

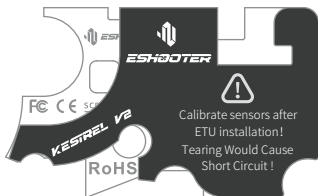
KESTREL V2

Instruction Manual V1.2.2

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Specification



Voltage Range	3.75V—17V
Current	17mA
Dimensions (L/W/H)	47.4 x 28.7 x 13.5(mm)
Product Weight	27.6g
Temperature Range	-15°C—50°C
Humidity	≤80%

Product Features

- Kestrel V2 is a ETU module with wireless Bluetooth connectivity.
- With Kestrel V2, you can adjust your AEG's parameters from the mobile app, ESHOOTER (Android and iOS)
- Kestrel V2 is compatible with standard Tokyo Marui V2 gearbox.
- This is totally prewired with T-plug connector and mini fuse.
- New shooting experience: ROF, pre-cocking, active braking, virtual magazine, etc.
- The highest battery voltage limit is 17v (LiPo/LiFe, 4 cells, 14.8v).

Cautions

1. Relevant technical skill is required for the installation of Kestrel V2 into your AEG.
2. In order to avoid any damage, please read through this instruction manual before installation.
3. Your AEG might be damaged by short circuit or battery misconnection which is not under the warranty. This might even cause fire or battery explosion.
4. Kestrel V2 does not support brushless motors.
5. Kestrel V2 will go to sleep mode if your AEG is idle for an hour. Battery connection is required to reset to restart.
6. Please disconnect the battery after using your AEG, as Kestrel V2 maintains a small power consumption even this is not operated.
7. Do not connect the battery when your AEG points at yourself, others, or any creatures.
8. Do not modify or repair Kestrel V2 by yourself. Avoid immersing in any kind of liquid and keep away from any thermal shock equipment.

Toolkit Checklist



0.2mm :
(DIAM 6mm/ID 3.2mm
/THK 0.2mm)*2Pcs



0.3mm :
(DIAM 6mm/ID 3.2mm
/THK 0.3mm)*8Pcs



0.5mm :
(DIAM 6mm/ID 3.2mm
/THK 0.5mm)*8Pcs



Plum blossom
metal gasket*2Pcs



2.6*14screw*2Pcs



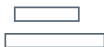
M2x4screw*2Pcs



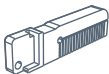
30A Fuse*1



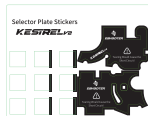
Deans-T*1



Heat shrink tube*2



Magzine button base*1



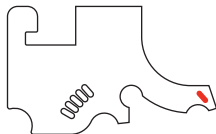
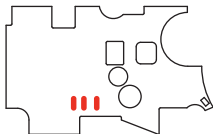
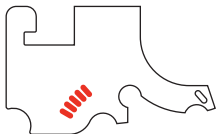
Selector plate sticker*1

Product Overview

Trigger Detection: High precision control is achieved by 5 sets of infrared unit to detect the trigger's movement.

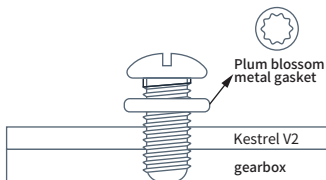
Mode Detection: Longer service life and higher accuracy are achieved by 2 sets of infrared unit to determine the mode's switching function.

Gear Detection: Precise monitoring of gear movement is achieved by a set of infrared unit to detect the gear teeth and gear condition.

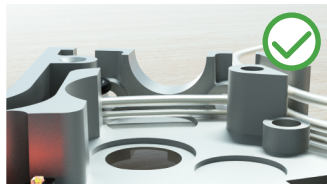


Preparation for Installation

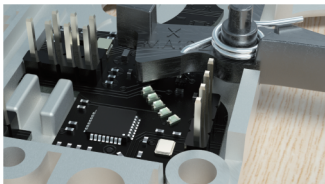
1. Please follow all the safety precautions procedure in order to avoid any damage of your AEG, no matter how experienced you are.
2. Installation of Kestrel V2 is required a good technical knowledge of the gearbox mechanism. This is strongly recommended the installation should be done by the relevant technical persons. Any damage caused by mis-use or incorrect installation is not covered by the warranty.
3. Kestrel V2 does not support the infinite torque-up gear.
4. Apply a thin layer of grease only, excessive grease application might cover the gap between the sensors and teeth which can be resulted in the cycle detection problem. Please use appropriate viscosity and density of grease.
5. Please remember to configure the gear type in the ESHOOTER App (if your gears are out of stock) and perform first-time sensor calibration .
6. Please be careful that sector gear might damage the sensor during the installation.



