



**UAV Device
Repair & Maintenance**
Daily Maintenance Manual (v1.0.1)

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Overview

This document includes the daily maintenance of the product, precautions and product upgrades, etc.

Symbol Definition

The following symbol may appear in the document. Please refer to the table below for the respective definition.

Symbol	Definition
 Danger	It indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 Warning	It indicates a moderate or low level of potential danger, which, if not avoided, could result in minor or moderate injury.
 Caution	It indicates a potential risk that, if ignored, could result in damage to device, degraded performance, or unpredictable results.
 Tips	It means that it can help you to solve some problems or save your time.
 Notes	It means the additional information, which is the emphasis and supplement of the main body.

Revision Record

No.	Version No.	Revision Content	Release Date
1	V1.0	First Release	2017.10.31
2	V1.0.1	Life cycle description of the added parts	2018.1.31

The following content includes the correct application method of the device, prevention of danger, prevention of property loss, etc. Please read the manually carefully before use, in order to prevent danger and property loss. Strictly conform to the manual during application and keep it properly after reading.



Caution

- Please do not touch the lens of the PTZ camera directly. Use a hair drier to remove dust or dirt from the lens surface.
- Do not drop or splash liquid on the device, and ensure that no stuff with filled liquid around the device to prevent liquid from flowing into the device.
- Please transport, use and store the device within the allowed humidity and temperature range.
- Do not weigh, vibrate or soak the device during transport, storage or installation.



Warning

- Please only use drone products after standard operation training to avoid unnecessary economic loss or casualties
- Please only use the accessories provided by manufacturer and it shall be installed and repaired by professional staffs.
- Please do not provide two or more power supply modes to the device at the same time; otherwise, it may damage the device.

Special Announcement

- This manual is for reference only. Please refer to the actual product for more details.
- The user's manual and software will be regularly updated according to the product upgrade without prior announcement.
- The user shall undertake any losses resulting from violation of guidance in the document.
- The document may include technically inaccurate contents, inconsistencies with product functions and operations, or misprint. Final explanations of the company shall prevail.

Daily use and maintenance

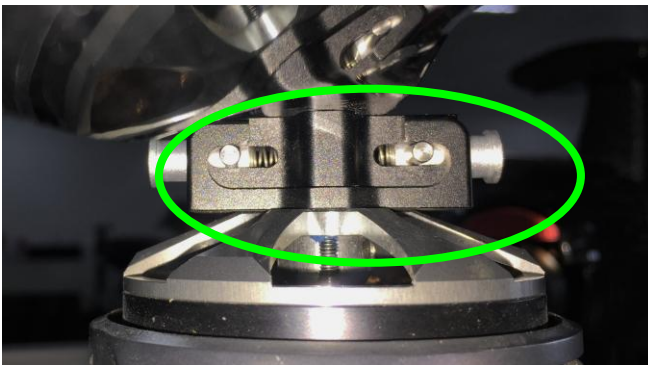
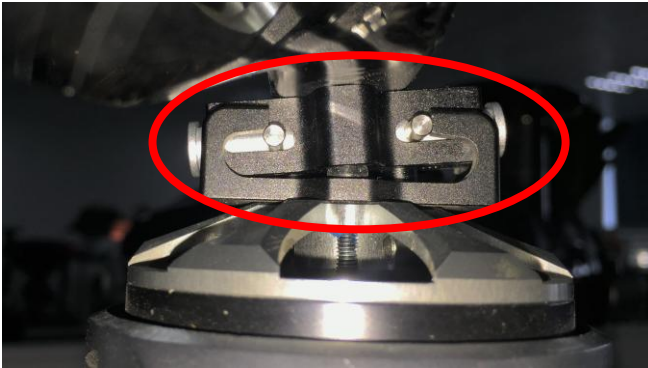
First, please ensure that the device is fully charged before the flight mission being performed;

Fully unfold the device and remove the fuselage protection device (for example: the caging foam of PTZ Camera, the fixed support for propeller, etc.);

 **Warning**

- Ensure that the CW and CCW propellers are installed correctly, the CW propeller should be installed on the motor which Print with CW, and the CCW propeller should be installed on the motor which Print with CCW;
- After the propeller is installed, please check again whether the propeller is Fixed in place;

As below:



- Clean up the aircraft after the mission is completed, keep the aircraft clean and dry to prevent dust and particles from entering the motor.

Battery & Charger

Charger



Caution

- Before charging the battery, the charger and power cable must be connected properly; as shown in the figure, red is the “+” pole, black is the “-” pole, and the red side of the balanced cable plug is the positive pole.
- The charger should be in BLC (balanced charge) mode when used;
- The recommended charging current is: X820/1550/X1100 choose Model 5A~20A.



