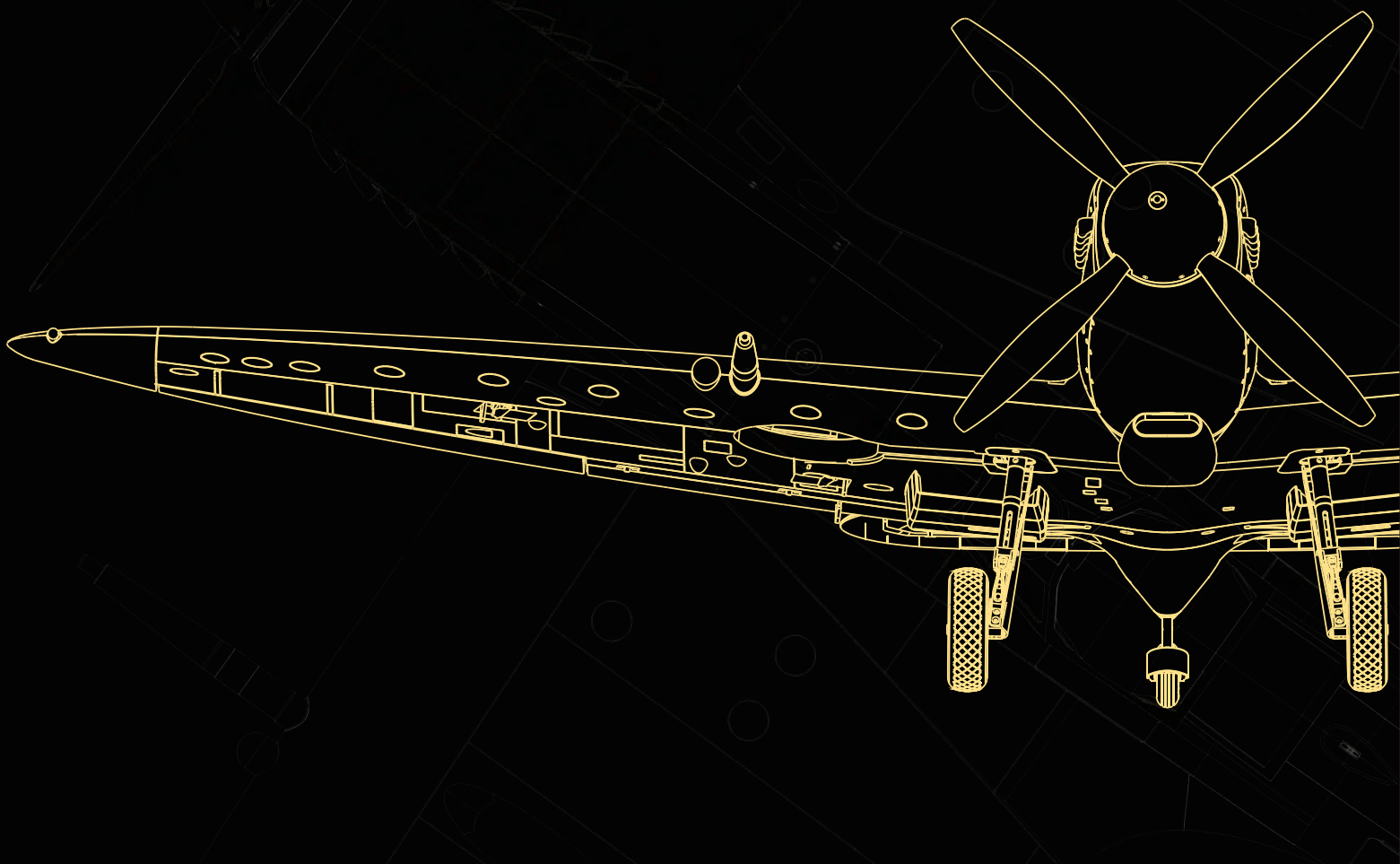
SUPERMARINE

SPITFIRE MK.IXc User Manual

1/7 Scale WWII Warbird



WINGSPAN: 1600MM (63")
LENGTH: 1350MM (53.1")
WEIGHT: 2850G (W/O BATTERY)

EN	1~12
中	13~24

Flightline RC

FC CE 0-14

Freewing MODEL
www.sz-freewing.com
MADE IN CHINA

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Introduction

中文版

Thank you for purchasing the FlightLineRC 1600mm Spitfire Mk.IXc!

FlightLineRC is a leading brand produced by Freewing Model in partnership with Motion RC! We will bring you a new series of propeller driven aircraft at the same level of quality and value you trust from Freewing Model's EDF aircraft and other products. FlightLineRC inherits Freewing's goals of outstanding innovation, exquisite design, high quality, unbeatable value, and dependable performance.

The Supermarine Spitfire is one of the most popular warbirds in history. This British single-seat fighter was used famously by the Royal Air Force and the Allies, earning distinction during the Battle of Britain and throughout World War II. Over 20,300 aircraft were produced with more than 24 variants. The Spitfire's versatility and maneuverability made it a lethal aircraft against Axis forces. The Spitfire continues to fly in modern times as a tribute to aviation history and military veterans.

This FlightLineRC Spitfire Mk.IXc is approximately 1/7 scale, with a 1600mmm wingspan and 1350mm length. It is molded from EPO foam, featuring a scale shape and smooth surface. The main wing is assembled from hollow parts and an interlocking plywood and carbon fiber frame, providing lower weight and higher strength than a solid foam wing. The main wing and horizontal tail are attached with screws for very convenient transport. Proper ventilation is also designed to keep the electronics cool. The large battery hatch and removable battery bay floor provides easy access to an organized battery and receiver compartment.

The stock PNP version is equipped with a 5055-390KV brushless outrunner motor and scale 4-blade propeller and 80A ESC. With the recommended 6S 4000-5000mAh lipo battery, the Spitfire MK.IXc has a level top speed of 125kph/75mph, with tall vertical power and 4-8 minutes of flight time depending on throttle management. To enhance grass performance, the main landing gear use shock absorbing Oleo struts, a main wheel diameter of 85mm, and a tail wheel diameter of 45mm. Metal reinforcement plates, thick steel strut pins and axles, and metal trunions work together with the suspension struts and soft wheels to dampen the forces caused by operating this aircraft on rough runways. The FlightLineRC 1600mm Spitfire Mk.IXc was optimized for very gentle handling, suitable for intermediate pilots and above. The Take off, flying performance, and slow speed handling is especially stable. A very predictable stall and power on recovery make the aircraft easy to control throughout any aspect of flight. Bright LEDs also aid in visibility of this large and beautiful foam electric model aircraft.

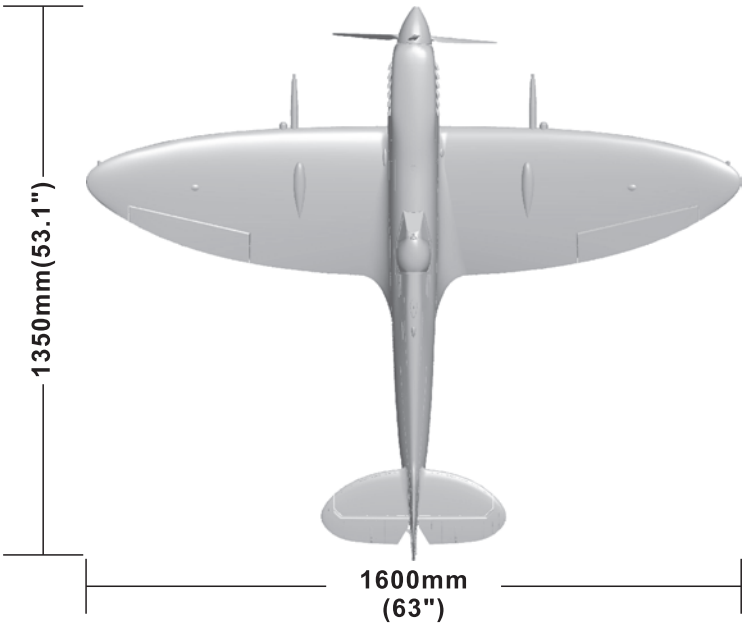
The FlightLineRC 1600mm Spitfire arrives completely painted and with national insignias pre-applied. To personalize your Spitfire, included in the box are two optional decal sets, depicting the aircraft of Squadron Leader F.A.O. Tony Gaze (MA621 DV-A) and Lieutenant Michel Boudier (BS383 GW-Z).

⚠ **NOTE:** This is not a toy. Not for children under 14 years. Young people under the age of 14 should only be permitted to operate this model under the instruction and supervision of an adult. Please keep these instructions for further reference after completing model assembly.

Note:

1. This is not a toy! Operater 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,Freewing and its vendors will not be held responsible for any losses.
4. Model planes' players must be on the age of 14 years old.
5. This plane used the EPO material with surface spray paint, don't use chemical to clean, otherwise it will damage.
6. You should be careful to avoid flying in areas such as public places,high-voltage-intensive areas,near the highway, near the airport or any other place where laws and regulation clearly prohibit.
7. You cannot fly in bad weather conditions such as thunderstorms,snows....
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 2M 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 lipo-battery in aircraft.
12. Do not try to take planes by hand when flying or slow landing process. You must wait for landing stop, then carry it.

