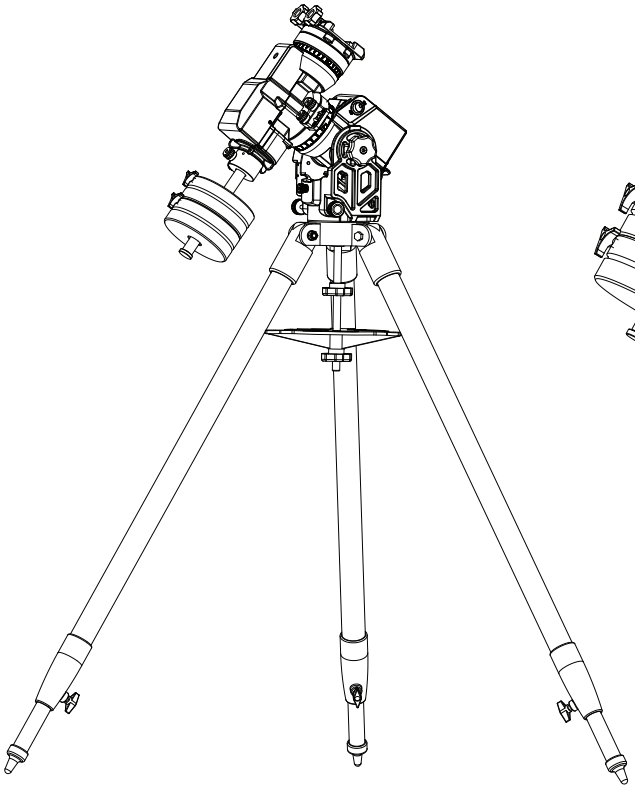
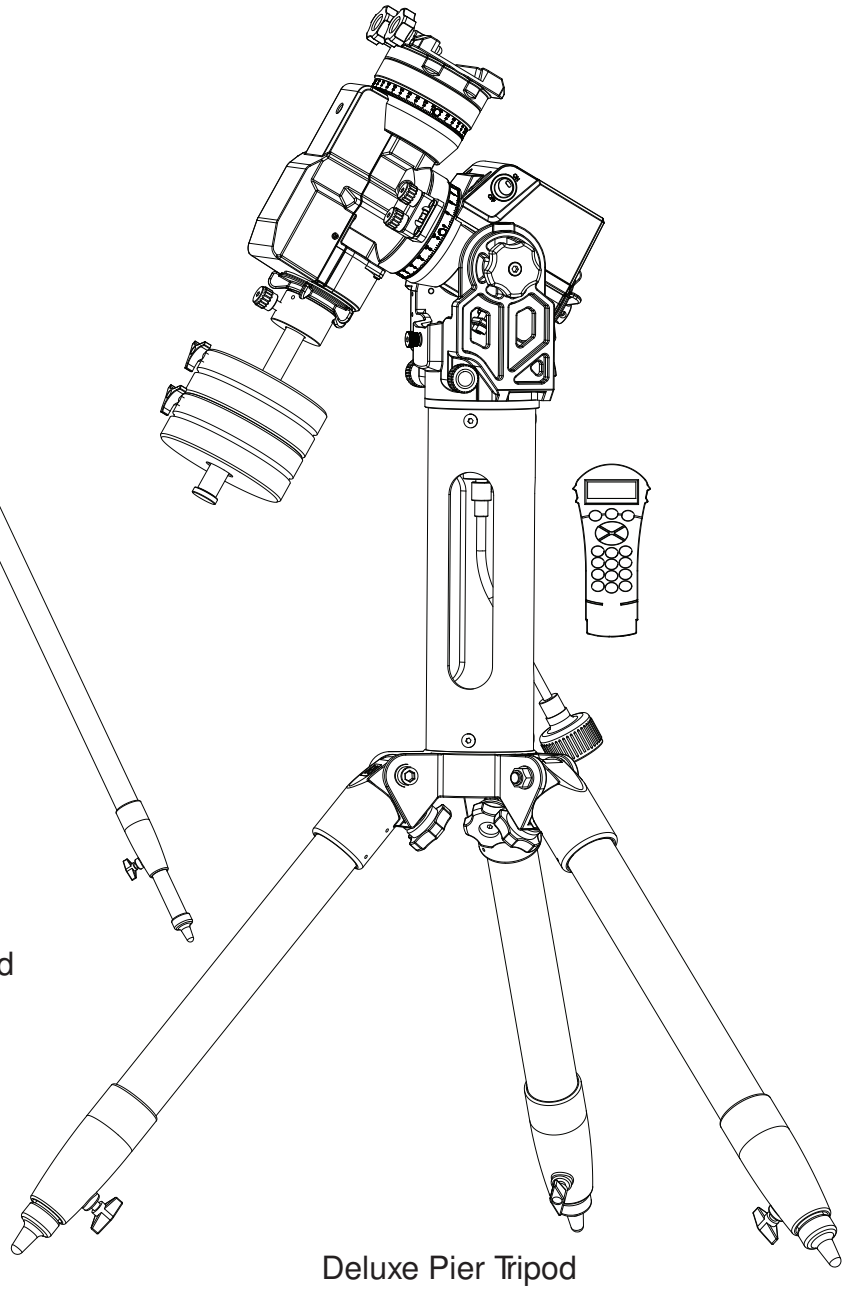
# INSTRUCTION MANUAL

## AZ-EQ5 GT Mount



Standard Tripod



Deluxe Pier Tripod

280814V1

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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-EQ5 GT MOUNT

## 1.1 Setting Up The Tripod

### For Standard Tripod

1. Fully expand the three legs of the standard tripod on level ground.
2. Locate the locking clamps on the legs and turn counter-clockwise to unlock them to extend the tripod legs (Fig.1.1a).
3. Extend the legs to desired height. Make sure the tripod top is level and then lock the clamps.

### For Pier Tripod

1. Fully unfold each leg with the pier tripod lying down. Use the thumb screws to secure the legs firmly, then let the pier tripod stand on a level ground (Fig.1.1b).
2. Locate the locking clamps on the legs and turn counter-clockwise to unlock them to extend the tripod legs. Extend the legs to desired height, make sure the pier top is leveled and then lock the clamps (Fig.1.1a).

