Vivitar TEL76700

Vivitar TEL76700 Reflector Telescope Instruction Manual

Model: TEL76700

Introduction

The Vivitar TEL-76700 is a reflector telescope designed for astronomical observation, suitable for budding to novice stargazers. It features a reflector-based architecture with high-grade materials, coatings, lenses, and mirrors. This manual provides essential information for the setup, operation, and maintenance of your telescope to ensure optimal viewing experiences.
The telescope is equipped with a deluxe Altazimuth mount for superior functionality and precision, combining portability with powerful magnification capabilities. It allows for clear and crisp views of celestial objects.

Product Overview

Image: The Vivitar TEL76700 Reflector Telescope fully assembled on its adjustable aluminum tripod, showing the main tube, finderscope, and eyepiece assembly.

The Vivitar TEL-76700 Reflector Telescope consists of several key components designed for ease of use and effective observation. Understanding these parts is crucial for proper assembly and operation.

Key Components:

- **Main Mount:** The primary structure supporting the telescope tube.
- **Pitching Slim Auxiliary Knob & Pitching Shaft Screw:** Used for fine vertical adjustments.
- **Rack and Pinion Focusing Knob:** For adjusting the focus of the image.
- **Eyepiece Joint Tube & Eyepiece:** Where the interchangeable eyepieces are inserted for viewing.
- **Sighting Scope Bracket & Sighting Scope (Finderscope):** A low-magnification scope used to locate objects before viewing them through the main telescope.
- **Tripod Legs:** Adjustable aluminum legs providing a stable base.
- **Accessory Dish:** For holding eyepieces and other small accessories.
- **Direction Control Handle:** Located on the tripod for convenient movement.

Setup and Assembly

Follow these steps to correctly assemble your Vivitar TEL76700 Reflector Telescope:

1. **Unpack Components:** Carefully remove all parts from the packaging and verify against the parts list.
2. **Assemble Tripod:** Extend the full-size adjustable aluminum tripod legs to a suitable height. Ensure the tripod is stable on a flat surface. The tripod adjusts to different heights to accommodate various users.
3. **Attach Main Mount:** Secure the main mount to the top of the tripod. Ensure it is firmly attached and stable.
4. **Mount Telescope Tube:** Attach the main telescope tube to the main mount. Use the pitching shaft screw and pitching clamp handle screw to secure it.
5. **Install Finderscope:** Attach the sighting scope (finderscope) to its bracket on the main tube. Secure it with the thumb nut for sighting scope.
6. **Insert Eyepiece:** Insert the desired eyepiece into the eyepiece joint tube. You can choose between the SR4mm and H8mm eyepieces provided.
7. **Attach Accessory Dish:** Secure the accessory dish to the tripod for convenient storage of eyepieces and other small items during observation.

Once assembled, ensure all connections are secure but do not overtighten, as this may damage components.

Operating Instructions

1. Choosing Eyepieces and Magnification

Your telescope comes with two primary eyepieces (SR4mm and H8mm) and additional lenses to vary magnification:

- **SR4mm Eyepiece:** Provides higher magnification.
- **H8mm Eyepiece:** Provides lower magnification and a wider field of view.
- **2x Barlow Lens:** Doubles the magnification of any eyepiece it is used with.
- **1.5x Erecting Lens:** Corrects the image orientation, making it suitable for terrestrial (land-based) viewing.

To calculate magnification, divide the telescope's focal length (700mm) by the eyepiece's focal length. For example, with the H8mm eyepiece, magnification is 700mm / 8mm = 87.5x. With the 2x Barlow lens, this becomes 175x.

2. Using the Finderscope

The finderscope has a low magnification and a wide visual field, making it easier to locate objects before observing them with the main telescope. To use it effectively:

1. **Align the Finderscope:** During daylight hours, point the main telescope at a distant, easily identifiable object (e.g., a tree top or building). Look through the main telescope's lowest power eyepiece and center the object.

2. Now, look through the finderscope. Adjust the finderscope's alignment screws until the same object is centered in its crosshairs. This ensures the finderscope points exactly where the main telescope is aimed.
3. Once aligned, you can use the finderscope to quickly locate celestial objects, then fine-tune their position using the main telescope's controls.

3. Focusing

To achieve a clear image, rotate the rack and pinion focusing knob until the object appears sharp. Fine adjustments may be needed as objects move or as you change eyepieces.

4. Using the Moon Filter

When observing the full moon, its brightness can cause glare, making it difficult to discern surface details. The moon filter, which screws onto the eyepiece, reduces this glare, allowing for sharper views of lunar features. For other objects or phases of the moon, the filter may not be necessary.

5. Using the Barlow Lens

The 2x Barlow Lens increases the magnification of any eyepiece. Insert the Barlow lens into the eyepiece joint tube first, then insert your chosen eyepiece into the Barlow lens. While it increases magnification, it also reduces the field of view and can make the image dimmer. Use it for detailed observations of bright objects like the Moon or planets when atmospheric conditions are stable.

WARNING: Never use the telescope to look directly at the sun without a certified solar filter. Doing so can cause severe and permanent eye damage.

Maintenance and Care

Proper maintenance will extend the life and performance of your telescope:

- **Cleaning Lenses:** Use a soft, lint-free cloth specifically designed for optical lenses. Gently wipe away dust. For smudges, use a small amount of optical cleaning fluid 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. Use lens caps to protect the optics from dust and scratches.
- **Handling:** Always handle the telescope by its main tube or mount, avoiding direct contact with optical surfaces.
- **Environmental Protection:** Avoid exposing the telescope to extreme temperatures, humidity, or sudden temperature changes, which can cause condensation or damage.

Troubleshooting

Problem	Possible Cause	Solution
Image is blurry or out of focus.	Incorrect focus setting; atmospheric conditions; eyepiece not fully inserted.	Adjust the focusing knob slowly. Wait for stable atmospheric conditions. Ensure eyepiece is fully seated.
Cannot find objects easily.	Finderscope is not aligned with the main telescope.	Align the finderscope during daylight hours as described in the "Operating Instructions" section.
Image is dim or dark.	Too high magnification; light pollution; dirty optics.	Use a lower magnification eyepiece. Observe from a darker location. Clean lenses as per maintenance instructions.
Image is upside down or reversed.	Normal for astronomical telescopes; erecting lens not used for terrestrial viewing.	This is normal for astronomical viewing. For terrestrial viewing, use the 1.5x erecting lens.

Specifications

Optical System:	Reflector Telescope
Aperture:	76mm (3 inches)
Focal Length:	700mm
Focal Ratio:	f/9
Eyepieces Included:	SR4mm, H8mm
Barlow Lens:	2x
Erecting Lens:	1.5x
Finderscope:	5x24
Mount Type:	Deluxe Altazimuth Mount
Tripod:	Full-size adjustable aluminum tripod
Product Dimensions:	76.71 x 22.86 x 26.04 cm
Item Weight:	1.36 kg (3 Pounds)

Warranty and Support

For warranty information, technical support, or service inquiries regarding your Vivitar TEL76700 Reflector Telescope, please refer to the warranty card included with your product or contact Vivitar customer service directly. Keep your purchase receipt as proof of purchase.
Manufacturer: Sakar
Place of Business: EDISON, NJ, 08817 US