INSTRUCTION MANUAL

Orion® EQ-26 Motorized German Equatorial Mount

#55029

ORION®
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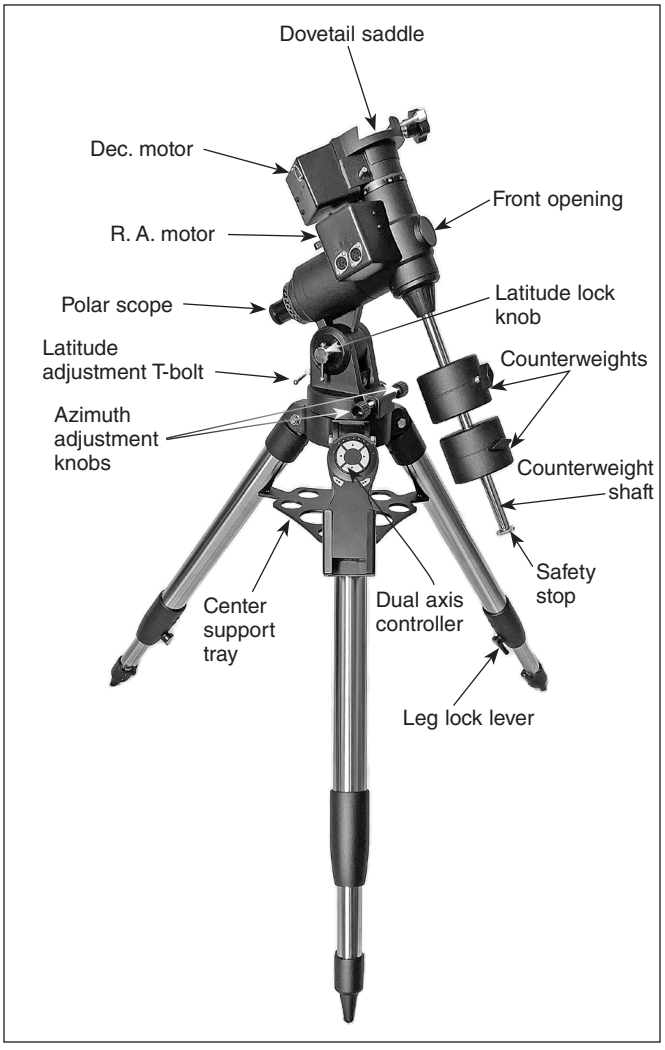


Figure 1. The Orion EQ-26 Motorized German Equatorial Mount

1. Unpacking

Be careful unpacking the two shipping boxes. We recommend keeping the boxes and all their internal packaging. In the event that the mount needs to be returned to Orion for warranty repair, having the proper packaging will ensure that your mount will survive the journey intact.

Make sure all the parts in the Parts List below are present. If anything appears to be missing or broken, immediately call Orion Customer Support (800-676-1343) or email *support@telescope.com* for assistance.

2. Parts List

- Equatorial mount
- Tripod
- Counterweight, 5.9 lbs. (x2)
- Counterweight shaft
- Center support tray
- Center support shaft
- Dual-axis hand controller
- Saddle lock knob
- Safety lock knob
- 8-pin cable
- 4-pin motor cable
- 12V DC Power cable
- Hand controller holster

3. Assembly

Refer to **Figure 1** and **Figure 2** as needed during the assembly process.

1. Stand the tripod legs upright and spread the legs out as far as they will go. Make certain that the leg lock levers are tightened. You can lengthen the legs later to a desired length by loosening the leg lock levers and extending the lower leg section, then retighten the leg lock levers.
2. Now thread the narrow end of the center support shaft into the underside of the hole in the tripod head, as shown in **Figure 3**. Thread the shaft clockwise until the threaded end of the shaft is completely through the hole. Then the shaft will be captive in the tripod head.
3. Now place the base of the equatorial mount onto the tripod head. Orient the equatorial mount so that the post on the tripod lines up with the gap between the azimuth adjustment bolts in the equatorial mount (**Figure 4**).
4. Thread the center support shaft up through the tripod head and into the bottom of the equatorial mount until tight. Use the upper knob on the central support shaft to do this. The equatorial mount should now be firmly connected to the tripod.
5. Now slide the tripod support tray up the shaft until the three tray arms are touching the legs of the tripod. The flat side