Product basic information

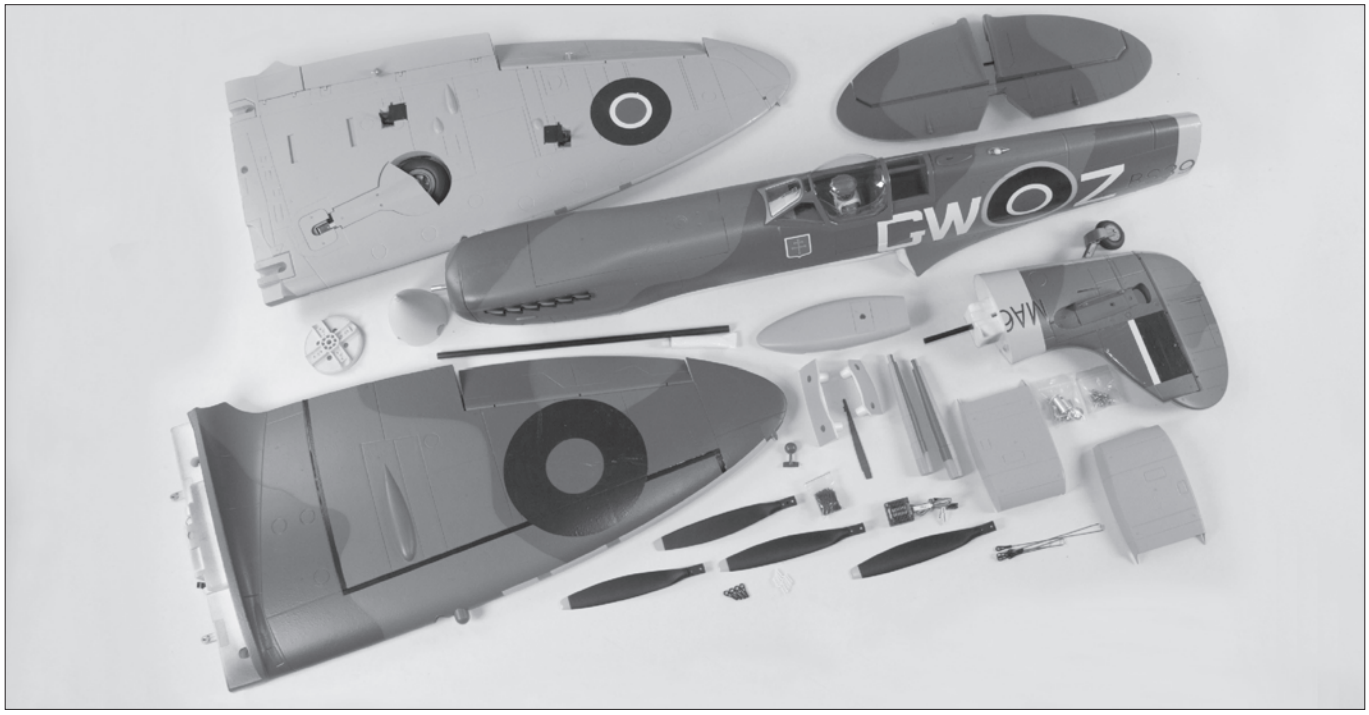


Wing loading: 74g/dm²
Wing area : 46.5dm²
Motor: 5055-390KV
brushless outrunner motor
Propeller : 4-Blade 16×10
ESC: 80A (1pcs)
Servo: : 17g MG×6pcs
Weight: 2850g (W/O battery)
Flight speed : 125KMH

Aileron: Yes
Elevator: Yes
Steering pushrod : Yes
Flap: Yes
LED lights : Yes
Cabin door: Yes
Landing gear: Retract landing gear
Material: EPO

⚠ Note: The parameters in here are derived from test result using our accessories. If use other accessories, the test result will be different. Any problem since of using other accessories, we are not able to provide technical support.

Package list



Different equipment include different spareparts. Please refer to the following contents to check your sparepart list.

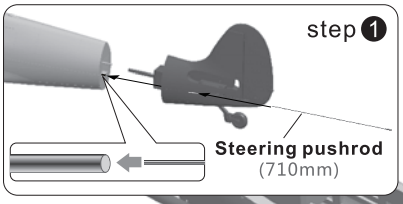
No.	Name	PNP	ARF Plus	Airframe
1	Fuselage	Pre-installed all electronic parts	Pre-installed servo	No electronic equipment
2	Main wing	Pre-installed all electronic parts	Pre-installed servo	No electronic equipment
3	Horizontal tail	Pre-installed all electronic parts	Pre-installed servo	No electronic equipment
4	Vertical tail	Pre-installed all electronic parts	Pre-installed servo	No electronic equipment
5	Decorated part	√	√	√
6	Spinner	√	√	√

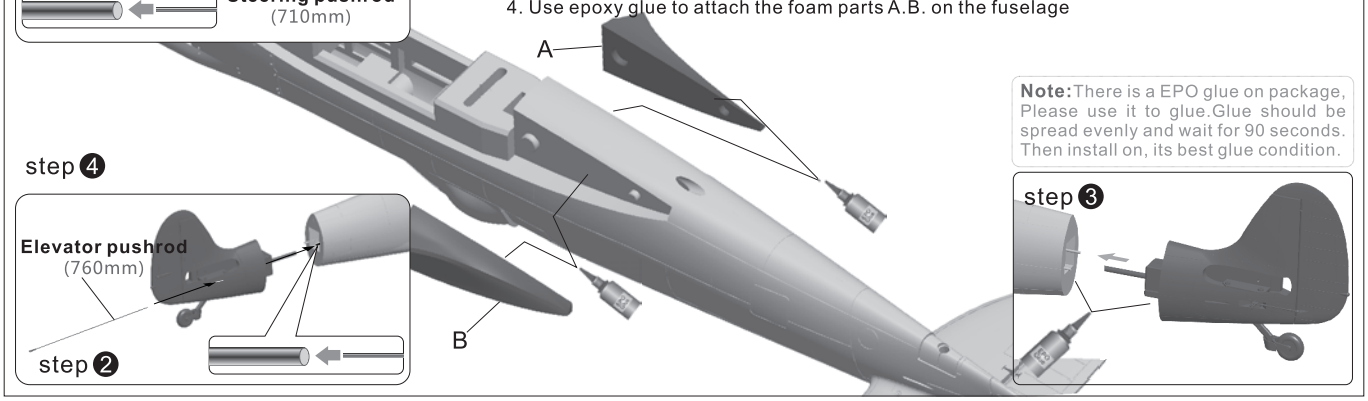
No.	Name	PNP	ARF Plus	Airframe
7	Scale propeller	√	√	√
8	Carbon tube	√	√	√
9	Linkage Set	√	√	√
10	Glue & Non-slip mat	√	√	√
11	Manual & Decals	√	√	√
12	Screw & Plastic fo	√	√	√

PNP Install instructions

Install fuselage

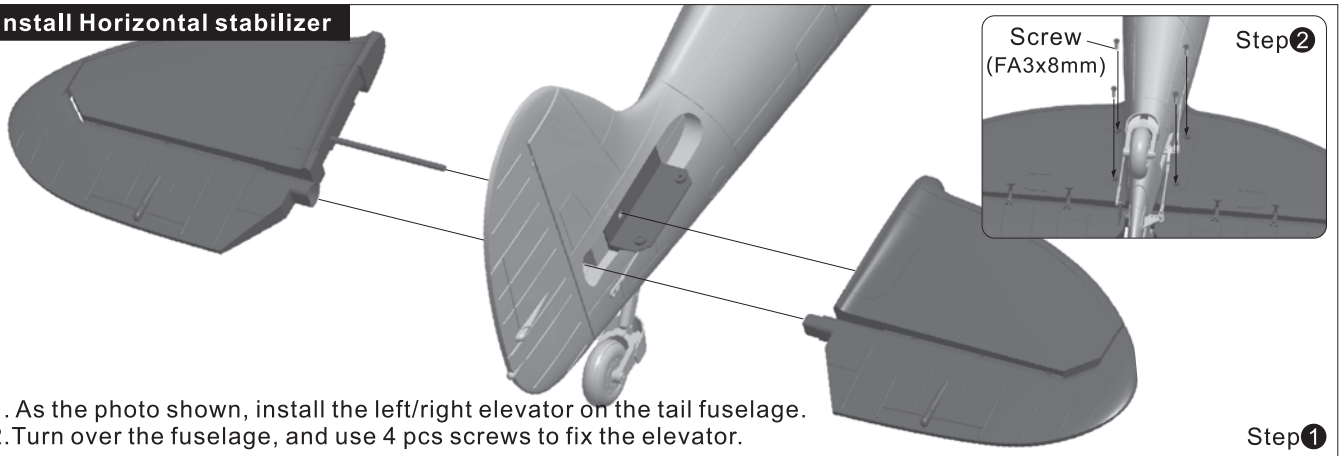
1. Before installation, remove the battery compartment and fuselage pushrods in plastic tube, and install the ball-head buckle on the pushrods. Then insert the rudder pushrod from tail fuselage to front fuselage plastic tube.
2. Insert the elevator pushrod from tail fuselage to front fuselage plastic tube.
3. Use epoxy glue to attach the front and rear fuselage. During the gluing process, take special attention so that NO GLUE enters the control rod tubing! If any glue enters the control rod tubing, the control rods will not be able to move and the model will be useless. Proper materials and execution of assembly is the responsibility of the builder and any damage is not covered by the manufacturer or vendor warranty.
4. Use epoxy glue to attach the foam parts A.B. on the fuselage





Note: There is a EPO glue on package, Please use it to glue.Glue should be spread evenly and wait for 90 seconds. Then install on, its best glue condition.

