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AmScope SM-4T-30WS

AmScope SM-4T-30WS Stereo Trinocular Microscope User Manual

Model: SM-4T-30WS

1. INTRODUCTION

This manual provides essential information for the safe and effective use of your AmScope SM-4T-30WS Stereo Trinocular Microscope. This system is designed for industrial inspection, biological applications, research labs, gemology, and use in semiconductor and electronic industries. It features a 7X-45X zoom magnification, a trinocular head for camera integration, a dual-arm boom stand for flexible positioning, and a 30 Watt LED fiber-optic illuminator for bright, cool lighting.

2. SAFETY INFORMATION

- Always handle the microscope with care to prevent damage to optical and mechanical components.
- Ensure the microscope is placed on a stable, level surface.
- Disconnect the power cord before cleaning or performing any maintenance.
- Do not expose the microscope to direct sunlight, high temperatures, or high humidity.
- Use only the provided power adapter and accessories.
- Avoid touching optical surfaces with bare hands. Use specialized lens cleaning materials.

3. PACKAGE CONTENTS

Verify that all components are present before assembly:

- AmScope SM-4T-30WS Trinocular Microscope Head
- Dual-Arm Boom Stand
- 30 Watt LED Fiber-Optic Illuminator
- 22-inch Metal-Sheathed Fiber-Optic Cable
- Pair of Eyepieces (e.g., WF10X)

- Power Adapter
- Dust Cover

4. SETUP INSTRUCTIONS

4.1. Assembling the Boom Stand

1. Place the heavy base of the boom stand on a stable workbench.
2. Insert the vertical pillar into the base and secure it with the locking screw.
3. Attach the dual-arm assembly to the vertical pillar, ensuring all joints are secure but allow for movement.

4.2. Mounting the Microscope Head

1. Carefully remove the trinocular microscope head from its packaging.
2. Loosen the set screw on the microscope head holder of the boom stand.
3. Insert the microscope head into the holder and tighten the set screw to secure it. Ensure the head is level.
4. Insert the eyepieces into the two ocular tubes.

4.3. Connecting the LED Fiber-Optic Illuminator

1. Place the 30 Watt LED fiber-optic illuminator near the microscope.
2. Insert one end of the 22-inch metal-sheathed fiber-optic cable into the illuminator's output port.
3. Position the other end of the fiber-optic cable to direct light onto your specimen. The cable is flexible and can be bent as needed.

4.4. Power Connection

1. Connect the power adapter to the LED fiber-optic illuminator.
2. Plug the power adapter into a suitable electrical outlet.