7. Please place the washers and gasket in the correct sequence by the diagram indicated, incorrect placement might cause the damage of Kestrel V2 which is not covered by the warranty.
8. Incorrect placement of wiring under the motor gear may cause insulation damage and short circuit, which are not covered by the warranty.

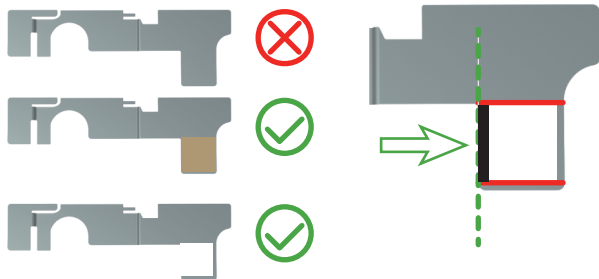


9. Do not pull the trigger when the gearbox is opened which may cause the damage of trigger sensor.



10. In some cases, the first trigger sensor may be covered even the trigger is not pulled that may cause shooting. Please check the installation properly, or check the "Sensor" in the ESHOOTER App.

11. If the selector is not light reflective, please use the sticker from the installation kit.



12. The position of sticker is very important. Please make sure it is fully aligned with the left edge and the top line. There are 3 different stickers in the kit. Please use the thinnest sticker, if you cannot calibrate the selector, try another one.

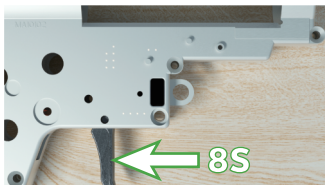
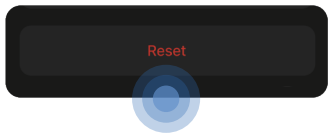
13. The connector from Kestrel V2 must be bent according the photo below. Bending it in the opposite direction may cause its fracture. If this happened, please use the spare terminals from the installation kit.



14. Restore factory setting will cause Kestrel V2 resets to default setting, all users' setting and records will be erased.

15. Restore factory setting can be done by ESHOOTER App. Please open the App, connect your AEG and switch to the Dashboard, click 'Reset' at the bottom of Dashboard.

NOTE: If reset is not successful through App, you can turn your AEG to safe mode, then long press the trigger for 8 seconds to perform the reset manually.



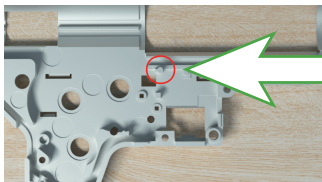
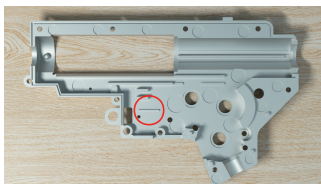
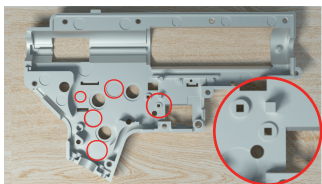
Installation Instruction

You will need:

Philips screwdriver/Flat Head screwdriver/Metal file or milling machine/
Solvent/Grease/An Android phone or an iPhone/iPad

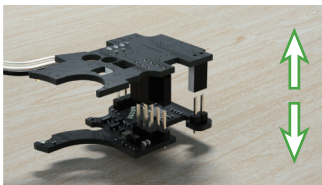
Follow the following steps:

1. Remove the gearbox from the AEG body.
2. Disassemble the gearbox and remove all the internals.
3. Clean the gearbox case with proper solvent.
4. Pay attention to the marked area. If you find it is not smooth, use the metal file to prepare the surface. The gearbox surface should be smooth, sharp edges may damage Kestrel V2.



