Quick Start Guide

HAE Strain Wave Gear AZ/EQ GoTo Mount
Models: HAE29C/EC,HAE43C/EC and HAE69C/EC

PACKAGE CONTENTS[1]

- Dual strain wave gear altazi/equatorial mount with USB connection
- High precision optical encoder on RA axle (for EC version)
- AC adapter – 100-240V, 12V 6A DC output for mount (for indoor use only)
- Carrying case

OPTIONAL PARTS (not included)

- #8411 handset with OLED display
- iPolar™ electronics polar scope (#3339)
- Tripod/tri-pier
- External iGuider for autoguiding (#3360)
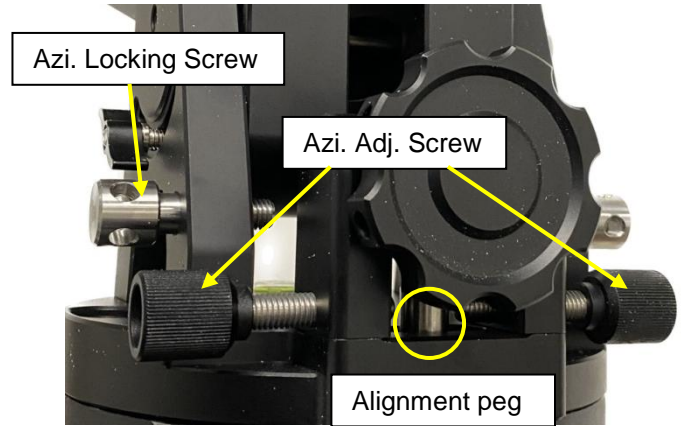- Counterweight shaft (#P-SGP-CWS) and counterweight (#3006-10)

ONLINE RESOURCES (www.iOptron.com)

- User's Manual
- Mount and handset firmware upgrades (check online for the latest version)
- Computer control

---

[1]Contents and design may change from time to time without notice. An HAE69 mount is used here for illustration.

HAE is operated under unbalanced condition and could be tipped off if tripod is not secured.

1. **Remove mount head from package**.

2. **Set up tripod**: An HAE69C, as shown here, has a 150mm base. An optional LiteRoc tripod #8023ACC or a tri-pier #8034 may be used. Setup and level the tripod. Adjust the tripod height. Tighten tripod locking knob to secure the tripod. Remove the **Alignment Peg** from the mount base and thread it onto the tripod head, on top of a tripod leg or between two legs depending on the latitude. Use two outside threaded holes to secure the mount head.
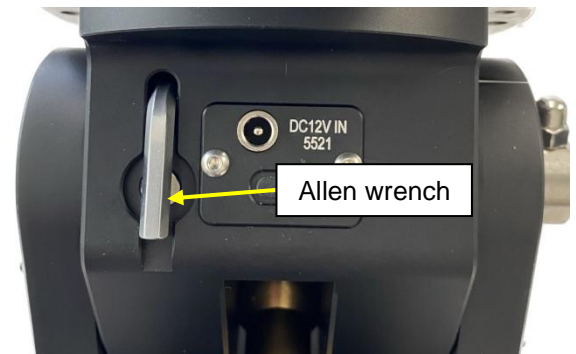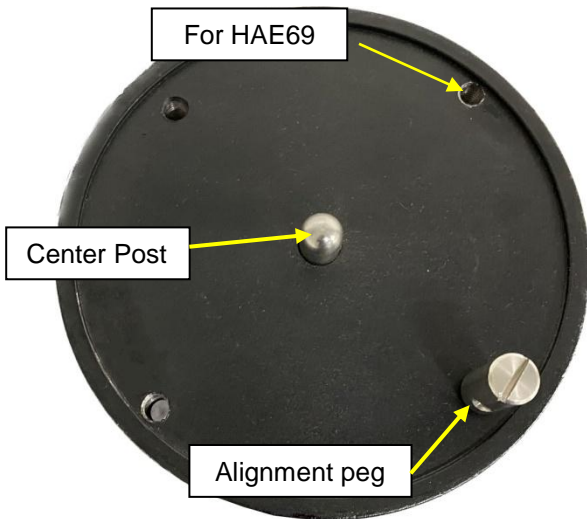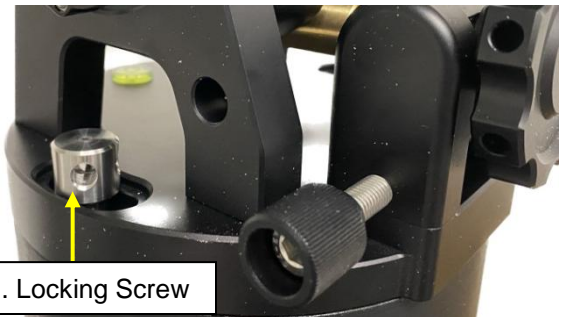
3. **Attach mount head:** Retract the 2X Azimuth (Azi) Adjustment Screws from both sides to leave ample space for the alignment peg to be fitted in between the 2X Azi Adjustment Screws.


