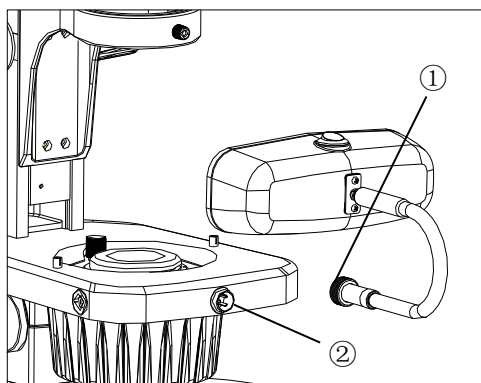


Fig. 3

2.2.4 Install fluorescent lamp (Fig. 3)

1. Install the fluorescent lamp into the socket^② in front of the stage, and seat it as deeply as possible.
2. Tightening the screw cap^① to fix it.
3. The tile of fluorescent lamp illumination is adjustable for individual comfortable.

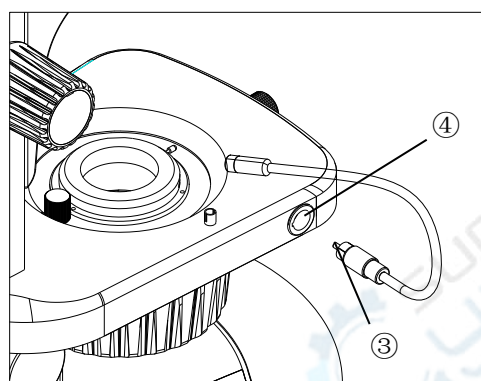


Fig. 4

2.2.5 Install LED lighting(Fig. 4)

1. Insert LED pipe^③ into the socket^④ and seat it as deeply as possible.
2. Remove the plastic cover of the LED pipe.

3.1 Adjusting Stand

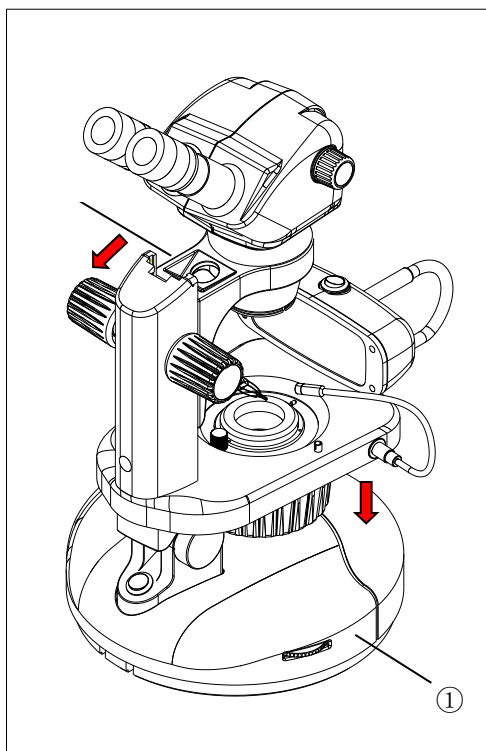


Fig. 5

3.1.1 Adjusting the base(Fig. 5)

Rotating the microscope to a suitable position for viewing comfort by pushing the base ① gently.

3.1.2 Adjusting the tilt of stand(Fig. 5)

The tilt of stand is adjustable by holding down the frontage of base ① with left hand, and take hold of bracket with right hand, then push or pull the bracket to obtain the most comfortable viewing position. The stand is 0-38° adjustable.

3.1.3 Adjusting the rotation tension of the focus adjustment knob (Fig. 6)

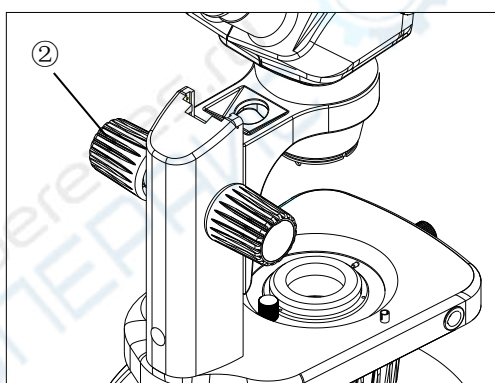


Fig. 6

1. Rotating the focus adjustment knob ② to lower the zoom body to a lower place for fear that the zoom body drops down suddenly if the tension is decreased too much.
2. Hold the focus adjustment knobs with both hands, stop the left knob and rotate the right knob to increase or decrease the focus knob tension.

