

Quick Start Guide



The ZEQ25GT™ Balanced GoTo Equatorial Mount #7100, #7101



PACKAGE CONTENTS¹

- Telescope Mount (with built-in GPS)
- Go2Nova® #8408 Hand Controller
- 1.5-inch Tripod
- One 10.4 lbs (4.7 kg) counterweight
- Installed AccuAlign™ dark field illuminated polar scope (model #7100 only)
- Polar scope LED cable (model #7100 only)
- AC adapter (100V-240V)
- Controller Cable X 2

ONLINE CONTENTS (click under "Support" menu) www.iOptron.com

- Manuals (*you will need to refer to the full manual for details on set-up and operation*).
- Tips for set up
- Hand controller and mount firmware upgrades (check online for latest version)
- Reviews and feedback from other customers

¹ The contents may change from batch to batch without notice

Quick Setup

1. **Select a Mount Latitude Range:** The mount is set at high latitude range (35~60°) at factory. If your observation location is between 0 to 35°, you need to replace the long Latitude Adjustment Knob with the short one. Unlock Latitude Locking T-bolts on both sides, do not loosen the washers. Unscrew the Locking Screw on Bottom Latitude Adjustment Post. Replace the long Latitude Adjustment Knob with a short one. Thread in the Top and Bottom Latitude Adjustment Posts and make sure they are fully threaded in. Reinstall and tighten the bottom locking screw. Insert the Latitude Locking T-bolts into the upper threaded holes and tighten them, with the washers.



2. **Setup tripod:** Expand the tripod legs. Adjust the tripod height by unlocking and re-locking the tripod legs to desired height. Position the tripod so that the Alignment Peg faces north, if you are located at northern hemisphere. If you are located in southern half, face the Alignment Peg south. Thread the tripod center rod into the tripod head and install the Accessory Tray and thread the Tray Locking Knob onto it. Do not fully tighten the Tray Locking Knob.

The Alignment Peg may be moved to the opposite position shall the mount hit the tripod leg when used at a high latitude.

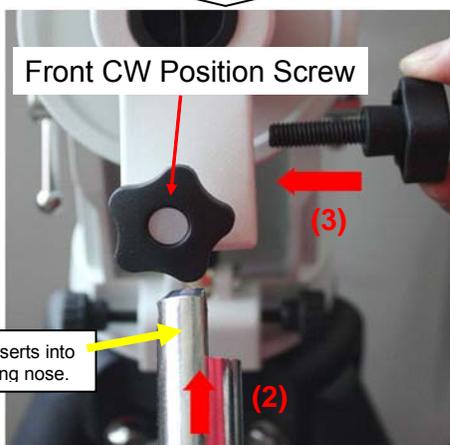
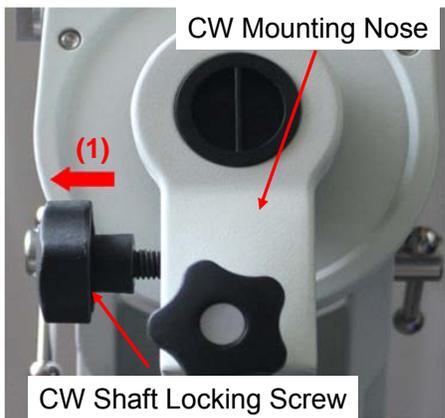


3. **Attach the ZEQ25 Mount:** Retract the Azimuth Adjustment Knobs to allow enough clearance for the Alignment Peg seating in the house. Put the mount onto the Tripod Head with Azimuth Adjustment Knobs on top of the Alignment Peg. Turn Center Rod Knob to secure the mount head onto the tripod. Tighten the Tray Locking Knob to fully expand the tripod legs and secure the Accessory Tray. Adjust the tripod legs to roughly level the mount using the built-in level indicator.



4. **Adjust Latitude:** Slightly loosen the Latitude Locking T-bolts. Turn Latitude Adjust Knob to adjust the latitude until the arrow points to your current latitude on the Latitude Indicator (see 2nd photo in step 1). Relock the Latitude Locking T-bolts.

5. **Install Counterweight (CW) Shaft:** (1) Remove CW Shaft Locking Screw from the CW Mounting Nose. (2) Insert CW shaft into the CW Mounting Nose as indicated in 2nd photo below. (3) lock it using CW Shaft Locking Screw from the other side of the CW Mounting Nose. Tighten the Front CW Positioning Screw which is located in front of the CW Mounting Nose.



