

# POLAR AXIS FINDERSCOPE CGX & CGX-L

## INSTRUCTION SHEET

# 94239

### What's in the Box?



- Polar finderscope and bracket
- Plastic dust covers for both ends of finderscope
- Dovetail mounting bracket (attached to base of bracket)
- Hex head screws (x2)
- Hex keys (x4)
- Phillips screwdriver

Objective Lens



### Solar Warning



- Never look directly at the Sun with the naked eye or with a telescope (unless you have the proper solar filter). Permanent and irreversible eye damage may result.
- Never use your telescope to project an image of the Sun onto any surface. Internal heat build-up can damage the telescope and any accessories attached to it.
- Never use an eyepiece solar filter or a Herschel wedge. Internal heat build-up inside the telescope can cause these devices to crack or break, allowing unfiltered sunlight to pass through to the eye.
- Do not leave the telescope unsupervised, either when children are present or adults who may not be familiar with the correct operating procedures of your telescope.

### Installing the Polar Finder

1. Loosen the two thumb knobs on the base of the finderscope and slide the dovetail base plate off the bottom of the finder bracket.
2. Locate the polar finder bracket mount on the CGX or CGX-L mount. This will be a rectangular plate located on the right-side mount's Right Ascension axis, just below the declination motor housing. Remove the two Phillips head screws and the cover plate.
3. Install the dovetail bracket into these holes using the two hex head screws provided with packaging. Make sure the thinner part of the dovetail bracket is facing the north side of the mount with the broader side facing south.
4. Slide the polar finder and bracket assembly onto the dovetail mount and tighten the two thumb knobs to secure it in place.
5. The position of the polar finder can be adjusted to make the polar finder more easily accessible. To do this, loosen the large hand knob in the middle of the bracket, set the angle of the finder to the desired position and tighten the knob.



### Focusing the Polar Finderscope

To focus the finderscope, simply look through the finderscope and rotate the eyepiece clockwise or counterclockwise until the reticle is sharp.

### Aligning the Polar Finderscope

Before the polar finderscope can be used, you must align the finderscope with the mechanical polar axis of your CGX or CGX-L mount.

1. Set the mount up during the day, but without the counterweight bar, counterweight or telescope tube.
2. Locate a stationary object at least 1/4 mile away or as far away as possible.
3. Loosen the Right Ascension clutch lever and rotate the mount in R.A. until you reach one of the hard stops.

4. Center your chosen object in the crosshairs of the polar finderscope reticle using the latitude and azimuth adjustment knobs on the mount. These are the knobs which you would normally use for polar alignment.

5. Rotate the mount 180° in R.A. and tighten the clutch levers.

6. Look through the finderscope for your target.

If the crosshair reticle is still on the same target after the rotation, no further adjustment is required. If the crosshairs have moved off your target, you will need to adjust the three knobs surrounding the finderscope's objective lens.

1. Without moving the equatorial mount, start by backing off the three hex head screws recessed in the finder bracket next to the three finder adjustment knobs.

2. Loosen one of the finder adjustment knobs by a half turn, then tighten one or both of the remaining finder adjustment knobs to keep even pressure on the finderscope. As you adjust the knobs, the aiming point of the finderscope will shift slightly.

3. Move the crosshairs back towards the target, but **do not** center the crosshairs over the target. Instead, only move the crosshairs halfway back toward the target.

4. Gently tighten the three recessed hex head screws until they are snug. Do not overtighten.

5. Use the latitude and azimuth adjustment knobs on the equatorial mount to re-center the crosshairs on your distant target.

6. Unlock the R.A. clutch knob on the mount and rotate the mount 180° back the other direction.

7. Look through the finderscope for your target.

8. The alignment should be close. Repeat this procedure as necessary until the crosshair stays on target after rotating the mount 180°.

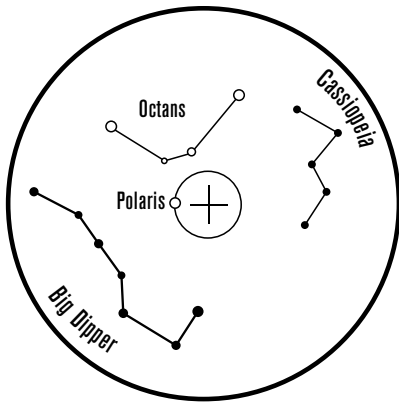
While a daytime alignment is easier, it is possible to do this alignment at night. Simply use Polaris as your target to center the crosshairs of the finderscope.

**NOTE:** You should only need to do this alignment procedure once, unless the finderscope is bumped or dropped. Your polar finderscope is mounted to the CGX or CGX-L mount using a dovetail bracket that will allow you to attach and remove the finderscope for storage or travel. It should maintain its alignment with repeated use.

If you adjust the angle of the finder bracket arm after aligning the finder, you may want to check the alignment once again before use to verify the finder is still aligned to the polar axis of the mount.

## Using the Polar Finder

1. Setup your mount outside at night, as you normally would, for observing. Adjust the polar axis of your CGX or CGX-L mount so the latitude scale on the side of the mount is close to the latitude of your observing site. Orient the mount so your polar axis is roughly facing north. Use a compass if necessary.
2. Remove the caps from the eyepiece and objective lenses of the finderscope and look through the polar finderscope.
3. The polar alignment reticle contains representations of the constellations Cassiopeia, Octans, the Big Dipper asterism, the North Celestial Pole (NCP) and Polaris. While the constellations and the Big Dipper are not in scale, they do show their correct relative positions to the Celestial Pole.



4. For Northern Hemisphere observers, rotate the finderscope within its bracket until Cassiopeia and the Big Dipper match their current orientation in the sky when seen with the unaided eye. Use the latitude and azimuth polar adjustment knobs on your mount until Polaris in the small circle labeled "Polaris" in the reticle.

For Southern Hemisphere observers, rotate the reticle until the stars of Octans match their orientation of the reticle. Use the latitude and azimuth polar adjustment knobs on your mount until the stars of Octans fit inside the small circle labeled "Octans" in the reticle.

5. Make sure you tighten all of the knobs on the mount to firmly lock the polar axis in position.

You are now polar aligned and ready to use your mount for observing or imaging.

**NOTE:** The use of this polar finderscope requires that you have a clear view of Polaris. If you have trees or buildings blocking your view to the North, you will need to relocate your mount or use a different method of polar alignment.

While it is possible to do the alignment procedure without telescope tube attached to the equatorial head, it is recommended that the tube and counterweights be attached before you begin polar alignment. Any accidental bumping of the mount when installing the tube and counterweights, or any settling of the tripod into the ground as weight is added may throw off your alignment.

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