3.2 Adjusting Binocular Viewing Head

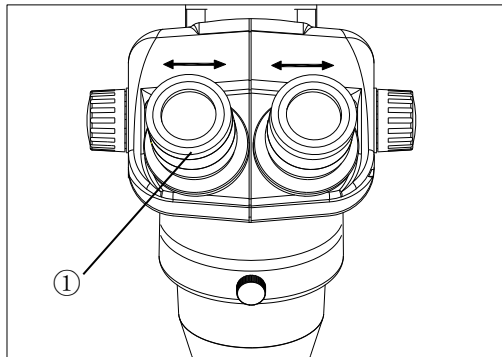


Fig. 7

3.2.1 Adjusting interpupillary distance (Fig. 7)

While looking through the eyepieces, hold the left and right of the binocular assembly ① and adjust the eyepieces by opening or closing them for binocular vision until the left and right fields of view coincide completely.

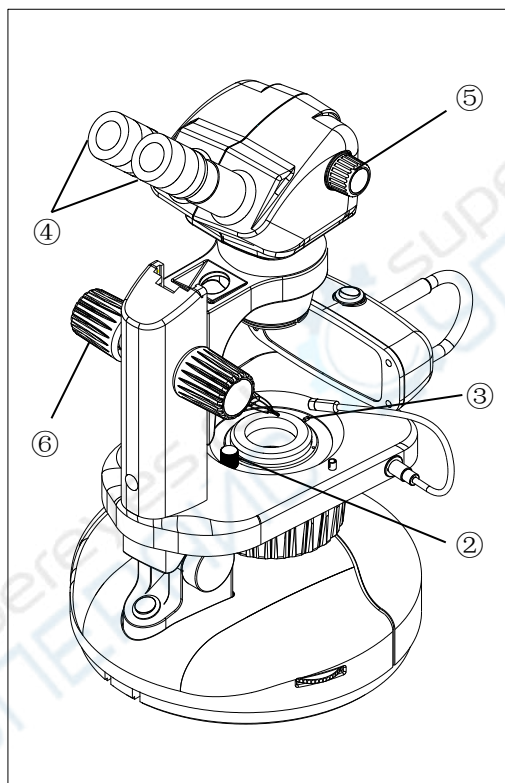


Fig. 8

3.2.2 Adjusting diopter ring (Fig.8)

1. Close the baffle by turning the baffle control knob ② clockwise, and close the iris diaphragm by turning the iris diaphragm control lever ③ clockwise.
2. Set the diopter rings ④ of both eyepieces to "0" position. (Do this when users change, because different users have different diopters.)
3. Rotate the zoom body knob ⑤ to the highest magnification $5\times$, and turn the focusing knob ⑥ to focus the iris diaphragm.
4. Rotate the zoom body knob ⑤ to the lowest magnification $0.8\times$, adjust the diopter ring ④ on left eyepiece to focus the specimen then do the same thing for the right one.
5. Repeat item 3 and 4 until the specimen image can always focus without any adverse effect of the changes of magnification on the definition of the image.

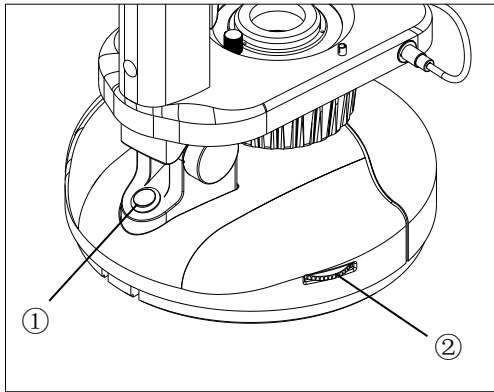


Fig. 9

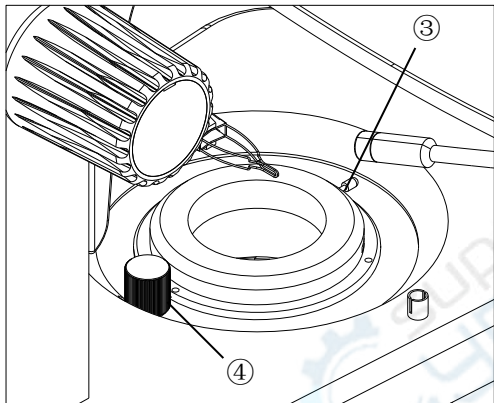


Fig. 10

3.3 Bottom illumination (Fig. 9, 10)

Turn the main switch ① to “I” (on) state, and rotate the brightness adjusting knob ② to obtain a comfortable brightness.

