



BS-3030 Series

Zoom Stereo Microscope

Instruction Manual



BS-3030A

BS-3030AT

BS-3030B

BS-3030BT

BS-3030C

BS-3030CT

This instruction manual is for the stereo microscope BS-3030 series. To ensure the safety and obtain optimum performance and familiarize yourself fully with the use of this microscope, we recommend that you read this manual thoroughly before operating the microscope. Please keep this instruction manual in an easily accessible place near the microscope for future reference.

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Operation

- 1) As microscope is a precision instrument, handle with care, avoiding impact or abrupt movement during transportation.
- 2) Microscope ought to be placed in a dry and clean place. Do not expose the microscope in the sun directly. Avoid high temperature and violent vibration. Usually, following environment is required indoor temperature: 0°C - 40 °C, Max. relative humidity:85%.
- 3) To keep the image clear, do not leave fingerprints or stains on the surfaces of the lens.
- 4) Before use, please check the power supply in compliance with the microscope power required.
- 5) Never turn the left and right focusing knob in the adverse direction at the same time, otherwise the microscope will be damaged.
- 6) When use photo set to capture image, please ensure the stability of microscope, make sure the main body inclined less than 3°.
- 7) When use camera with C-mount, the camera sensor size should be less than 2/3", weight not more than 2.5kg.

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 xylene or 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.

