BS-3014 Stereo Microscope

Instruction Manual

BS-3014A

BS-3014B

BS-3014C

BS-3014D

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1 Before use

1-1 *Notice*

1)Microscope ought to be place in a dry and clean place. Do not expose the microscope in the sun directly. Avoid high temperature and violent vibration.

2)Microscope is a precision instrument, so handle with care, avoiding impact or abrupt movement during transportation.

3)To keep the image clear, do not leave fingerprints or stains on the surfaces of the lens.

4)Never turn the left and right focusing knob in the adverse direction at the same time, otherwise the microscope will be damaged.

1-2 *Maintenance*

1)All lenses must be kept clean. Fine dust on the surface of the lens should be blown off with hand blower or wiped off gently with a soft lens tissue; Fingerprints or oil marked on it should be wiped off with a tissue moistened with a small amount of a 3:7 mixture of alcohol and ether.

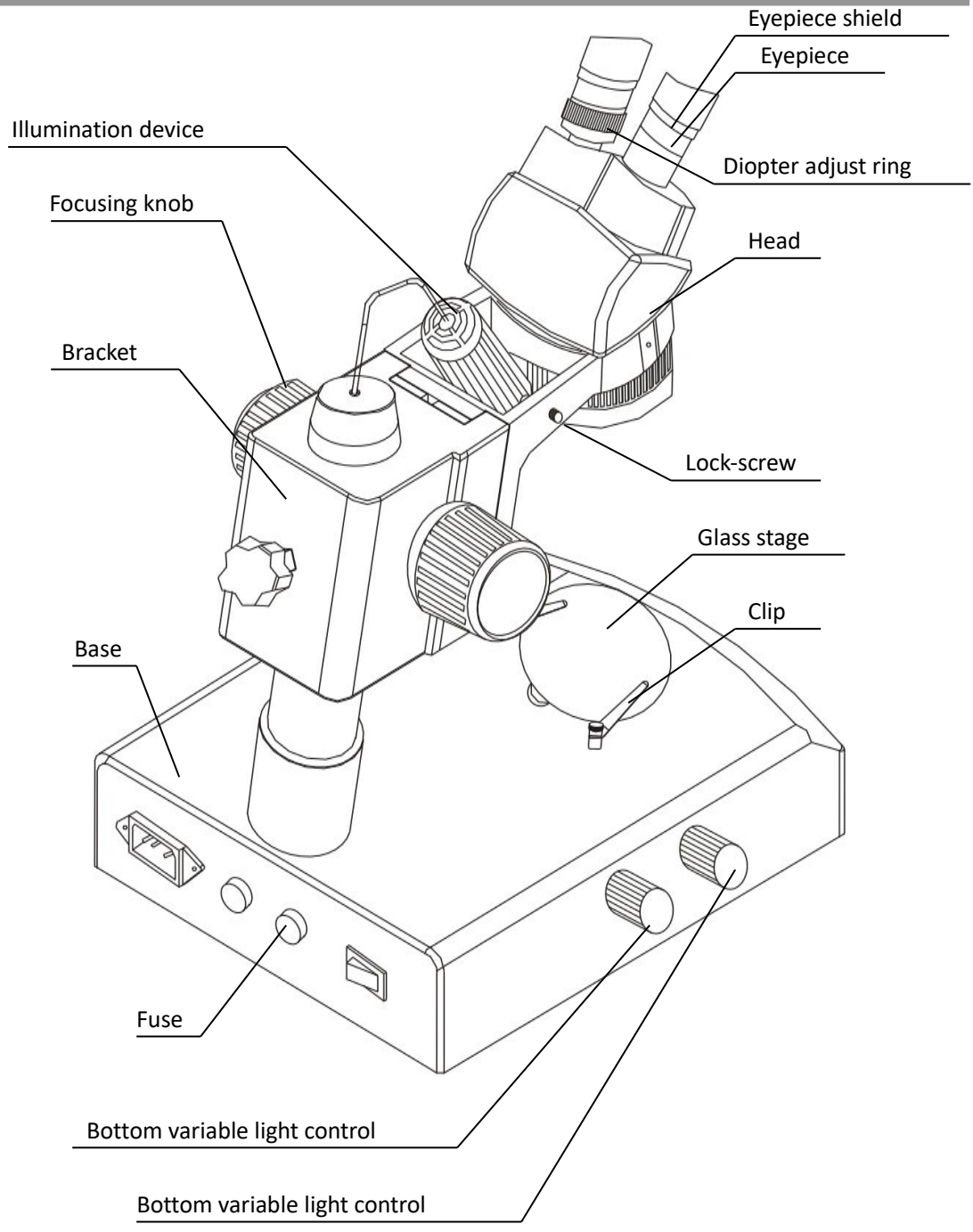
2)Never use the organic solution to clean the other surface (especially the plastic surfaces). If necessary, please choose the neutral detergent.