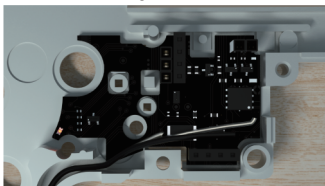
Note: This area should be sanded to the right height to avoid damage to the Kestrel V2.

Installation Notes



1. Detach the drop-in module carefully.

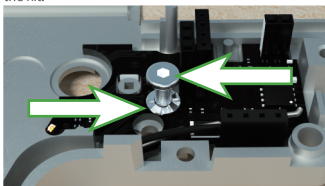
2. Place the bottom board in the bottom part of the gearbox and don't use a screw. Check if the bottom board is laid flat in the gearbox.



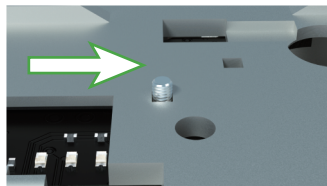
3. Make sure the electronic components are not touching the gearbox case.



4. Take the plum blossom metal gasket in the kit and place on the screw hole, secure the bottom part to the gearbox case by original screw or the one from the kit.



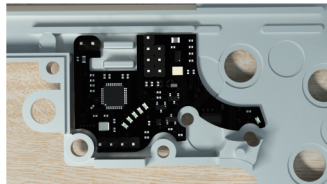
5. Please check the screw is sticking out from the gearbox or not.



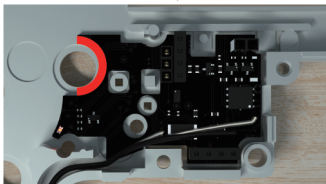
6. If the screw sticks out from the gearbox, please add the metal washers from the kit.



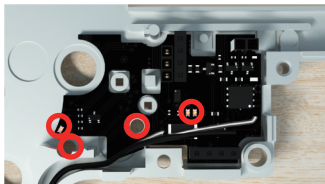
7. Check if the top board fits the gearbox without any problems.



8. Loosen the screw and adjust the position of the bottom board. The space between the PCB and the bearing must be consistent throughout. (As indicated in the marked area).



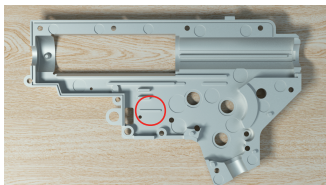
9. Make sure that the marked area is not covered by the circuit board or wires.



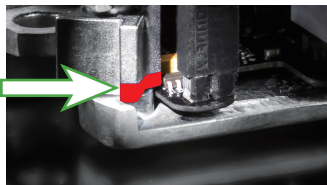
Note: The position of the sector gear sensor is very important!



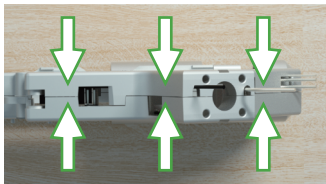
10. Some gearboxes are required for modification. Please check and remove if your gearbox has any marked metal pins.



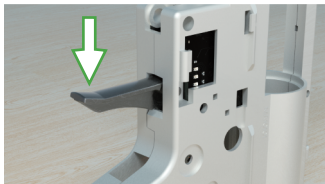
Caution : ICS gearboxes require modification to avoid KESTREL damage.



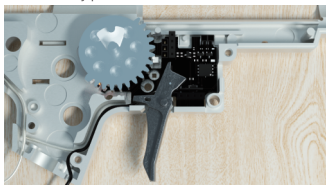
11. Check if the two parts of the gearbox fit together perfectly.



12. Install the trigger without the spring, insert the Kestrel V2 top board and close the gearbox. Check carefully the trigger should move smoothly without touching any Kestrel V2 components.



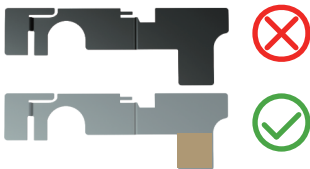
13. Install the sector gear, trigger with the spring and top Kestrel V2 board. Please make sure the gear does not touch any part of Kestrel V2.



