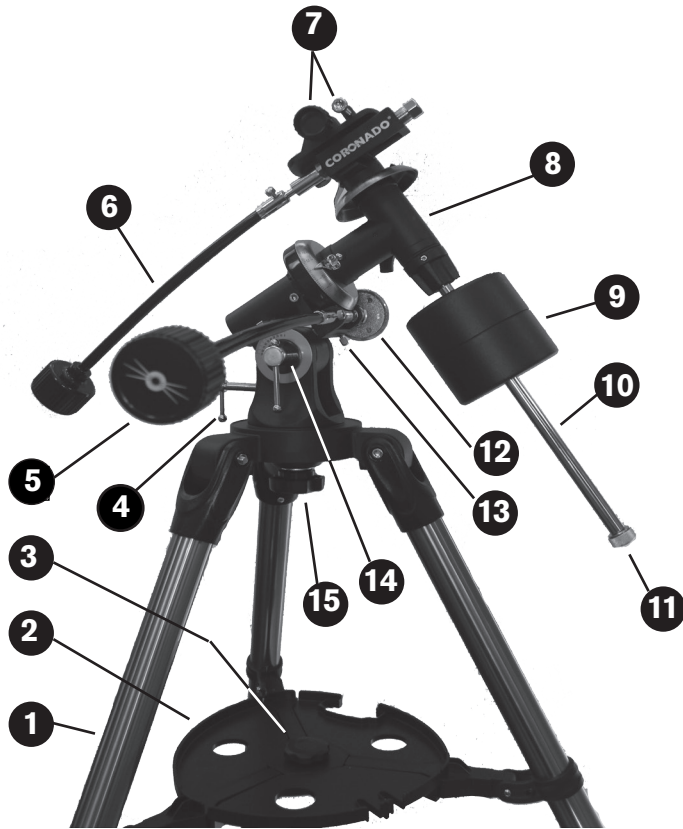


CORONADO[®]

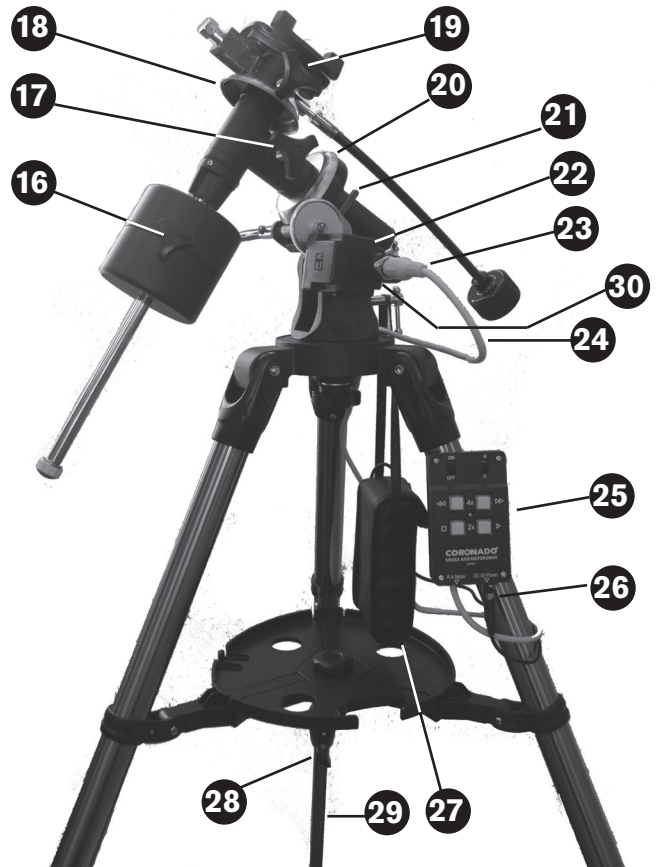
EQS Mount with RA Motor

Users Guide



- 16. Counterweight lock knob
- 17. RA lock knob
- 18. DEC setting circle
- 19. DEC lock knob
- 20. RA setting circle
- 21. Motor clutch knob
- 22. RA motor drive assembly
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- 27. Battery pack
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- 1. Tripod
- 2. Accessory tray
- 3. Accessory tray mounting knob
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- 5. RA slow-motion control
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- 7. OTA mounting lock knobs
- 8. EQ mount body
- 9. Counterweight
- 10. Counterweight shaft
- 11. Counterweight shaft safety nut
- 12. RA spur gear
- 13. Motor tension spring mounting screw
- 14. Latitude lock knob & scale
- 15. Mount body lock knob



SETUP YOUR TRIPOD

The tripod is the basic support for your telescope. Its height may be adjusted so that you can view comfortably. To assemble your Coronado EQS Mount, follow the below instructions carefully.

