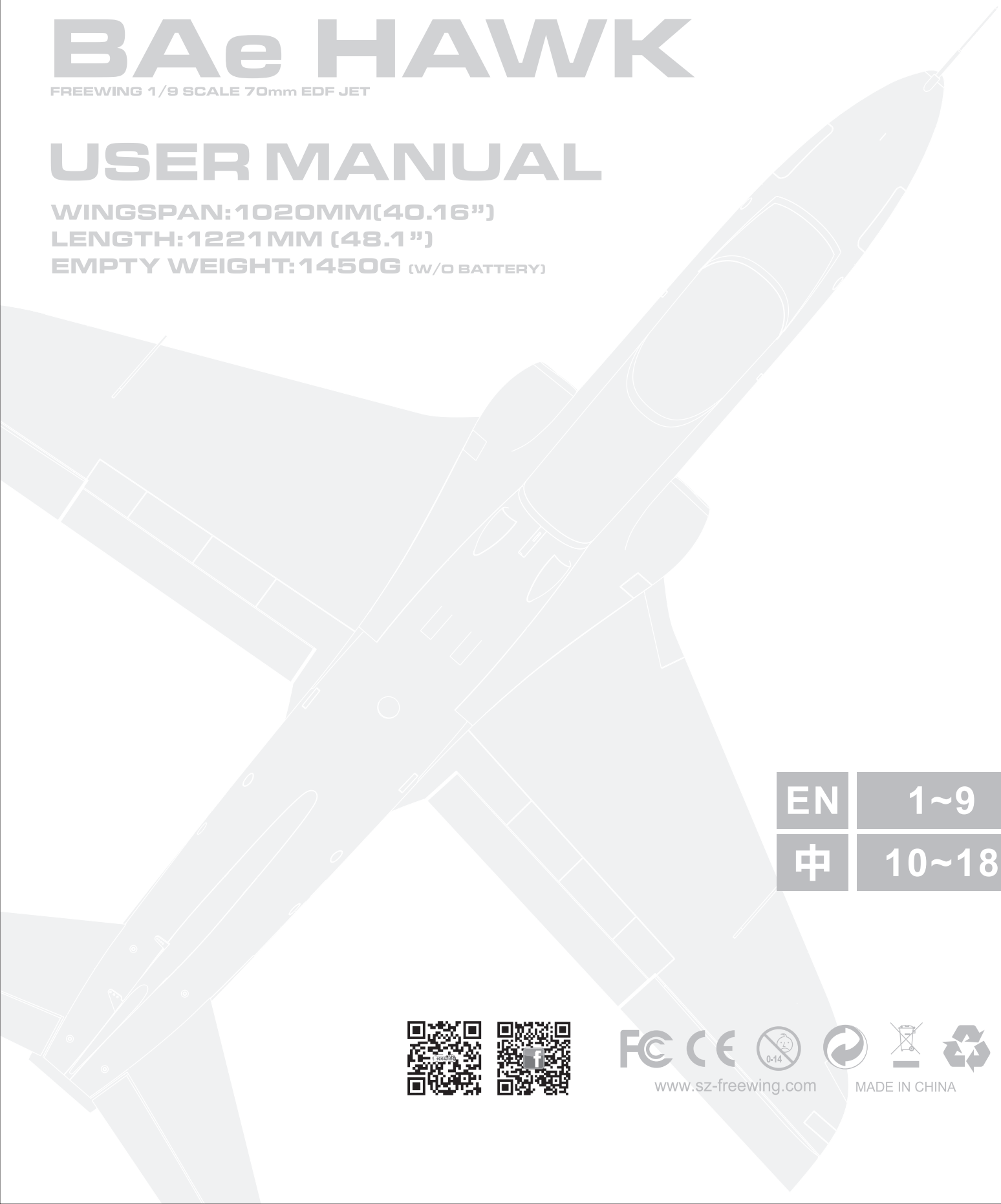
BAe HAWK

FREEWING 1/9 SCALE 70mm EDF JET

USER MANUAL

WINGSPAN:1020MM(40.16")
LENGTH:1221MM (48.1")
EMPTY WEIGHT:1450G (W/O BATTERY)



EN	1~9
中	10~18

www.sz-freewing.com

MADE IN CHINA

Introduction

Perhaps the most versatile British advanced trainer jet in the world, the BAe Hawk has been in service for over 40 years. Operated at its peak by 18 countries in various trainer and light combat roles, the Hawk T1 variant was also popularized by the Red Arrows display team, whose expert piloting demonstrations have amazed audiences worldwide for generations.

