

UNICO®

ZM 190 Series Microscope Operations Manual



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UNICO ZM190 SERIES ZOOM STEREO MICROSCOPES

INTRODUCTION

The ZM190 Series zoom stereo microscopes adapt multifunction design and excellent manufacturing technology to make the outstanding products. The enhanced quality and competitive cost make the ZM190 Series ideal instruments for a variety of industrial, medical, veterinary, educational, or special OEM applications.

SPECIFICATION

Binocular or Trinocular zoom stereo head with
0.7-4.5X continuous magnification range
10X Wide Field FN22 High Eyepoint Eyepieces
Pole or Focusing Rack stand with dual variable LED illuminators
Working distance 100mm
Power Input 100-240v. Dual fuse 250V/ 1Amp

MODELS

ZM191	Binocular with Pole Stand with Top and Bottom LED Illumination
ZM191T	Trinocular with Pole Stand with Top and Bottom LED Illumination
ZM194	Binocular with Focusing Rack Stand with Top and Bottom LED Illumination
ZM194T	Trinocular with Focusing Rack Stand with Top and Bottom LED Illumination

SHIPPING

The unit is shipped in a styrofoam container, which is placed, into a cardboard box. Examine the shipment for evidence of damage and retain all packing material until the unit has been tested. If damage has occurred, contact the carrier immediately. Your warranty specifically excludes damage during shipping.

UNPACKING

Carefully open the carton and verify that the shipment is complete. If necessary, refer to your purchase order for the microscope configuration. Assure that no hidden damage has occurred.

INSTALLATION

Place the instrument on a stable, clean desk with access to an electrical outlet. Unless otherwise specified, please follow these general installation directions:

1. Put the stand on a smooth and stable surface or working table.
2. Loosen the zoom body locking screw on the focusing mount where the zoom body goes. Put the zoom body into the mount.
3. Rotate the body to the direction you want the eyepiece tubes to face. Lock the body with the locking screws.
4. Insert the eyepieces in the eyetubes of the zoom body.
5. Make sure that the output voltage of the outlet matches the input voltage requirement of the instrument. Then insert the power plug into the electrical socket.

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OPERATION

1. Place the specimen on the stand. Plug the power cord to the proper power outlet. Adjust the LED illumination to comfortable level. Use combination top and bottom LED illuminators to achieve the best contrast.
2. Loosen the holding screw on the back of the pole and adjust the focusing assembly position so you can see the top of your specimen. Lock the screw.
3. Using focusing knobs bring sample into focus. See more details below.

ZOOM BODY ADJUSTMENTS AND SETTING

1. Interpupillary Adjustment: Adjust the interpupillary distance until you get a single non-overlapping image by rotating the binocular eyepiece tubes to adjust the interpupillary distance.
2. Focusing: The Stereo microscope allows the observer to see the object's image in three dimensions. This means the viewer can perceive height and depth of a specimen. To do this, the images coming from the binocular eyepieces must be formed in a single image for the observer. After the interpupillary distance has been properly set, the eyetube diopters need to be adjusted. This adjustment allows the focus to remain sharp in both eyepieces through the whole zoom range. Please follow the procedures to set the zoom body:
 - A) Rotate the zoom body to the highest power (4.5x). Set the diopters on both eyepiece tube to "0". Then use the focusing knobs on the microscope to focus sharply on the specimen.
 - B) Rotate the zooming mechanism to get the lowest power (0.7x). DO NOT TOUCH the focusing knob on the stand.
 - C) Look through the right eyepiece; rotate the eyetube until the image is precisely in focus (the diopter is now properly set). Do the same for the left eyepiece to set the diopter.
 - D) Bring the zoom body to the highest power again. If the image is not in sharp focus, adjust the focusing mechanism to bring the specimen in focus. The image should remain sharp throughout the entire zoom range.

TENSION ADJUSTMENT OF FOCUSING KNOB

The tension of the focusing knob have been properly pre-adjusted. To increase the focusing tension, hold the left knob with your left hand; use your right hand to turn the right knob clockwise. To check the tension, release your left hand and rotate the knob with either or both hands in the same direction. If it is not tight enough, repeat the above step until the proper tension is set. To decrease the focusing tension, rotate the right knob counterclockwise.

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MAINTENANCE AND CARE

1. During both operation and storage, avoid airborne contaminants and moisture.
2. Protect the instrument with a dust cover when it is not in use.
3. DISCONNECT the power cord before replacing the lamp. Allow the lamp to cool before replacing it.

CLEANING:

1. Use filtered air and a brush to remove dust particles from the optical surfaces.
2. For routine cleaning, use a clean cotton swab and lens cleaner.
3. For difficult spots or stains, use a lens cleaning solution designed for coated optics and a clean lint-free cloth or lens tissue.