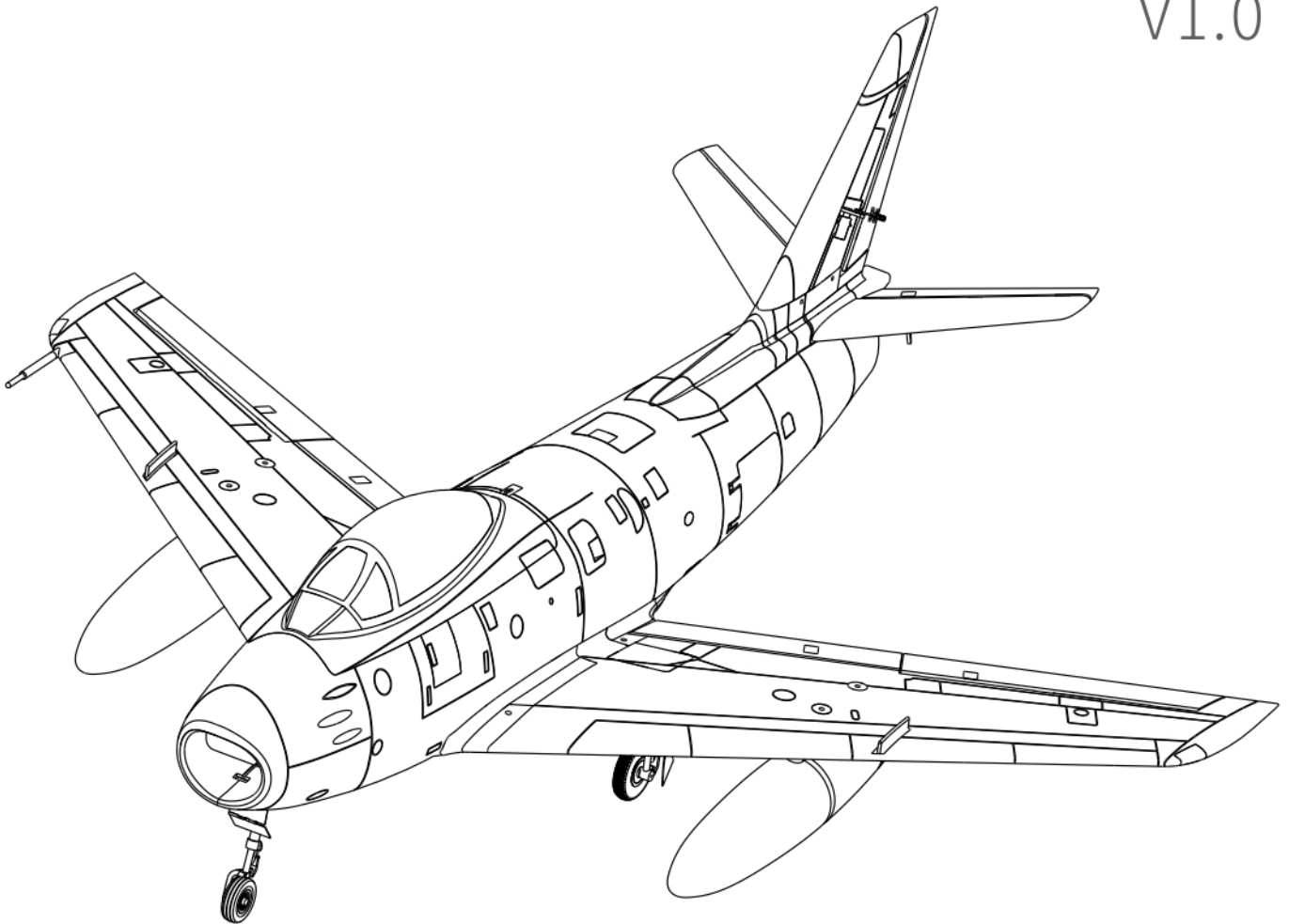


# **HSDJETS<sup>®</sup>**

## S-EDF120mm HF-86 ASSEMBLY AND PRE-FLIGHT INSTRUCTIONS

V1.0



Product S/N:

Want to learn more about the product video,  
pictures, and other matters of attention Please  
log in: [www.hsdr.com](http://www.hsdr.com)

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## Introduction

Thank you so much for purchasing 120 HF-86 Jet plane, What you have now is the latest 120 HF-86 Jet plane product of HSDJETS. This model has the following features:

01. Scale appearance with a classic look and attention to detail with state of the art electronics.
02. The Airframe is constructed of 35 times ultra high-density and high-strength EPO foam. this makes for a very durable aircraft that resist many not so welcomed occasions!
03. 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.
04. This 120 HF-86 utilizes 13 Precision All Metal Gear Digital Servos for much better precision, reliability, power and strength!
05. Sequencing on-board LED Lighting System gives the HF-86 an extremely scale appearance.

06. The connecting plugs of the wing and the fuselage are made of high-precision one-piece quick plugs, which are quick to assemble and reliable to connect.

07. The connection method of the rear electric retractable and landing gear adopts 11mm diameter landing gear legs directly locked in the electric slot, so that the landing gear legs can withstand the impact of stronger force and are not easy to bend.

08. New ball bearing wheels with Electric Braking System for smooth landings and stopping the 120 HF-86 quickly.

09. The inner packing adopts pearl cotton three-dimensional foaming to protect every part safely.

10. Adopt S-EDF high efficiency culvert to match the internal Hobbywing motor, Strong momentum.

We believe that 120 HF-86 Jet plane will bring you excellent flight. Before starting, please read our manual carefully.

## Warning!



**This is not a toy. Potentially dangerous for children under 14 years old. Children under 14 should not be permitted to operate the model without the supervision of an adult. Please keep these instructions for reference after model assembly.**

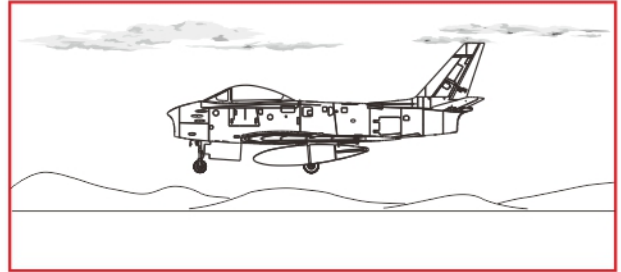
## Important Tips

1. Some experience necessary. Beginners should use under supervision;
2. Before install, please read through the instructions carefully and operate strictly under instructions;
3. HSDJETS and its distributors/dealers will not be held responsible or liable for injury due to incorrect assembly or wrongful use;
4. Not for use of 14 years or under;
5. Please do not use commercial cleaning products to clean plane. It will damage the painted EPO foam;
6. You 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. Do not store batteries within 2 meters of flammable or explosive materials;
9. Dispose of damaged batteries in a designated place;
10. In flying field, the waste after flying should be properly handled, it can't be abandoned or burned;
11. Before starting the airplane, ensure that the throttle is in low and the transmitter switch is on! Then connect the battery;
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 than carry it;

