



SQF-D/E LED MICROSCOPE

Cod. 5313308 - 5313309

Instructions Manual

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一、 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: $^{\circ}\text{C} \sim 40^{\circ}\text{C}$, 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, 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 ensure the stability of microscope, make sure the main body inclined less than 3° .
- 7、 When use C type camera, The camera to receive the target surface should less than $2/3''$, weight not more than 2.5kg.

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 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.

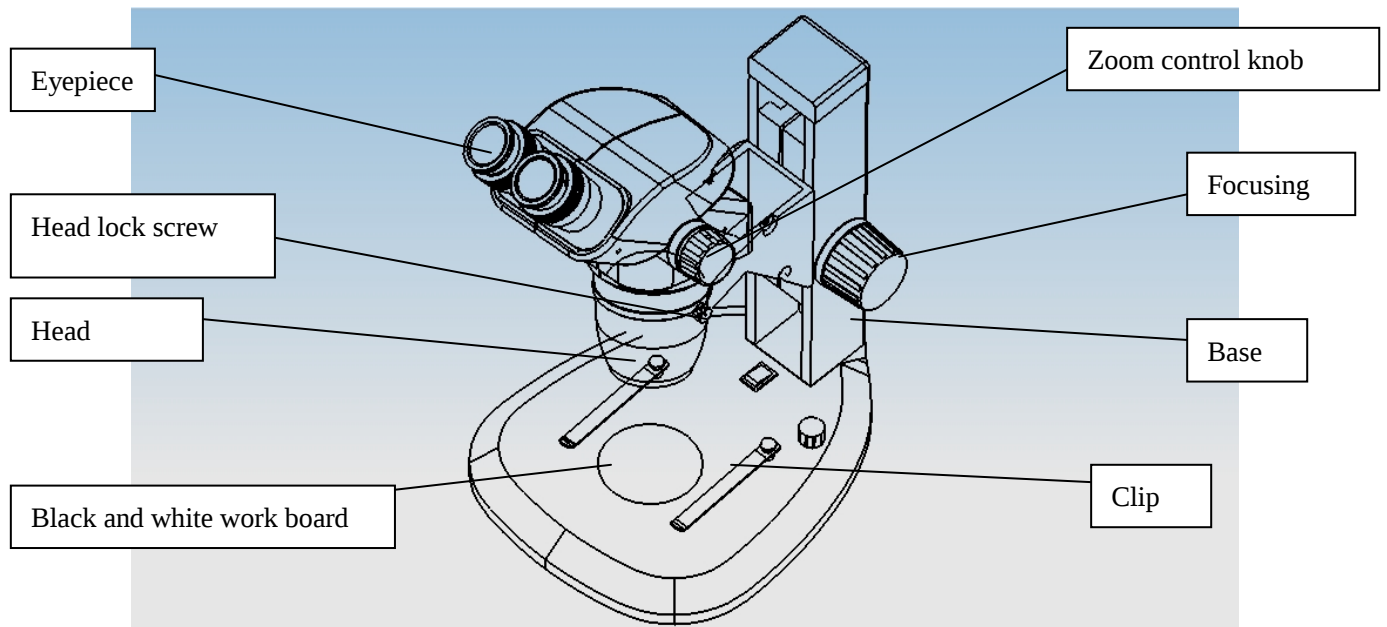


Fig.1

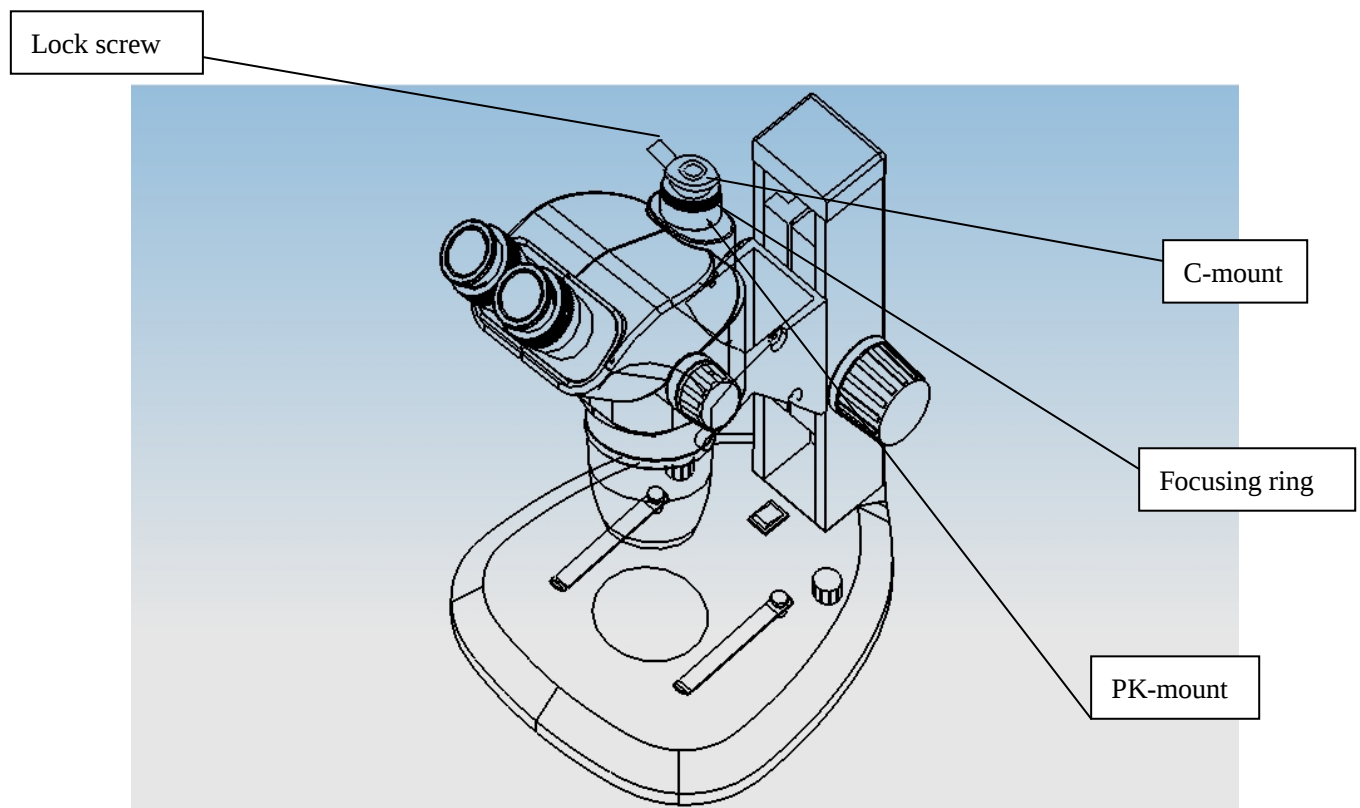
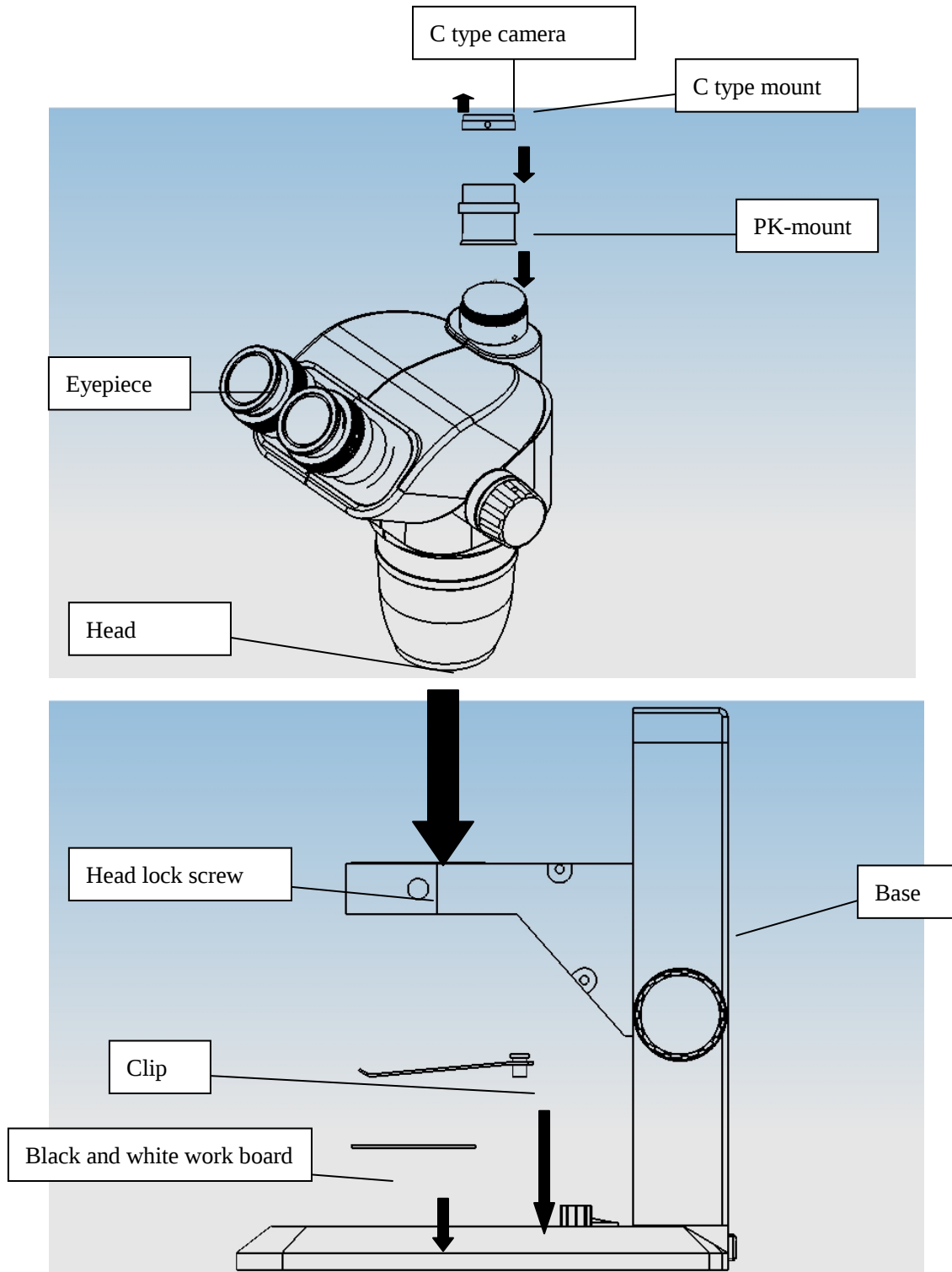