If the latitude of the observation location is lower than 10°, thread in the Rear CW Position Screw (a hex head set screw) before tightening the Front CW Positioning Screw to avoid CW hit tripod legs. Then tighten the Front CW Positioning Screw.



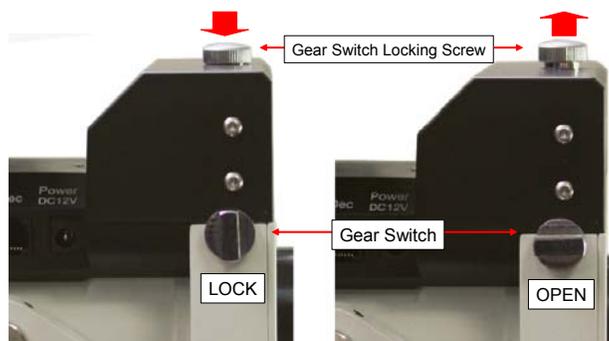
6. **Install Counterweight:** Mount the CW onto CW shaft. Tighten the CW Locking Screw to hold the CW in place. Tighten the CW Safety Screw. ZEQt5 comes

with a 10.4 lbs (4.7kg) counterweight. It should be able to balance a payload of about 13 lbs (6kg). An optional CW or Extension bar is available for heavier payload.

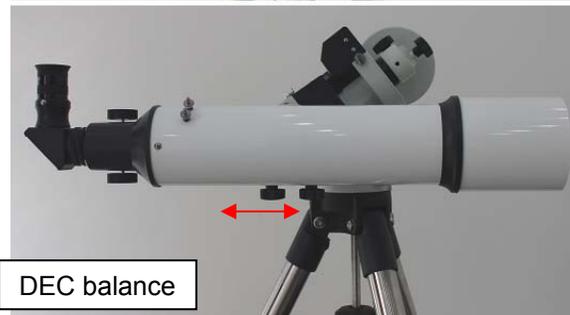
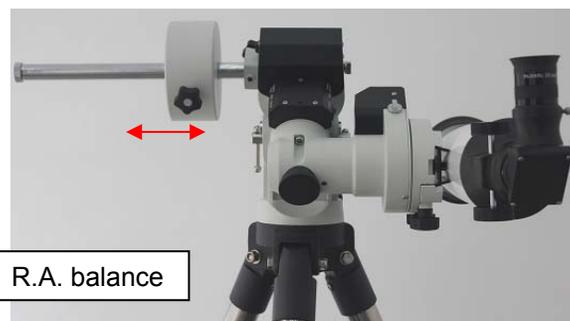
7. **Attach and Balance an OTA on the Mount:** After attaching an OTA and accessories to the mount, the ZEQt5 mount must be balanced in both R.A. and DEC to ensure minimum stress on the mount (such as gears and motors inside).

CAUTION: The telescope may swing freely when the R.A. or DEC Gear Switch is released. Always hold on to the OTA before you release the gear switch to prevent it from swinging. It can cause personal injury or damage to the equipment.

Release Gear Switch Locking Screw by turning it 2 turns counterclockwise. Turn Gear Switch Knob 90 degree to **OPEN** position to disengage the worm from the worm wheel.



Rotate the DEC axis to horizontal position. Adjust the CW position to balance the mount in R.A. axis and move the OTA position to balance the mount along DEC axis.



Return the mount to Zero Position after balance, i.e. the CW shaft points to ground and telescope is at the highest position.

Turn Gear Switch Knob 90 degree again to **LOCK** position to re-engage the worm to the worm wheel. Retighten the Gear Switch Locking Screw.

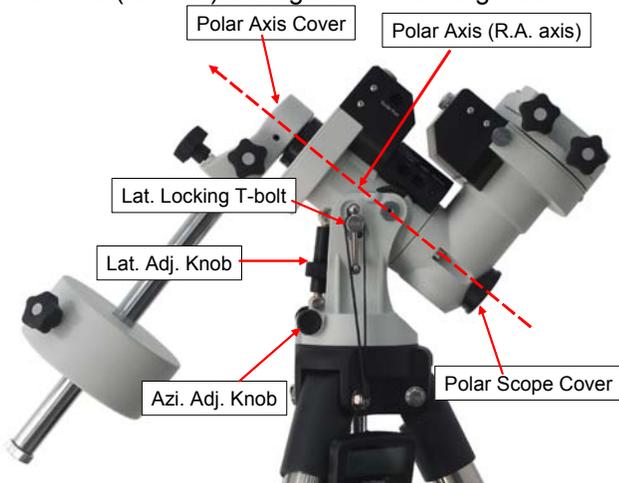
CAUTION: The balance process MUST be done with Gear Switch at OPEN position! Otherwise it might damage the worm system.



