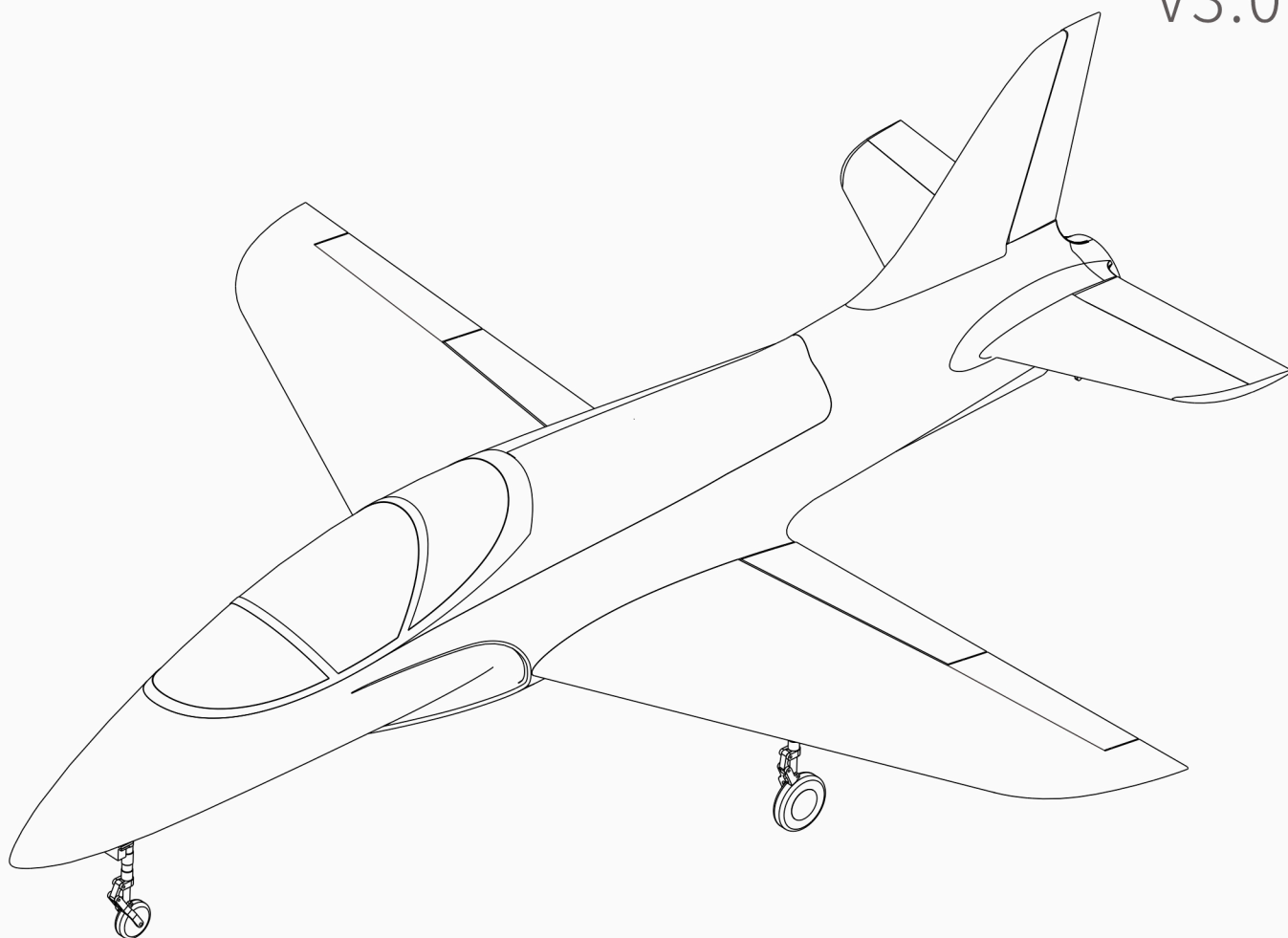




120-EDF SUPER VIPER FRP ASSEMBLY AND DEBUGGING GUIDE

V3.0



Product S/N:

Want to learn more about the product video,
pictures, and other matters of attention Please
log in: www.hsdr.com

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Product summary

Super Viper is a classic model that independently designed and developed by HSDJETS. In order to let pilots to enjoy a better flight experience, HSDJETS has always been pursuing a excellence, leading by example, leading the industry trend, and constantly upgrading products. This version is completely upgraded and optimized in appearance, structure, material, and control system, etc. In terms of appearance, the shape of the main parts such as the main wing and the fuselage are further optimized. In terms of structure, after careful calculation, unnecessary weight is removed and the structure is more reasonable and stronger now. In terms of material, in order to pursue more perfect flight performance, it will be upgraded again on the basis of the original material, including the main components such as the fuselage, main

wing, and elevator, all of which are made of high strength composite. In terms of control, it is the biggest highlight of this product optimization upgrade. HSDJETS has invested in the independent development of an exclusive control system to fully integrate the landing gear, various channel servos, power, lighting and other systems to reduce complicated wiring. In order to take into account the beauty of the body and equipment cabin, the back line is used to hide all the connecting wires or wires below the second floor. Except the battery connection, the equipment cabin has no other wire material, it is clean and beautiful.

The new version of this Super Viper is coming up.

Kindly Note:

More about it, kindly check the link of HSDJETS website: www.hsdrc.com

Note



This is not a toy, it has the potentially dangerous, not for children under 14 years old. Young people under the age of 14 should only be permitted to operate the model under the instruction and supervision of an adult. Please keep these instructions for further reference after completing model assembly.

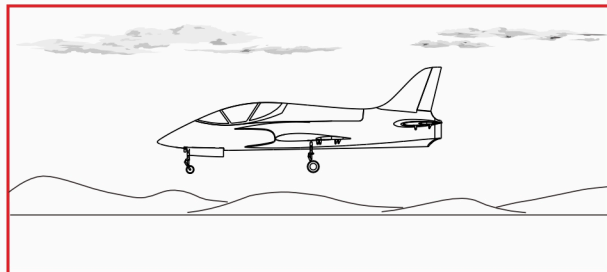
Important hints

1. Operator should have a certain experience, beginners should operate under the guidance of professional players;
2. Before install, please read through the instructions carefully and operate strictly under instructions;
3. Cause of wrong operation, HSDJETS and its distributors/dealers will not be held responsibility for any losses;
4. Model planes players must be above the age of 14 years old;
5. This plane used the EPO material with surface spray paint, don't use chemical liquid to clean, otherwise it will damage;
6. Your should be careful to avoid flying in areas such as public places, high-voltage-intensive areas, near the highway, near the airport of any other place where laws and regulation clearly prohibit;
7. You can not fly in bad weather conditions such as thunderstorms, snow, and etc;
8. Model plane's battery, don't allowed to put in everywhere. Storage must ensure that there is no inflammable and explosive materials in the round of 2 meter range;
9. Damaged or scrap battery should be properly recycled, it can't discard to avoid spontaneous combustion and fire;
10. In flying field, the waste after flying should be properly handled, it can't be abandoned or burned;
11. In any case, you must ensure that the throttle is in the low position and transmitter switch on, then it can connect the li-po battery in aircraft;
12. Do not try to take planes by hand when flying or slow landing process. You must wait for landing stop and when the blades stop turning, first disconnect the power supply and then carry it;
13. Whether flying or debugging on the ground, always ensure that there is no one in front of the aircraft.