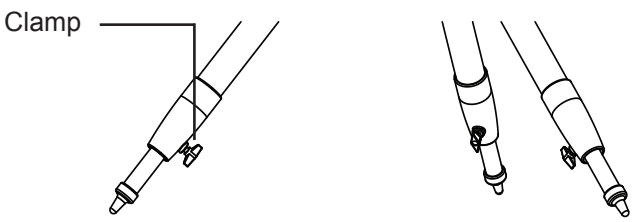



Fig. 1.1a

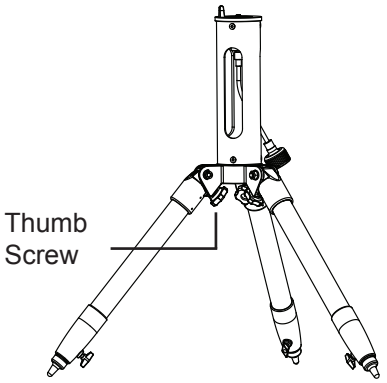
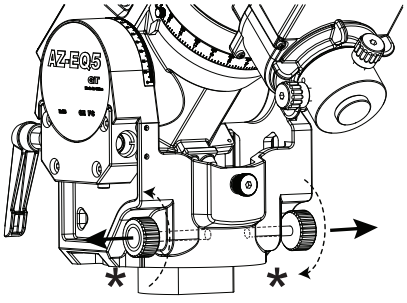



Fig. 1.1b

## 1.2 Putting On The AZ-EQ5 GT Mount

1. Loosen the two azimuth adjustment knobs on the AZ-EQ5 GT mount until there is sufficient space between the two knob screws(Fig. 1.2a).




* Azimuth Adjustment Knobs

Fig. 1.2a

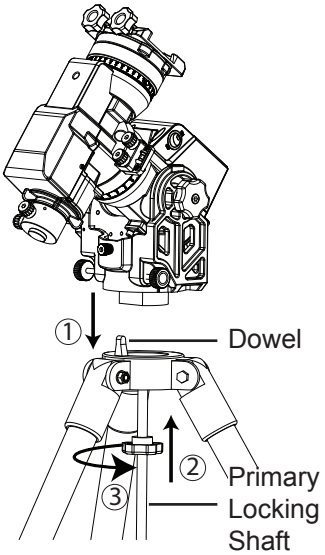



Fig. 1.2b

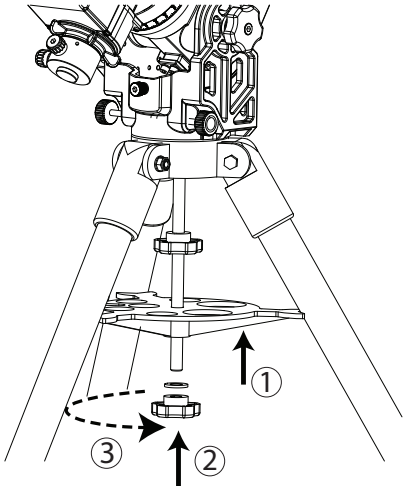



Fig. 1.2c

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, Fig1.2d).
3. Once the mount is seated, slightly tighten the two azimuth adjustment knobs.
4. **FOR USING A STANDARD TRIPOD**, 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); then slide the accessory tray along the primary locking shaft until its three tips push against the tripod legs and secure the tray with the washer and the locking knob. (Fig. 1.2c)
5. **FOR USING A PIER TRIPOD**, while supporting the mount with one hand, use the tumb screw on the flexible shaft to secure the mount to the tripod top. (Fig. 1.2d)
6. Use the bubble leveler (Fig. 1.2e) on the mount to level the mount by adjusting the length of the tripod legs.

**Warning:** The accessory tray of a standard tripod ensures that the tripod legs are firmly expanded, which prevents the tripod from accidentally tipping over. When using the AZ-EQ5 GT mount on a standard tripod, an accessory tray should always be used to ensure stability.

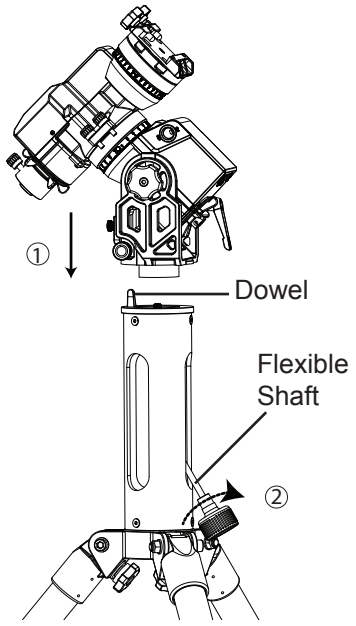



Fig. 1.2d

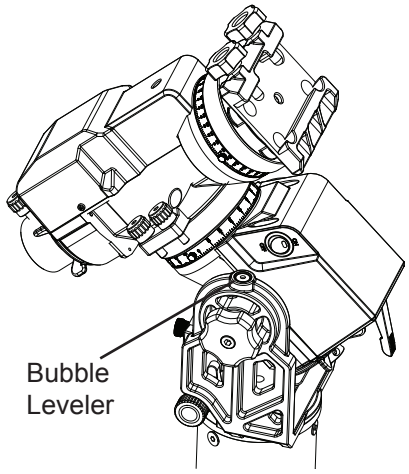



Fig. 1.2e

## 1.3 Installing The Counterweights

1. Loosen the two bolts that locks the counterweight rod and gently pull out the counterweight rod. Re-tighten the two bolts to secure the counterweight rod in place. (Fig. 1.3a)
2. Loosen the R.A. clutch wheel, and rotate the R.A. Axis until the counterweight rod is pointing towards the ground. (Fig. 1.3b)
3. Remove the threaded cap from the end of the counterweight rod.
4. The AZ-EQ5 GT mount comes with a 120mm counterweight rod extension, which can be installed at this point if necessary. Ensure the extension is tightly secured before installing counterweights. (Fig. 1.3c)
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. Finish by putting the threaded cap back in place(Fig. 1.3d).