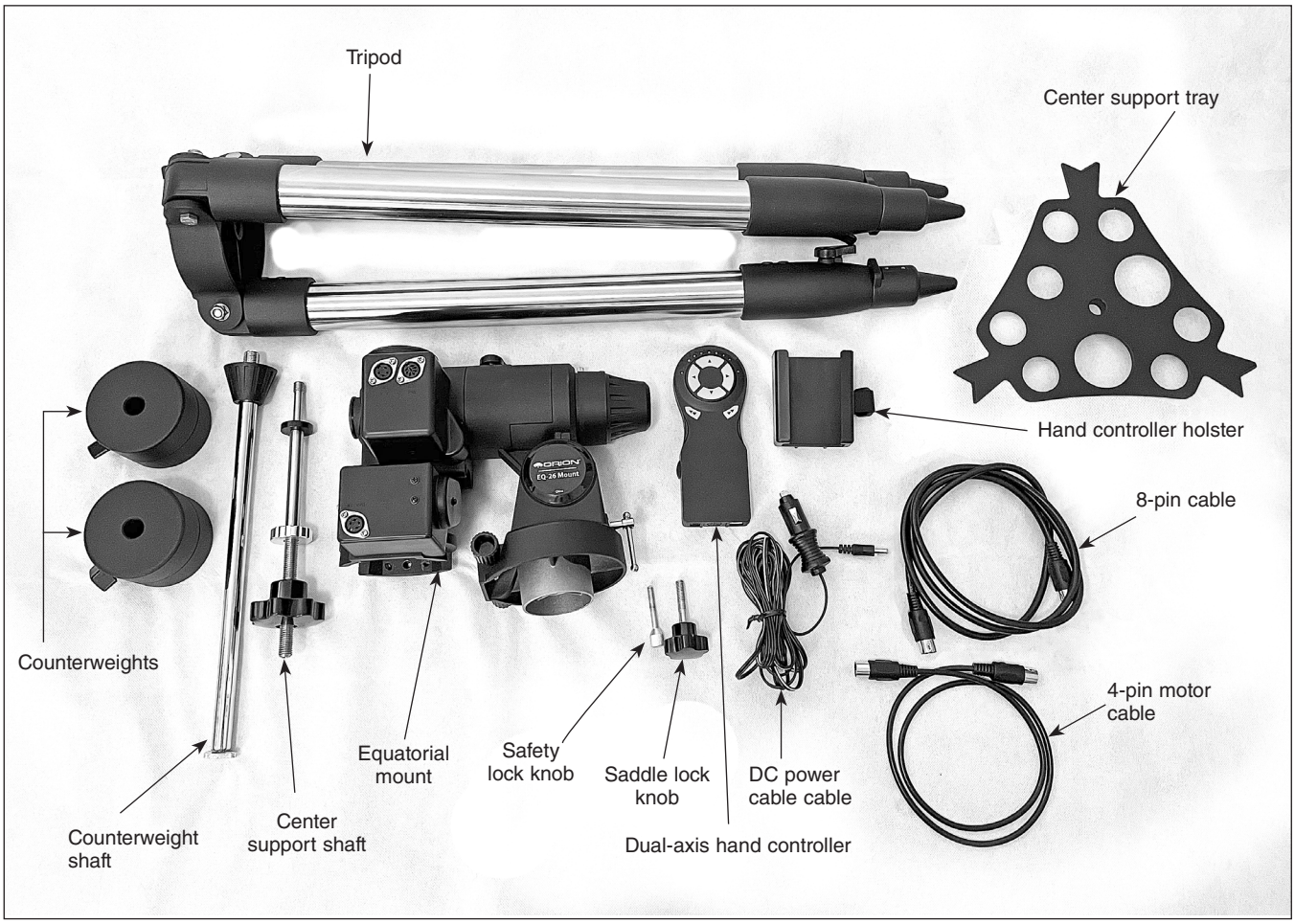


Figure 2. Components of the EQ-26 Mount

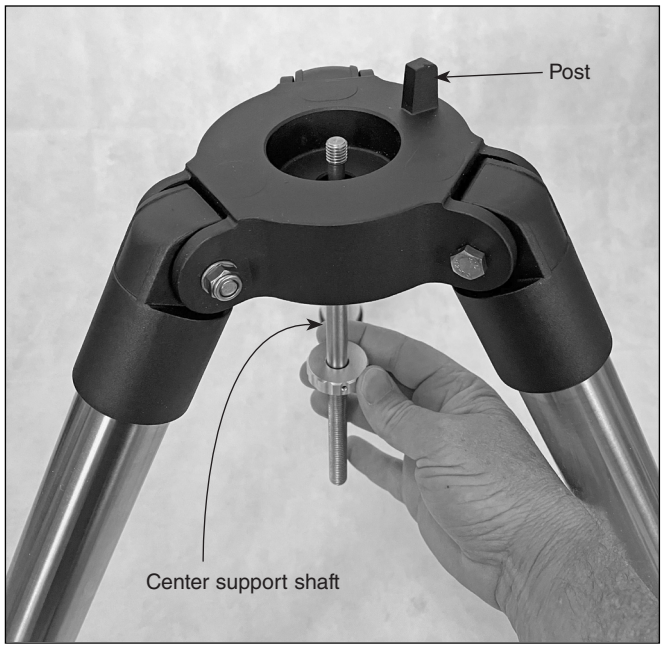


Figure 3. Thread the center support shaft up through the tripod head.

of the support tray should be facing up. Make sure the "V" of each tray arm is buttressed against a tripod leg (**Figure 5**). Thread the large rosette knob clockwise onto the support shaft until the knob is tight against the tray. The tripod support tray provides additional stability for the tripod, and holds up to seven 1.25" eyepieces/accessories and two 2" eyepieces/accessories for convenient access.

6. Thread the counterweight shaft clockwise into its receptacle in the mount (**Figure 6**) until tight.
7. Remove the knurled "toe saver" safety stop on the bottom of the counterweight shaft and slide the counterweight(s) onto the shaft (**Figure 7**). Make sure the counterweight lock knob is adequately loosened to allow the counterweight shaft to pass through the hole. Position the counterweight(s) near the bottom of the shaft, then tighten the lock knob. Replace the toe saver on the end of the shaft. The toe saver prevents a counterweight from falling on your foot if the lock knob happens to come loose.
8. Next, attach the hand controller holster to one of the tripod legs (**Figure 8**). Wrap the holster's hook-and-loop strap around the leg at a position above the support tray arm. That way it will not slip down the tripod leg.

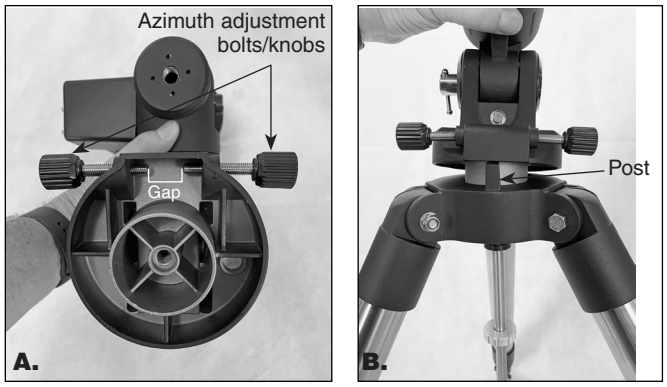


Figure 4. A) Back off the azimuth adjustment bolts to create a gap. **B**) Place the equatorial head on the tripod so that the gap aligns with the post on the tripod.

9. Connect one end of the 4-pin motor cable – identifiable by the 4 pins in its two plugs (**Figure 9A**) – to the "Dec. In" socket on the Declination motor (**9B**), and the other end to the "R.A. In" socket on the Right Ascension (R.A.) motor.
10. Connect one end of the 8-pin cable (**Figure 9A**) to the "Dec. OUT" socket on the R.A. motor (**9B**) and the other end to the "Motor" socket on the hand controller.

Powering the EQ-26 Mount

The EQ-26 Mount should be powered by a 12V DC power supply (tip positive) capable of producing continuous current of 5 amps. A 12V DC power cable is included with the mount; it has a male cigarette lighter plug on one end for connection to a 12V power supply, and a standard 2.1/5.5mm stereo plug on the other end to connect to the "Power" jack on the hand controller (**Figure 10**).

4. Attaching a Telescope

The EQ-26 Motorized German Equatorial Mount is designed to hold a telescope tube weighing up to 26 lbs. (including all accessories). For astronomical imaging an equipment load somewhat less than that weight is recommended to insure consistently steady images. The mount has a Vixen-style dovetail saddle (**Figure 11**), which accepts any telescope optical tube equipped with a Vixen-style dovetail bar or plate (not included).