1. Spread the tripod legs out evenly apart.
2. Set the height of your tripod by rotating and loosening the tripod leg lock to unlock the sliding leg extension.
3. Slide the inner portion of the leg in or out to the desired length.
4. Rotate and tighten the leg lock to re-lock the inner tripod leg.
5. Repeat for the other two legs so when complete, the top of the tripod is level.

ATTACH THE ACCESSORY TRAY

The accessory tray attaches at the center of the tripod legs and is a convenient place to hold eyepieces and other Coronado accessories while observing. To attach:

1. Place the tray underneath the center of the tripod under the center knob as shown in **Figure 1** with the tripod leg braces in the slots.
2. Tighten the center knob until there is a firm fit.
3. To remove the tray, loosen the center knob until the tray drops down.



FIGURE 1



FIGURE 2

ATTACH THE MOUNT

Attach the mount body to the tripod by placing the base of the mount on top of the tripod as shown in **Figure 2**. Rotate the mount until the front of the mount sits over one of the tripod legs. Next, secure the mount to the tripod using the large mount body lock knob at the top of the tripod. Tighten to a firm feel.

PREPARE THE MOUNT

1. Attach the RA & DEC slow-motion cables. These cables are secured in place with a firm tightening of the thumb-screws located at the attachment ends of each cable. See **Figure 3**.
2. Thread the latitude adjustment knob into the back of the mount.
3. Loosen the latitude lock and turn the latitude adjustment knob clockwise until the latitude scale on the side of the mount reads approximately 45°. See **Figure 4**.
4. Tighten the latitude adjustment lock on the side of the mount to secure the latitude in place.



FIGURE 3



FIGURE 4

ATTACH THE COUNTERWEIGHT & COUNTERWEIGHT SHAFT

1. Thread the counterweight shaft into the mounts declination axis until it stops. See **Figure 5**.
2. Remove the counterweight shaft safety nut and set it aside.
3. Slide the counterweight onto the counterweight shaft so it is about 2" from the bottom of the shaft, (**shown in Figure 6**) and secure in place by tightening the counterweight lock knob.
4. Thread the safety nut into the counterweight shaft until tight. See **Figure 7**.

Note: Make sure the safety knob always remains in place on the shaft. This safety feature prevents the counterweight from accidentally falling off the shaft and possibly causing bodily injury.



FIGURE 5



FIGURE 6



FIGURE 7



FIGURE 8

MOTOR DRIVE INSTALLATION

The Coronado EQS mount can be used without installing the RA motor assembly. However, in this configuration, the user must manually adjust the slow-motion cables to follow the Sun or stars as they move in the sky. With the RA motor drive installed, the Coronado EQS mount will track the Sun automatically as it moves. If the mount does not follow the Sun precisely you can use the hand controller to electronically make small adjustments to the tracking to keep the object centered in the eyepiece. To install the motor:

1. Loosen the motor mounting lock knob located on the

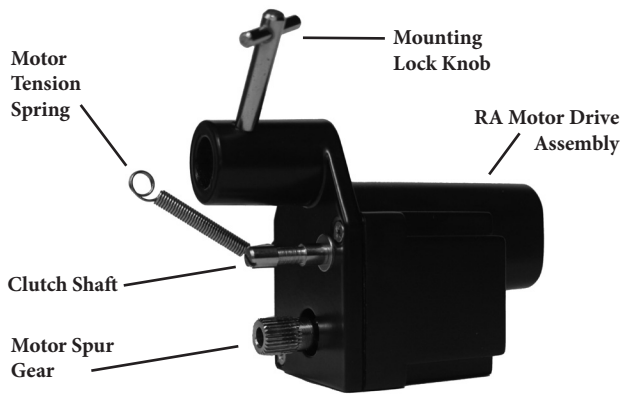


FIGURE 9

motor drive assembly. **See Figure 9.**

2. Slide the motor assembly onto the motor mounting shaft. **See Figure 10.**
3. Rotate the motor assembly until the motor spur gear and RA spur gear fit together properly, as shown in **Figure 14**. Lightly tighten the motor mounting lock knob to hold motor in place.