## Safety Instructions

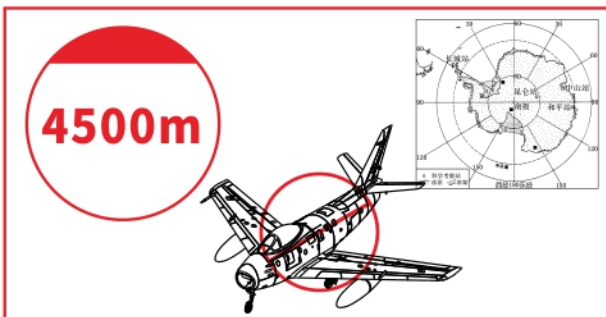
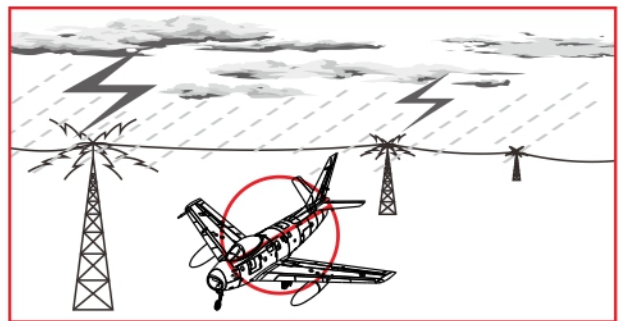
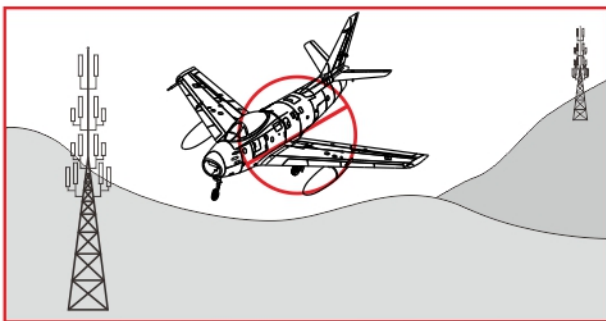
**Strongly suggestion: users while enjoying the flying, please ensure that you are in a safe and reasonable environment.**

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.

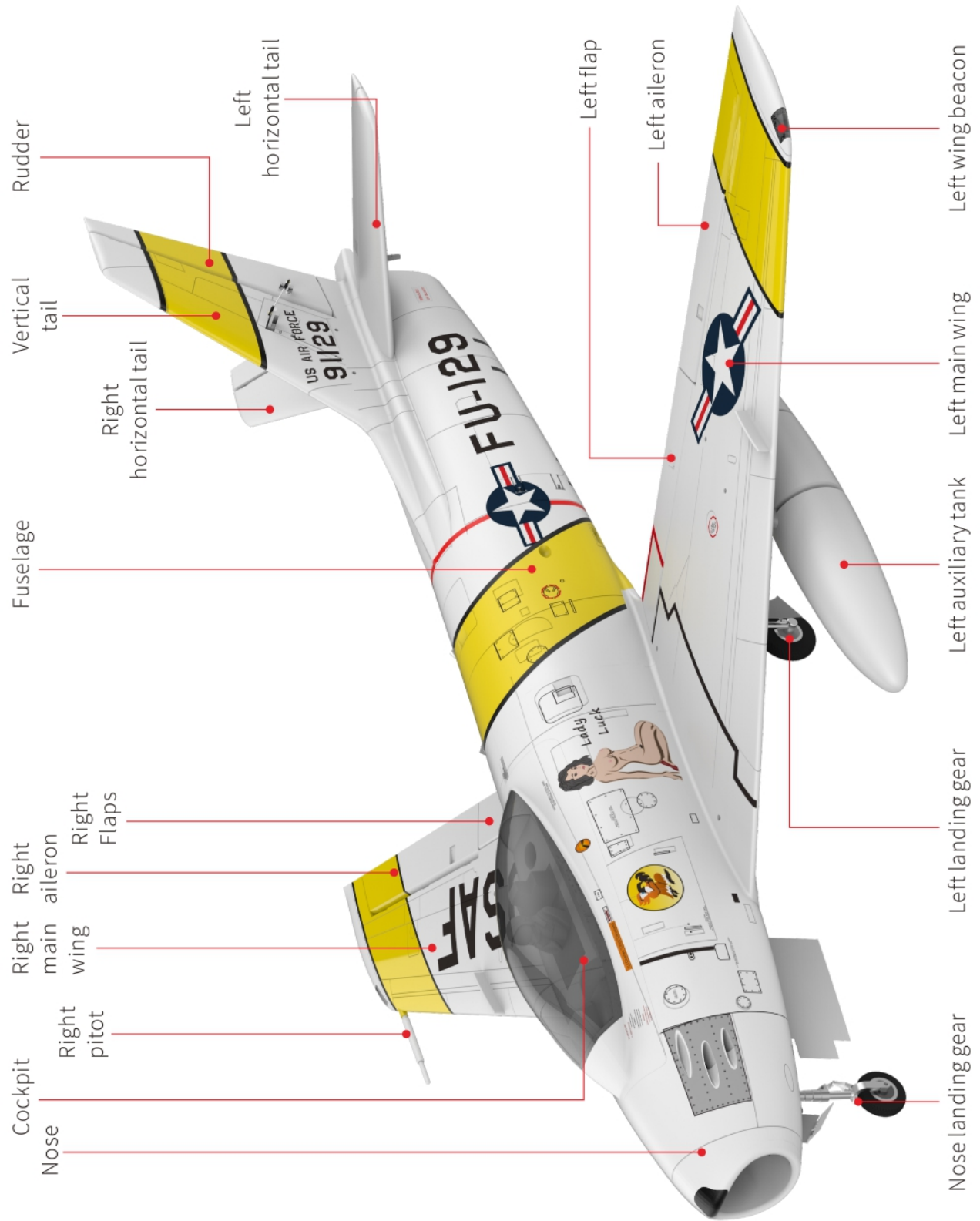


### Flight environment requirements

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.



## Description of each component

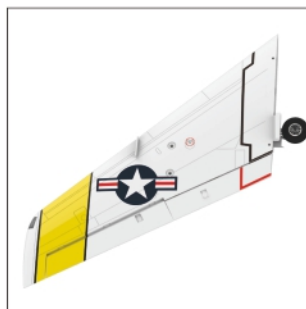


## Install instructions

1. Open the box(PNP version): Take out the fuselage, nose, cockpit, left and right auxiliary oil tanks, left and right main wings, vertical tail, horizontal tail, instruction manual, main wing pin rod, accessory package and other items in the foam box in turn, and check whether the number of packaged items is complete according to the list of packaged items in the instruction manual;



