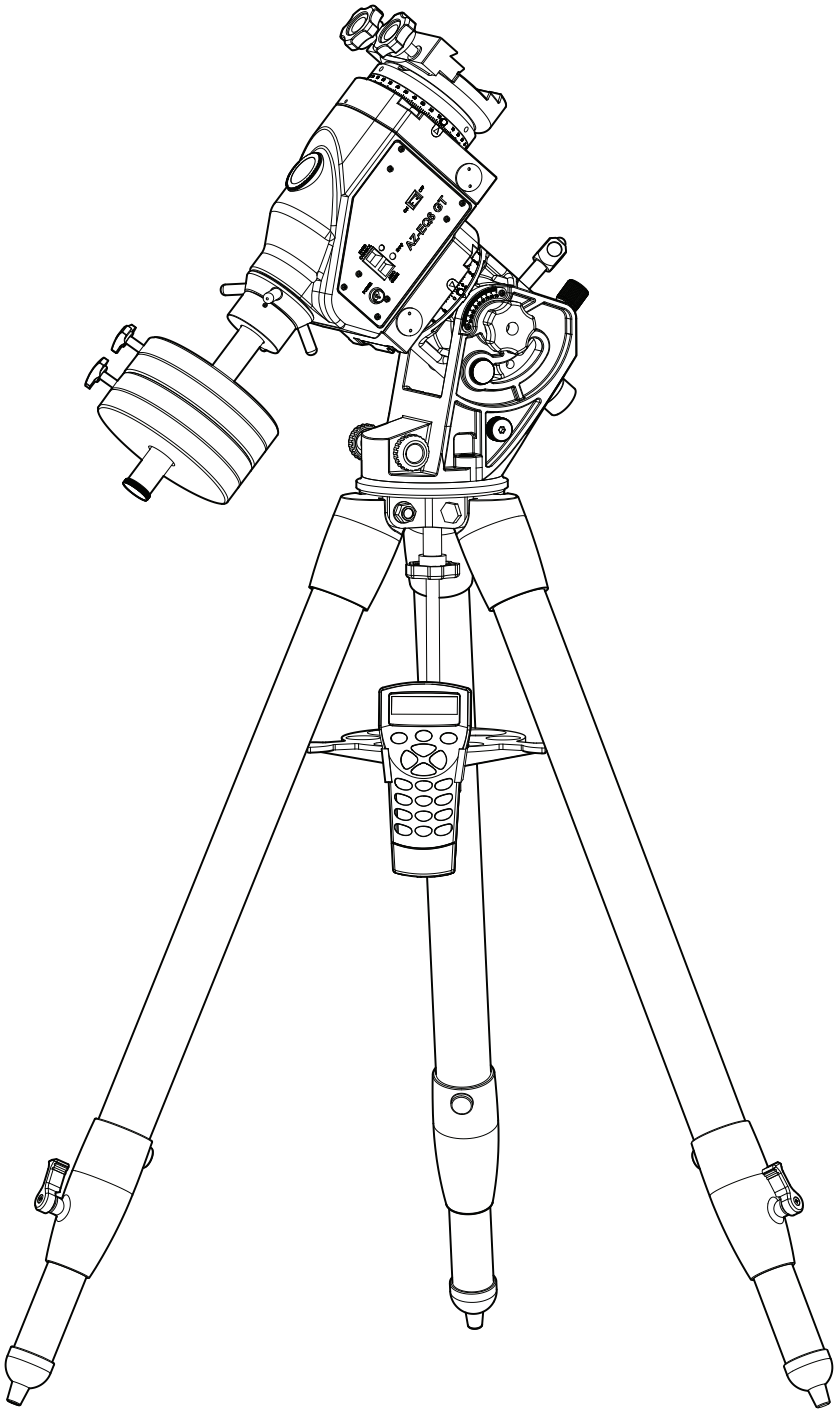
INSTRUCTION MANUAL

AZ-EQ6 GT Mount



310113V1

Copyright © Sky-Watcher

CONTENT

PART I : SETTING UP THE AZ-EQ6 GT MOUNT

1.1 Setting Up the Tripod 3
1.2 Putting on the AZ-EQ6 GT Mount 3
1.3 Attaching the Accessory Tray and the Hand Controller Holder 4
1.4 Installing the Counterweights 5
1.5 Installing the Telescope 5
1.6 Balancing the Mount 6

PART II : USING THE AZ-EQ6 GT MOUNT

2.1 Manually Rotating the Mount 7
2.2 Using the Dials 7
2.3 Adjusting the R.A. Axis's Elevation 8
2.4 Setting the AZ-EQ6 GT Mount to Alt-azimuth Mode 9
2.5 Installing a Secondary Telescope 10

PART III : POLAR ALIGNMENT

3.1 Preparation 12
3.2 Alignment 13
3.3 The Orientation of the Polaris 14
3.4 Align the Polar Scope 14

PART IV : ELECTRONIC CONTROL INTERFACE

4.1 Control Panel 16
4.2 Panel Interface Components 16
4.3 Pinout of the Interfaces 17
4.4 Power Supply Requirements 17

PART V : OTHER AZ-EQ6 GT MOUNT FEATURES

5.1 Auxiliary Encoder Function 18
5.2 Permanent Periodic Error Correction 18
5.3 Batch Exposures Function 18

APPENDIX I : SPECIFICATIONS

Dimensions 19
Specifications 19

Note: The ① ② ③ signs on the diagrams are *not* related to the Chapter Steps 1. 2. 3.

PART I : SETTING UP THE AZ-EQ6 GT MOUNT

1.1 Setting Up the Tripod

1. Fully expand the tripod legs on level ground.
2. Locate the locking clamps on the legs and turn counter-clockwise to unlock them to extend the tripod legs.
3. Extend the legs to desired height, make sure the tripod top is level and then lock the clamps.

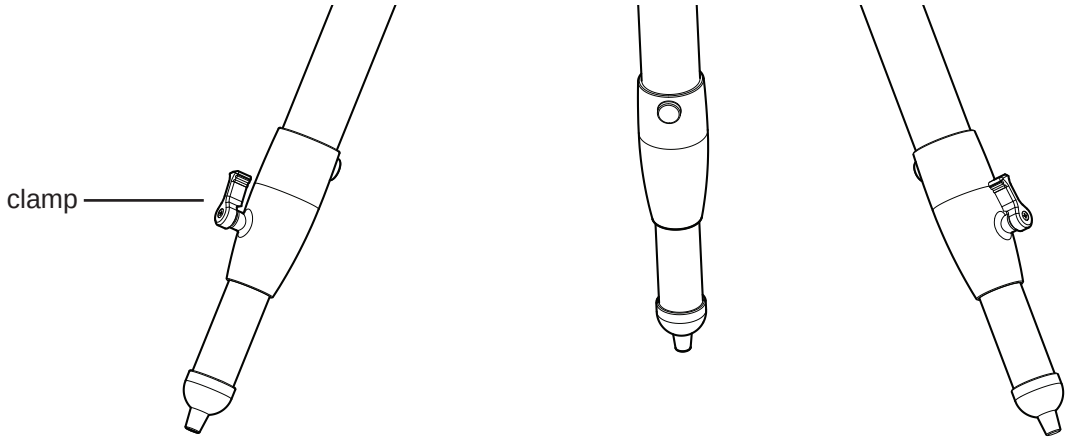
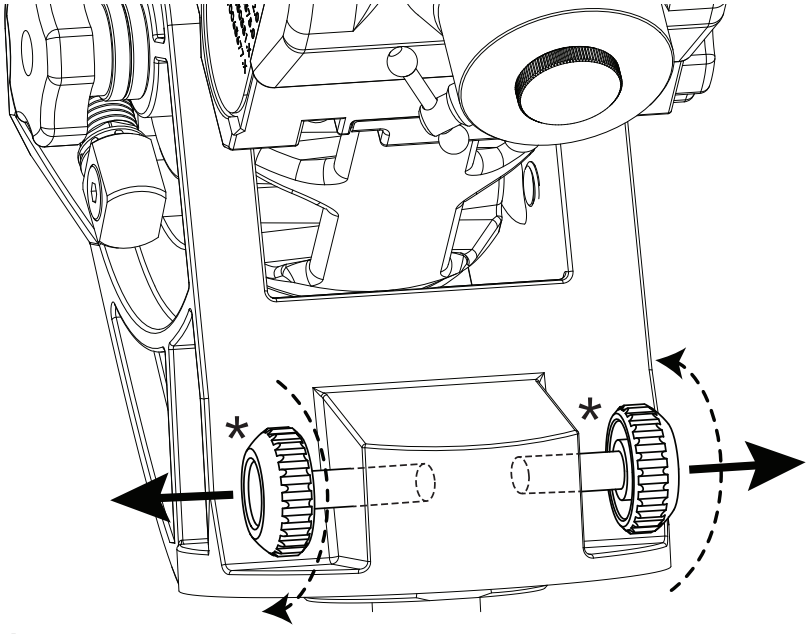


