BEBANG WX-C03-620

BEBANG Monocular Microscope User Manual

Model: WX-C03-620

1. Introduction

This manual provides detailed instructions for the proper assembly, operation, and maintenance of your BEBANG Monocular Microscope. Designed for students, adults, and beginners, this microscope offers a magnification range of 40X to 2000X, making it suitable for various biological observations and educational purposes. Please read this manual thoroughly before using the microscope to ensure safe and effective operation.



Image: The BEBANG Monocular Microscope is capable of observing a wide range of biological samples, including plant cells, animal tissues, and microorganisms.

2. Safety Information

Please observe the following safety precautions to prevent injury or damage to the microscope:

- This product is intended for users over 6 years old. It contains small parts; do not put them in the mouth to prevent accidental ingestion.
- When observing with the provided glass microscope slides, handle with care to avoid breakage due to impact, which could lead to cuts on the skin.
- Always ensure the microscope is placed on a stable, flat surface to prevent tipping.
- Do not look directly into the LED light source, as it may cause eye strain.
- Keep the microscope and its accessories away from water and other liquids.



Image: Important safety warnings are provided to ensure proper handling and prevent injury, especially concerning small parts and glass slides.

3. Product Components

Your BEBANG Monocular Microscope package includes the following items:

- BEBANG Monocular Microscope Unit
- Eyepieces: WF10X, WF25X
- Objective Lenses: 4X, 10X, 40X (mounted on revolving turret)
- Barlow Lens: 2X
- Phone Adapter
- Carrying Case
- AC Power Adapter
- Prepared Specimen Slides (10 pieces)
- Blank Slides (5 pieces)

- Science Kit Tools (e.g., pipette, tweezers, petri dish)



Image: The complete BEBANG Monocular Microscope kit, including the microscope, various eyepieces, objective lenses, phone adapter, slides, and carrying case.

Microscope Structure Overview



Image: A detailed diagram illustrating the main components of the microscope, including the eyepiece, objective lenses, stage, focusing knobs, and LED illuminators.

Familiarize yourself with the following key parts:

- **Eyepiece:** Where you look to view the specimen.
- **Monocular Head:** Holds the eyepiece.
- **Objective Lenses:** Multiple lenses (4X, 10X, 40X) on a revolving turret for different magnifications.
- **Stage:** Flat platform where the specimen slide is placed.
- **Filter Circle:** Located beneath the stage, used to adjust light.
- **LED Brightness Switch:** Controls the intensity of the light.
- **Bottom LED:** Illuminates translucent specimens from below.
- **Top LED:** Illuminates opaque specimens from above.
- **Coarse and Fine Focus Knobs:** Used to bring the specimen into sharp focus.
- **Battery Bin:** Located at the base for AA batteries (not included).
- **AC Power Interface:** For connecting the AC power adapter.

4. Setup

Follow these steps to set up your microscope for first use:

1. **Unpack:** Carefully remove all components from the carrying case.
2. **Power Connection:**
    - For AC power, connect the provided AC adapter to the AC Power Interface on the microscope base and plug it into a wall outlet.
    - For battery power, open the battery bin on the base and insert 3x 1.5V AA batteries (not included), ensuring correct polarity.
3. **Insert Eyepiece:** Select either the WF10X or WF25X eyepiece and gently insert it into the monocular head.
4. **Prepare Stage:** Ensure the stage is clean and free of debris.

5. Operating Instructions

5.1. Magnification Adjustment

The microscope offers multiple magnification levels by combining different eyepieces, objective lenses, and the Barlow lens.



Image: A visual guide demonstrating how different combinations of eyepieces (WF10X, WF25X), objective lenses (4X, 10X, 40X), and the 2X Barlow lens achieve magnifications from 40X to 2000X.

To change magnification:

1. **Select Eyepiece:** Choose WF10X or WF25X and insert it into the monocular head.
2. **Select Objective Lens:** Rotate the revolving turret to select the desired objective lens (4X, 10X, or 40X). Ensure it clicks into place.
3. **Use Barlow Lens (Optional):** For higher magnification, insert the 2X Barlow lens between the eyepiece and the monocular head. This doubles the total magnification.

Magnification Chart:

Eyepiece	Objective Lens	Total Magnification (without Barlow)	Total Magnification (with 2X Barlow)
WF10X	4X	40X	80X
WF10X	10X	100X	200X

Eyepiece	Objective Lens	Total Magnification (without Barlow)	Total Magnification (with 2X Barlow)
WF10X	40X	400X	800X
WF25X	4X	100X	250X
WF25X	10X	250X	500X
WF25X	40X	1000X	2000X

5.2. Illumination System

The microscope features a dual LED illumination system for observing both opaque and translucent specimens.