8. Connect Cables: Connect DEC unit to the main control unit with a short, straight RJ11 cable. Connect the Go2Nova® 8408 hand controller to the HC port on the main unit. Plug 12V DC power supply into the POWER socket. The power indicator on the main unit will be on when the power switch is turned on.

9. Polar Alignment: In order for an equatorial mount to track properly, it has to be accurately polar aligned.

Take off the Polar Axis Cover and Polar Scope Cover. Look through the polar scope eyepiece to locate the Polaris. Slightly turn tripod Center Rod Knob to loosen the mount head. Adjust the Azimuth Adjustment Knobs to do a fine adjustment of the mount to center the polar star in the azimuth direction. Tighten the Center Rod Knob to secure the mount. Slightly loosen two Latitude Locking T-bolts on the side of the mount, turning the Latitude Adjustment Knob to adjust the latitude (altitude). Re-tighten the locking screws.

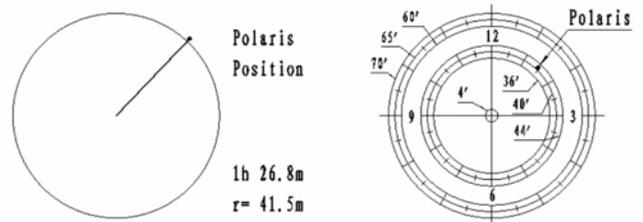


If the mount is equipped with iOptron's AccuAligning™ Polar Scope, you can do a fast and accurate polar alignment.

Quick Polar Alignment

(1) Connect polar scope LED cable between Reticule plug located on the main unit and the LED socket at the bottom of the DEC axle. The illumination intensity can be adjusted using the HC via **“Set Polar Scope Light”** function under **“Set Up Controller”** menu.

(2) Pressing the **MENU** button, then select **“Align”** and **“Pole Star Position”** to display the Polaris Position on the LCD screen, as indicated in the left of the following figure. For example, May 30, 2010, 20:00:00 at Boston, US (alt N42°30'32" and long W71°08'50"), 300 min behind UT, the Polaris Position are 1h26.8m and 41.5m



(If you are located at south hemisphere, Sigma Octantis will be used as the reference for polar alignment.)

(3) Using Azimuth Adjustment Knob and Latitude Adjustment Knob to adjust the mount in altitude and azimuth directions and put the Polaris in same position on the Polar Scope Dial as indicated on the HC LCD, as shown in Right of the above figure.

If the mount is not equipped with a polar scope or the pole star cannot be seen, you can use Polar Alignment Procedure.

(1) Level the ZEQ25 mount and set it at Zero Position. Make sure the telescope is parallel to the pole axis (R.A. axis) of the mount. If a finder scope is used, adjust it to be parallel to the telescope optical axis. Set correct R.A. and DEC back lash numbers. An eyepiece with cross hairs is recommended.

(2) Power on the mount. Pressing the **MENU** button, then select **“Align”** and **“Polar Alignment”**. The HC will display the azimuth and altitude position of several bright stars near meridian. Select one that is visible from the site as aligning Star A. Follow the instruction to move the Star A to the center of the eyepiece with the combination of Latitude Adjustment Knob and **“◀”** or **“▶”** button. Press ENTER to confirm. Then select a bright star that is close to the horizon as aligning Star B. Center it

using the Azimuth Adjustment Knob and “◀” or “▶” button (*The “▲” and “▼” buttons do not work here*). Press ENTER to confirm.

- (3) The telescope will point to Star A again and repeat above step until the error is minimum, or at your decision. Press the BACK button to exit alignment procedure.