Safety Instructions

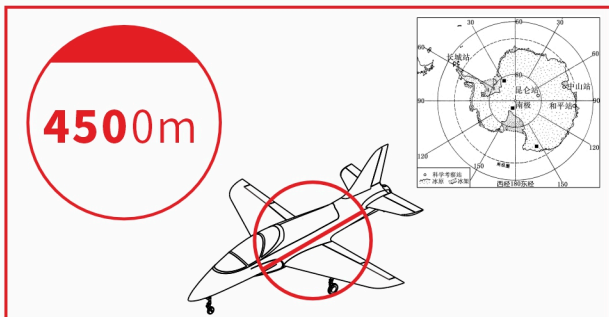
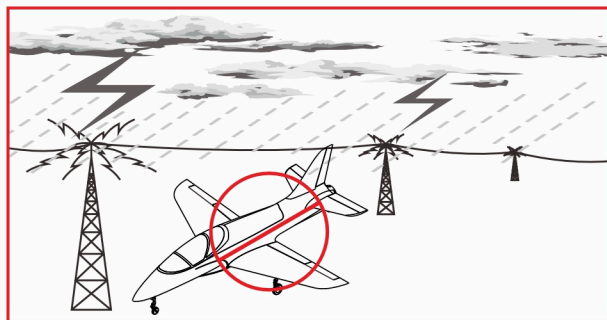
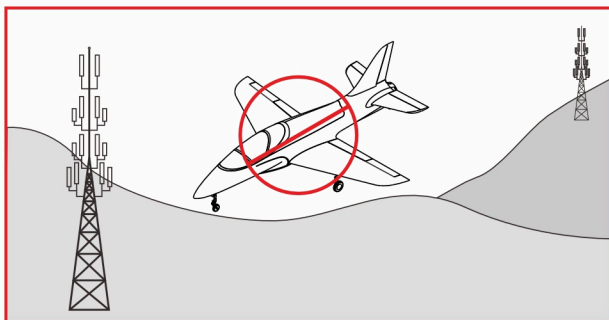
Strongly suggestion: users while enjoying the flying, please ensure that you are in a safe and reasonable environment.

1. It is better to try to choose an empty airspace and no obstacles conditions when you fly.
2. Stay away from people, animals, buildings, trees, water and other obstacles during flying.
3. Please keep the radio transmitter in your hand during the flight to control the model at any time to prevent accidents.
4. Please control the height of the aircraft to 120 meters to ensure the flight safety of the flyer and civil aviation. If you are in the area that have restrictions on flying altitude of 120 meters or less, please comply with its regulations. Make sure the model do not go out of sight and cause unnecessary accidents.



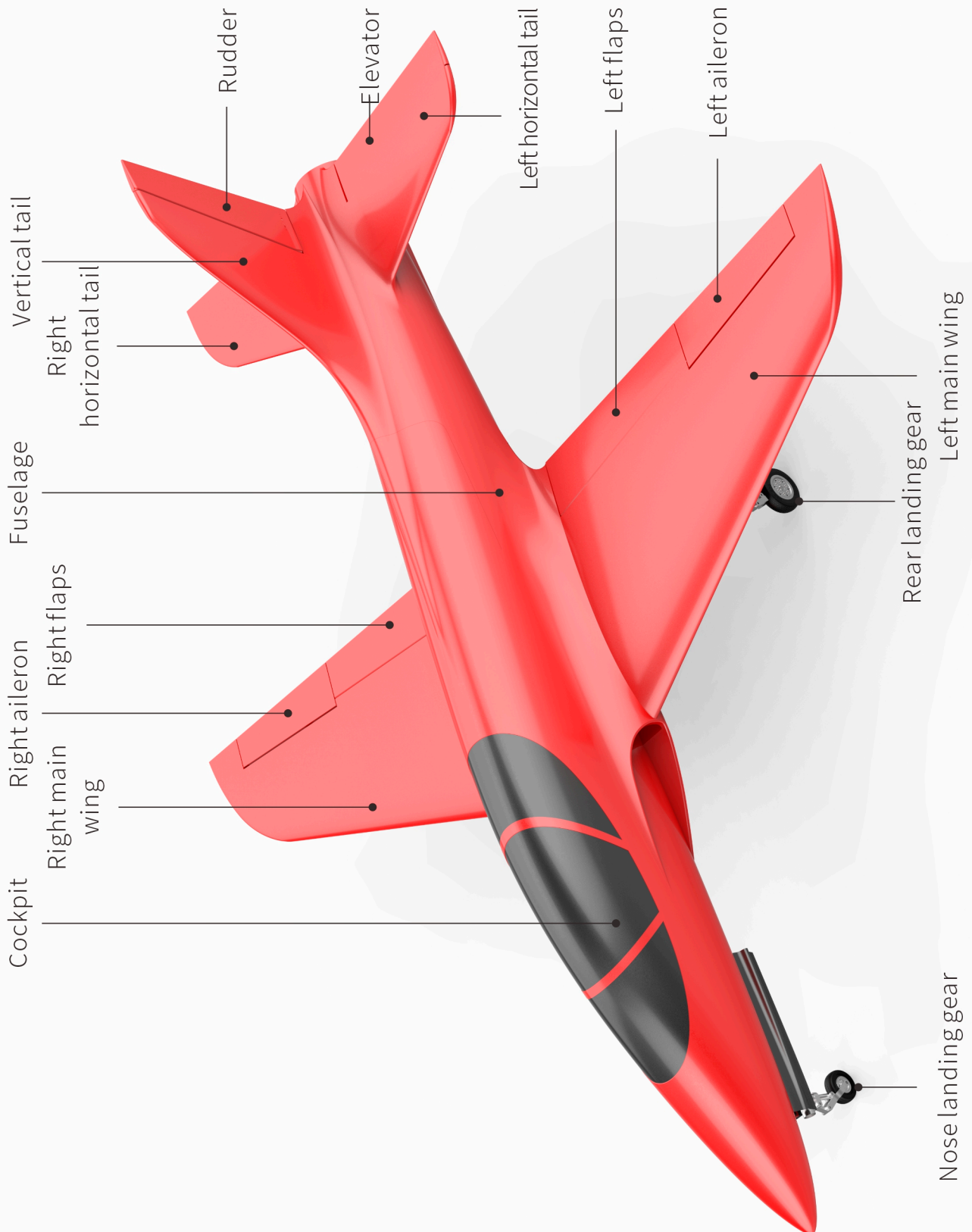
Flight environment requirements

1. Do not fly in areas such as transmission towers, communication base stations, high-voltage lines, or Wi-Fi hotspots to prevent the radio transmitter signal is interferenced.
2. Do not operate in bad weather, such as: strong winds(wind speed 10 m/s and above), raining, lightning, fog, snow, etc..
3. Flying is not recommended at altitudes above 4,500 meters and in the Arctic and Arctic circles.
4. Do not fly in airports or restricted areas under the relevant laws or regulations.



SUPER VIPER JET

Super viper description of each component

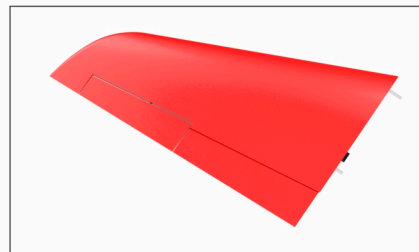


Super viper install instructions

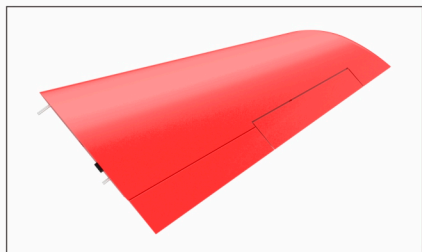
1. Open the box(PNP version): Take the fuselage, left and right main wings, left and right horizontal tail, manual, wing bolt rod, horizontal tail bolt rod, accessories package and other items in order. Check the packing items according to the packing item list in the manual.