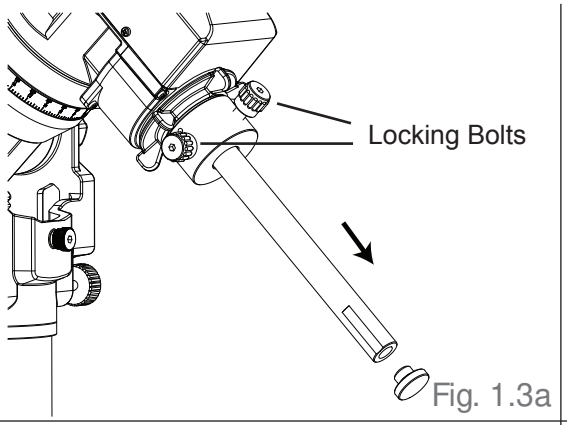


Fig. 1.3a

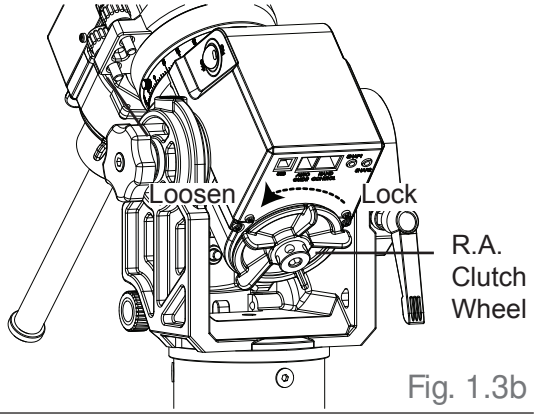
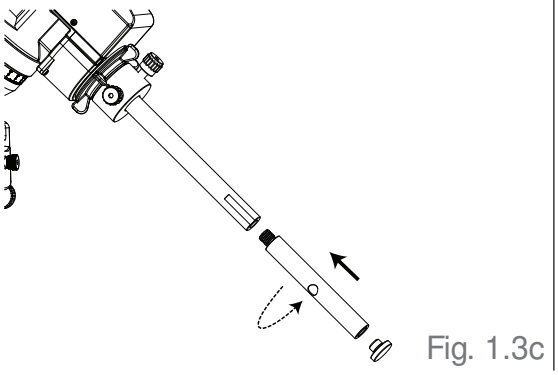


Fig. 1.3b


Fig. 1.3c

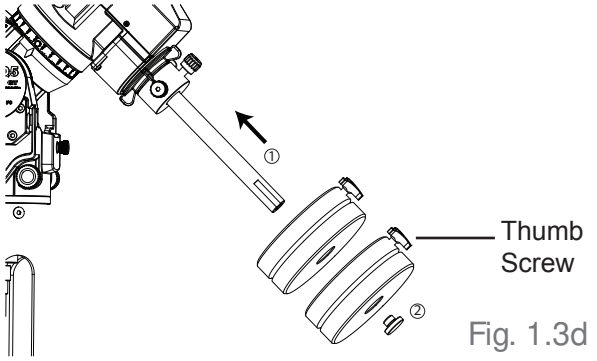


Fig. 1.3d

## 1.4 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 thumb screws on the saddle are facing upward and the dovetail groove is leveled (Fig. 1.4). Tighten the Dec. clutch again.

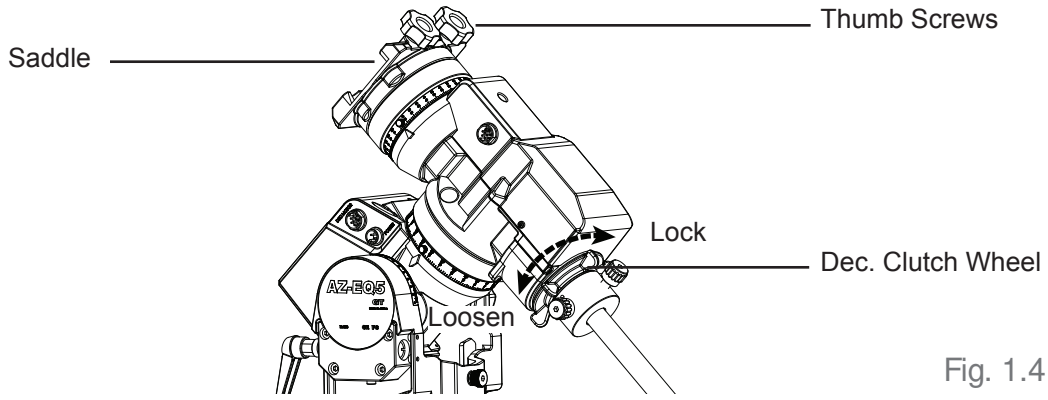



Fig. 1.4

3. Loosen the two knobs on the saddle until the space in 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 groove of the saddle.
5. Tighten the two thumb screws 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.

### 1.5 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-EQ5 GT MOUNT

## 2.1 Manually Rotate The Mount

Refer to the following diagrams:

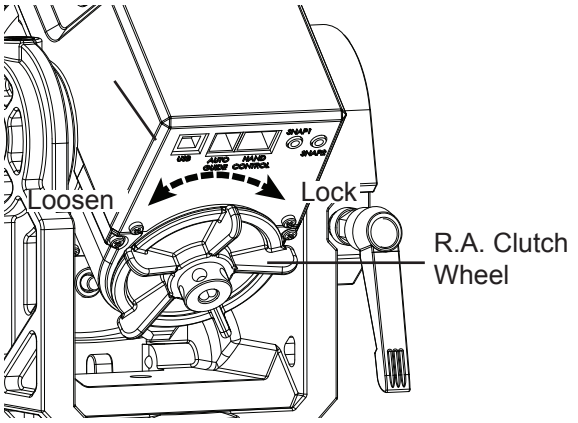



Fig. 2.1a

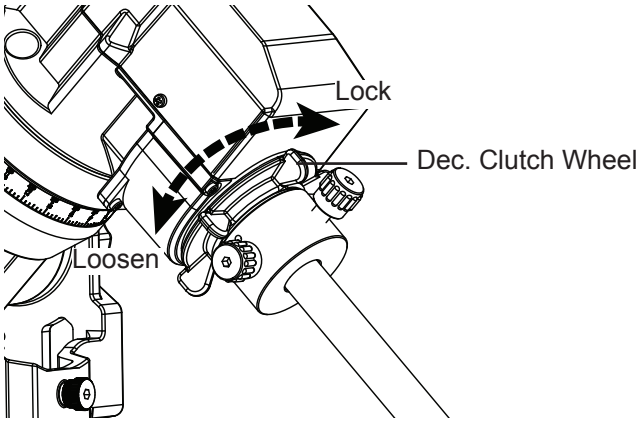



Fig. 2.1b

1. Release the R.A. clutch wheel to manually rotate the R.A. Axis (Fig. 2.1a).
2. Release the Dec. clutch wheel to manually rotate the Dec. axis (Fig. 2.1b).
3. Both the R.A. clutch wheel and the Dec. clutch wheel should be tightened when driving the mount with the internal motors.