14. Close the gearbox and tighten the two screws on the top part of gearbox.

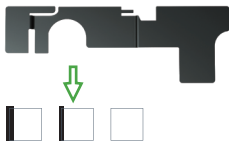


15. Prepare the selector plate. If there is no copper connector, it needs to be modified. This is because the black surface cannot reflect light, thus sensor cannot work properly.



16. Please try to modify the black selector plate from the thinnest sticker. If there is a copper connector on the selector, please do not make any modification.

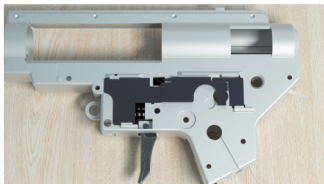
NOTE: If the selector slide has a copper connector, do not make any modifications!



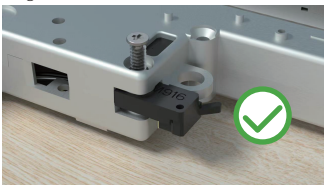
17. Sticker position is very important for modifying black plate, please make sure the sticker is aligned at the left side edge.



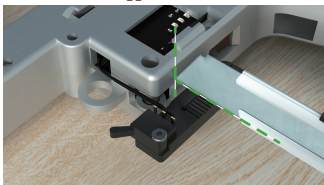
18. Install the selector plate.



19. Installation of Magazine Button: embedding the button into the bottom edge of the gear box and tighten the screw, make sure magazine button is triggered by your magazine.



20. If the magazine button cannot withstand your magazine, you can cut the button base from accessory kit with an appropriate length to fit it well and make sure the magazine button can be triggered.



21. When releasing your magazine from the gearbox, it doesn't touch the magazine button.



22. When putting your magazine into the gearbox, it need to touch the magazine button.



Note : Magazine button only fits the normal M4 type guns. If it doesn't fit your gearbox, you can remove this function by cutting magazine button and turning of "Magazine Mode- 30 BBs" on the App.

23. Connect the Kestrel V2 to your mobile device and start the App.

24. Check gear and teeth

Switch to the "Sensor" interface of ESHOOTER App, click the "Test Mode" to enter the test mode. Slowly turn the gear and check that if sensor detects the teeth.

App Instruction

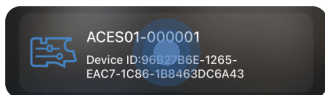
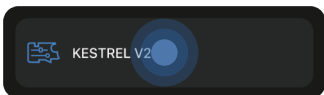
1. Download and install the App

By searching "ESHOOTER" at the App Store or google Play, you also could scan the QR code we provide



2. Connect with your device

Make sure your device is charged and open the App, then click "KESTEREL V2" and come to its interface, click the device

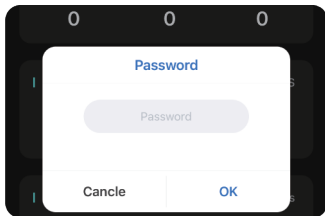
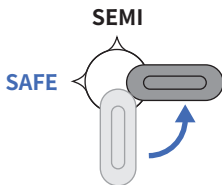


3. Password Setting:

3.1 Initial password: The initial password is "888888" , when you first log in the App.

3.2 Change the password: Click "Setting" , you will see a change password button at the bottom of the page, then change your password as the following guide.

3.3 Reset the password: If you forget the password, you can reset it by setting your gun. Just pull the selector of your AEG to SAFE and long pull the trigger for 8 seconds , the password is settled successfully till the gun body is slightly shaking.