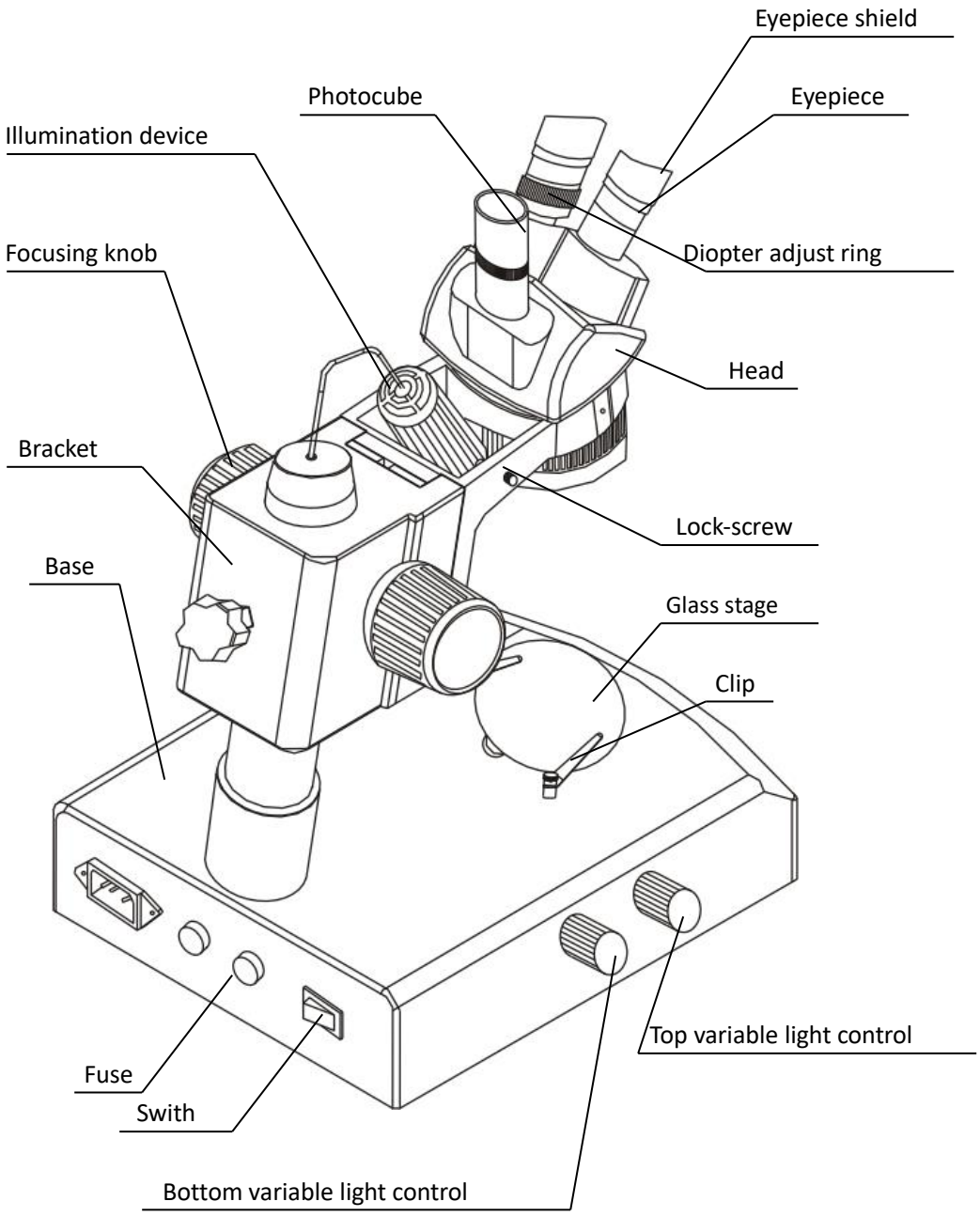
3)Do not take the microscope apart for fearing that it is damaged.

