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## SWIFT S306

# SWIFT S306S-20-2L Binocular Stereo Microscope User Manual

Model: S306

## INTRODUCTION

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Thank you for choosing the SWIFT S306S-20-2L Binocular Stereo Microscope. This instrument is designed for observing three-dimensional objects, offering 20X, 40X, and 80X magnification. It is suitable for various applications including hobby use, educational purposes, and professional work in fields such as electronics, geology, and biology. This manual provides essential information for the correct assembly, operation, and maintenance of your microscope to ensure optimal performance and longevity.



Figure 1: SWIFT S306S-20-2L Binocular Stereo Microscope, showing its main components and 360-degree rotatable head.

## SAFETY INFORMATION

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Please read and understand all safety instructions before using the microscope. Failure to do so may result in injury or damage to the instrument.

- Always handle the microscope with care. Avoid sudden movements or impacts.
- Do not expose the microscope to direct sunlight, high temperatures, or high humidity.
- Keep the microscope away from dust and corrosive chemicals.

- Ensure the power adapter is connected to a grounded outlet. Disconnect power before cleaning or servicing.
- Do not attempt to disassemble or repair the microscope yourself. Contact qualified personnel for service.
- Keep small parts and accessories out of reach of children to prevent choking hazards.
- Use only the provided power adapter and batteries.

## SETUP

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### 1. Unpacking and Component Check

Carefully remove all components from the packaging. Verify that all items listed in the packing list are present and undamaged. The package typically includes:

- SWIFT S306S-20-2L Microscope body
- 10X Widefield Eyepieces (WF 10X/20)
- 20X Widefield Eyepieces (WF 20X/10)
- Power Adapter
- Reversible Black/White Stage Plate
- Frosted Glass Stage Plate
- Dust Cover
- AA Batteries (rechargeable)
- Hex Wrench
- User Manual



Figure 2: Microscope and its accessories, including eyepieces, power adapter, batteries, and stage plates.

## 2. Component Identification

Familiarize yourself with the different parts of your microscope using the diagram below:



Figure 3: Labeled diagram of the microscope. Key components include: Eyepiece, Eyepiece Tube, Diopter Adjustment, Head Holder, Focus Knob, Zoom Objective, Incident Illumination, Specimen Holder, Transmitted Illumination, On/Off Switch, Stage, Light Intensity Regulator, and Base.

### 3. Assembly

1. **Install Eyepieces:** Gently insert the desired eyepieces (10X or 20X) into the eyepiece tubes.
2. **Place Stage Plate:** Choose either the reversible black/white stage plate or the frosted glass stage plate and place it onto the stage. The black/white plate is ideal for contrast with light or dark specimens, while the frosted glass plate is used for transmitted illumination.
3. **Power Connection:**
  - **AC Power:** Connect the power adapter to the microscope's power input and then to a suitable electrical outlet.
  - **Battery Power:** Open the battery compartment (usually located on the underside of the base) and insert the provided AA rechargeable batteries. Ensure correct polarity. The microscope can operate on battery power for portability.

## OPERATING INSTRUCTIONS

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### 1. Powering On and Illumination

Locate the On/Off switch on the base of the microscope. Flip the switch to the "ON" position. Use the light intensity regulator to adjust the brightness of the illumination. The microscope features both incident (top) and transmitted (bottom) LED illumination, which can be controlled independently or together depending on the model variation.



Figure 4: Detailed view of the eyepieces, objective lens, and LED illumination system.

## 2. Placing a Specimen

Place your specimen on the stage plate. For larger objects, the microscope head can be rotated 360 degrees to view objects off the stage. Use the specimen clips to secure smaller or flat objects.

## 3. Adjusting Magnification

The SWIFT S306S-20-2L offers multiple magnification levels. The objective lens provides 2X and 4X magnification. When combined with the 10X eyepieces, you get 20X and 40X total magnification. With the 20X eyepieces, you achieve 40X and 80X total magnification.

- **Changing Eyepieces:** To change total magnification, swap the 10X eyepieces for the 20X eyepieces, or vice-versa.
- **Changing Objective Magnification:** Rotate the objective turret to select between the 2X and 4X objective lenses.

## 4. Focusing

Use the focus knob located on the side of the microscope body to bring your specimen into sharp focus. Rotate the knob slowly for fine adjustments.

## 5. Adjusting Interpupillary Distance and Diopter

- **Interpupillary Distance:** While looking through both eyepieces, adjust the distance between the eyepiece tubes until you see a single, clear circular field of view.
- **Diopter Adjustment:** If one eye has a different visual acuity than the other, use the diopter adjustment ring on one of the eyepiece tubes. Close the eye without diopter adjustment, focus the image with the main focus knob using only the eye with the diopter adjustment. Then, open both eyes and adjust the diopter ring until the image is sharp for both eyes without touching the main focus knob.



Figure 5: A user demonstrating observation of a circuit board, highlighting the microscope's application in electronics.

## MAINTENANCE

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### 1. Cleaning

- **Optical Components:** Use a soft, lint-free cloth or lens paper specifically designed for optics. For stubborn smudges, a small amount of lens cleaning solution can be applied to the cloth, never directly to the lens. Avoid touching optical surfaces with bare fingers.
- **Body and Stage:** Wipe the microscope body and stage with a soft, damp cloth. Do not use harsh chemicals or abrasive cleaners.

### 2. Storage

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

### 3. Battery Care

If using rechargeable batteries, ensure they are charged regularly. If the microscope will not be used for an extended period, remove the batteries to prevent leakage.

## TROUBLESHOOTING

Problem	Possible Cause	Solution
No illumination	Power switch off, power adapter disconnected, batteries drained/incorrectly inserted, bulb failure.	Check power switch. Ensure adapter is securely connected. Check battery charge and polarity. Contact support if bulb is suspected.
Image is blurry or out of focus	Focus knob not adjusted, interpupillary distance incorrect, diopter not adjusted, dirty lenses.	Adjust focus knob. Adjust interpupillary distance. Adjust diopter. Clean lenses.
Dark spots in the field of view	Dust on eyepieces, objective, or stage plate.	Clean eyepieces, objective lenses, and stage plate.
Only one eyepiece shows an image	Interpupillary distance not set correctly, diopter adjustment needed.	Adjust interpupillary distance. Perform diopter adjustment.

## SPECIFICATIONS

Feature	Detail
Model Number	S306
Magnification	20X, 40X, 80X (with included eyepieces)
Eyepieces	Widefield 10X/20MM, Widefield 20X/10MM
Objective Lenses	2X, 4X
Head Type	Binocular, 360° Rotatable, 45° Inclined
Illumination Type	Upper (Incident) and Lower (Transmitted) LED
Light Source Type	LED
Power Supply	AC Adapter (240 Volts), AA Rechargeable Batteries
Material	Metal
Color	White
Package Dimensions	36.4 x 33.1 x 24 cm
Item Weight	3.02 kilograms
Country of Origin	China

## WARRANTY INFORMATION

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SWIFT products are manufactured to high-quality standards. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official SWIFT website. Typically, microscopes come with a limited warranty covering manufacturing defects.

## CUSTOMER SUPPORT

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If you encounter any issues not covered in this manual or require further assistance, please contact SWIFT customer support. You can usually find contact information on the official SWIFT website or through your retailer. For online resources and frequently asked questions, please visit the official SWIFT support page.

