

SVBONY SV503

SVBONY SV503 102mm F7 Refractor Telescope Instruction Manual

Model: SV503 | Brand: SVBONY

INTRODUCTION

The SVBONY SV503 Refractor Telescope is designed for both visual observation and astrophotography. This 102mm F7 Extra Low Dispersion (ED) achromatic refractor Optical Tube Assembly (OTA) provides crisp, bright, and high-resolution images. It includes the SV193 Focal Reducer to enhance astrophotography capabilities by reducing focal length and flattening the field.

Key features include:

- **102mm Objective Lens:** Large aperture for bright and clear images.
- **F/7 Focal Ratio:** Provides a good balance between magnification and field of view.
- **Extra Low Dispersion (ED) Glass:** Minimizes chromatic aberration for superior image clarity.
- **Ultra-Wideband Multi-Layer Coating:** Enhances light transmission and contrast.
- **0.8x Focal Reducer and Field Flattener (SV193):** Optimized for astrophotography, ensuring sharp stars across the entire field.
- **Dual Speed Focuser:** Features 1:10 micro-reduction for precise focusing.
- **360-Degree Rotatable Focuser:** Allows for flexible camera positioning.
- **Durable Construction:** Hard anodized aluminum body for longevity.



Image: The SVBONY SV503 telescope highlighting its 102mm objective lens diameter and 714mm focal length.



Image: Visual representation of the ED objective lens in the SVBONY SV503 telescope, designed for clearer detail observation.

SETUP

Attaching the SV193 Focal Reducer/Flattener

The SV193 0.8x Focal Reducer/Flattener is designed to improve image quality for astrophotography by correcting field curvature and reducing the focal length. Follow these steps for installation:

1. Remove any existing 1.25-inch to 2-inch adapter from the telescope's focuser.
2. If desired, install a 2-inch filter into the SV193 focal reducer by unscrewing the reducer adapter, screwing in the filter, and reattaching the adapter.
3. Insert the 2-inch barrel of the SV193 focal reducer directly into the SV503 telescope's focuser. Secure it with the focuser's thumbscrews.
4. The SV193 features M48x0.75 threads at its back end for direct connection to a camera bayonet or other astrophotography accessories.



Image: Step-by-step visual instructions for removing the 1.25-2 inch adapter and inserting the 2-inch end of the SV193 focal reducer into the SV503 telescope.

Video: This video demonstrates the installation process for the SV209 Field Flattener, which is similar in principle to installing the SV193 Focal Reducer/Flattener. It shows how to attach the flattener to the telescope for optimal performance.

Mounting the Telescope

The SV503 OTA comes with integrated structure hoops and a dovetail plate for secure mounting to an equatorial or alt-azimuth mount. Ensure your mount is capable of supporting the telescope's weight (approximately 11.46 pounds).

Video: This video illustrates the SV503 102ED telescope's dovetail plate and optics tube ring, demonstrating how to secure the telescope to a compatible mount.

OPERATING

Focusing

The SV503 features a dual-speed focuser with a 1:10 micro-reduction mechanism. This allows for both rapid coarse adjustments and very fine adjustments, crucial for achieving sharp focus, especially during astrophotography.

- Use the larger knob for coarse focusing to quickly bring objects into approximate focus.
- Use the smaller knob for fine focusing to achieve critical sharpness.

Dual Speed Focusing

The 1:10 micro-reduction is ideal for astrophotography and allows precise focusing



Image: The SVBONY SV503 telescope illustrating its dual-speed focuser with both coarse and fine adjustment knobs for precise focusing.

Video: This video demonstrates the two-speed focusing mechanism of the SV503 telescope, highlighting its utility for achieving sharp images.

Focuser Rotation

The focuser can be rotated 360 degrees. This feature is particularly useful for astrophotography, allowing you to adjust the camera's orientation without rotating the entire telescope, which can affect guiding.

- Loosen the focuser rotation screw to freely rotate the focuser.
- Tighten the screw once the desired orientation is achieved.