Install Horizontal stabilizer

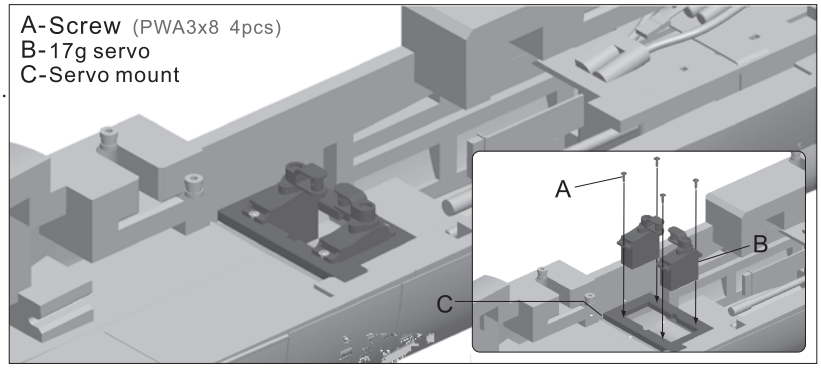


1. As the photo shown, install the left/right elevator on the tail fuselage.
2. Turn over the fuselage, and use 4 pcs screws to fix the elevator.

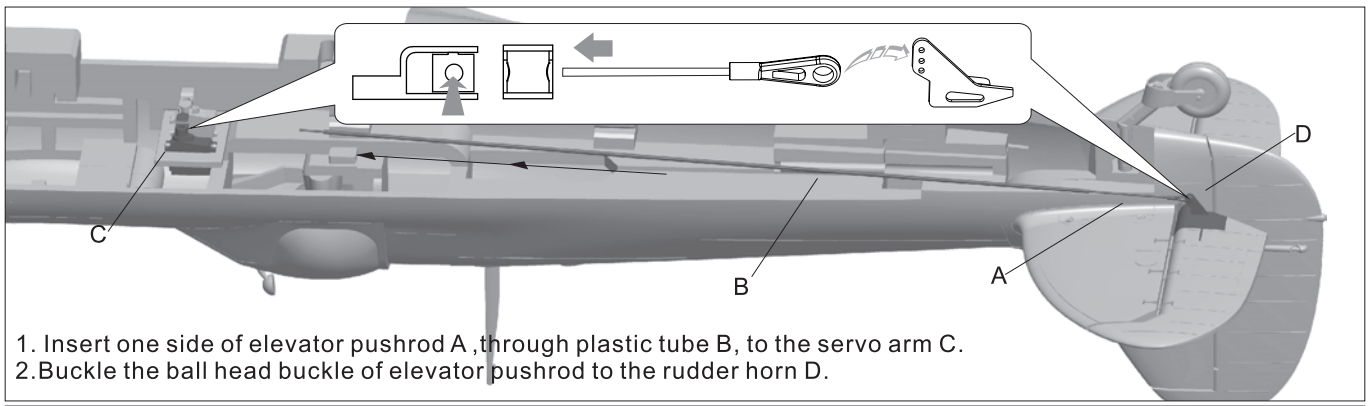
Step 1

Install Elevator/Rudder pushrod

1. Use servo tester or radio to center the servo.
2. Use screws to fix the servo on the plastic board.
3. Place the servo cable from the plastic board to the battery compartment.

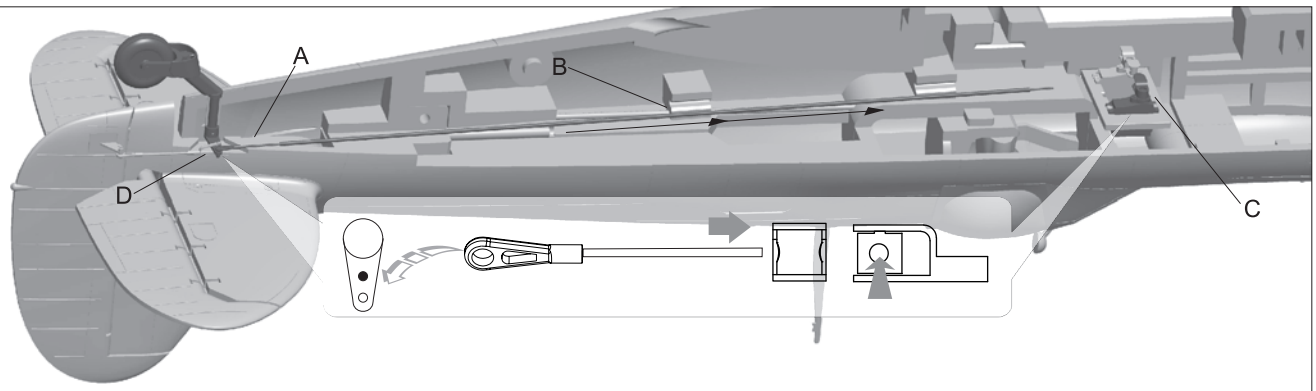


⚠ **Note:** If you don't choose the factory servo, the servo maybe don't fix since of its servo different size. If like that, we need to remove the fixed wood piece, and glue the servo in the servo position in fuselage, it also can use in common.

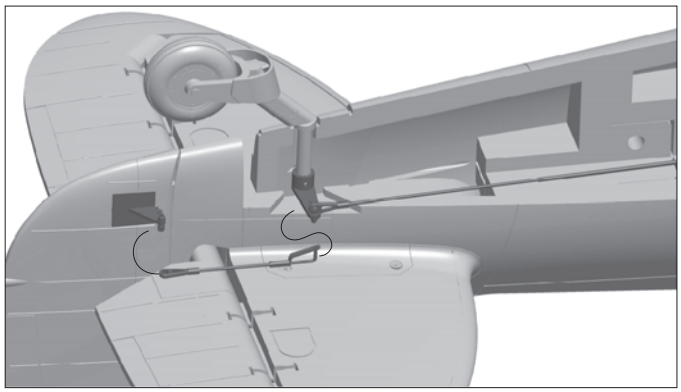


1. Insert one side of elevator pushrod A ,through plastic tube B, to the servo arm C.
2. Buckle the ball head buckle of elevator pushrod to the rudder horn D.

Product basic information



1. Insert one side of rudder pushrod A ,through plastic tube B, to the servo arm C.
2.Buckle the ball head buckle of rudder pushrod to the rudder horn D.



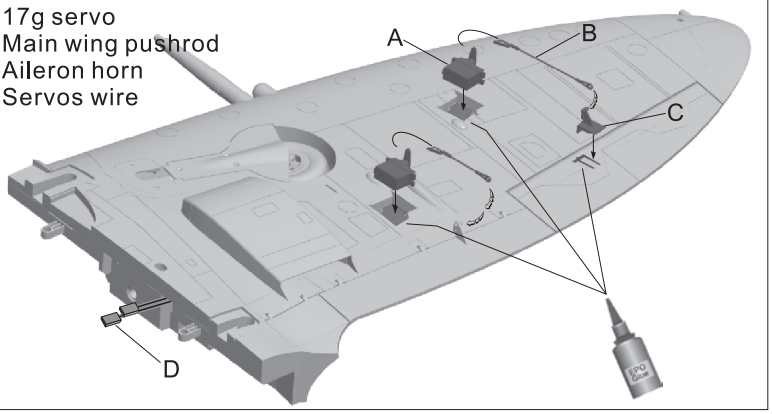
⚠ **Note:** when install on the rudder pushrod, we need to make sure our tail gear is in the center. Then install the rudder pushrod, and adjust the plastic clevis to center the rudder.