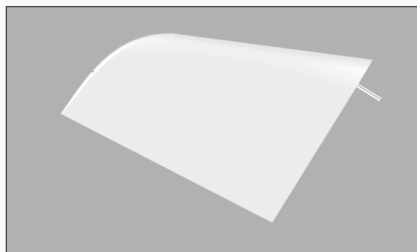
Fuselage×1



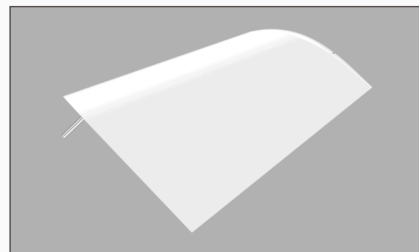
Left main wing×1



Right main wing×1



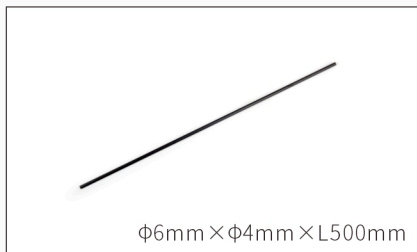
Left horizontal tail×1



Right horizontal tail×1



$\phi 16\text{mm} \times \phi 12\text{mm} \times L598\text{mm}$
Main wing bolt rod ×1



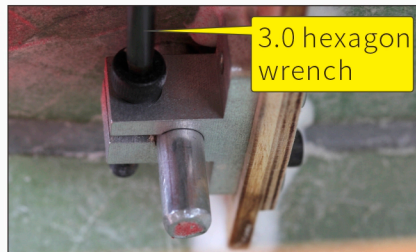
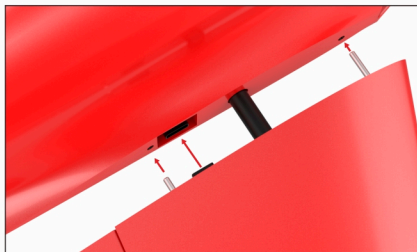
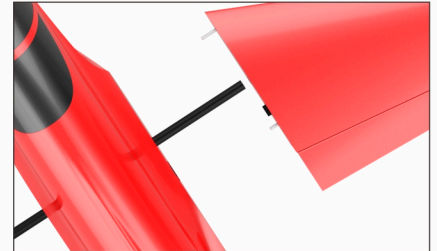
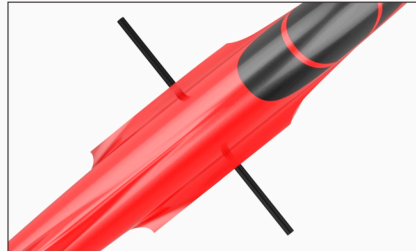
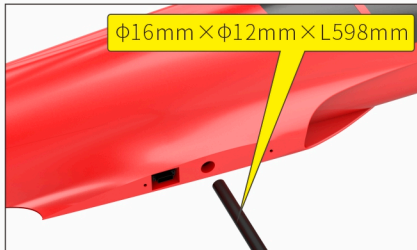
$\phi 6\text{mm} \times \phi 4\text{mm} \times L500\text{mm}$
Horizontal tail bolt rod×1



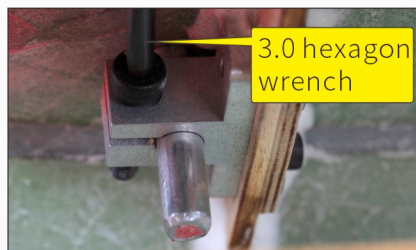
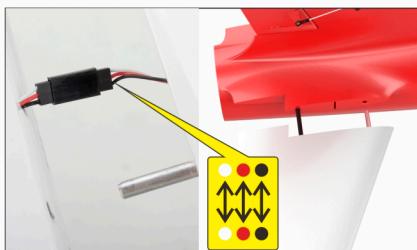
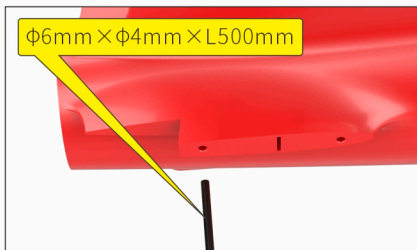
(JR male + JR female)
100mm Signal line×8pcs

Superviper install instructions

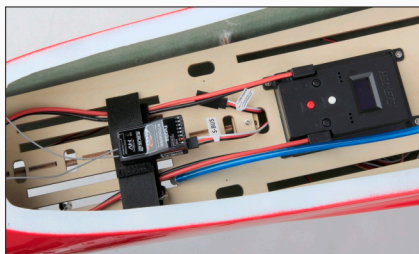
2. Install the main wing: pass the main wing pin rod ($\phi 16\text{mm} \times \phi 12\text{mm} \times \text{L}598\text{mm}$) through the designated hole position of the fuselage to ensure that the extension length of the left and right main wing bolt rods is equal, and then align the hole positions of the left and right main wings with the main wing bolt rod, and at the same time, insert the bolt rod and positioning pin into the main wing, and ensure that the main wing end is connected before fully inserting. After being installed in place, lock the inner hexagon screw with 3.0 hexagon wrench and fix it. The main wing assembly is completed.



3. Install the left and right horizontal tail: firstly, put the flat tail bolt rod ($\phi 6\text{mm} \times \phi 4\text{mm} \times \text{L}500\text{mm}$) through the designated hole position of the fuselage, ensure that the extension length of the flat tail bolt rod at the left and right ends is equal, and then align the hole positions of the left and right flat tail with the bolt rod and positioning pin respectively, and at the same time, insert the bolt rod and positioning pin. Before fully inserting, the left and right horizontal tail should be aligned with the positioning hole on the fuselage. The signal line of the steering gear at the flat tail end is connected with the corresponding signal line of the steering gear at the fuselage end. (Note: the color of the wire should not be reversed.) After being installed in place, lock the inner hexagon screw with 3.0 hexagon wrench, and the flat tail assembly is completed.



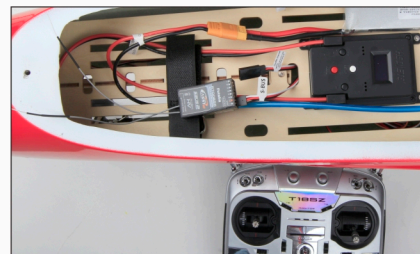
First test and adjustment after assembly



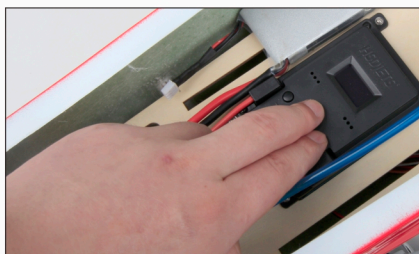
1. To find the S-BUS line at the location of the Super Integrated Control Box and connected to the receiver S-BUS port. (Note: If the receiver does not support S-BUS, the integrated control box needs to be connected to the PWM signal line connection;)



2. Connect the Super integrated control box with 2 sets of 2S lipo batteries (T plug or XT60 plug);



3. Open the radio transmitter.



4. Super integrated control box start up. (For details on start up operations, kindly see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance)

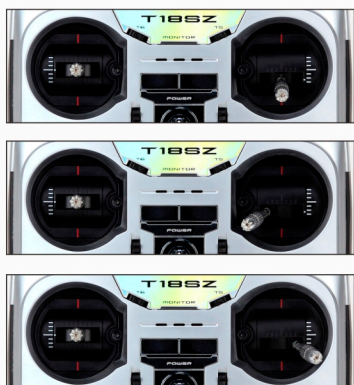
5. Check the Super Integrated Control Box S-BUS mode channel settings. The factory default channel is: S-BUS Setting

(Note: You can change the default gear switch position according to your own custom channel.)

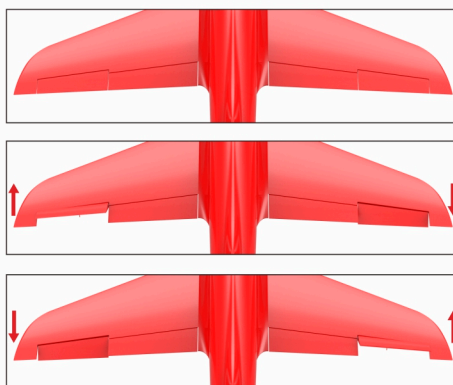
- | | |
|----------------------------------|----------------------------------|
| 1.AUX1 CH Aileron (default CH1) | 7.AUX7 CH Smoke(default CH7) |
| 2.AUX2 CH Elevator (default CH2) | 8.AUX8 CH Spare |
| 3.AUX3 CH Rudder (default CH4) | 9.A/B LIGHT CH (default CH3) |
| 4.AUX4 CH Flap (default CH6) | 10.NAV,LIGHT CH (default CH9) |
| 5.AUX5 CH Spare | 11.WHEEL BRAKE CH (default CH8) |
| 6.AUX6 CH Throttle (default CH3) | 12.LANDING GEAR CH (default CH5) |

6. Aileron test: Check whether the aileron action is correct

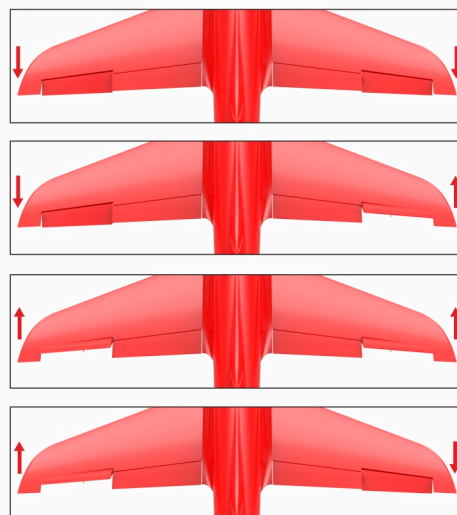
Right model throttle radio transmitter



Aileron standard action



Possible ailerons reverse action



Note: If there is no special explanation, this user guide is introduced by default with the right model throttle radio transmitter as an example.