Remove Azi Locking Screws from the mount altitude arm. Secure the mount head by tightening the Azi Locking Screws into the M8 holes on the tripod. There is an Allen wrench stored on the mount base for tightening the screws.

Level the mount by adjusting the tripod legs. Use the built-in Bubble Level Indicator on the mount base or an external leveler for this purpose.

4. **Adjust latitude:** The HAE69 has three latitude range settings: 0°~34°, 28°~62° and 56°~90°. To adjust the latitude, loosen both the Primary and Auxiliary Alt. Locking Lever on the RA base. *An HAE29C or HAE43C does not have the auxiliary locking lever.*

Alt. Adj. Knob

Auxiliary Alt. Lock. Lever

Lat. Mark

Primary Alt.. Lock. Lever
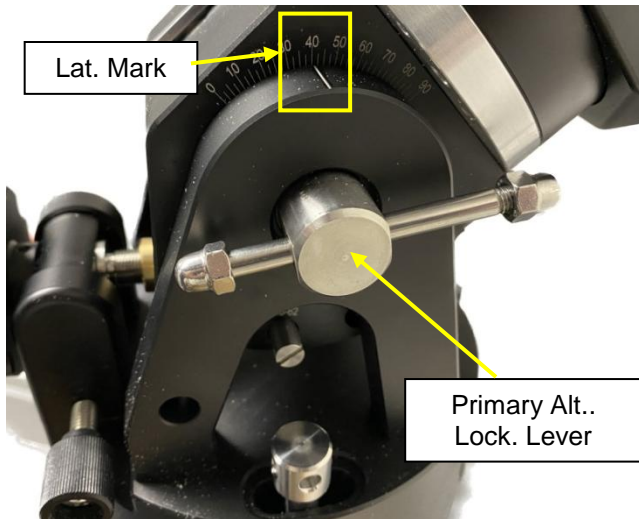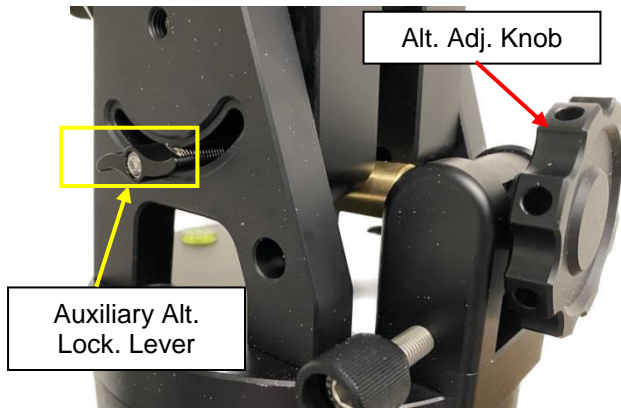
Use the Altitude Adjustment Knob to move the mount to the desired latitude by aligning the scale to the Latitude Mark Line. Tighten both Primary and Auxiliary Locking Lever.

There are holes on the Altitude Adjustment Knob. An Allen wrench may be inserted for increased adjustment torque, if needed.

To use the mount near the equator, change the latitude range settings to 0°~34°. To use the mount at

AA mode, change the range to 56°~90°. Please refer to on-line instruction for detailed procedures.

5. **Install telescope**: An HAE69C is equipped with a Vixen/Losmandy-D dual dovetail saddle. It accepts a Vixen or a Losmandy-D dovetail mounting bar.

6. **Install counterweight bar and CW:** The mount is designed to operate without a counterweight (CW). If you want to use an optional CW, the CW shaft mounting hole is 3/8"-16 threaded. Thread in a CW shaft and install a 10 lbs CW.

