U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

May 15, 2015

Exemption No. 11606
Regulatory Docket No. FAA–2015–0510

Mr. Brian Shannon
Aerial Appeal
5114 Grand Phillips Lane
Katy, TX 77450

Dear Mr. Shannon:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

By letter dated February 26, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Aerial Appeal (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial filming and photography for coverage of events, enhanced real estate listings, and structural inspections.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner.

Airworthiness Certification

The UAS proposed by the petitioner are the DJI F550, DJI Phantom 2, DJI S800 EVO, and DJI Inspire.

In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Aerial Appeal is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Aerial Appeal is hereafter referred to as the operator.

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the DJI F550, DJI Phantom 2, DJI S800 EVO, and DJI Inspire when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

2. Operations for the purpose of closed-set motion picture and television filming are not permitted.

3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.

4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.

5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.

6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised

documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS−80) may be contacted if questions arise regarding updates or revisions to the operating documents.

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g., replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.

9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.

10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.

11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.

13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal Government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with

14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.

16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.

17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.

18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.

19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.

20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least 5 minutes or with the reserve power recommended by the manufacturer if greater.

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification (N−Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

24. The UA must remain clear and give way to all manned aviation operations and activities at all times.

25. The UAS may not be operated by the PIC from any moving device or vehicle.

26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
    a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
    b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

    The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.

27. All operations shall be conducted over private or controlled-access property with permission from the property owner/controller or authorized representative. Permission from property owner/controller or authorized representative will be obtained for each flight to be conducted.

28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported to the FAA's UAS Integration Office (AFS−80) within 24 hours. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

If this exemption permits operations for the purpose of closed-set motion picture and television filming and production, the following additional conditions and limitations apply.

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.

30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
    a. Dates and times for all flights;
    b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
    c. Name and phone number of the person responsible for the on-scene operation of the UAS;
    d. Make, model, and serial or N−Number of UAS to be used;
    e. Name and certificate number of UAS PICs involved in the aerial filming;
    f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
    g. Signature of exemption holder or representative; and
    h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on May 31, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/
John S. Duncan
Director, Flight Standards Service

Appendix D

DJI S800 EVO

Operator Manual

Spreading Wings S800 EVO User Manual

V 1.10

February 07, 2014 Revision

www.dji.com

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Disclaimer

Thank you for purchasing this DJI product. Please regularly visit the S800 EVO web page at www.dji.com, which is updated regularly. Product information, technical updates and manual corrections will be available on this web page. Due to unforeseen changes or product upgrades, the information contained in the manual is subject to change without notice.

Read this disclaimer carefully before using this product. By using this product, you hereby agree to this disclaimer and signify that you have read them fully. Please strictly follow the manual to assemble and use the product. The manufacturer and seller assume no liability for any resulting damage or injury arising from the operation or use of this product.

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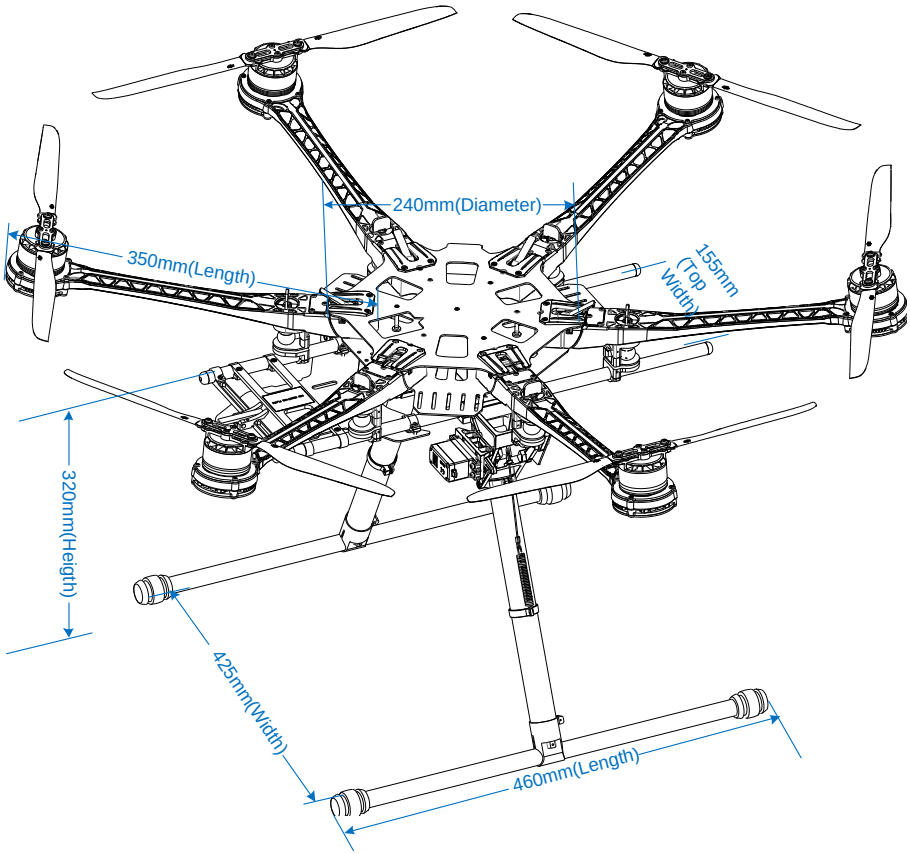
Profile

S800 EVO is a multi-rotor designed for aerial photograph which integrates reinforced mechanical structures, stabilized dynamical system and high-efficiency power supply. Integrated designs make assembly and configuration become especially easy and fast; retractable landing gear, foldable propellers and collapsible GPS Mount are conveniently portable for optimal user experiences. Retractable landing gears and vibration dampers coordinate to create omnidirectional aerial view and high quality photograph. Combined with professional DJI multi-rotor autopilot system S800 EVO will achieve hovering, cruising and other steady flight elements, which can be applied for aerial photography and other aero-modeling activities.



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Contents

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Product Usage Cautions

When flying, the fast rotating propellers may cause serious damage(s) and injuries. Therefore, please fly with a high safety in mind at all time.

Assembly Cautions

(1) Mount the GPS Module with a bracket, to avoid interference with the power board of center frame.

(2) For IMU mounting, make sure the arrow direction marking on the IMU is pointing to the aircraft nose.

(3) The receiver is strongly recommended to be attached under the bottom board of center frame, and the head of antenna is downward without any obstacle. Otherwise the aircraft may be out of control, since the wireless signal may be lost.

(4) Mount the arms correctly.

a) Center frame ⊗ ⟷ Arm ⊗

b) Center frame ⊙ ⟷ Arm ⊙

(5) For removing screws in the bottom board, please proceed with cautious, avoiding damages. Do not remove any other screws fixed with glue.

(6) Notice matching the indications is very important, please pay attention to them.

Flight Cautions

(1) With DJI WKM autopilot system, make sure the output signal of WKM F1-F2 and M1-M6 are all normal, to avoid serious damages and injuries.

(2) Keep flying the multi-rotor a distance from people, building, high-voltage lines, tall trees, water, etc.

(3) Make sure to use 6S LiPo battery for power supply.

(4) Do not get close to or touch the working motors and propellers, which will cause serious injury.

(5) Do not over load the multi-rotor.

(6) Make sure the propellers and the motors are installed correctly and firmly before flying.

(7) Make sure all parts of product are in good condition before each flight. Do not fly with wore or broken parts.

(8) Strongly recommend you to use DJI parts as much as possible.