Fuselage×1



Right main wing×1



Left main wing×1



Nose×1



Cockpit×1



Vertical tail ×1



Horizontal tail×1



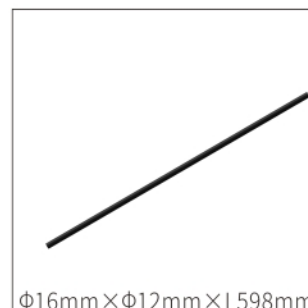
Left auxiliary tank×1



Right auxiliary tank×1

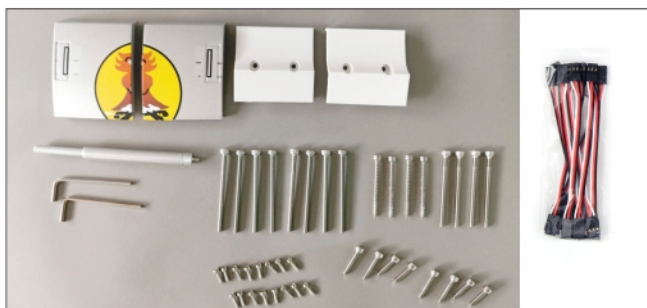


Manual×1



Φ16mm×Φ12mm×L598mm

Pin rod×1



Accessories package×1

### PNP:

HA4×45MM×4PCS  
HM4×20MM×4PCS  
HM4×16MM×4PCS  
HA3×10MM×16PCS  
HM4×60MM×4PCS  
HM4×70MM×8PCS

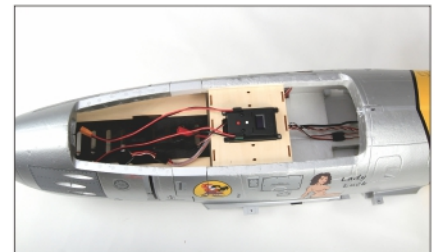
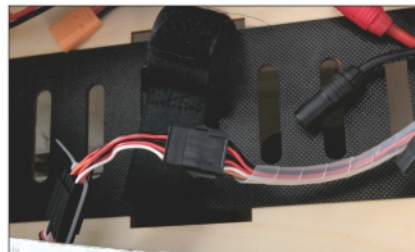
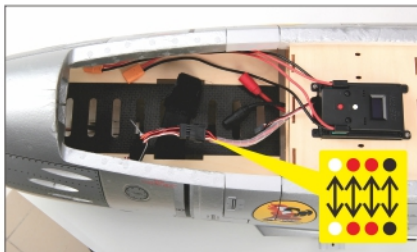
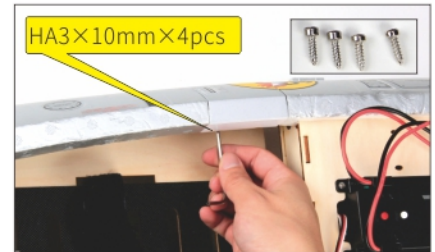
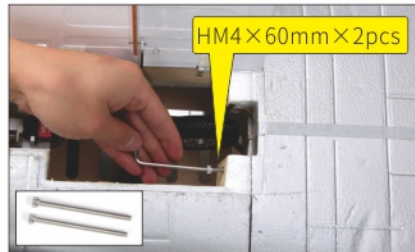
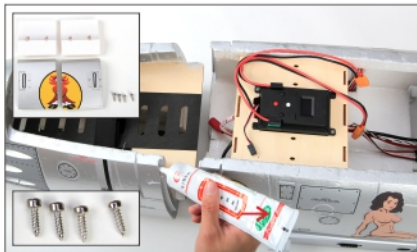
### KIT:

HA4×45MM×4PCS  
HM4×20MM×4PCS  
HM4×16MM×4PCS  
HA3×10MM×16PCS  
HM4×60MM×4PCS  
HM4×70MM×8PCS

Screw information

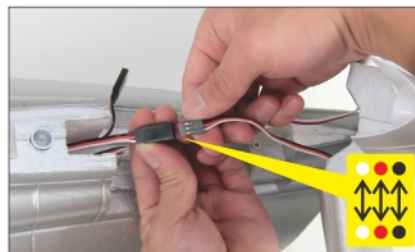
## Install instructions

**2. Install the Nose and the Fuselage:** Take out the head and fuselage from the PE bag, place them on a flat and clean table, align the two screw holes of the head with the corresponding two screw holes of the fuselage, and use the screws (HM4 × 60mm × 2pcs) fixed (screw hole in landing gear cover plate position). Fix the plastic parts on the left and right sides of the head with screws (HA3 × 10mm × 4 PCS). Then connect the signal cables at the head end and the fuselage end respectively. The color of the wire is opposite to the color, and cannot be inserted reversely. Note: if you want to be more firm, you can apply EPO glue on the contact section between the head and the fuselage before fixing with screws.



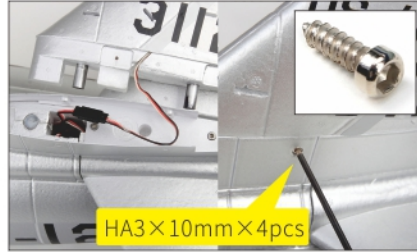
Note: the signal cable must be inserted in the right color, not in the opposite direction.

**3. Install the Horizontal tail:** Take out the flat tail from the PE bag. Before installing the flat tail in the designated position of the fuselage, connect the signal line of the steering gear at the flat tail end with the signal line of the fuselage end. Note: the color of the wire is opposite to the color, and it cannot be inserted reversely; After installation, screw (HA4 × 45mm × 2 pcs).

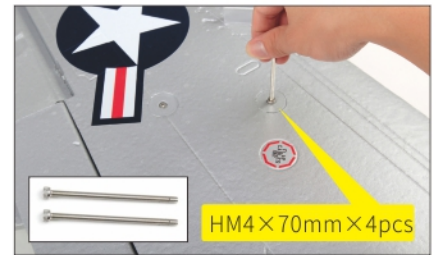
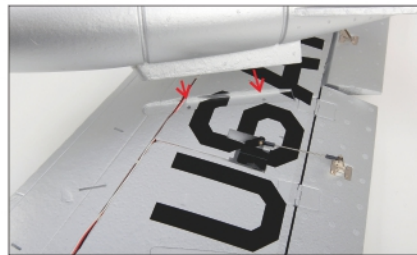
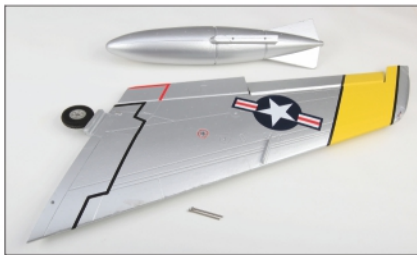


## Install instructions

**4. Install the vertical tail:** Take out the vertical tail from the PE bag, install the vertical tail in the designated position of the fuselage, and make sure to connect the vertical tail end and the fuselage end signal cable; fix both sides with screws (HA3 × 10 mm × 4pcs) after installation.



**5. Install the auxiliary fuel tank:** Take out the auxiliary oil tank from the PE bag, install the auxiliary oil tank at the designated position of the wing, and then fix it with screws (HM 4 × 70mm × 4pcs)。

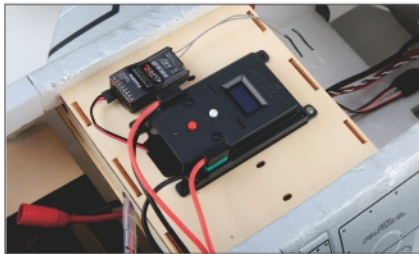


**6. Install the main wing:** Pass the main wing stiffener (φ20mm × φ16mm × L720mm) through the designated hole position of the fuselage, make sure that the extension length of the main wing stiffener at the left and right ends of the fuselage is equal, then align the hole position of the left and right main wings with the main wing stiffener, and insert the stiffener. Before fully inserting, make sure that the signal line between the main wing end and the fuselage end is connected, and then fix it with screws (HM4 × 16mm × 2pcs)、(HM4 × 20mm × 2pcs), F86 body 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;



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 Spare(default CH7)     |
| 2.AUX2 CH Elevator (default CH2)     | 8.AUX8 CH Spare                  |
| 3.AUX3 CH Rudder (default CH4)       | 9.A/B LIGHT CH Tail blowtorch    |
| 4.AUX4 CH Flap (default CH6)         | 10.NAVIGATION LIGHTS CH          |
| 5.AUX5 CH Speed reducer(default CH9) | 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

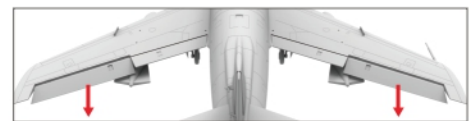
### Right model throttle radio transmitter



### 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:

- to find the reverse setting menu of servo in the radio transmitter menu, and switch in the aileron item to the forward direction.
- 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;