When the aileron action is opposite to the specified action, you can adjust it with the 2 ways as below:

- (1). to find the reverse setting menu of servo in the radio transmitter menu, and switch in the aileron item to the forward direction.
- (2). Adjust directions of the aileron servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

First test and adjustment after assembly

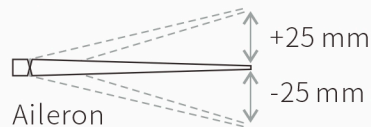
7. Aileron adjustment: After the setting, the standard position of the rudder surface will be adjusted. The aileron rudder surface should be in the same plane as the wing. If there is an upward or downward adjustment, it can be adjusted by physical adjustment or system adjustment;

- (1). Physical adjustment: by adjusting the length of the pull rod to change the rudder surface angle to keep it in the same plane as the wing;
- (2). System Adjustment: Adjust the neutral point of the servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

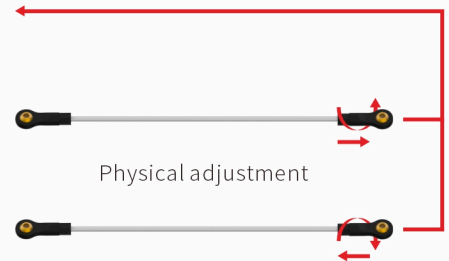
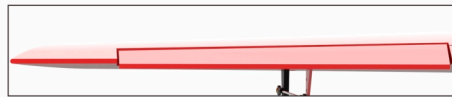
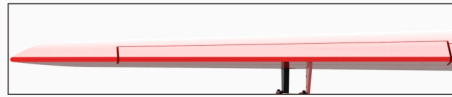
It is recommended to adjust the radio transmitter travel to 80% , adjusting the EXP curve under the same amount of servo, it recommends to adjust to -30 % EXP value in the first time; Can adjust according to the personal operating habits.



Suggest the amount of servo:



EXP Recommend: -30%

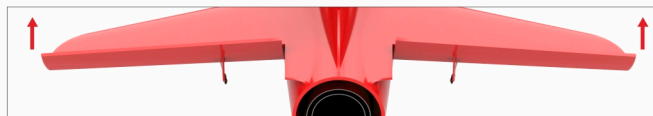


8. Elevation test: Check whether the elevate action is correct

Right model throttle radio transmitter

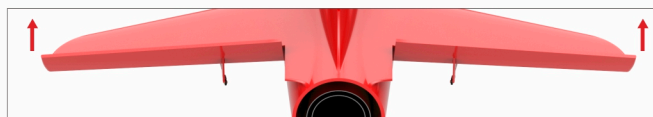


Elevation standard action



Note: If there is no special explanation, this user guide is introduced by default with the right model throttle radio transmitter as an example.

Possible elevation reverse action



When the elevate action is opposite to the specified action, you can adjust it with the 2 ways as below:

- (1). to find the reverse setting menu of servo in the radio transmitter menu, and switch in the elevate item to the forward direction.
- (2). Adjust directions of the elevate servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

First test and adjustment after assembly

9. Elevation adjustment: After the setting, the standard position of the rudder surface will be adjusted. The elevate rudder surface should be in the same plane as the horizontal tail. If there is an upward or downward adjustment, it can be adjusted by physical adjustment or system adjustment;

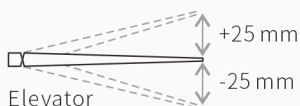
(1). Physical adjustment: by adjusting the length of the pull rod to change the rudder surface angle to keep it in the same plane as the wing;

(2). System Adjustment: Adjust the neutral point of the servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

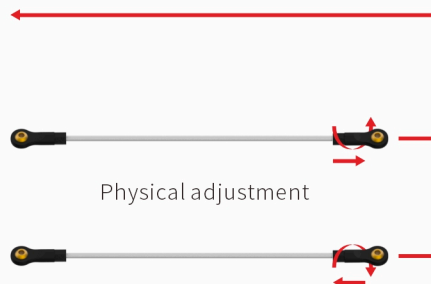
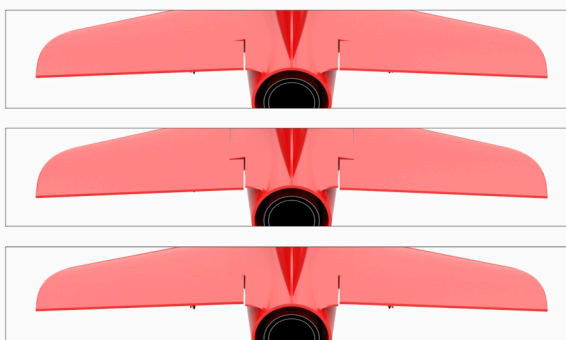
It is recommended to adjust the radio transmitter travel to 65%, adjusting the EXP curve under the same amount of servo, it recommends to adjust to -30 % EXP value in the first time; Can adjust according to the personal operating habits.



Suggest the amount of servo:



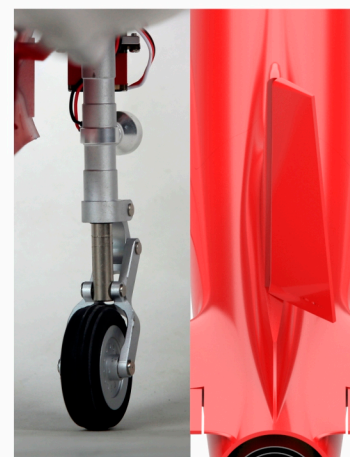
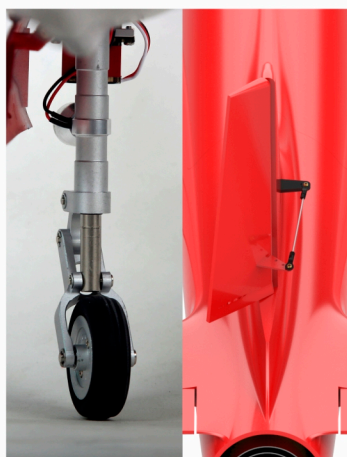
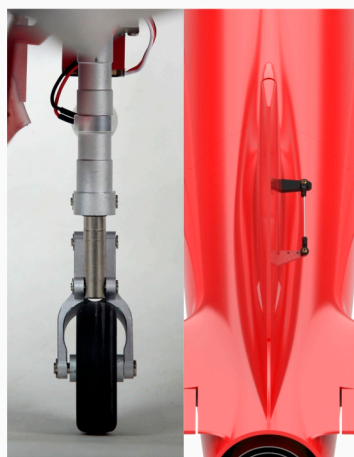
EXP Recommend: -30%