NOTE: Only tighten the motor mounting lock knob slightly so the motor assembly can still rotate on the mounting shaft and re-engage the RA spur gear using the force from the motor tension spring. Overtightening the mounting lock knob will prohibit the motor spur gear from re-engaging the RA spur gear and prevent the motor drive from functioning properly.



FIGURE 10

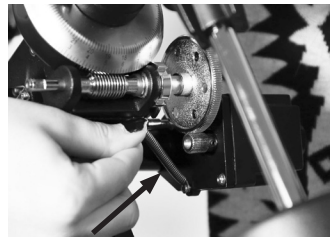


FIGURE 11



FIGURE 12



FIGURE 13

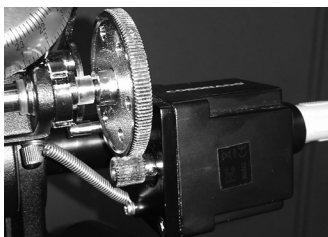


FIGURE 14

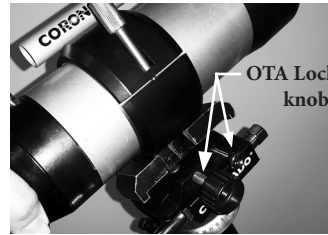


FIGURE 15



FIGURE 16

4. Slide the circular end of the motor tension spring over the motor tension spring mounting screw located below the RA spur gear. **See Figure 11.** Tighten the motor tension spring mounting screw until firm.
5. Verify the RA motor can freely rotate on its mounting shaft and can re-engage the RA spur gear using the force from the motor tension spring. If it can not, loosen the motor lock knob slightly until it can.
6. From the hand controller, plug the 5-pin DIN cable into motor assembly as shown in **Figure 12**.
7. Plug in the power cord from the battery case into power outlet on control box as shown in **Figure 13**.

ATTACH THE OPTICAL TUBE TO THE MOUNT

1. Lay the optical tube dovetail onto the top of the mount, as shown in **Figure 15**.
2. Tighten both dovetail locking knobs to a firm feel.

BALANCING THE TELESCOPE

In order for the telescope to move smoothly on its mechanical axes, it must first be balanced as follows:

1. Loosen the RA lock knob. The telescope mount will turn freely about the RA axis, so be sure to hold the optical tube in one hand to prevent it from moving uncontrollably. Rotate the telescope about the RA axis so that the counterweight shaft is parallel to the ground (horizontal). **See Figure 16.**
2. Loosen the counterweight lock knob and slide the counterweight along the shaft until the telescope remains in any given position without tending to drift up or down around the polar axis as shown in **Figure 16**.
3. **NOTE:** Always re-tighten the counterweight lock knob before rotating the RA axis to prevent the counterweight from sliding unexpectedly. When the telescope is balanced, proceed to the next step of aligning the equatorial mount. Improper balance will overstrain the RA motor and may cause the issues with gear engagement or tracking accuracy.

POLAR ALIGNMENT OF THE EQUATORIAL MOUNT

To line up the Meade Coronado EQS mount with the celestial pole, follow this procedure:

1. Slightly loosen the mount body lock knob, so that the entire telescope may be rotated in a horizontal direction. Rotate the telescope until it points to TRUE North. Use a compass or locate Polaris (visible only at night!), the North Star, as an accurate reference to TRUE North.

- Level the top of the tripod with the horizon, if necessary, by adjusting the heights of the three tripod legs.
- Determine the latitude of your observing location by checking a road map, atlas, or the internet. Release the latitude lock and adjust the latitude adjustment knob until the latitude is indicated on the latitude scale pointer. Then tighten the latitude lock until firm. **See Figure 17.**
- If the above steps (1-3) were performed with reasonable accuracy, your telescope is now sufficiently well-aligned to the North Celestial Pole (TRUE North) for visual observations. Once the mount has been polar-aligned as described above, the latitude angle need not be adjusted again, unless you move to a different geographical location more than about sixty miles away (i.e. a different latitude). The only polar alignment procedure that you need to perform each time you use the telescope is to point the polar axis True North, as described in step 1 above.