Others

(1) If you have any problem you cannot solve, please contact your dealer or DJI customer service.

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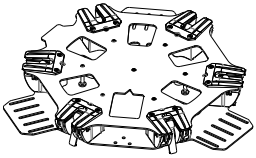
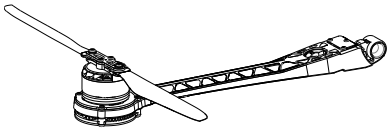
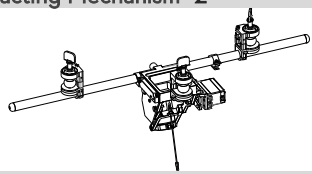
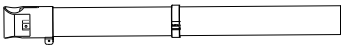
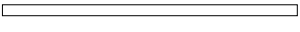
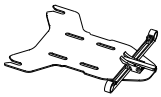
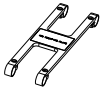
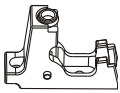
In The Box

Center Frame×1	Frame Arm×6
	
Retracting Mechanism×2	Landing Gear Support Tube ×2
	
Base Pipe×2	H Frame Connection Pipe×1、Spring×2
	
Package of 3-PIN Servo Cable ×1	Silicone Rubber Damper ×4
	
Package of Battery Tray×1	Package of IMU Mount×1
	
GPS Fixed Seat×1	Screw Package for Frame×1 Screw Package for Landing Gear×1
	
Out of The Box Guidance ×2	

Tools Needed

2.0mm Hex Wrench, 2.5mm Hex Wrench	For mounting screws.
Thread Locker	For fastening screws.
Nylon Cable Tie	
Scissors	For binding devices and wires.
Diagonal Cutting Pliers	
Foam Double Sided Adhesive Tape	For fixing receiver, controller and other modules.

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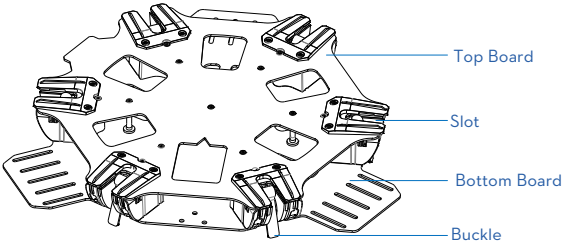
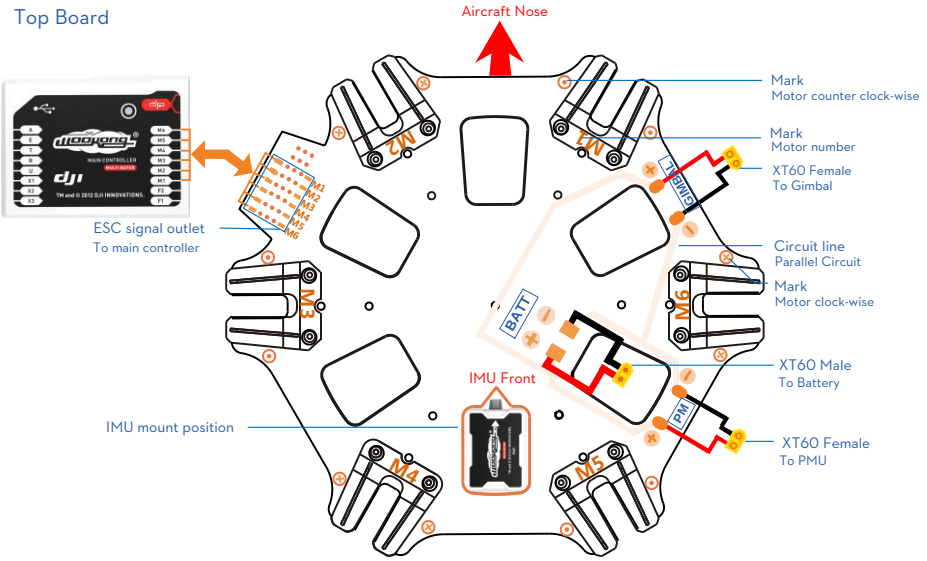
Center Frame Wiring

The top board is a power distribution board, and the bottom board is for loading autopilot system components.





Notes:

(1) For IMU mounting, make sure the arrow direction marking on the IMU is pointing to the aircraft nose.

(2) Connect the 3-pin connectors (M1~M6) of servo cable from WKM M.C. to ESC signal socket (M1~M6) on center frame markings accordingly.

(WKM M.C. M1 ⟷ ESC signal socket M1, ... , WKM M.C. M6 ⟷ ESC signal socket M6)

Tips:

(1) The main battery power leads, gimbal and PMU leads are on the bottom surface of the top board.

(2) Markings ⊗ and ⊙ stand for the propeller rotation direction. ⊗ means clock-wise, and ⊙ means counter clock-wise.

(3) If other lead connector is required, please cut the original connector and solder on the new one. (But NOT Recommend.)

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Attach Electric Equipment to Center Frame

1. (Fig.1)Remove the screws in the bottom board.
2. (Fig.2)Attach the IMU module into IMU position in the center frame. Ensure the IMU casing is out of touching the top board edge, as vibration can cause IMU mal-function.
3. (Fig.2)Please attach DJI Autopilot System parts onto the bottom board (not including GPS modules.
4. (Fig.2)Connect the Autopilot System and receiver. Please refer to DJI *WKM User Manual* for details.
5. (Fig.3)Please fix all the screws to bottom board, and use adequate thread locker.
6. (Fig.4)Attach the GPS Fixed Seat to the top board (near to the M3), then mount the GPS Module to the GPS Fixed Seat with a bracket.
7. Configure Autopilot System. Please refer to DJI *WKM User Manual*.

Note:

(1) Make sure to mount the IMU module at the IMU position first, and the mount orientation is correct.

(2) Mount the GPS with a bracket, to avoid interference from center frame power board.

(3) Make sure the USB port of the M.C. is pointing outwards for easy access.

(4) Please wire neatly. Make sure the wires will not be cut by the edge of frames.

(5) Install the screws with appropriate strength to prevent damage threads.

(6) Watch out clamping fingers when folding the GPS Bracket.

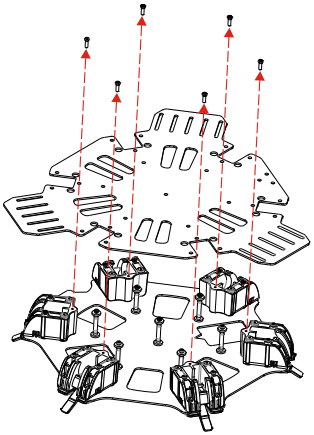

Fig.1 Remove the screws

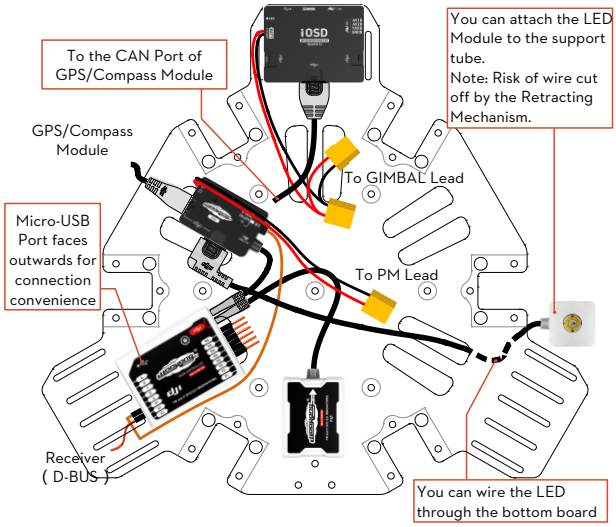

Fig.2 Attach the Autopilot System

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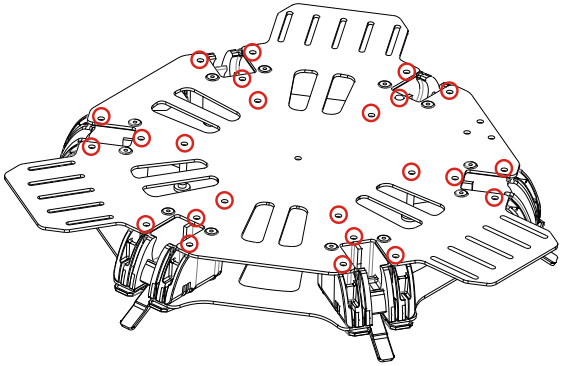

