SVBONY SM201

Svbony SM201 Binocular Compound Microscope User Manual

Model: SM201

1. Introduction

This manual provides detailed instructions for the proper setup, operation, and maintenance of your Svbony SM201 Binocular Compound Microscope. Please read this manual thoroughly before using the microscope to ensure optimal performance and longevity of the instrument.

2. Product Overview and Features

The Svbony SM201 is a versatile binocular compound microscope designed for educational, hobbyist, and laboratory use, offering a magnification range of 40X to 2500X. It features a robust metal construction and advanced optical components for clear and detailed observations.

Key Features:

- **Achromatic Objective Lenses:** Includes 4X, 10X, 40X(S), and 100X(S, Oil) objectives for various magnification levels. The 100X oil immersion objective enhances clarity for observing fine details.
- **Dual Power Supply:** Operates on either 3 AA batteries (not included) for portability or a 5V 1A power adapter for continuous use.
- **Phone Adapter:** Equipped with a mobile phone adapter for capturing images and videos of your observations, and for connecting to an SV189 microscope camera (sold separately) for computer display.
- **Wide Magnification Range:** Offers 6 levels of magnification from 40X to 2500X, suitable for observing cellular structures, bacteria, viruses, and protists.
- **Adjustable LED Illumination:** Integrated LED light source with adjustable brightness, providing both transmitted (bottom) and reflected (top) illumination for transparent and opaque specimens.
- **Double-Layer Mechanical Stage:** Features an XY mechanical stage for precise and smooth positioning of specimens.
- **Professional Binocular Head:** Includes 10X and 25X wide-field eyepieces. The binocular head is rotatable 360 degrees and inclined at 30 degrees for comfortable viewing. The right eyepiece has a diopter adjustment for individual eye focus correction.

- **NA1.25 Abbe Condenser:** Enhances image contrast and resolution.



Figure 2.1: The Svbony SM201 Binocular Compound Microscope with included accessories.

3. Package Contents

Verify that all items listed below are included in your package:

- Svbony SM201 Microscope x1
- WF10X Eyepiece x2
- WF25X Eyepiece x2
- Dust Cover x4
- Microscope Slides and Cleaning Kit x1
- Cell Phone Adapter x1



Figure 3.1: All components included in the Svbony SM201 microscope package.

4. Setup Instructions

4.1 Power Supply Connection

The microscope can be powered by either 3 AA batteries or the provided 5V 1A power adapter.

1. **Battery Power:** Open the battery compartment cover located at the bottom of the microscope. Insert 3 AA batteries, ensuring correct polarity. Close the cover securely.
2. **Adapter Power:** Connect the 5V 1A power adapter to the DC input port on the side of the microscope and plug it into a standard electrical outlet.

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Video 4.1: Demonstration of connecting the power supply to the microscope, showing both battery and adapter options.

4.2 Eyepiece Installation

Insert the desired wide-field eyepieces (10X or 25X) into the binocular tubes. Ensure they are seated firmly.

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Video 4.2: Demonstration of installing the eyepieces into the binocular head.

4.3 Attaching the Phone Adapter

To use your smartphone for observation or photography, attach the phone adapter to one of the eyepieces.

1. Secure the phone adapter to one of the eyepieces.
2. Place your smartphone into the adapter, ensuring the camera lens is aligned with the eyepiece.

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Video 4.3: Instructions on how to attach and use the phone adapter with the microscope.

5. Operation

5.1 Placing a Specimen Slide

Place your prepared specimen slide onto the mechanical stage. Use the stage clips to hold it securely in place. Use

the XY stage adjustment knobs to center the specimen under the objective lens.

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Video 5.1: Demonstration of moving the mechanical stage and slide holder for precise specimen positioning.

5.2 Adjusting Magnification (Objective Lenses)

Rotate the revolving nosepiece to select the desired objective lens (4X, 10X, 40X, or 100X). Start with the lowest magnification (4X) for initial viewing and then increase as needed.