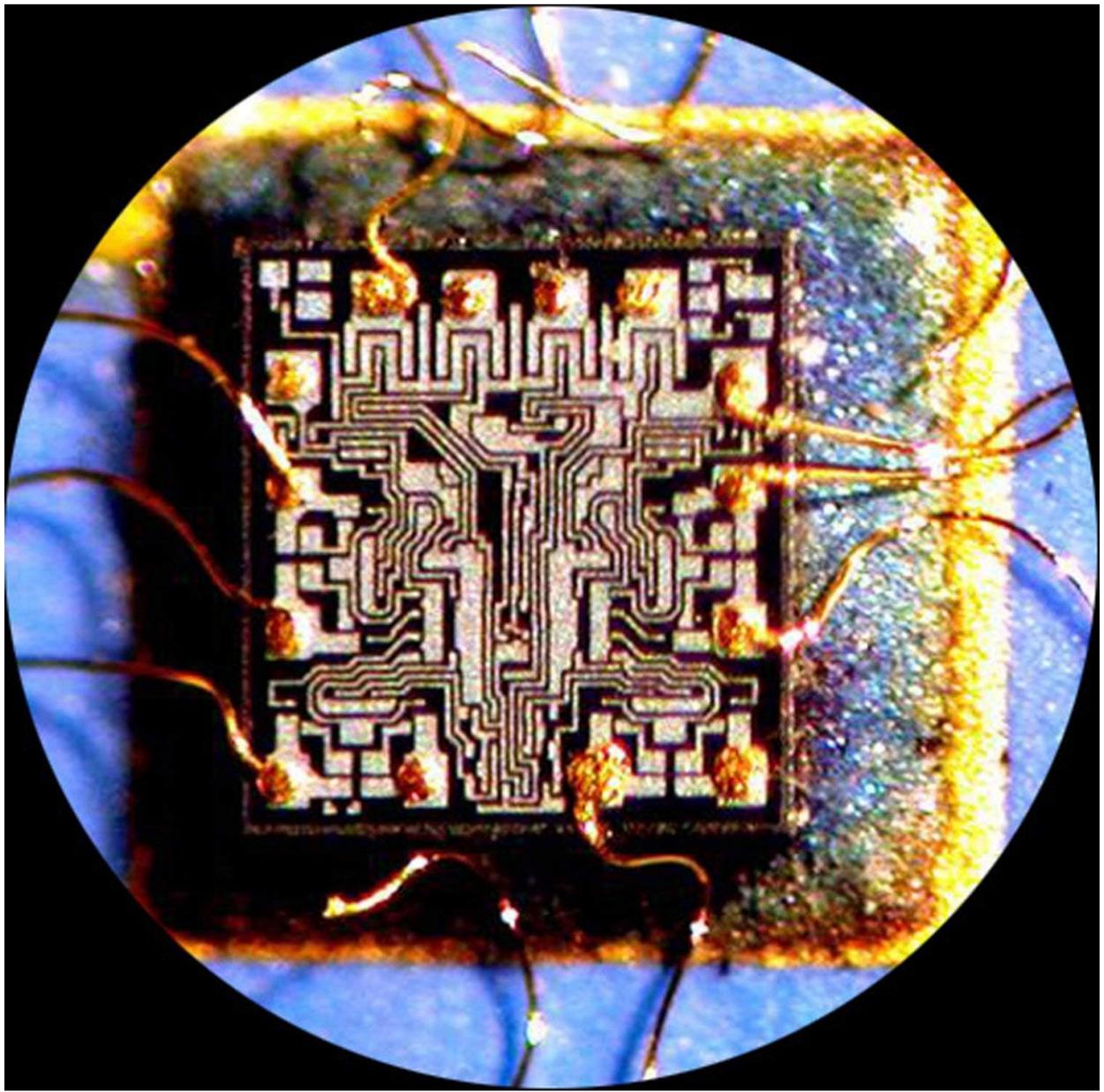


Figure 1: The complete AmScope SM-4T-30WS microscope system, including the trinocular head, dual-arm boom stand, and the LED fiber optic illuminator with its flexible cable.

5. OPERATING INSTRUCTIONS

5.1. Powering On and Illumination Adjustment

1. Turn on the LED fiber-optic illuminator using its power switch.
2. Adjust the intensity of the light using the dimmer control on the illuminator.
3. Position the fiber-optic cable to provide optimal illumination for your specimen, minimizing shadows and glare.

5.2. Placing the Specimen

Place your specimen directly under the objective lens of the microscope head.

5.3. Adjusting Magnification

The microscope offers a 7X-45X continuous zoom magnification. Rotate the zoom knob located on the microscope head to change the magnification. Observe through the eyepieces as you adjust.

5.4. Focusing

1. While looking through the eyepieces, slowly rotate the coarse focus knob until the specimen comes into approximate focus.
2. Use the fine focus knob for precise focusing to achieve a sharp, clear image.
3. Adjust the interpupillary distance (distance between eyepieces) and diopter settings on the eyepieces for comfortable viewing and to compensate for differences in vision between your eyes.

5.5. Utilizing the Dual-Arm Boom Stand

The dual-arm boom stand allows for versatile positioning of the microscope head. You can move the head along three axes (X, Y, and Z) to view different areas of a large specimen or to position the microscope at various angles. Loosen the locking knobs on the stand, adjust the position, and then re-tighten them to secure the microscope.

5.6. Using the Trinocular Port (for Camera Integration)

The trinocular port allows for the attachment of a camera (sold separately) to capture images or video. To use this feature:

1. Remove the dust cap from the trinocular port.
2. Attach your compatible microscope camera to the port.
3. Refer to your camera's instruction manual for software installation and operation.
4. Adjust the light path selector (if present) to direct light to the trinocular port for imaging.



Figure 2: A detailed view of the trinocular microscope head, highlighting the eyepieces and the camera port, which allows for digital imaging and video capture.

6. MAINTENANCE

6.1. Cleaning Optics

- Use a soft brush or air blower to remove dust from lens surfaces.
- For smudges or fingerprints, use a lens cleaning solution and specialized lens paper or microfiber cloth. Apply solution to the cloth, not directly to the lens.
- Clean eyepieces and objective lenses gently in a circular motion from the center outwards.

6.2. General Cleaning

- Wipe the microscope body and stand with a soft, damp cloth. Avoid harsh chemicals or abrasive cleaners.
- Ensure all moving parts of the boom stand are free of dust and debris.

6.3. Storage

- When not in use, cover the microscope with the provided dust cover to protect it from dust and environmental contaminants.
- Store the microscope in a cool, dry place, away from direct sunlight and vibrations.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
No illumination	Power cord disconnected; Illuminator off; Bulb failure (if applicable)	Check power connection; Turn on illuminator; Contact support if LED fails.
Image is blurry/out of focus	Improper focus adjustment; Eyepieces not adjusted; Specimen not flat	Adjust coarse and fine focus; Adjust interpupillary distance and diopter; Ensure specimen is flat.
Dark spots in field of view	Dust on eyepieces or objective lens	Clean eyepieces and objective lenses as per maintenance section.
Microscope head not stable	Boom stand locking screws loose	Tighten all locking screws on the boom stand.

8. SPECIFICATIONS

Feature	Specification
Model Name	SM-4T-30WS
Magnification Range	7X-45X (Zoom Stereo)
Working Distance	4 inches (100mm)
Field of View	2-1/2 inches (65mm) Super Widefield
Microscope Head Type	Trinocular
Stand Type	Dual-Arm Boom Stand (3D movement)
Illumination	30 Watt LED Fiber-Optic Illuminator
Light Source Type	LED
Fiber Optic Cable Length	22 inches
Material	Metal
Color	Black
Item Weight	83 pounds
Package Dimensions	24.8 x 16.93 x 15.35 inches
Manufacturer	United Scope, LLC

9. WARRANTY AND SUPPORT

This AmScope product is manufactured by United Scope, LLC. For warranty information, please refer to the documentation included with your purchase or contact AmScope customer support directly. For technical assistance, troubleshooting beyond this manual, or spare parts, please reach out to the manufacturer's support channels.

Manufacturer: United Scope, LLC