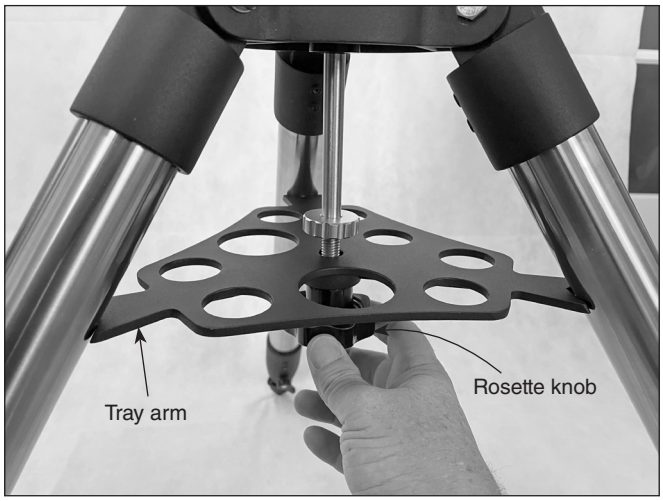


Figure 5. Slide the tray into the center support shaft, with the tray arms contacting the tripod legs. Then tighten the tray with the rosette knob.

Figure 6. Install the counterweight shaft as shown.

1. To install a telescope on the mount, first ensure that the counterweight is installed as in step 7 above, and that the RA and Dec clutch levers are tightened.
2. Now loosen the saddle lock knob and safety lock knob to allow the dovetail plate to seat in the saddle without obstruction (**Figure 11**).
3. Place the dovetail mounting plate, with optical tube attached, in the saddle so that the plate is roughly centered lengthwise in the slot. While still holding the optical tube with one hand, re-tighten the saddle lock knob and safety lock knob with your other hand until the plate is secure.

5. Balancing the Telescope

To ensure smooth movement of a telescope on both axes of the equatorial mount, and to avoid putting undue stress on the motors, it is imperative that the optical tube be properly balanced on both axes.

We will first balance the telescope on the right ascension (RA) axis.

1. Unlock both the RA and Dec clutch levers (**Figure 11**) and rotate the telescope until both the telescope and the counterweight shaft are parallel to the ground.
2. Retighten the Dec clutch lever.
3. Now loosen the counterweight lock knob (**Figure 7**) and slide the weight along the shaft until it counterbalances the telescope. That's the point at which the shaft remains horizontal when released. If the telescope can't be balanced in this way then you have either too much or too little counterweight. Remove the counterweight, or add an additional counterweight if needed.
4. Retighten the counterweight lock knob.

The telescope is now balanced on the RA axis. To balance the telescope on the Dec axis:

5. First, tighten the RA clutch lever, with the counterweight shaft still in the horizontal position.

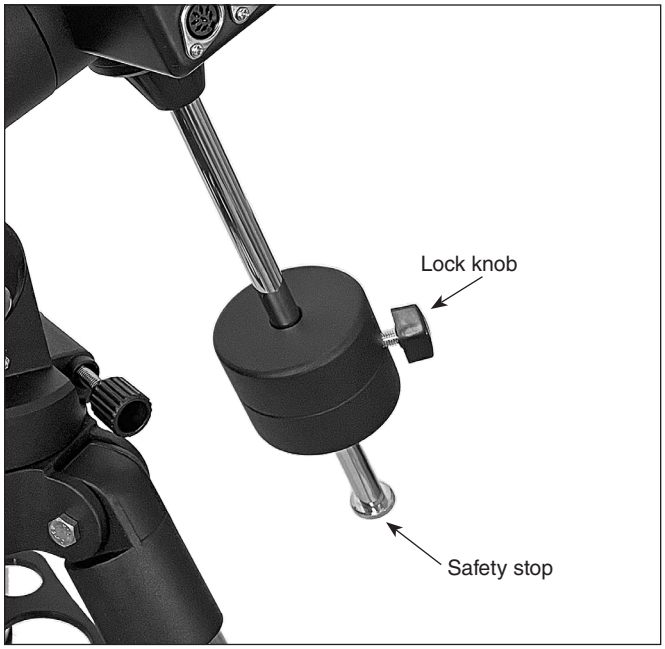
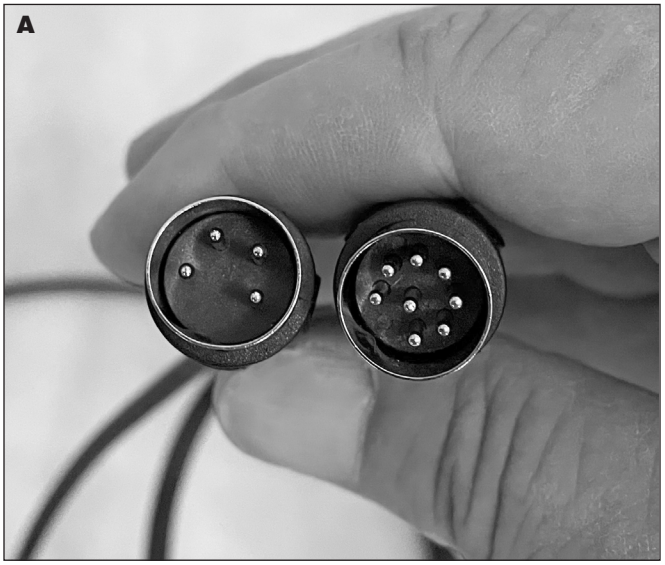


Figure 7. Install the counterweight, then make sure the "toe saver" safety stop is threaded on.

Figure 8. Attach the hand controller holster to a tripod leg with the hook-and-loop strap. Make sure the strap is fastened above the tray arm.

6. With one hand on the telescope optical tube, loosen the Dec clutch lever. The telescope should now be able to rotate freely about the declination axis. Determine which direction it tends to rotate.
7. Now, if the telescope is held in tube rings, loosen the tube ring clamps until you can slide the telescope tube forward and back inside the rings (this can be aided by using a slight twisting motion on the optical tube while you push or pull on it). Slide it until it is balanced.
8. If your telescope is not held by tube rings, you will need to slide the dovetail plate it is mounted on forward or backward in the saddle. To do that carefully loosen the saddle lock knob and safety lock knob while supporting the telescope with your other hand, then slide the plate as needed. Then retighten the lock knobs.



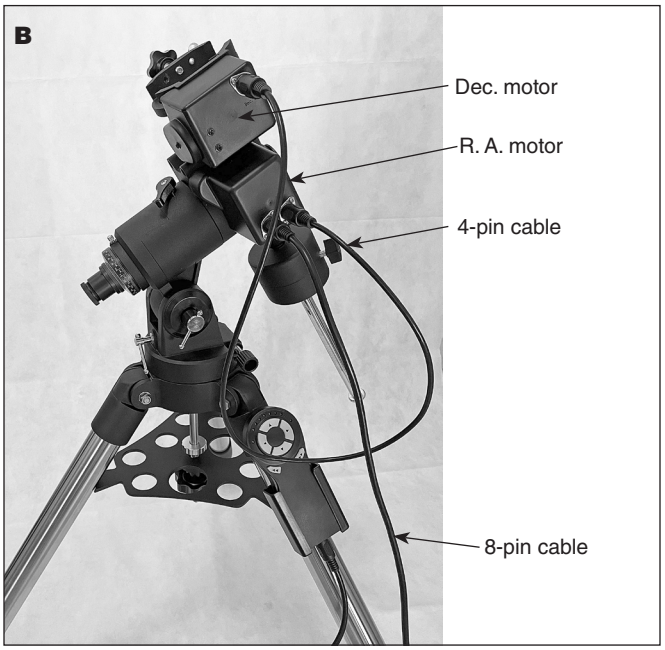


Figure 9. A) The plugs of the 4-pin (left) and 8-pin cables. **B**) Note the correct attachment of the 4-pin and 8-pin cables.

