EAF

Quick Guide

V1.0



Thank you for purchasing the ZWO Electronic Automatic Focuser(EAF).

The EAF is an intelligent product independently developed and manufactured by ZWO, specifically designed for astronomical photography. It aims to achieve automatic and precise adjustment of the optical tube assembly (OTA)'s focal length.

This manual can guide you to use the EAF safely and efficiently through simple instructions and illustrations. It also highlights important precautions.

For more information, please visit our official website:
https://www.zwoastro.com

Product Introduction

To meet the diverse needs of users, ZWO has launched two versions of the EAF: the standard EAF and the high-end EAF Pro.

The EAF is an upgrade from the previous version, with its interface upgraded from Type-B to the more universal Type-C.



The EAF Pro is equipped with a Bluetooth chip, enabling wireless communication with ASIAIR or PCs, it also features a built-in lithium battery, no longer relying on external power supply, and truly enabling wireless operation.



The accessories include a variety of mounting brackets, which can be flexibly installed on most telescope focusers available on the market to accommodate different user needs.

	EAF	EAF Pro
Dimensions	41*52*70.3mm	41*52*73.4mm
Payload	5kg	5kg
Drive Mechanism	Stepper motor Reduction ratio 1:128	Stepper motor Reduction ratio 1:128
Communication Method	Type-C（5V1A）	Type-C（5V1A）/Bluetooth
Battery	✗	✓
Temperature Sensor **Hand Controller Interface**	✓	✓
Power Switch	✗	✓
Status Indicator Light	✗	✓
Focus Button	✗	✓

In the Box - Standard Version



①. EAF body *1

②. Standard bracket*1

③. 2m USB2.0 cable(Type-C to Type-A)*1

④. 3mm Hex wrench*1

⑤. 2mm Hex wrench*1

⑥. Flexible coupling 1 set (4-4mm*1/4-5mm*1/4-6mm*1/4-7mm*1)

⑦. Screw 1 set (M5*10 cylindrical head hex screws*2 / M4*8 cylindrical head hex screws*4)

⑧. Spacer*5(Inner diameter: 5mm)

⑨. Quick Guide*1

Optional Accessories



Hand Controller



Temperature Sensor

User Manual

Preparation

Install the EAF

Remove the coarse adjustment knob of the telescope focuser using a suitable sized wrench.



Install the coupling on the telescope focuser shaft and tighten the locking screw with the 2mm hex wrench.