1. Use rudder pushrod to connect the tail gear steering arm and rudder horn.

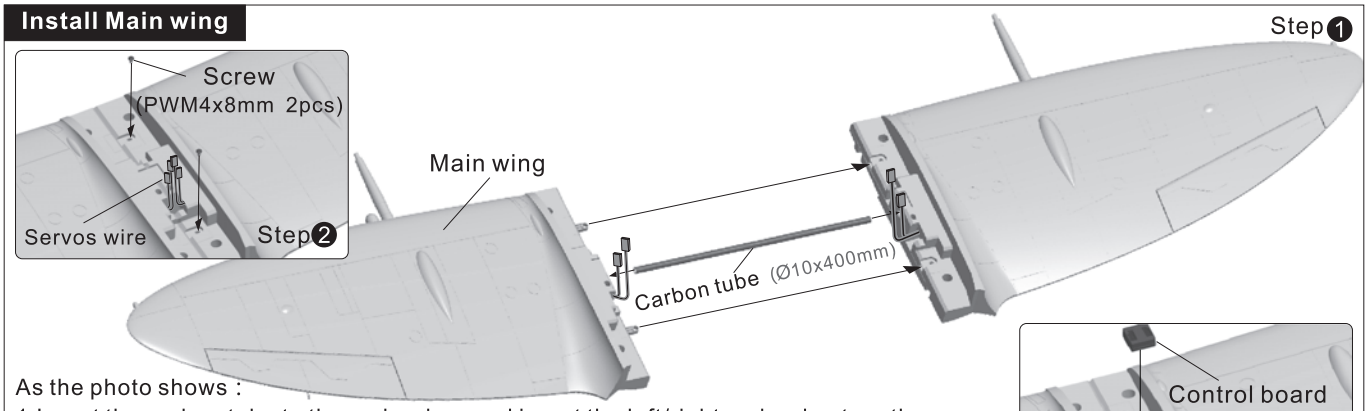
Install Aileron pushrod

1.Use servo tester or radio to center the servo.
2.Use glue to install the servo and aileron horn on the main wing.
3.Buckle the servo cable to the through, after installed all the servos, stick on the decal.
4.One side pushrod insert to the servo arm, adjust its length. And insert the Ball-head to the aileron horn.
5.Repeat the above four steps, install the other side main wing servo and flap servo.

A- 17g servo
B- Main wing pushrod
C- Aileron horn
D- Servos wire



Install Main wing



As the photo shows :
1.Insert the carbon tube to the main wing, and insert the left/right main wing together. Glue is not required.
2.Use 2 screws to fix the main wing with machine screws.
3.Match the text on the label with the text on the control board, and attach it as shown in the photo.

Product basic information

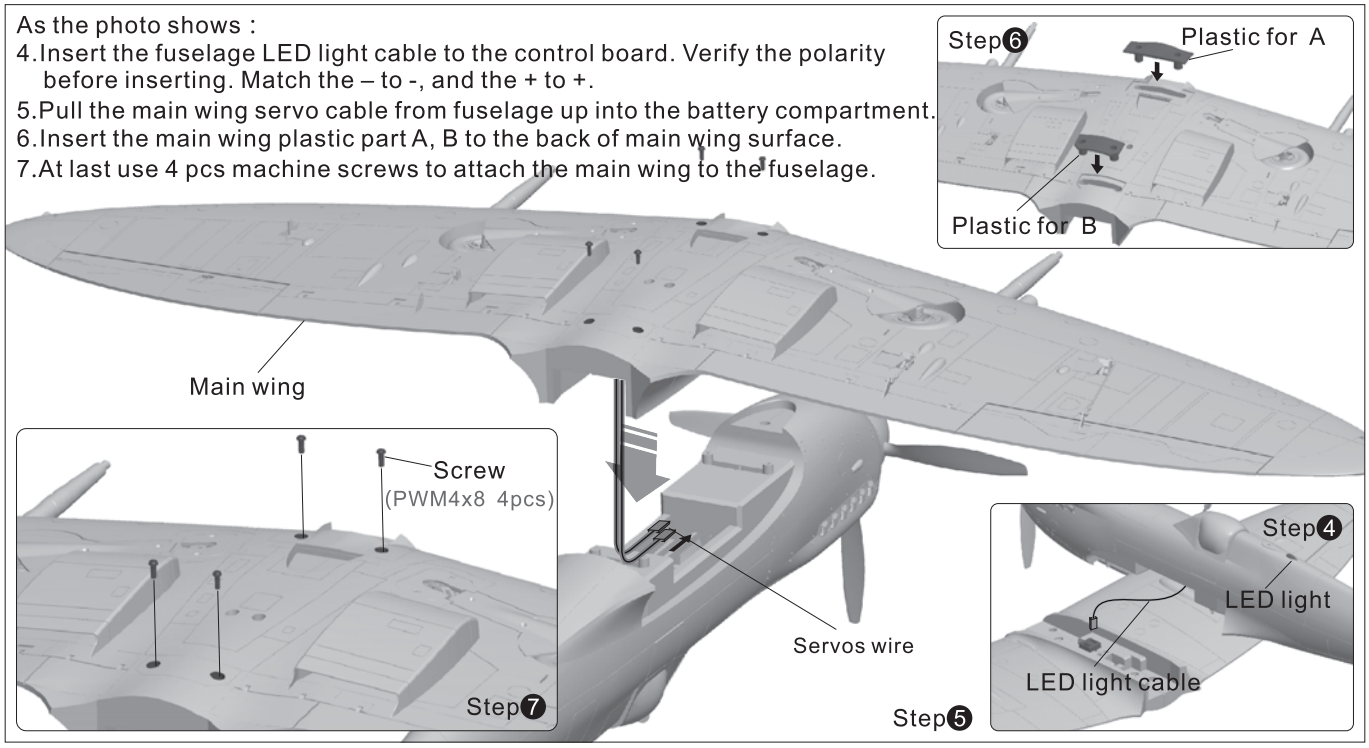
As the photo shows :

4.Insert the fuselage LED light cable to the control board. Verify the polarity before inserting. Match the – to -, and the + to +.

5.Pull the main wing servo cable from fuselage up into the battery compartment.

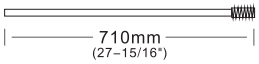
6.Insert the main wing plastic part A, B to the back of main wing surface.

7.At last use 4 pcs machine screws to attach the main wing to the fuselage.



Pushrod instructions

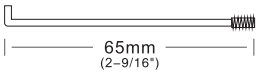
Steering pushrod size



Pushrod diameter Ø1.5mm

Steering pushrod mounting hole

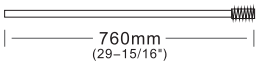
Rudder pushrod size



Pushrod diameter Ø1.5mm

Rudder pushrod mounting hole

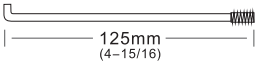
Elevator pushrod size



Pushrod diameter Ø1.5mm

Elevator pushrod mounting hole

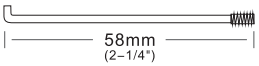
Aileron pushrod size



Pushrod diameter Ø1.5mm

Aileron pushrod mounting hole

Flap pushrod size



Pushrod diameter Ø1.5mm

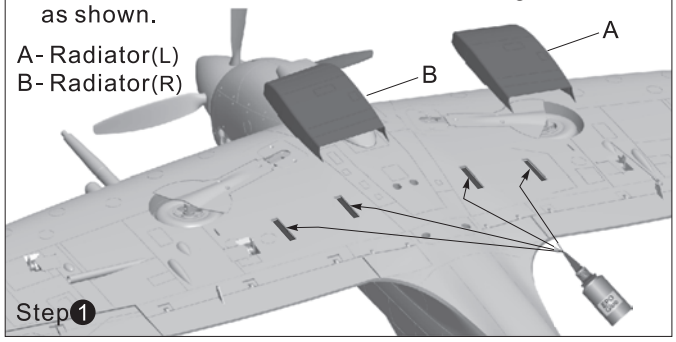
Flap pushrod mounting hole

Product basic information

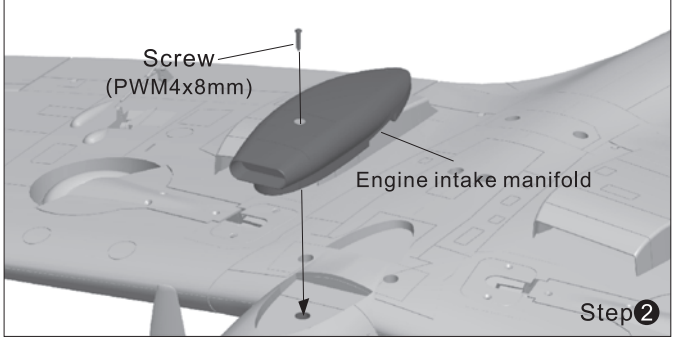
Install decorated part

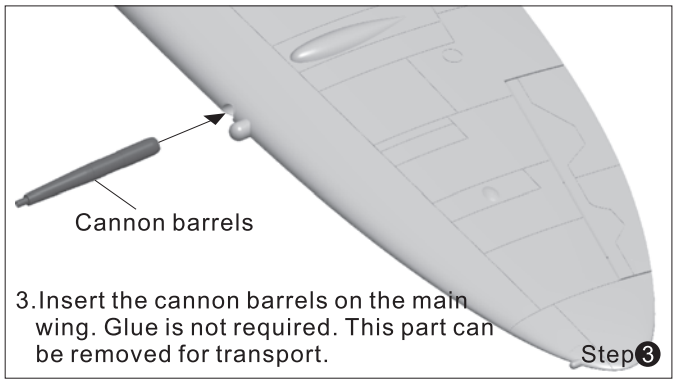
1.Glue the Radiator A and B to the main wing surface, as shown.