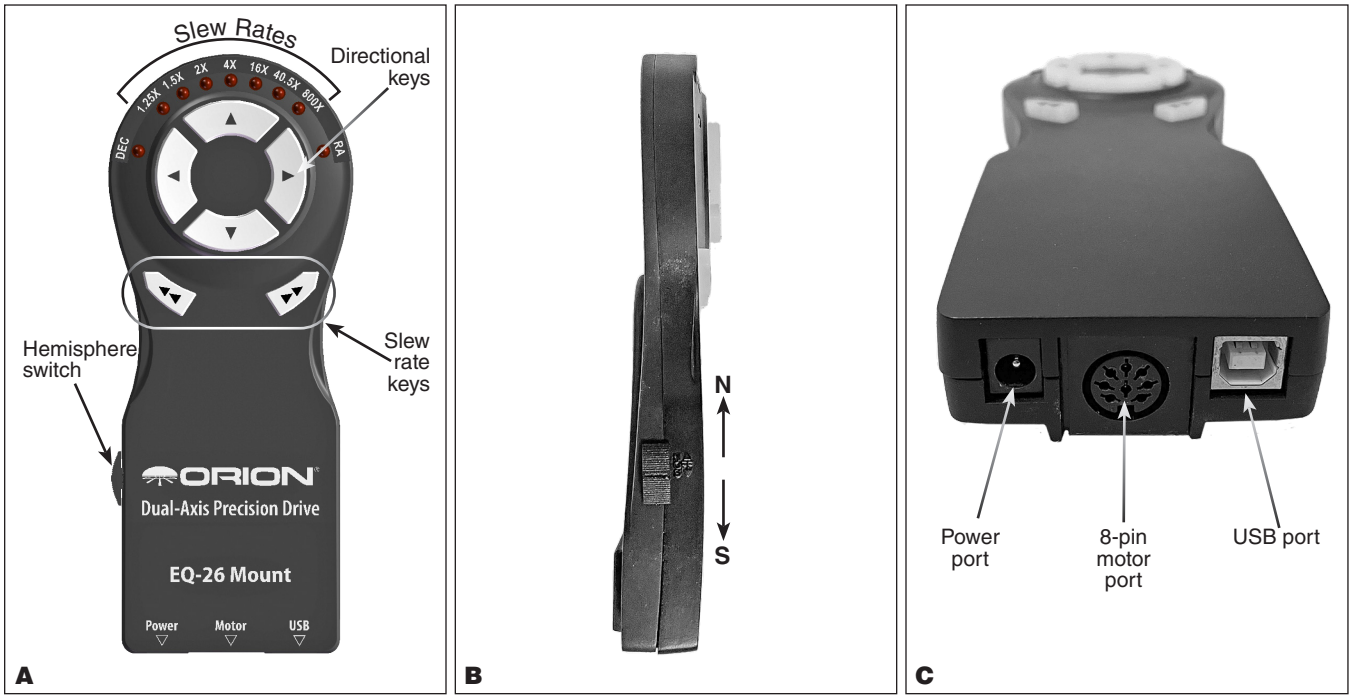


Figure 10. A) The dual-axis hand controller of the EQ-26 mount. **B**) Slide the hemisphere switch to N (Northern) or S (Southern) for your observing location**. C**) The cable ports at the bottom of the hand controller.

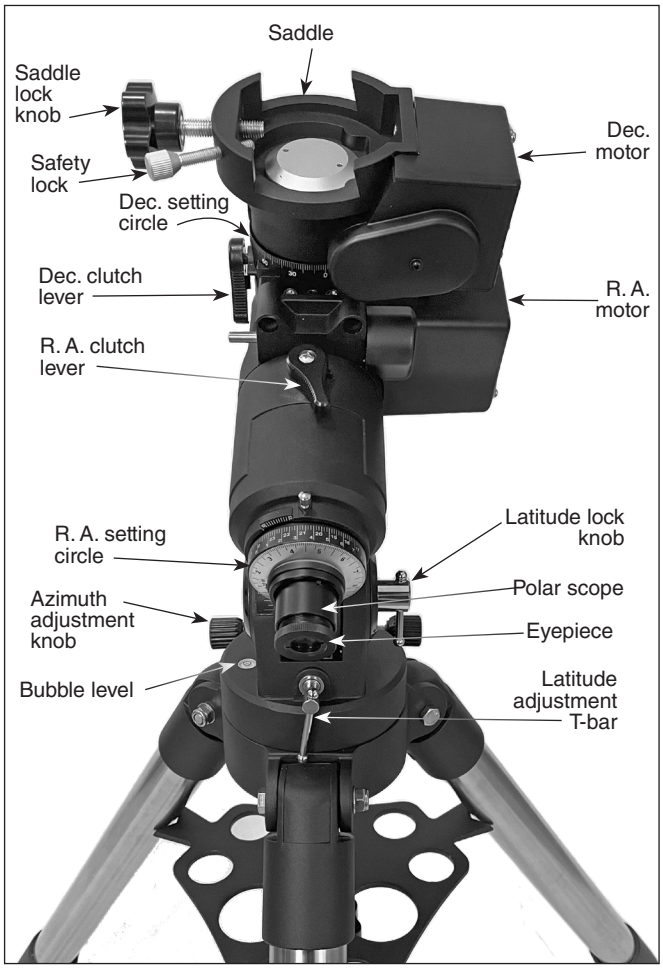


Figure 11. Close-up detail of the EQ-26 mount.

The telescope is now balanced on both axes. When you loosen the clutch lever on one or both axes and manually point the telescope, it should move without resistance and should not drift from where you point it.