4)After using, cover the microscope with the dust-cover provided and store it in a dry and clean place free from moisture to prevent rust.

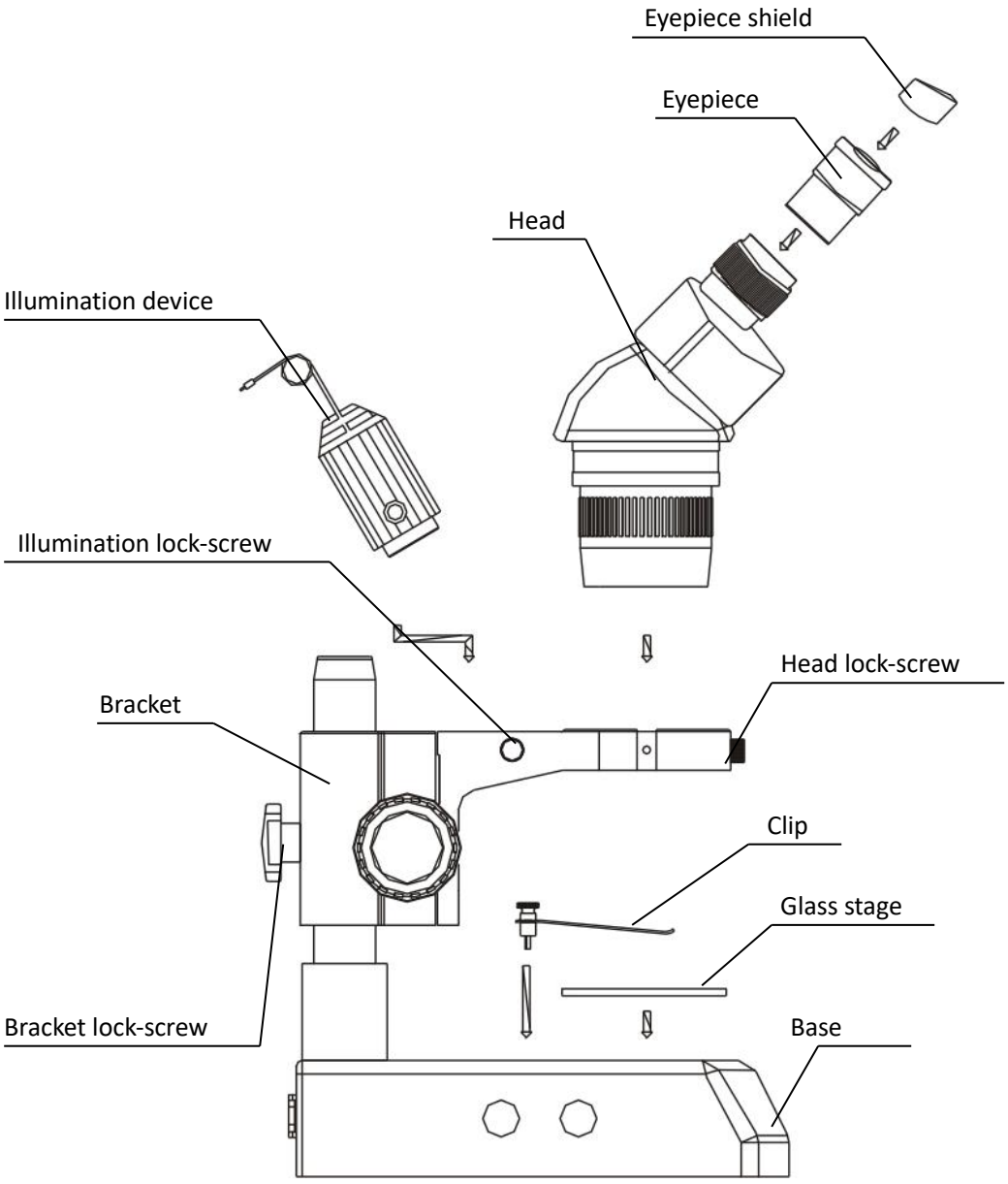
5)To keep the performance of the microscope, please check it periodically.

