iOptron 3200

iOptron SmartEQ Pro Mount User Manual

Model: 3200 SmartEQ Pro

Introduction

The iOptron SmartEQ Pro mount is a highly portable and fully computerized German equatorial GOTO mount, designed for both visual observation and wide-field astrophotography. Its compact and lightweight design makes it an excellent choice for users requiring portability. The mount features a database of 59,000 celestial objects and utilizes the intuitive Go2Nova Hand Controller for easy navigation and setup.
This manual provides essential information for the setup, operation, maintenance, and troubleshooting of your SmartEQ Pro mount.

Setup and Assembly

Proper assembly is crucial for the stable and accurate operation of your SmartEQ Pro mount. Follow these steps carefully.

Unpacking and Initial Inspection

- Carefully remove all components from the packaging.
- Verify that all parts listed in the packing list are present and undamaged.
- Familiarize yourself with the main components: the mount head, tripod, counterweight, and Go2Nova Hand Controller.

Tripod Assembly

The tripod provides the stable base for your mount. Ensure it is set up on a level, firm surface.

- Extend the tripod legs to a suitable height. For astrophotography, it is recommended not to fully extend the legs to maintain maximum stability.
- Tighten all leg locking mechanisms securely.
- Attach the accessory tray (if included) to the tripod spreader for added rigidity.

Mount Head Installation

Mount the equatorial head onto the tripod.

- Align the mount head with the tripod's mounting bolt.
- Securely fasten the mount head to the tripod using the provided knob or screw.

Counterweight and Optical Tube Installation

Balance is critical for smooth tracking and motor longevity.

- Slide the counterweight onto the counterweight shaft and secure it at an appropriate position to balance the mount in the Right Ascension (RA) axis.
- Attach your optical tube (telescope or camera setup) to the mount's Vixen-style dovetail saddle. The mount supports optical tubes using a Vixen-style dovetail connection.
- Adjust the optical tube's position in the saddle to achieve balance in the Declination (DEC) axis. The maximum payload capacity is 11 lb (5 kg), excluding the counterweight.

Power and Hand Controller Connection

The mount requires power for operation and communication with the hand controller.

- Insert 6 AA batteries into the designated battery compartment, ensuring correct polarity.
- Connect the Go2Nova Hand Controller to the mount's designated port.
- The mount also features a guiding port for advanced astrophotography setups.

Polar Alignment

Accurate polar alignment is essential for precise tracking, especially for astrophotography.

- Utilize the integrated polar scope for initial alignment with Polaris (Northern Hemisphere) or Sigma Octantis (Southern Hemisphere).
- The Go2Nova Hand Controller can assist by indicating the correct position for Polaris based on time and GPS location.
- Fine-tune the alignment using the mount's altitude and azimuth adjustment knobs.


HBX
MENU
BACK
ENTER

Image: The iOptron SmartEQ Pro mount, showing the main unit, counterweight, tripod, and the connected Go2Nova hand controller. This illustrates a typical setup configuration.

Operating Instructions

The SmartEQ Pro mount is designed for user-friendly operation with its Go2Nova Hand Controller.

Go2Nova Hand Controller

The Go2Nova 8408 controller is the primary interface for controlling the mount. It features a large LCD screen and an intuitive menu system.

- **Power On:** After connecting the power source, the hand controller will power on and display the initial setup screen.
- **Date and Time:** Enter the current date and time accurately. This is crucial for precise GOTO calculations.
- **Location:** Input your current geographical coordinates (latitude and longitude) or allow the system to acquire GPS data if available.
- **Alignment:** Perform a star alignment procedure as prompted by the hand controller. This calibrates the mount's position relative to the celestial sphere.

GOTO Functionality

The mount's GOTO system allows you to automatically slew to celestial objects from its extensive database.

- Navigate through the hand controller's menu to select "Select and Slew" or similar options.
- Choose from categories such as "Solar System," "Deep Sky Objects," "Stars," etc. The database contains over 59,000 celestial objects.
- Select your desired object, and the mount will automatically slew to its coordinates.
- Once at the target, the mount will begin tracking the object to keep it centered in your eyepiece or camera field of view.

Tracking and Astrophotography

The SmartEQ Pro is capable of accurate tracking for both visual observation and wide-field astrophotography.

- Ensure proper polar alignment for optimal tracking performance.
- The mount's German equatorial design allows for long-exposure astrophotography by compensating for Earth's rotation.
- For advanced astrophotography, the guiding port can be used with an autoguider system to further refine tracking accuracy.
- The mount can be connected to a computer (requires additional cable) for control via astronomy software, enabling features like plate solving and high-precision pointing.

Maintenance

Regular maintenance ensures the longevity and optimal performance of your iOptron SmartEQ Pro mount.

- **Cleaning:** Use a soft, dry cloth to wipe down the mount and tripod after each use. Avoid abrasive cleaners or solvents. For optical surfaces like the polar scope, use specialized lens cleaning solutions and cloths.
- **Storage:** Store the mount in a dry, dust-free environment. If possible, use the original packaging or a padded case for protection during storage and transport.

- **Battery Care:** Remove AA batteries from the hand controller and mount if storing for extended periods to prevent leakage and corrosion.
- **Mechanical Checks:** Periodically check all screws, knobs, and locking mechanisms to ensure they are securely tightened. Do not overtighten.
- **Cable Management:** Ensure all cables are neatly routed and not under tension or prone to snagging during mount movement.

Troubleshooting

This section addresses common issues you might encounter with your SmartEQ Pro mount.