X650 choose Model 5A~12A

- When the battery is used for the first time, the battery must be charged to 100% Capacity. At this time, the charger screen displays FULL. It is forbidden to unplug the battery in advance.
- Recommendation: The aircraft power battery must be charged to FULL capacity before operation.

Storage

- If the battery will not be used for a long time (months), the battery needs to be stored with half capacity (50%-60% of the full capacity);
- Use STO mode of the charger to adjust the battery for storage. DONE will be displayed when the battery is completed. At this time, the battery power is maintained around 60% power capacity;



Warning

Do not discharge the battery in STO mode when it is fully charged.

- The STO mode can only be used when the battery power indicator is under 2 bar of green light (please note ,battery power indicator : full bright—one bar; flickering – half bar);

Caution

- When the battery is in storage mode, before it is being used again, no matter how long it is stored, must be charged to FULL bar in BLC mode, same as new battery;

Tips

- Do not charge the battery immediately after it has been used. Pay attention to the temperature of the battery and wait for the temperature to decrease before charging.
- Pay attention to the ambient temperature before charging. Charge the battery in an ambient temperature of 0 to 50°C.
- Please distinguish the positive and negative pole to prevent unnecessary short-circuit and damage when charging.
- Charge and discharge at least once a month. Do not store without any power.
- If you will not use the battery for a long period, keep the battery for around 60% capacity, and store it in a cool and dry place.

- Before using the battery, check the appearance of the battery. If there is any obvious bulging, please stop using it and replace it in time.
- The number of cycles of the power battery under normal usage is 300 times.
- While charging, a dedicated power adapter must be used, otherwise it will cause battery damage or other unpredictable consequences.



Caution

Some alarm message of the battery

- The red light flickers, but it can be turned on: the high temperature alarm of the battery core, generally after the flight is completed, the temperature of the battery core is relatively high, which does not affect the usage;
- The current battery setting of the charging temperature range is 0-50°C. If the temperature exceeds this range, the battery will protect the charger and send an error message (the charger will display ERROR);
- The red light flickers and cannot be turned on: The voltage difference of the single chip is too large after full charge;



Caution

When the battery is often charged to 99% or the battery is often unplugged when the battery is not full. Because of this, the battery monomer will become more and more different. When the charger cannot balance back the voltage difference of a single chip, it will enter this state of protection and need to be replaced;

Motor



Caution

- After performing the flight mission for 10 to 20 times (discontinuous), please check the motor temperature after the mission is completed. Compare the motor temperature of the aircraft if any obvious abnormality. If there is a burning sensation when touching the motor with your hand, please be cautious or stop using the Aircraft.
- After using the aircraft in a dusty environment, clean the aircraft in time. Pay attention if there is any dirt in the motor (please do not use sharp objects to remove dirt inside the motor).



Tips

- When the device is powered off, roll the aircraft's power motor and check if the motor is blocked or stuck.
- When the device is powered on, remove all the propellers of the aircraft! (**Remove all the propellers!!**) Unlock the aircraft and listen if there is any abnormality sound when the motor turns up. Check the rotation of axes of the motor under idle speed to see if any imbalance situation. If there is any abnormal situation, please replace the motor.

Propeller & Quick Release

- Keep the propellers clean, and pay attention to clean the dust on the windward surface after performing the flight mission.
- Wipe with a soft cloth.



Danger

- Please check if there are any cracks or breakages on the edge or top of the propeller. If this is the case, do not use the propeller.
- Please check if the quick-release structure is secured fastened. After the propeller is installed, shake the propeller, if there is an obvious loosening, it must be fastened immediately and must not be used;
- Please check if the quick release base screws and quick release screws of the propellers are loose on the motor, please tighten them in time.

Life cycle list of the parts

Name of the parts	Life Cycle	Notes
Propeller	3 years	Standard Operating Environment
Power Motor	3 years	Standard Operating Environment
Smart Battery	300 cycles	Full charge and discharge
Tripod and Steering Gear	20000 times	Standard Operating Environment
Carbon fiber	10 years	Whether the body resin is broken

Notes:

1. Calculation of motor cycle life: two landings per day, complete set of batteries for each landing, cumulative running time about 1000 hours;
2. According to the intensity of use of the aircraft, the operating environment, etc., it will have a certain influence on the life cycle of each component. Please judge by actual use conditions. (Example: Weather conditions like rain, snow and dust may cause irreversible damage to the propellers);