

EAF-ZWOHelical-M42, EAF-ZWOHelical-OAG, EAF-QHYHelical-OAG INSTALLATION INSTRUCTIONS

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

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

The **EAF-QHYHelical-OAG** is intended for use with the QHYOAG S/M/L.

Included in the package:

- (1) EAF Bracket
- (1) EAF Pulley
- (1) Focus Gear
- (1) Belt
- (2) M4x10mm Pan Head Screws

Tools needed: small philips screwdriver, 1.5mm 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.
- **EAF-ZWOHelical-M42** – Loosen the screw in the Focus Gear and slide the gear from the bottom over the black focus ring with numbered scale. Position the gear so the top of the gear is 1mm below the numbers on the scale and the square M3 nut embedded in the gear lines up with the single silver 1.25" retention knob. Tighten the screw in the gear. There should be little to no gap in the gear seam.
- **EAF-ZWOHelical-OAG** – 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. Position the gear so the top of the gear is 1mm below the numbers on the scale and the square M3 nut embedded in the gear lines up with the single silver 1.25" retention knob. Tighten the screw in the gear. There should be little to no gap in the gear seam. Replace the silver or brass knobs.
- **EAF-QHYHelical-OAG** – 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. Position the gear so the top of the gear is level with the top of the blue focus ring and the square M3 nut embedded in the gear lines up with the silver screw as indicated below. Tighten the screw in the gear. Depending on variances in diameter of the blue ring, the seam of the Focus Gear may be fully closed or have a small gap.



STEP 2

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

STEP 3 – Install the EAF in the bracket.

- Position the EAF closest to the focuser in the bracket.
- Loosely secure the EAF to the bracket with provided M4x10mm pan head screws. 
- Ensure the EAF 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.

- **EAF-ZWOHelical-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.
- **EAF-ZWOHelical-OAG** – 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.
- **EAF-QHYHelical-OAG** – 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.



STEP 5 – Install the belt.

- First slip the belt around the EAF Pulley, then the Focus Gear.
- Place tension on the belt by sliding the EAF toward the rear of the bracket and tighten the two M4x10mm pan head screws.

- **EAF-ZWOHelical-OAG and EAF-QHYHelical-OAG note:** It is necessary to temporarily rotate the whole bracket perpendicular to the OAG to tighten the EAF screws. After securing the EAF to the bracket with tension on the belt, rotate the bracket to the desired position and fully tighten the bracket clamping screws. There should be little to no gap in the clamping ring seams.
- **Belt tension:** The belt should be taut but not rigid.

OPERATION NOTES:

- It is best practice to set the maximum step value in the EAF 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 78mm 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. 78mm 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.

Please inform of any additions or corrections to these directions by sending an email to buckeyestargazer@gmail.com