Freewing and Motion RC are proud to present this well-loved aircraft as a 70mm EDF powered electric flying model. The Freewing 70mm Hawk T1 features a powerful 12 bladed EDF power system for satisfying speed, vertical performance, and realistic sound.

With a 6s 2600mAh-4500mAh LiPo battery, the 6s power system can achieve a top speed of approximately 160kph / 100mph. Retractable landing gear, flaps, and a wide gear stance make the aircraft well suited for intermediate jet pilots and short grass runways. An optional suspension strut set is available if more shock absorption is desired. A large battery bay provides easy access to your battery, receiver, and an optional gyro stabilizer.

To enhance visibility, the Freewing 70mm Hawk T1 also features the signature bright white nose light of the real aircraft, and sports bright red and green wingtip lights as well. This is the only Freewing 70mm Class aircraft to include pre-installed lighting!

Celebrating the Red Arrows Demonstration Team's approach to 40 years with their BAE Hawks, the Freewing Hawk T1 is finished in one of the iconic Red Arrows liveries. It is our hope that as you enjoy this model aircraft, you will spread the love of flight and of this historic aircraft's contributions to aviation history.

⚠ **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.

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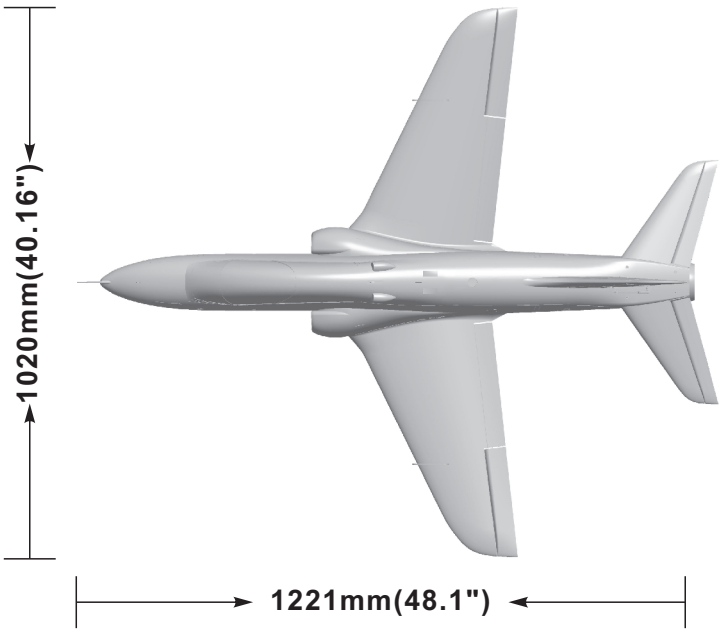
Product basic information



