

## Q-Focuser-ZWO-Helical-M42, Q-Focuser-ZWOOAG-Helical, Q-Focuser-QHYOAG-Helical, Q-Focuser-AskarOAG-Helical INSTALLATION INSTRUCTIONS

The **Q-Focuser-ZWO-Helical-M42** is intended for use with the ZWO 1.25" Helical Focuser with female M42 connection.

The **Q-Focuser-ZWOOAG-Helical** is intended for use with the ZWO 1.25" Helical Focuser on the OAG-L and OAG-L-M68.

The **Q-Focuser-QHYOAG-Helical** is intended for use with the QHYOAG S/M/L.

The **Q-Focuser-AskarOAG-Helical** is intended for use with the Askar OAG.

Included in the package:

- (1) Q-Focuser Bracket
- (1) Q-Focuser Pulley
- (1) Focus Gear
- (1) Belt
- Necessary Hardware

Tools needed: small philips screwdriver, 1.5mm hex key, 2.5mm hex key (not provided)

**IMPORTANT: make sure any locking thumbscrews are disengaged and the focuser can rotate freely.**

STEP 1 – Install the Focus Gear on the focuser.

- Put the focuser in the "0" position.
- **Q-Focuser-ZWO-Helical-M42** – Loosen the screw in the Focus Gear and slide the gear from the bottom over the black focus ring with numbered scale. Clamp the gear to the focuser. There should be little to no gap in the gear seam.
- **Q-Focuser-ZWOOAG-Helical** – On the OAG, remove any silver or brass lock knobs. Loosen the screw in the Focus Gear and slide the gear from the top over the black focus ring with numbered scale. Clamp the gear to the focuser. There should be little to no gap in the gear seam. Replace the silver or brass knobs.
- **Q-Focuser-QHYOAGHelical** – On the OAG, remove the long silver M2 locking knob. Loosen the screw in the Focus Gear and slide the gear from the top over the blue focus ring. Clamp the gear to the focuser. Depending on variances in diameter of the blue ring, the seam of the Focus Gear may be fully closed or have a small gap.
- **Q-Focuser-AskarOAG-Helical** – On the OAG, remove any lock knobs. Loosen the screw in the Focus Gear and slide the gear from the top over the black helical focus ring. Position the gear so the bottom of the gear is approximately 2mm above the red OAG ring. Tighten the screw in the gear. There should be little to no gap in the gear seam. Replace the lock knobs.

STEP 2

- Install the Pulley onto the Q-Focuser focuser pinion shaft. Secure with two set screws, but do not over-tighten the set screws.

STEP 3 – Install the Q-Focuser in the bracket.

- Position the Q-Focuser closest to the focuser in the bracket.
- Loosely secure the Q-Focuser to the bracket with (3) M3 washers, (1) M3x16 socket head screw (side entry), and (2) M3x10mm socket head screws (provided with the Q-Focuser).
- Ensure the Q-Focuser can still slide front to back in the bracket. If necessary, loosen the screws a little.

#### STEP 4 – Install the Bracket onto the Helical Focuser.

- **Q-Focuser-ZWO-Helical-M42** – Loosen the two clamping screws in the round part of the bracket so a small gap appears in each seam. Place the bracket on a flat surface. Slide the focuser into the bracket and position it so the focuser knobs are easily accessible as in the image below. Tighten the clamping screws. There should be little to no gap in the clamping ring seams.
- **Q-Focuser-ZWOOAG-Helical** – Loosen the two clamping screws in the round part of the bracket and completely separate the two halves. Place the bracket and clamping ring around the small red part of the OAG and tighten the screws to clamp the bracket onto the OAG. Position the bottom of the clamping ring so it is even with the bottom of the red ring in the focuser. At this point, leave the screws loose enough so that the bracket can be rotated around the red ring.
- **Q-Focuser-QHYOAG-Helical** – Loosen the two clamping screws in the round part of the bracket and completely separate the two halves. Place the bracket and clamping ring around the small black body of the OAG and position it so that the bracket is up against the ridge above. Tighten the screws to clamp the bracket onto the OAG. At this point, leave the screws loose enough so that the bracket can be rotated around the black body.
- **Q-Focuser-AskarOAG-Helical** – Loosen the two clamping screws in the round part of the bracket and completely separate the two halves. Place the bracket and clamping ring around the red ring of the OAG and tighten the screws to clamp the bracket onto the OAG. Position the bottom of the clamping ring so it is even with the bottom of the red ring in the focuser.



#### STEP 5 – Install the belt.

- First slip the belt around the Q-Focuser Pulley, then the Focus Gear.
- Place tension on the belt by sliding the Q-Focuser toward the rear of the bracket and tighten the M3 screws.
- Belt tension: The belt should be taut but not rigid.

#### OPERATION NOTES:

- It is best practice to set the maximum step value in the Q-Focuser driver to whatever value represents the actual number of maximum steps that the focuser can rotate. This number depends on the tolerance of each individual Helical Focuser.
- 1.25" cameras and cameras up to 72mm in diameter can be used in the Helical Focuser with the bracket in place. (NOTE: this has been tested with 1.25" cameras and "planetary" cameras with a diameter of 62mm. 72mm dia. cameras with a 1.25" nosepiece should work, but are untested.)
- ZWO M42 version – the radius of the bracket extends 10mm from the red M42 ring.
- ZWO OAG version – the radius of the bracket extends 12mm from the OAG red bottom ring.

- QHY OAG version – the radius of the bracket extends 12mm from the OAG small black body.
- Askar OAG version – the radius of the bracket extends 10mm from the OAG red bottom ring.

Please inform of any additions or corrections to these directions by sending an email to [buckeyestargazer@gmail.com](mailto:buckeyestargazer@gmail.com)