Fig. 1.1

1.2 Putting On the AZ-EQ6 GT Mount

1. Loosen the two azimuth adjustment knobs on the AZ-EQ6 GT mount until there is sufficient space between the two knob screws. (Fig. 1.2a)



* Azimuth Adjustment Knobs

Fig. 1.2a

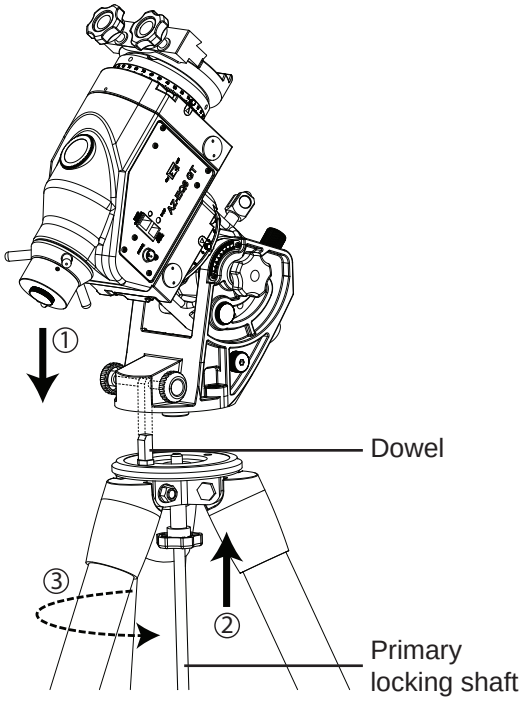


Fig. 1.2b

2. Align the metal dowel on the tripod top with the gap between the two azimuth adjustment knobs; then put the mount on the tripod top. (Fig. 1.2b)
3. Once the mount is seated, slightly tighten the two azimuth adjustment knobs.
4. While supporting the mount with one hand, gently push the primary locking shaft up against the underside of the mount and turn the shaft counter-clockwise to secure the mount to the tripod top. Tighten the shaft with the knurled knob on the primary locking shaft. (Fig. 1.2b)

1.3 Attaching the Accessory Tray and the Hand Controller Holder

1. Slide the accessory tray along the primary locking shaft until its three tips push against the tripod legs, and then secure the tray with the washer and the locking knob. (Fig. 1.3a)
2. By referring to the bubble leveler on the mount, level the mount by adjusting the length of the tripod legs. (Fig. 1.3b)
3. Insert the hand controller holder into the U-shaped opening on the accessory tray. (Fig. 1.3b)

Warning: The accessory tray will ensure the tripod legs remain firmly expanded, which will prevent the tripod from accidentally toppling over. When using the AZ-EQ6 GT mount, an accessory tray should always be used to ensure stability.

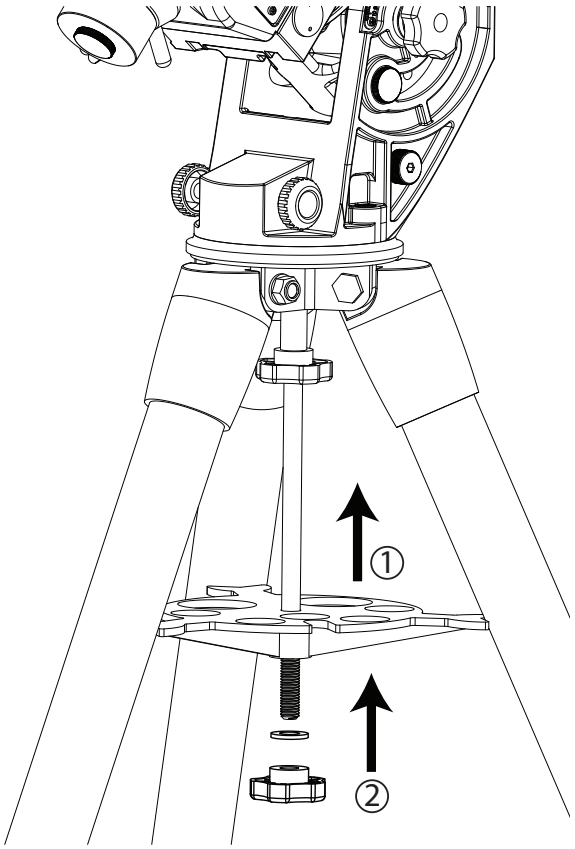


Fig. 1.3a

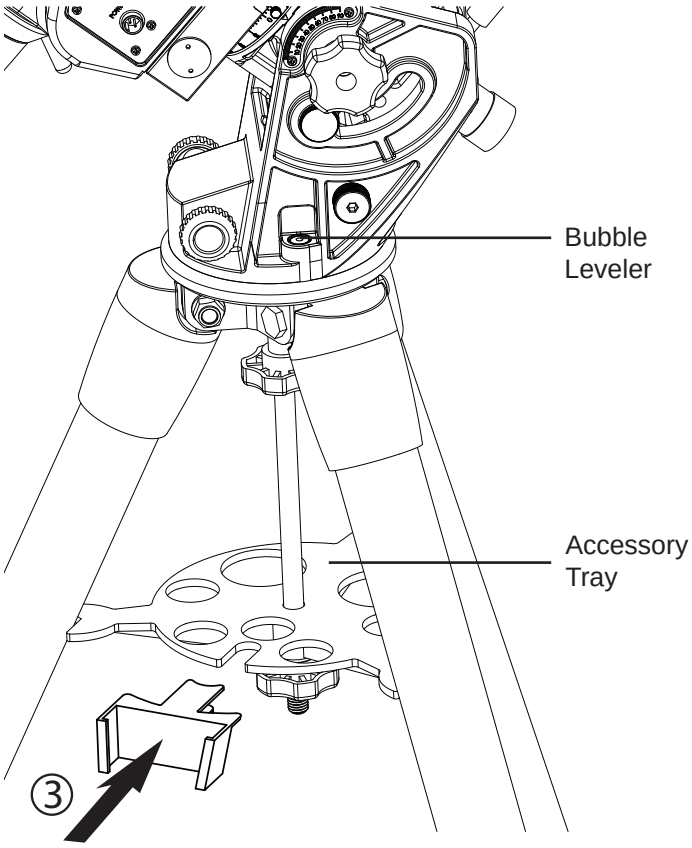


Fig. 1.3b

1.4 Installing the Counterweights

1. Loosen the T-bolt for locking the counterweight rod and gently pull out the counterweight rod. Re-tighten the T-bolt to secure the counterweight rod in place. (Fig. 1.4a)
2. Loosen the R.A. Clutch with the handle, and rotate the R.A. Axis until the counterweight rod is pointing towards the ground. (Fig. 1.4b)
3. Remove the threaded cap from the end of the counterweight rod.
4. The AZ-EQ6 GT mount comes with a 150mm counterweight rod extension, which can be installed at this point if necessary. Ensure the extension is tightly secured before installing counterweights. (Fig. 1.4c)
5. Loosen the counterweight's thumb screw and slide the counterweight onto the counterweight rod. Re-tighten the thumb screw to secure the counterweight on the rod.
6. Replace the cap to the end of the counterweight rod.