Standard version

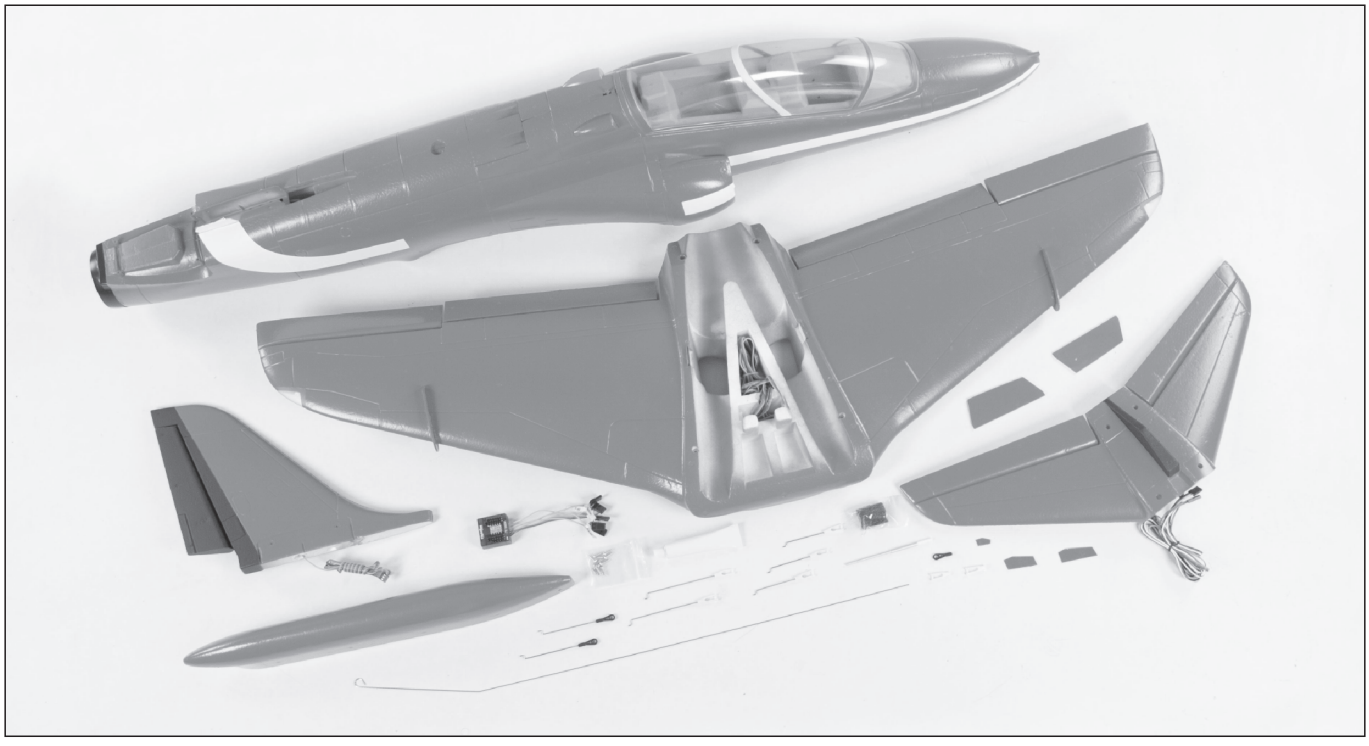
Wing loading:97.5g/dm^2
Motor: 3048-2300KV
brushless outrunner motor
Ducted fan: 70mm 12-blade fan
ESC: 80A brushless
Servo: 9g digital metal gear servo(8pcs)
Flight speed : 160KPH/100MPH
Empty Weight: 1450g(without battery)
Thrust: 2300g

Other features

Material : EPO
Aileron: Yes
Split Flaps: Yes
Elevator: Yes
Rudder: Yes
Landing gear: Retractable, Suspension
Scale LED lights
Scale Pilot figure
Battery: 6S 2600-4500mAh (1pcs)

⚠ 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	Drop tank	√	√	√
6	Scale Accessories	√	√	√

No.	Name	PNP	ARF Plus	Airframe
7	Control board	√	√	√
8	Traction steel wire use	√	√	√
9	Linkage Set	√	√	√
10	Manual	√	√	√
11	Glus & Non-slip mat	√	√	√
12	Screw	√	√	√