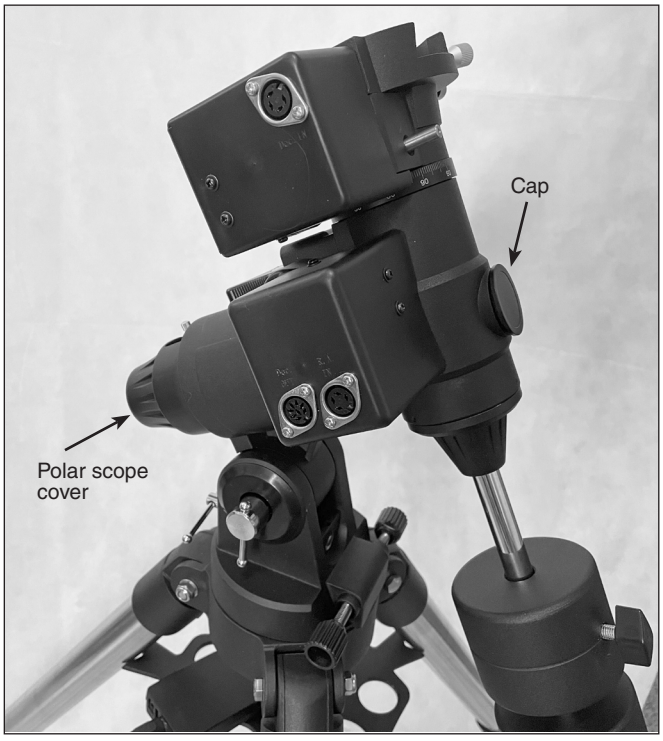


Figure 12. To use the polar scope, remove the polar scope cover and the cap on the front of the mount housing.

6. The Dual-Axis Hand Controller

Review **Figure 10** to familiarize yourself with the dual-axis hand controller.

Hand Controller Features

- Power port: The small end of the included 12V DC "cigarette lighter" power cable provided with the mount plugs into the power input jack.
- Motor port: 8-pin jack is for connecting the cable to the R.A. motor housing.
- USB port: USB-B serial port accepts USB cable for connection to a computer. This port is not needed for current functionality of the mount. It is there for possible future applications.
- Hemisphere switch: Switch on left side of hand controller; set it to N for use in Northern hemisphere, or S for use in Southern hemisphere.
- Directional buttons: Press buttons to move the mount in right ascension and declination.
- Slew rate buttons: Press the left button to decrease the rate of slewing; press the right button to increase the rate.
- Slew rate and axis indicator lights: Seven red LEDs along the top edge of the hand controller provide speed indicators, starting at 1.25x sidereal up to 800x sidereal rate. Pressing the slew speed button on the left decreases the slew speed; pressing the slew speed button on the right increases it. Slow speeds will be useful for final centering of an object in the telescope's eyepiece, while faster slew speeds will facilitate moving the telescope from one part of the sky to another rapidly.

The DEC and RA LEDs will illuminate when you press the Dec (top and bottom) and RA (left and right) directional buttons, respectively.

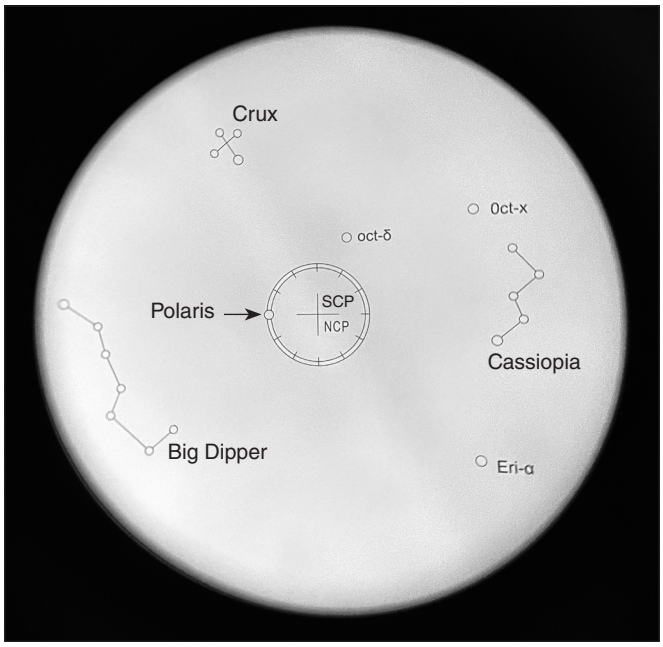


Figure 13. The polar scope's internal reticle is used for polar alignment in both the Northern and Southern hemispheres. Illuminate it with a dim red flashlight.

7. Polar Alignment

An equatorial mount is designed to compensate for the Earth's rotation, allowing your telescope to easily "track" the movement of stars and astronomical objects across the sky. Tracking keeps objects from drifting out of the telescope's field of view while you're observing or imaging. This is accomplished by the slow rotation of the mount on its RA axis, using the built-in RA motor drive. But first the RA axis must be aligned with the Earth's rotational (polar) axis—a process called polar alignment.

Adjusting the R.A. Axis Elevation (Latitude)

You will want to set the mount's latitude to the latitude of your observing site, which you can look up on the internet or find on some astronomy apps. To set the latitude:

1. Loosen the latitude clutch knob located on the right side of the mount (**Figure 11**) about a quarter turn.
2. Refer to the latitude scale and its pointer (**Figure 12**) as you turn the latitude adjustment T-bar clockwise or counterclockwise to set the R.A. axis elevation to your location's latitude. For example, if your latitude is 35° North, set the pointer to 35. The latitude setting should not have to be adjusted again unless you move to a different viewing location some distance away.
3. Retighten the latitude clutch knob.

The EQ-26 Mount comes with a polar axis finder scope (**Figure 11**) housed inside the RA housing of the mount. When properly aligned and used, it makes accurate polar alignment quick and easy to do.

Remove the cover at the rear of the mount's RA housing and the cap on the front opening of the mount to view through the polar axis finder scope (**Figure 12**). Shine a red flashlight down the front end of the polar scope to illuminate the reticle, which is shown in **Figure 13**. Make sure the flashlight shines in at an angle, so as not to block the polar scope's field of view. It may be helpful to have a friend hold the flashlight while you look through the polar finder. Too much light will wash out the view of Polaris and other stars, so it's best to use dim red light. The reticle allows accurate polar alignment from either hemisphere. If the reticle graphic appears blurry, you can focus it by rotating the polar scope's knurled eyepiece (see **Figure 11**).