10. Direction test: Check whether the direction action is correct

Direction standard action

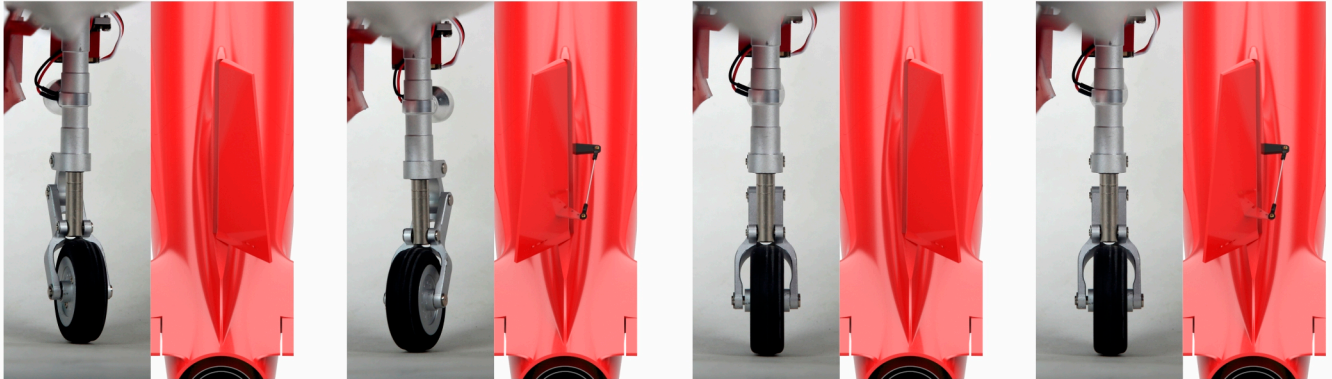
Right model throttle radio transmitter



Note: If there is no special explanation, this user guide is introduced by default with the right model throttle radio transmitter as an example.

First test and adjustment after assembly

Possible direction reverse action



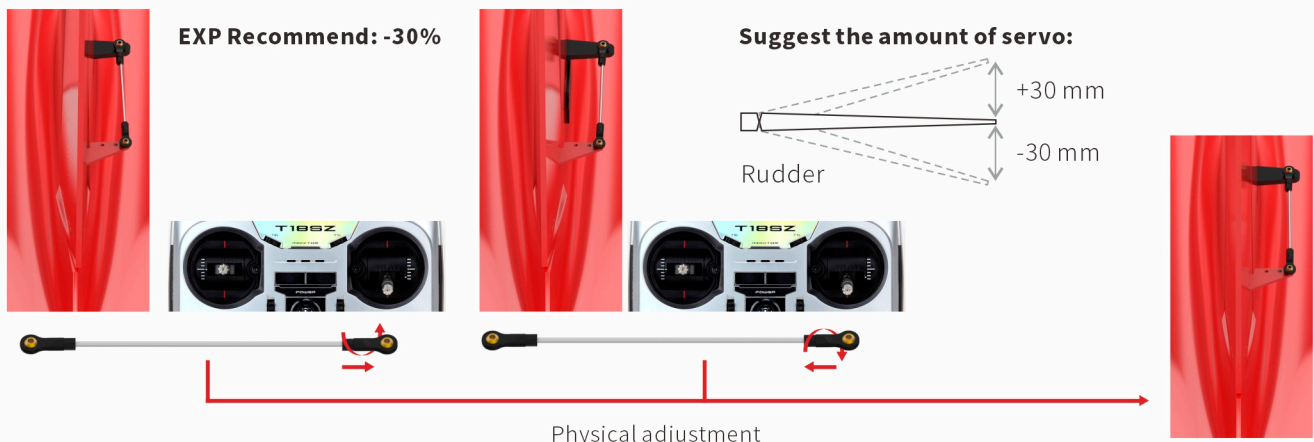
When the direction action is opposite to the specified action, you can adjust it with the 2 ways as below:

- (1). to find the reverse setting menu of direction in the radio transmitter menu, and switch in the direction item to the forward direction.
- (2). Adjust directions of the direction servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

11.Direction adjustment: After the setting, the standard position of the rudder surface will be adjusted. The direction rudder surface should be in the same plane as the vertical tail. If there is a left or right deviation need to be adjusted to vertical center, it can be adjusted by physical adjustment or system adjustment;

- (1). Physical adjustment: by adjusting the length of the pull rod to change the rudder surface angle to keep it in the same plane as the wing;
 - (2). System Adjustment: Adjust the neutral point of the servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);
- It is recommended to adjust the radio transmitter travel to 100%, adjusting the EXP curve under the same amount of servo, it recommends to adjust to -30 % EXP value in the first time; Can adjust according to the personal operating habits.

The front landing gear steering is adjusted with the direction of the rudder surface. If you need to adjust one of them alone, it can be completed by adjusting the neutral point of the servo through the Super integrated control box. (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

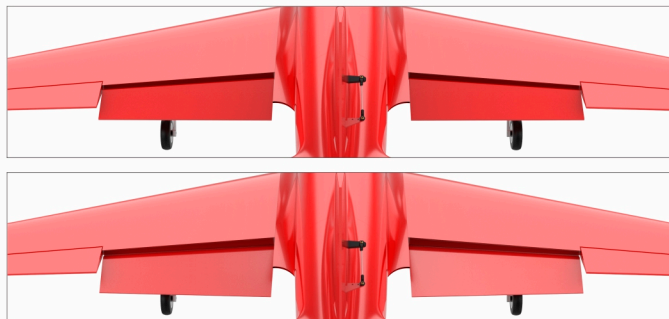


First test and adjustment after assembly

12. Flap test: Check whether the flap action is correct

Flap standard action

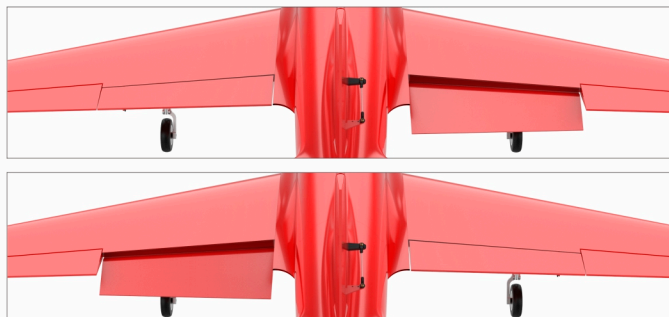
Right model throttle radio transmitter



Note: If there is no special explanation, this user guide is introduced by default with the right model throttle radio transmitter as an example.

Possible flap reverse action

The flap compensation:
Factory default compensation 5 %, customers according to their own needs can be increased or reduced;

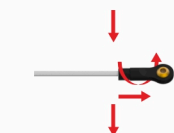
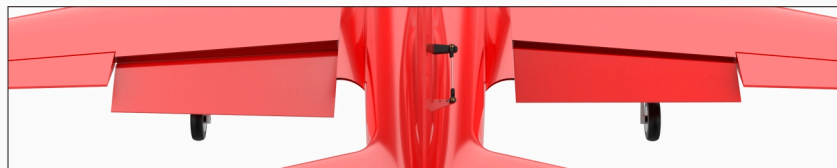


When the two flaps don't move in the same direction: adjust directions of the flap servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

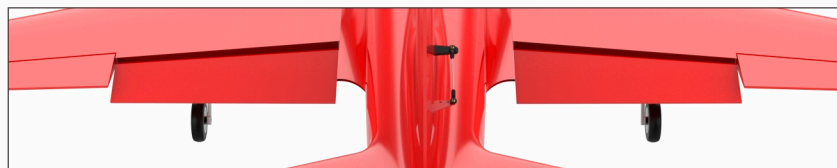
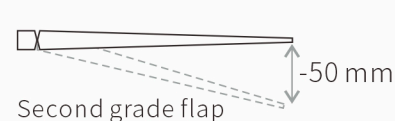
13.Flaps adjustment: After the setting, start checking the flaps rudder surface, if the angles of the flaps rudder surface are consistent in first grade, and whether the angles of the flaps rudder surface are consistent in second grade. If the angles of the rudder surfaces on both sides are inconsistent, it can be adjusted by physical adjustment or system adjustment;

(1). Physical adjustment: by adjusting the length of the pull rod to change the angle of the rudder surface to keep it at the same angle as the two rudder surfaces;

(2). Through the Super integrated control box to adjust the wing steering gear stroke to solve (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance); The radio transmitter is recommended to use the 100 % amount of servo, can adjust according to the personal operating habits.