A- Radiator(L)
B- Radiator(R)

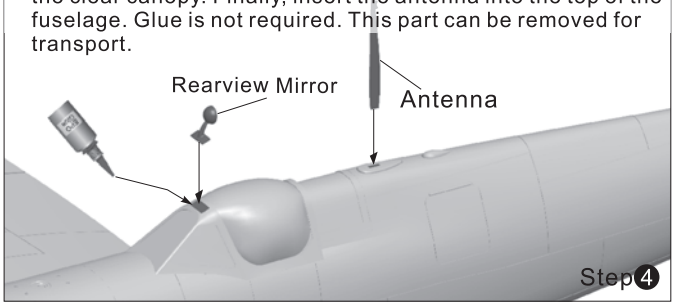


2.Use 1 pcs screw to fix the intake pipe.





4.Use clear canopy glue to attach the scale rearview mirror on the clear canopy. Do not use CA glue. CA glue may damage the clear canopy. Finally, insert the antenna into the top of the fuselage. Glue is not required. This part can be removed for transport.



Note：After finish the above steps, depending on the mark of control board, insertaileron,flap servo cable and landing gear cable to the control board.

Control board use introduction

Use Control board

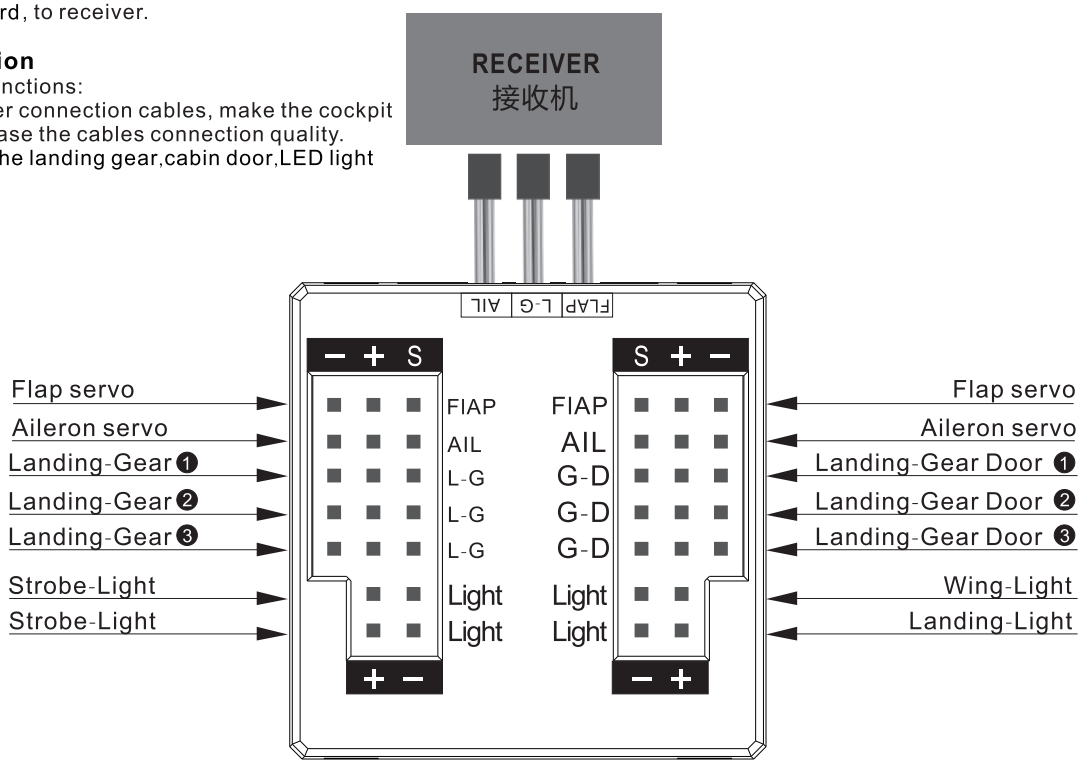
As the below photo shown, according to connection diagram, insert the servo, landing gear, cabin door, LED lights into the designated plug. Then, connect the aileron, flap, landing gear output line on control board, to receiver.

Control board operation

Control board have two functions:

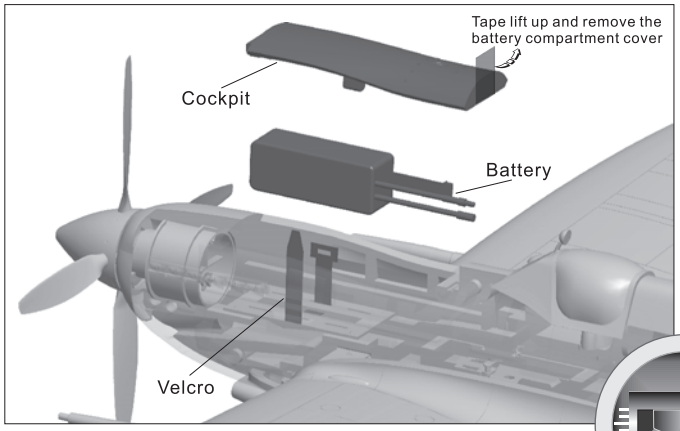
1.Replace Y-wire and other connection cables, make the cockpit is more neat. And, increase the cables connection quality.

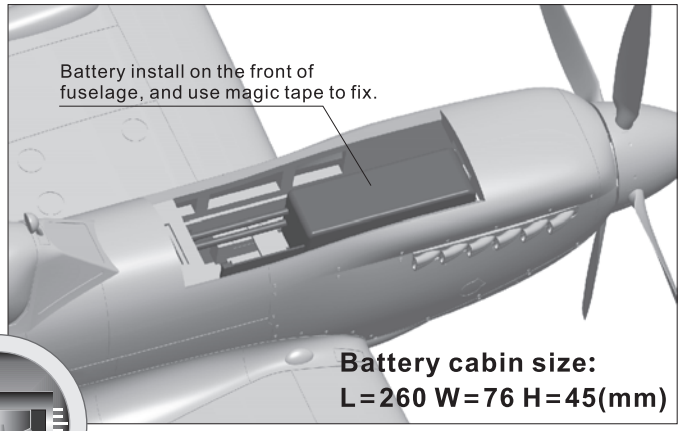
2.Through control board,the landing gear,cabin door,LED light controlled in unified.



PNP Install instructions

Install Battery





Before connect the battery and receiver, please switch on the transmitter power and make sure the throttle stick is in the lowest position.
After connecting your receiver and plugging in the battery for the first time, before please make sure that the propeller is not attached. After you have programmed your radio transmitter, before all future flights whenever you plug in the battery also make sure there is no object within the propeller diameter to avoid accidents and personal injury!

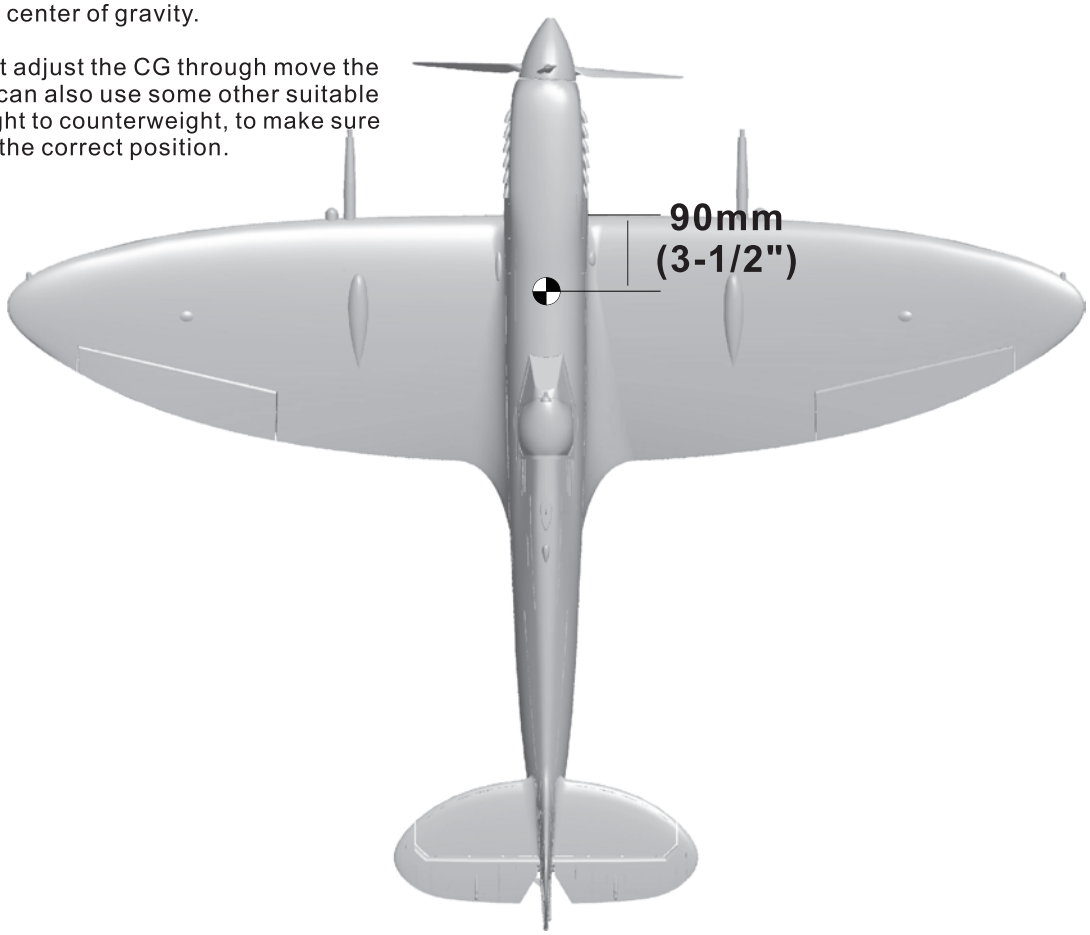
The battery capacity and discharge rate we advise is in the following :
6S 22.2V 3500mAh ~ 6S 22.2V 5000mAh
Discharge rate of C ⩾ 30C