1. Nomenclature

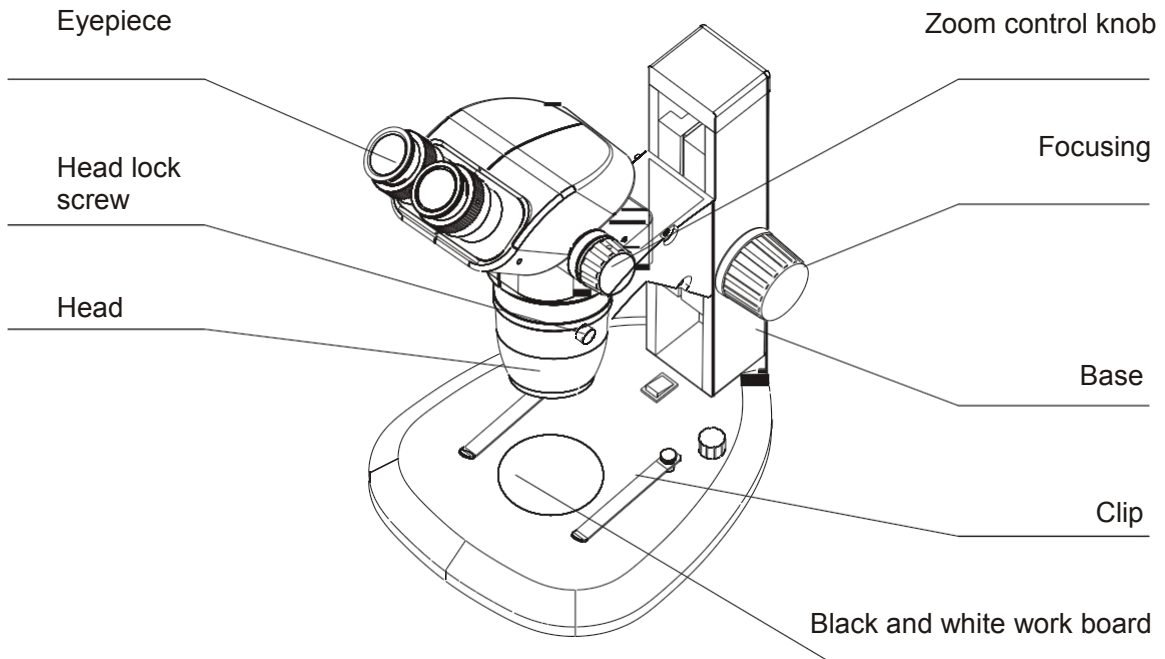


Fig.1

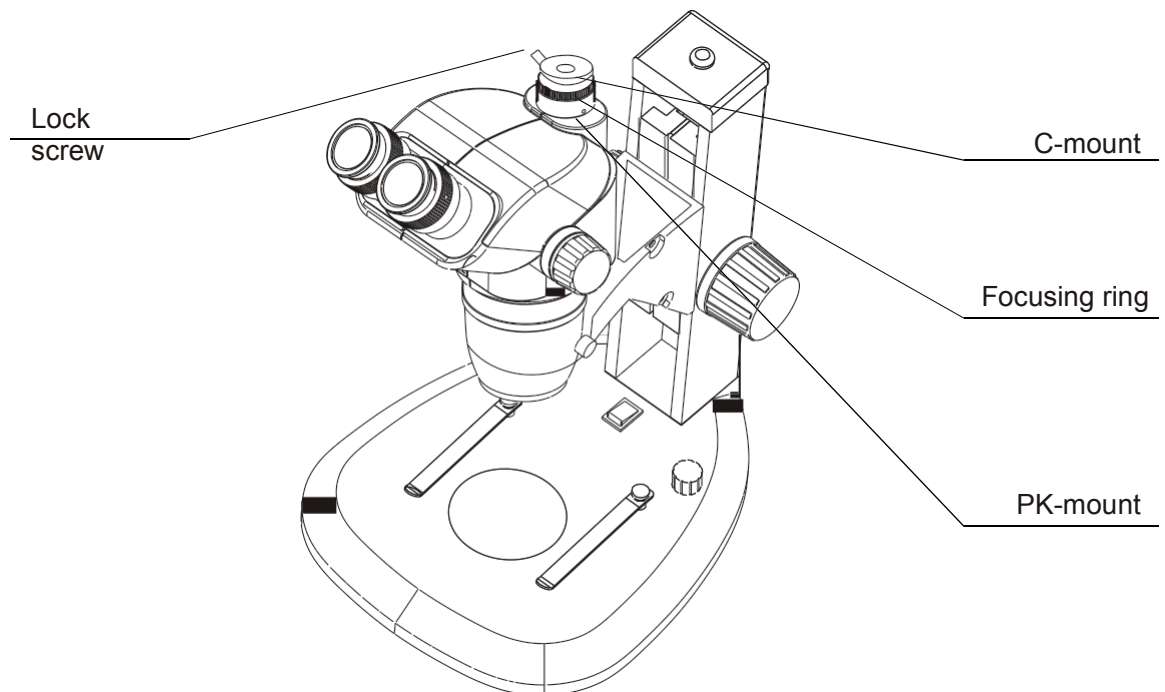


Fig.2

2. Assemblage

The following diagram for the installation, the number representatives the order.
Before installing, it should ensure that all connections has clean surface, the installation should be taken to avoid the surface of the lens was dirty or scratched.