Fig.2

2. Assemblage

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



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

Fig. 3

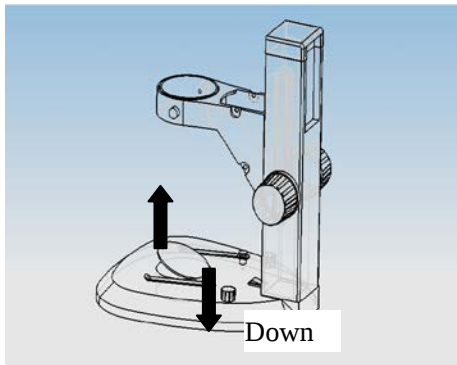


Fig.1

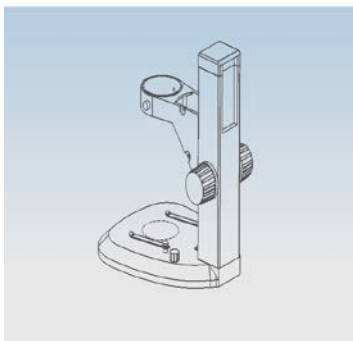


Fig.2

3-1 Use black and white work board

- (1) Make the white up, 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, than the other side will be up. (Fig. 1)

3-2 Adjust the degree of tightness of the focusing arm.