Image: The microscope's dual LED system, showing the top illuminator for opaque objects and the bottom illuminator for translucent specimens, both with adjustable brightness.

- **Bottom Illuminator:** Use for translucent specimens (e.g., prepared slides, thin tissue samples). Turn the LED Brightness Switch to the left (I position) to activate the bottom light.
- **Top Illuminator:** Use for opaque objects (e.g., fabric, leaves, coins). Turn the LED Brightness Switch to the

right (II position) to activate the top light.

- **Adjust Brightness:** Rotate the knob on the side of the base to adjust the intensity of the selected LED light source.

5.3. Focusing

The microscope is equipped with coarse and fine focusing knobs for precise image clarity.

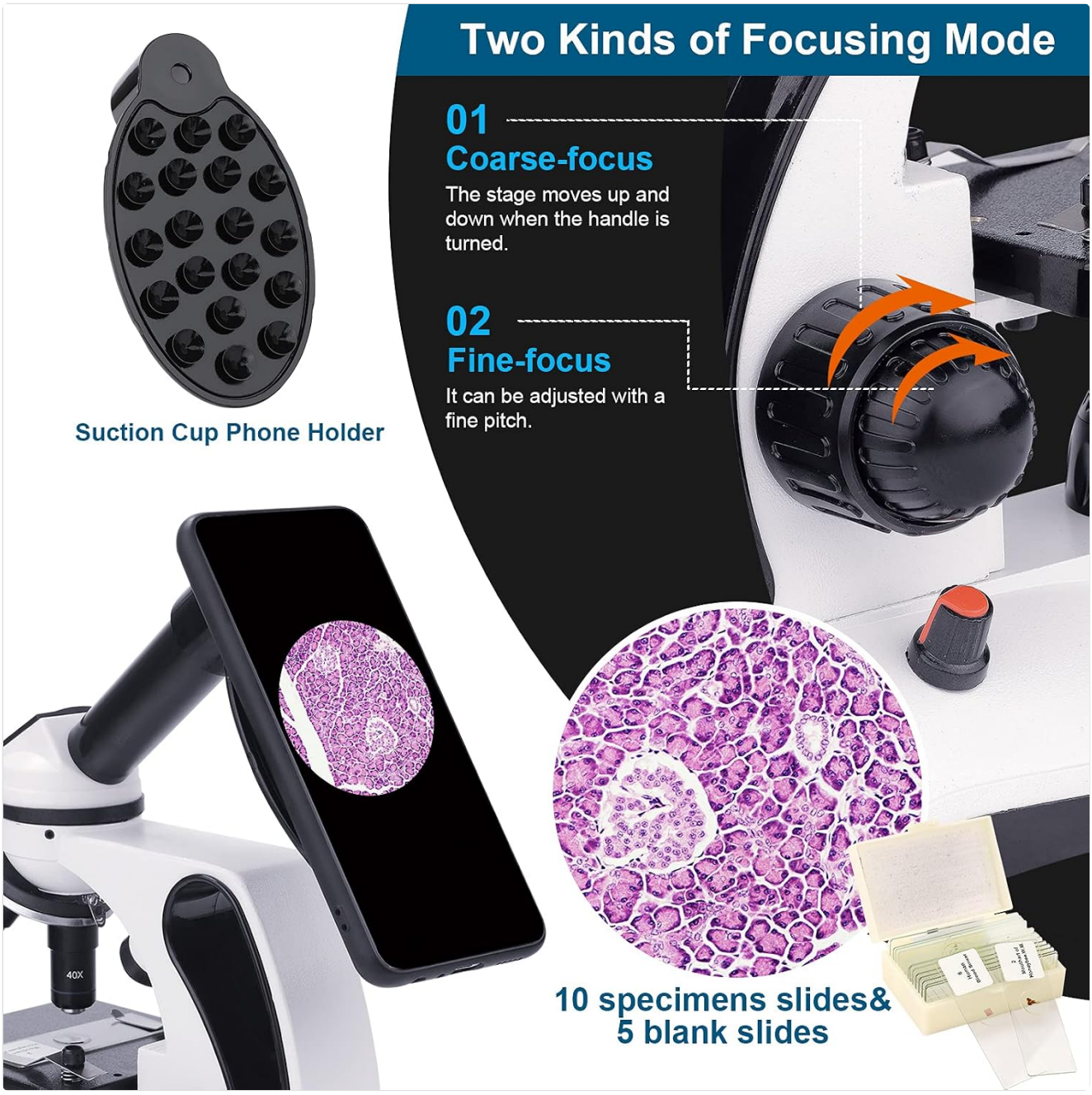


Image: Illustration of the coarse and fine focus knobs, demonstrating their function in moving the stage for clear image acquisition. Also shows the phone adapter and included slides.

