

## AmScope B120

# AmScope B120 Siedentopf Binocular Compound Microscope User Manual

Model: B120

## 1. INTRODUCTION AND OVERVIEW

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The AmScope B120 Siedentopf Binocular Compound Microscope is designed for high-magnification biological and educational applications. It features a Siedentopf binocular head for comfortable viewing, a forward-facing nosepiece with four DIN achromatic objectives, Brightfield LED illumination, and a double-layer mechanical stage for precise specimen manipulation.

This microscope provides clear, color-corrected magnified images, making it suitable for detailed inspection and dissection of specimens where two-dimensional images are desired.



Figure 1: The AmScope B120 Siedentopf Binocular Compound Microscope, showcasing its main components including the binocular head, objective lenses, and mechanical stage.

## 2. WHAT'S IN THE BOX

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Upon unpacking, please verify that all the following components are present:

- AmScope B120 microscope with double-layer mechanical stage
- (4) DIN Standard Objectives: 4x, 10x, 40xS (spring-loaded), and 100xS (spring-loaded, oil immersion)
- 10x widefield eyepieces, one pair
- Color filter, blue

- Immersion oil, one bottle
- Dust cover
- Instructions (this manual)

### 3. SETUP GUIDE

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1. **Unpacking:** Carefully remove all components from the packaging. Place the microscope body on a stable, level surface.
2. **Attaching the Head:** Loosen the head locking screw on the microscope body. Gently insert the Siedentopf binocular head into the top opening of the microscope body. Tighten the locking screw to secure the head.
3. **Inserting Eyepieces:** Insert the two 10x widefield eyepieces into the eyepiece tubes on the binocular head.
4. **Connecting Power:** Connect the power cord to the microscope's power input and then to a standard 110V or 220V AC outlet. Ensure the power switch is in the "Off" position before connecting.
5. **Initial Adjustments:**
  - **Inter-pupillary Distance:** While looking through the eyepieces, adjust the distance between the two eyepiece tubes until you see a single, clear circular field of view. The inter-pupillary adjustment range is 53 to 77mm.
  - **Dioptric Adjustment:** If one eye is stronger than the other, use the diopter adjustment ring on one of the eyepiece tubes (usually the left one) to compensate. Focus on a specimen with your non-diopter eye first, then adjust the diopter ring for the other eye until both eyes see a sharp image.



Figure 2: Side view of the AmScope B120, showing the main body and the position for attaching the binocular head.

## 4. OPERATING INSTRUCTIONS

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### 4.1 Powering On and Off

Locate the power switch, usually on the side or back of the microscope base. Flip the switch to the "On" position to activate the LED illumination. Flip it to "Off" when not in use.

### 4.2 Placing a Specimen

1. Rotate the nosepiece to select the lowest power objective (4x).
2. Lower the mechanical stage using the coarse focus knob to create enough space.



3. Place your prepared slide onto the mechanical stage, securing it with the stage clips.
4. Use the X-Y axis stage manipulation knobs to center the specimen directly under the objective lens.



Figure 3: A user observing a specimen through the AmScope B120 microscope, demonstrating proper posture and handling.

### 4.3 Focusing

- **Coarse Focus:** While looking through the eyepieces, slowly raise the stage using the coarse focus knob until the specimen comes into approximate focus.
- **Fine Focus:** Once the image is roughly focused, use the fine focus knob for precise adjustments to achieve a sharp, clear image.
- **Changing Objectives:** To increase magnification, rotate the nosepiece to the next objective (e.g., from 4x to 10x). The microscope is parfocal, meaning the image should remain largely in focus, requiring only minor adjustments with the fine focus knob.
- *Note: The 40xS and 100xS objectives are spring-loaded to prevent damage to the slide or objective if they accidentally contact.*

### 4.4 Adjusting Illumination

- **LED Brightness Control:** Use the dimmer knob (if present) on the microscope base to adjust the intensity of the LED light source.
- **Abbe Condenser:** The 1.25 NA Abbe condenser is located beneath the stage. Use the condenser adjustment knob to raise or lower the condenser, controlling the light path and optimizing illumination for different objectives.
- **Iris Diaphragm:** The iris diaphragm is located within the Abbe condenser. Adjust its lever to control the amount of light illuminating the specimen and to improve contrast. Generally, for higher magnification, you may need to open the diaphragm more.



Figure 4: Top view of the objective lenses and mechanical stage, illustrating the components involved in specimen placement and magnification.