4. Dash Board:

You can switch to the data display interface by clicking the “Dash Board” button

4.1 BB Counter: Current shows the shots number which connect the App one time; Total is all the historical shots number.

4.2 Rate of Fire: There are minimum rate of fire, average rate of fire and maximum rate of fire to display.

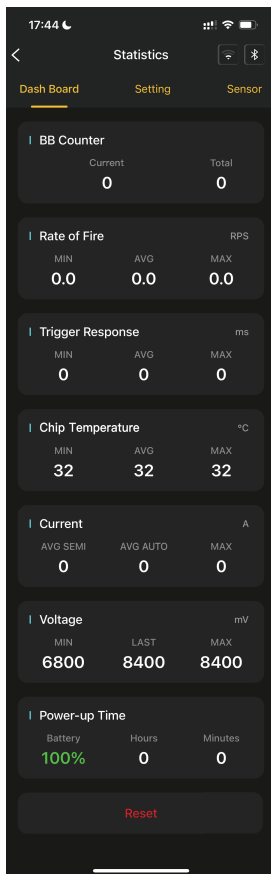
4.3 Trigger Response: There are minimum response time, average response time, and maximum response time to display.

4.4 Temperature: There are minimum temperature, average temperature and maximum temperature to display.

4.5 Current: There are average single shooting current, average continuous current and the maximum current to current.

4.6 Voltage: There are minimum voltage, current voltage and maximum voltage to display.

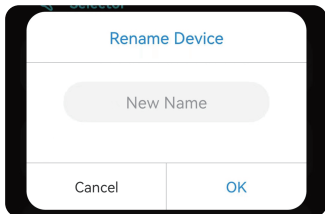
4.7 Power-up Time: There are battery left percentage, Connection hours and minutes to display.



5.Setting

5.1 Device Name Setting :

Click the Device Name column, you can change the user name in the pop-up window.



5.2 Selector Setting :



SAFE (default) includes: SAFE

SEMI (default) includes: SAFE, SEMI, AUTO, BURST, AUG, BINARY, and SNIPER

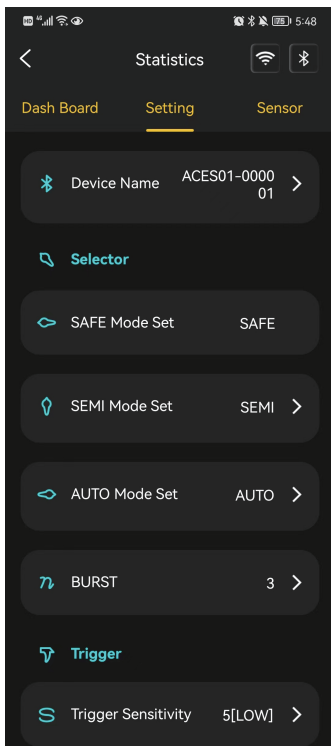
AUTO (default) includes: SAFE, SEMI, AUTO, BURST, AUG, BINARY, SNIPER

5.3 Burst Function Setting : n

Clicking the Burst bar, select single burst number in the pop-up window. The number range is from 3 to 10.

5.4 Trigger Sensitivity Setting : S

There are 5 different trigger sensitivities can be selected. 1 gear means the highest sensitivity and 5 gear means the lowest sensitivity.



5.5 Gear Setting:

There are 6 following functions included: Pre-cocking Mode, Pre-cocking Boost, ROF Control, Sniper Delay Model, Magazine Model-30 BBs, and Gear Ratio.

Pre-cocking Mode: You can choose ON/OFF.

Pre-cocking Boost: Can be selected low, middle and high, total 3 levels.

ROF control: In AUTO cases, the rate of fire can be controlled by selecting the percentage. You can select 0%, 50%, 60%, 70%, 80%, 90%, 100% under the continuous shooting mode. 0% means the ROF control function is turned off.

Sniper delay setting: Sniper can set the trigger time after pulling the trigger.

Magazine Model-30 BBs: Simulate the real magazine function, you can not shoot if you finish 30 rounds shooting until reloading.

Gear Ratio: You can choose standard speed, high-speed teeth, DSG.