Traction steel wire use instruction

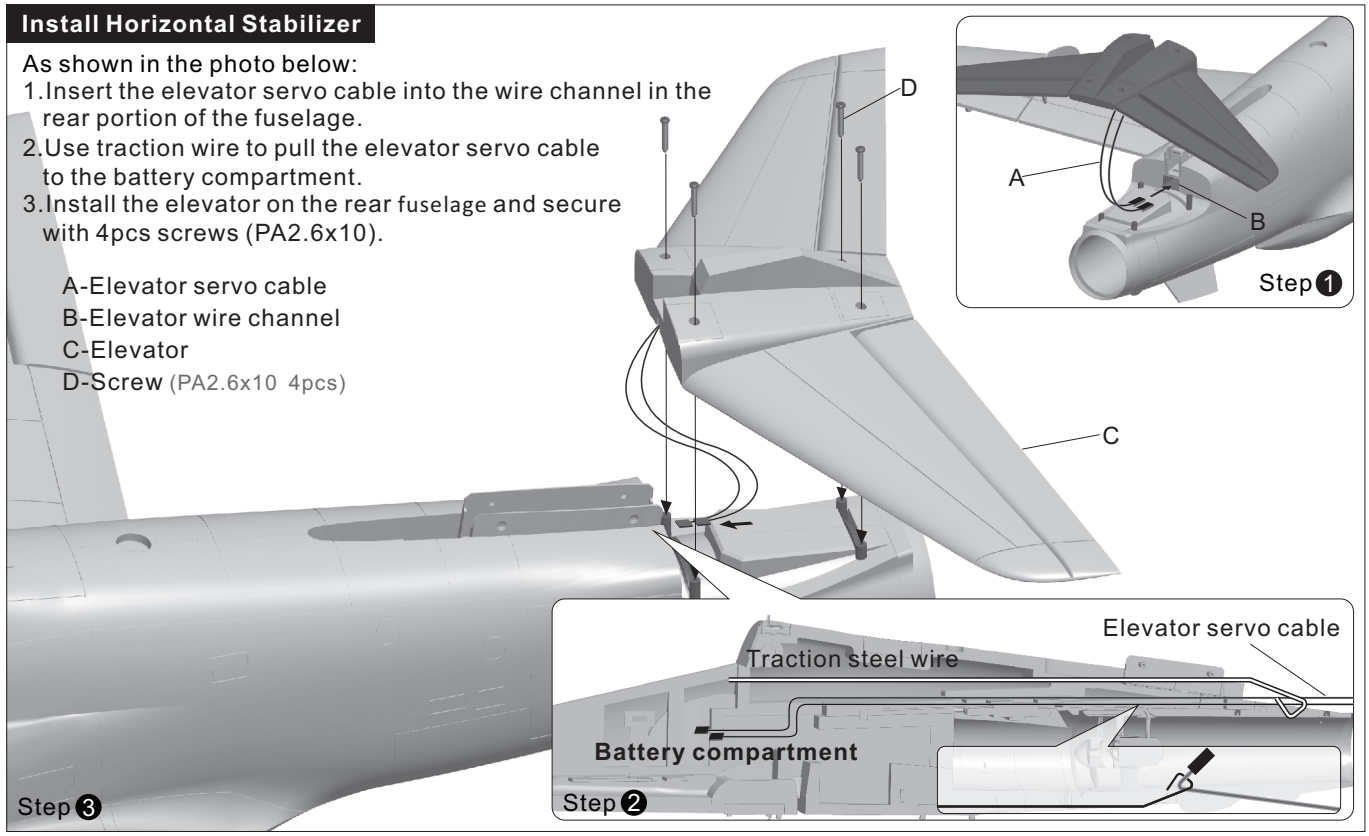
To minimize servo connections, the Elevator and Rudder servos' wires each reach from the servo itself directly to the receiver. A rigid steel wire hook is included in the box to allow you to pull the servo wires through the model's internal fuselage.

Install Horizontal Stabilizer

As shown in the photo below:

1. Insert the elevator servo cable into the wire channel in the rear portion of the fuselage.
2. Use traction wire to pull the elevator servo cable to the battery compartment.
3. Install the elevator on the rear fuselage and secure with 4pcs screws (PA2.6x10).