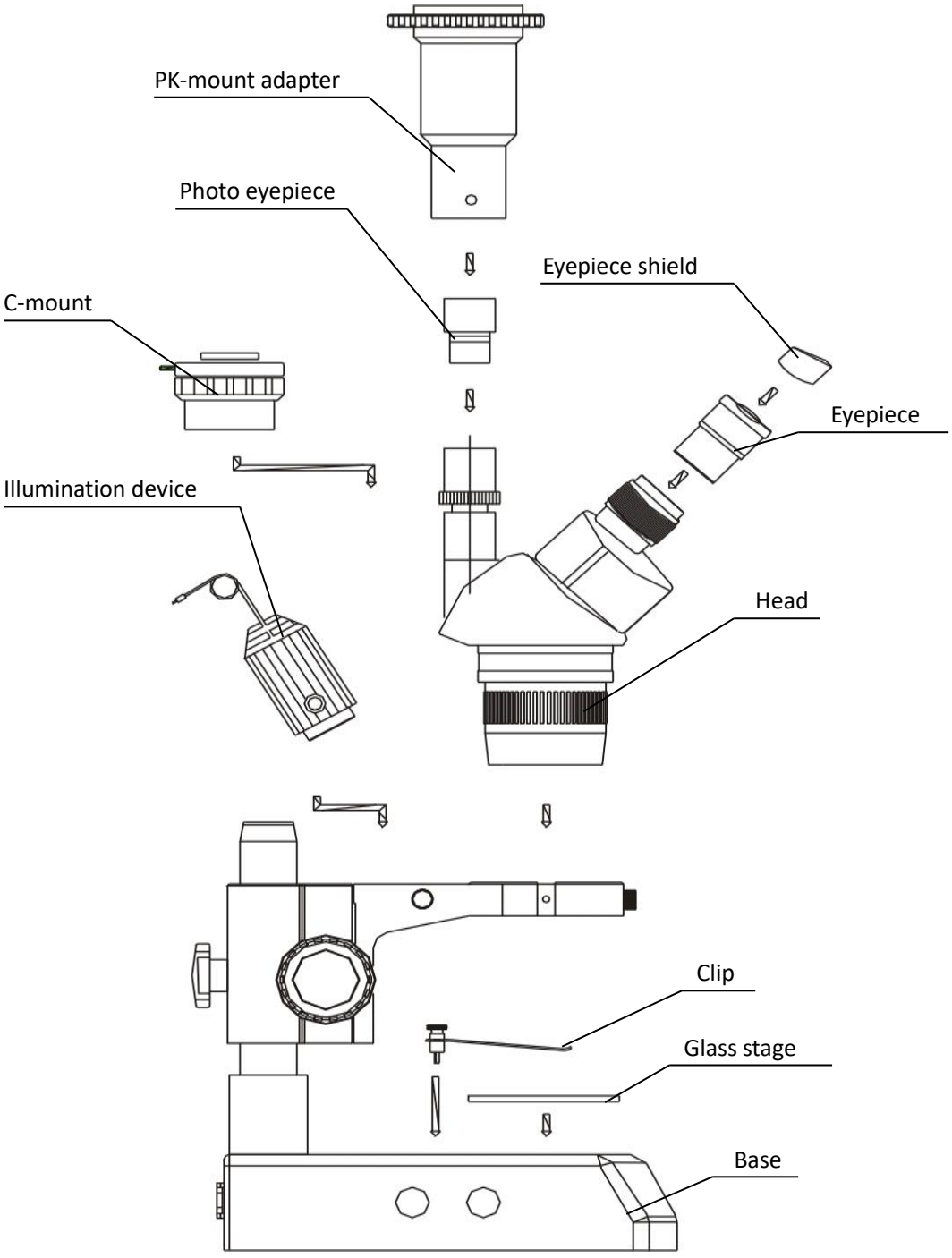
2 Nomenclature




Eyepiece shield
Photocube
Eyepiece
Illumination device
Diopter adjust ring
Focusing knob
Head
Bracket
Lock-screw
Base
Glass stage
Clip
Top variable light control
Fuse
Swith
Bottom variable light control

3 Assemblage




PK-mount adapter
Photo eyepiece
Eyepiece shield
C-mount
Eyepiece
Illumination device
Head
Clip
Glass stage
Base

4 Operation

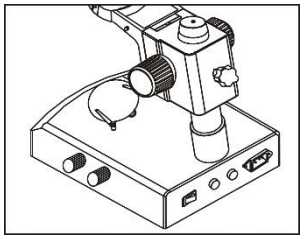


Fig. 1

4-1 Use the glass stage

1)Press the glass stage on the sunken place then the other side of the glass stage will be lifted. (Fig.1)