1. Adjusting the iris diaphragm ; the iris diaphragm restricts the diameter of the beam of light entering the objective and thus excludes extraneous light, improving image contrast. It could be adjusted by turning iris diaphragm control lever ③.
2. Brightfield illumination: open the baffle by turning the baffle control knob ④ counter-clockwise. Inclusions should stand out as dark objects against a bright background. This method helps you see curved striae or other low-relief or structural inclusions.
3. Darkfield illumination: close the baffle by turning the baffle control knob ④ clockwise, the stone is illuminated with diffused light from the sides. View the stone against the baffle's black, non-reflective background. Inclusions stand out as bright objects. Darkfield is the most frequently used illumination in gemology.

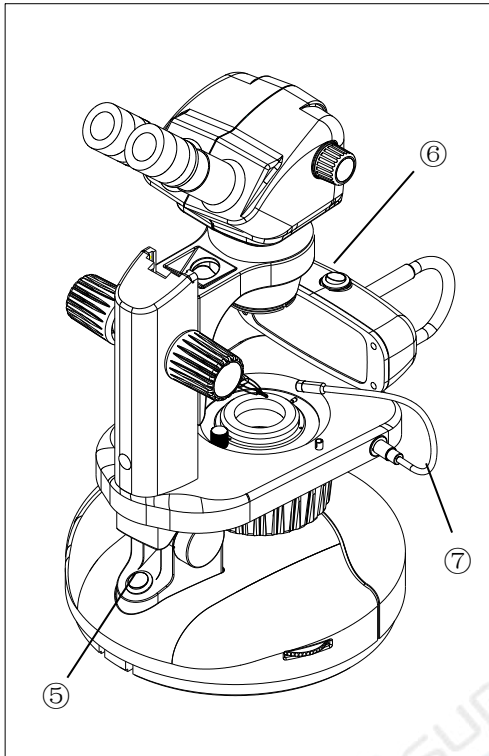


图 11

3.4 Top illumination (Fig. 11)

1. Fluorescent lamp illumination: turning the main switch⑤ to “I” (on) state, and fluorescent lamp switch⑥ to “I” (on) station, it could get a daylight equivalent fluorescent overhead light source, and its tile is adjustable for individual comfort.
2. LED lighting: turning the main switch⑤ to “I” (on) station after installed the LED lighting⑦, and rotate the left side brightness adjusting knob to obtain a comfortable brightness. It can offer many lighting options, different types of lighting work best for seeing different gem features.

Brightfield、darkfield、top illumination ,these three types of illumination is optional for users to meet with different viewing desire .

	Specification
Zoom ratio	1: 6.3
Zoom magnification	0.8× ~ 5×
Binocular viewing head	Inclined at 45° interpupillary distance range: 52~75mm
Working distance	115mm
Eyepiece	15×/Φ16 with diopter adjustment
Focusing range	110mm
Illumination system	6V/20W Halogen illumination
	8W fluorescent lamp
	LED lighting
Stand	0-38° Rotatable
Base	325° Rotatable

5. Troubleshooting

Under certain conditions, performance of this unit may be adversely affected by factors other than defects. If a problem occurs, please review the following list and take remedial action as needed. If you cannot solve the problem after checking the entire list, please contact your local franchiser for assistance.

PROBLEM	CAUSE	SOLUTION	PAGE
1 . Incomplete binocular vision.	Interpupillary distance is not correctly adjusted.	Adjust it correctly	8
	Diopter adjustment is incomplete.	Complete diopter adjustment	
2. Dirt is visible in field of view	Dirt on specimen	Clean specimen	2
	Dirt on eyepiece	Clean eyepiece	
3 . The visibility of the image is poor.	Dust on objective front lens.	Clean lens surface	

PROBLEM	CAUSE	SOLUTION	PAGE
4. Specimen image blurs when zoom magnification is changed.	Diopter ring is not correctly adjusted.	Adjust it correctly.	8
	Not in complete focus on specimen.	Focus specimen correctly at a high magnification.	
5. Coarse focus adjustment knobs rotate with too much resistance.	Tension adjustment ring is too tight.	Loosen it properly.	7
6. Zoom microscope body drops or specimen goes out of focus during observation.	Tension adjustment ring is too loose.	Tighten it properly.	7

6. Outfit

Components	Specification	Quantity	NGI-6	
Main body	Main body	1	●	
Observation system	Binocular head and zoom body	1	●	
	Trinocular head	1	○	
Illuminator	Transmitted illuminator (Halogen illumination)	1	●	
	Reflected illuminator	fluorescent lamp	1	●
		LED lighting	1	●
Eyepiece	15× Eyepiece	2	●	
	20× Eyepiece	2	○	
Objective	0.5×	1	○	
	0.7×	1	○	
	2×	1	○	
Stone holder	Stone holder	1	●	
Photo attachment		1	○	
Video attachment		1	○	
Power cord	Power Cord	1	●	

●: standard Outfit; ○: Optional