#### 4.5 Using the 100xS Oil Immersion Objective

The 100xS objective requires immersion oil for optimal resolution. Follow these steps:

1. Focus on your specimen using the 40xS objective.

2. Rotate the nosepiece halfway between the 40xS and 100xS objectives.
3. Place a small drop of immersion oil directly onto the center of the illuminated area of the slide.
4. Carefully rotate the 100xS objective into place, ensuring it makes contact with the oil drop. The spring-loaded mechanism will prevent excessive pressure.
5. Use only the fine focus knob to bring the image into sharp focus.
6. After use, always clean the 100xS objective and the slide thoroughly with lens paper and a suitable lens cleaning solution to remove all oil residue.

## 5. MAINTENANCE

- **Cleaning Lenses:** Use only specialized lens paper and lens cleaning solution for optical components. Gently wipe the lenses in a circular motion. Avoid touching lenses with bare fingers.
- **Cleaning Body:** Wipe the microscope body with a soft, damp cloth. Avoid using harsh chemicals or abrasive cleaners.
- **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 away from direct sunlight and extreme temperatures.
- **Oil Immersion Care:** Always clean the 100xS objective immediately after use to prevent oil from drying on the lens.
- **Moving the Microscope:** Always carry the microscope by holding the arm with one hand and supporting the base with the other.

## 6. TROUBLESHOOTING

Problem	Possible Cause	Solution
No illumination	Power cord not connected; Power switch off; LED bulb failure.	Check power connection; Turn power switch on; Contact support for bulb replacement.
Image blurry or out of focus	Incorrect focus knob used; Slide upside down; Objective lens dirty; Condenser/diaphragm not adjusted.	Use fine focus for precise adjustment; Ensure slide cover slip is up; Clean objective lens; Adjust condenser and iris diaphragm.
Dark field of view	Iris diaphragm closed too much; Condenser too low; Light intensity too low.	Open iris diaphragm; Raise condenser; Increase LED brightness.
Dust or spots in field of view	Dust on eyepiece, objective, or slide.	Clean eyepieces and objectives with lens paper; Clean slide.

## 7. SPECIFICATIONS

Feature	Detail
Head	Siedentopf Binocular, 30-degree inclined, 360-degree rotatable
Eyepieces	WF 10x (Widefield)









Feature	Detail
Objectives	4X, 10x, 40xS (spring), 100xS (spring, oil) DIN Achromatic
Magnification Range	40X - 1000X
Stage	Double-layer Mechanical Stage with 1.0mm divisions
Illumination	Transmitted (bottom) Brightfield LED
Condenser	1.25 NA Abbe with Iris Diaphragm
Power	110V / 220V (Dual Voltage)
Dimensions (L x W x H)	11 x 7 x 13.75 inches (27.94 x 17.78 x 34.92 cm)
Item Weight	9.25 pounds (4.2 kg)
Material	Enamel-coated cast-steel body, Glass optics

## 8. WARRANTY AND SUPPORT

For warranty information and technical support, please contact the manufacturer, United Scope LLC., directly. Details regarding product warranty periods and service procedures are typically provided with your purchase documentation or can be found on the official AmScope website. You can visit the [AmScope Store on Amazon](#) for more information or to find contact details for support.

### Related Documents - B120

	<p><a href="#">AmScope 120 Series Microscope User Manual</a></p> <p>Comprehensive user manual for the AmScope 120 Series microscopes (B120 and T120), covering setup, operation, specifications, and troubleshooting.</p>
	<p><a href="#">AmScope 120 Series Microscope User Manual</a></p> <p>Comprehensive user manual for the AmScope 120 Series microscopes, covering setup, operation, specifications, and troubleshooting for models like B120 and T120.</p>

 <p>PM240 Series</p> <p>AmScope</p> <p>User's Manual</p> <p>1</p>	<p><a href="#">AmScope PM240 Series Stereo Microscope User Manual</a></p> <p>User manual for the AmScope PM240 Series stereo microscopes, covering setup, operation, specifications, and troubleshooting for binocular and trinocular models.</p>
 <p>M150 Series</p> <p>AmScope</p> <p>User's Manual</p> <p>1</p>	<p><a href="#">AmScope M150 Series Microscope User Manual</a></p> <p>User manual for the AmScope M150 Series microscopes, covering setup, operation, maintenance, specifications, and troubleshooting.</p>
 <p>AmScope DM Series</p> <p>DM150-W</p> <p>AmScope</p> <p>User's Manual</p>	<p><a href="#">AmScope DM150-W Full HD Digital Compound Microscope User Manual</a></p> <p>Comprehensive user manual for the AmScope DM150-W Full HD Digital Compound Microscope, covering setup, operation, safety, and maintenance for optimal use.</p>
 <p>M150 Series</p> <p>AmScope</p> <p>User's Manual</p> <p>1</p>	<p><a href="#">AmScope 150 Series Microscope User Manual</a></p> <p>Comprehensive user manual for the AmScope 150 Series microscope, detailing setup, operation, specifications, parts, and troubleshooting for optimal use.</p>