Rotate 360 degree

When connecting the camera to shoot, loosen this screw, the focus wheel can rotate 360 degree, turn the focus wheel to your left hand or right hand according to your requirements.

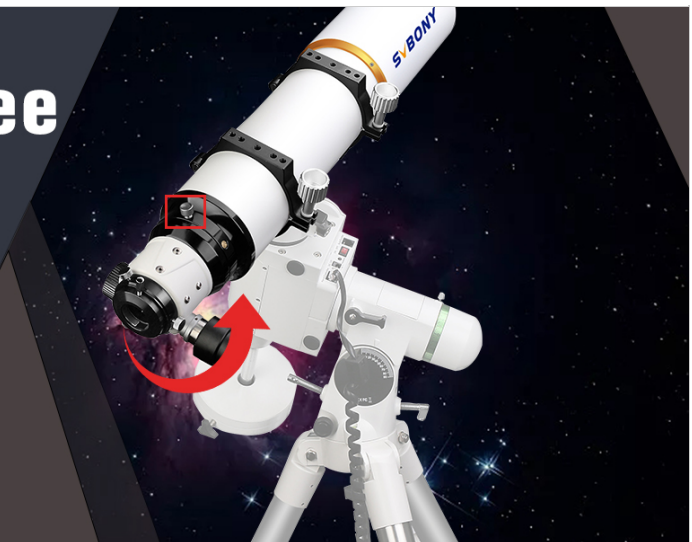


Image: The SVBONY SV503 telescope demonstrating its 360-degree focuser rotation capability, allowing for flexible camera positioning during astrophotography.

Astrophotography with SV193

When using the SV193 Focal Reducer/Flattener, the SV503 telescope is optimized for capturing wide-field celestial photos with minimal star distortion at the edges. This combination is ideal for deep-sky objects.



Image: Examples of astrophotography results, showcasing the capabilities of the SVBONY SV503 telescope in capturing deep-sky objects.

Video: This short video highlights the SV503 and SV305 as a powerful combination for astrophotography, demonstrating their synergy in capturing celestial images.

MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your SVBONY SV503 telescope.

- **Cleaning Optics:** Use a soft brush to remove dust, then a lens cleaning solution and microfiber cloth for smudges. Avoid touching optical surfaces directly.
- **Storage:** Store the telescope in a dry, dust-free environment. Use dust caps on both ends of the OTA when not in use.
- **Mechanical Parts:** Periodically check all screws and connections for tightness. Avoid overtightening.
- **Temperature Acclimation:** Allow the telescope to acclimate to ambient outdoor temperatures before use to prevent dew formation and ensure stable images.

TROUBLESHOOTING

If you encounter issues with your SV503 telescope, consider the following common troubleshooting steps:

- **Fuzzy Images:** Ensure the focuser is correctly adjusted. Check for dew on the objective lens; use a dew shield or heater if necessary. Verify eyepiece and diagonal are clean.
- **Chromatic Aberration (Color Fringing):** While the ED glass minimizes this, some may be visible on very bright objects. This is normal for refractors and typically not a defect.
- **Difficulty Finding Objects:** Ensure your finderscope is aligned with the main telescope. Start with a low-power eyepiece for a wider field of view.
- **Unstable View:** Check that the telescope is securely mounted to a stable tripod or mount. Ensure all clamps and screws are tightened.
- **Focuser Movement Issues:** If the focuser is stiff or loose, check for any debris or adjust tension screws if available and accessible.

SPECIFICATIONS

Feature	Specification
Objective Lens Diameter	102 Millimeters
Focal Ratio	F/7
Optical Tube Length	630 Millimeters
Eyepiece Lens Description	Achromatic
Focus Type	Manual Focus (Dual Speed)
Telescope Mount Description	Equatorial Mount (OTA only)
Finderscope	Reflex
Product Dimensions	26.77 x 8.07 x 9.64 inches
Item Weight	11.46 pounds
Model Name	SV503
Manufacturer	SVBONY

WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the official SVBONY website or contact their customer service directly. Keep your purchase receipt as proof of purchase for warranty claims.