A-Elevator servo cable
B-Elevator wire channel
C-Elevator
D-Screw (PA2.6x10 4pcs)

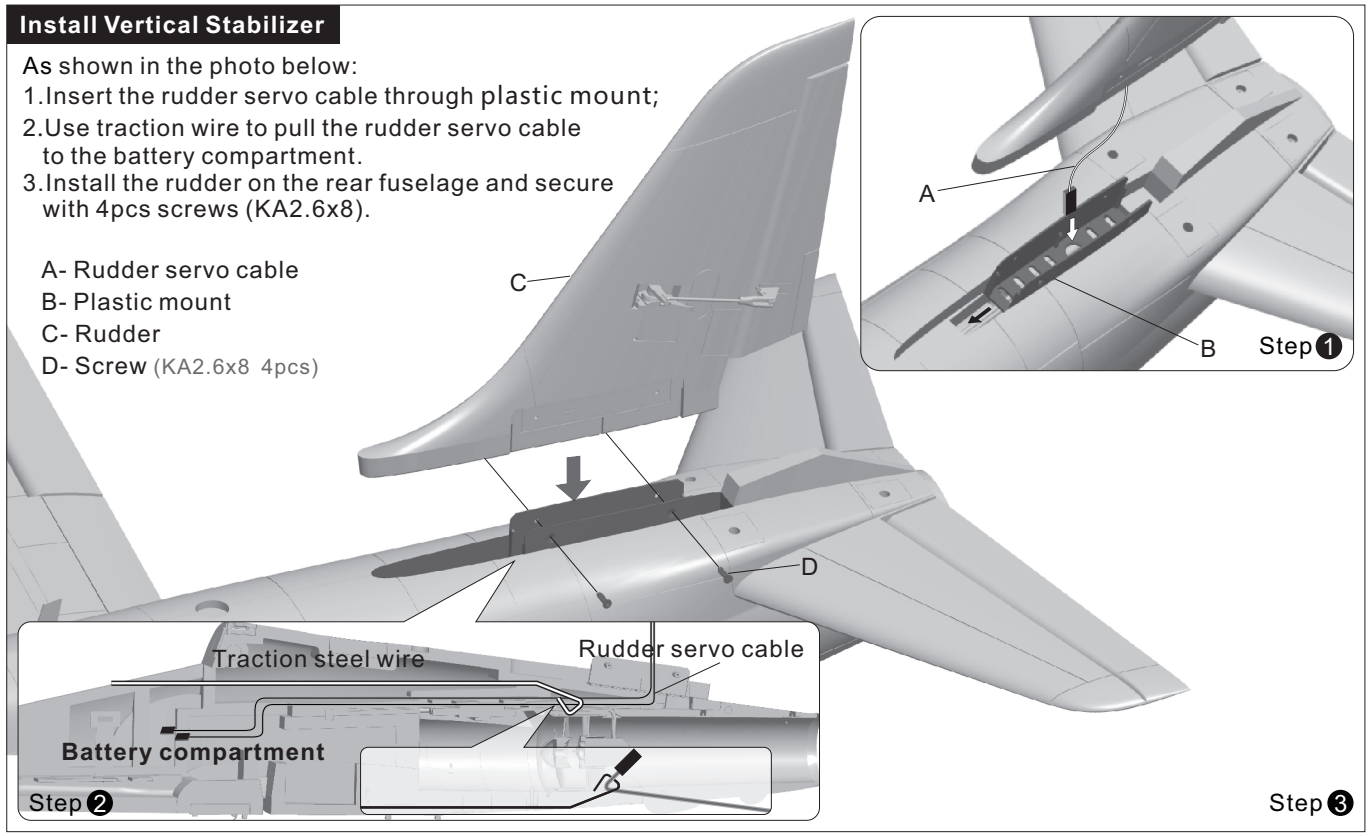


Install Vertical Stabilizer

As shown in the photo below:

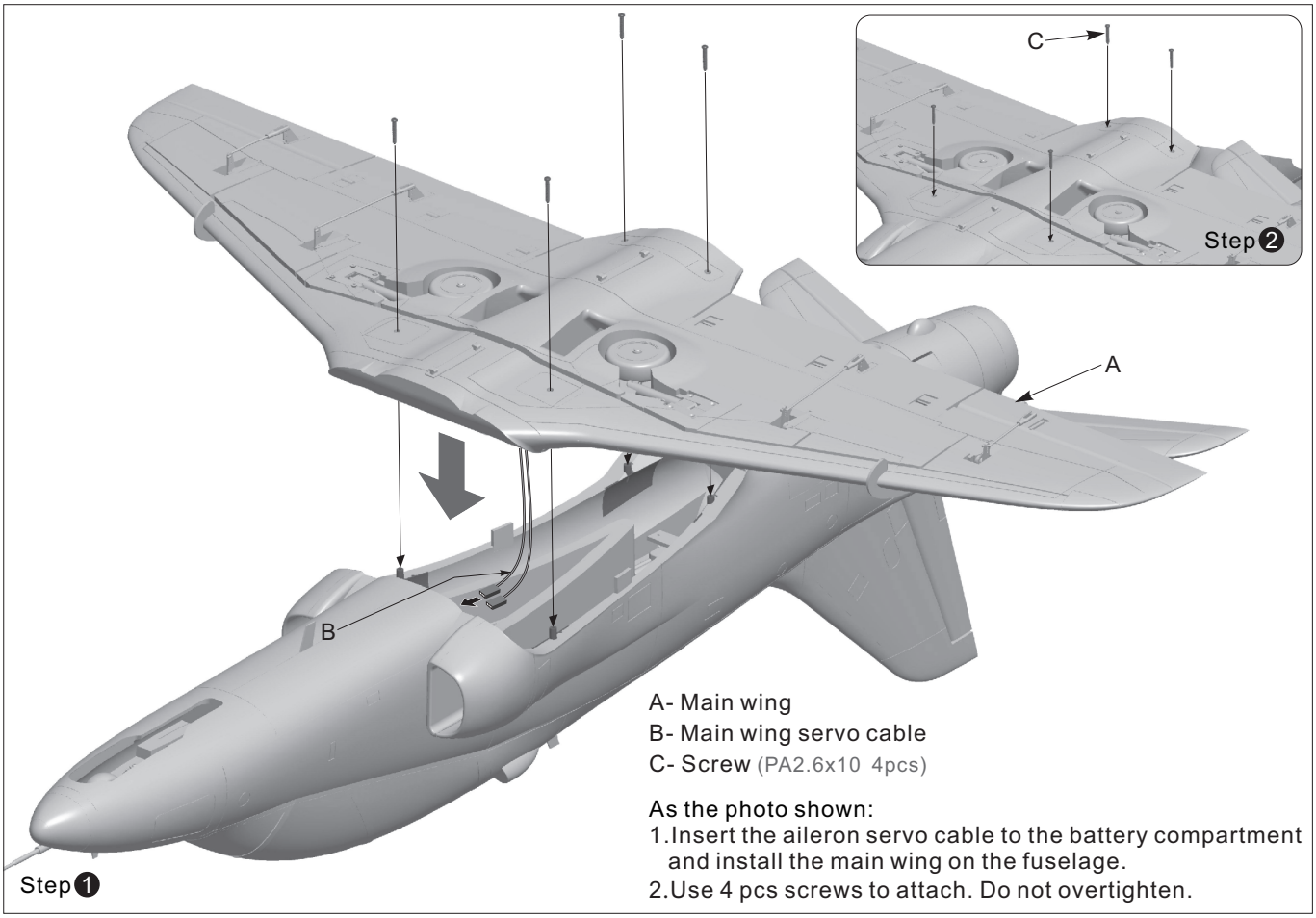
1. Insert the rudder servo cable through plastic mount;
2. Use traction wire to pull the rudder servo cable to the battery compartment.
3. Install the rudder on the rear fuselage and secure with 4pcs screws (KA2.6x8).