Fig.3 Fix the screws

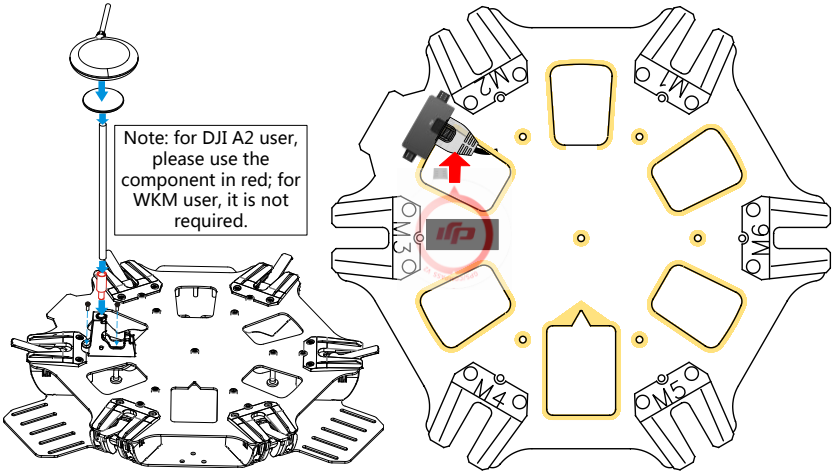

Fig.4 Mount the GPS Fixed Seat and GPS module

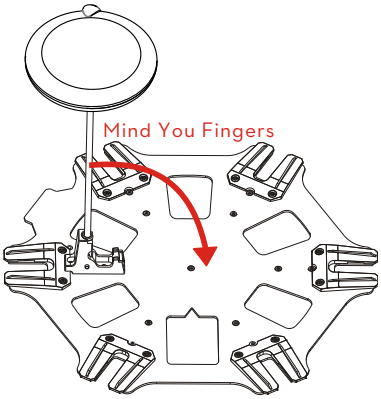

Fig.5 Note of folding the GPS Bracket

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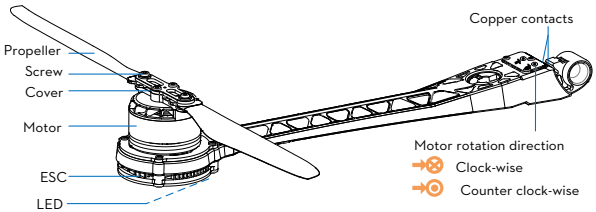
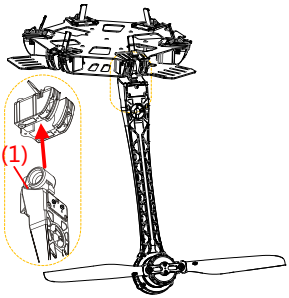
Mount Frame Arms

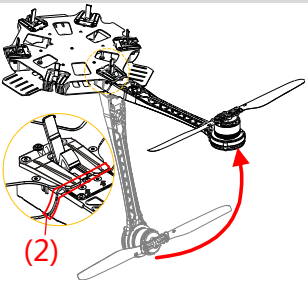
Step 1



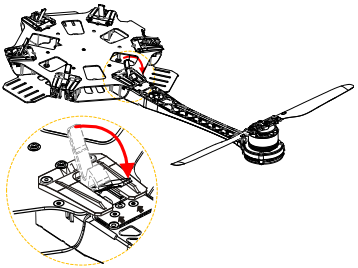
Step 2



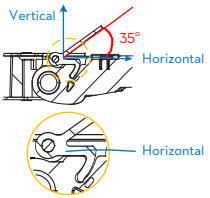
Step 3



Step 4



Step 5



Step1: Check the arms.

(1) Make sure the copper contacts are in good condition without bend or severe wear.

(2) Make sure the propellers are without crack, and screws in propeller cover tight.

(3) Make sure the motors are mounted firmly, and rotate freely.

(4) We recommend you to mount the arms with red propeller cover to M1 and M2 to indicate the nose of aircraft.

(5) Distinguish the marks ⊗ and ⊙ on the arms.

Arm ⊗ ⟷ Center frame ⊗

Arm ⊙ ⟷ Center frame ⊙

Step2: Insert the frame arm into center frame vertically.

Step3: Slowly rotate the frame arm upward until positioned completely.

Step4: Press down the buckle to lock the arm. Make sure the arm does not move.

Step5: Make sure the buckle is pressed down correctly, about 35° under normal circumstances.

Notes:

(1) Please add some lubricant at the position (1) if it is hard to press down the buckle.

(2) Slowly rotate the frame arm to prevent from breaking the copper contacts.

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(3) Please refer to (2) to make sure the arm is perfectly positioned.

(4) Make sure to use appropriate strength to press down the buckle correctly.

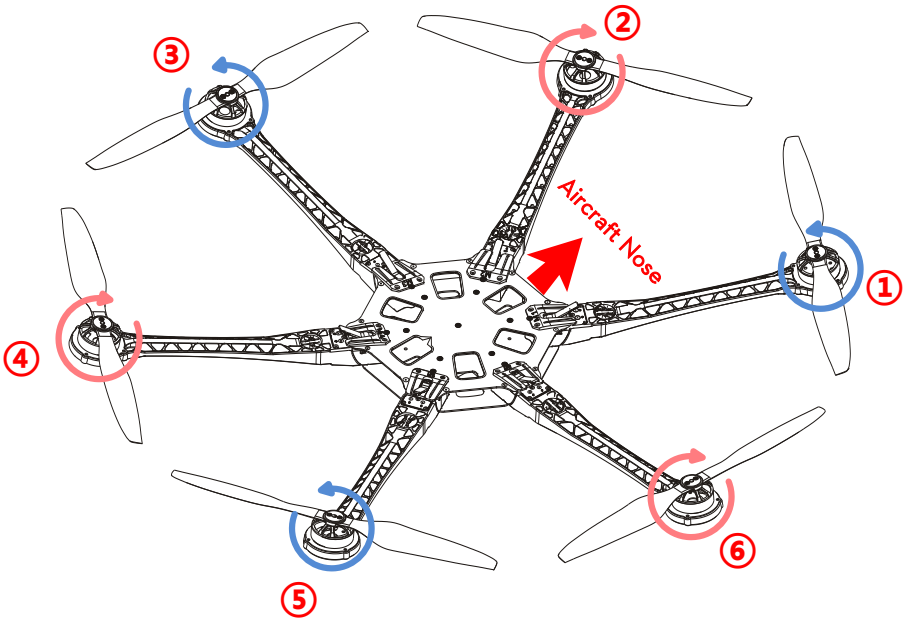
(5) Do not hot plug arms.