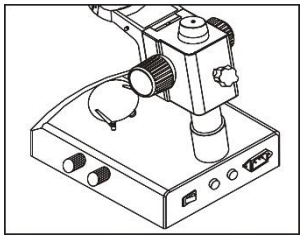


Fig.2

4-2 Adjust the degree of tightness of the focusing arm

1)If you want to adjust the degree of tightness of the tightness of the focusing arm, you can hold one of the focusing knob and turn another one to attain a suitable position. The degree of tightness relies on the direction to be turned. The clockwise direction is tight, otherwise, is loose.

2)The suitable position of the tightness can make the adjustment more comfortable and prevent the focusing bracket from slipping down by its weight during the observation. (Fig. 2)

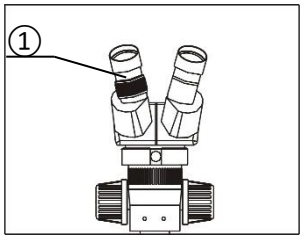


Fig. 3

4-3 Set the specimen slide

1)Set the specimen in the center of stage plate. If necessary, clamp the slide with the clips.

2)Turn on the light.

4-4 Adjust diopter and focus

1)Turn the focusing knob and observe the specimen through the right eyepiece till the image of the specimen is clear.

2)Observe the specimen through the left eyepiece and adjust the diopter adjustment ring ① till the image is clear. (Fig. 3)

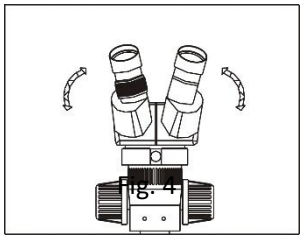


Fig. 4

4-5 Adjust the interpupillary distance

Adjust the prism housing along the direction of arrow of the Fig.4 till the observation is comfortable.

4-6 Use eyepiece shields

1)For user who does not wear glasses, hold the diopter-adjusting ring to prevent them from rotating and turn the eyepiece till the eyepiece shield fit the observer well.

2)For user who wears glasses, take the eyepiece shields off before observation.

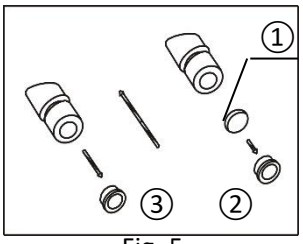


Fig. 5

4-7 Install and remove the optional eyepiece micrometer

1)Turn and remove the mounting ring ② from the eyepiece.(Fig.5)

2)Clean the eyepiece micrometer①, and mount it to the mounting ring with the inscription side downward.

3)Gently twist the mounting ring with the eyepiece micrometer into the eyepiece till tightening② securely.

4)To remove the eyepiece micrometer, take down the mounting ring by twisting and take out of the micrometer, and the wrap it in clean soft paper for storage.

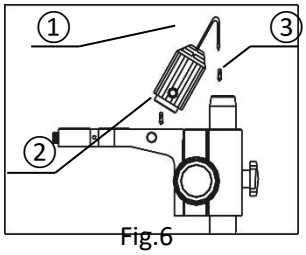


Fig.6

4-8 Install the illumination device

1)Insert the illumination device① in the bracket with the protrudent side toward the lock-screw② and tighten the lock-screw.(Fig.6)

2)Put the plug into the socket of the pillar stand ③.

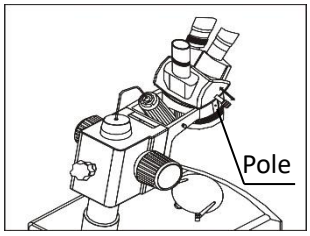


Fig.7

4-9 Choose the optical system

1)You can alternate the binocular and video capture by pushing or pulling “the pole”. You can attain binocular observation by pushing “the pole” inside, or attain video capture by pulling it outside.(Fig.7)

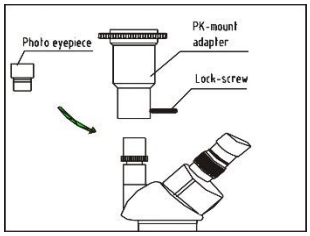


Fig.8

4-10 Mount the photo eyepiece and the PK-mount adapter

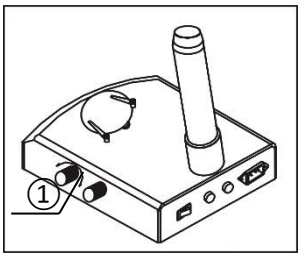


Fig. 9

1)Put the photo eyepiece into the eyepiece socket of the tri-ocular.
2)Connect the PK-mount adapter with the photo eyepiece, and then tighten the lock-screw. (Fig.8)