Figure 5.2: Achromatic objective lenses, including the 100X oil immersion lens.

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Video 5.3: How to change objective lenses by rotating the nosepiece.

5.3 Focusing

Use the coarse adjustment knob to bring the specimen into approximate focus. Then, use the fine adjustment knob for precise focusing and to achieve a sharp image.

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Video 5.4: Demonstration of using the focusing knobs to adjust the mechanical stage height.

5.4 Adjusting LED Illumination

Turn on the LED light using the power switch. Adjust the brightness using the dimmer control for optimal viewing of your specimen. The microscope offers both top and bottom illumination.

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Video 5.5: How to adjust the LED illumination brightness.

5.5 Adjusting the Abbe Condenser

The NA1.25 Abbe condenser helps control the light passing through the specimen, improving contrast and resolution. Adjust the condenser lever to open or close the iris diaphragm to achieve the best image quality for your specimen.



Figure 5.6: Location of the NA1.25 Abbe Condenser.

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Video 5.7: How to adjust the Abbe condenser for optimal illumination.

5.6 Binocular Head and Diopter Adjustment

The binocular head can be rotated 360 degrees for comfortable viewing from different angles. Adjust the interpupillary distance by moving the eyepiece tubes closer or further apart until you see a single, clear field of view. Use the diopter adjustment ring on the right eyepiece to compensate for differences in vision between your eyes.

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Video 5.8: Demonstration of the 360-degree rotatable eyepiece and diopter adjustment.

6. Maintenance

6.1 Cleaning

- **Optical Components:** Use the provided cleaning kit, including lens paper and cleaning solution, to gently clean objective lenses and eyepieces. Avoid touching optical surfaces with bare hands.
- **Body:** Wipe the microscope body with a soft, dry cloth. Do not use harsh chemicals or abrasive cleaners.

6.2 Storage

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

7. Troubleshooting

If you encounter issues with your microscope, refer to the following common problems and solutions:

- **No Illumination:** Check if the power adapter is securely connected or if the batteries are correctly inserted and charged. Ensure the power switch is on and the brightness control is adjusted.
- **Unclear Image:** Adjust the coarse and fine focus knobs. Ensure the objective lens is properly clicked into place. Clean the objective and eyepiece lenses if smudges are visible. Adjust the Abbe condenser and iris diaphragm.
- **Difficulty Focusing:** Ensure the specimen slide is flat on the stage and held by the clips. Start focusing with the lowest magnification objective.
- **Image Appears Double (Binocular Head):** Adjust the interpupillary distance until a single circular field of view is observed. Adjust the diopter on the right eyepiece if one eye appears out of focus.

8. Specifications

Feature	Specification
Brand	SVBONY
Model Name	Svbony SM201 Binocular Microscope
Magnification Range	40X - 2500X
Eyepieces	WF10X, WF25X
Objective Lenses	4X, 10X, 40X(S), 100X(S, Oil) Achromatic

Condenser	NA1.25 Abbe Condenser
Illumination	Adjustable LED (Transmitted & Reflected)
Focus Type	Manual (Coarse & Fine)
Stage	Double-Layer Mechanical Stage
Binocular Head	360° Rotatable, 30° Inclined, Diopter Adjustment
Power Supply	3 AA Batteries or 5V 1A Power Adapter
Material	Metal
Product Dimensions	13 x 18 x 35 cm
Item Weight	3790 Grams
Water Resistance Level	Not waterproof

9. Warranty and Support

SVBONY offers a lifetime warranty for its spotting scopes, monoculars, binoculars, and microscopes. Additionally, a 30-day no-reason return policy is provided. For maintenance services beyond the warranty period, buyers are responsible for associated costs. For any inquiries or support, please contact SVBONY customer service via Amazon, and they will respond within 12 hours.

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Example: How do I reset this device or fix this error?

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