## 2.2 Using The Dials

As displayed below, the AZ-EQ5 GT mount features a R.A dial and a Dec. dial.

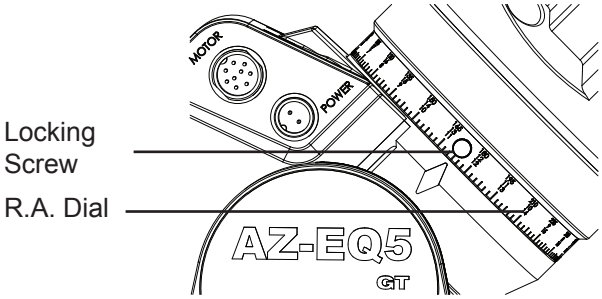



Fig. 2.2a

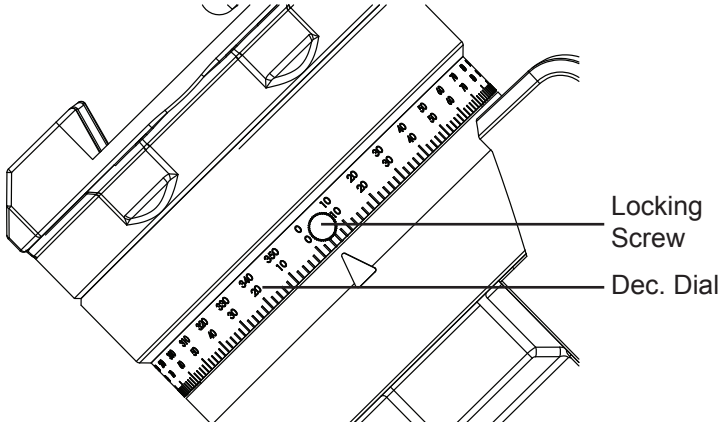



Fig. 2.2b

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 lower 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 upper scale is used to indicate the azimuth angle when operating in Alt-azimuth mode.
4. The lower scale of 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 fork thumb screw located on the sidewalls of the mount (Fig. 2.3a).

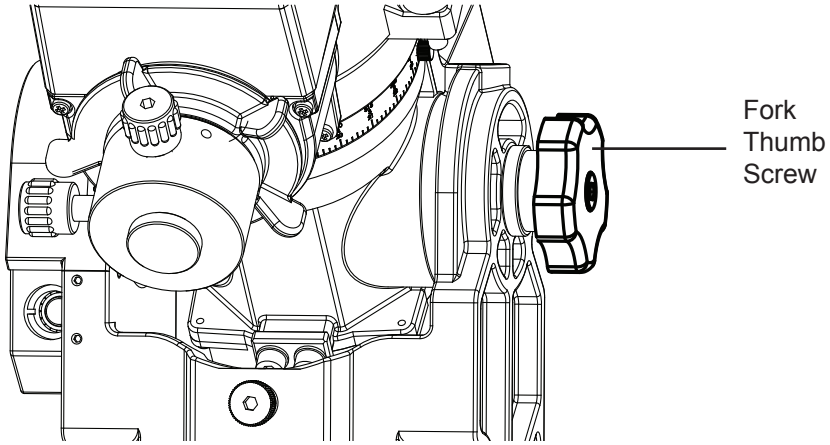



Fig. 2.3a

2. Push in the spring loaded handle to engage the handle with latitude jack (Fig. 2.3b), then turn the handle left or right to change the elevation of the RA axis to a specified angle by referring to the latitude scale on the right side of the mount (Fig.2.3c). When the handle reaches the left or right limits, release the handle to change its orientation for the next jacking.

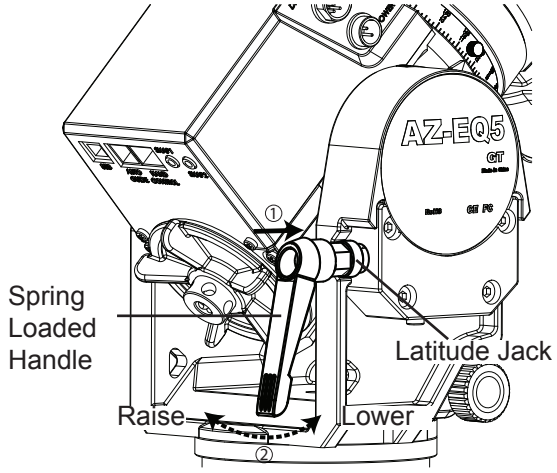



Fig. 2.3b

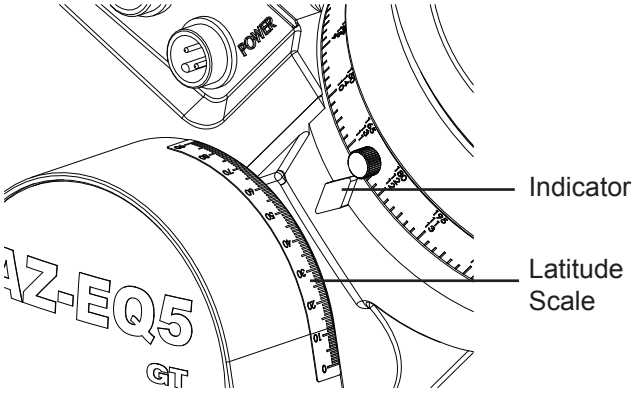



Fig. 2.3c

3. Engage the fork thumb knob.

**Note:** It is normal to have slight elevation play on the AZ-EQ5 GT mount. The mount relies 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-EQ5 GT Mount to Alt-azimuth Mode