7. **Connect DC power and handset:** Plug in a 12V DC power supply to the **DC12V IN** socket on the base.
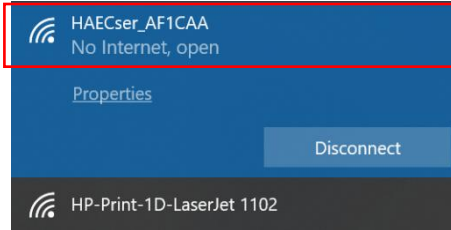

If you have an optional Go2Nova® 8411 handset, plug it into the **HBX** port on the mount.
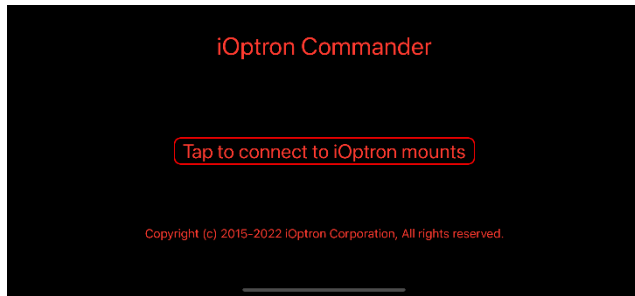
8. **Mount control via a SmartPhone/Tablet:** The mount can be controlled by the iOptron Commander Lite app for GOTO and tracking.
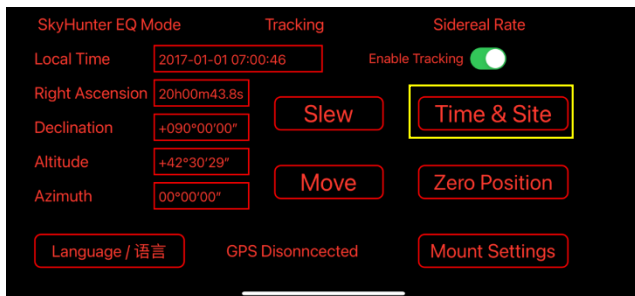
Turn the mount power on. Check your SmartPhone WIFI setting and connect to a WIFI device named HAECser_XXXXXX.
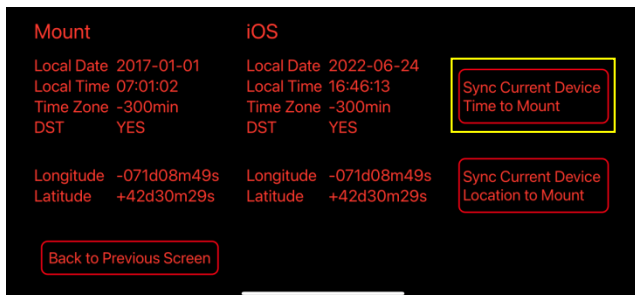

Launch iOptron Commander Lite and tap to connect the mount.

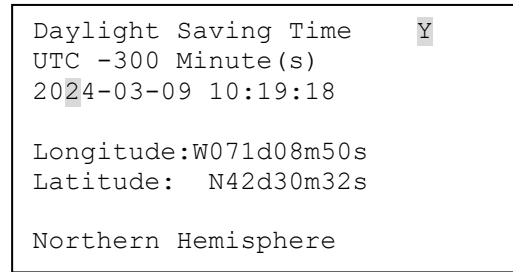Now you can control the mount via your phone/tablet.

Click on **Time & Site**, then pap on **Sync Current Device Time to Mount** and **Sync Current Device Location to Mount**. to set the mount Time and Site info.

Please refer to online full operation manual for more detailed information.

9. **Mount control via an 8411 handset:** An HAE mount uses an optional 8411 handset. Press **MENU** button, then **Settings** =>**Set Time and Site** to set the hand controller.

```
Daylight Saving Time    Y
UTC -300 Minute(s)
2024-03-09 10:19:18

Longitude:W071d08m50s
Latitude:  N42d30m32s

Northern Hemisphere
```

Enter the current date. Enter the time zone offset to the UTC; for example:
- Boston is "UTC -300 minutes"
- Los Angeles is "UTC -480 minutes"
- Rome is "UTC +060 minutes"
- Sydney is "UTC +600 minutes"

Enter longitude and latitude coordinates according to your GPS information. Toggle the Daylight Savings Time (DST) between N(No) and Y(Yes) using the arrow key. Move the cursor to the end of the screen to select the Northern or Southern Hemisphere.

[TIPS: All time zones in N. America are "UTC -XXX minutes". Latitude and longitude coordinates can be obtained from GPS-equipped devices (navigator, phone), or from the internet, if you are entering them manually.   "W/E" = western/eastern hemisphere; "N/S" = northern/southern hemisphere; and "d" = degree; "m" = minute; and "s" = second. Use arrow and number keys to enter location information.]