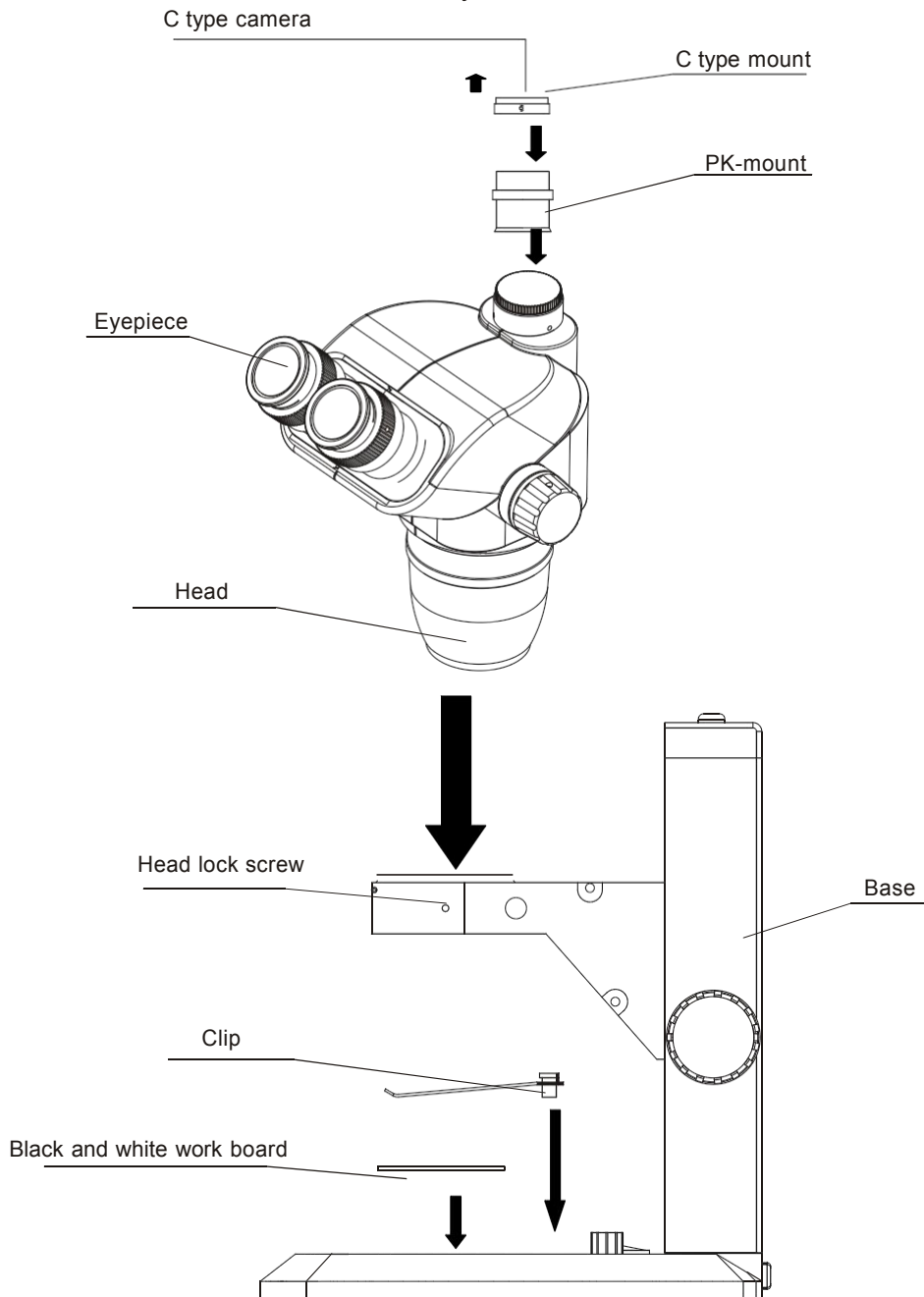


Fig.3

*1)Connect the C -mount to the camera, ,Then connect the camera to the PK- Mount.

3. Operation

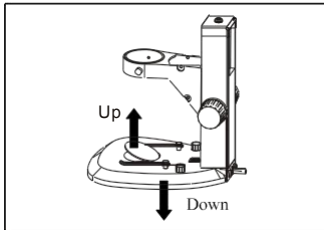


Fig.1

3.1 Use black and white work board

- (1) If the specimen is white or transparent, make the black one as background, to enhance the contrast.
- (2) Take off or change the work board, move the work board (Fig.1) make one side down, then the other side will be up.(Fig. 1)

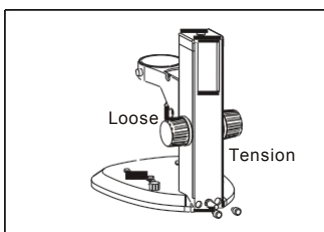


Fig.2

Adjust the degree of tightness of the focusing arm.

- (1) If you want to adjust tightness of the focusing arm, you can hold one of the focusing knobs and turn another one to attain a suitable tightness. The degree of tightness relies on the direction to be turned. The reverse direction is tight, otherwise, is loose.
- (2)The suitable position of tightness can make the adjustment more comfortable and prevent the focusing bracket from slipping down by its weight during the observation. (Fig.2)

Set the specimen slide

- (1) Set the specimen on the center of stage plate. If necessary, clamp the slide with the clips.
- (2)Turn on the light.

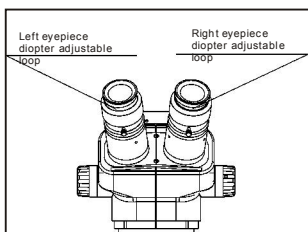


Fig.3

Adjust the specimen slide

- (1) Turn the zoom control knob to the maximum magnification.
- (2) Turn the diopter adjusting rings to the zero.
- (3) Observe the specimen through the right eyepiece and make the image clear by turning the focusing knob.
- (4) Rotate the zoom control knob to the minimum magnification.
- (5) Observe the specimen through the right eyepiece and make the image clear by turning the right diopter adjusting ring.(Fig.3)
- (6) Re-do the step(3)and (5) till the right adjusting ring is more precise.
- (7) Do the step (4) and make the image clear which is observed through the left eyepiece by turning the left diopter adjusting ring. (Fig.3)

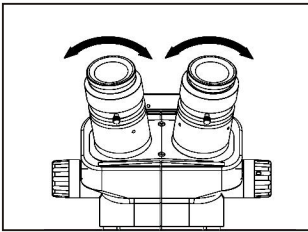


Fig.4

- Adjust the interpupillary distance
 - (1) Adjust the prism housing along the direction of arrow of the Fig.4 till the observation is comfortable.

