

AmScope SM-3TZZ-144-10M3

AmScope 3.5X-180X Trinocular Stereo Zoom Microscope Instruction Manual

Model: SM-3TZZ-144-10M3

1. INTRODUCTION

This manual provides comprehensive instructions for the AmScope 3.5X-180X Trinocular Stereo Zoom Microscope. This instrument is designed for detailed observation, inspection, and digital imaging across various applications, including research, gemology, engraving, and electronics. Please read this manual thoroughly before operating the microscope to ensure proper setup, safe use, and optimal performance.

2. SAFETY INFORMATION

- Always handle the microscope with care. Avoid sudden impacts or vibrations.
- Ensure the microscope is placed on a stable, level surface to prevent tipping.
- Do not expose the microscope to direct sunlight, high temperatures, or high humidity.
- Disconnect the power cord before cleaning or performing any maintenance.
- Use only the power adapter supplied with the unit.
- Keep lenses clean and free from dust and fingerprints. Use specialized lens cleaning solutions and cloths.
- Avoid looking directly into the LED light source for extended periods.
- Keep out of reach of children.

3. PACKAGE CONTENTS

Verify that all components are present and undamaged upon unpacking:

- Trinocular Stereo Zoom Microscope Head
- Super Widefield Eyepieces (e.g., WF10X/20)
- Single-Arm Boom Stand with Base
- 144-LED Ring Light with Dimmer Control

- 10MP USB3 Digital Camera with USB Cable
- Software CD for Camera (or download instructions)
- Power Adapter for LED Ring Light
- Dust Cover
- User Manual (this document)

4. SETUP AND ASSEMBLY

Follow these steps to assemble your AmScope microscope:

4.1. Boom Stand Assembly

1. Place the heavy base on a stable workbench.
2. Insert the vertical pillar into the hole on the base and secure it with the locking screw from underneath the base.
3. Attach the horizontal boom arm to the vertical pillar using the provided clamp and knobs. Ensure it is securely tightened.



Figure 1: Fully assembled AmScope Trinocular Stereo Zoom Microscope with boom stand.

4.2. Microscope Head Installation

1. Carefully remove the microscope head from its packaging.
2. Loosen the locking screw on the microscope head holder located at the end of the boom arm.
3. Insert the microscope head into the holder, ensuring it is seated firmly.
4. Tighten the locking screw to secure the microscope head in place.
5. Insert the widefield eyepieces into the ocular tubes.



Figure 2: Microscope head mounted on the boom arm, showing focus and zoom controls.

4.3. LED Ring Light Installation

1. Slide the 144-LED ring light onto the objective lens housing of the microscope head.
2. Secure it with the small set screws on the ring light, ensuring it is centered and stable.
3. Connect the ring light cable to the dimmer control box.
4. Connect the power adapter to the dimmer control box and then plug it into a power outlet.



Figure 3: The 144-LED ring light and its control unit.

4.4. Digital Camera Setup

1. Remove the protective cap from the trinocular port on the microscope head.
2. Insert the 10MP USB3 digital camera into the trinocular port. Ensure it is seated correctly.
3. Connect the USB3 cable from the camera to an available USB3 port on your computer.

4. Install the camera software from the provided CD or download it from the AmScope website. Follow the on-screen instructions for installation.

5. OPERATING INSTRUCTIONS

5.1. Powering On and Illumination

- Ensure the LED ring light power adapter is plugged in.
- Flip the ON/OFF switch on the dimmer control box to the "ON" position.
- Adjust the brightness using the dimmer knob on the control box.

5.2. Adjusting Magnification and Focus

- Place your specimen on the working stage beneath the objective lens.
- Look through the eyepieces.
- Rotate the zoom knob on the microscope head to adjust the magnification from 3.5X to 180X.
- Use the large focus knobs on the microscope head holder to bring the specimen into sharp focus.
- Adjust the interpupillary distance by moving the eyepiece tubes closer or further apart until you see a single, circular field of view.
- Adjust the diopter on one eyepiece (usually the left one) to compensate for differences in vision between your eyes. Focus with the main focus knob using the non-diopter eyepiece, then adjust the diopter ring on the other eyepiece until that eye is also in sharp focus.

5.3. Using the Digital Camera

- Launch the installed camera software on your computer.
- The software should detect the 10MP USB3 camera and display a live feed from the microscope.
- Use the software interface to capture still images, record videos, and perform measurements. Refer to the camera software's specific user guide for detailed features and functions (e.g., image-stitching, extended-depth-of-focus for Windows software).
- Adjust the camera's focus independently if your trinocular port has a focus adjustment, or fine-tune the main microscope focus for optimal camera image clarity.

6. MAINTENANCE

- **Cleaning Lenses:** Use a soft lens brush to remove dust. For smudges, apply a small amount of lens cleaning solution to a lens tissue and gently wipe in a circular motion. Avoid touching lens surfaces with bare fingers.
- **Cleaning Body:** Wipe the microscope body with a soft, damp cloth. Do not use organic solvents or harsh chemicals.
- **Storage:** When not in use, cover the microscope with the provided dust cover to protect it from dust and debris. Store in a cool, dry place.
- **Lubrication:** Moving parts are factory-lubricated. Do not attempt to lubricate them yourself unless specifically instructed by AmScope support.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
No illumination from LED ring light.	Power not connected; switch off; dimmer set to minimum.	Check power connection; turn on switch; increase dimmer setting.
Image is blurry or out of focus.	Incorrect focus adjustment; eyepieces not adjusted for user's vision.	Adjust main focus knob; adjust diopter on eyepieces; ensure specimen is flat.
Dark spots in the field of view.	Dust on eyepieces, objective lens, or camera sensor.	Clean eyepieces and objective lens. If spots persist, clean camera sensor (refer to camera manual).
Camera not detected by computer.	USB cable loose; driver not installed; incorrect USB port.	Ensure USB cable is securely connected to a USB3 port; install camera drivers; try a different USB3 port.
Cannot achieve desired magnification.	Zoom knob not fully rotated; incorrect auxiliary lens (if applicable).	Rotate zoom knob through its full range; ensure correct auxiliary lens is installed (if using).

8. SPECIFICATIONS

- **Model:** SM-3TZZ-144-10M3
- **Microscope Type:** Trinocular Stereo Zoom
- **Magnification Range:** 3.5X - 180X (continuous zoom)
- **Eyepieces:** Super Widefield (e.g., WF10X/20)
- **Working Distance:** Approximately 8 inches (200mm)
- **Field of View:** Approximately 2-1/2 inches (65mm)
- **Illumination:** 144-LED Ring Light with Dimmer
- **Camera:** 10MP USB3 Digital Camera
- **Camera Compatibility:** Windows XP/Vista/7/8/10, Mac, Linux
- **Stand Type:** Single-Arm Boom Stand
- **Head Inclination:** 45 Degrees
- **Objective Lens Description:** Achromatic
- **Power Source:** Corded Electric
- **Item Weight:** 60 pounds (approx.)
- **Package Dimensions:** 22.44 x 17.72 x 12.2 inches (approx.)

9. WARRANTY AND SUPPORT

AmScope products are manufactured to high-quality standards. For warranty information, technical support, or service inquiries, please contact AmScope customer service directly. Details can typically be found on the official AmScope website or through your purchase documentation.

Manufacturer: United Scope, LLC