If we extend Earth's rotational axis out into space it intersects an imaginary point called the Celestial Pole. In the northern hemisphere that point is called the North Celestial Pole, or NCP. In the southern hemisphere it is the South Celestial Pole, or SCP. Because the celestial poles are imaginary points, you can't see them. Fortunately, there are a couple of celestial "guideposts" close to the poles that help us pinpoint them. In the northern hemisphere that landmark is Polaris, the North Star. Polaris is not located exactly at the NCP; it is offset from it by less than 1 degree. In the southern hemisphere

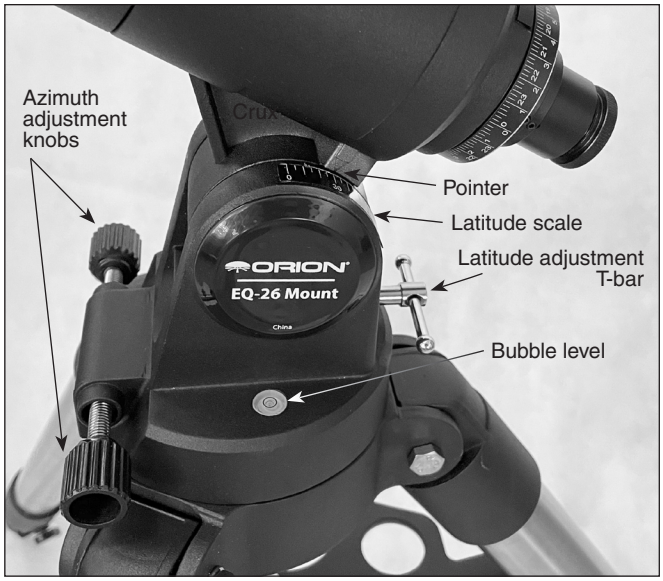


Figure 14. Features for leveling the mount and adjusting its latitude and azimuth positions.

the guidepost star is the star Sigma Octantis, in the constellation Octans. But Sigma Octantis is much fainter than Polaris at magnitude 5.4. Sigma Octantis lies a little more than a degree away from the SCP.

For observing in the Northern Hemisphere

1. Extend the tripod legs to the desired length by first releasing the leg locks, then extending the lower portion of each leg, then re-tightening each leg lock. Check the bubble level (**Figure 14**) to make sure the tripod is level; if it isn't, adjust the tripod legs individually as needed to center the bubble in the black ring.
2. Set the mount's latitude to the local latitude.
3. Find Polaris in the sky. Look north and locate the pattern of the Big Dipper (**Figure 15**). The two stars at the end of the "bowl" of the Big Dipper point right to Polaris. If you need help determining which direction is north, you could use your smartphone's compass feature or find a physical compass to point the way.
4. Now move the tripod so the mount's RA axis points roughly in the direction of Polaris.

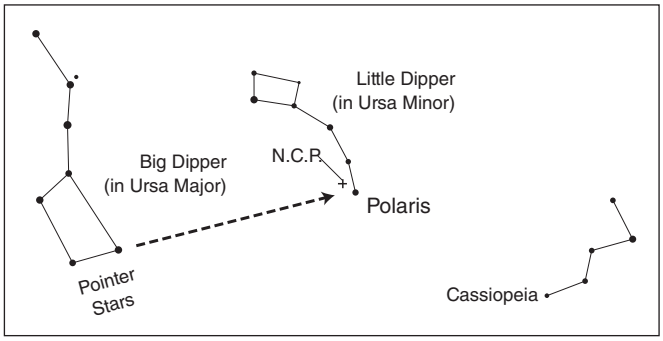


Figure 15. To find Polaris in the night sky, look north and find the Big Dipper. Extend an imaginary line from the two "Pointer Stars" in the bowl of the Big Dipper. Go about five times the distance between those stars and you'll reach Polaris, which lies within 1° of the north celestial pole (NCP).

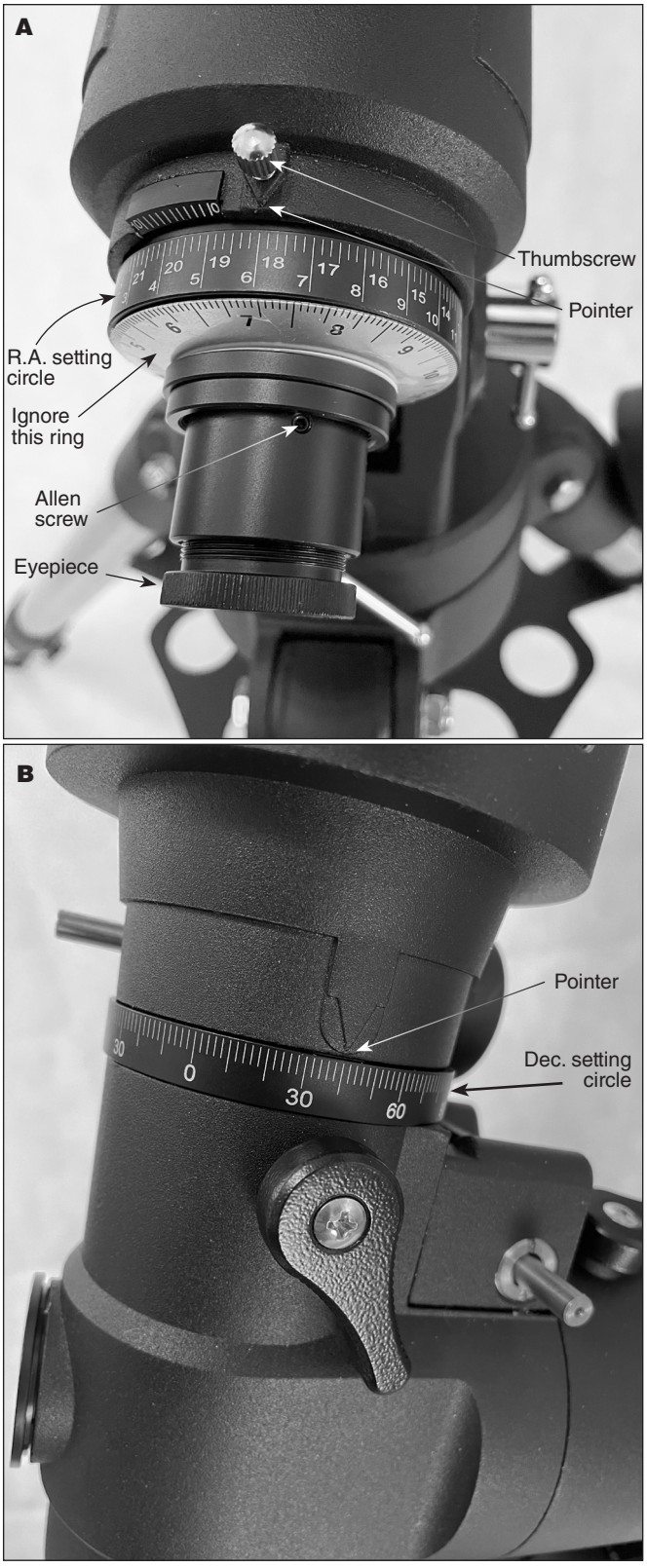


Figure 16 A.) The polar scope and R.A. setting circle. **B**) The Declination setting circle.

5. Make sure that the polar scope is aligned with the RA Axis. If it is not, follow the procedure in the following section, "Aligning the Polar Scope".
6. Use the latitude and azimuth adjustments on the mount (see **Figure 14**) to move it incrementally while viewing through the polar scope, until you can see Polaris in the field of view. It doesn't matter where it is in the field of view at this point; you will make fine adjustments to position Polaris where it needs to be in a moment.