10. Manual Operation of the Mount: Now you can observe astronomical objects using the arrow keys of a Go2Nova™ hand controller. Flip the I/O switch on the telescope mount to turn on the mount. Use ▶, ◀, ▼ or ▲ buttons to point the telescope to the desired object. Use the number keys to change the slewing speed. Then press **STOP/0** button to start tracking.

11. Setup Controller: The time and site information of the observation location needs to be entered for precise GOTO.

Turn the mount power on. Wait for controller lights on. Press the MENU button. Move the cursor to “**Set Up Controller**” and press ENTER. Select “**Set Up Time & Site**” and press ENTER.



Enter the date and check if it is Daylight Saving Time using arrow keys and number keys. Enter your time zone (add or subtract 60 minutes per time zone) by entering minutes “behind” UT or “ahead” of UT, such as:

- Boston is 300 minutes “behind” UT
- Los Angeles is 480 minutes “behind” UT
- Rome is 60 minutes “ahead” of UT
- Sydney is 600 minutes “ahead” of UT

All the time zones in North America are “behind” UT.

You may also find your observation longitude and latitude coordinate from your GPS navigator, a GPS

capable cell phone or from internet. “W/E” means western/eastern hemisphere; “N/S” means northern/southern hemisphere; “d” means degree; “m” means minute; and “s” means second. Use number keys and arrow keys to enter your location information.

Move the cursor to the end of the screen to select Northern or Southern Hemisphere.

12. One Star Alignment: Perform One Star Align to correct the Zero Position discrepancy. To further improve the GOTO accuracy, refer to the full manual for more details.

13. Go to an Object: The mount is now ready to GOTO and tracking targets. Press MENU button, select “**Select and Slew**” and press ENTER. Select a category (ex. “**planets, sun, moon**”). Then select an object (ex. “moon”). Then press ENTER. The telescope will automatically slew to the object and start tracking.

14. Sync to Target: If the star is not in the center of the eyepiece, one can use this function to center and synchronize the object to improve the local GOTO accuracy. Press MENU button and select “**Sync. To Target**.” Press ENTER. Next use the arrow keys to move object until it is centered in your eyepiece. Then press ENTER again on the hand controller. A **Select and Slew** has to be performed before “**Sync to Target**” operation. This is most useful if you are looking for some faint objects near a bright star. “**Sync to Target**” is similar to “one star alignment”.

15. Identify Nearby Bright Objects: After slewing to an object using hand controller, a list of nearby bright object(s) will be displayed by pressing the “?” button.

16. Adjust Gear Mesh Tension: The Gear Switch Locking Screws also serve as gear mesh tensing adjusters. You may adjust R.A. and/or DEC gear meshing tension by turn the Gear Switch Locking Screws as needed.

For technical support you can email
support@ioptron.com

IOPTRON TWO YEAR TELESCOPE, MOUNT, AND CONTROLLER WARRANTY

A. iOptron warrants your telescope, mount, or controller to be free from defects in materials and workmanship for two years. iOptron will repair or replace such product or part which, upon inspection by iOptron, is found to be defective in materials or workmanship. As a condition to the obligation of iOptron to repair or replace such product, the product must be returned to iOptron together with proof-of-purchase satisfactory to iOptron.

B. The Proper Return Merchant Authorization Number must be obtained from iOptron in advance of return. Call iOptron at 1.781.569.0200 to receive the RMA number to be displayed on the outside of your shipping container.

All returns must be accompanied by a written statement stating the name, address, and daytime telephone number of the owner, together with a brief description of any claimed defects. Parts or product for which replacement is made shall become the property of iOptron.

The customer shall be responsible for all costs of transportation and insurance, both to and from the factory of iOptron, and shall be required to prepay such costs.

iOptron shall use reasonable efforts to repair or replace any telescope, mount, or controller covered by this warranty within thirty days of receipt. In the event repair or replacement shall require more than thirty days, iOptron shall notify the customer accordingly. iOptron reserves the right to replace any product which has been discontinued from its product line with a new product of comparable value and function.

This warranty shall be void and of no force of effect in the event a covered product has been modified in design or function, or subjected to abuse, misuse, mishandling or unauthorized repair. Further, product malfunction or deterioration due to normal wear is not covered by this warranty.

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This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

iOptron reserves the right to modify or discontinue, without prior notice to you, any model or style telescope.

If warranty problems arise, or if you need assistance in using your telescope, mount, or controller contact:

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Monday-Friday 9AM-5PM EST

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