10. **Mount control via a computer:** One can control the HAE69C mount via one of two USB-C ports on the mount, one is on the dovetail saddle and the other on the base. It can also be connected via the mount via a built-in WIFI. It supports ASCOM for Windows, third party INDI driver for MacOS or Raspberry PI, iOptron Commander Lite or SkySafari Pro for iOS/Android. Some software also has an iOptron mount driver embedded.

11. **Zero Position:** The **Zero Position** is the mount GOTO reference. Without setting the mount zero position properly, it may cause a large GOTO error or even cause the scope to hit the tripod leg. The simplest way to find the mount Zero Position of the EQ mode is using the zero position sensors. You may perform this by click on **Zero Position =>Search Zero Position**, then press **ENTER.** Follow the online instruction to

complete the process. The Zero Position can be set via 1n 8411 handset, the iOptron Commander, or via a planetarium software.

Check the online manual for AA mode Zero Position.

12. **Polar alignment:** When an HAE mount operating at EQ mode, if no iPolar is installed or the pole star is not in sight, you may use two bright stars for coarse polar alignment if you have the optional handset.

You may also use planetarium software for polar alignment.

An HAE mount may use an external iPolar^{TM} electronic polar scope. Just place the iPolar over the bubble level on top of the mount and secure the thumb screws.

Make sure that the arrow key is facing upward:

Refer to the iPolar Operation Manual from iOptron's website to perform the polar alignment, or steps briefly outlined below:

- Download and install iPolar Software (first time use);
- Connect a USB cable between the iPolar USB port and a computer USB port;
- Click Connect and start polar alignment by following on screen instructions.

13. **Manual operation:** Now **t**he mount can be used to observe astronomical objects. Use the arrow buttons (►,◄,▼, and▲) form your handset, Commander Lite, Commander or a software to point the telescope to the desired object. Use the number keys to change the slewing speed. Press the **0** button on handset, or click on the Tracking box in Commander to start/stop tracking.

14. **Go to an object:** The mount is now ready for GOTO and tracking targets. Press **MENU** on the handset, select and ENTER **Select and Slew**. Select a category (e.g., **Solar System**), then select an object of interest (e.g., **Mars**). Press **ENTER** and the telescope will slew to the object and automatically start tracking. You may also using iOptron Commander or planetarium software to perform GOTO function.

15. **Sync to Target:** If the object is not in the center of the eyepiece, use this function to synchronize the object to improve GOTO accuracy.

16. **Put the mount back into the package/carrying case:** It is recommended to return the mount to Zero Position at the end of the observing session. Thread the dovetail saddle locking screws all the way in. You may need to adjust the latitude a little bit to fit the mount into the carrying case.

Use support@ioptron.com for technical supports.

Rev. 2.0 April 2024

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. Contact iOptron at support@ioptron.com 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.

This warranty is automatically void if it is sold as an open box, used, auction, or discount over 20%; unless specified by iOptron.

IOPTRON DISCLAIMS ANY WARRANTIES, EXPRESS OR IMPLIED, WHETHER OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR USE, EXCEPT AS EXPRESSLY SET FORTH HERE. THE SOLE OBLIGATION OF IOPTRON UNDER THIS LIMITED WARRANTY SHALL BE TO REPAIR OR REPLACE THE COVERED PRODUCT, IN ACCORDANCE WITH THE TERMS SET FORTH HERE. IOPTRON EXPRESSLY DISCLAIMS ANY LOST PROFITS, GENERAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM BREACH OF ANY WARRANTY, OR ARISING OUT OF THE USE OR INABILITY TO USE ANY IOPTRON PRODUCT. ANY WARRANTIES WHICH ARE IMPLIED AND WHICH CANNOT BE DISCLAIMED SHALL BE LIMITED IN DURATION TO A TERM OF TWO YEARS FROM THE DATE OF ORIGINAL RETAIL PURCHASE.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you.

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:

iOptron Corporation
Customer Service Department
6F Gill Street
Woburn, MA01801
www.ioptron.com
support@ioptron.com

NOTE: This warranty is valid to U.S.A. and Canadian customers who have purchased this product from an authorized iOptron dealer in the U.S.A. or Canada or directly from iOptron. Warranty outside the U.S.A. and Canada is valid only to customers whopurchased from an iOptron Distributor or Authorized iOptron Dealer in the specific country. Please contact them for any warranty.