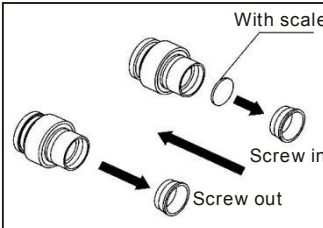


Fig.5

■ Mount and Remove the Optional Eyepiece Micrometer

- (1) Turn and remove the mounting ring from the eyepiece.(Fig.5)
- (2) Clean the eyepiece micrometer and mount it to the mounting with the inscription side downward.
- (3) Gently twist the mounting ring with the eyepiece micrometer into the eyepiece till tightening securely.
- (4) To remove the eyepiece micrometer, take down the mounting ring by twisting and take out of the micrometer, and then wrap it.

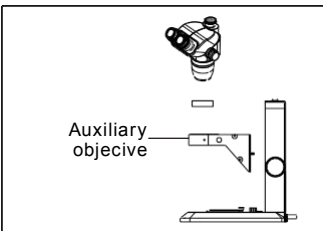


Fig.6

■ Use Auxiliary objective

- (1) Connect the Auxiliary objective to the thread at the bottom of the microscope head.
- (2) 0.5x Auxiliary objective has long working distance. When use 0.5x auxiliary objective, release the lock screw on the arm by a 4mm Allen key, move the focus arm up and fixed in the up screw hole.(Fig 6)

★0.75x auxiliary objective no need to remove arm.

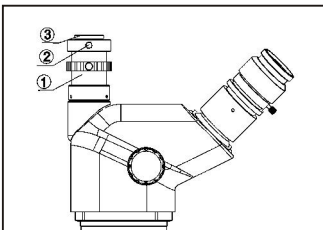


Fig.7

■ Mount PK-mount and photo set

- (1) Screw the PK-mount ① in the head, M28 screw, tight the mount.(Fig.7)
- (2) Loosen the screw on the PK-mount ②, take out the mount of C type camera ③.
- (3) Screw the C type mount in the TV photo set.
- (4) Install the TV photo set into the PK-mount and lock the screw.

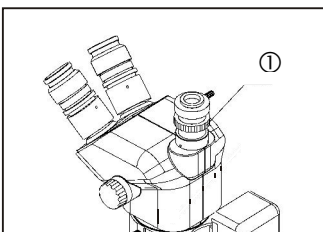


Fig.8

■ Focusing the TV photo set

- (1) Turn the zoom control knob to the maximum magnification, meanwhile, observe the TV set, adjust until the image is clear.
- (2) Rotate the zoom control knob to the min. magnification. If the image is not clear enough, adjust the part ① until the image clear.
- (3) Redo the step (1), turn the zoom control knob to the maximum magnification to check the image is clear or not. If not clear, redo step(1)and (2), until the image is clear in all the zoom range.

4. Use Microscope stand

- ★ Make sure the power is cut off when replace the fuse.
- ★ Make sure the earth wire is correctly connected.
- ★ Black and white stage plate, glass stage plate, diameter 95mm