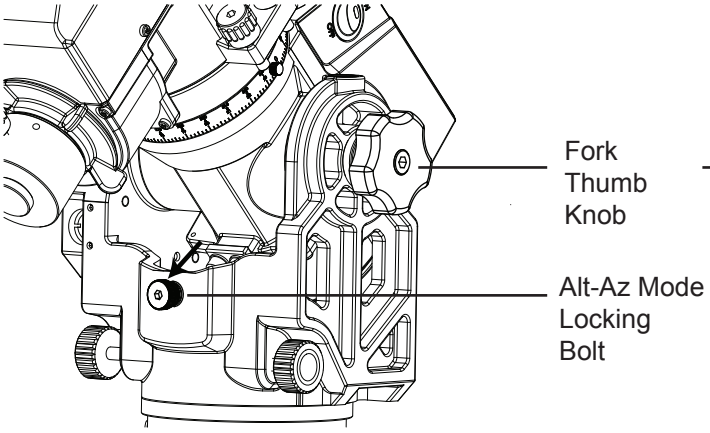



Fig. 2.4a

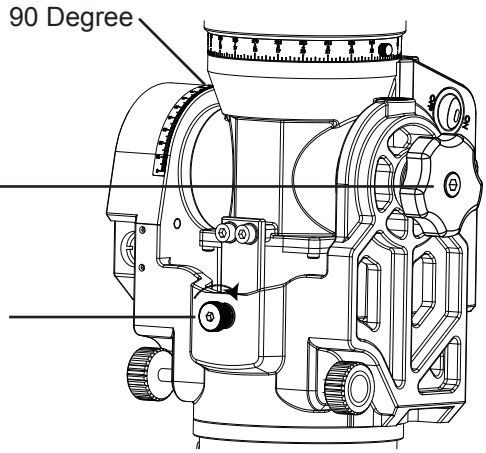



Fig. 2.4b

1. Refer to Section 2.3 to ajust R.A. axis's elevation.
2. Use caution when the latitude indicator is close to 90 degree. Do not turn the spring loaded handle further when you feel it is blocked because it means that the R.A. axis has reached the factory-calibrated position for Alt-azimuth mode. **TURNING THE HANDLE FORCEFULLY WILL DAMAGE THE MOUNT**.
3. Tighten the *Alt-Az mode locking bolt* (Fig. 2.4a) to secure the R.A. axis to this position for Alt-azimuth mode operation. Use a 5mm Allen wrench to secure the bolt if necessary.
4. Tighten the fork with the thumb screw.
5. To restore the mount to Equatorial mode, loosen the fork tightening knob first, then **FULLY** release the *Alt-Az mode locking bolt* (**NEVER FORGET TO DO THIS**). Use the jack handle to lower the elevation to the desired angle.

**Note:**

- In any case, **DO NOT TURN THE HANDLE FORCEFULLY**.
- 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-EQ5 GT mount's counterweight rod for the mounting of a secondary telescope.

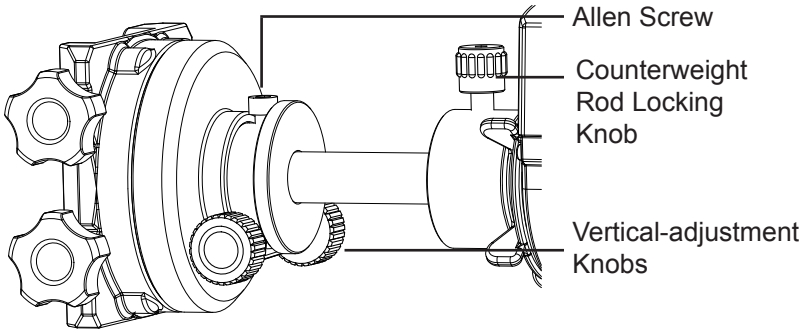



Fig. 2.5a

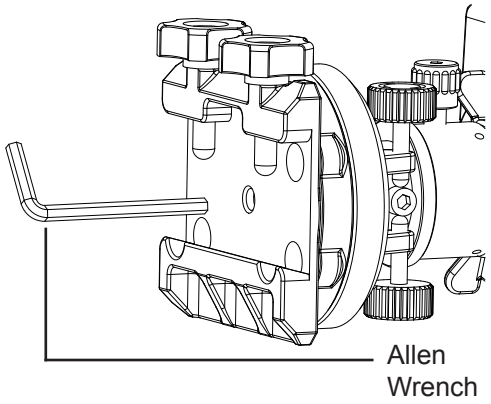



Fig. 2.5b

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 locking knobs.
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 two locking knobs to test the balance of the secondary telescope. Adjust the position 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 knobs 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 knobs and rotate the secondary telescope vertically until it points in the same direction as the main telescope. Lock the knobs again.
8. Aim the main telescope at a distant object, and then adjust the two vertical adjustment knobs(Fig. 2.5a) 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 AZ-EQ5 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 120mm counterweight rod's extension cannot be used with the secondary saddle.

# PART III : POLAR ALIGNMENT

Prior to operating the AZ-EQ5 GT mount in equatorial mode for astrophotographic, it must be polar aligned. The SynScan hand control provides a high accuracy polar alignment routine after a 2-Star or 3-Star alignment. Please refer to the SynScan hand control manual for detail instructions.
An optional polar scope kit is also available from Skywatcher for quick polar alignment. This chapter describes how to use a polar scope to polar-align an AZ-EQ5 mount.

## 3.1 Preparation

1. Setup the AZ-EQ5 GT mount (*Refer to* **PART I : SETTING UP THE AZ-EQ5 GT MOUNT**). It is recommended to load the mount with the telescope and counterweights prior to polar alignment.
2. Loosen the two locking knobs to remove the bubble leveler (Fig. 3.1a) and replace it with the polar scope kit. Attach the polar scope illuminator to the front of the polar scope (Fig. 3.1b).
3. 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**)

