M2 Z45 and Z45T
Stereo Microscope

Instruction Manual

Please read the Instruction Manual carefully before installation and keep it for future use.

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1 Before use

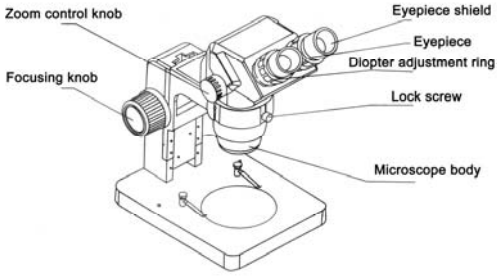
NOTICE

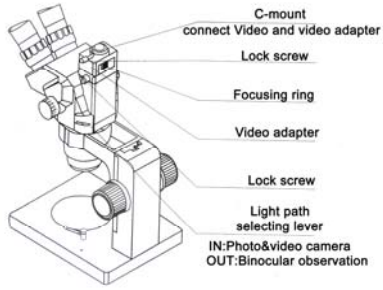
1) Microscope should be placed in a dry and clean place. Do not expose the microscope to direct sunlight. Avoid high temperature and violent vibration.
2) As microscope is a precision instrument, so handle with care to avoid abrupt movement during transportation.
3) To keep the image clear, do not leave fingerprints or stains on the surfaces of the lenses.
4) Never turn the left and right focusing knob in the adverse direction at the same time, otherwise the microscope will be damaged.

1-1 MAINTENANCE

1) All lenses must be kept clean. Fine dust on surface of the lens should be blown off with hand blower or wiped off gently with a soft lens tissue; Use a soft cloth with a little bit mild cleaner to clean fingerprints or oil marks on the lenses.
2) Never use the strong solution to clean the surface of microscope body (especially the plastic surfaces). If necessary, please choose the mild detergent.
3) Don't disassemble the microscope body.
4) Cover the microscope with dust cover and store it in a dry and clean place.

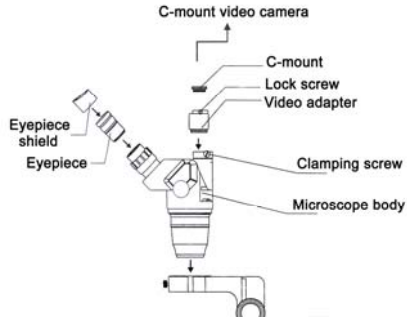
2 Diagrams (Your models may be different depending on the stands.)



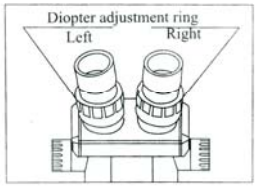


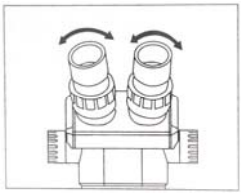
3 Installation ★Mount the C-mount to the video camera, and put on the video adapter.

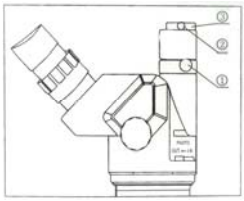
This diagram shows the parts and order for installing SZ series stereo microscopes. Make sure the surface of the unit is clean before installation.



4 Operation







4-1 Adjust the diopter

(1) Maximize the magnification power by turning the zoom control knob.
(2) Turn the diopter adjustment ring to “0” position.
(3) Look through the right eyepiece, and make the image clear by turning the focusing knobs.
(4) Turn the zoom control knob to the minimum magnification.
(5) Look through the right eyepiece again. If the specimen goes out of focus, readjust the focus by turning the right diopter adjustment ring only.
(6) Do the step(1) and look through the right eyepiece. If the image is not clear, Re-do the step (3)~(5) and make the adjustment more precise.
(7) Do the step (4) and look through the left eyepiece and make the image clear by turning the left diopter adjustment ring.

4-2 Adjust the interpupillary Distance

(1) Hold the right and left eyepiece tubes, and turn the tubs in the direction of the ARROWS until the observation is comfortable.

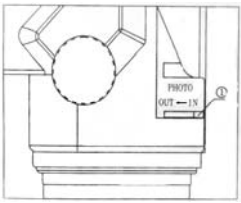
4-3 Mount the C-mount video Adapter and Video camera

(1) Loosen the right and left body lock screws ① , and mount the video adapter by

aligning the positioning grooves of the video adapter with the positioning pins of the microscope body.

(2) Fix the video adapter by tightening the lock screws.

★ Make sure to tighten the screw.



(3) Loosen the lock screw ②, and remove the C-mount ③ from the video adapter.

(4) Screw the C-mount into the video camera.

(5) Mount the video camera with the C-mount into the video adapter, and tighten the lock screw ②.

4-4 Select the Light Path

(1) For binocular observation, slide the light path selecting lever ① to the “OUT”.

(2) Slide the light path selecting lever ① to the “IN” for photo and capture. This allows the light to go into both the observation tube and the photo Equipment or camera

★ Make sure to slide the light path selecting level as far as it can go.

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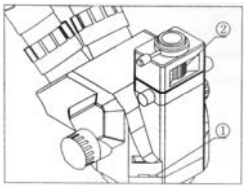

4-5 Focus the video camera

(1) Slide the light path selecting lever ① to the “IN” position.

(2) Turn the zoom control knob to the maximum magnification. Viewing the video Monitor, make the image clear by turning the focusing knob.

(3) Turn the zoom control knob to the minimum magnification. Adjust the focusing ring ② to get the clear image.

(4) Turn the zoom control knob to the maximum again. If the image is not clear, re-do step (2) and (3) until the clear image appears.

5 Optical data

Zoom mag.	Working Distance (mm)	Eyepiece					
		WF10(Φ22mm)		WF15(Φ16mm)		WF20(Φ12mm)	
		Total Mag.	Filed of View	Total Mag.	Filed of View	Total Mag.	Filed of View
0.67X	100	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

Auxiliary objective	Magnification	Working Distance (mm)	Auxiliary Objective	Magnification	Working Distance (mm)
SZ303101	0.3X	287	SZ303104	1.5X	47
SZ303102	0.5X	217	SZ303105	2.0X	26
SZ303103	0.75X	117			

★Working distance is fixed regardless of the magnification factor.

★When an auxiliary objective is being used, Total mag. =Zoom mag. × Eyepiece mag. × Auxiliary objective mag.

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

★ Photo adaptor mag. = Zoom mag. (×Auxiliary objective mag.)×Eyepiece mag.

★ Video adaptor mag. = Zoom mag. (×Auxiliary objective mag.)× C-mount Video adaptor

6 Troubleshooting

Trouble	Cause	Remedy
(1) Too bright or dark	The brightness is not appropriate	Adjust the brightness correctly
(2) Dirt appears in the field of view	Dirt on the specimen	Clean the specimen
	Dirt on the eyepieces' surfaces	Clean the surface
	Dirt on the objectives' surfaces	Clean the surface
(3) Double image	Wrong pupillary distance	Readjust pupillary distance
	Wrong diopter adjustment	Readjust it
	Different magnification	Mount the same size eyepiece
(4)Image not clear	Dirt on the objectives' surface	Clean the objectives
(5)Image blurs when zooming	Wrong diopter adjustment	Readjust it
	Wrong focusing adjustment	Readjust it
(6)Incision image appears in the field of view or the video view	Light path selecting lever is not in correct position	Set it up to right position
(7)When adjusting focus, the image on the monitor is not clear	Wrong focal depth of the video	Readjust the focal depth by adjusting the adjust ring on TV adapter