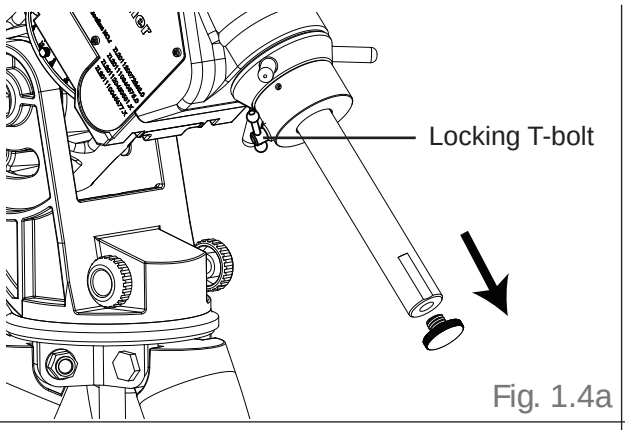


Fig. 1.4a

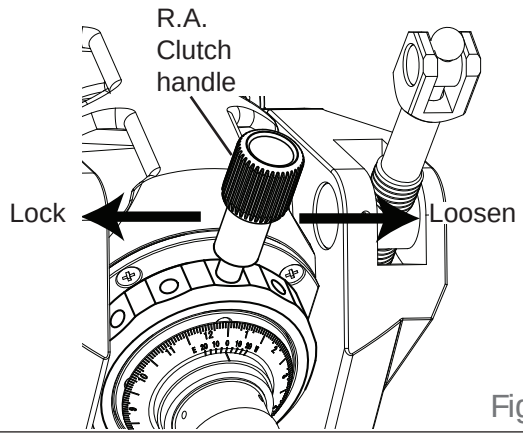


Fig. 1.4b

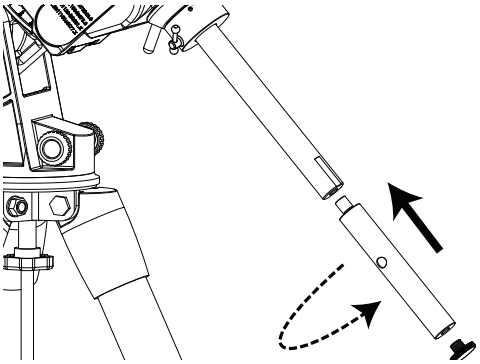


Fig. 1.4c

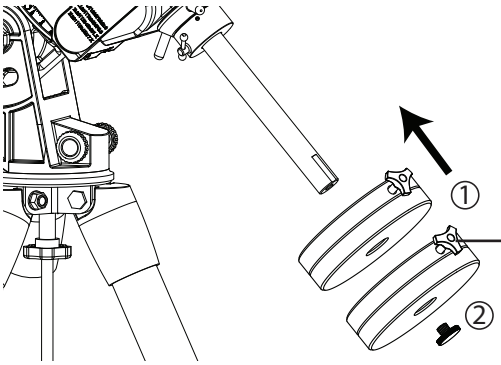


Fig. 1.4d

1.5 Installing the Telescope

1. Before installing a telescope, ensure:
   - The counterweight rod is pointing towards the ground.
   - All counterweights have been moved to the end of the counterweight rod.
   - The R.A. Axis is secured by tightening the R.A. Clutch.

2. Release the Dec. clutch wheel and rotate the Dec. axis until the two knobs on the dual-fit saddle are facing upward and the dovetail groove is leveled. Tighten the Dec. clutch again.

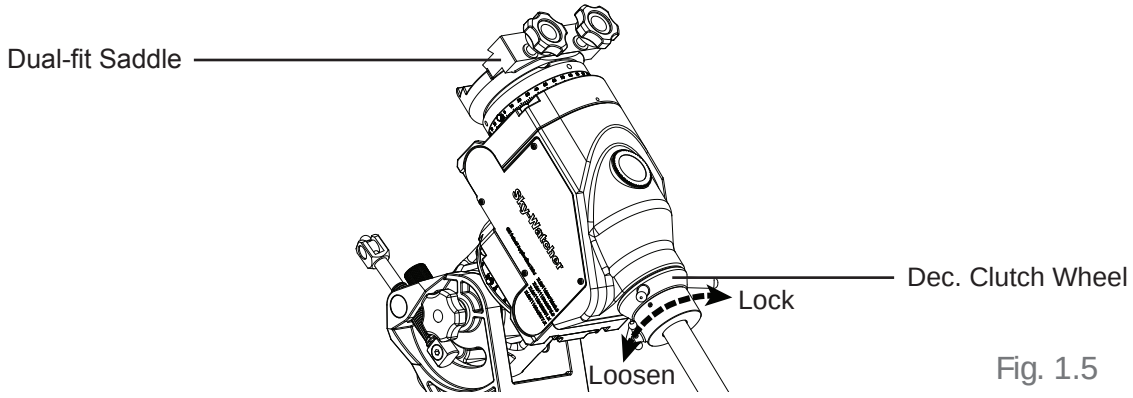


Fig. 1.5

3. Loosen the two knobs on the saddle until the width of one of the dovetail grooves is slightly wider than the width of the dovetail bar on the telescope.
4. While holding the telescope horizontally, seat or slide the dovetail bar of the telescope to the proper groove of the saddle. The lower groove is for a 45mm width dovetail bar and the upper groove is for a 75mm one.
5. Tighten the two knobs to secure the dovetail bar in the groove.

Warning: Keep supporting the telescope until you are sure that it has been firmly attached to the saddle.

1.6 Balancing the Mount

Once the counterweight, telescope, and accessories tray have been installed, the mount should be balanced to reduce stress on the motor drive system, as well as to ensure smooth and accurate operation.

1. Loosen the R.A. Clutch and rotate the R.A. Axis until the counterweight rod is parallel to the ground. Tighten the R.A. Clutch.
2. Loosen the Dec. clutch and rotate the Dec. axis until the telescope is parallel to the ground. Tighten the Dec. clutch.
3. Loosen the thumb screws on the counterweights.
4. Hold the counterweight rod with one hand, release the R.A. Clutch and adjust the counterweights along the rod until the mount is able to remain stationary without support. Tighten the thumb screws on the counterweights again.
5. Rotate the R.A. Axis; the mount should remain relatively balanced along different angles. Once this is confirmed, return the mount to its original position described in Step 1 and tighten the R.A. Clutch again.
6. Hold the telescope with one hand and release the Dec. clutch.
7. Slowly let go of the telescope and check for any rotational movements. If there is a movement, adjust telescope position with relation to the tube rings and saddle. The final position of the telescope should remain stationary without support.

PART II : USING THE AZ-EQ6 GT MOUNT

2.1 Manually Rotating the Mount

Refer to the following diagrams:

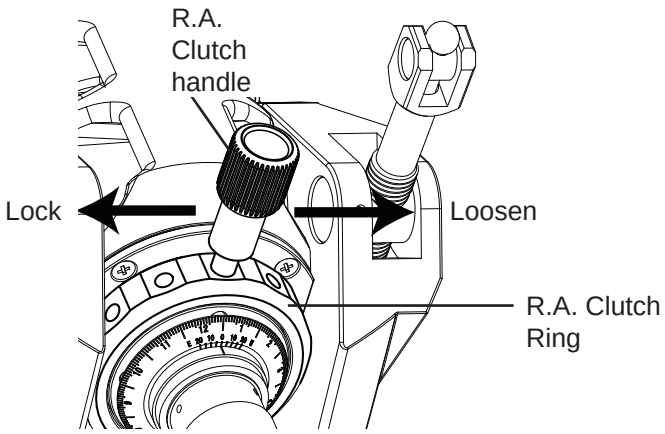


Fig. 2.1a

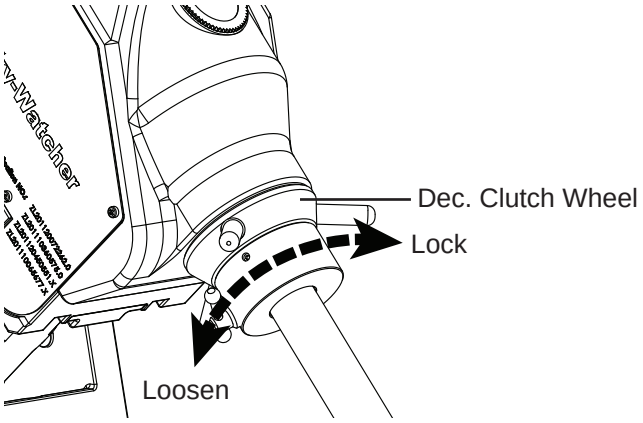


Fig. 2.1b

1. Release the R.A. Clutch to manually rotate the R.A. Axis. (Fig. 2.1a)
2. The R.A. Clutch handle can be removed and re-positioned on the clutch ring for adjustment of the tightening strength. (Fig. 2.1a)
3. Release the Dec. clutch wheel to manually rotate the Dec. axis. (Fig. 2.1b)
4. Both the R.A. Clutch and the Dec. clutch should be tightened when driving the mount with the internal motors.