Tips:

(1) LED is on after motor start.

Step 6 Double Check

Arms①②are aircraft nose, arms④⑤ are aircraft tail. See from top, motors on arms①③⑤ rotate counter clockwise; motors on arms②④⑥ rotate clockwise.



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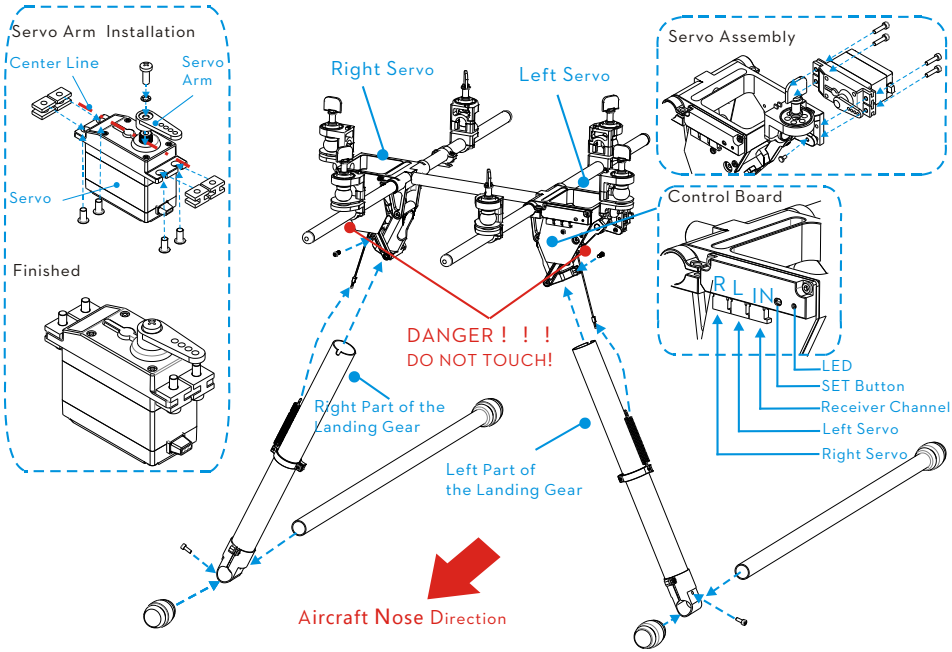
Mount Landing Gear

By using a 2-position switch of R/C transmitter, you can control the landing gear to retract remotely.

1 Assembly & Connection

The part with the control board attached is defined as left, and the other part is right. Make sure to make a distinction between the left and the right servos.



step1: **Servo Installation** *(If the servos have already been installed, please skip this step.)*

1. (Shown in the Fig) Define and mark the two HS-7954SH servos from Hitec as left servo and right servo.
2. Connect the left servo to the **[L]** port on the control board, and the right servo to the **[R]** port.
3. Keep pressing the SET button with aid of a small tool, and then power on. You will see the yellow LED beside SET button flashes quickly, and then wait until the servos have finished their position initialization.
4. Make sure the servo arm is parallel to the servo's center line.
5. Power off, assemble the left and right servos to the left and the right parts of the landing gear.

Tips: If you use your own servos, it is recommended to use the dedicated programmer from Hitec to enlarge the servo travel from 120° to 150°, and then install servos by the above steps. Servos from DJI have been enlarged servo travel.

step2: **Mechanical Assembly**

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1. Assemble the left and right parts respectively, and then fix the screws at the joints with appropriate thread locker.
2. Connect the left and right parts with connecting rod.
3. For safety reasons, make sure to connect the springs to both parts.

step3: Electrical Connections

1. Plug the cables from the servos into the correct ports on the control board. Make sure the right servo is connected to the **[R]** port, and the left servo to the **[L]** port.
2. Connect the required 2-position switch of R/C receiver to the **[IN]** port.

2 Travel Calibration

If the Landing Gear you got has been installed with the servos, please skip this step. Otherwise, calibrate the system using the following procedures.

1. For safety reasons, please keep your hands away from any link mechanism to avoid injury.
2. Make sure the **[R]**, **[L]** and **[IN]** connections are correct and firmly connected.
3. Hang the Landing Gear in the air during calibration, as the landing gear will move.
4. Keep pressing the SET button using a small tool and power on. You can see the LED flashes YELLOW quickly, and then press the SET button once again. The system begins auto calibration with the indication of the LED flashing YELLOW slowly. **DO NOT** obstruct any moving part during auto calibration.
5. The left-part is calibrated, the left link mechanism first moves up then moves down automatically. Then the right-part is calibrated, the right link mechanism first moves up then moves down automatically.
6. After calibration, both left and right parts are in the **[Lower]** position, and the LED is solid GREEN on. Then the landing gear will work normally.

Notes:

(1) If the LED is solid YELLOW on during calibrating, it means that there is something wrong with the calibration, please re-do the Servo Installation of the Assembly & Connection section, since the servo arm might be installed with a wrong angle.

(2) Please avoid any obstruction during calibrating. If the landing gear is blocked from moving, please recalibrate the landing gear by the above steps.

(3) If the **[R]** and **[L]** servo cables are reversed, the travel will not be measured correctly. Please connect correctly and recalibrate the landing gear using the above steps.

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3 Transmitter Setting

Select a 2-position switch (default setting is OK) of Transmitter as the control input of the landing gear, and then make sure the corresponding port of receiver is connected to the **[IN]** port on control board.

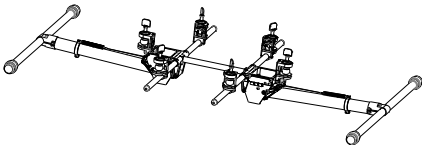
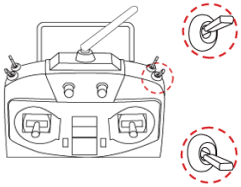


Fig. 1



Retracted： Toggle the switch to this position to retract the landing gear (Fig.1)

Lower： Toggle the switch to this position to lower the landing gear (Fig. 2)

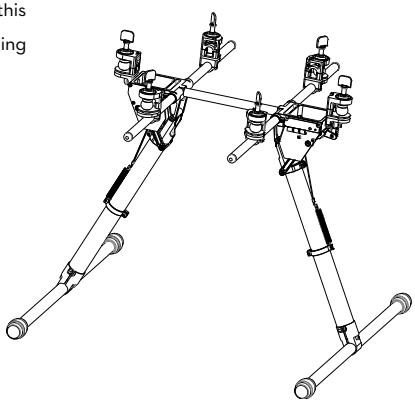


Fig. 2

Tips:

(1) If the switch of Transmitter has FailSafe function, set the FailSafe value to the **[Lower]** position, so that the landing gear will be in **[Lower]** status when the receiver enters FailSafe mode, to land the aircraft safely.

(2) To avoid false switch triggering, you can use the slide lever or other trim as the landing gear's control switch.

4 Usage

The landing gear can be used by following the steps below after assembly & connection.

1. Make sure the transmitter & receiver batteries are fully charged.
2. Toggle the switch to the **[Lower]** position, and then turn on the transmitter.
3. Make sure the **[R]**, **[L]** and **[IN]** connections are correct and firmly connected.
4. Make sure the Landing Gear is at the **[Lower]** position, and then power on the system. If the green LED is solid on, then this is a normal start. If the LED flashes GREEN slowly, please re-calibrate the system according to the procedure of Travel Calibration.
5. Make sure to toggle the switch to the **[Retracted]** position ONLY AFTER you takeoff the aircraft.
6. When the aircraft is landing, please toggle the switch to the **[Lower]** position for a safe landing.