4-11 Adjust the brightness of the bottom light

1)Turn the adjustable light knob① according to the sign marked on the base, along the clockwise the brightness will be added ,otherwise it will be weakened . (Fig.9)

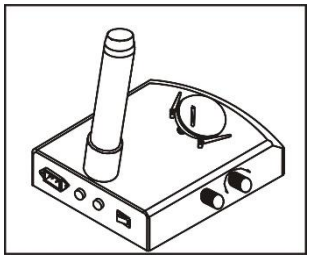


Fig.10

4-12 Replace the lamps

1)Press the stage on the sunken place then the other side will be lifted. (Fig.10)
2)Take the lamp out of the jack.
3) Put a new lamp into the jack thoroughly.
4)Recover the stage plate.(Fig.11)
Note: ① Before replacing the lamps, turn off the power first.
② Avoid violence while the lamp is plugged into the jack.

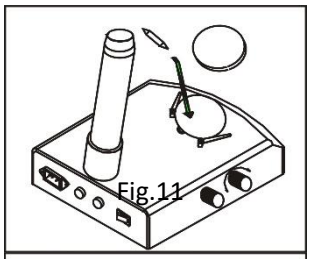


Fig.11

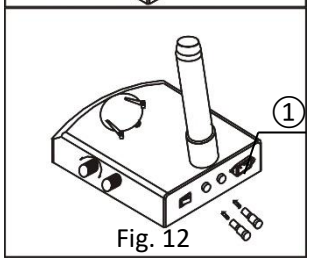


Fig. 12

4-13 Replace the fuse

1)Screw the fuse tube out with a screwdriver and the pull the fuse out of the tube ①.
2)Remove the fuse and mount it in an adverse way.(Fig. 12)

5 Configuration chart

5-1 BS-3014 Series Configuration

Item	Specification	BS-3014A	BS-3014B	BS-3014C	BS-3014D
Head	Binocular Viewing Head, Inclined at 45°, 360° rotatable, Interpupillary adjusting distance 54-76mm, left eyepiece with diopter adjustment±5	●	●	●	●
Eyepiece	High eyepoint WF10×/20mm eyepiece	●	●	●	●
	WF15×/15mm eyepiece	○	○	○	○
	WF20×/10mm eyepiece	○	○	○	○
Objective	2×, 4×	●	●	●	●
	1×, 2×	○	○	○	○
	1×, 3×	○	○	○	○
Magnification	20×, 40×, with optional eyepiece and auxiliary objective, can be extended to 5×-160×	●	●	●	●
Auxiliary Objective	0.5× objective, W.D.: 165mm	○	○	○	○
	1.5× objective, W.D.: 45mm	○	○	○	○
	2× objective, W.D.: 30mm	○	○	○	○
Working Distance	100mm	●	●	●	●
Head Mount	76mm	●	●	●	●
Illumination	Transmitted light 12V/15W Halogen, Brightness Adjustable		●		
	Incident light 12V/15W Halogen, Brightness Adjustable		●		
	Transmitted light 3W LED, Brightness Adjustable		○		●
	Incident light 3W LED, Brightness Adjustable		○		●
	LED ring light	○	○	○	○

	Cold light source	○	○	○	○
Focusing Arm	Coarse focusing, focusing range 50mm	●	●	●	●
Pillar Stand	Pole height 240mm, pole diameter Φ32mm, with Clips, Φ95 black&White plate, Base size: 200×255×22mm, no illumination	●			
	Pole height 240mm, pole diameter Φ32mm, with Clips, Φ95 black&White plate, glass plate, Base size: 200×255×60mm, Halogen illumination		●		
	Pole height 240mm, pole diameter Φ32mm, with Clips, Φ95 black&White plate, Base size: 205×275×22mm, no illumination			●	
	Pole height 240mm, pole diameter Φ32mm, with Clips, Φ95 black&White plate, glass plate, Base size: 205×275×40mm, LED illumination				●
Package	1pc/1carton, 38.5cm*24cm*37cm, Net/Gross Weight: 3.5/4.5kg	●	●	●	●