A- Rudder servo cable
B- Plastic mount
C- Rudder
D- Screw (KA2.6x8 4pcs)



PNP Installation Instructions

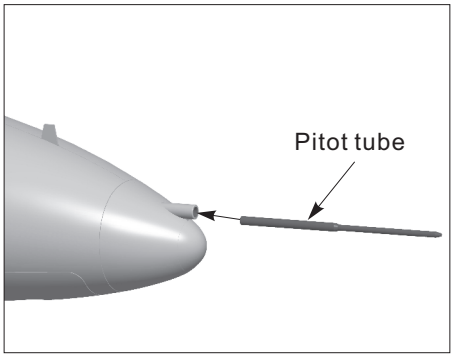
Install Main Wing

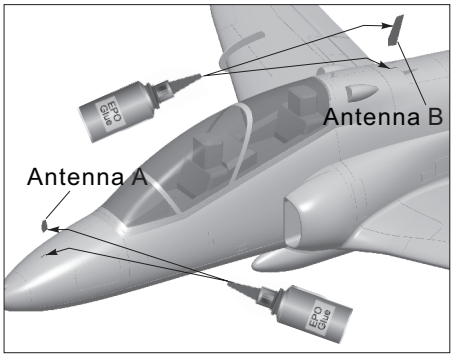


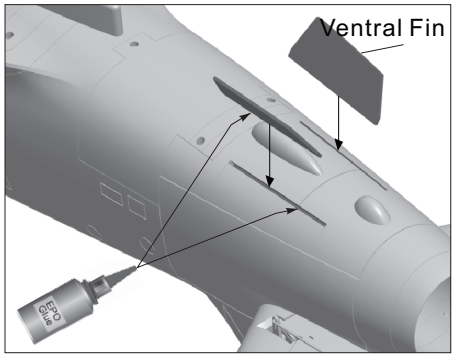
A- Main wing
B- Main wing servo cable
C- Screw (PA2.6x10 4pcs)

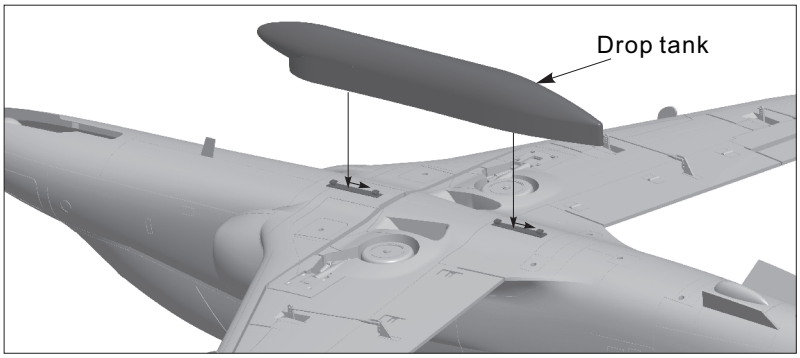
As the photo shown:
1.Insert the aileron servo cable to the battery compartment and install the main wing on the fuselage.
2.Use 4 pcs screws to attach. Do not overtighten.

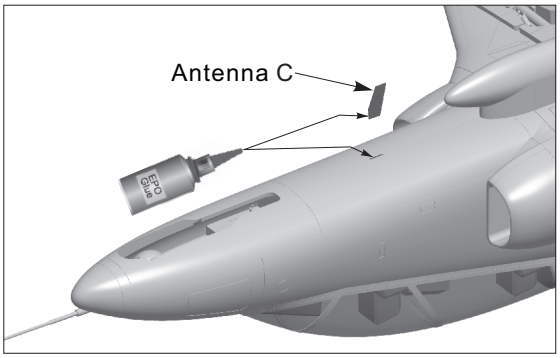
Install Scale Accessories









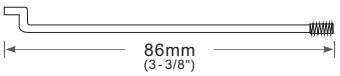


Note:
After completing the above steps, insert each servo cable into its corresponding location on the labeled control board.