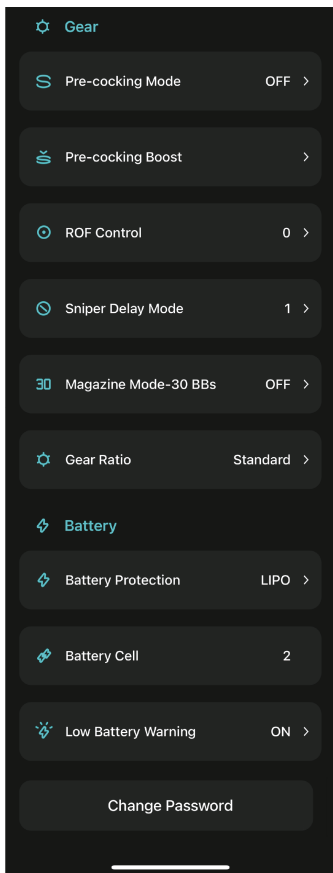
Attention: make sure to select the right gear to avoid affecting the life time of gearbox.

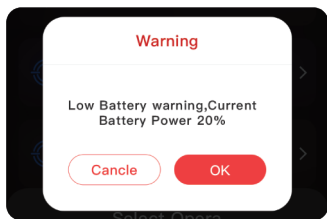
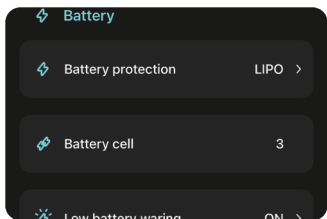
5.6 Battery Setting :

There are 2 Battery types: LIPO and LIFE, the correct battery type will provide better battery protection.

When the battery is connected, the number of the battery will be displayed.

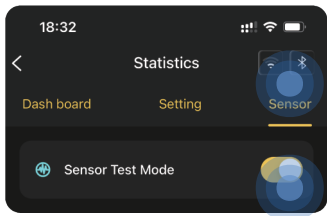
When turn on the low battery notification, you will get the notification from App when the battery power is low.





6. Commissioning Function:

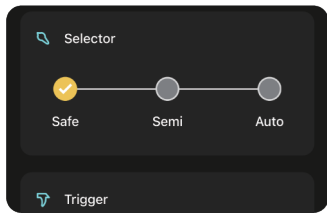
After clicking the "Sensor", you can enter the sensor interface, which can test and calibrate the sensor. Turn on the "Sensor Test Mode" you can recognize whether the sensor works or not .



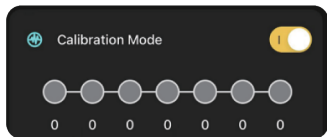
6.1 Sensor Test Mode: Please click the button on the right to test whether the sensor is OK by observing the display below.

6.2 Trigger: Pull the trigger gently and observe if the Trigger bar in the App will illuminate the corresponding position.

6.3 Gear: It shows the position for tooth or break.

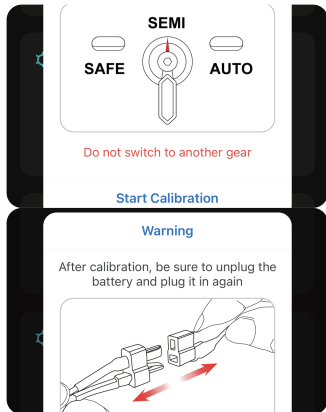
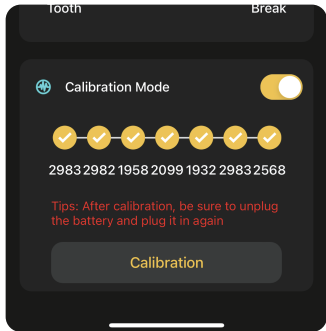


7. Calibration Mode: By clicking the button on the right to turn on calibration operation.



Selector need operate as pop-up window's reminder, after clicking "Start Calibration" button, battery needs to be reconnected and the calibration result will come out, then the calibration is finished.

Note: Please make sure the battery is unplugged and plugged in again for work normally!



8. The iOS Shortcut Command

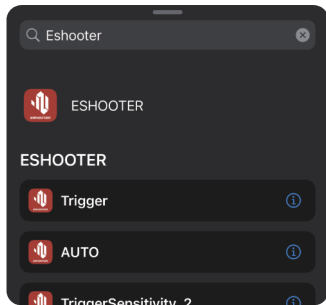


The ESHOOTER App provide shortcut command function under the iOS system which could control the equipment quickly.

