Vivitar VIV-TEL-60700

Vivitar Refractor Telescope-Black (VIV-TEL-60700) User Manual

Model: VIV-TEL-60700

Introduction

This manual provides comprehensive instructions for the assembly, operation, maintenance, and troubleshooting of your Vivitar Refractor Telescope-Black (VIV-TEL-60700). Please read this manual thoroughly before using your telescope to ensure proper function and longevity of the product.

Product Overview

The Vivitar Refractor Telescope is designed for astronomical observation, offering multiple magnification options and precise control. Below is an illustration of the telescope and its primary components.

Figure 1: Vivitar Refractor Telescope. This image displays the complete Vivitar Refractor Telescope, featuring a black optical tube assembly, a finderscope mounted on top, an eyepiece holder with a diagonal prism, and a sturdy black altazimuth tripod with adjustable legs. The Vivitar logo is visible near the objective lens.

Key components include the main optical tube, finderscope, eyepiece, diagonal prism, focus knob, altazimuth mount, and adjustable tripod. The telescope features a lightweight and durable construction.

Setup Instructions

1. **Unpack Components:** Carefully remove all parts from the packaging. Verify that all components are present: optical tube, tripod, altazimuth mount, reflex finderscope, eyepieces (4mm and 12.5mm), and a 3x Barlow lens.
2. **Assemble Tripod:** Extend the legs of the full-sized adjustable tripod to a stable position. Secure the legs using the locking mechanisms.
3. **Attach Mount:** Secure the altazimuth mount to the top of the tripod. Ensure it is firmly attached to prevent instability.
4. **Mount Optical Tube:** Attach the main optical tube to the altazimuth mount. Use the provided screws or clamps to secure it. The slow motion control rod should be accessible for adjustments.
5. **Install Finderscope:** Attach the reflex finderscope to its designated bracket on the optical tube. Align the finderscope with the main telescope later during initial observation.
6. **Insert Diagonal and Eyepiece:** Insert the diagonal prism into the eyepiece holder at the back of the optical tube. Then, insert one of the eyepieces (e.g., 12.5mm for lower magnification) into the diagonal. Secure with the small set screw. The 3x Barlow lens can be inserted between the diagonal and the eyepiece for increased magnification.

Operating Instructions

1. Aligning the Finderscope

1. Point the main telescope at a distant, stationary object during daylight hours (e.g., a distant tree or building).
2. Center the object in the main telescope's eyepiece.

3. Look through the finderscope and adjust its alignment screws until the same object is centered in the finderscope's crosshairs.

2. Observing with the Telescope

1. **Choose an Eyepiece:** Start with the 12.5mm eyepiece for a wider field of view and easier object location. For higher magnification, switch to the 4mm eyepiece or use the 3x Barlow lens in conjunction with an eyepiece. The telescope offers multiple magnification options, including 56x, 168x, 175x, or 525x, depending on the eyepiece and Barlow lens combination.
2. **Locate Object:** Use the aligned reflex finderscope to locate the desired celestial or terrestrial object. Center the object in the finderscope's crosshairs.
3. **View Through Main Eyepiece:** Look through the main telescope's eyepiece. The object should be visible within the field of view.
4. **Focus:** Slowly turn the manual focus knob until the image appears sharp and clear.
5. **Track Object:** For astronomical observations, objects will appear to drift across the field of view due to Earth's rotation. Use the slow motion control for precise adjustments to keep the object centered. The altazimuth mount allows for movement along horizontal (azimuth) and vertical (altitude) axes.

3. Magnification Calculation

The magnification of your telescope is calculated by dividing the telescope's focal length by the eyepiece's focal length. If a Barlow lens is used, multiply the result by the Barlow's magnification factor (e.g., 3x).

Maintenance

- **Lens Cleaning:** Use a soft, lint-free cloth specifically designed for optical lenses. Gently wipe the objective lens and eyepieces. For stubborn smudges, use a small amount of optical cleaning fluid on the cloth, not directly on the lens. Avoid touching optical surfaces with bare hands.
- **Dust Protection:** Always keep dust caps on the objective lens and eyepieces when the telescope is not in use.
- **Storage:** Store the telescope in a dry, dust-free environment. If possible, store it in its original packaging or a padded case to protect it from impacts.
- **Avoid Extreme Temperatures:** Do not expose the telescope to extreme hot or cold temperatures, as this can affect its components.
- **Mechanical Parts:** Periodically check all screws and fasteners to ensure they are tight. Do not overtighten.

Troubleshooting

Problem	Possible Cause	Solution
Image is blurry or out of focus.	Incorrect focus; atmospheric conditions; dirty lens.	Adjust the manual focus knob slowly. Wait for stable atmospheric conditions. Clean lenses as per maintenance instructions.
Cannot find objects easily.	Finderscope is not aligned; using too high magnification.	Align the finderscope with the main telescope. Start with a lower magnification eyepiece (e.g., 12.5mm).

Problem	Possible Cause	Solution
Image appears dim.	Light pollution; high magnification; small aperture.	Observe from a darker location. Use a lower magnification eyepiece. This is a refractor telescope with a specific aperture, which limits light gathering.
Image is inverted.	Normal for astronomical telescopes without an erecting prism.	This is expected for astronomical viewing. For terrestrial viewing, an optional erecting prism (not included) would correct the image orientation.

Specifications

- **Model Number:** VIV-TEL-60700
- **Telescope Type:** Refractor
- **Mount Type:** Altazimuth Mount
- **Focus Type:** Manual Focus
- **Finderscope:** Reflex
- **Eyepieces Included:** 4mm, 12.5mm
- **Barlow Lens:** 3x (Lens coating description: 3x barlow)
- **Magnification Options:** 56x, 168x, 175x, 525x (with various eyepiece/Barlow combinations)
- **Slow Motion Control:** Yes, for precise adjustments
- **Tripod:** Full-sized adjustable tripod
- **Product Dimensions:** 73.66 x 15.24 x 24.13 cm
- **Item Weight:** 0.5 Kilograms
- **Compatible Devices:** Camera, Smartphone (requires additional adapters, not included)

Warranty and Support

For information regarding warranty coverage and technical support, please refer to the documentation included with your purchase or visit the official Vivitar website. Keep your proof of purchase for warranty claims.