Suggest the amount of servo:



First test and adjustment after assembly

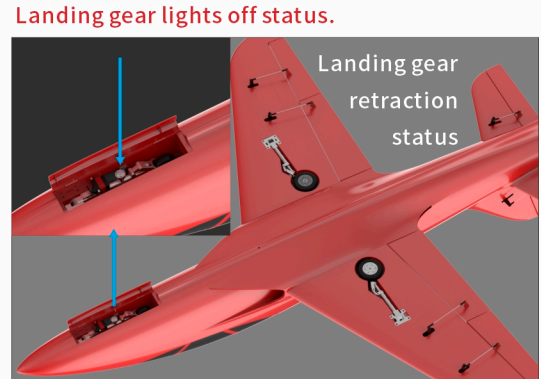
14. Landing gear testing and adjustment:

Check whether the landing gear is working properly. If the landing gear retract, the landing gear lamp is open, indicating that the landing gear is the opposite, the reason is the positive and negative pole lines of the electric retraction are reverse inserted. It is necessary to replace the positive and negative poles of the electric retraction from the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

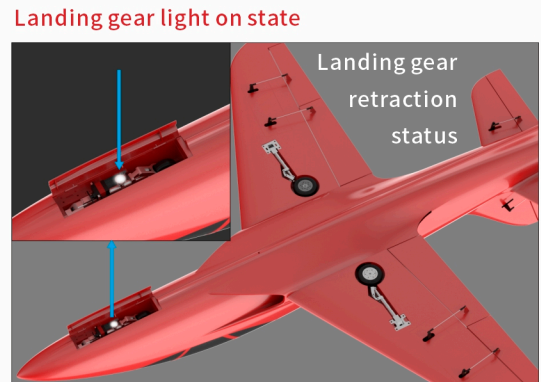
If the three are not in the same step and one up and two down or two up and one down, to change the insertion of positive and negative poles to solve.(for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

MFC-2085 Super Integrated Control Box has a one-click retractable landing gear function (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

Standard landing gear action



Contrary landing gear action



Standard landing gear action



Possible landing gear reverse action



First test and adjustment after assembly

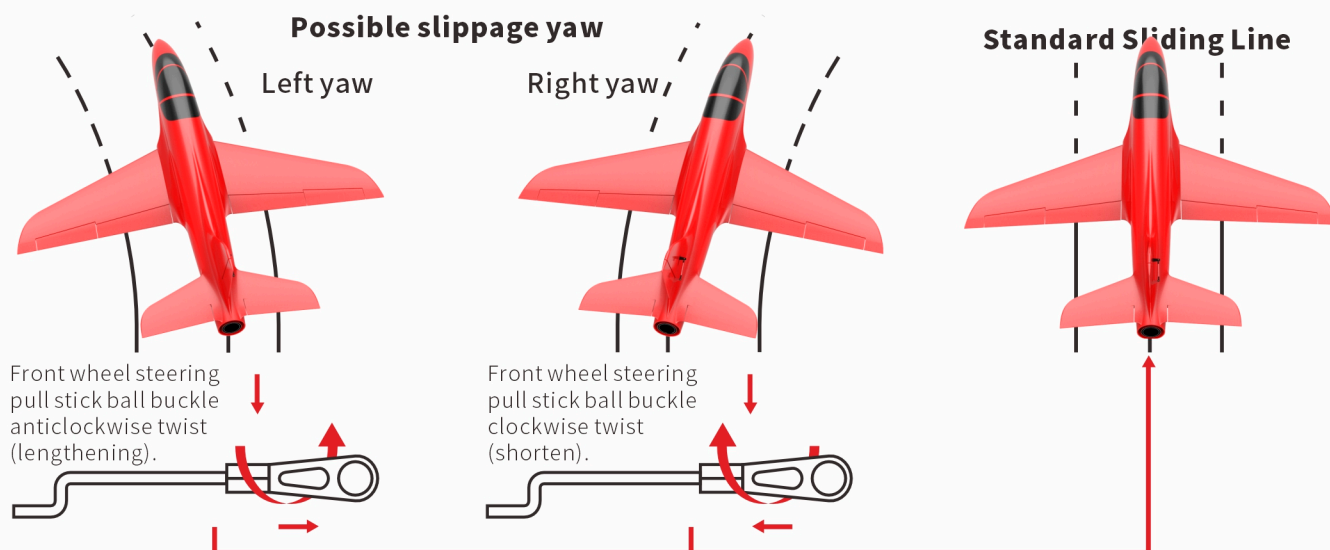
15. Ground test and adjustment: After the above process is gradually completed, power the plane and do straight slide test to check whether the stroke volume of the front steering servo is full. If the steering is yaw or the steering angle is too large, it can be adjusted by physical adjustment or system adjustment:

(1).Steering yaw adjustment:

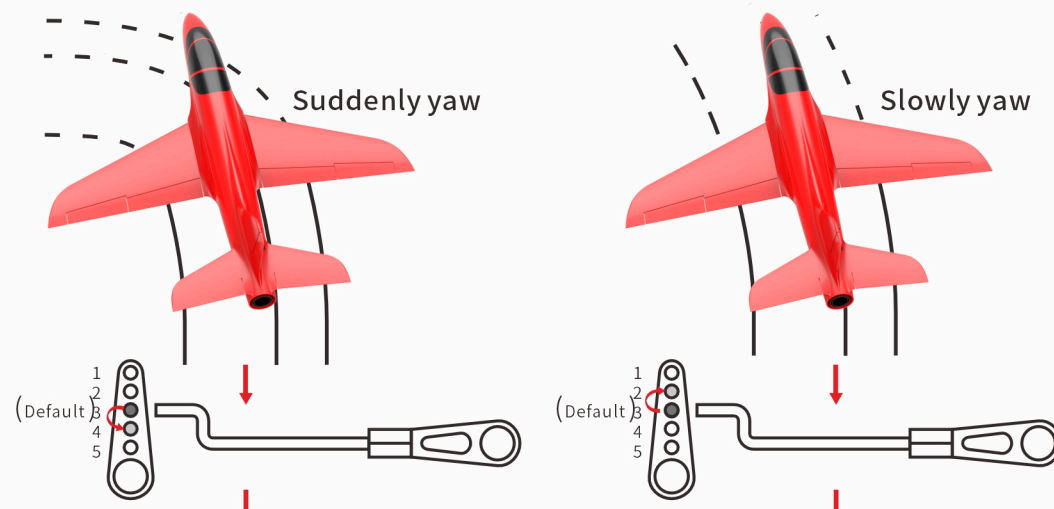
- ①. physical adjustment: Complete it by adjusting the length of the front wheel steering rod;
- ②. System Adjustment : Adjust the servo stroke by the Super Integrated Control Box(for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

(2).Excessive adjustment of steering angles:

- ①.Physical adjustment: adjust the install holes of the pull rod in the rocker arm of the steering servo of the front wheel;
- ②.System Adjustment : Adjust the servo stroke through the Super Integrated Control Box(for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);



The skid yaw angle over or smaller may happened during the operation



Front wheel steering servo rocker lever mounting hole position is adjusted to hole 4, and the stroke is reduced by system adjustment.