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Tips

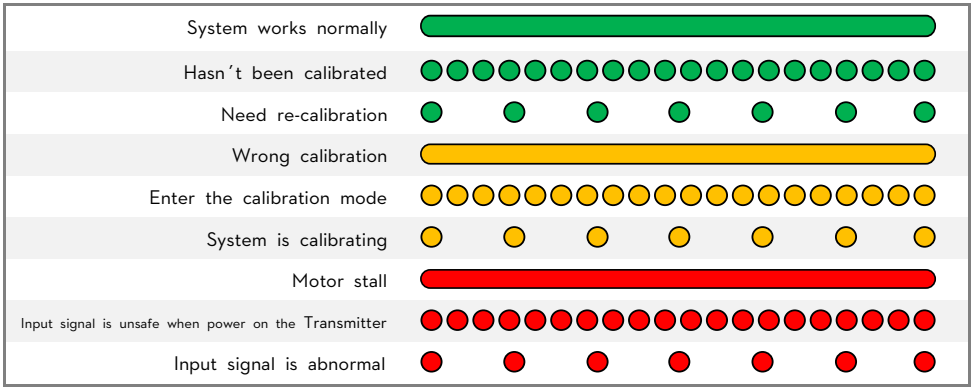
(1) The system will turn off the servo power temporarily within 3 seconds after the landing gear has reached the target position.

(2) When powering on the system, if the Transmitter switch is at the **[Retracted]** position, which is the unsafe signal for the landing gear, the LED will quickly flash RED. Toggle the switch to the **[Lower]** position.

(3) If there is an abnormal signal or no signal input into the **[IN]** port the LED will slowly flash RED. Please check the receiver and the connections.

(4) If the power consumption of servos is too large during usage, the LED will be solid RED on. If this status lasts more than 4 seconds, the landing gear will lower and the LED will flash GREEN slowly. Please re-calibrate the system.

LED Indicator



Specifications

Parameter	Range	Parameter	Range
Working Voltage	3S~6S (LiPo)	Input Signal	PWM (High-Pulse Width 800us~2200us)
Working Current	Max 1A@6S	Output Signal	PWM(Mid Position is 1520us) in 90Hz
Working Temperature	-20~70°C	Output Voltage	6V
Total Weight	875g	Servo Travel	150° (Minimum120°)

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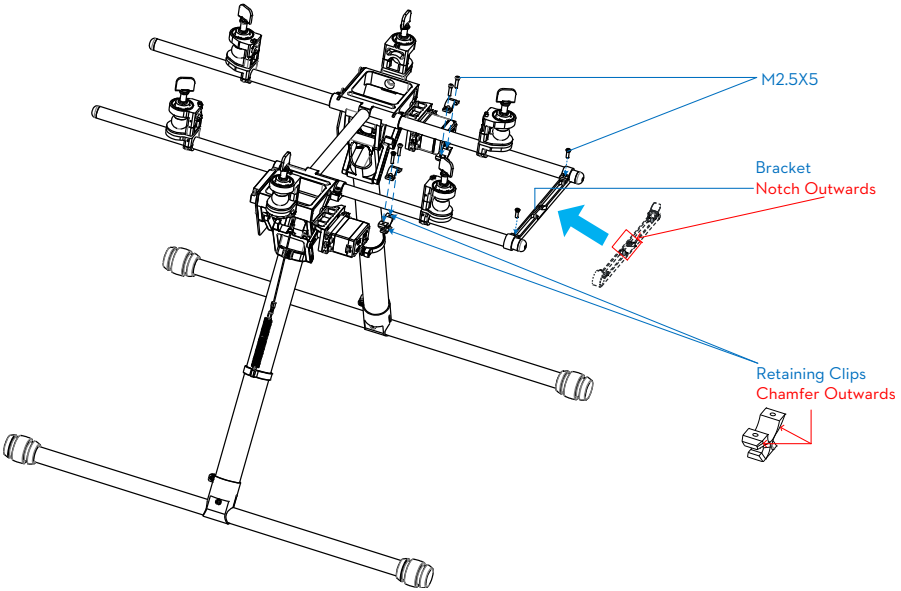
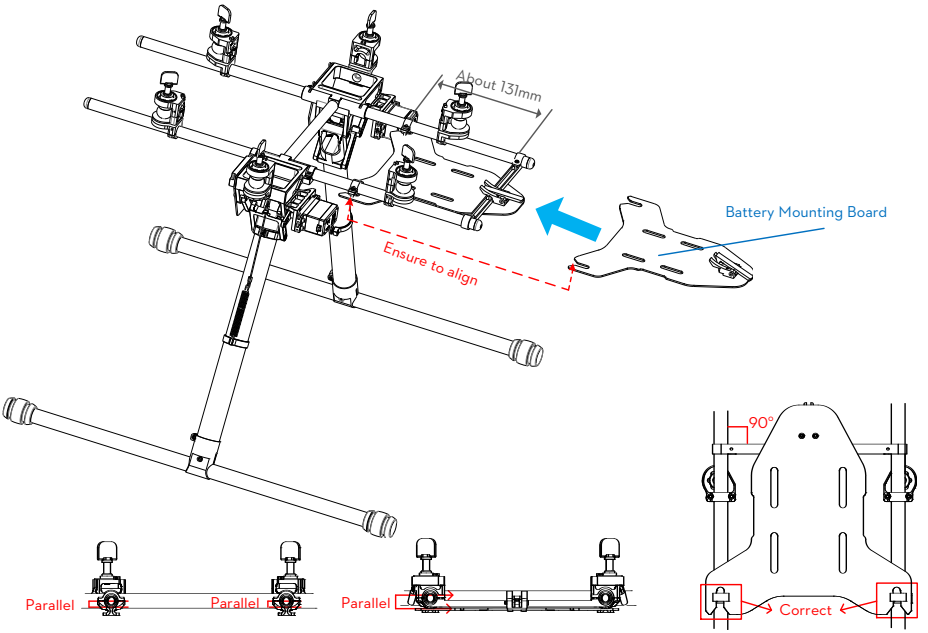
5 Mount Battery Bracket

Step1: Mount the retaining clip and the bracket, fix screws (but not tighten).



Step2: Place the battery mounting board and adjust its position, and then tighten all screws.