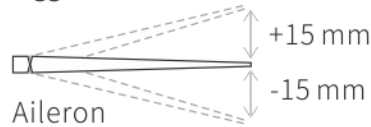
(1). Physical adjustment: by adjusting the length of the pull rod to change the rudder surface angle to keep it in the same plane as the wing;

(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);

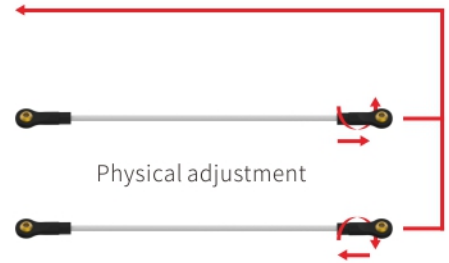
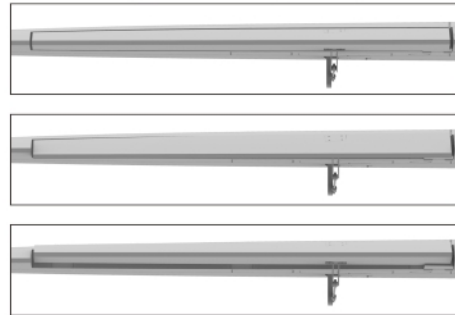
It is recommended to adjust the radio transmitter travel to 70%, adjusting the EXP curve under the same amount of servo, it recommends to adjust to -30% EXP value in the first time; Can adjust according to the personal operating habits.



**Suggest the amount of servo:**



**EXP Recommend: -30%**

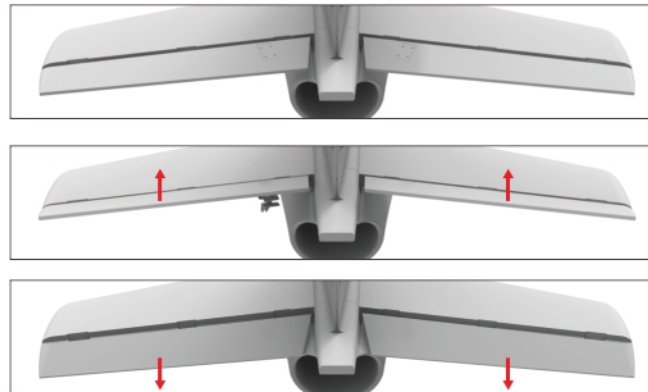


**8. Elevation test:** Check whether the elevate action is correct

**Right model throttle radio transmitter**

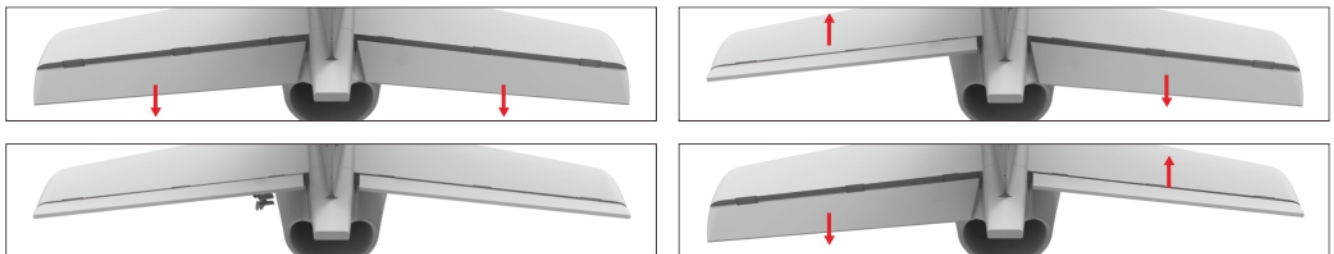


**Elevation standard action**



**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 rear edge of elevator should be flush with the upper edge of the fuselage as the benchmark. If there is an upward or downward adjustment, it can be adjusted by physical adjustment or system adjustment;

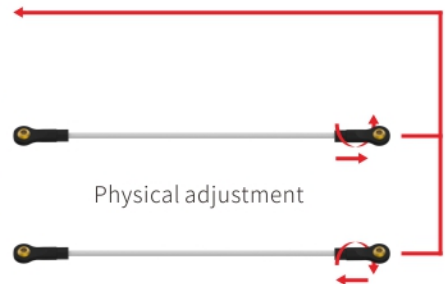
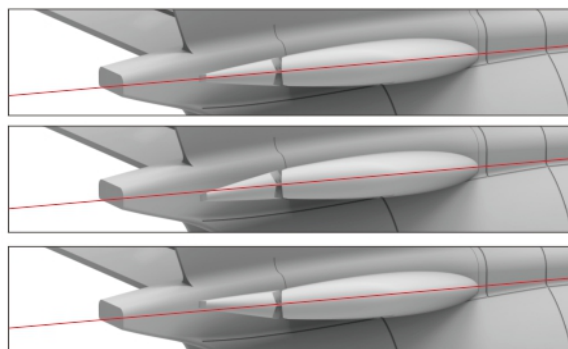
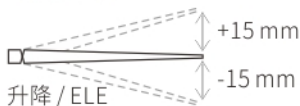
(1). Change the angle of the rudder surface by adjusting the length of the pull rod, so that the rear edge of the elevator is in a plane with the upper edge of the fuselage;

(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 70%, 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:**

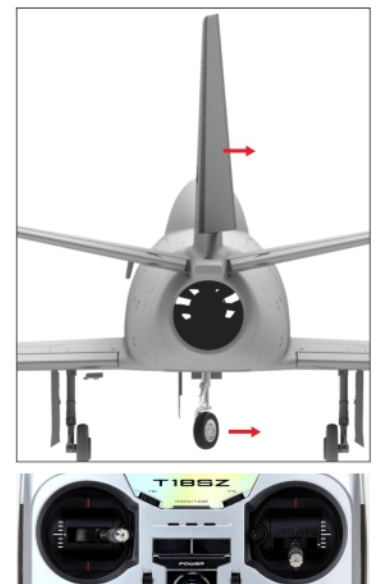
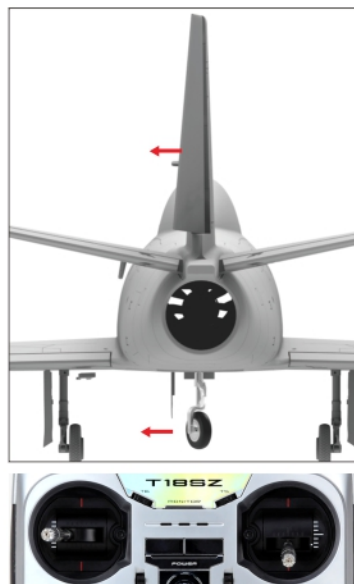