2.2 Using the Dials

As displayed below, the AZ-EQ6 GT mount features a R.A dial and a Dec. dial.

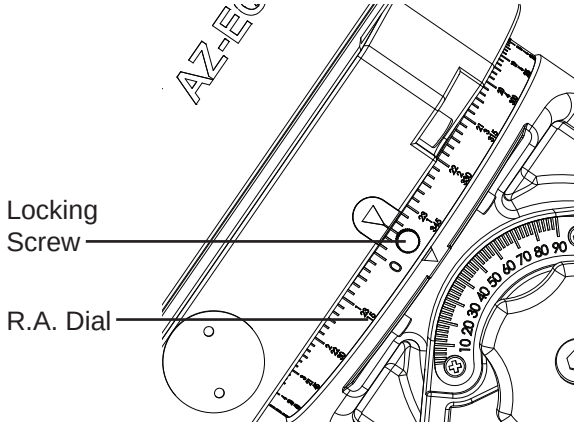


Fig. 2.2a

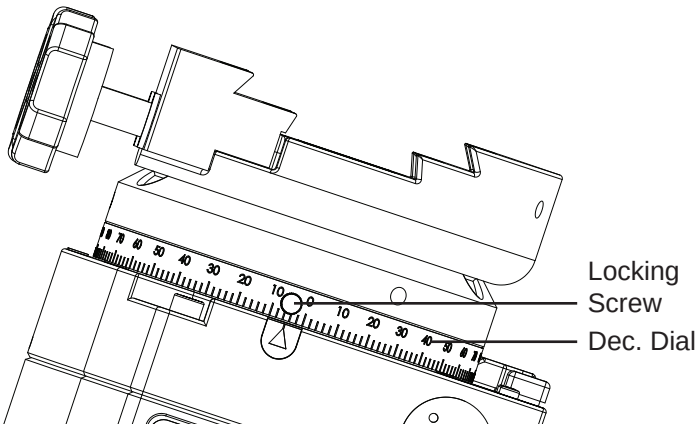


Fig. 2.2b

1. Before using the dials, they need to be calibrated: Point the telescope towards a known coordinate (R.A.-Dec. coordinates or azimuth-altitude coordinates). Loosen the two locking screws on the dials to turn and let the dials read the known coordinates, then tighten the locking screws again.

2. Once the dials are calibrated, the mount can either be motor-driven or moved manually to specified coordinates by referring to the dial readings.
3. The R.A. dial features three different scales: the upper scale is used to indicate the right ascension in Equatorial mode when mount is operating in the Southern Hemisphere; the middle scale is used to indicate the right ascension in Equatorial mode when operating in the Northern Hemisphere; the lower scale is used to indicate the azimuth angle when operating in Alt-azimuth mode.
4. The Dec. dial is divided into four quadrants of 90-degree scales, used to indicate the declination (when mount is operating in Equatorial mode) or altitude angle (when operating in Alt-azimuth mode). Users should use the proper segment when calibrating the Dec. dial.

2.3 Adjusting the R.A. Axis's Elevation

1. Loosen the two fork tightening knobs located on the sidewalls of the mount. (Fig. 2.3a)

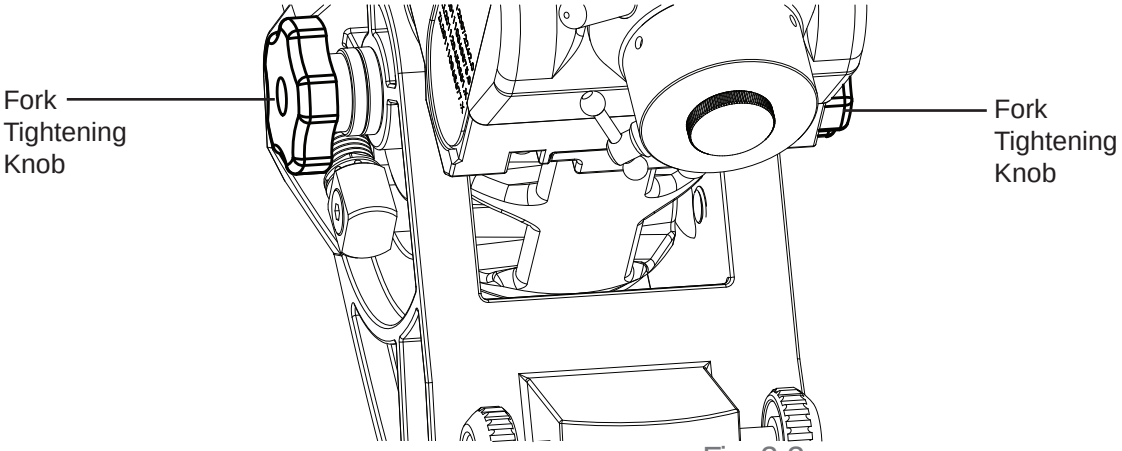


Fig. 2.3a

2. Pull out the handle stowed in the latitude jack screw (Fig. 2.3b), and use it to turn the jack screw to set the R.A. axis's elevation to a specified angle by referring to the latitude scale on the left side of the mount. (Fig.2.3c)

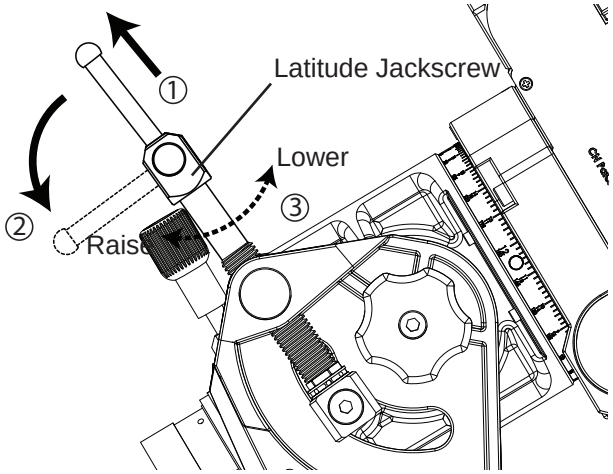


Fig. 2.3b

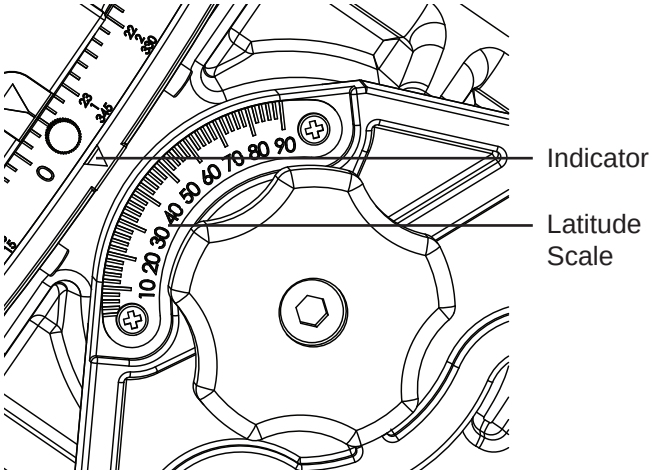


Fig. 2.3c

3. Stow the handle into the jack screw after the adjustment. (Fig. 2.3b)
4. Engage the two fork tightening knobs.

Note: It is normal to have slight elevation play on the AZ-EQ6 GT mount. The mount depends on the gravity of its payload and its own weight to stay firm. Because of this, it is recommended to end the elevation adjustment with an upwards movement. Whenever there is an upwards over-adjustment, lower the elevation first, and then jack the mount upwards again.