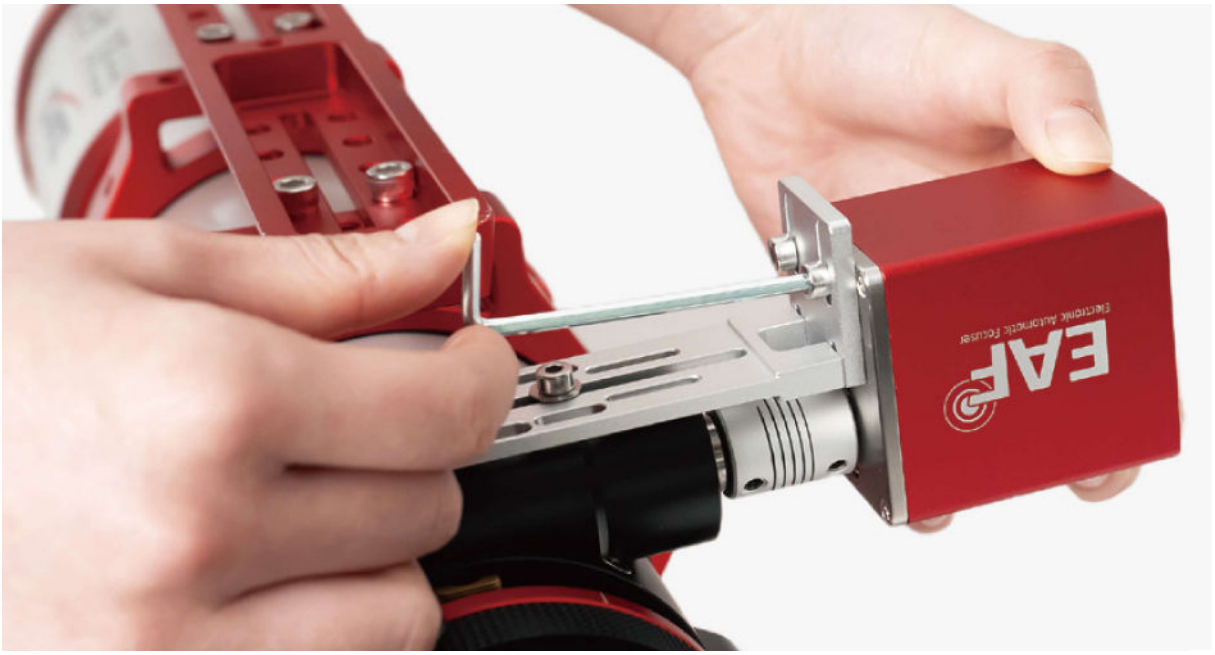


Attach the focuser body to the coupling, align the EAF motor shaft flat surface with the locking screw, and tighten the locking screw using the provided 2mm hex wrench.





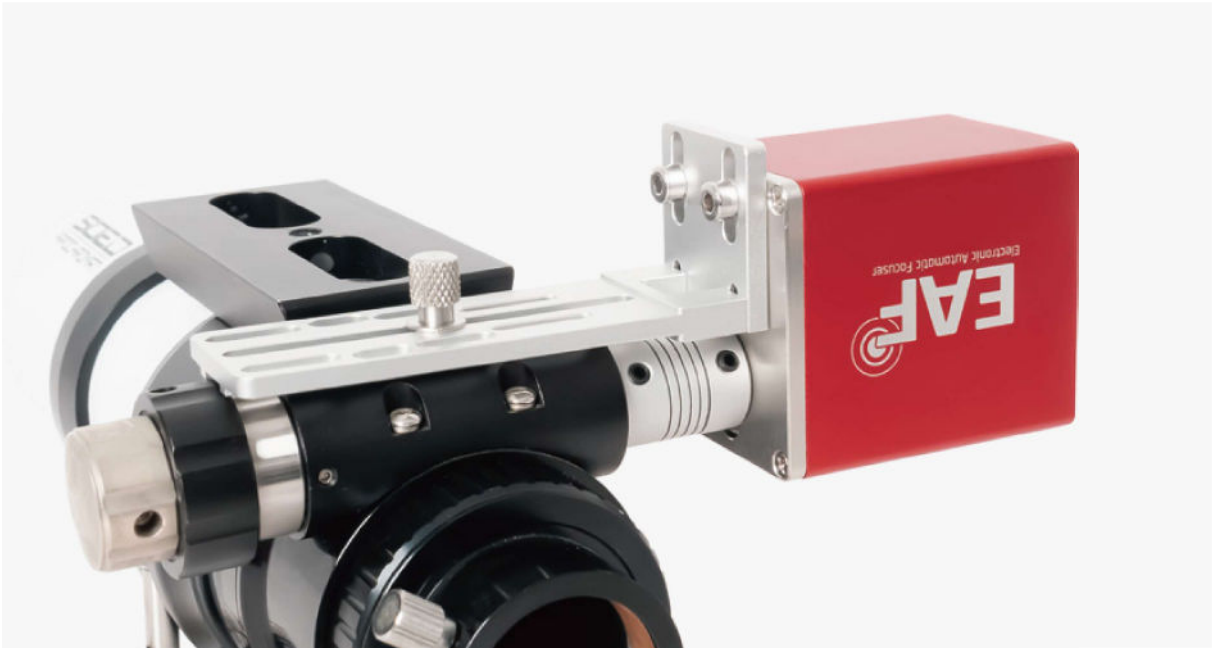
Secure the EAF body to the bracket and the bracket to the matching mounting holes in the focuser assembly using the supplied M4 screws. Ensure that the bracket is flush with the EAF mounting surface without any gaps, and that it is parallel to the focuser body surface.



Check and ensure that all the connections of the EAF are secure. This completes the hardware installation of the EAF.



For curved focusers like the one in the image below, you only need to use wodethe original locking screws and 3 washers to secure the EAF. There is a groove at the bottom of the EAF bracket, and a single screw provides sufficient stability.



Attention

1. Select the appropriate coupling. The package includes four different specifications of couplings. Please choose the most suitable one based on the actual size of the focuser shaft for installation.

2. Correctly install the coupling: Since the shape of the EAF motor shaft is irregular (one side is flat, and the other side is round), please make sure that the two screws on the same side of the coupling are aligned with the flat surface of the motor shaft to ensure a secure connection and prevent slippage.