**EXP Recommend: -30%**

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

### Direction standard action

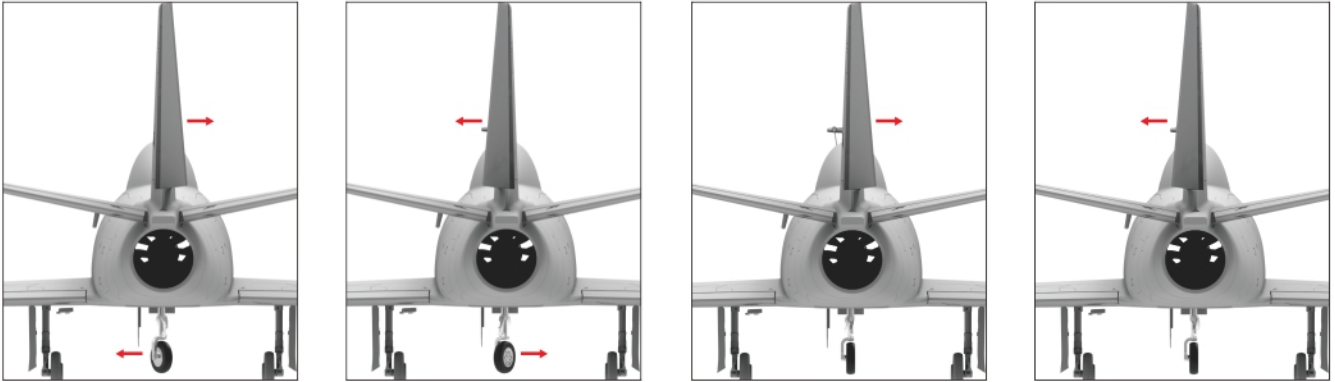
Right model throttle radio transmitter



**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:

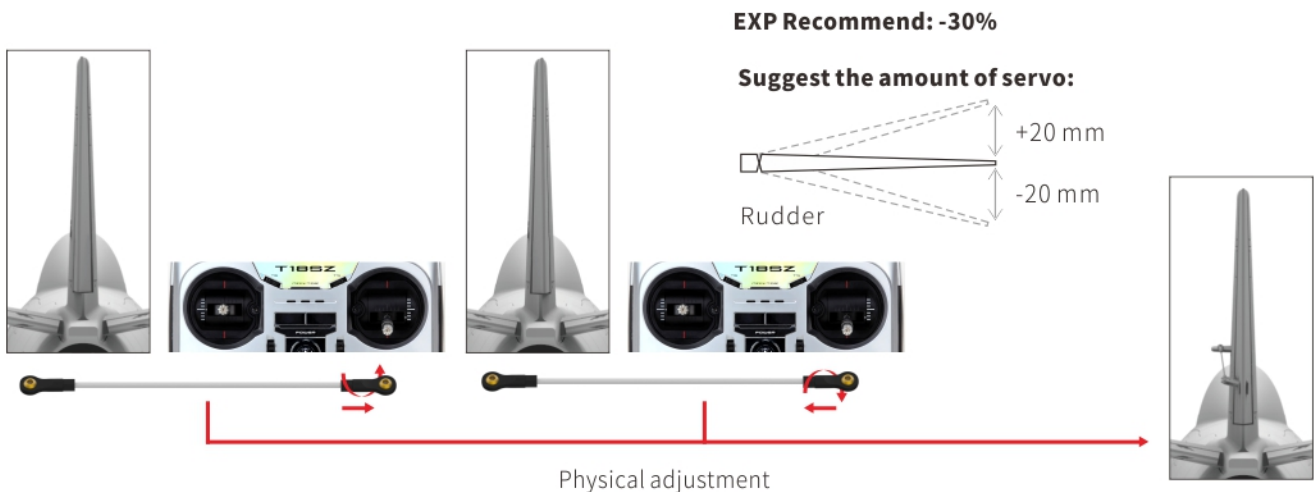
- (1). To find the reverse setting menu of direction in the radio transmitter menu, and switch in the direction item to the forward direction.
- (2). Adjust directions of the direction servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system 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 70%, 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);

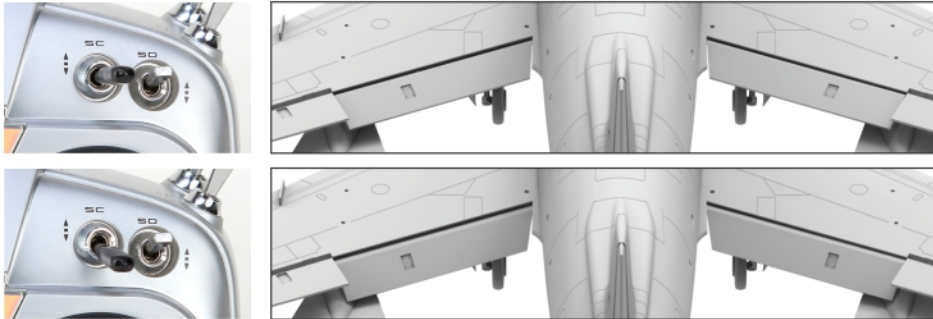


## First test and adjustment after assembly

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

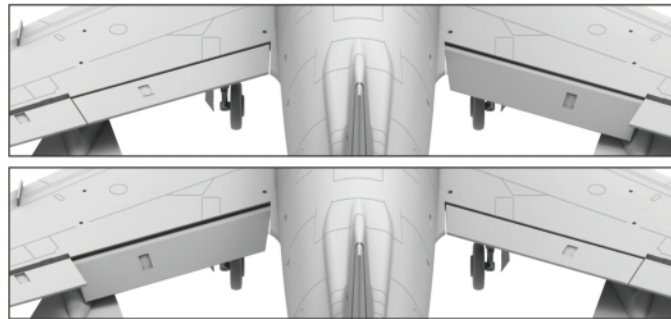
#### Flap standard action

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

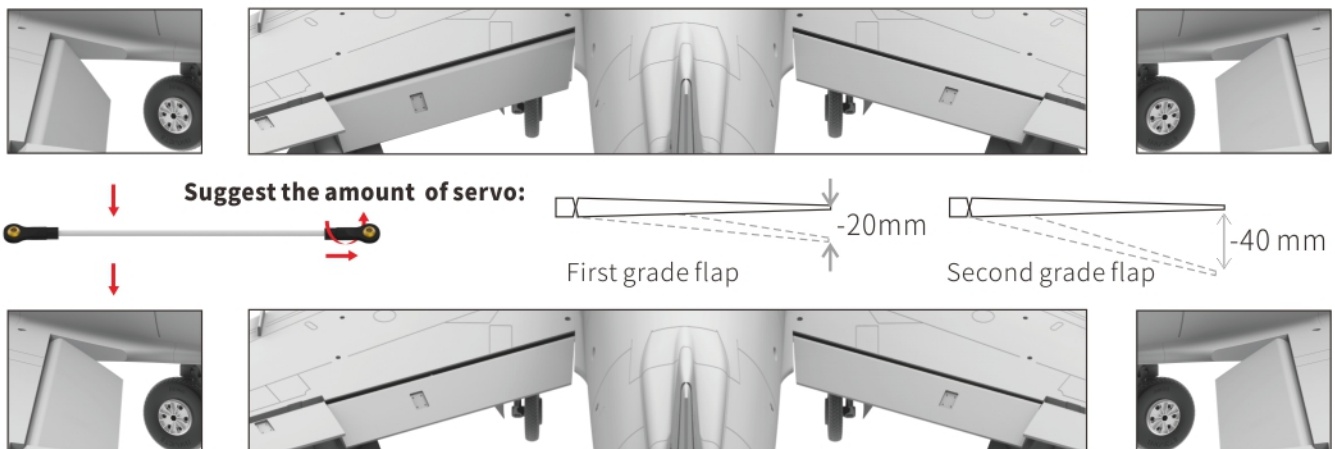


When the two flaps don't move in the same direction: adjust directions of the flap servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

**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.



## First test and adjustment after assembly

### 14. Reduction plate test: Check whether the Reduction plate acts correctly

Right model throttle radio transmitter



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 reverse action



When the two Reduction plate 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);

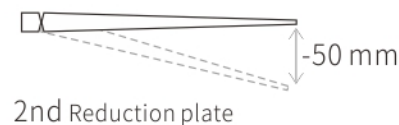
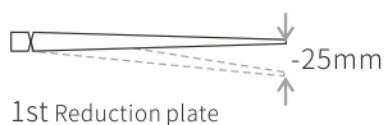
**15. Reduction plate adjustment:** After the setting, start checking the Reduction plate rudder surface, if the angles of the Reduction plate rudder surface are consistent in first grade, and whether the angles of the Reduction plate rudder surface are consistent in second grade. If the angles of the rudder surfaces on both sides are inconsistent, it can be adjusted by system adjustment;

(1). System adjustment: 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.