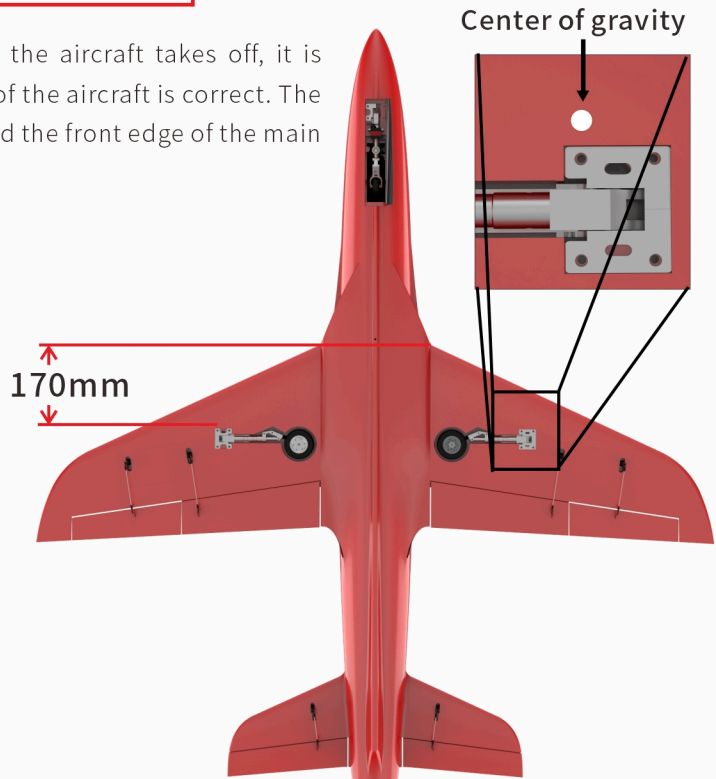
Front wheel steering servo rocker lever mounting hole position is adjusted to hole 2, and the stroke is increased by system adjustment.

First test and adjustment after assembly

16. Pre-takeoff center of gravity test: Before the aircraft takes off, it is necessary to confirm whether the center of gravity of the aircraft is correct. The center of gravity of the Super snake is located behind the front edge of the main wing: 170mm.



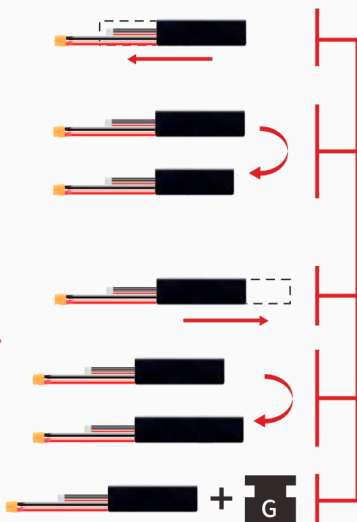
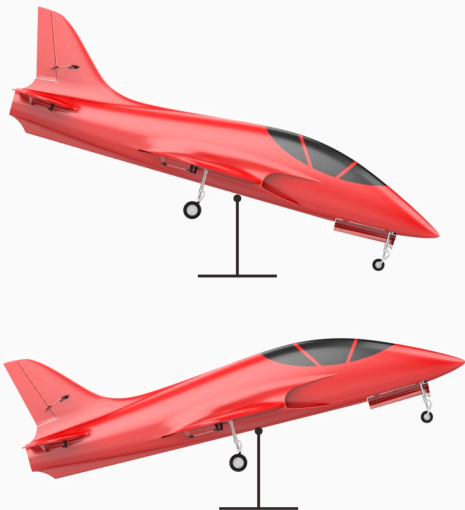
A general method for testing the center of gravity.



Center of gravity adjustment: If the center of gravity position is not correct, it must be adjusted. There are generally two situations:

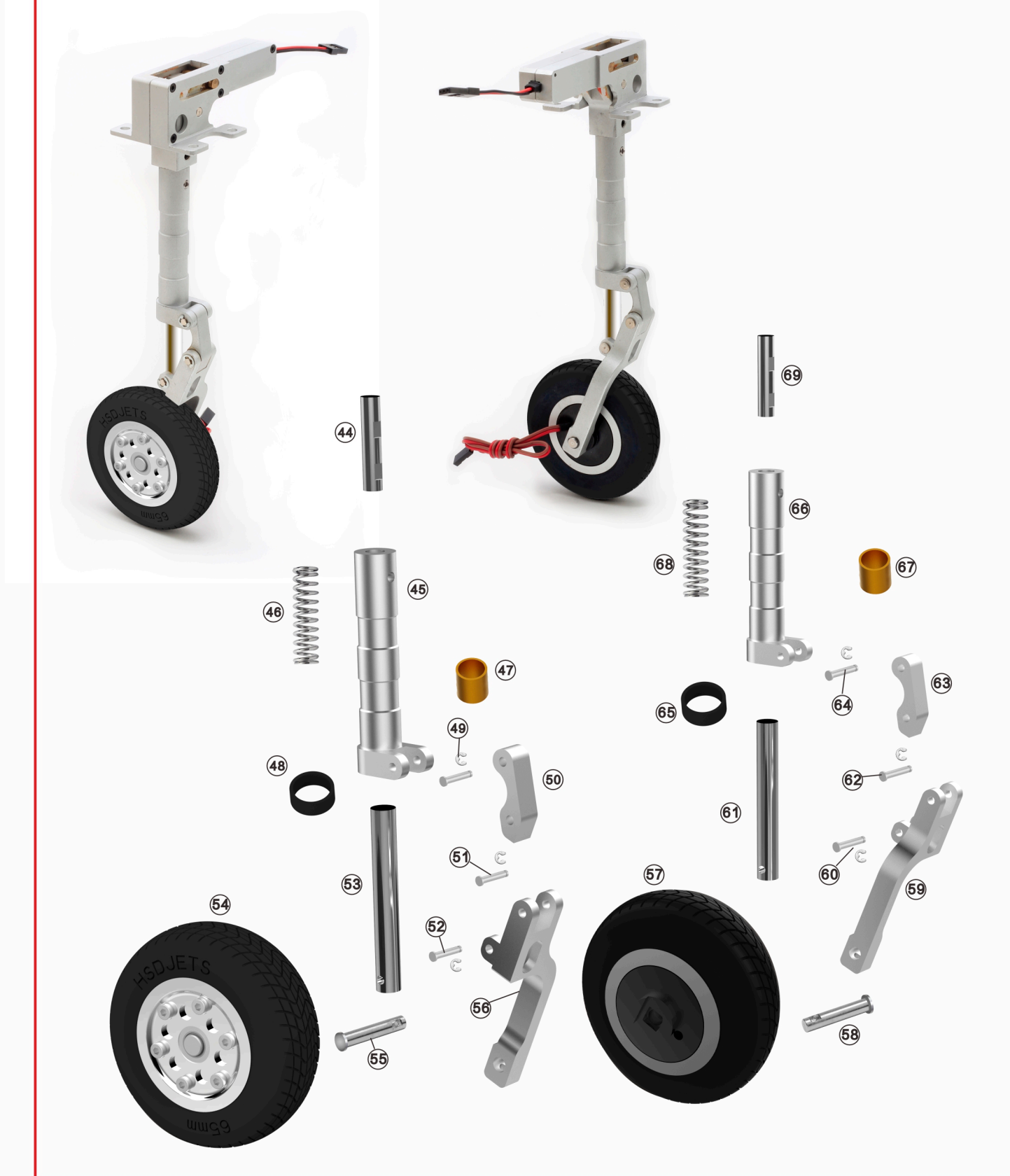
A, the nose is overweight (the nose of the aircraft is drooping during the center of gravity testing on the ground), can move the battery back to the tail or replaced with a smaller capacity battery that within the scope of the aircraft's electricity demand;

B, the nose is too light (the nose of the aircraft is upwards during the center of gravity testing on the ground), move the battery forward to the nose or replaces the larger capacity battery that within the scope of the aircraft's electricity demand;