- (1) If you want to adjust degree of tightness of the focusing arm, you can hold one of the focusing knobs 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 tightness can make the adjustment more comfortable and prevent the focusing bracket from slipping down by its weight during the observation. (Fig.2)

3-3 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.

3-4 Adjust the specimen slide

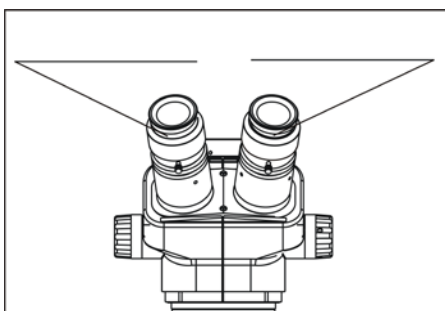


Fig.3

- (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) Redo 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 ①. (Fig.3)

3-5 Adjust the interpupillary distance

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

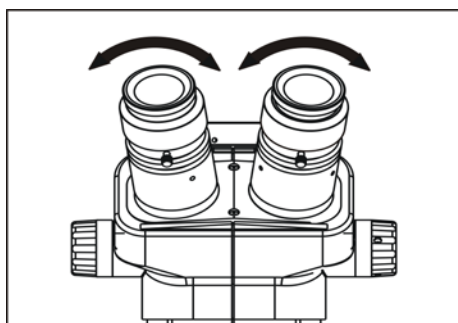
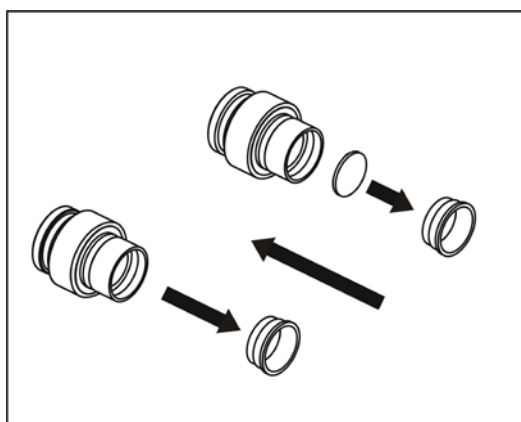


Fig.4

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.

3-7 Use Auxiliary objective

- (1) connect the Auxiliary objective to the thread at the bottom of the head.
- (2) 0.5x Auxiliary objective with long working distance, when use 0.5x auxiliary objective, release the lock screw on the arm by a six mao spanner, use after move a bit hole. (Fig 6)
0.75x auxiliary objective no need make hole

0.3x and 0.4x auxiliary objective can not used on J2 and J3 base.

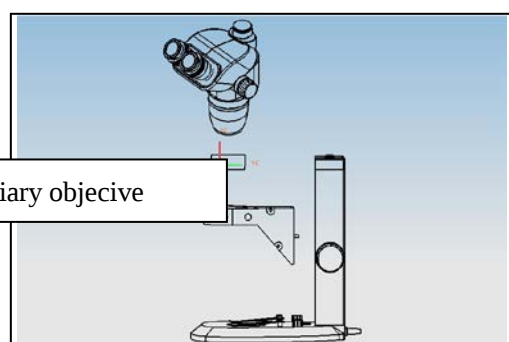


Fig.6

3-8 Mount PK-mount and photo set

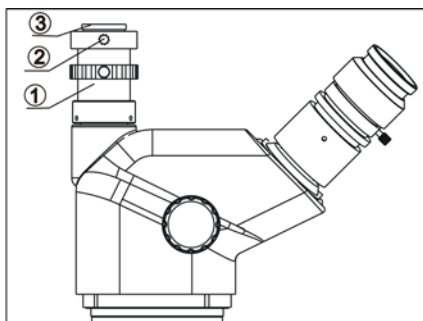


Fig.7

- (1) Screw the PK-mount ① in the head, M28 screw, tight the mount. (Fig.7)
- (2) loosen the screw on the PK-mount②, take out the mount of C type camera③
- (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.