Center of gravity

Correct center of gravity is directly related to the success of the flight, please refer to the following CG diagram to adjust your plane's center of gravity.

- You can move the battery forward or backward to adjust the center of gravity.

- If you can not adjust the CG through move the battery, you can also use some other suitable material weight to counterweight, to make sure that CG is in the correct position.



Control direction test

After installed the plane, before flying, we need a fully charged battery and connect to the ESC, then use radio to test and check that every control surface work properly.

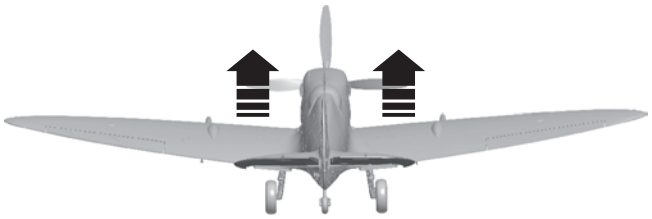
Aileron

Stick Left

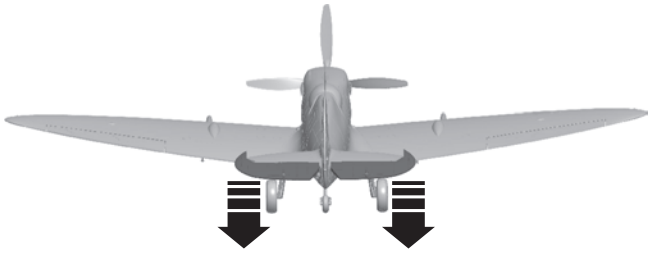
Stick Right

Elevator

Up Elevator

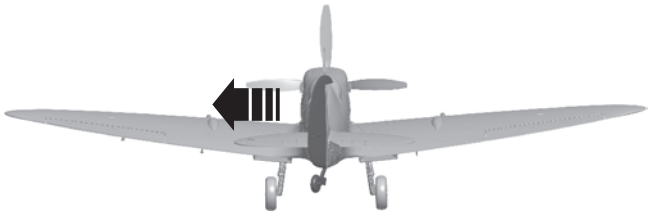


Down Elevator

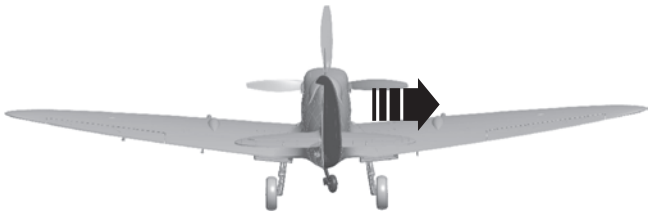


Rudder

Stick Left

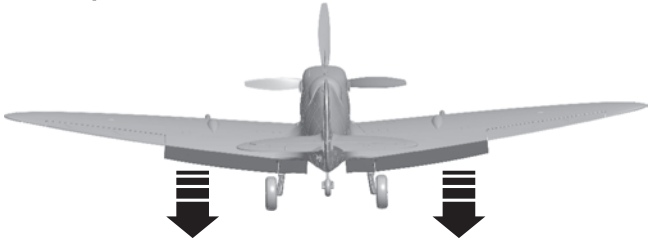


Sitck Right



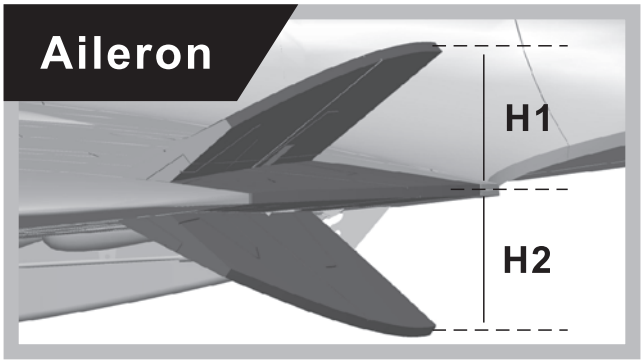
Flaps

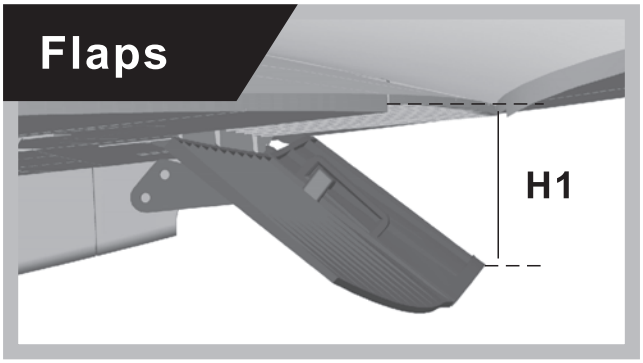
Flaps down

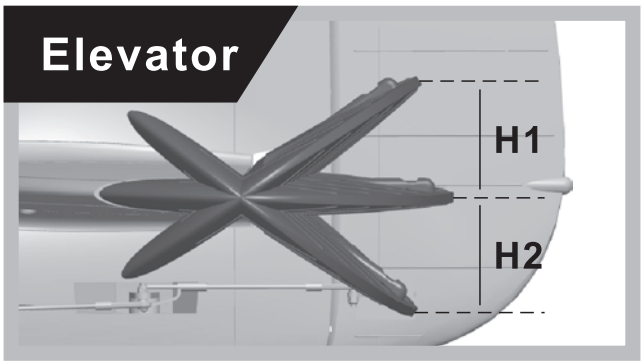


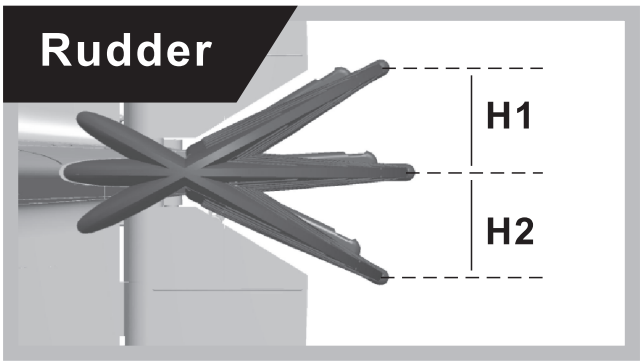
Dual rates

According to our testing experience, according to the following parameters to set the aileron/elevator rate, it will be useful for flight. In low rate, its good for flight control and its suitable for the initial flight or less skilled players. According to your own circumstance, choose one rate in flight.









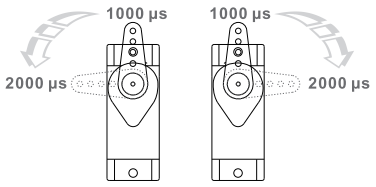
	Aileron(Is Side)	Elevator (Is Side)	Rudder (The Bottom)	Flaps
Low Rate	H1/H2 31mm/31mm D/R Rate : 80%	H1/H2 27mm/27mm D/R Rate : 75%	H1/H2 28mm/28mm D/R Rate : 80%	H1 24mm
High Rate	H1/H2 38mm/38mm D/R Rate : 100%	H1/H2 33mm/33mm D/R Rate : 100%	H1/H2 33mm/33mm D/R Rate : 100%	H1 40mm

⚠**Flight Attention :** 1.Depending on your flight battery and your personal preference for flight stability versus agility, trim the elevator 2mm up. This can be pre-set by either of the following two ways:
- Use pushrod to keep 2mm elevator up.
- Center the elevator, and set the 2mm elevator up in your radio.