   Note: For the azimuth adjustment knobs, turn one clockwise and the other counterclockwise the same amount, or vice versa. For latitude adjustment, loosen the latitude lock knob slightly, then turn the latitude adjustment T-bolt counterclockwise to raise the mount or clockwise to lower the mount. Then retighten the latitude lock knob.

   Note the constellation Cassiopeia (looks like a W) and the Big Dipper in the reticle (**Figure 13**). They do not appear in scale, but they indicate the general positions of Cassiopeia and the Big Dipper relative to the north celestial pole (which is indicated by the cross at the center of the reticle). Rotate the reticle so the constellations depicted match their current orientation in the sky when viewed with the naked eye. To do this, release the R.A. lock lever and rotate the main telescope around the R.A. axis until the reticle is oriented with sky. For larger optical tubes, you may need to remove the tube from the mount to prevent it from bumping into the mount. Once the reticle is correctly oriented, use the right ascension lock lever to secure the mount's position.
7. Now use the azimuth adjustment knobs and the latitude adjustment T-bolt (**Figure 14**) to position the star Polaris inside the tiny circle on the "railroad track" ring. You may first need to very slightly loosen the central support shaft underneath the equatorial mount, to allow it to rotate.

   Once Polaris is properly positioned in that small circle on the reticle, you are polar aligned. If you do not have a clear view of Polaris from your observing site, you will not be able to use the polar-axis finder to polar align the telescope.

   Note: *From this point on in your observing session, you should not make any further adjustments in the azimuth or the latitude of the mount, nor should you move the tripod. Doing so will undo the polar alignment. The telescope should be moved only about its right ascension and declination axes.*

For observing in the Southern Hemisphere

1. Set the mount's latitude to the local latitude.
2. Move the tripod so the mount's RA axis points roughly in the direction of the South Celestial Pole.
3. In the polar scope's field of view (**Figure 13**), there are three labeled stars and the unlabeled "cross" asterism of Crux, the Southern Cross, which will act as guideposts for alignment in southern hemisphere. They do not appear in scale, but they indicate the general positions of these stars relative to the south celestial pole (SCP). Release the R.A. lock lever and rotate the main telescope around the R.A. axis until the stars in the polar scope's reticle are oriented the same as those in the sky. For larger optical tubes, you may need to remove the tube from the mount to prevent it from bumping into the mount. Once the reticle is correctly oriented, use the right ascension lock lever to secure the mount's position.
4. Use the latitude adjustment bolt and the two azimuth adjustment knobs on the mount (see **Figure 14**) to fine-tune the alignment of the stars in the sky with those on the reticle.

   Note: For the azimuth adjustment knobs, turn one clockwise and the other counterclockwise the same amount, or vice versa. You may first need to very slightly loosen the central support shaft underneath the equatorial mount, to allow it to rotate. For latitude adjustment, loosen the latitude lock knob slightly, then turn the latitude adjustment T-bolt counterclockwise to raise the mount or clockwise to lower the mount. Then retighten the latitude lock knob.

   The mount is now polar aligned.

   Note: *From this point on in your observing session, you should not make any further adjustments in the azimuth or the latitude of the mount, nor should you move the tripod. Doing so will undo the polar alignment. The telescope should be moved only about its right ascension and declination axes.*

Aligning the Polar Scope

Before using the polar scope for polar alignment for the first time, you should check that the polar scope is aligned to the mount's RA axis. If it isn't, you will want to make adjustments to its alignment. At the center of the reticle is a cross, which you'll use in the procedure below to align the polar scope.

1. Look through the polar scope at a distant object (during the day) or at Polaris (at night, in Northern Hemisphere) and center it on the cross in the middle of the reticle. You may need to turn the latitude adjustment T-bolt and the azimuth adjustment knobs of the mount and even move the tripod itself to do this.
2. Rotate the mount 180° about the RA axis. It may be convenient to remove the optical tube and counterweight(s) before doing this. If the object remains centered on the cross after the rotation, then the polar scope is properly aligned to the RA axis and no adjustment is needed.
3. If the target deviated from the cross, then use a 1.5mm Allen wrench to adjust the three small Allen screws on the polar scope (**Figure 16A**) to move the target half the distance back to the cross. Then you will re-center the object on the cross as in Step 1 using the mount's azimuth adjustment knobs and the latitude adjustment T-bolt (without moving the tripod this time).
4. Repeat Steps 2 to 4 until the object stays centered on the cross of the reticle when rotating the mount 180° on the RA axis.

   NOTE:
   - When adjusting the Allen screws, first loosen one screw only ⅛ of a turn, and then lightly tighten the other two.
   - Do not over tighten the Allen screws as it might damage the reticle plate in the polar scope.

- Do not loosen one screw completely or loosen more than one screw at a time, or the reticle plate in the polar scope will be disengaged and further adjustment will be impossible.
- If the reticle plate does disengage, remove the polar scope's eyepiece by turning it counterclockwise and engage the reticle plate again.

8. Operating the EQ-26 Mount

Moving the Mount By Hand

The EQ-26 mount can be moved by hand in RA or Dec or can be moved electronically with the included dual-axis hand controller.

For coarse slewing, moving the mount by hand will allow you to slew the telescope a large distance across the sky quickly. Then you can finish the slew to a target object in a slower and more controlled way with the electronic hand controller. To move the mount by hand, loosen one or both of the lock levers on the RA and Dec axes to rotate the mount. Both levers should then be re-tightened for electronic operation via the hand controller. f

Using the Dual-Axis Hand Controller

The Orion EQ-26 Equatorial Mount allows motorized slewing using the included dual-axis hand controller (**Figure 10**). Make sure you are using a power supply capable of providing 12V and 5 Amps, and that it is connected to the hand controller via the included DC cable. The cable has a male DC "cigarette lighter" plug on one end, which you connect to a corresponding female socket on your power supply. The other end of the cable has a small stereo plug, which you connect via the "Power" socket on the hand controller.

Now make sure the 8-pin and 4-pin motor cables are attached as in **Figure 9B**. The DC power cable from your 12V DC power supply should plug into the "Power" port on the hand controller (**Figure 10C**). The 8-pin plug from the cable connected to the R.A. motor housing should be plugged into the "Motor" port on the hand controller.

Set the hemisphere of your location using the switch on the side of the controller (**Figure 10B**). Slide it to N for Northern hemisphere or S for Southern hemisphere.

The four large directional keys (**Figure 10A**) allow the mount to be slewed electronically as follows:

- The Left and Right keys control the movements of the Right Ascension (R.A.) axis.
- The Up and Down keys control the movements of the Declination (Dec.) axis.

When the power to the mount is turned on, the RA motor runs at sidereal rate and the Dec. motor remains idle. To turn the power off, turn off the external power supply or unplug the power cable from the hand controller's Power port.

