



[Manuals.plus](#) /

› [AmScope](#) /

› AmScope ME580T-PZ-2L Trinocular Dual-Light Polarized Metallurgical Microscope Instruction Manual

## AmScope ME580T-PZ-2L

# AmScope ME580T-PZ-2L Trinocular Dual-Light Polarized Metallurgical Microscope Instruction Manual

Model: ME580T-PZ-2L

## 1. INTRODUCTION

This manual provides essential instructions for the proper setup, operation, and maintenance of your AmScope ME580T-PZ-2L Trinocular Dual-Light Polarized Metallurgical Microscope. This advanced metallurgical microscopy system features both incident (reflected) and transmitted illumination, along with polarized lighting capabilities for structural analysis. It is designed to deliver sharp, flat-field images with excellent color correction across various magnification settings.

Please read this manual thoroughly before using the microscope to ensure safe and effective operation and to maximize the lifespan of your instrument.



Figure 1: AmScope ME580T-PZ-2L Trinocular Dual-Light Polarized Metallurgical Microscope. This image shows the complete microscope assembly, including the trinocular head, objective turret, mechanical stage, and illumination unit.

## 2. SETUP

Carefully unpack all components and verify that all parts are present according to the packing list. Handle all optical components with care to avoid scratches or damage.

### 2.1 Component Assembly

1. **Base and Stand:** Place the microscope base on a stable, level surface.
2. **Trinocular Head:** Carefully mount the trinocular head onto the top of the microscope body. Secure it with the set screw, ensuring it is oriented correctly for comfortable viewing.
3. **Eyepieces:** Insert the 10X plan eyepieces into the two ocular tubes of the trinocular head.
4. **Objectives:** Screw the objective lenses (4X, 10X, 40X achromat and 5X, 10X, 50X long-working-distance metallurgy plan achromat) into the revolving nosepiece. Start with the lowest magnification objective.
5. **Stage:** Ensure the double-layer mechanical stage is securely attached to the microscope body.

6. **Illumination Unit:** Attach the incident illumination unit, which includes the polarizer and analyzer, to its designated port on the microscope body.



Figure 2: Close-up of the microscope stage, objective turret, and control knobs. This view highlights the mechanical stage, the objectives mounted on the revolving nosepiece, and the coarse/fine focus knobs.

## 2.2 Power Connection

Connect the power cord to the microscope's power input and then to a suitable electrical outlet (240 Volts). Ensure the power switch is in the 'OFF' position before connecting.

## 3. OPERATING INSTRUCTIONS

### 3.1 Powering On and Illumination Adjustment

- Flip the main power switch to 'ON'.
- Adjust the brightness of the transmitted (bottom) and incident (top) halogen light sources using their respective intensity control knobs.

- For polarized light observation, engage the polarizer and analyzer components within the incident illumination path. Rotate the analyzer to observe polarization effects.
- Utilize the adjustable field and aperture diaphragms on the episcopic illuminator to optimize contrast and resolution for incident light.



Figure 3: Close-up of the polarizer and filter unit. This image details the components for polarized light observation, including the polarizer and filter adjustment mechanisms.

### 3.2 Specimen Placement and Focusing

1. Place your specimen on the mechanical stage. Use the stage clips to secure it if necessary.
2. Rotate the revolving nosepiece to select the desired objective lens. Start with a lower magnification (e.g., 4X or 5X) for initial viewing.
3. Use the coarse focus knob to bring the specimen into approximate focus.
4. Refine the focus using the fine focus knob until the image is sharp. The coaxial coarse and fine focusing system allows for precise adjustments.
5. Adjust the focusing tension control mechanism as needed for smooth operation.

### 3.3 Magnification and Viewing Adjustments

- **Changing Magnification:** Rotate the nosepiece to switch between objectives. The microscope offers metallurgical magnifications of 50X, 100X, 500X and bright-field magnifications of 40X, 100X, 400X.
- **Interpupillary Distance:** Adjust the distance between the two ocular tubes to match your eye spacing for comfortable binocular viewing.
- **Diopter Adjustment:** Use the adjustable diopters on both eye tubes to compensate for differences in vision between your eyes, ensuring a sharp image for both.
- **Photo Port:** The dedicated photo port allows for simultaneous viewing and imaging. Attach a compatible camera (not included) to this port for capturing images or video.



Figure 4: Close-up of the trinocular head and eyepieces. This image shows the adjustable eyepieces and the top port for camera attachment.

## 4. MAINTENANCE

### 4.1 Cleaning

- **Optical Components:** Use a soft, lint-free cloth and a specialized lens cleaning solution to clean objective lenses and eyepieces. Avoid touching optical surfaces with bare hands.

- **Body:** Wipe the microscope body with a soft, damp cloth. Do not use harsh chemicals or abrasive cleaners.

## 4.2 Storage

When not in use, cover the microscope with a dust cover to protect it from dust and debris. Store in a dry, cool environment away from direct sunlight and extreme temperatures.

## 4.3 Bulb Replacement

The microscope uses halogen bulbs for illumination. If a bulb burns out, ensure the microscope is unplugged and cooled down before carefully replacing the bulb according to the instructions provided with the replacement bulb. Avoid touching the new bulb directly with your fingers.

## 5. TROUBLESHOOTING

- **No Illumination:** Check the power cord connection, ensure the power switch is on, and verify that the intensity control is not set to minimum. Check if the halogen bulb needs replacement.
- **Blurry Image:** Adjust the coarse and fine focus knobs. Ensure the diopter settings are correct for your eyes. Clean objective and eyepiece lenses if smudges are present. Verify the specimen is correctly placed on the stage.
- **Uneven Illumination:** Adjust the field and aperture diaphragms. Ensure the light source is properly centered.
- **Difficulty with Assembly/Optical Path:** Ensure all components are securely and correctly attached as per the setup instructions. If persistent issues with optical alignment occur, contact AmScope support.

For issues not covered here, please refer to the Warranty & Support section for contact information.

## 6. SPECIFICATIONS

Feature	Detail
Model Name	ME580T-PZ-2L
Brand	AmScope
Light Source Type	Halogen
Material	Metal
Magnification Maximum	500.00X
Item Weight	69 Pounds
Voltage	240 Volts
Objective Lens Description	Achromatic
Real Angle of View	30 Degrees
Power Source	Corded Electric
Enclosure Material	Metal
UPC	840979104237

## **7. WARRANTY & SUPPORT**

---

### **7.1 Warranty Information**

This AmScope ME580T-PZ-2L microscope comes with an excellent five (5) year factory warranty. Please retain your proof of purchase for warranty claims.

### **7.2 Customer Support**

For technical assistance, warranty service, or inquiries regarding replacement parts, please contact AmScope customer support. Refer to the official AmScope website for the most current contact information.