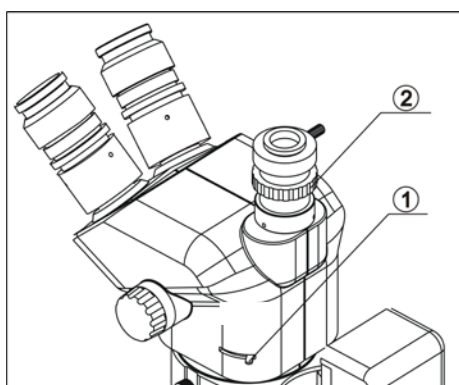


Fig.8

3-10 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 minimum magnification. if the image is not clear enough, adjust the part ② until the image clear.
- (4) 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 (2) and (3), until the image is clear in all the zoom rang.

4. Use J3 base

- ★ Make sure the power is cut off when replace the fuse.
- ★ Make sure the earth wire is ok, and the equipment proper grounding.
- ★ black and white stage ,glass stage, diameter $\phi 95\text{mm}$ 。

一 Nomenclature

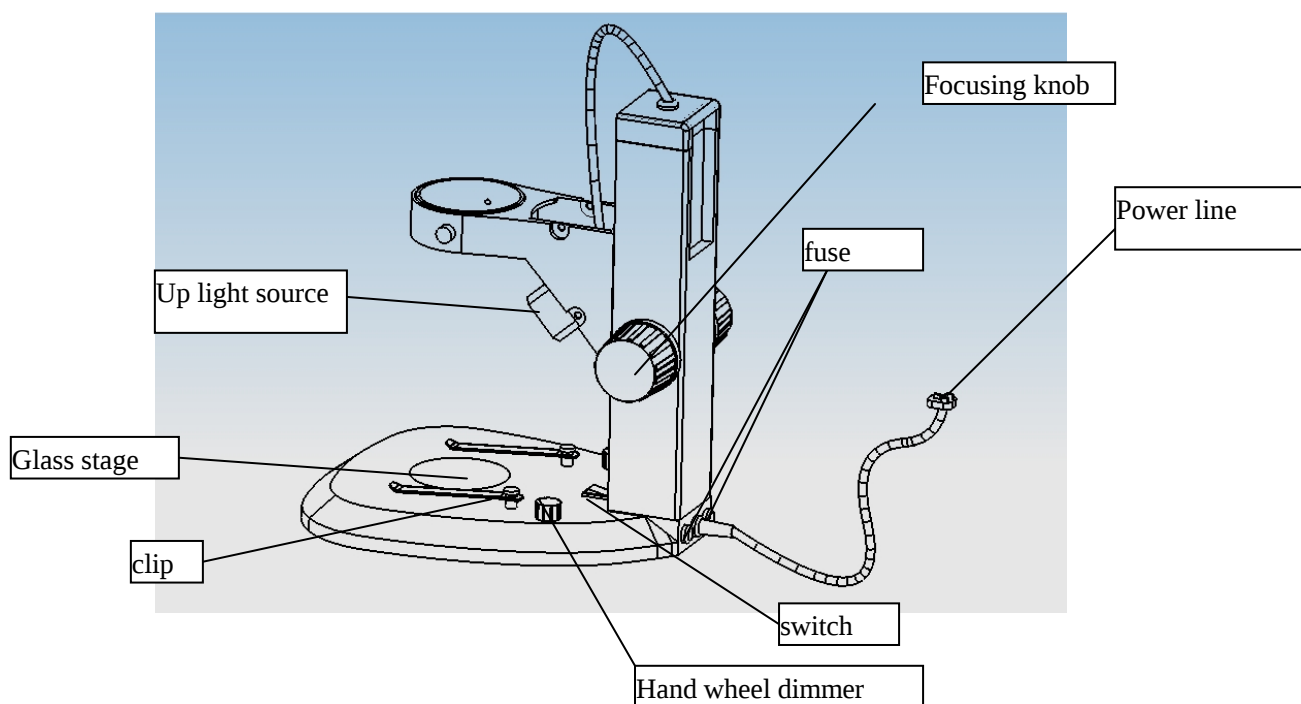


Fig.9

二、operation

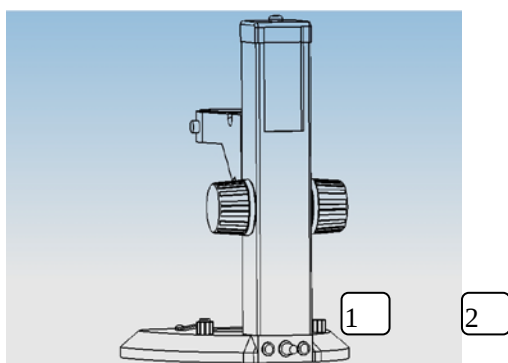
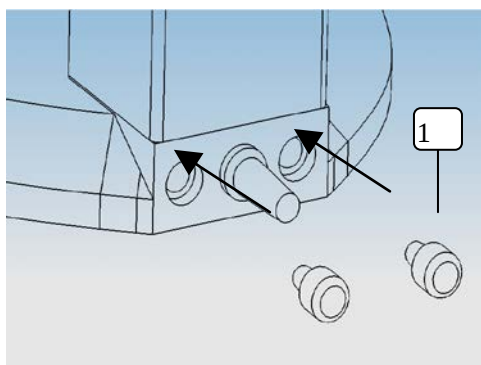


Fig.10

1 Adjust the brightness of the bottom light

Turn the adjustable light knob ① ② according to the sign marked on the base, along the clockwise the brightness will be added, otherwise it will be weakened. (Fig.10)

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2 Replace the fuse

- (1) Screw the fuse tube out with a screwdriver
- (2) and then pull the fuse out of the tube ① .
- (3) Renew the fuse and mount it in an adverse way.

Fig.11

5、 Technical parameter 5-1

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SQF-D/E LED optical data

Zoom magnification	Working distance (mm)	Eyepiece		Eyepiece (option)			
		WF10X (φ 22mm)		WF15X (φ 16mm)		WF20X (φ 12mm)	
		magnification	Field of view	magnification	Field of view	magnification	Field of view
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 SQF-D/E LED Auxiliary objective standard (option)

Auxiliary	Magnification	Working distance (mm)	Auxiliary	Magnification	Working distance (mm)
SAO0.3	0.3X	287	SAO0.75	0.75X	117
SAO0.4	0.4X	217	SAO1.5	1.5X	47
SAO0.5	0.5X	177	SAO2	2X	26

- ★ Working distance is fixed regardless of the magnification factor.
- ★ Total mag.= Zoom mag. X Eyepiece mag. X Auxiliary objective mag.

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

5-3 Photo adaptor mag.= Zoom mag.(× Auxiliary objective mag.)× Eyepiece mag.

5-4 Photo set zoom mag.= Zoom mag.(× Auxiliary objective mag.)x CTV mag .x C type photo tube mag.

6. Troubleshooting

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

Trouble	Cause	Remedy
一、 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 speciman	Clean the speciman
	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
	Diopr 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	Dioptr adjustment is not correct	Readjust the diopter
	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
二、 Circuit 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 work 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
三 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
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