2.4 Setting the AZ-EQ6 GT Mount to Alt-azimuth Mode

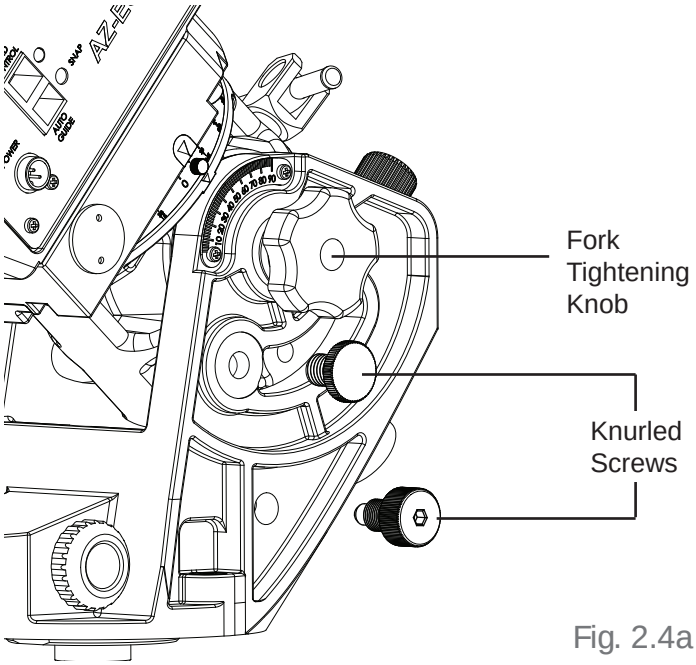


Fig. 2.4a

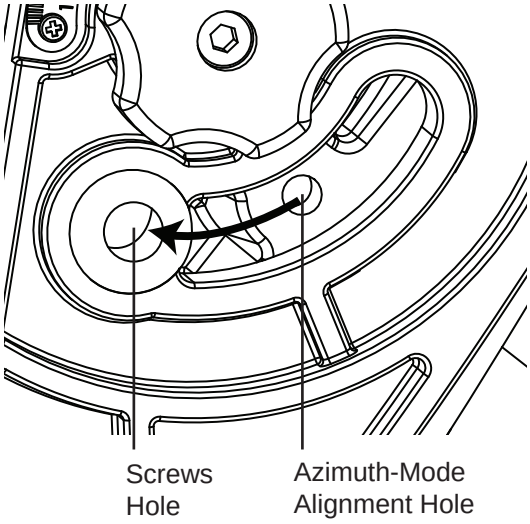


Fig. 2.4b

1. Loosen the two fork tightening knobs.
2. Remove the two knurled screws from the left sidewall of the mount; Put the shorter one into the lower screw hole, keep the longer one for later usage.
3. Jack up the R.A. axis's elevation until it reaches approximately 88 degrees and the jackscrew will disengage entirely. Lift the counterweight rod to align the azimuth-mode alignment hole with the upper screw hole on the left sidewall (Fig. 2.4b). Use the longer knurled screw to connect these two holes and tighten it with a 5mm Allen wrench.
4. Engage the two fork tightening knobs.
5. To restore the mount to Equatorial mode, loosen the two fork tightening knobs first, then remove and exchange the two knurled screws on the left sidewall of the mount. While holding the counterweight rod, slowly lower the R.A. axis's elevation until the latitude jackscrew starts to engage. Spin the jackscrew counterclockwise with the handle to lower the elevation to the desired angle.

Note:

- When setting the mount to Equatorial mode, the longer knurled screw on the left sidewall of the mount must be moved to the lower threaded hole on the left sidewall. Do not put it in the upper threaded hole; otherwise, the mount may be damaged when jacking up the R.A. axis.
- The telescope should be mounted in a way so that it is on the right-hand side of the mount when it points forward.
- When switching between Alt-azimuth/Equatorial modes, be sure to remove all counterweights and telescope from the mount first to avoid damage to the Mount's latitude adjustment mechanisms.
- It may be more difficult to balance the R.A. (or Azimuth) axis in Alt-azimuth mode. Here are the balancing steps recommended for Alt-azimuth mode:
  - » **Balance** the payload and counterweights in equatorial mode and mark the position of the counterweights.
  - » **Unload** the payload and counterweights to set the mount in Alt-Azimuth mode.
  - » **Re-load** the mount again by installing the counterweight at the marked position.

2.5 Installing a Secondary Telescope

A secondary telescope saddle can be installed at the end of the AZ-EQ6 GT mount's counterweight rod for the mounting of a secondary telescope.

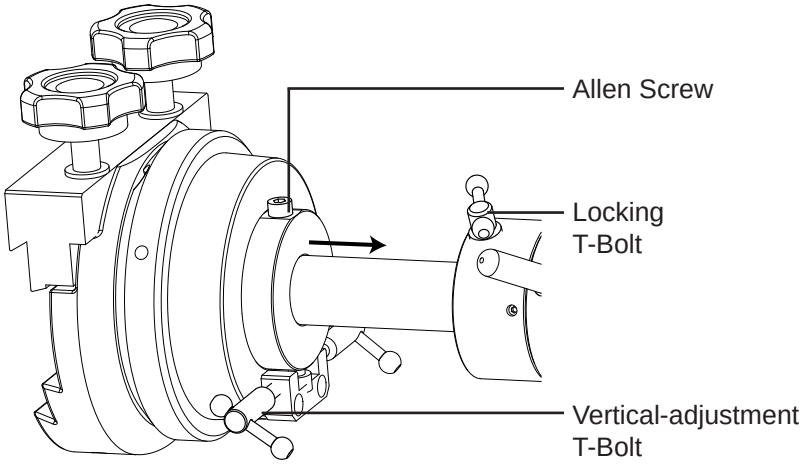


Fig. 2.5a

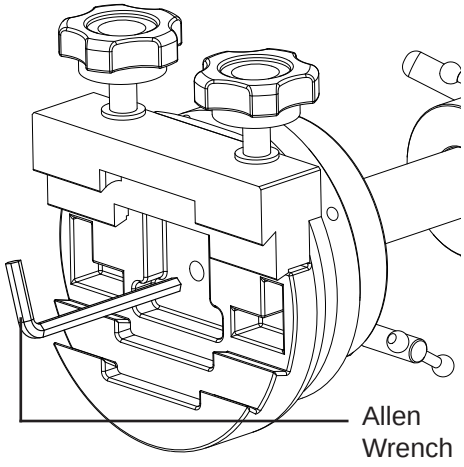


Fig. 2.5b

1. Slide the counterweight rod out and rotate it so the flat cutting surface at the end of the rod is facing up, then lock the rod with the T-bolt.
2. Loosen the Allen screw on the saddle's silver ring and push the saddle onto the counterweight rod, as shown in Fig. 2.5a. Align the Allen screw to the flat surface on the counterweight rod.

3. Use a 5mm Allen wrench to secure the saddle to the counterweight rod with the Allen screw in the central hole of the saddle (Fig. 2.5b). Also tighten the Allen screw on the silver ring with the same wrench.
4. Tighten the Dec. clutch, and then install the secondary telescope on the secondary saddle. The secondary telescope and its saddle should be situated to the left of the mount when the telescope points forward.
5. Loosen the counterweight rod's locking T-bolt to test the balance of the secondary telescope. Adjust the positioning of the telescope in its tube rings or the dovetail bar's position in the groove of the saddle until the telescope is balanced. Tighten the T-bolt again.
6. Loosen the Dec. clutch to test and balance the telescope mounted on the primary saddle. Then tighten the Dec. clutch again.
7. Loosen the counterweight rod's locking T-bolt and rotate the secondary telescope vertically until it points in the same direction as the main telescope. Lock the T-bolt again.
8. Aim the main telescope at a distant object, and then adjust the two T-bolts on the secondary saddle to point the secondary telescope to the same horizontal level of the distant object.