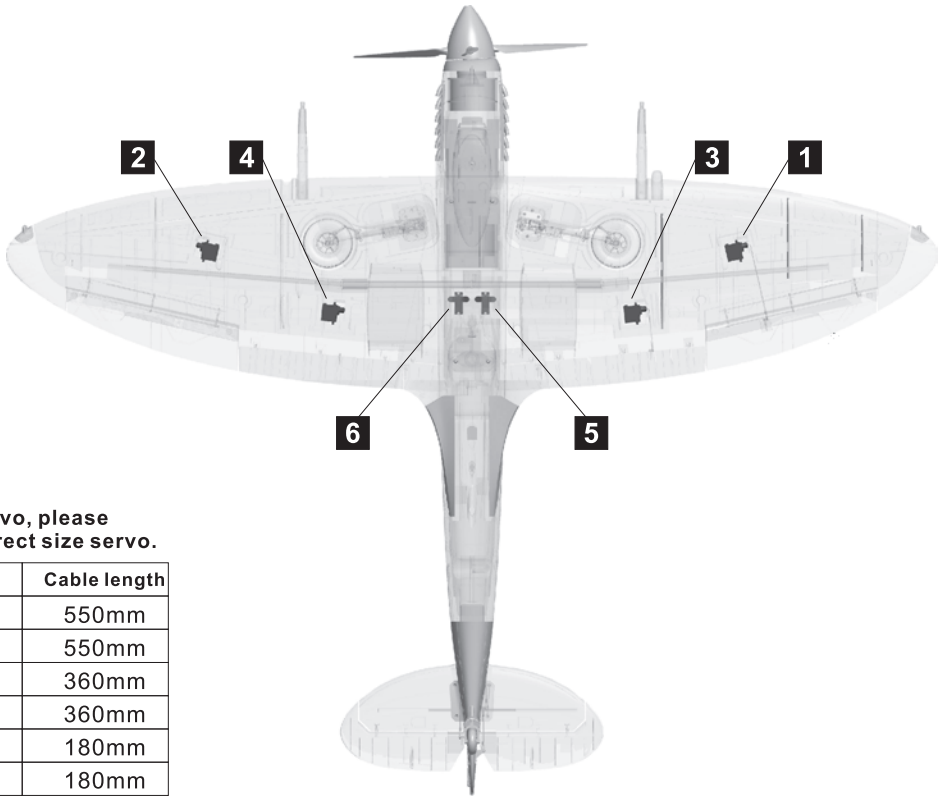
2.When the flaps are deployed, the aircraft will nose slightly downward. In your radio transmitter, program a Down-Flap-to-Up-Elevator mix according to these parameters.
- Flap travel down 24mm/ set elevator travel UP 1.5mm
- Flap travel down 40mm/ set elevator travel UP 3mm

Accessories Description

Servos Introductions



The servo positive or reverse rotation is defined as follows:
When servo input signal change from 1000μs to 2000μs,
The servo arm is
rotated clockwise, its **positive servo.**
The servo arm is
rotated counterclockwise, its **reverse servo.**

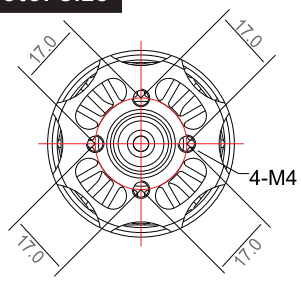


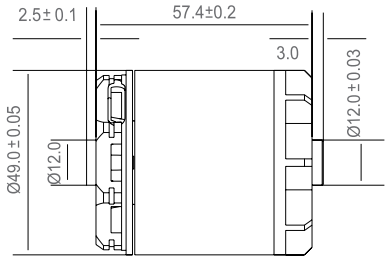
If you need to purchase other brand servo, please refer to the following list to choose correct size servo.

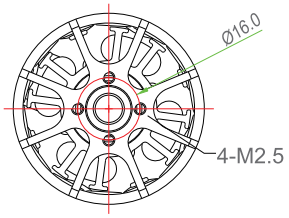
Position	Model	No.	Pos./Rev.	Cable length
Aileron(L)	17g plastic	1	Positive	550mm
Aileron(R)	17g plastic	2	Positive	550mm
Flap(L)	17g plastic	3	Positive	360mm
Flap(R)	17g plastic	4	Positive	360mm
Elevator	17g plastic	5	Positive	180mm
Rudder	17g plastic	6	Positive	180mm

Parameter of motor

Motor size





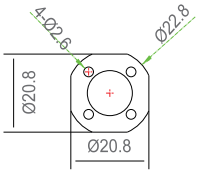


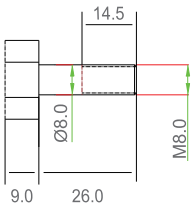
5055-390KV

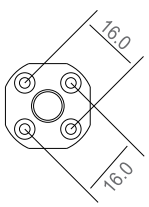
Unit: mm

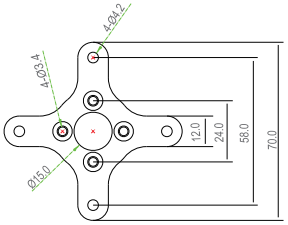
Item No.	KV Value	Volate (V)	Current (A)	Pull (g)	Motor Resistance	Weight (g)	No Load Current	Propeller	ESC
MO1505501	390RPM/V	22.2V	60	5600	0.02 Ω	410	2.3A/10V	4-Blade16×10	⩾80A

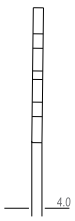
Motor shaft,X-fixed base









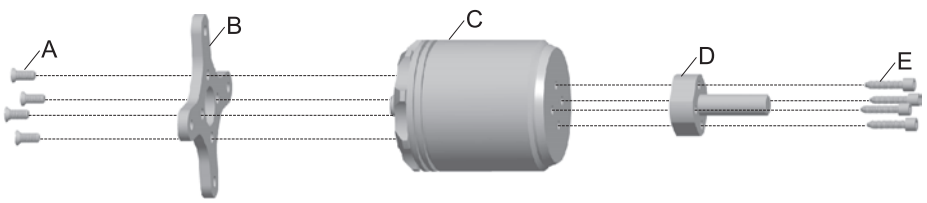


Unit: mm

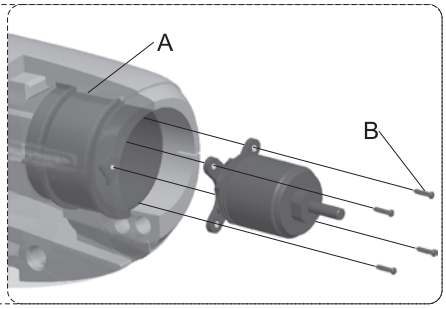
Accessories Description

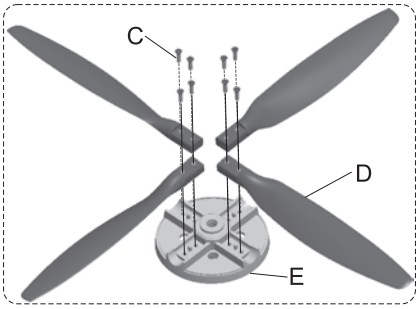
Install power system

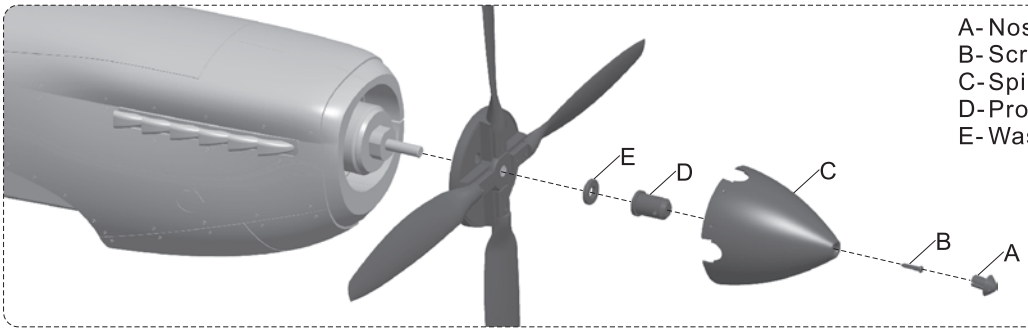
A- Screw (KM4x8mm 4pcs)
B- Motor X-fixed base
C- 5055-390KV out-runner motor
D- Propeller folder
E- Screw (HM2.5x10mm 4pcs)



A- Motor fixed mount
B- Screw (PA4x15mm 4pcs)
C- Screw (PM3x16mm 8pcs)
D- Scale propeller (16x10 , 4-blade)
E- Scale propeller fixed plate