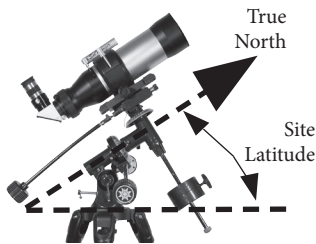


FIGURE 17



FIGURE 18

MOTOR DRIVE OPERATION

The hand controller on/off switch controls the power for the motor drive. **See Figure 18.** The N/S switch changes the direction in which the motor will track depending on which hemisphere the observer lives in. For observers who live in the northern hemisphere the “N” setting should be used and for observers who live in the southern hemisphere the setting should be set to the “S” on the hand box.

The motor drive requires 4 ‘D’ cell batteries to operate. On average, a set of batteries will last several observing sessions. Under normal operation the battery indicator LED light will be green. When the battery LED indicator changes color to orange or red it is recommended that the batteries be switched. **Note: Tracking performance will suffer if the batteries are low.**

The right “2X” button will rotate the telescope forward at twice the tracking speed or approximately $\frac{1}{2}^\circ$ per minute. The left “2X” button stops all motion and allows stars to drift by at their normal rotation rate of approx. $\frac{1}{4}^\circ$ per minute. The “4X” button allows for four times the tracking rate (approx. 1° per minute) and the reverse button move the telescope backwards at three times the tracking rate (approx. $\frac{3}{4}^\circ$ per minute).

From the hand controller, turn the power on. The motor drive will allow your mount to track celestial objects or the Sun. The motor drive will automatically rotate at the correct speed to compensate for the rotation of the earth. However, for the motor drive to properly compensate for the earth’s rotation,

your telescope mount must be polar-aligned and the altitude axis set to your local latitude. The mount’s motor speed will match the earth’s rotation rate for stars or the sun so that it will appear stationary in telescope eyepiece. The hand controller can be used as a correction for the RA axis.

The motor clutch knob is located next to the RA spur gear and acts as a clutch to engage and disengage the motor drive. Push the lever down to disengage the motor and lift the lever to engage the motor. For large coarse RA movements, disengage the motor using the motor clutch knob. Then use the RA slow-motion cable to center the object in the eyepiece and re-engage the motor clutch to begin tracking

NOTE: The motor must be disengaged by the clutch before using the R.A. slow-motion cable.

Please note that the tracking speed of the R.A. motor is set at the factory and will not need any adjustment. However, if an adjustment is needed to the variable resistor inside the control box we recommend it be performed by an experienced technician.

MEADE LIMITED WARRANTY

Every Meade telescope, spotting scope, and telescope accessory is warranted by Meade Instruments Corporation (“Meade”) to be free of defects in materials and workmanship for a period of ONE YEAR from the date of original purchase in the U.S.A. and Canada. Meade will repair or replace a product, or part thereof, found by Meade to be defective, provided the defective part is returned to Meade, freight-prepaid, with proof of purchase. This warranty applies to the original purchaser only and is non-transferable. Meade products purchased outside North America are not included in this warranty, but are covered under separate warranties issued by Meade international distributors.

RGA Number Required: Prior to the return of any product or part, a Return Goods Authorization (RGA) number **must** be obtained from Meade by writing, or calling (800) 626-3233. Each returned part or product must include a written statement detailing the nature of the claimed defect, as well as the owner’s name, address, and phone number.

This warranty is not valid in cases where the product has been abused or mishandled, where unauthorized repairs have been attempted or performed, or where depreciation of the product is due to normal wear-and-tear. Meade specifically disclaims special, indirect, or consequential damages or lost profit which may result from a breach of this warranty. Any implied warranties which cannot be disclaimed are hereby limited to a term of one year from the date of original retail purchase.

This warranty gives you specific rights. You may have other rights which vary from state to state.

Meade reserves the right to change product specifications or to discontinue products without notice.

This warranty supercedes all previous Meade product warranties.



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