4.1 Nomenclature

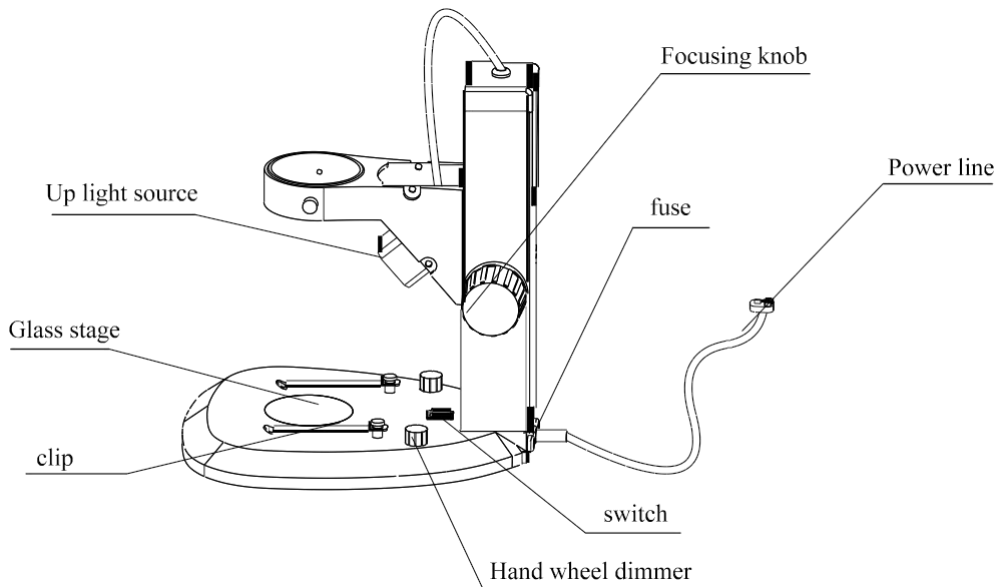


Fig.9

4.2 Operation

2.1 Adjust the brightness of the bottom light or top light

Turn the adjustable light knob ①②, knob ① control top light, knob ② control bottom light, along the clockwise the brightness will be added, otherwise it will be weakened. (Fig.10)

Fig.10

2.2 Replace the fuse

- (1) Screw the fuse tube out with a screw driver.
- (2) Then pull the fuse out of the tube ①.
- (3) Change with new fuse and mount it in an adverse direction.

Fig.11

5. Technical Parameter

5.1 Optical parameter

Zoom magnification	Working distance (mm)	Eyepiece		Eyepiece (optional)			
		WF10X/22mm		WF15X/16mm		WF20X/12mm	
		magnification	Field of view(mm)	magnification	Field of View(mm)	magnification	Field of view(mm)
0.67X	105	6.7X	32.8	10.05X	23.9	13.4X	17.9
0.7X		7X	31.4	10.5X	22.86	14X	17.1
0.8X		8X	27.5	12X	20	16X	15
1X		10X	22	15X	16	20X	12
1.5X		15X	14.7	22.5X	10.7	30X	8
2X		20X	11	30X	8	40X	6
3X		30X	7.3	45X	5.3	60X	4
4X		40X	5.5	60X	4	80X	3
4.5X		45X	4.9	67.5X	3.6	90X	2.7

5.2 Auxiliary objective standard(optional)

Magnification	Working distance(mm)	Magnification	Working distance(mm)
0.3X	287	0.75X	117
0.4X	217	1.5X	47
0.5X	177	2X	26

★Working distance is fixed regardless of the magnification factor.

★Total mag.= Zoom mag. X Eyepiece mag. X Auxiliary objective mag.

$$\text{Diameter of field of view(mm)} = \frac{\text{Field number of eyepiece}}{\text{Zoom mag. X Auxiliary objective mag.}}$$

5.3 Photo adapter mag.= Zoom mag.(X Auxiliary objective mag.)X Eyepiece mag.

5.4 Photo set zoom mag.= Zoom mag.(X Auxiliary objective mag.) X CTV mag. X C type photo tube mag.

6. Trouble shooting

The performance of the microscope can't be made fully because of unfamiliar using, this following table will give some advice.

Trouble	Cause	Solution
1. Optical system		
(1) Brightness is too bright or too dark	Brightness adjust not well	Make right adjustment
(2) Dirt appears in the field of view	Dirt on the specimen	Clean the specimen
	Dirt on the surface of eyepiece	Clean the surface
	Dirt on the surface of the objective	Clean the objective
	Dirt on the working stage	Clean the working stage
(3) Double image	Interpupillary distance is not correct	Readjust it
	Dioper adjustment is not correct	Readjust it
	Magnification of each eyepiece is not the same size	Mount the same size eyepiece
(4) Image is not clear	Dirt on the surface of the objective	Clean the objective
(5) Image is not clear while the focus changing	Diopeter adjustment is not correct	Readjust the diopeter
	Focus is not correct	Readjust the focus
(6) The image on the monitor is not clear when the focusing knob is turned	The focus of video is not correct	Readjust the focus of video to a correct position
2. Electrical system		
(1) Bulb does not work when the switch is on	The bulb is not inserted correctly	Insert it correctly
	Bulb is wrong	Replace bulb
	Fuse is broken	Replace fuse
	There is something impede the light	Clean the working stage
(2) bulb is burned out suddenly	The voltage is too high	Use voltage regulator
	Use the wrong bulb	Replace with a correct one
(3) fuse always burned out	The voltage is too high	Use voltage regulator
(4) 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 I correctly
3. Focusing		
(1) the focusing knob is not smooth	The focusing knob is too tight	Loosen it to a suitable
(2) the image is obscure because of the head slipping down by itself during observation	The focusing knob is too loose	Tight it to a suitable position