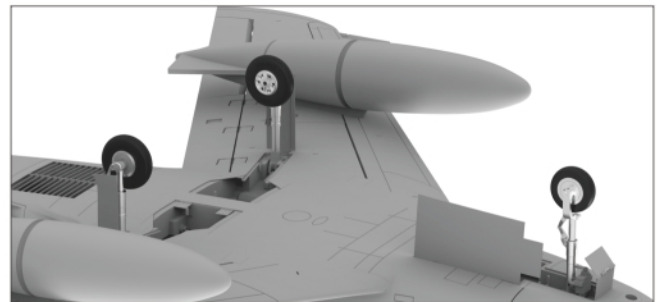
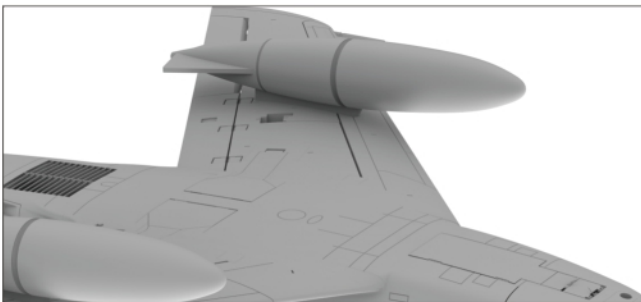
Suggest the amount of servo:



## First test and adjustment after assembly

### 16. Landing gear test and adjustment:

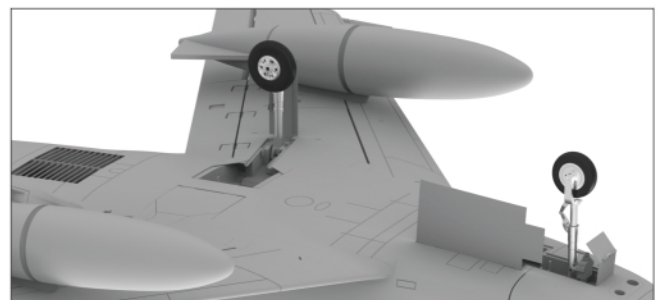
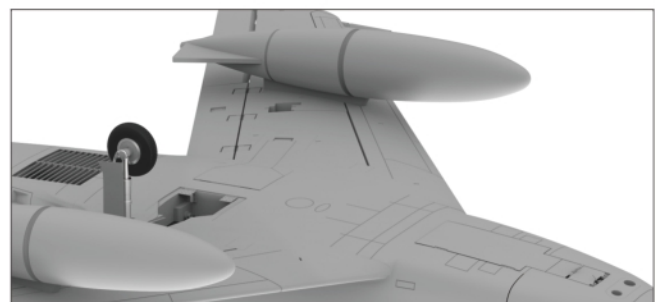
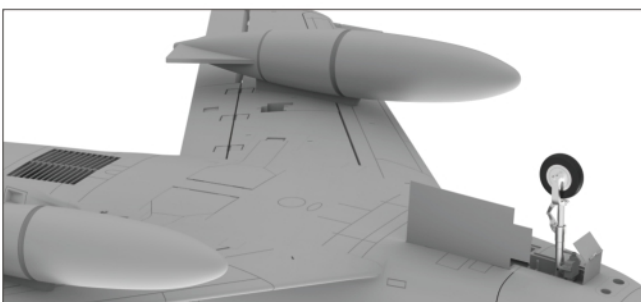
#### Standard landing gear action



If the three are not synchronized, one up, two down or two up, one up and one down, it can also be solved by switching and inserting the positive and negative lines.(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);

#### Possible landing gear reverse action



## First test and adjustment after assembly

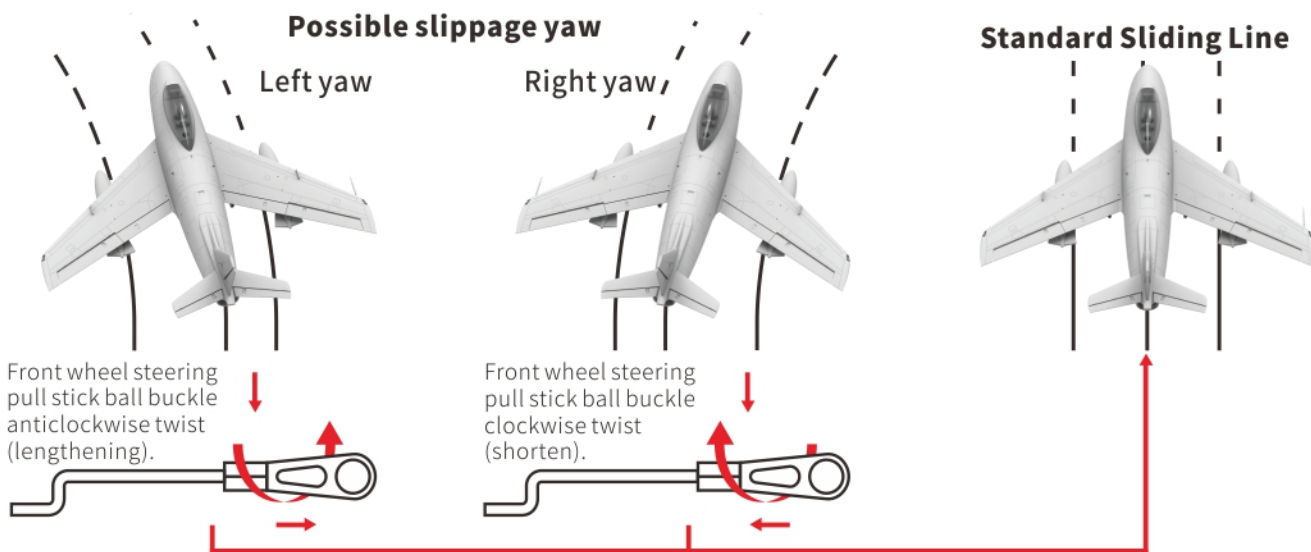
**17. Ground test and adjustment:** After the above process is gradually completed, power the plane and do straight slide test to check whether the stroke volume of the front steering servo is full. If the steering is yaw or the steering angle is too large, it can be adjusted by physical adjustment or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

(1).Steering yaw adjustment:

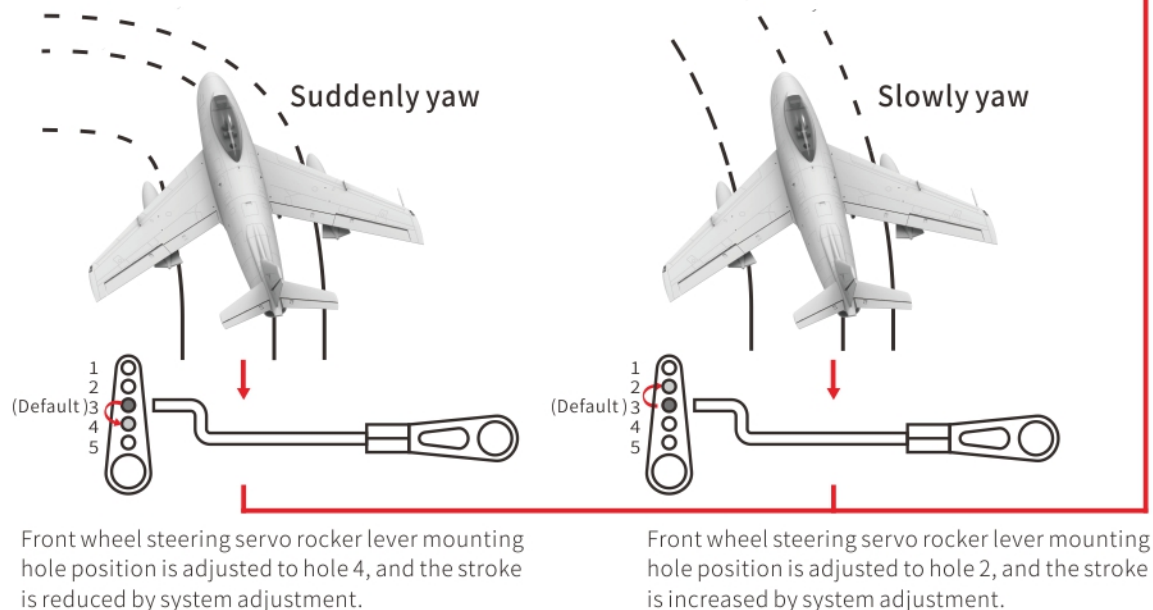
- ①. physical adjustment: Complete it by adjusting the length of the front wheel steering rod;
- ②. System Adjustment: Adjust the servo stroke by the Super Integrated Control Box(for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

(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

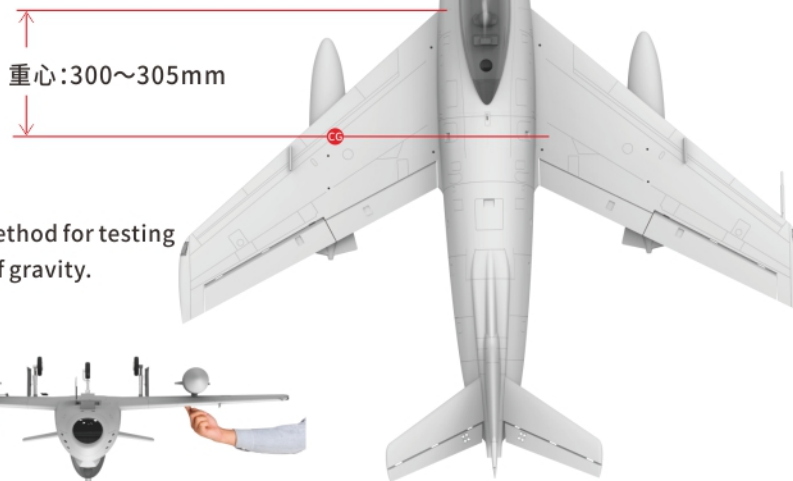




## First test and adjustment after assembly

### 18. 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: 300~305mm.



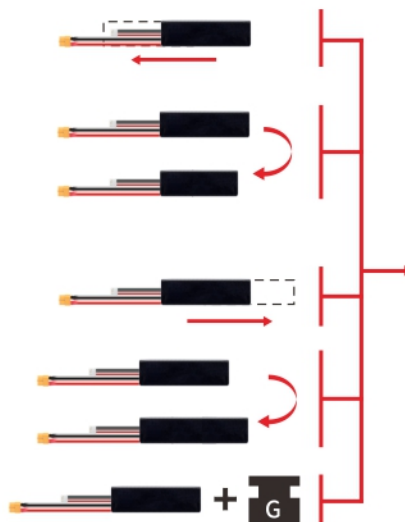
A general method for testing the center of gravity.



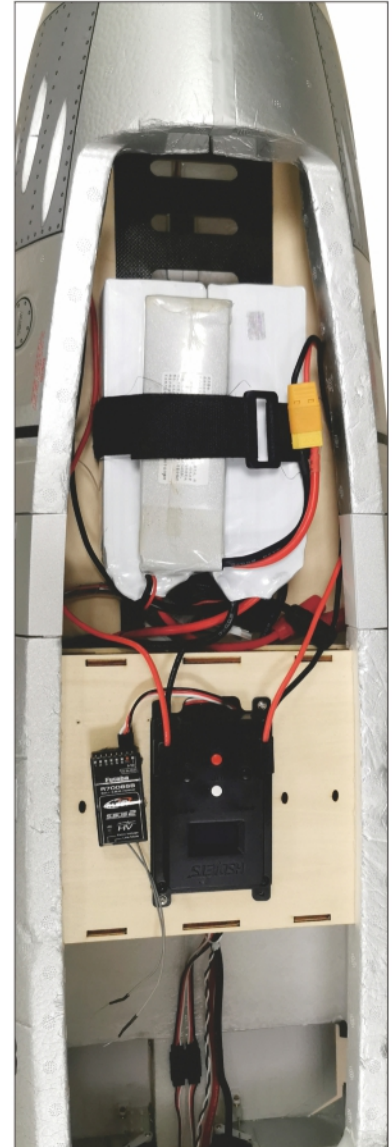
**19. Center of gravity adjustment:** If the center of gravity position is not correct, it must be adjusted. There are generally two situations:

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;

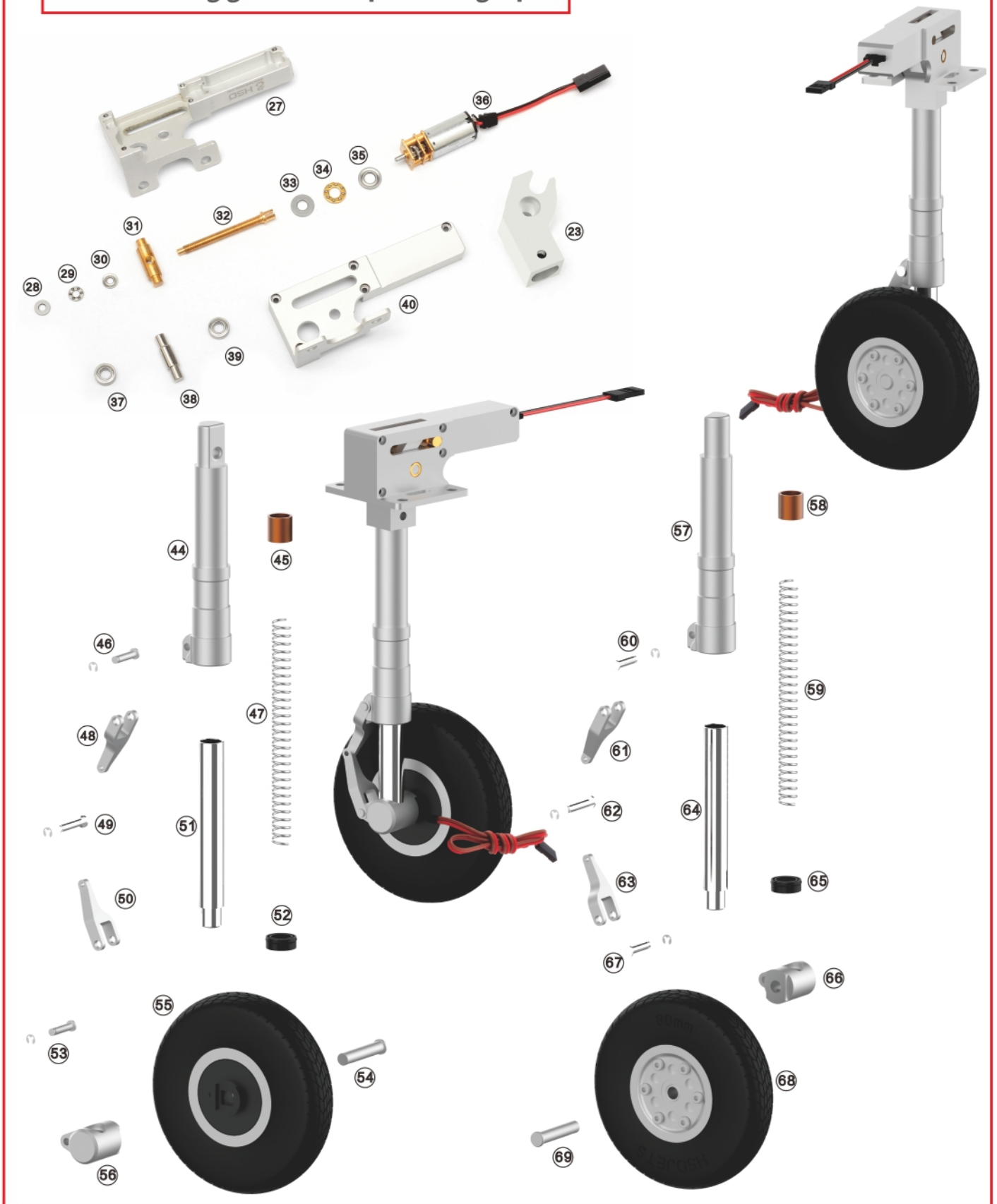
B, the nose is too light (the nose of the aircraft is upwards during the center of gravity testing on the ground), move the battery forward to the nose or replaces the larger capacity battery that within the scope of the aircraft's electricity demand;