1. **Place Specimen:** Secure your prepared slide or opaque object on the stage using the stage clips.
2. **Coarse Focus:** Use the larger **Coarse Focus** knob to quickly move the stage up or down until the specimen is roughly in focus. This knob is for large adjustments.
3. **Fine Focus:** Once the image is somewhat clear, use the smaller **Fine Focus** knob for precise adjustments to achieve a sharp and clear image. This knob is for small, detailed adjustments.

5.4. Using the Phone Adapter

The included phone adapter allows you to capture images and videos of your observations directly with your smartphone.



Image: The suction cup phone holder, designed to securely attach a smartphone to the microscope's eyepiece for capturing magnified views.

1. **Attach Phone:** Secure your smartphone to the phone adapter, ensuring the phone's camera lens is aligned with the adapter's opening.
2. **Mount Adapter:** Carefully place the phone adapter with your phone onto the microscope's eyepiece.
3. **Adjust Camera:** Open your phone's camera app. You may need to zoom in or out on your phone's camera to fill the screen with the circular view from the microscope.
4. **Focus:** Use the microscope's coarse and fine focus knobs to bring the image into sharp focus on your phone's screen.
5. **Capture:** Take photos or record videos using your phone's camera controls.

6. Maintenance

Proper care and maintenance will extend the life of your microscope:

- **Cleaning Lenses:** Use a soft, lint-free lens cleaning cloth or lens paper to clean the eyepiece and objective lenses. For stubborn smudges, a small amount of lens cleaning solution can be applied to the cloth, not directly to the lens.
- **Cleaning Body:** Wipe the microscope body with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
- **Storage:** When not in use, store the microscope in its carrying case in a cool, dry place, away from direct sunlight and dust.
- **Handling:** Always carry the microscope by its arm and base. Avoid touching the lenses with your fingers.
- **Battery Replacement:** If using batteries, replace them when the LED lights become dim. Remove batteries if the microscope will not be used for an extended period.

7. Troubleshooting

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

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
No light from LEDs	Power not connected; Batteries dead/incorrectly inserted; LED switch off/wrong position.	Ensure AC adapter is plugged in or batteries are correctly inserted and charged. Check LED brightness switch position (I for bottom, II for top).
Image is blurry/out of focus	Incorrect focusing; Objective lens not clicked into place; Specimen not flat on stage.	Use coarse and fine focus knobs. Rotate objective turret until lens clicks into position. Ensure slide is flat under stage clips.
Dark spots or dust in view	Dust on eyepiece or objective lens.	Clean eyepiece and objective lenses with a lens cleaning cloth.
Cannot achieve high magnification	Incorrect eyepiece/objective combination; Barlow lens not used.	Refer to the Magnification Chart in Section 5.1. Ensure 2X Barlow lens is inserted for maximum magnification.
Phone adapter not holding phone/image unstable	Phone not securely attached; Adapter not properly seated on eyepiece.	Ensure phone is centered and suction cups are firmly pressed. Verify adapter is fully seated on the eyepiece.

8. Specifications

Feature	Specification
Model Number	WX-C03-620
Magnification Range	40X - 2000X
Eyepieces	WF10X, WF25X
Objective Lenses	4X, 10X, 40X (Achromatic)
Barlow Lens	2X
Illumination	Dual LED (Top & Bottom), Adjustable Brightness
Focusing System	Coarse and Fine Focus Knobs
Material	Metal Body
Power Source	AC Adapter (included) or 3x 1.5V AA Batteries (not included)
Product Dimensions	6.69 x 5.12 x 11.81 inches
Item Weight	5.04 pounds

9. Warranty and Support

BEBANG provides quality issue refund and quality guarantee service for this product. For any questions, technical assistance, or support regarding your BEBANG Monocular Microscope, please refer to the contact information provided with your purchase or visit the official BEBANG website.

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