The setting steps are:

Turn on your Shortcut App on the phone, click the "+" button at the top right corner. Searching the "ESHOOTER" at the search window, the shortcut list of ESHOOTER will appear.

Selecting a command and click the start button at the bottom right corner, then you can back to ESHOOTER App to operate.



9.OTA Update:

9.1 Click the "Setting" button at the App homepage , enter the setting interface, and click the "OTA UPDATE" to enter the device search interface.

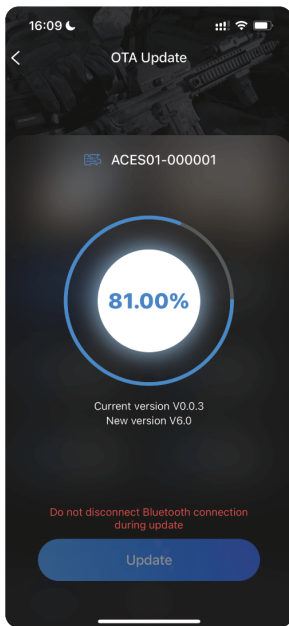
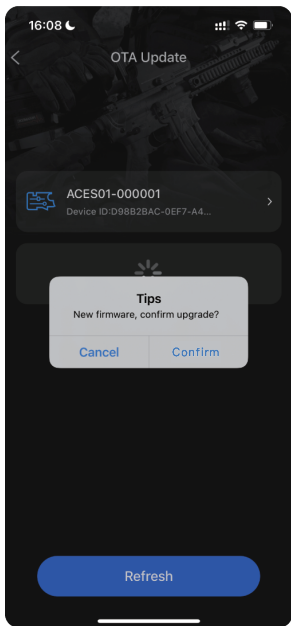
9.2 Click the device in the device list, and the software version will be verified after connecting the device. You will be noticed to upgrade when there is a new version, click the "upgrade" to get a new version.

9.3 Upgrade to the newest version for the better hardware experience.

9.4 When using the OTA function, please put the device close to your equipment to avoid the upgrade failure due to Bluetooth signal weakness.

9.5 When the upgrade is finished, your equipment will slightly shake, and the ESHOOTER App need be reconnected.

Note: Please make sure to recalibrate after successful upgrade.



Warranty Card

Name: _____

Phone Number: _____

Email: _____

Address: _____

Item Model: **Kestrel V2** _____

Inspector: _____

Date of Production: _____

After Sale Policy

Please kindly provide Warranty Card, Purchase Invoice and packaged the product well before you send back for repairing or replacement

1. We provide 3 months warranty time for Kestrel V2 when you purchase.
2. We provide replacement service within 30 purchasing days if the product has a quality problem (non-artificial damage) and without disassembly marks.
3. The free maintenance service only be provided during our warranty period, and the product problem will be assessed and confirmed by our engineer whether it is be normal used. Shipping fee and door to door maintenance service are not included in our after sale policy.
4. For the following situation, we will not provide free maintenance .
 - 4.1 Users don't follow the requirement and installation steps from the product instruction and cause product damage and failure.
 - 4.2 Damage caused by the irresistible factors.
 - 4.3 The disassembly damage or failure caused by people who are not authorized by E-Shooter company.
 - 4.4 Without purchase proof or warranty card.
 - 4.5 The Warranty time is expired.
5. We refuse to provide maintenance service if the warranty card is not the original version, warranty record is not correct or be altered , as well as the card content is difficult to recognize.

Warning



Measures for the Administration of Low-Power Radio-Wave Radiating Motors

Article 12

For low-power RF motors that have passed the type certification, without permission, companies, trade names or use are not allowed to change the frequency, increase the power or change the characteristics and functions of the original design.

Article 14

The use of low-power radio frequency motors shall not affect flight safety and interfere with legal communications. When interference is found, it should be improved until there is no interference and can continue to be used.

The legal communication in the preceding paragraph refers to the wireless communication that operates under the Telecommunications Law. Low-power radio frequency motors must endure interference from legal communications or electrical equipment that radiates radio waves for industrial, scientific, and medical use.



Pb-Free



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RoHS

More



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Watch the Video




ESHOOTER

KESTREL_{v2}

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