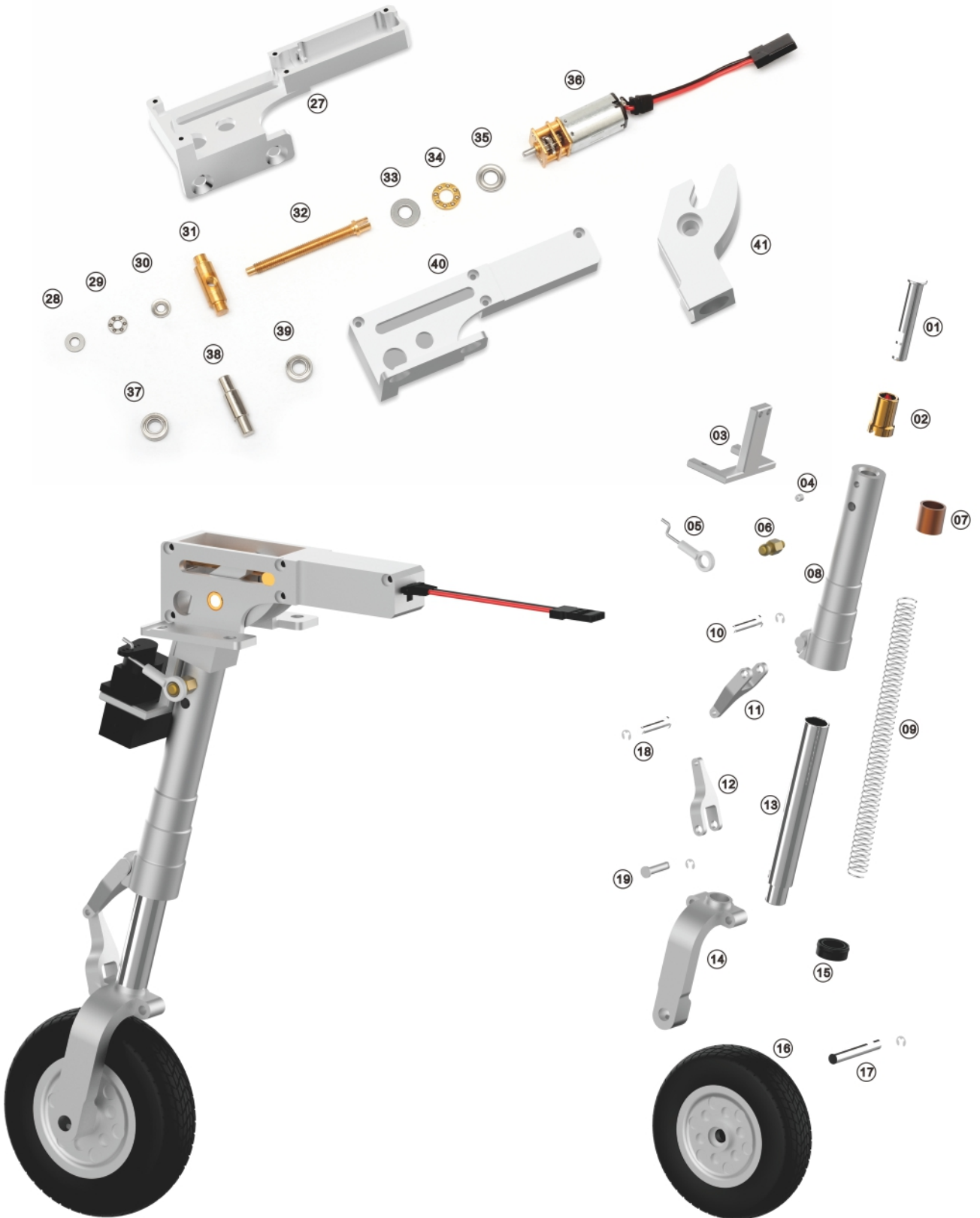
Battery assembly diagram



## Rear landing gear decomposition graph



Nose landing gear decomposition graph



## Specification and configuration

### Specifications:

Wingspan	1720 mm / 67.7 in
Length	1715 mm / 67.5 in
Take off weight	8 kg / 15.4 lb(with Li-Po×2 PCS)
Cruising speed	150~200 km/h
Flying time	3~5 minutes
Main wing area	64.34 dm <sup>2</sup>
Loading of airfoil surface	124.3 g/dm <sup>2</sup>
Main material	35 times the import of aeromodelling EPO
Body Surface Treatment	Matte environmental water-borne 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 type="checkbox"/> ★(20mins) <input checked="" type="checkbox"/> ★★☆(30mins) <input type="checkbox"/> ★★★(60mins) <input type="checkbox"/> ★★★★(120mins)
Operate suitable for age	Above 14 years of age
Working temperature	0°C ~ 40°C

### Configuration:

Remote control channel	8CH (Selective configuration)
Control system	MFC-2085
Motor	5268-KV640(Inner rotor)
EDF	S-EDF 120mm-10 blade
ESC	Hobbywing 160A brushless
Power battery	6S / 22.2V / 5200mAh / 45C Li-Po×2 PCS (Selective configuration)
Receiver battery	S / 7.4V / 2200~5200 mAh Li-Po×2 PCS (Selective configuration)
Servo	7.4V / 12g×5 PCS / 25g×8 PCS (Metal gear digital)
Landing gear	All-metal simulation electronic retractable landing gear
Brake function	Yes
LED Lighting System	Yes
Aileron	Yes
Flaps	Yes
Horizontal tail	Yes
Vertical tail	Yes
Retarder plate	Yes
Reinforced gyro	Selective configuration
Packaging	Pearl cotton 3D Inner box + Outer Box (1320×550×440mm)
Center of gravity	300~305 mm leading edge of main wing



扫码关注，谢谢支持！

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