



**System 273/373
Stereo-Zoom Microscope
Instruction Manual**

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I. Introduction

System 273/373 Microscopes are binocular or trinocular stereo-zoom microscopes which can magnify tiny objects to create detailed stereo images. They have nearly an 8" working distance, widefield eyepieces, excellent image quality and magnification range of 7X-45X. Simple to operate and convenient to use, System 273/373 Microscopes can be used for observing or studying elements in medical work, agricultural and forestry, geology, and public security as well as for testing, installing and repairing small parts in electronics industry instruments and meter trades.

II. Characters

- a. Objects are viewed through two separate eyepieces.
- b. Magnification can be adjusted through the use of zoom objectives.
- c. Magnification levels can be read on either of the two adjustable zoom knobs located on both sides of the microscope head.
- d. Extensive flexibility and accessibility allow the microscope to angle the focus mount up to 45°.
- e. The ring light reflects, illuminates and transmits images from the surface area back into the microscope head where it is then reflected through the eyepieces for viewing.
- f. USB or CCD cameras and monitors can record digital images and real-time videos of the images being observed for further study and documentation.

III. Specifications

- g. The System 273/373 Microscopes are Stereo-Zoom Microscopes with a magnification range of 7X-45X.
- h. Working distance is 110mm.
- i. Adjustable focus range is ≥ 50 mm.
- j. The diameter of the focus mount is 87mm.
- k. The zoom range is .7 – 4.5.

IV. Adjustment and Operation

l. Adjusting Working Distance

Loosen tightening screws in the post. Move the main body to the desired position. Retighten.

m. Parfocal Calibration

- i. Set microscope to highest zoom/magnification setting
- ii. Focus image using main focus mount adjustment knob only
- iii. Set to lowest zoom/magnification setting
- iv. Focus image using eyepieces only
- v. While zooming to highest magnification, verify that the image remains in focus
- vi. If necessary, while at the highest magnification, refocus image using main focus mount adjustment knob only
- vii. Set to lowest zoom/magnification setting & adjust focus using eyepieces only
- viii. Verify that image remains in focus when zooming in or out
- ix. Repeat steps vi thru viii as necessary

- n. **Adjusting Magnification**
Turn the rotating magnification knob. Magnification levels can then be read on either of the two adjustable knobs located on the side of the microscope head. Eyepieces and accessory objective lenses can be changed if increased or decreased magnification or working distance is required.
- o. **Adjusting Light Source**
For dimmable models, adjust the light output from the ring light by turning the luminance adjusting knob.
- p. **Using the USB or CCD Cameras**
 - i. Mount the USB or CCD camera onto the video adapter first. Then onto a parfocal adjusted System 373 main body's photoport tube.
 - ii. Push the Porro prism pulling pole in. If needed, connect the USB or CCD camera to a television set, video recorder or computer monitor for real-time viewing.
 - iii. Adjust the focus, using the video adapter only, in order to make the image in both the eyepieces and monitor clear.
 - iv. Subject will appear on the screen. Luminance, contrast and color can be adjusted using the USB or CCD camera.
 - v. Instructions regarding the USB Camera, CCD Camera, television, video recorder and computer monitor should be found in their respective operating manuals.
- q. **Adjustment and Operation of Omnipotent Support**
 - i. **Assembly**
Omnipotent support consists of three components: stand, vertical post (including supporting block and bearing ring), and cross arm (including slider and hanging pole). Once microscope is assembled, remove the three socket head cap screws in the intermediate tube of the vertical post, and then re-tighten the vertical post and stand using those same screws. Put the crossarm through the corresponding hole in the supporting block and tighten fixing screw. When omnipotent support is used, remove the rotating knob for fixing and tighten it after mounting the instrument. After these steps have been completed, operator can conduct minor adjustments.
 - ii. **Up/down adjustment along vertical post**
Loosen the fixing screw in the supporting block for tightening mode vertical post and the bearing to make supporting block up or down.
 - iii. **Forward/Back Adjustment**
 - 1. **Rough adjustment of crossarm**
Loosen the fixing screw on the supporting block in order to allow the cross arm freedom of horizontal movement.
 - 2. **Fine adjustment of crossarm**

Loosen the tightening screw and turn the rotating knob in order to adjust the crossarm.