Mount Not Powering On or Intermittent Power

- **Check Batteries:** Ensure 6 AA batteries are correctly inserted with proper polarity and are not depleted. Replace with fresh batteries if necessary.
- **Battery Compartment:** Verify that the battery compartment cover is securely closed.
- **Cable Connections:** Confirm all power cables and the hand controller cable are firmly connected to their respective ports.

GOTO Inaccuracy or Objects Not Found

- **Polar Alignment:** The most common cause of GOTO inaccuracy is poor polar alignment. Re-perform the polar alignment procedure carefully.
- **Date, Time, and Location:** Double-check that the correct date, time (including daylight saving if applicable), and geographical coordinates are entered into the hand controller.
- **Star Alignment:** Ensure the star alignment procedure is completed accurately, using bright, easily identifiable stars.
- **Balance:** An unbalanced mount can lead to tracking errors. Re-check the balance of your optical tube and counterweight.

Tracking Issues (Slipping, Jerky Motion)

- **Clutches:** Ensure the RA and DEC clutches are sufficiently tightened. If they are too loose, the mount may slip.
- **Payload:** Verify that your total payload (optical tube, camera, accessories) does not exceed the mount's maximum capacity of 11 lb (5 kg). Overloading can cause motor strain and tracking errors.
- **Balance:** Re-check the mount's balance in both RA and DEC axes.

Polar Scope Issues (Out of Focus, Light Not Working)

- **Focus:** The polar scope may require manual refocusing. Refer to the detailed instructions in the full user manual for adjustment.
- **Illumination:** If the polar scope's illumination is not working, check its battery (if separate) or connection. Ensure the brightness setting is not too low.

Hand Controller Not Saving Settings

- **Internal Battery:** Some hand controllers have a small internal battery for retaining settings. If this battery is depleted, settings may not save. Consult iOptron support for replacement or troubleshooting.
- **Firmware:** Ensure the hand controller firmware is up to date. Check the iOptron website for the latest firmware and update instructions.

Specifications

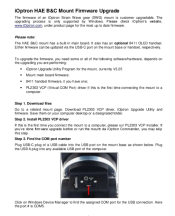
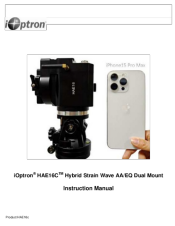
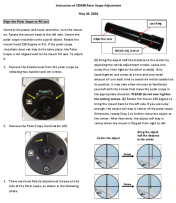
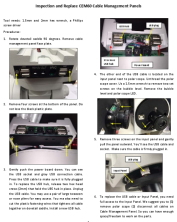
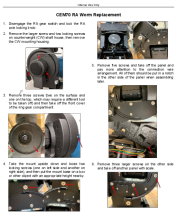
Feature	Specification
Model Name	3200 SmartEQ Pro
Brand	iOptron
Product Dimensions	40 x 8 x 10 inches
Item Weight	18 pounds
Payload Capacity	11 lb (5 kg) (excluding counterweight)
Power Source	Battery Powered (6 AA batteries required)
Telescope Mount Description	Equatorial Mount
GoTo Database	Over 59,000 celestial objects
Hand Controller	Go2Nova 8408
Compatible Devices	Camera (via Vixen-style dovetail)
Focus Type	Manual Focus (for attached optical tube)
Finderscope	Reflex (Polar Scope)

Warranty and Support

For detailed warranty information, please refer to the documentation provided with your purchase or visit the official iOptron website. iOptron provides support for their products to ensure customer satisfaction.

- **Official Manual:** A comprehensive installation manual is available in PDF format:iOptron SmartEQ Pro Installation Manual (PDF).
- **Technical Support:** If you encounter issues not covered in this manual or require further assistance, please contact iOptron customer support directly. Contact information can typically be found on their official website.
- **Firmware Updates:** Check the iOptron website periodically for firmware updates for your Go2Nova Hand Controller and mount, which may improve performance and add new features.

Related Documents - 3200

	[iOptron HAZ130 Mount: Strain Wave Alt-Az GoTo Telescope Mount Instruction Manual] This instruction manual provides comprehensive details on setting up, operating, and maintaining the iOptron HAZ130 Strain Wave Alt-Az GoTo Mount, featuring advanced strain wave gear technology for astronomical observation and imaging.
	[iOptron HAE B&C Mount Firmware Upgrade Guide] Detailed instructions for upgrading firmware on iOptron HAE B&C Strain Wave gear (SWG) mounts using Windows. Covers driver installation, utility usage, and troubleshooting common errors.
	[iOptron HAE16C Hybrid Strain Wave AA/EQ Dual Mount Instruction Manual] Comprehensive instruction manual for the iOptron HAE16C Hybrid Strain Wave AA/EQ Dual Mount, detailing setup, operation, and maintenance for astronomical observation.
	[iOptron CEM60 Polar Scope Adjustment Guide] Detailed instructions for aligning, adjusting, and focusing the polar scope on the iOptron CEM60 telescope mount for accurate astrophotography and celestial observation.
	[iOptron CEM60 Cable Management Panel Inspection and Replacement Guide] Detailed instructions for inspecting and replacing the cable management panel, USB hub, and related components on the iOptron CEM60 telescope mount. Includes tool requirements, step-by-step procedures, and troubleshooting tips.
	[CEM70 RA Worm Replacement Guide | iOptron] Detailed, step-by-step instructions for replacing the Right Ascension (RA) worm gear assembly on the iOptron CEM70 telescope mount. This guide covers disassembly, component replacement, and reassembly, with emphasis on proper alignment and wire management.