3. Post-installation inspection: After installing the coupling, make sure to conduct a thorough check to ensure its tightness. It is recommended to manually rotate the motor a few times to confirm that there is no slippage. This will help avoid focusing issues during actual imaging sessions.

Power / Data



After receiving the device, connect the EAF Type-C port to the USB port of your computer or ASIAIR, power bank, or other charger to activate it, then, switch the power to the "ON". That means the device can power on normally (the indicator light will turn on).

Power and communication can be established by connecting the EAF Type-C port to the USB port of a PC or ASIAIR.

For the EAF Pro, in addition to wired connection via the Type-C port, wireless communication with a PC or ASIAIR can also be established via Bluetooth, powered by the built-in battery, and when not in use, it is recommended to switch it to OFF.

Bluetooth Connection Steps

1. Turn on Bluetooth on the PC (No need to do this on the ASIAIR APP), and scan for the Bluetooth name of the EAF in the software, such as ‘EAF Pro_XXXXXX’, then click to connect.

2. At this point, the status indicator on the EAF Pro will blink alternately between red and green, accompanied by a continuous beeping sound.

3. Press the 'IN' or 'OUT' on the device manually to confirm the pairing.

4. Once the Bluetooth connection is successful, the flashing and beeping will stop.

Bluetooth Reset

When the Bluetooth connection is unstable or fails to connect, press and hold the 'IN' and 'OUT' simultaneously for more than 5 seconds. After a short beep, the Bluetooth reset is successful, and the Bluetooth name will revert to its default value.

Depending on your needs, you can connect an external Temperature Sensor or Hand Controller via the 3.5mm audio jack.

Focusing

The EAF can be controlled via both mobile and PC software to achieve great focusing result in both planetary and deep-sky photography projects.

For example, ZWO's self-developed mobile App ASIAIR and PC software ASIStudio.

In addition, it also supports third-party imaging software on the ASCOM platform, such as planetary imaging software like Sharpcap, FireCapture, as well as deep-sky imaging software like Maxim DL, The SkyX, SGP, Nebulosity, among others.

You can also purchase the ZWO-developed Hand Controller (HC) for focusing. Additionally, with EAF's integrated focusing buttons on its body, simple focusing operations can also do done for convenience.

Precautions

1. Activate the Device

Before using the EAF Pro for the first time, please activate the device.

After receiving the device, connect the EAF Type-C interface to the USB port of your computer, or ASIAIR, power bank, or charger to activate it. Then, switch the power to the "ON". If the device powers on normally (the indicator light will turn on), the device is successfully activated.

It is recommended to fully charge the device before use to ensure stable operation for an extended periods.

2. Payload

The rated payload of the EAF is 5kg. Please avoid prolonged overloading to prevent the focuser from stalling or being damaged.

3. Initial Setup of EAF

The stepper motor of the EAF has a certain torque. During the first operation, please set the zero position and maximum steps to prevent damage to the focuser.

4. Power Saving

When the EAF Pro is not in use, please turn the switch to "OFF" to conserve battery power.

To prevent excessive battery discharge, charge it fully before long-term storage, and avoid storage periods exceeding three months.

The recommended storage temperature is 15°C ± 10°C.

5. Abnormal Alarm

When the device is in an abnormal state (e.g., stalling), the buzzer will emit a "beep-beep" warning sound.

Please promptly adjust the device's operating environment to restore normal working conditions.

6. Battery Operating Temperature

The charging temperature range is 0°C to 45°C, and the discharging temperature range is -10°C to 40°C.

Using the device outside these temperature ranges may result in failure to charge or discharge properly, and may significantly shorten the battery lifespan.

Please avoid using the device in extreme environments.

7. Pre-Usage Parameter Setup

Please set the backlash, zero position, and maximum steps limit before use to ensure the best performance.

If the "Reverse" function of the EAF is activated during operation, make sure to reset the zero position to avoid affecting the proper functioning of the device.

Reference Document

For more detailed user manual information, please visit the official website: https://www.zwoastro.com/guides-and-manuals/

Software and Drivers

The EAF is a driver-free device, thus the computer does not require additional specialized drivers to operate it.

If you need to install the ASCOM driver or the EAF firmware upgrade tool, please visit the official website for download: https://www.zwoastro.com/software/

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