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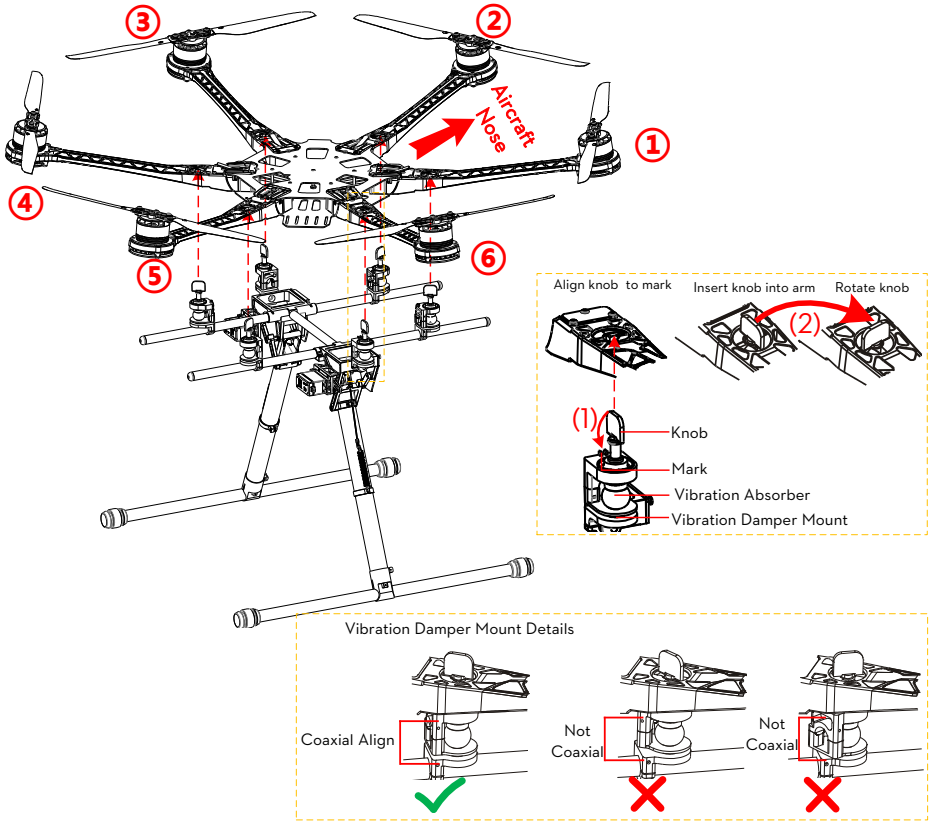
Assembly

Assembly



1. Align all knobs on H frame to the marks; refer to fig (1).
2. Lie frame and Landing Gear horizontally, insert knobs into arms ③ and ⑥ first, and then adjust to insert the others into the arms.
3. Make sure the Vibration Damper Mount is correct, and then rotate the knob to the end, as fig (2) shown.

Notes:

- Ensure all knobs on the H frame aligned to the marks, and they would go through the arms successfully.

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Install the IMU Mount (Optional)

If you wish to achieve a smooth and steady fight, carry out the following procedures to install the IMU Mount.

1. (Fig.1) Remove the screws to dismount the Battery Bracket.
2. (Fig.2) Fix the IMU Mount and remount the Battery Bracket.
3. (Fig.3) Adjust the IMU Mount and the Battery Bracket, and then fix all the screws.
4. (Fig.4) Attach the IMU Module; make sure that the arrow on LOGO is pointing to the aircraft nose.

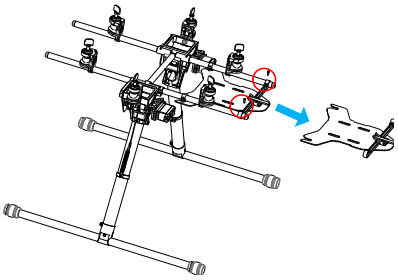

Fig.1

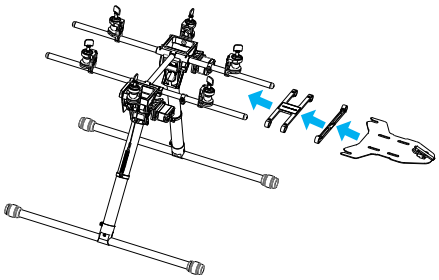

Fig.2

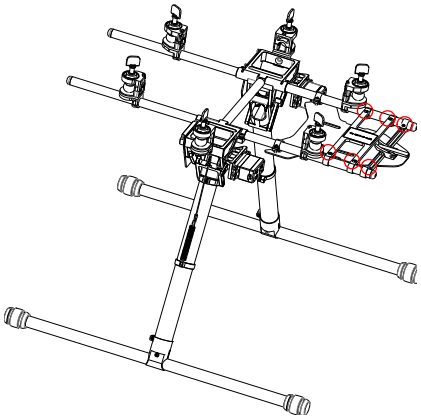

Fig.3

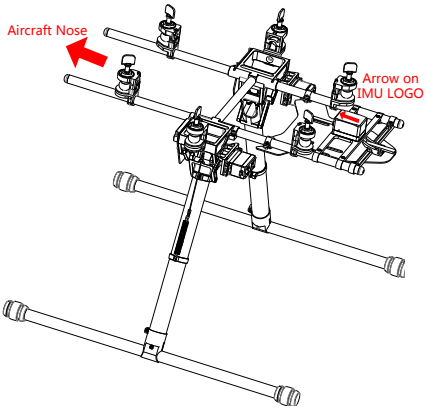

Fig.4

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Appendix

ESC Sound

ESC State	Sound
Ready	♪1234567--B--B
Throttle stick is not at bottom	BBBBBB...
Input signal abnormal	B--------B--------B...
Input voltage abnormal	BB---BB---BB---BB...

ESC LED

ESC State	LED
Standby	Off
Motor rotating	Solid Red or Green On
Motor rotating at full throttle position	Solid Yellow On

Tips:

DJI ESCs are specially designed for multi-rotors. When use with DJI autopilot systems, you do not have to setup any parameters or calibrate travel range.

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Specifications

Frame	
Diagonal Wheelbase	800mm
Frame Arm Length	350mm
Frame Arm Weight (with Motor, ESC, Propeller)	356g
Center Frame Diameter	240mm
Center Frame Weight	550g
Landing Gear Size	460mm(Length)×425mm(Width)×320mm(Height) (Top width: 155mm)
Retractable Landing Gear Weight (Including Battery Tray)	1050g
Motor	
Stator Size	41×14mm
KV	400rpm/V
Max Power	500W
Weight (with Cooling Fan)	158g
ESC	
Current	40A OPTO
Voltage	6S LiPo
Signal Frequency	30Hz ~ 450Hz
Drive PWM Frequency	8KHz
Weight (with Radiators)	35g
Foldable Propeller (1552)	
Material	Engineering plastic
Size	15×5.2 inch
Weight	13g
Flight Parameters	
Takeoff Weight	6.0Kg ~ 8.0Kg
Total Weight	3.7Kg
Power Battery	LiPo (6S、10000mAh~15000mAh、15C(Min))
Max Power Consumption	3000W
Hover Power Consumption	800W(@ Takeoff Weight 6.7Kg)
Hover Time	Max: 20 min (@15000mAh&6.7KgTakeoff Weight)
Working Environment Temperature	-10 ~ +40 °C

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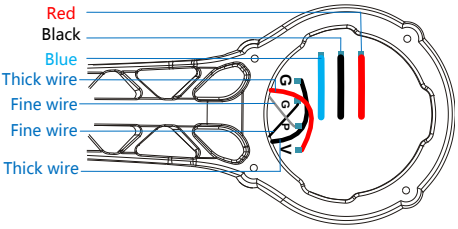
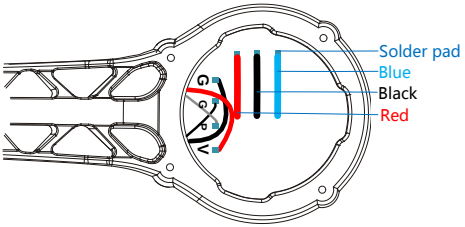
FAQ (Trouble Shooting)

Solder ESC

Make sure to solder the thick wires and fine wires correctly, when solder ESC to frame arm.

Clockwise and counter clockwise motor should be soldered to ESC correctly by different color order.