Note:

- It is recommended to use the secondary saddle only when the EQ6 GT mount is configured in Alt-azimuth mode.
- There is no mechanism on both the primary saddle and the secondary saddle for aligning the two telescopes in azimuth direction. User has to find a proper way to eliminate the azimuth deviation.
- The 150mm counterweight rod's extension cannot be used with the secondary saddle.

PART III : POLAR ALIGNMENT

Prior to operating the AZ-EQ6 GT in Equatorial mode, it must be polar-aligned.

3.1 Preparation

1. Setup the EQ6 GT mount (*Refer to* **PART I : SETTING UP THE AZ-EQ6 GT MOUNT**). It is recommended to load the mount with the telescope and counterweights prior to polar alignment.
2. Point the polar scope to the direction of the North Pole (For Northern Hemisphere observing) or South Pole (For Southern Hemisphere observing). Set the R.A. axis's elevation to the local latitude (*Refer to* **2.3 Adjusting the R.A. Axis's Elevation**)
3. Remove the polar scope cap on the mount, loosen the Dec. clutch, and rotate the Dec. axis to allow the hole on the Dec. shaft to fully open for the polar scope and then lock the Dec. clutch again. (Fig. 3.1a & Fig. 3.1b)

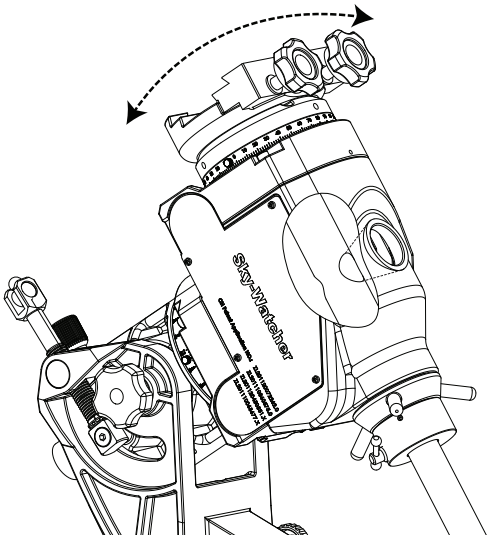


Fig. 3.1a

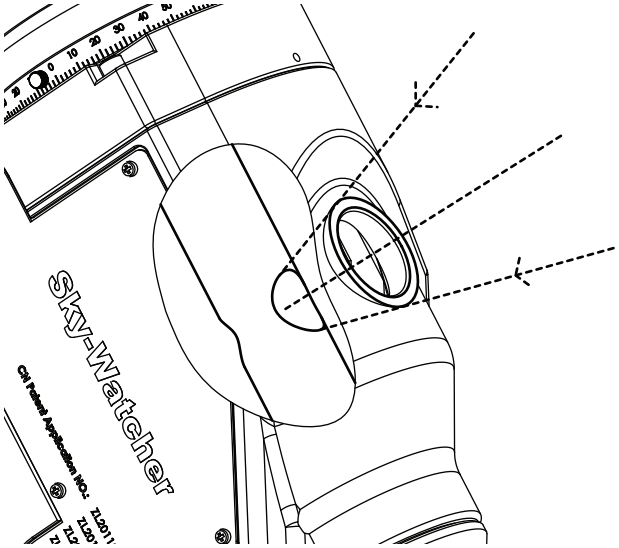


Fig. 3.1b

4. Verify whether the polar scope is aligned with the R.A. Axis. (*Refer to* **3.4 Align the Polar Scope**).
5. Turn on the power on the mount to illuminate the polar scope.
6. Find the orientation of Polaris in the Polar Scope. (*Refer to* **3.3 The Orientation of the Polaris**).

3.2 Alignment

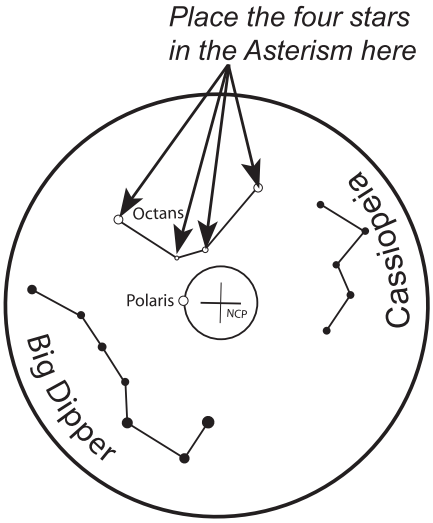


Fig. 3.2a

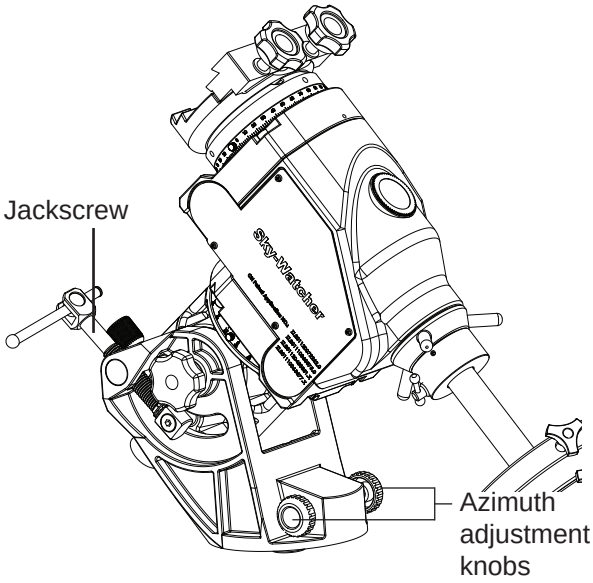


Fig. 3.2b

Once the mount is powered up and the polar scope is illuminated, the pattern in the above figure (Fig. 3.2a) should be visible in the field of view (FOV) of the polar scope. If the image appears blurred, rotate the knurled ring of the polar scope's eyepiece to focus.

1. **For observing in Northern Hemisphere:** Find the Polaris (The brightest star near the North Celestial Pole) in the polar scope; then use the jackscrew and the two azimuth adjustment knobs to move the Polaris to the proper position in the FOV of the polar scope. (*Refer to the upcoming section* "The Orientation of Polaris in Polar Scope").

2. **For observing in Southern Hemisphere:** In the FOV of the polar scope, locate the 4 dim stars (Around Magnitude 5 to 6) which form the pattern like the "Octans" drawing in the polar scope (refer to Fig. 3.2a). Loosen the R.A. clutch and rotate the R.A. axis to align the orientation of the "Octans" drawing to the 4 stars. Then use the jack screw and the azimuth adjustment knobs to move the 4 stars to the 4 small circles of the "Octans" drawing.

3.3 The Orientation of the Polaris:

As the Polaris is not located exactly at the North Celestial Pole, we can see it orbits the North Celestial Pole in a polar scope. The large circle seen in the center of the pattern in Fig. 3.2a is a representation of the Polaris' orbit around the North Celestial Pole. When performing the polar alignment process, it is necessary to determine the orientation of the Polaris on the circle. We can use the following 3 methods to get the orientation:

1. Locate Ursa Major (Big Dipper) in the sky, or alternatively Cassiopeia. Loosen the R.A. clutch and rotate the mount in the R.A. axis until either the Big Dipper or Cassiopeia is aligned with their pattern in the FOV of the polar scope. Tighten the R.A. clutch again. At this point, the location of the small circle on the large central circle of the pattern represents the orientation of the Polaris in the polar scope. Put the Polaris to the center of the small circle to finish the polar alignment.