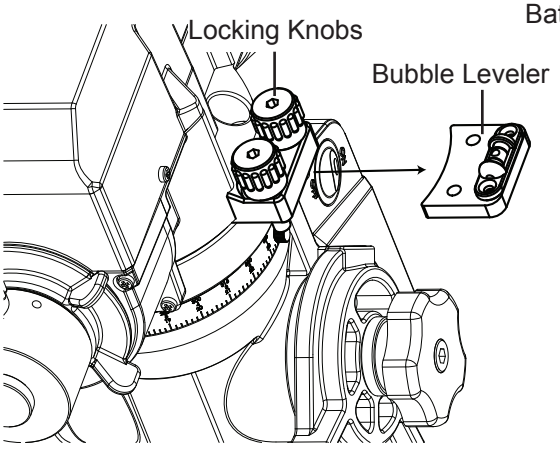



Fig. 3.1a

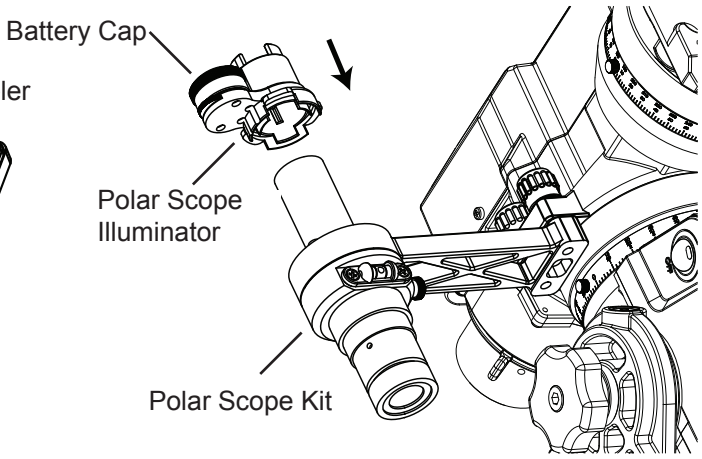



Fig. 3.1b

4. Tighten the battery cap to turn on the power of the polar scope illuminator.
5. Verify whether the polar scope is aligned with the R.A. Axis (*Refer to section* **3.4 Calibrate the Polar Scope**).
6. Find out the proper orientation of Polaris in the polar scope. (*Refer to* **3.3 The Orientation of the Polaris**).

## 3.2 Alignment

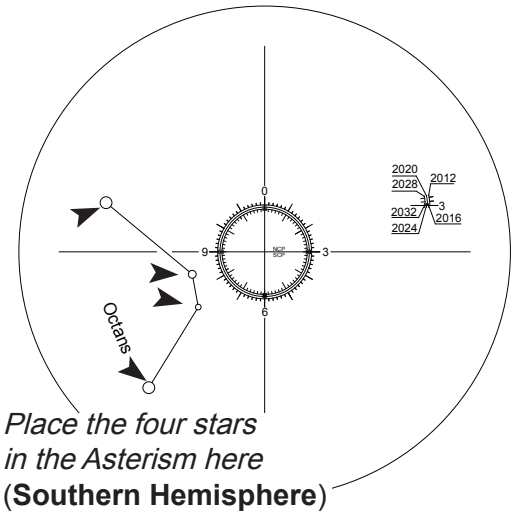



Fig. 3.2a

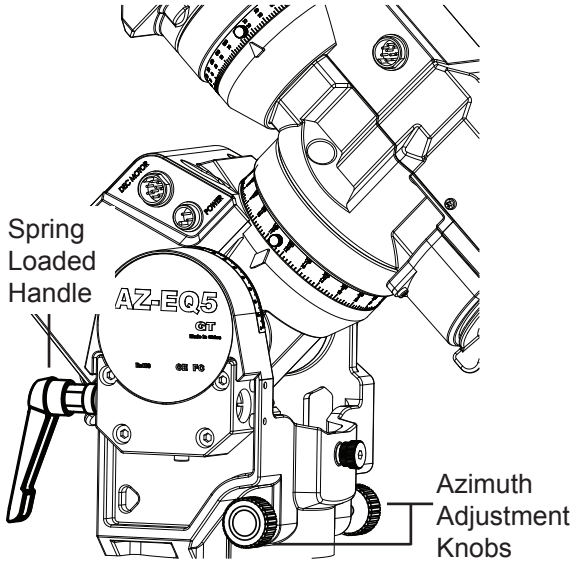



Fig. 3.2b

Once the 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 spring loaded handle 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").
   The Polaris's orbit around the NCP(north celestial pole) changes gradually. The 3 central circles in the polar scope pattern are the obits for year 2012, 2020 and 2032. Users should refer to these circles and the current year to put the Polaris at the proper radius.

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 spring loaded handle 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 central circles seen in Fig. 3.2a is a representation of the Polaris' orbit around the North Celestial Pole. When polar aligning the AZ-EQ5 mount, it is necessary to determine the orientation of the Polaris on the circle. We can use the following 2 methods to get the orientation:

1. Locate both the Polaris and the star Kochab in the sky. The direction from the Polaris to the Kochab can be used as an approximation of the orientation of the Polaris in the polar scope. Put the Polaris at the same direction on the large central circle in the polar scope to finish the polar alignment.

2. 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". Imaging the circles 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 in the same orientation on the large circle to finish the polar alignment.

Out of the two methods above, the orientation given by the SynScan hand controller is the most accurate.

### 3.4 Calibrate The Polar Scope

The polar scope must be calibrated to ensure accurate polar alignment. The following steps will outline how to calibrate the polar scope:

**Step1 Align Polar Scope's Optical Axis with The Center of The Pattern**

1. Put a distant fixed point object at the center of the reticle in the polar scope's FOV with the azimuth adjustment knobs and the spring loaded handle (Fig. 3.2b).
2. Loosen the polar scope locking bolt (Fig. 3.4a).

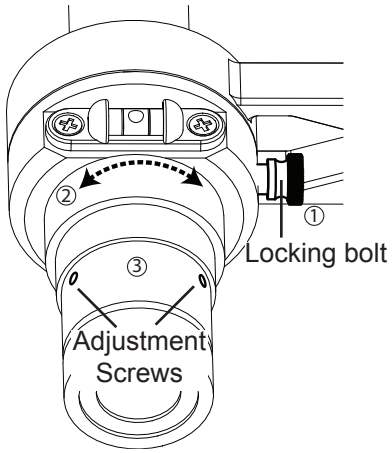



Fig. 3.4a

3. Rotate the polar scope for 180 degree, then tighten the locking bolt.
4. If the the point object is still at the center of the reticle, there is no need for further adjustment.
5. If the object is off the center, adjust the three adjustment screws with a 1.5mm Allen key to eliminate the offset by half. When making the adjustment, loosen one screw for 1/4 turn each time, and then tighten the other two screws.
6. Repeat the above operaton until the point object stay at the center when rotating the polar scope.