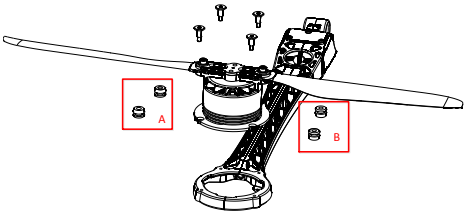
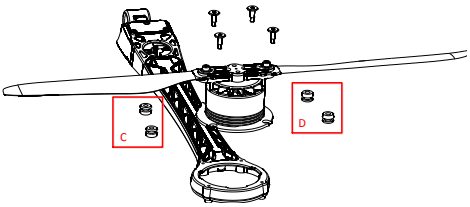
For arms	For arms
	

Assemble the Vibration Absorber of Motors

The soft gasket is a part of the Vibration Absorber and it has a thick end and a thin end, it ' s important to assemble the soft gaskets in correct approach adhere to the diagram below.

Propeller CCW: the thick ends of the gaskets (A) are upwards, the thick ends of the gaskets (B) are downwards.

Propeller CW: the thick ends of the gaskets (C) are downwards, the thick ends of the gaskets (D) are upwards.

Propeller CCW	Propeller CW
	

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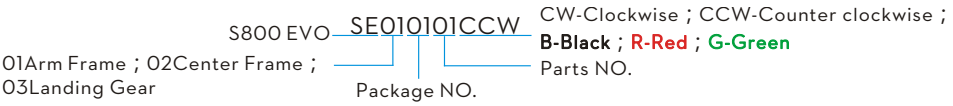
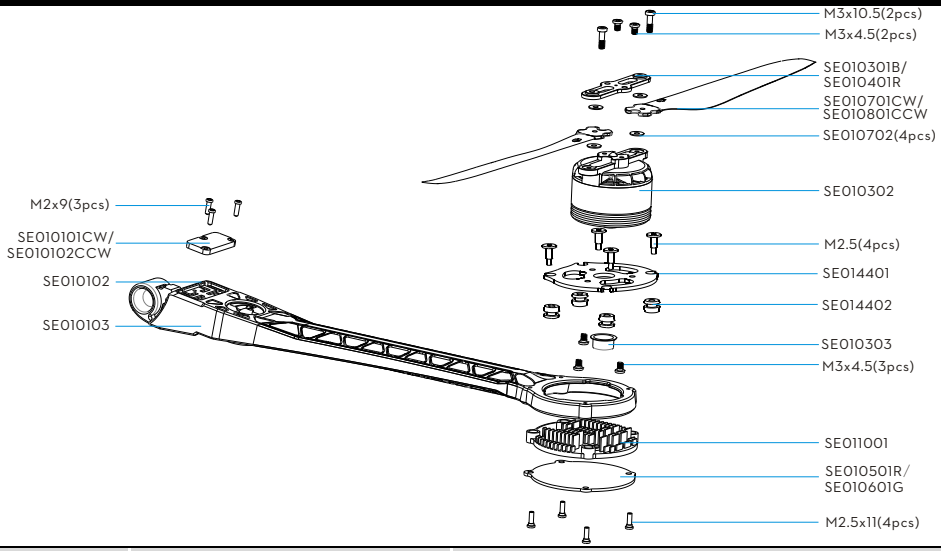
Spare Parts Listing

If S800 EVO needs component replaced, please refer to the following diagram to identify the component NO., and then make a purchase of corresponding package. Each package includes screws needed. The Components Number is defined as bellow.



Frame Arm



Package NO.	Name	Components Number
1	Frame Arm (Counter Clockwise)	SE010101CCW、SE010102、SE010103、M2x9
2	Frame Arm (Clockwise)	SE010102CW、SE010102、SE010103、M2x9
3	Motor with black Prop cover	SE010301B、SE010302、SE014402、SE014401 、SE010303 、M2.5x5、M3x4.5
4	Motor with red Prop cover	SE010401R、SE010302、SE014402、SE014401 、SE010303 、M2.5x5、M3x4.5
5	ESC with Red Led	SE010501R
6	ESC with Green Led	SE010601G
45	1552 Folding Propellers(both CW&CCW)	SE010701CCW、SE010801CW、SE010702、M3x10.5
9	Washer for Propeller	SE010702
10	ESC Heat Sink	SE011001

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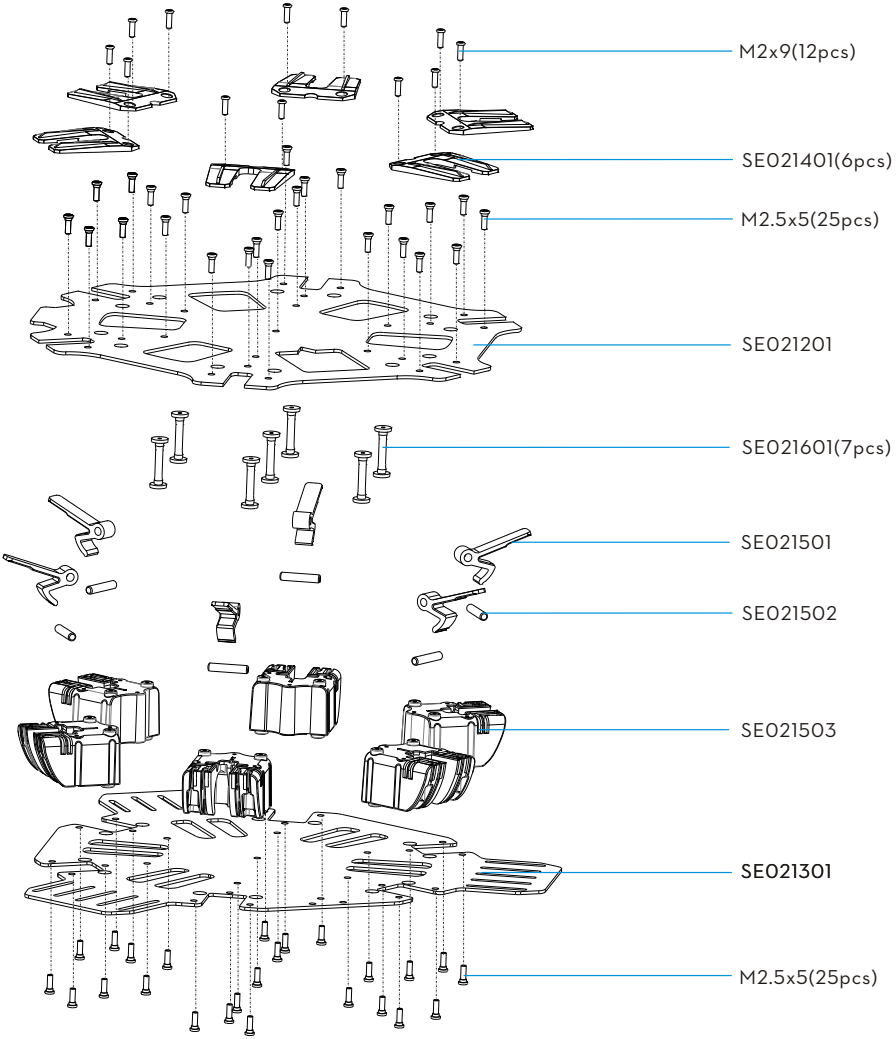
Center Frame