2. Locate both the Polaris and the Kochab in the sky near the North Celestial Pole. The direction from the Polaris to the Kochab can be used as proximity of the orientation of the Polaris in the polar scope. Put the Polaris to the same direction on the large central circle in the polar scope to finish the polar alignment.

3. At the end of the initialization of the SynScan hand control, after entering the proper local longitude, latitude, date, time, and daylight-saving time, the SynScan hand controller will display the message: "Polaris Position in P.Scope=HH:MM". Imagine the larger circle in Fig. 3.2a as a clock's face with 12:00 at the top, with the current time pointing to the "HH:MM". The orientation of the hour hand of the clock represents the orientation of the Polaris in the polar scope. Put the Polaris to the same orientation on the large circle to finish the polar alignment.

Out of the three methods above, the first two methods are somewhat less accurate, while the orientation given by the SynScan hand controller is the most accurate.

3.4 Align the Polar Scope

Before using the polar scope for polar alignment, the polar scope itself must be calibrated to ensure the pattern in the polar scope is aligned to the mount's R.A. axis. The following steps will outline how to calibrate the polar scope:

1. Choose a fixed object (the Polaris at night, or a faraway object in daytime); put the reticle in the FOV of the polar scope on the object by adjusting the two azimuth adjustment knobs and the latitude jack screw.
2. Rotate the mount in R.A. axis for half a turn. The R.A. dial can be used for an accurate rotation. Tighten the R.A. clutch after the rotation.

3. If the object remains at the center of the reticle in the polar scope after the rotation, then it means the polar scope has been aligned to the R.A. axis and no calibration is needed.
4. If the target deviated from the reticle, then use a 1.5mm Allen wrench to adjust the three small Allen screws on the polar scope (Fig. 3.4a) to eliminate the deviation to half. (Fig. 3.4b)
5. Repeat steps 1 to 4 a few times until the object keeps at the center of the reticle when rotating the mount in R.A. axis.

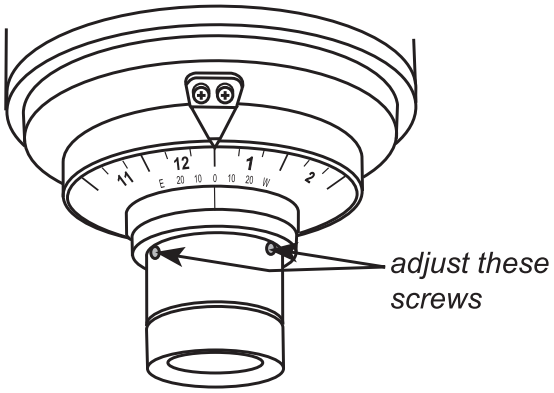


Fig. 3.4a

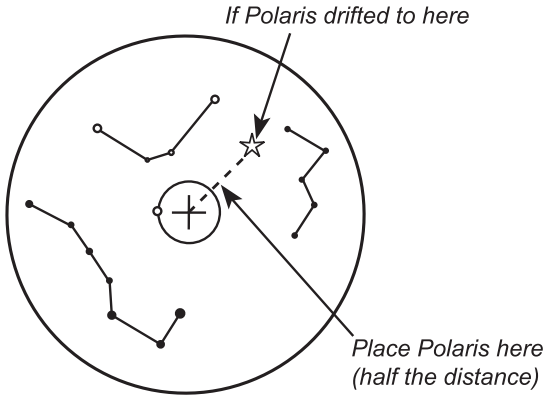


Fig. 3.4b

Note:

- When adjusting the Allen screws, loosen one screw only ¼ of a turn, and then tighten the other two.
- Do not over tighten the Allen screws; it might damage the pattern plate in the polar scope.
- Do not loosen one screw completely or loosen more than one screw at a time; otherwise, the pattern plate in the polar scope will be disengaged and further adjustment is impossible.
- If the pattern plate does disengage, remove the polar scope's eyepiece by turning the knurled ring counterclockwise and then engage the pattern plate again.

PART IV : ELECTRONIC CONTROL INTERFACE

4.1 Control Panel

The control panel of the AZ-EQ6 GT is shown below:

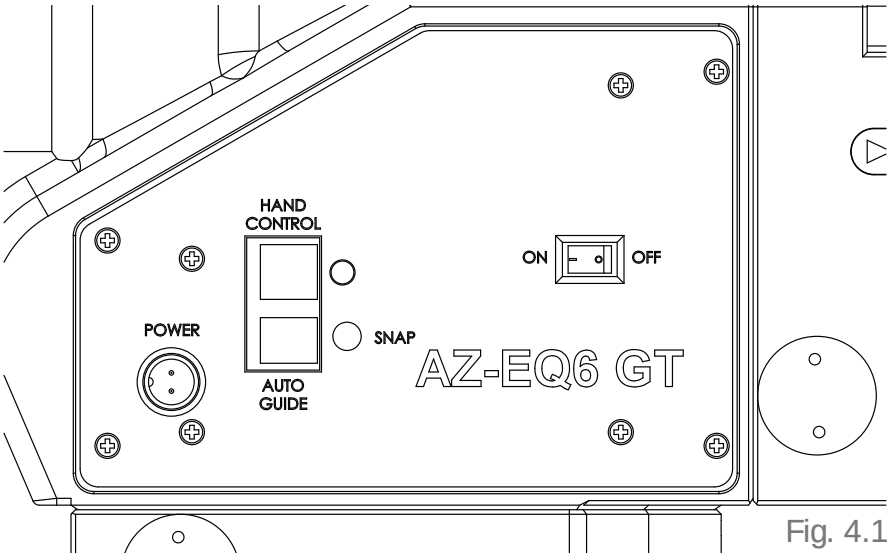
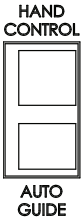


Fig. 4.1

4.2 Panel Interface Components:

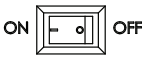
POWER: This is an outlet from which the mount and the hand control get power supply. To connect to a power supply, align the index on both the plug of the cord and the outlet on the panel, and then insert the plug to the outlet. Tighten the knurled cap on the plug to secure the plug on the panel.



HAND CONTROL: This RJ-45 8-pins outlet is for connecting the SynScan hand controller.

AUTO GUIDE: This RJ-12 6-pins outlet is for connecting an autoguider. It is compatible with any autoguider with a ST-4 type interface.

SNAP:This is a stereo outlet for connecting to a camera's shutter control port. The SynScan hand control can control a camera to take pictures automatically via this interface.



ON/OFF Switch: Turns on and off the power to the mount and hand controller.

Power LED: The power LED serves as a power-on indicator and provides other statuses.

1. Steady on: Power voltage is normal.
2. Slow flashing: Power voltage is low; continuing to operate the mount may damage the battery (if a 12V lead-acid battery is in use).
3. Fast flashing: Power voltage is extremely low; continuing to operate the mount may damage the battery and the motor controller in the mount.

4. Intermittent one flash: The PPEC training routine has been triggered, but the controller in the mount has not received the worm index signal and the correction-recoding has not started yet.
5. Intermittent two flashes: The PPEC training routine has been started and the controller in the mount has received the worm index signal and started to record the PE correction. When the intermittent two flashes stops, it means the PPEC training has finished.
6. Intermittent, three flashes: Sidereal tracking with PEC is now enabled.