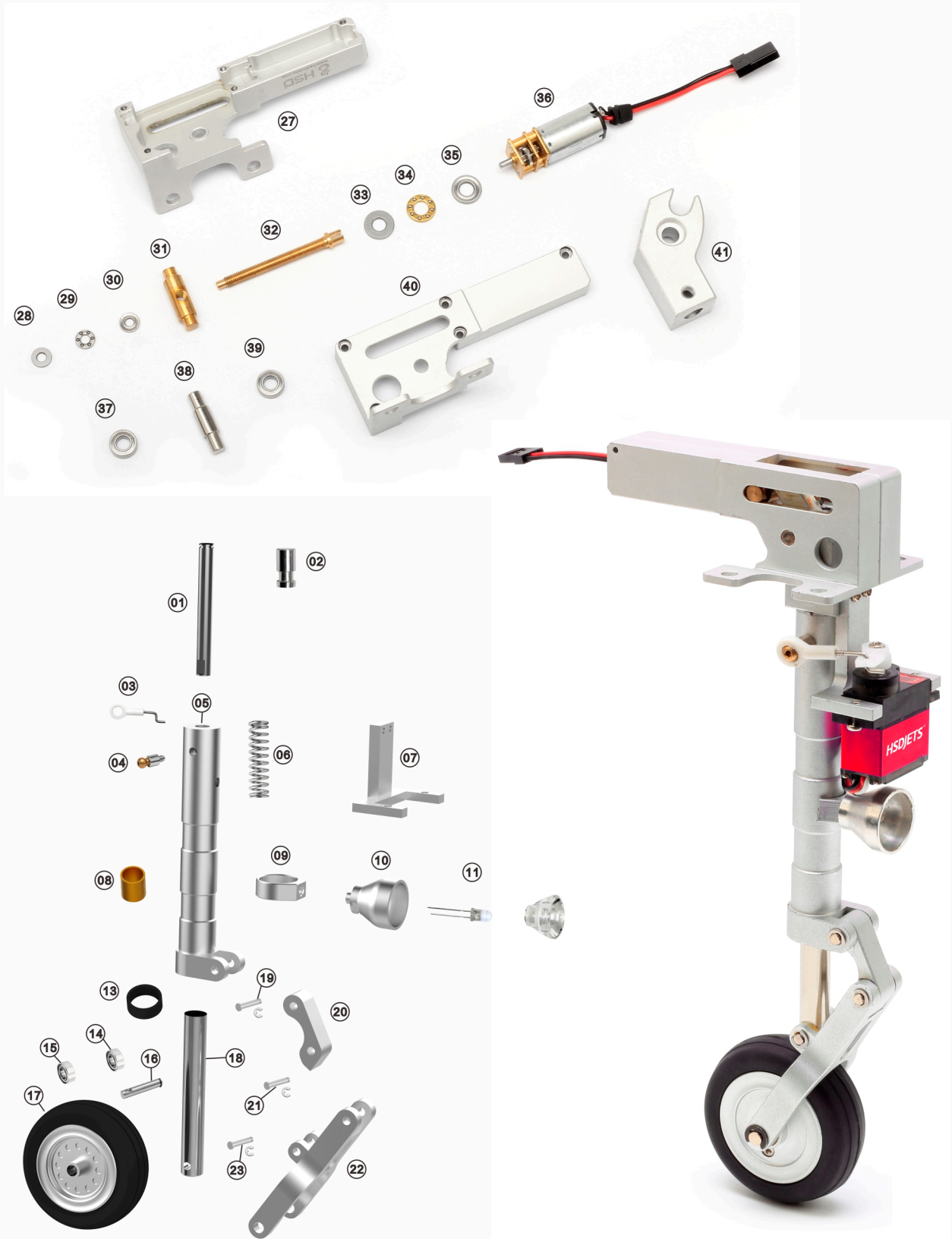


Recommended battery weight:
440 g Fully matched center of gravity.
Power supply UBEC for servos:
2S, (2200~2500)mAh×2, Li-Po

Super viper Nose landing gear decomposition graph



Super viper Rear landing gear decomposition graph



Super viper specification and configuration

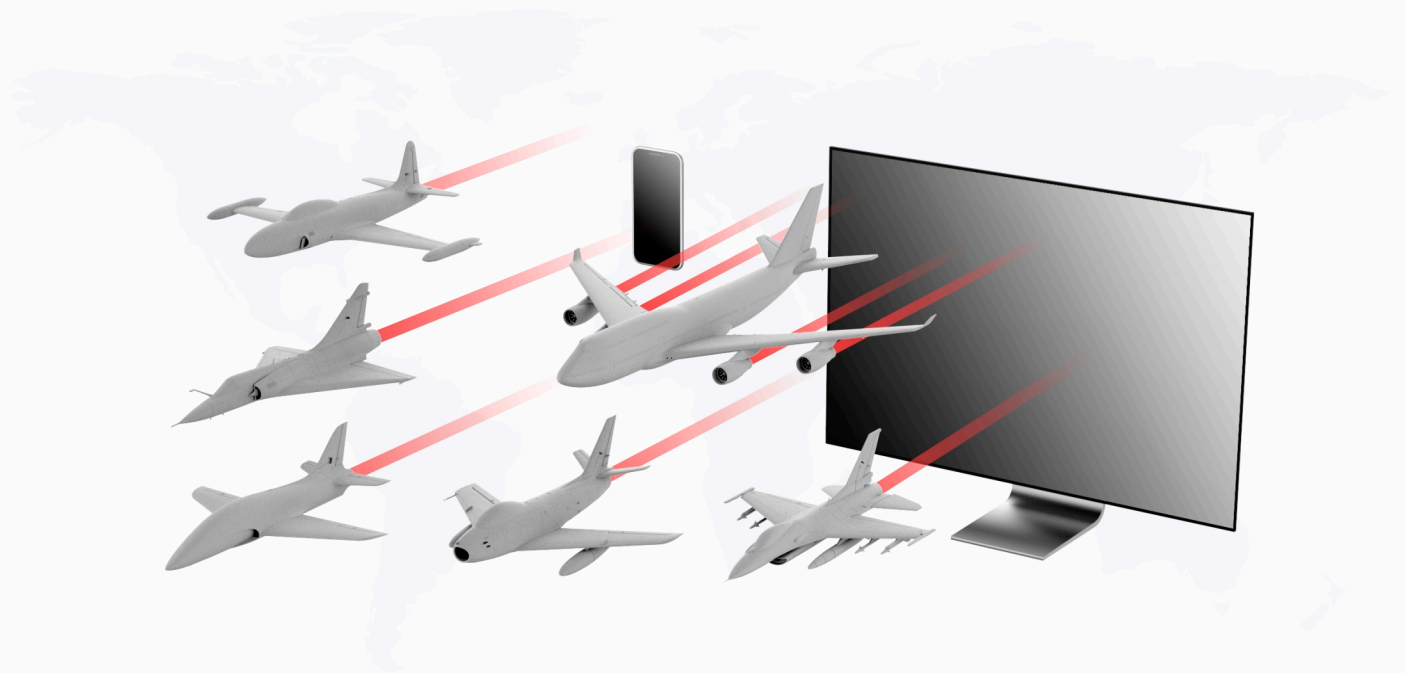
Specifications:

Wingspan	1800 mm / 70.87 in
Length	2000 mm / 78.74 in
Take off weight	11.8kg / 27lbs. wet. 18lbs without batteries
Cruising speed	260 km/h
Flying time	3~8 minutes
Main wing area	67.94 dm ²
Loading of airfoil surface	174 g/dm ²
Main material	Compound material
Body Surface Treatment	Highlight environmental protection paint + decal
Suitable experience level	<input type="checkbox"/> Zero basis <input type="checkbox"/> Beginner <input checked="" type="checkbox"/> Intermediate <input type="checkbox"/> Advanced
PNP assembly difficulty	<input type="checkbox"/> ☆(10mins) <input checked="" type="checkbox"/> ★☆☆(30mins) <input type="checkbox"/> ★★★(60mins)
Operate suitable for age	Above 14 years of age
Working temperature	0°C ~ 40°C

Configuration:

R/C system	12CH (Required & not included)
Control system	MFC-2085
Motor	5268-640KV (internal rotor)
EDF	S-EDF120mm 10-Blade
ESC	Hobbywing 160A
Power battery	6S / 22.2V / 5200mAh / 45C / Li-Po × 2 PCS (Required & not included)
Receiver battery	2S / 7.4V / 2200~3200 mAh / Li-Po × 2 PCS (Required & not included)
Servo	12g × 2 PCS / 39g × 5 PCS / 65g × 2 PCS (Metal gear digital)
Landing gear	All metal hydraulic simulation electronic retractable landing gear
Brake function	Yes
LED Lighting System	Yes
Aileron	Yes
Flaps	Yes
Horizontal tail	Yes
Vertical tail	Yes
Reinforced gyro	Built in standard gyroscope+nosewheel correction
Packaging	Inner box + Outer Box (with marks 1400×485×720mm)
Center of gravity	180~185mm leading edge of main wing

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Scanning code attention, thank you!

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