Package NO.	Name	Components Number
11	Center Frame	SE021201、SE021301、SE021401、SE021501、SE021502 、SE021503、SE021601、M2x9、M2.5x5
12	Center Frame Top Board	SE021201、M2x9、M2.5x5
13	Center Frame Bottom Board	SE021301、M2.5x5
14	Top Board Cover	SE021401、M2x9
15	Arm Mounting Bracket	SE021501、SE021502、SE021503、 M2x9、M2.5x5
16	Aluminum Brace for Center Frame	SE021601、M2.5x5

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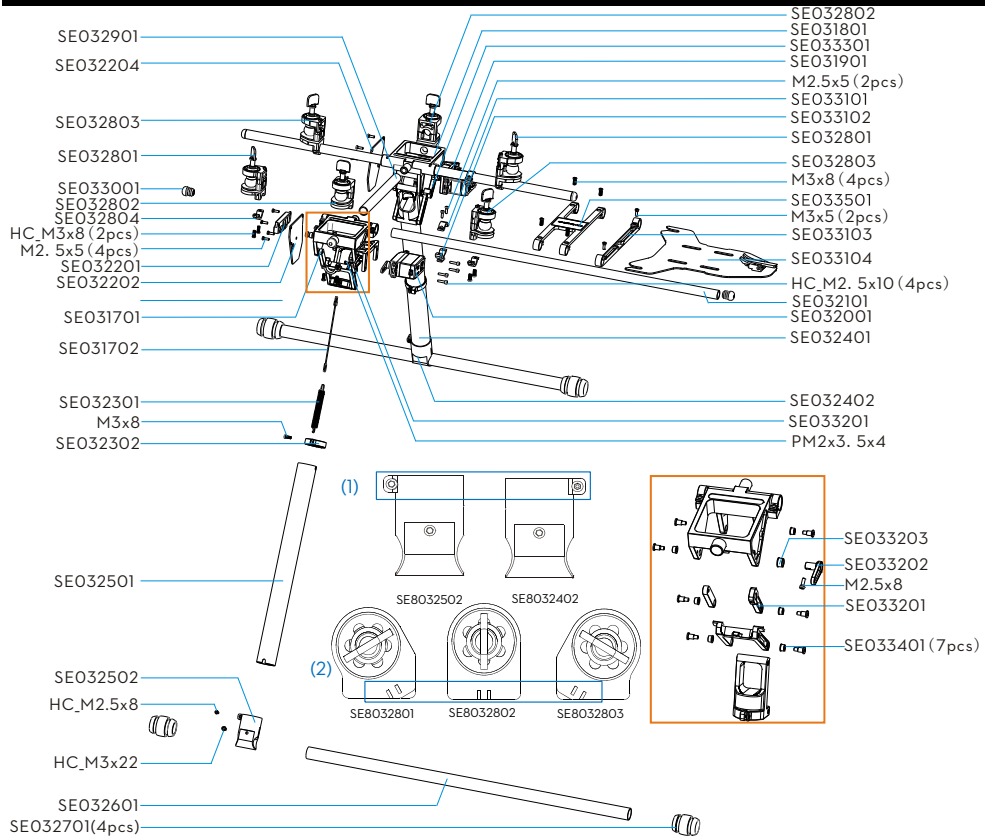
Landing Gear



Note1: (1) Left Support Tube right Support Tube are different; (2) Left set, middle set and right set of Damping Unit are different.

Package NO.	Name	Components Number
17	Retract Module(Left)	SE031701、SE031702
18	Retract Module(Right)	SE031801、SE031702
19	HITEC Servo (Right)	SE031901、HC_M2.5x10
20	HITEC Servo (Left)	SE032001、HC_M2.5x10
21	Carbon Tube of H-Frame	SE032101、HC_M2.5x8
22	Control Board	SE032201、SE032202、SE032203、SE032204、M2.5x5
23	Spring	SE032301、SE032302、SE031702、M3x8
24	Support Tube (Right)	SE032401、SE032402、M3x8、HC_M2.5x8、HC_M3x8
25	Support Tube (Left)	SE032501、SE032502、M3x8、HC_M2.5x8、HC_M3x8

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26	Base Tube	SE032601、SE032701
27	Silicone Rubber Damper	SE032701
28	Damping Unit (Set)	SE032801、SE032802、SE032803、SE032804、HC_M3x8
29	Aluminum Tube of H-Frame	SE032901
30	Silicone Rubber of H-Frame	SE033001
31	Battery Tray	SE033101、SE033102、SE033103、SE033104、M2.5x5、M3x5
32	Control arm of Retractable Module(Left)	SE033201、SE033202、SE033203、M2.5x8
33	Control Arm of Retractable Module(Right)	SE033301、SE033202、SE033203、M2.5x8
34	Shaft Sleeve of Retract Module	SE033401
35	IMU Mount	SE033501 、M3x8

Others

Package NO.	Name	Components Number
36	GPS Holder	SE033601
37	Screws Package	M3x8(10pcs)、HC_M2.5x10(10pcs)、M2.5x5(30pcs)、M2x9(10pcs)、M3x4.5(10pcs)、M2.5x8(5pcs)、M2.5x11(10pcs)、M3x 10.5(15pcs)、HC_M3x8(10pcs)、HC_M2.5x8(10pcs)、HC_M3x22(5pcs)
38	Blade Holder	SE033801

Package NO.	Name	Components Number
39	Battery Mount Board	SE033104、Velcro straps
40	Frame Arm with Prop CCW &Red LED	**Package NO.** 1、4、5、7、10
41	Frame Arm with Prop CW &Red LED	**Package NO.** 2、4、5、8、10
42	Frame Arm with Prop CCW &Green LED	**Package NO.** 1、3、6、7、10
43	Frame Arm with Prop CW &Green LED	**Package NO.** 2、3、6、8、10

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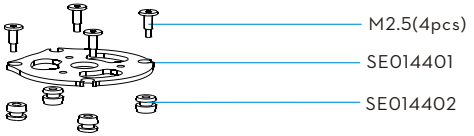

Package NO.	Name	Components Number
44	Vibration absorber of Motor	SE014401、SE014402、M2.5

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Appendix E

DJI Inspire

Operator Manual

Note: Manual is Protected – can be found online at:
http://download.dji-innovations.com/downloads/inspire_1/en/Inspire_1_User_Manual_v1.0_en.pdf

Appendix F

Aerial Appeal
Procedures & Operations

Safety for public on the ground as well as manned aircraft above is an essential and utmost consideration for aerial videos and photography. As such, safety protocols and controls must be implemented through pre-flight preparation and during flight.

Pre-Flight Procedures:

- Check batteries with voltage meter to insure fully charged and ready for use.
- Inspect batteries for damage or leakage that may affect proper operation.
- Inspect propellers for cracks, chips or damage.
- Check weather forecasts for wind advisory or other conditions that my impact flight.
- Consult five (5) mile radius map for airport/heliport locations.
- Inspect flight area for
    - location of light poles
    - proximity to utility wires
    - vicinity of trees
    - flocks of birds that may cause interference and potential flight impact
    - vicinity of any elevated obstructions that may pose potential flight hazard
    - optional point of control for best visual site of UAS while in flight
- Takeoff and landing
    - inspect area for best and safest point of takeoff and landing

Flight Procedures:

- Takeoff and land from same location
- Remain alert to birds, sound or aircraft, curious public, and approaching vehicles
- Do not allow anyone to engage in conversation or distract the PIC
- Restrict flight to minimal elevation sufficient to achieve desired results
- Remain prepared for emergency landing at all times
- Pay attention to flight time
    - Always set a timer as a safety alert to provide 30% power remaining upon landing
- Land UAS and shut down propulsion immediately following landing