4.3 Pinout of the Interfaces:

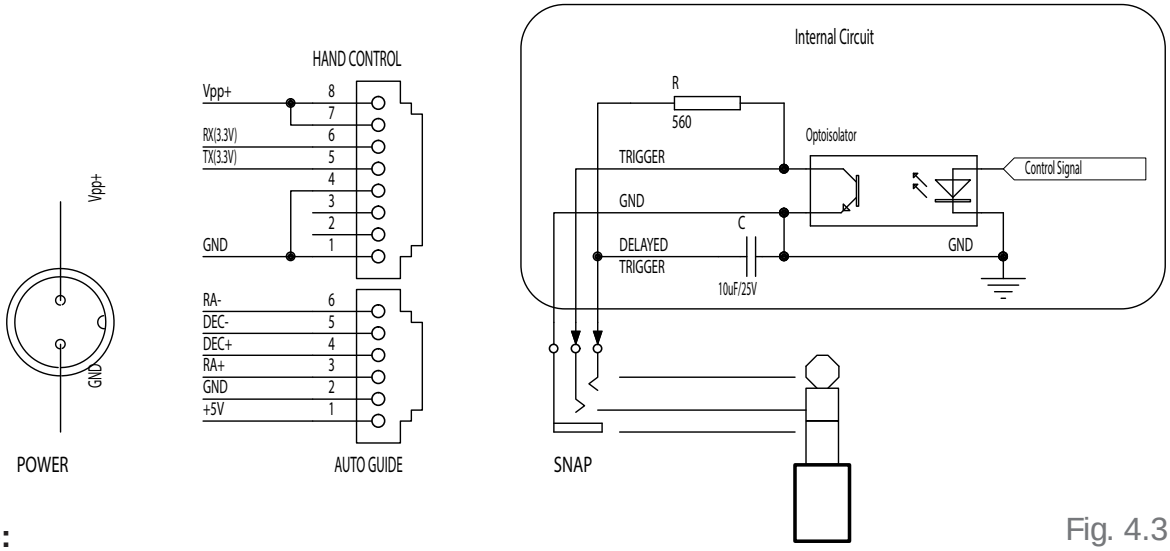


Fig. 4.3

Note:

- The SNAP port provides two trigger signals to the stereo plug. The signal to the head of the plug is issued slightly later than the signal to the ring of the plug.
- For a camera which only needs a shutter-release signal, either trigger signals will work. For a camera which requires a “Focus” signal ahead of the shutter-release signal, both signals should be connected properly.
- The camera control cable shipped with the AZ-EQ6 GT mount is for a Canon EOS series DSLR camera. Cable for other cameras is optional and can be ordered separately.

4.4 Power Supply Requirements

- Output Voltage: DC 11V (minimum) to DC 16V (maximum). Voltage not in this range might cause permanent damage to the motor controller or the hand controller.
- Output Current: 4A for power supply with 11V output voltage, 2.5A for power supply with 16V output voltage.
- Do not use an un-regulated AC-to-DC adapter. When choosing an AC adapter, it is recommended to use a switching power supply with 15V output voltage and at least 3A output current.
- If the power voltage is too low, the motor controller will stop the motors automatically.

PART V : OTHER AZ-EQ6 GT MOUNT FEATURES

5.1 Auxiliary Encoder Function

The AZ-EQ6 GT mount is equipped with auxiliary encoders on both the R.A. axis and Dec. axis. Therefore, the mount can keep tracking its current position even when a user unlocks the clutches and rotates the mount in R.A. axis and Dec. axis manually.

With this feature, a user can manually operate the mount anytime without worrying about losing the mount's alignment status. When the user wants to operate the mount with the SynScan hand control again, no alignment is required and all that is needed to be done is to re-lock the clutches.

This feature can be enabled or disabled on the SynScan hand controller.

5.2 Permanent Periodic Error Correction

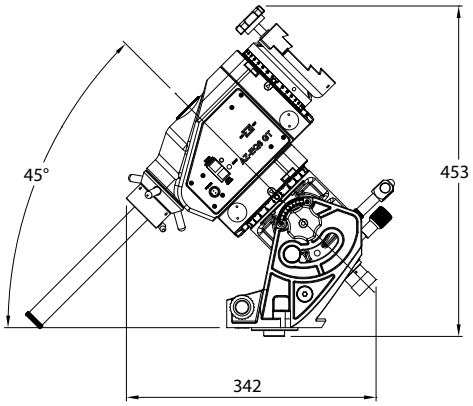
The AZ-EQ6 GT mount is equipped with an index on its R.A. worm thus the motor controller can keep tracking the current position of the worm. After a proper PEC training routine, in which the training data is stored in the motor controller permanently, a user can start the periodic error correction (PEC) at any time to improve the tracking performance for short focal length astrophotography. A training process is not required in the next observing session (assuming that the polar alignment is always accurate), thus this is a Permanent Period Error Correction (PPEC). A user can train the mount with manual guiding or auto-guiding. For detailed instructions, please refer to the relevant section in the SynScan hand controller instruction manual.

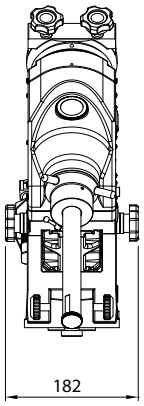
5.3 Batch Exposures Function

The AZ-EQ6 GT mount is equipped with a SNAP port which can control the shutter releasing of a camera. Working with the SynScan hand control's "Camera Control" function, a user can take batch exposures when doing astrophotography. Up to 8 groups of "Exposure-time & Frames" combinations can be set on the SynScan hand controller. For detailed information, refer to the SynScan hand control's instruction manual.

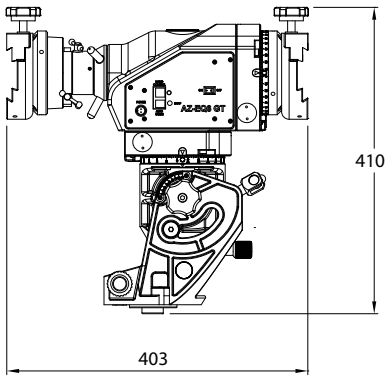
APPENDIX I : SPECIFICATIONS

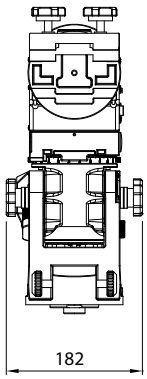
Dimensions:





Equatorial Mode





Alt-azimuth Mode

Specifications:

Product Name	AZ-EQ6 GT Mount
Mount Type	German Equatorial / Alt-azimuth Dual Mode
Payload (Counterweights excluded)	20kg
Latitude Adjustment Range	10º to 75º, 90º
Azimuth Adjustment Range	About ±9 º
Weight(Tripod excluded)	15.4 kg
Counterweight	2 x 5kg/ea
Tripod	2-inch stainless steel, 7.5kg
Counterweight Rod	25mm Diameter, Length 202mm + 150mm
Power Requirement	DC11~16V 4A
Motor	1.8 º Hybrid Stepper Motor
Transmission	180:1 Worm Drive + 48:12 Timing Belt Drive + 64 Micro-step/1.8º Stepper Motor Drive
Gear Ratio	720
Resolution	9216000 Counts/Rev., approx. 0.14 arc-second
Maximum Slewing Speed	4.2 degrees/second
Tracking Rate	Sidereal rate, solar rate, lunar rate
Tracking Mode	Alt-azimuth mode or Equatorial mode
Auto-guiding Speed	0.125X, 0.25X, 0.5X, 0.75X, 1X
PEC	100 Segments Permanent PEC
Hand Controller	SynScan
Database	42000+ Objects
Celestial Object Catalog	Messier, NGC, IC, SAO, Caldwell, Double Star, Variable Star, Named Star, Planets
Pointing Accuracy	Up to 5 arc-minutes (RMS)
Resolution of Aux. R.A./Dec. Axis Encoders	6356 Counts/Rev., approx. 3.4 arc-minutes

Note: The above specifications may be changed without advance notice.

AZ-EQ6 GT Mount

NEVER USE YOUR TELESCOPE TO LOOK DIRECTLY AT THE SUN. PERMANENT EYE DAMAGE WILL RESULT. USE A PROPER SOLAR FILTER FIRMLY MOUNTED ON THE FRONT OF THE TELESCOPE FOR VIEWING THE SUN. WHEN OBSERVING THE SUN, PLACE A DUST CAP OVER YOUR FINDERSCOPE OR REMOVE IT TO PROTECT YOU FROM ACCIDENTAL EXPOSURE. NEVER USE AN EYEPIECE-TYPE SOLAR FILTER AND NEVER USE YOUR TELESCOPE TO PROJECT SUNLIGHT ONTO ANOTHER SURFACE, THE INTERNAL HEAT BUILD-UP WILL DAMAGE THE TELESCOPE OPTICAL ELEMENTS.