Note: ● Standard Outfit, ○ Optional

6 Technical parameter

6-1 BS-3014 series optical parameter

Objective Mag.	Working Distance (mm)	Eyepiece		Eyepieces (option)			
		WF10X/20mm		WF15X/15mm		WF20X/10mm	
		Mag.	Objective field	Mag.	Objective field	Mag.	Objective field
1X	100	10X	20	15X	15	20X	11
2X		20X	10	30X	7.5	40X	5
3X		30X	6.7	45X	5	60X	3.3
4X		40X	5	60X	3.75	80X	2.5

6-2 Auxiliary objective for BS-3014 series

Auxiliary objectives	Magnification	Working distance（mm）
0.5 X	0.5X	165
1.5 X	1.5X	45
2 X	2X	30

★ Working distance is fixed regardless of the magnification factor.

★ Total mag.=Objective mag. X Auxiliary mag. X Auxiliary mag.

$$\text{Diameter of field of view（mm）} = \frac{\text{Eyepiece field}}{\text{Objective mag. X Auxiliary objective mag.}}$$

★ Photo adaptor mag.=Objective mag.(X Auxiliary objective mag.)X Photo eyepiece mag.

6-3 The base electrical specification of BS-3014 series

Parts \ Model		BS-3014A/C	BS-3014B	BS-3014D
Power supply		No	220V-50Hz 110V-50/60Hz	220V-50Hz 110V-50/60Hz
Transformer		No	Input:220/110VAC Output:12VDC/45W	Input:220/110VAC Output:12VDC/45W
Illuminate	Top light	No	12V/15W halogen lamp	3W LED lamp
	Bottom light		12V/15W halogen lamp	3W LED lamp

6-4 Configuration parameter of BS-3014 series

Parts \ Model		BS-3014(1X,2X)	BS-3014(1X,3X)	BS-3014(2X,4X)
Head	Objective magnification	1X, 2X	1X, 3X	2X, 4X
	Working distance	100mm		
	Observation angle	45°		
	Interpupillary distance adjustment	Linkage between left and right eyepiece tube Range of single adjustment: 54-75mm		
	Diopter adjustment	Range of single adjustment： ±5D		
	Mount with auxiliary objectives	Screw hole： M48*0.75		
Objective	Field of view	ϕ20mm		
Main body	Mount the head	Mount the head in the bracket hole whose diameter isϕ76mm		
	Focusing device	The degree of adjustable by rotating the focusing knob. Range of single adjustable :49 mm		
	Glass stage	Diameter: ϕ95mm		
	Clips	Put it on the base from top		

7 Trouble shooting

The performance of the microscope can't be made fully because of unfamiliar using. This table will give some advices.

Trouble	Cause	Remedy
1.Double images	Interpupillary distance is not correct	Readjust it
	Diopter adjustment is not correct	Readjust it
	Magnification of each eyepiece is not the same size	Mount the same size eyepiece
2.Dirt appears in the field of view	Dirt on the specimen	Clean the specimen
	Dirt on the surface of eyepiece	Clean the surface
3.Image is not clear	Dirt on the surface of the objective	Clean the objectives
4.Image is not clear while the focus changing	Diopter adjustment is not correct	Readjust the diopter
	Focus is not correct	Readjust the focus
5.The focusing knob is not smooth	The focusing knob is too tight	Loosen it to a suitable position
6.The image is obscure because of the head slipping down by itself during observation	The focusing knob is too loose	Tighten it to a suitable position
7.Incision image appears in the field of view or of the video view	The pole is not in correct position	Pull or push it to the correct position
8.Eyes fell tired easily	Diopter adjustment is not correct	Adjust the diopter
	Brightness of light is not correct	Adjust the brightness
9.Bulb does not work when the switch is on	No power in	Check the connection with the power supply
	The bulb was not insert correct	Insert it correctly
	Bulb is wrong	Replace with a new one
10.Bulb is burned out suddenly	Use the wrong bulb	Replace with a correct one
	The voltage is too high	Control the voltage Eg :use voltage regulator
11.Brightness is not enough	Use the wrong bulb	Replace with a correct one
	The voltage is too low	Increase the input voltage
12.The bulb flickers or the brightness is unstable	The bulb will burn out soon	Replace with a new one
	The bulb was not inserted correctly	Insert it correctly