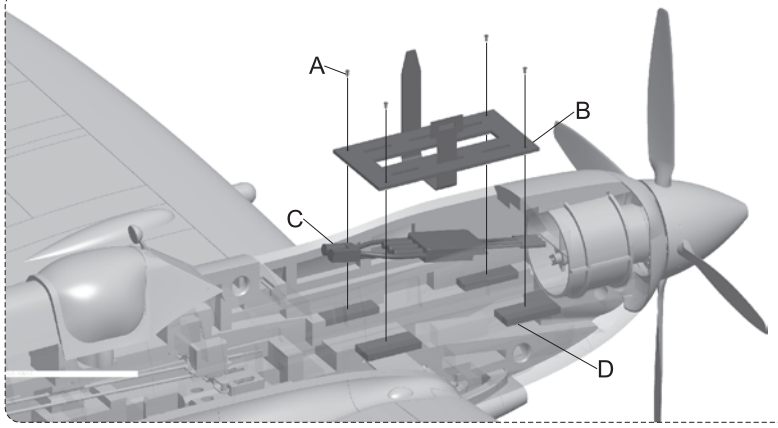






A- Nose plug
B- Screw (PM3x30mm 1pcs)
C- Spinner (scale 4-blade spinner)
D- Propeller fixing bolt
E- Washer (Ø24.5×3×Ø8.0mm)

Install on ESC



A- Screw (FA3x8mm 4pcs)
B- Battery tray
C- ESC
D- Tray holder

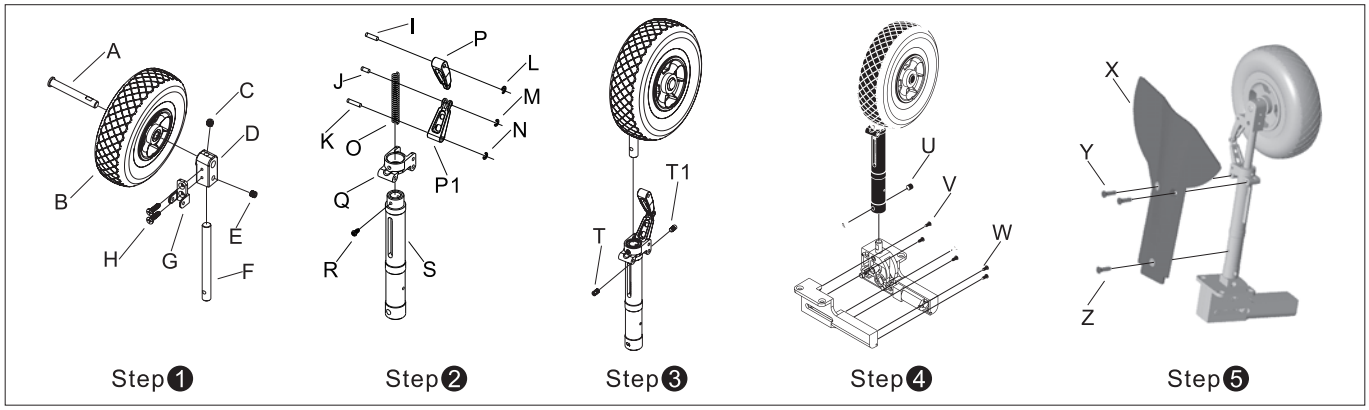
Put the ESC under the battery tray, there is a special designed ventilation ducts, it can cool the electric equipment effectively.

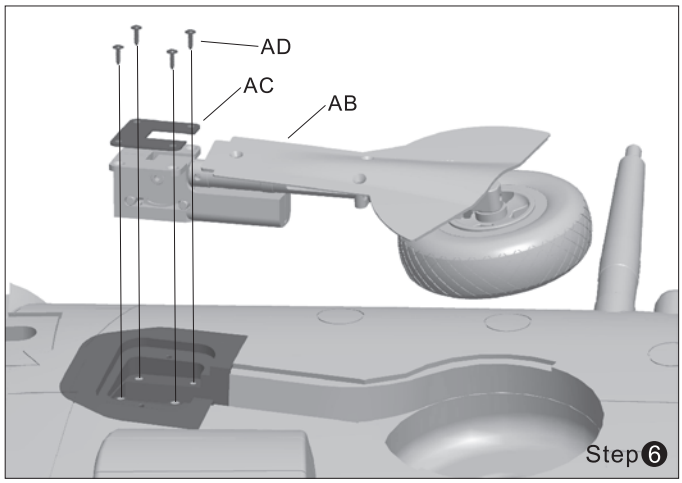
Accessories Description

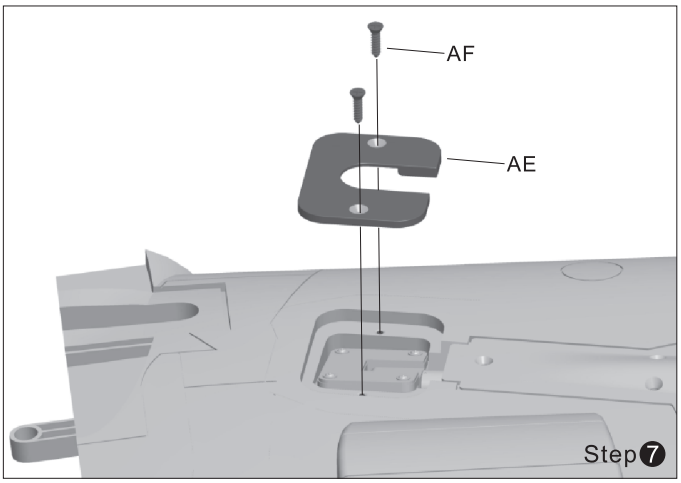
Install nose landing gear

Please assemble、disassemble the rear landing gear according to the following photo.

A - Nose gear axle
B - Nose wheel (Ø85x26mm)
C - JIMI Screw (M4x4)
D - Nose gear slant strut
E - JIMI Screw (M4x3)
F - Nose gear shock absorber active rod
G - Nose gear shock absorber arm fixed part
H - Screw (PM2x3 2pcs)
I - Pin (Ø3.5x12.6mm 1pcs)
J - Pin (Ø2x13.1mm 1pcs)
K - Pin (Ø3.5x7.3mm 1pcs)
L - C-Buckle (Ø1.5mm)
M - C-Buckle (Ø1.5mm)
N - C-Buckle (Ø1.5mm)
O - Spring
P - Nose gear shock absorber scissor arm
Q - Nose strut fixed ring
R - Screw (PM2x3 1pcs)
S - Nose gear strut
T - X Set screw (M3x5.2 2pcs)
U - IMI Screw (M4x4)
V - Screw (PA1.6x10 4pcs)
W - Screw (PA1.4x12 2pcs)
X - Nose landing gear door type
Y - Screw (KA2.3x8 2pcs)
Z - Screw (FM2x7 1pcs)
AB - Nose landing gear
AC - Metal reinforcement plate
AD - Screw (KA3x12 4pcs)
AE - landing gear cover
AF - Screw (KA2.3x8 2pcs)



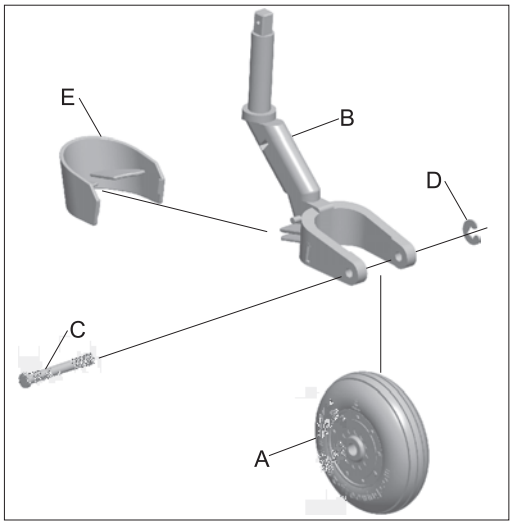


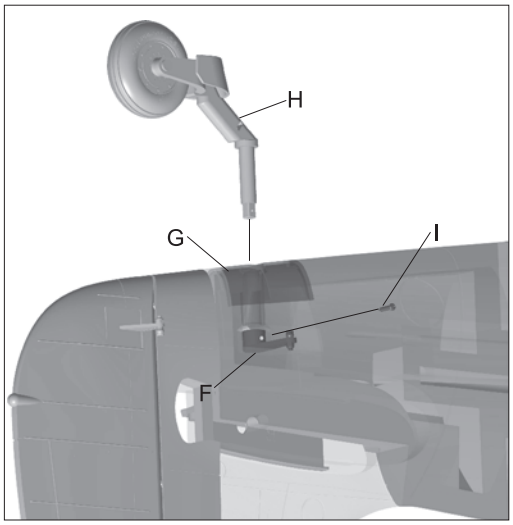


Install rear landing gear

1.Refer to the right photo, install the tail landing gear set.
2.Insert the tail gear set C to the fixed plastic part B, and continue to insert to the tail steering arm A.
3.Use screw D to fix the tail steering arm.

A - Rear wheel (Ø45x16mm)
B - Rear gear supporting rod
C - Rear wheel shaft
D - C-Buckle (Ø5xØ2mm)
E - Rear wheel fairing
F - Tail steering arm
G - Rear gear fixed plastic part
H - Tail gear set
I - Screw (PA1.6x6mm)





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