3. **Adjustment of microscope head**

Pull the handle in order to loosen hanging pole. This will allow the hanging pole and microscope head to swing forward and backward.

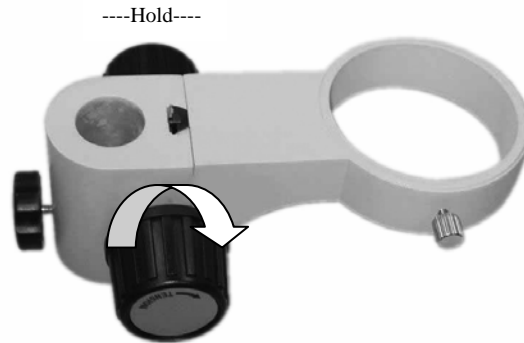
4. **Rotating adjustment**

a. In order to tighten the vertical post, the cross arm can be turned around the vertical post by loosening the fixing screw in stand.

b. In order to tighten the crossarm, the slider can be turned to the right and left by loosening the fixing screw.

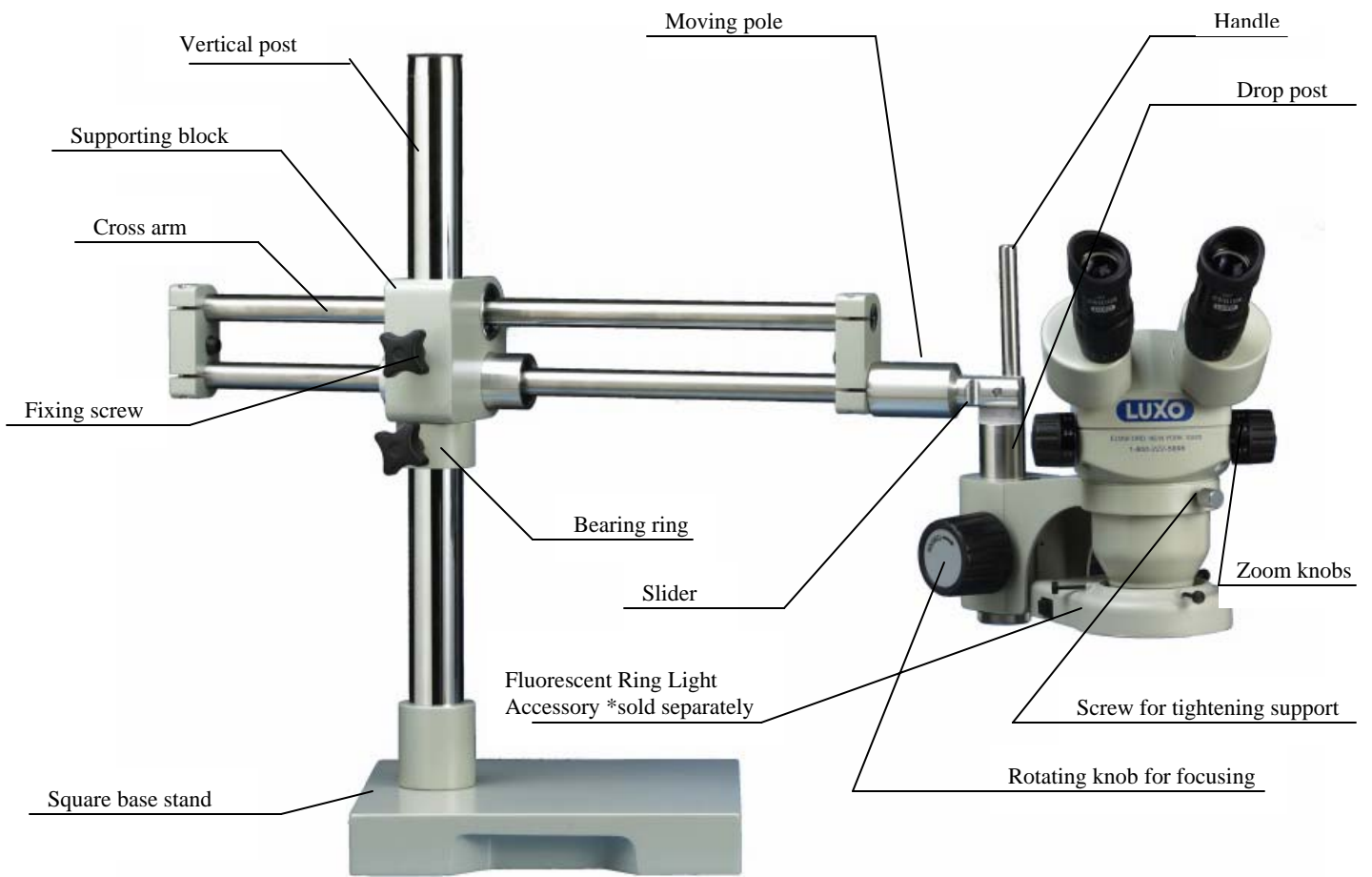
5. **Adjustment of vertical tension of the focus mount**

