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Starboosa SB70500

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INTRODUCTION

This manual provides detailed instructions for the assembly, operation, and maintenance of your Starboosa SB70500 Refractor Telescope. Please read this manual thoroughly before using your telescope to ensure proper setup and optimal viewing experience.

PACKAGE CONTENTS

Verify that all components listed below are present in your package:

- 1 x 70500 Telescope Optical Tube
- 1 x Star Finder Mount (Smartphone Adapter)
- 1 x Finderscope
- 1 x Adjustable Tripod
- 1 x 4mm Eyepiece (1.25-inch)
- 1 x 12.5mm Eyepiece (1.25-inch)
- 1 x 20mm Eyepiece (1.25-inch)
- 1 x 3X Barlow Lens
- 1 x Moon Filter
- 1 x User Manual

ASSEMBLY INSTRUCTIONS

Follow these steps to assemble your Starboosa SB70500 Telescope:

1. **Set up the Tripod:** Extend the legs of the adjustable tripod to a stable position. Adjust the height as desired. Ensure the tripod head is level.



Figure 1: Tripod setup with telescope attached.

2. **Attach the Telescope Optical Tube:** Locate the mounting plate on the tripod head. Align the telescope optical tube with the mounting plate and secure it using the provided screws or quick-release mechanism. Ensure the telescope is firmly attached and stable.



Figure 2: Telescope optical tube mounted on the tripod.

- 3. Install the Finderscope:** Attach the finderscope to its designated bracket on the main telescope tube. Secure it with the small screws. The finderscope helps in locating objects before viewing them through the main eyepiece.
- 4. Attach the Star Finder Mount (Smartphone Adapter):** If desired, attach the smartphone adapter to the top of the telescope tube. This allows you to use your smartphone with astronomy applications like Sky Map to assist in object location.



Figure 3: Telescope with smartphone adapter installed.

5. **Insert the Zenith Mirror:** Insert the 45° Zenith Mirror into the focuser tube at the back of the telescope. Secure it with the small thumbscrew.
6. **Insert an Eyepiece:** Choose an eyepiece (e.g., 20mm for lowest magnification, 4mm for highest) and insert it into the Zenith Mirror. Secure it with the thumbscrew. You can also insert the 3X Barlow lens between the Zenith Mirror and the eyepiece to increase magnification.



Figure 4: Fully assembled telescope with all accessories.

OPERATING INSTRUCTIONS

1. Aligning the Finderscope

The finderscope has a wider field of view than the main telescope, making it easier to locate objects. To align it:

1. Point the main telescope at a distant, easily identifiable object (e.g., a distant tree or building) during daylight hours.
2. Look through the main telescope with a low-power eyepiece (e.g., 20mm) and center the object in the field of view.
3. Now, look through the finderscope. Use the adjustment screws on the finderscope bracket to move its crosshairs until they are centered on the same object.
4. Once aligned, the finderscope will help you quickly point the main telescope to celestial objects.

2. Focusing

To achieve a clear image, rotate the focusing knob located on the side of the focuser until the object appears sharp. Different eyepieces and viewing conditions may require refocusing.

3. Using Eyepieces and Barlow Lens

The telescope comes with 4mm, 12.5mm, and 20mm eyepieces. The 20mm eyepiece provides the lowest magnification and widest field of view, ideal for locating objects. The 4mm eyepiece provides the highest magnification for detailed observation.

The 3X Barlow lens triples the magnification of any eyepiece it is used with. For example, a 20mm eyepiece with the 3X Barlow lens will provide the magnification of a 6.67mm eyepiece ($20\text{mm} / 3$).

Magnification Calculation: Telescope Focal Length (500mm) / Eyepiece Focal Length (mm)

- 20mm Eyepiece: $500\text{mm} / 20\text{mm} = 25\text{x}$ magnification
- 12.5mm Eyepiece: $500\text{mm} / 12.5\text{mm} = 40\text{x}$ magnification
- 4mm Eyepiece: $500\text{mm} / 4\text{mm} = 125\text{x}$ magnification
- 20mm Eyepiece + 3X Barlow: $25\text{x} * 3 = 75\text{x}$ magnification
- 12.5mm Eyepiece + 3X Barlow: $40\text{x} * 3 = 120\text{x}$ magnification
- 4mm Eyepiece + 3X Barlow: $125\text{x} * 3 = 375\text{x}$ magnification

4. Using the Moon Filter

The included moon filter can be screwed onto the bottom of any eyepiece. It reduces the brightness of the moon, making it more comfortable to observe and revealing finer surface details.

5. Using the Star Finder Mount (Smartphone Adapter)

Attach your smartphone to the star finder mount. Download a star map application (e.g., Sky Map) on your smartphone. This allows you to use your phone's screen to guide the telescope to celestial objects, making it easier to locate them.



Figure 5: Using the smartphone adapter with a star map application.

MAINTENANCE

Cleaning the Lenses

Handle optical components with care. Use a soft, lint-free cloth specifically designed for optics. For stubborn smudges, a small amount of optical cleaning fluid can be applied to the cloth, not directly to the lens. Avoid touching the lens surfaces with your fingers.

Storage

When not in use, store the telescope in a dry, dust-free environment. Keep all caps on the optical tube and

eyepieces to prevent dust accumulation. The included carrying bag is suitable for storage and transport.

TROUBLESHOOTING

Problem: Image is blurry or out of focus.

Solution: Adjust the focusing knob slowly until the image becomes sharp. Ensure the eyepiece is fully inserted and secured. Atmospheric conditions can also affect image clarity.

Problem: Cannot find objects easily.

Solution: Ensure the finderscope is properly aligned with the main telescope. Start with the lowest magnification eyepiece (20mm) to get a wider field of view. Use a star map application with the smartphone adapter to help locate objects.

Problem: Image appears dim or dark.

Solution: Ensure the lens caps are removed from both the main objective lens and the eyepiece. High magnification eyepieces (e.g., 4mm) will naturally produce a dimmer image. Avoid using the moon filter when observing fainter objects.

Problem: Telescope image is shaky.

Solution: Ensure the tripod legs are fully extended and stable on a firm surface. Avoid touching the telescope while observing. Wind can also cause vibrations. Consider observing from a sheltered location.

SPECIFICATIONS

Feature	Specification
Optical Type	Refractor Telescope
Aperture	70 mm
Focal Length	500 mm
Eyepiece Diameter	1.25 inches (3.2 cm)
Barlow Lens	3X
Zenith Mirror	45°
Model Number	SB70500
Compatible Devices	Smartphone (with adapter)
Product Dimensions (L x W x H)	62 x 20.8 x 12.7 cm (24.4 x 8.2 x 5 inches)
Item Weight	2.5 kg (5.5 lbs)
Zoom Ratio (Max)	375x

WARRANTY AND SUPPORT

Starboosa is committed to customer satisfaction. If you encounter any quality issues with your telescope, please contact Starboosa customer service for assistance. We will actively work to resolve any problems you may experience.

For further support or inquiries, please refer to the contact information provided on the Starboosa official website or

your purchase documentation.