**Step2 Align Vertical Line of The Pattern**

1. Loosen the locking knobs in Fig. 3.1a, level the bubble leveler on the polar scope kit, then tighten these knobs again.
2. Point the polar scope to a distant object which has a verticle reference line.
3. Loosen the locking bolt in Fig. 3.4a, rotate the polar scope to set the 0-6 line in the polar scope pattern parallel to the verticle reference of the object.
4. Tighten the plar scope locking bolt in Fig. 3.4a again.

**Step3 Align Polar Scope's Optical Axis with AZ-EQ5's R.A. Axis**

1. Put a distant fixed point object to the center of the reticle in the polar scope's FOV with the azimuth adjustment knobs and the spring loaded handle (Fig. 3.2b).
2. Loosen the R.A. clutch and rotate the R.A. axis for 180 degree..

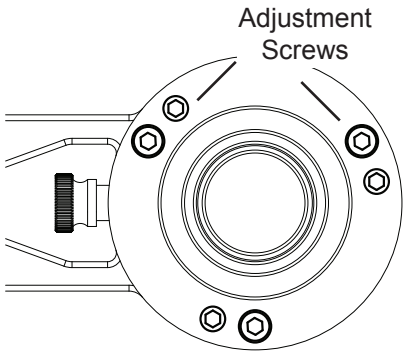



Fig. 3.4b

3. If the the point object is still at the center of the reticle, there is no need for further adjustment.
5. If the object is off the center, adjust the 6 adjustment screws (Fig. 3.4b) on the polar scope kit with a 2.5mm Allen key to eliminate the offset by half. When making the adjustment, loosen one screw for 1/4 turn each time, and then tighten the other two screws.
6. Repeat the above operaton until the point object stay at the center when rotating the polar scope.

# PART IV : ELECTRONIC CONTROL INTERFACE

## 4.1 Control Panel

The control panel of the AZ-EQ5 GT mount is shown below:

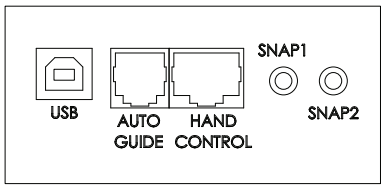



Fig. 4.1a

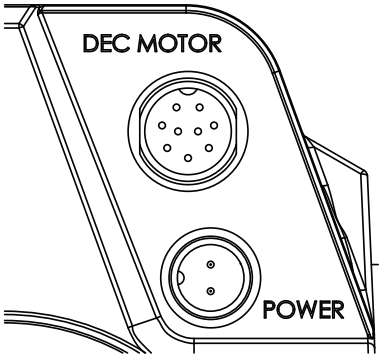



Fig. 4.1b

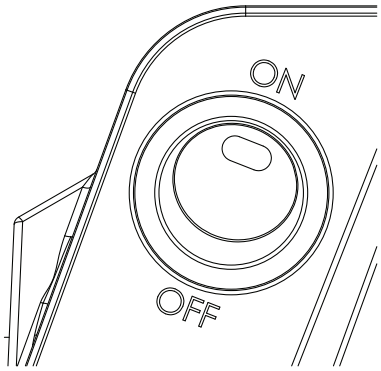
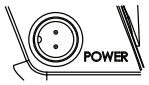
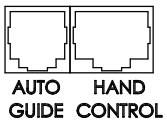



Fig. 4.1c

## 4.2 Panel Interface Components:

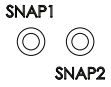



**POWER**: This is an outlet from which the mount and the hand control get power supply. To connect to a power supply, align the index on both the plug of the cord and the outlet on the panel, and then insert the plug to the outlet. Tighten the knurled cap on the plug to secure the plug on the panel.

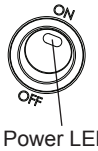



**HAND CONTROL**: This RJ-45 8-pins outlet is for connecting the SynScan hand controller.

**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**:These are two stereo outlets for connecting to two cameras' shutter control ports. The SynScan hand control can control the cameras to take pictures automatically via these interfaces.




Power LED

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

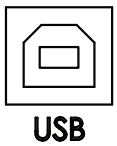
**Power LED**: The power LED serves as a power-on indicator and provides other statuses.

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.




**Dec Motor Scokets**: These two sockets are used to connect the Dec motor units to the main control panel with the provided Dec. motor cable.




**USB Port**: The USB port connects to an internal USB-to-Serial device (Baud rate 115200bps). It can be used to control the mount directly from a host PC. It is also used to update the firmware of the motor controller.

### 4.3 Pinout of The Interfaces:

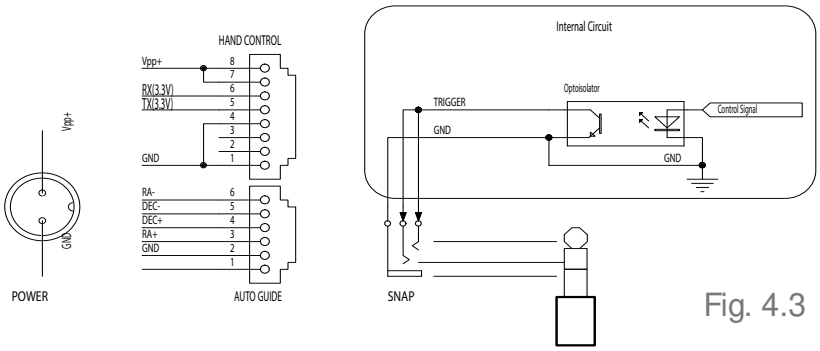



Fig. 4.3

**Note:**

- The SNAP port provides two trigger signals to the stereo plug. For a camera which only needs a shutter-release signal, either trigger signals will work. For a camera which requires an extra “Focus” signal, both signals should be connected properly.

- The camera control cable shipped with the AZ-EQ5 GT mount is for a Canon EOS series DSLR camera. Cable for other cameras is optional and can be ordered separately from dealer.

### 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: 3A for power supply with 11V output voltage, 2A 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 2A output current.
- If the power voltage is too low, the motor controller will stop the motors automatically.