The slew rate is indicated by labeled LEDs at top of controller. The rates range from 1.25x (1.25 times the default sidereal rate) to 800x. Adjust the rate to be faster or slower using the two buttons below the four directional control buttons. The rate adjustment buttons are the ones sporting the double arrows. Set a slower rate when doing fine centering of an object in the eyepiece, and use a faster rate for slewing the telescope across larger swaths of sky.

Locating Objects Using the Setting Circles

The two setting circles (**Figure 16**) on an equatorial mount enable you to locate celestial objects by their "celestial coordinates". Every object resides in a specific location on the "celestial sphere". That location is denoted by two numbers: its right ascension (R.A.) and declination (Dec.). In the same way, every location on Earth can be described by its longitude and latitude. R.A. is similar to longitude on Earth, and Dec. is similar to latitude. The R.A. and Dec. values for celestial objects can be found in any star atlas or star catalog.

The EQ-26 mount's R.A. setting circle (**Figure 16A**) is scaled in hours, from 1 through 24, with small marks in between representing 10-minute increments. The numbers at the bottom of the setting circle scale apply to viewing in the Southern Hemisphere while the numbers at the top apply to viewing in the Northern Hemisphere.

NOTE: *If the silver-colored ring adjacent to the RA setting circle has numbers on it, you can ignore them (see* **Figure 16A***). They are not useful for the purposes of object location or polar alignment.*

The Dec. setting circle is denoted in degrees, with each long mark representing 10° increments and the short marks denoting 2° increments (**Figure 16B**). Values of Dec. coordinates range from +90° to -90°. The 0° mark indicates the celestial equator. For this mount, the number scale goes to 90 on either side of 0 – there are no (+) or (-) signs. When the telescope is pointed north of the celestial equator, values of Dec. are positive, while when the telescope is pointed south of the celestial equator, values of Dec. are negative.

For example, the coordinates for the Orion Nebula (M42) are:

R.A. 5 hr 35.4 min, Dec. -5° 27'

That's 5 hours and 35.4 minutes in right ascension, and -5 degrees and 27 arc-minutes in declination (there are 60 arc-minutes in 1 degree of declination).

Calibrating the Setting Circles

Before you can use the setting circles to locate objects, the mount must be polar aligned, and the setting circles must be calibrated. The easiest way to calibrate the setting circles is to point the telescope at an identifiable bright star, center it in the eyepiece, then set the setting circles to the star's published coordinates, which you can find in a star atlas or astronomical software program, or perhaps on the internet.

Using a star atlas or astronomy planetarium program, identify a bright star visible in your sky. Some smartphone apps allow you to hold your phone up to the sky and the app will identify the stars and constellations visible in the direction you're pointing to. Note the right ascension and declination coordinates of the star.

Let's take as an example Altair, in the constellation Aquila. Its coordinates are:

R.A. 19 hr 51 min, Dec 8° 52'

1. Loosen the R.A. and Dec. lock knobs on the equatorial mount, so the telescope optical tube can move freely.

2. Point the telescope at Altair. Lock the R.A. and Dec. lock knobs. Center the star in the eyepiece with the electronic controller.

3. Now loosen the thumbscrew above the R.A. setting circle (see **Figure 16A**) to allow the setting circle to rotate, and rotate it until the pointer beneath the thumbscrew is pointing to ~19 hr 51 min. Retighten the thumbscrew.

4. Then rotate the Dec. setting circle until the pointer indicates +8° 52'. (There is no thumbscrew to lock or unlock the Dec. setting circle.)

Finding Objects with the Setting Circles

Now that both setting circles are calibrated, look up the coordinates of an object you wish to view.

1. Loosen the R.A. lock knob and rotate the telescope until the R.A. value from the star atlas matches the reading on the R.A. setting circle. Remember to use the upper set of numbers on the R.A. setting circle if you're in the Northern hemisphere. Retighten the lock knob.

2. Loosen the Dec. lock knob and rotate the telescope until the Dec. value from the star atlas matches the reading on the Dec. setting circle. Remember that values of the Dec. setting circle are positive when the telescope is pointing north of the celestial equator (Dec. = 0°), and negative when the telescope is pointing south of the celestial equator. Retighten the lock knob.

Most setting circles are not accurate enough to put an object dead-center in the telescope's eyepiece, but they should place the object somewhere within or near the field of view of the red dot finder scope, assuming the equatorial mount is accurately polar aligned. Use the dual-axis electronic controller to center the object in the finder scope, and it should then appear in the telescope's field of view.

The R.A. setting circle must be re-calibrated every time you wish to locate a new object. Do so by calibrating the setting circle for the centered object before moving on to the next one.

Confused About Pointing the Telescope?

Beginners occasionally experience some confusion about how to point the telescope overhead or in other directions. One thing you DO NOT do is make any adjustment to the mount's latitude setting or to its azimuth position (don't touch the azimuth lock knob). That will throw off the mount's polar alignment. Once the mount is polar aligned, the telescope should be moved only about the R.A. and Dec. axes by loosening one or both of the R.A. and Dec. lock knobs and moving the telescope by hand, or keeping the knobs tightened and moving the telescope using the slow-motion cables.

9. Specifications

Mount Type	German Equatorial
Motors	Dual stepper motors (R.A. and Dec.)
Payload capacity (counterweights excluded)	26 lbs. (12 kg)
Mount Weight (tripod excluded)	9 lbs., 11 oz. (4.4 kg)
Tripod	1.75" stainless steel tube legs
Tripod Weight	9 lbs., 13 oz. (4.4 kg)
Saddle	Vixen style
Counterweight	5 lbs., 12 oz. (2.6 kg), qty 2
Counterweight Shaft	Diameter 20mm, Length 326mm
Power Requirement	DC 12V, 5A
Maximum Slewing Speed	800x sidereal
Tracking Rates	Sidereal
Hand Controller	Cabled, dual-axis
Saddle height at max. leg extension	49"
Saddle height at min. leg extension	36"

One-Year Limited Warranty

This Orion product is warranted against defects in materials or workmanship for a period of one year from the date of purchase. This warranty is for the benefit of the original retail purchaser only. During this warranty period Orion Telescopes & Binoculars will repair or replace, at Orion's option, any warranted instrument that proves to be defective, provided it is returned postage paid. Proof of purchase (such as a copy of the original receipt) is required. This warranty is only valid in the country of purchase.

This warranty does not apply if, in Orion's judgment, the instrument has been abused, mishandled, or modified, nor does it apply to normal wear and tear. This warranty gives you specific legal rights. It is not intended to remove or restrict your other legal rights under applicable local consumer law; your state or national statutory consumer rights governing the sale of consumer goods remain fully applicable.

For further warranty information, please visit www.OrionTelescopes.com/warranty.

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