

Sky-Watcher SK1149EQ1

Sky-Watcher Newton Telescope 114/900 User Manual

Brand: Sky-Watcher | **Model:** SK1149EQ1

1. INTRODUCTION

The Sky-Watcher Newton 114/900 Telescope is a classic instrument designed for amateur astronomy. With its 114mm diameter and 900mm focal length, it is well-suited for observing bright objects within our solar system, such as the Moon, Venus, Mars, Jupiter, and Saturn. It also provides clear views of brighter deep-sky objects, including star clusters, nebulae, and galaxies. This manual provides essential information for setting up, operating, and maintaining your telescope to ensure optimal performance and longevity.

2. PRODUCT OVERVIEW AND COMPONENTS

The Sky-Watcher Newton 114/900 telescope system includes the optical tube, an EQ1 equatorial mount, an adjustable aluminum tripod, and essential accessories.

Key Features:

- **Optical Design:** Newtonian Reflector
- **Aperture:** 114 mm
- **Focal Length:** 900 mm
- **Focal Ratio:** f/7.8
- **Maximum Magnification:** 228x
- **Mirror Coating:** Aluminum
- **Mount Type:** EQ1 Equatorial Mount
- **Tripod:** Adjustable Aluminum Tripod
- **Eyepieces:** Super 25mm (36X) and Super 10mm (90X) with 31.8mm barrel diameter
- **Finder Scope:** 5x24 Optical Finder

Components Diagram:



Figure 2.1: Overview of the Sky-Watcher Newton 114/900 Telescope. This image displays the main components including the black optical tube, the equatorial mount with its counterweight, and the adjustable silver tripod. The finder scope is visible mounted on top of the optical tube.

3. SETUP AND ASSEMBLY

Follow these steps to correctly assemble your Sky-Watcher Newton 114/900 Telescope. It is recommended to perform the initial assembly indoors in a well-lit area.

1. Set up the Tripod:

Unfold the adjustable aluminum tripod legs and extend them to a comfortable height. Ensure the tripod is stable on a flat surface. Tighten any locking knobs to secure the legs in place.

2. Attach the Equatorial Mount (EQ1):

Mount the EQ1 equatorial head onto the tripod. Secure it firmly using the provided attachment screw or knob located underneath the tripod head. Ensure the mount is level.

3. Install the Counterweight Shaft and Counterweight:

Thread the counterweight shaft into the declination axis of the equatorial mount. Slide the counterweight onto the shaft and secure it with its locking screw. This counterweight is crucial for balancing the telescope.

4. Attach the Optical Tube:

Carefully place the telescope's optical tube into the mounting rings on the equatorial mount. Ensure the tube is balanced within the rings before tightening the ring clamps. The optical tube should be able to rotate freely within the rings if needed for comfortable viewing, but secure enough not to slip.

5. Install the Finder Scope:

Attach the 5x24 optical finder scope to its bracket on the optical tube. Align the finder scope with the main telescope by pointing the main telescope at a distant, stationary object (like a streetlight during the day) and then adjusting the finder scope's alignment screws until the object is centered in its crosshairs.

6. Insert an Eyepiece:

Loosen the thumbscrew on the focuser and insert either the Super 25mm or Super 10mm eyepiece. Tighten the thumbscrew to secure the eyepiece. Start with the 25mm eyepiece for wider fields of view and easier object acquisition.

4. OPERATING THE TELESCOPE

Using your Sky-Watcher Newton 114/900 telescope involves pointing it at celestial objects and focusing for clear views.

4.1. Finding Objects:

- **Using the Finder Scope:** Look through the 5x24 finder scope. Its wider field of view makes it easier to locate objects in the night sky. Once the desired object is centered in the finder scope's crosshairs, it should be visible in the main telescope's eyepiece.
- **Manual Tracking with EQ1 Mount:** The EQ1 equatorial mount allows you to track celestial objects as they move across the sky due to Earth's rotation. Once an object is found, you can turn the Right Ascension (R.A.) slow-motion control knob to keep the object centered in your eyepiece. This eliminates the need to constantly reposition the telescope.

4.2. Focusing:

Once an object is in view, turn the focuser knobs slowly until the image appears sharp and clear. You may need to make slight adjustments as your eyes adapt or as the object moves.

4.3. Changing Magnification:

To change magnification, swap eyepieces. The 25mm eyepiece provides lower magnification and a wider field of view, ideal for initial object location and extended objects like nebulae. The 10mm eyepiece offers higher magnification, suitable for detailed views of the Moon and planets.

Important Note: *Never look directly at the Sun through your telescope or finder scope without a certified solar filter. Doing so can cause permanent eye damage.*

5. MAINTENANCE

Proper care and maintenance will extend the life of your telescope and ensure optimal viewing performance.

- **Cleaning Optics:** Dust on the mirrors or eyepieces can degrade image quality. Use a soft brush or compressed air to remove loose dust. For stubborn smudges, use a specialized optical cleaning solution and a microfiber cloth designed for optics. Avoid touching optical surfaces with your fingers.
- **Storage:** When not in use, store your telescope in a dry, dust-free environment. Keep it covered to prevent dust accumulation.
- **Handling:** Always handle the telescope by the optical tube or mount, avoiding direct contact with the optical surfaces.

- **Temperature Acclimation:** Allow your telescope to acclimate to the ambient outdoor temperature for about 30 minutes before observing. This prevents image distortion caused by temperature differences.

6. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Fuzzy or blurry images	Out of focus; poor seeing conditions; telescope not acclimated to temperature.	Adjust focuser slowly; wait for better atmospheric conditions; allow telescope to cool down.
Cannot find objects	Finder scope not aligned; incorrect object location.	Align finder scope with main telescope; use a star chart or astronomy app to locate objects.
Object drifts out of view quickly	Mount not properly aligned to Polaris (for Northern Hemisphere) or Octans (for Southern Hemisphere); tracking mechanism not engaged.	Perform a proper polar alignment for the equatorial mount; use the R.A. slow-motion control to track.
Dust on optics	Exposure to dusty environment.	Use a soft brush or compressed air. For smudges, use optical cleaning solution and cloth.

7. SPECIFICATIONS

Detailed technical specifications for the Sky-Watcher Newton 114/900 Telescope:

Feature	Value
Optical Design	Newtonian Reflector
Aperture	114 mm
Focal Length	900 mm
Focal Ratio	f/7.8
Maximum Magnification	228x
Mirror Coating	Aluminum
Mount Type	EQ1 Equatorial Mount
Tripod	Adjustable Aluminum
Eyepieces Included	Super 25mm (36X), Super 10mm (90X)
Eyepiece Barrel Diameter	31.8 mm
Finder Scope	5x24 Optical Finder
Product Dimensions (L x W x H)	108 x 24.5 x 37 cm

Feature	Value
Item Weight	11 Kilograms
Model Number	SK1149EQ1
Compatible Devices	Motorized devices, camera
Model Year	2015
Focus Type	Manual Focus

8. WARRANTY AND SUPPORT

For information regarding product warranty, technical support, or service, please refer to the documentation provided with your purchase or visit the official Sky-Watcher website. Contact details for customer service are typically available on the manufacturer's website.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Email

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Details

Submit question