In order to keep the focus mount from sliding downward toward the worksurface, adjust the tension of the focus mount by holding one rotating knob in place while simultaneously turning the other until desired tension is reached.



V. Assembly

The following figure illustrates a basic System 273 microscope.



System 273 Stereo-Zoom Microscope

VI. Optional Accessories

Name	Quantity Required
0.5X Reducing Lens	1
0.7X Reducing Lens	1

VII. Operation

- r. The System 273/373 Microscopes are highly precise optical equipment. Always handle with care. Avoid abrupt movement or impact during transportation or operation of the controls.
- s. Avoid exposure to direct sunlight, high temperatures and humidity, dust and vibration.
- t. Avoid leaving dirt or fingerprints on the lens surfaces, as these may reduce image clarity.
- u. Never turn the right and left zoom control knobs in opposite directions as malfunction may result.

VIII. Care and Storage

- v. Clean all glass components by wiping gently with gauze. To remove fingerprints or oil smudges, wipe with gauze slightly moistened with a mixture of ether (70%) and alcohol (30%). **WARNING:** Since solvents such as ether and alcohol are highly flammable, they must be handled carefully. Be sure to keep these chemicals away from open flames or potential sources of electrical sparks – for example, electrical equipment that is being switched on or off. Finally, remember to always use these chemicals in a well-ventilated room.
- w. Do not use organic solutions to wipe the surfaces of other components. Plastic parts especially, should be cleaned with a neutral detergent.
- x. Never attempt to disassemble the microscope as decreased performance may result.
- y. When not in use, be sure to cover the microscope with the dust cover provided. Always store it in an area free from moisture to prevent rust.

IX. Troubleshooting Guide

If satisfactory performance is not obtained from your microscope due to unfamiliarity with its use, the table below may provide some guidance.

Symptom	Cause	Remedy
Incomplete binocular vision	The interpupillary distance is not adjusted correctly	Correct/readjust the interpupillar distance
	Diopter adjustment of the eyepieces is incomplete	Complete the diopter adjustment of the eyepieces
	The right and left eyepieces are different	Replace and remount the same eyepiece
Stains or dust are observed on the field view	Stains or dust have accumulated on the specimen	Clean the specimen thoroughly
	Stains or dust have accumulated on the eyepieces	Refer to the Care and Storage (VII) section of this manual
Unclear image	Stains or dust have accumulated on the object	Refer to the Care and Storage (VII) section of this manual
Image blurs when zoomed	Diopter adjustment of the eyepieces is incomplete	Complete the diopter adjustment of the eyepieces
	Focus adjustment is incomplete	Complete the focus adjustment
The focusing knob is stiff	The focusing knob tension adjustment is too tight	Loosen appropriately
Poor focus during observation due to unintentional lowering of the zoom microscope body	The focusing knob tension is too loose	Tighten the crossarm and/or vertical post appropriately

X. Warranty

Microscopes and Mounting Stands have a 5-year warranty. For a complete list of warranties, contact Luxo Customer Service (Phone: 1-800-222-5896/Fax: 1-800-648-2978/Email: office@luxous.com).

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