# PART V : OTHER AZ-EQ5 GT MOUNT FEATURES

## 5.1 Freedom Find™ Function

The AZ-EQ5 GT mount is equipped with auxiliary encoders on both the R.A. axis and Dec. axis. Therefore, the mount can keep track of 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-EQ5 GT mount is equipped with an index on its R.A. worm. Thus the motor controller can keep track of 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.

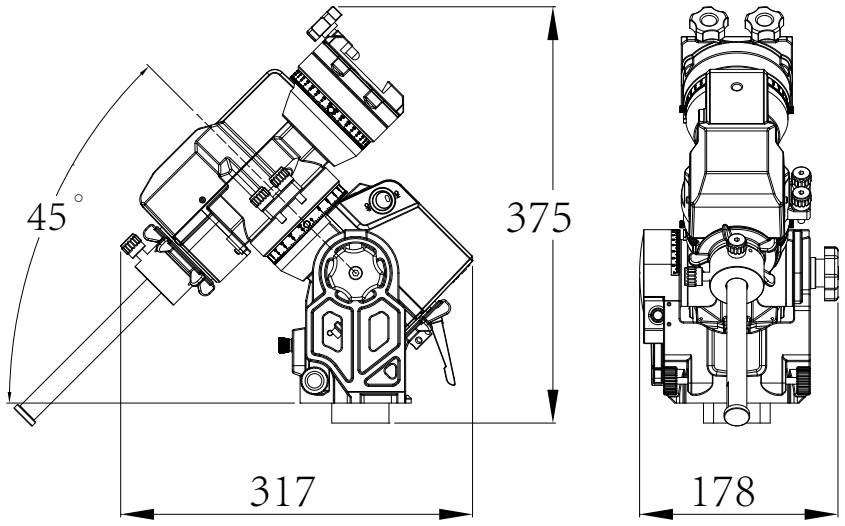
## 5.3 Batch Exposures Function

The AZ-EQ5 GT mount is equipped with two SNAP ports which can control the shutter releasing of two cameras. 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.

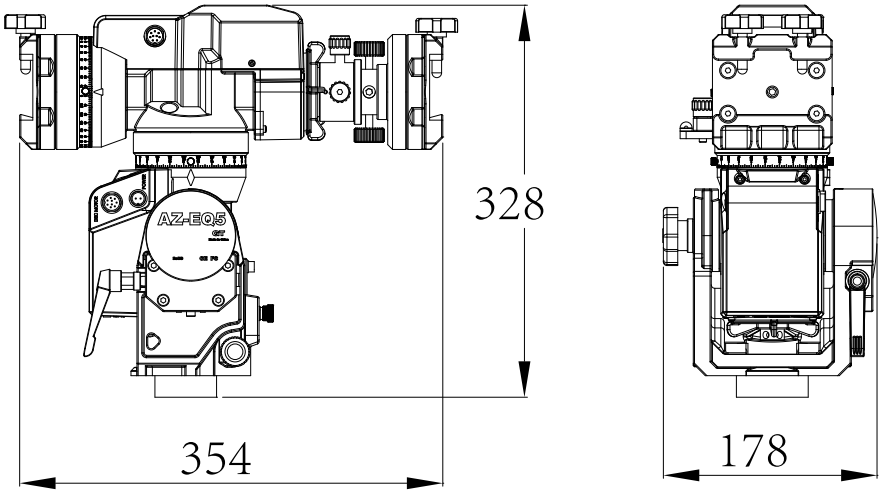
# APPENDIX I : SPECIFICATIONS

**Dimensions:**

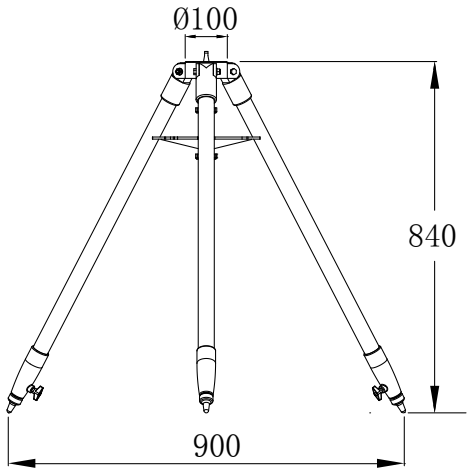
Equatorial Mode



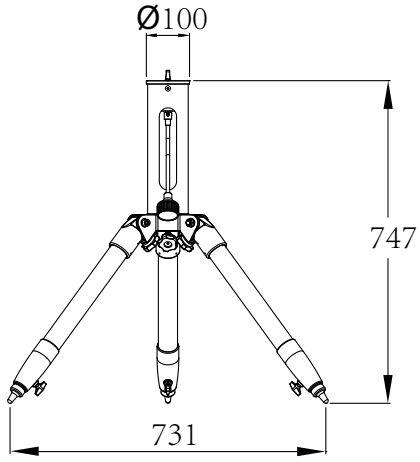

Alt-azimuth Mode




Standard Tripod




Pier Tripod



# APPENDIX I : SPECIFICATIONS

**Specifications:**

| | |
|---|---|
| Product Name | AZ-EQ5 GT Mount |
| Mount Type | German Equatorial / Alt-azimuth Dual Mode |
| Payload<br>(Counterweights excluded) | 15 kg<br>(for Astrophotography) |
| Latitude Adjustment Range | On a Standard Tripod: 28º to 90º<br>On a Pier Tripod: 0º to 90º |
| Azimuth Adjustment Range | About ±15 º |
| Weight(Tripod excluded) | 7.7 kg |
| Counterweight | 3.5 kg / ea. x 2 |
| Tripod | Standard Tripod: 1.75-inch stainless steel, 5.6 kg<br>Pier Tripod: 1.75-inch stainless steel, 6.1 kg |
| Counterweight Rod | 18mm Diameter, Length 162mm + 120mm |
| Power Requirement | DC11~16V 3A |
| Motor | 1.8 º Hybrid Stepper Motor |
| Transmission | 135:1 Worm Drive + 72:12 Timing Belt Drive +<br>32 Micro-step/1.8º Stepper Motor Drive |
| Gear Ratio | 810 |
| Resolution | 5184000 Counts/Rev., 0.25 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 | 1200 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 | 5144 Counts/Rev., approx. 4.2 arc-minutes |

**Note:** The above specifications may be changed without prior notice.

# AZ-EQ5 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.