PNP Installation Instructions

Pushrod instructions

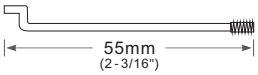
Flap pushrod size



Pushrod diameter Ø1.5mm

Flap pushrod mounting hole

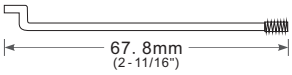
Aileron pushrod size



Pushrod diameter Ø1.5mm

Aileron pushrod mounting hole

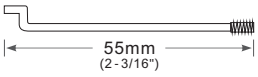
Elevator pushrod size



Pushrod diameter Ø1.5mm

Elevator pushrod mounting hole

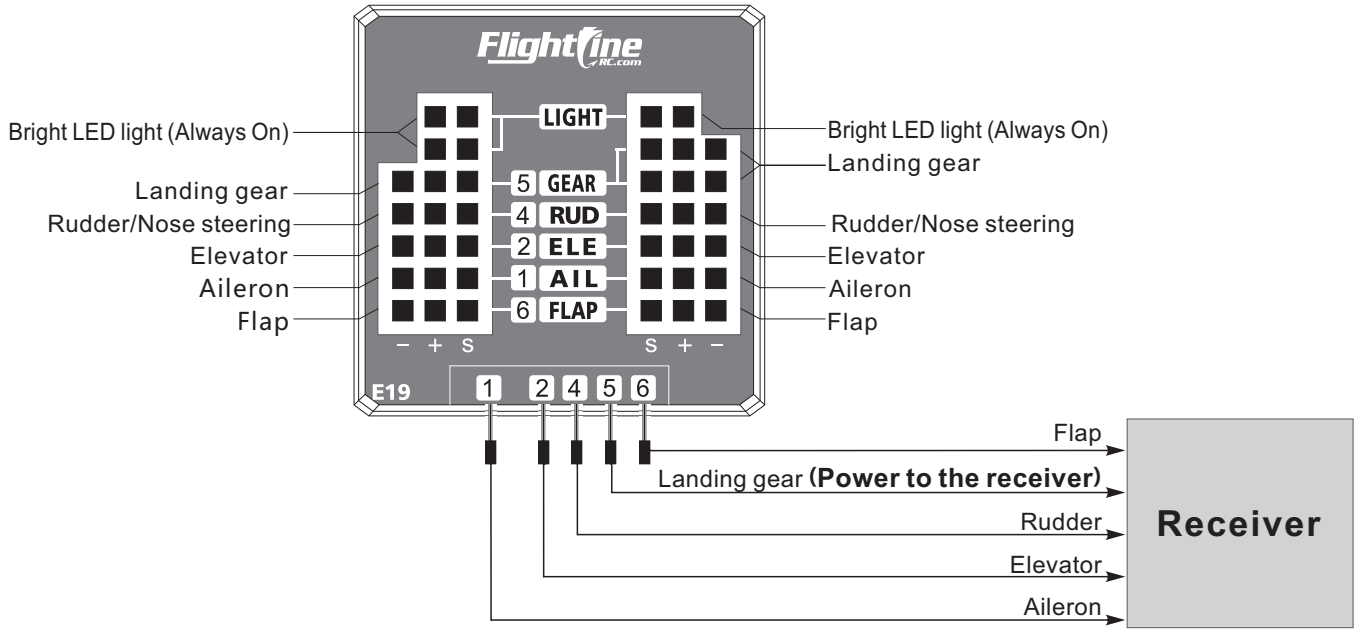
Rudder pushrod size

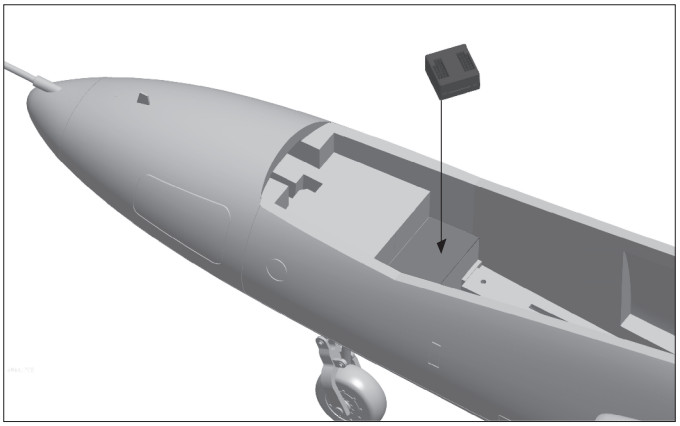


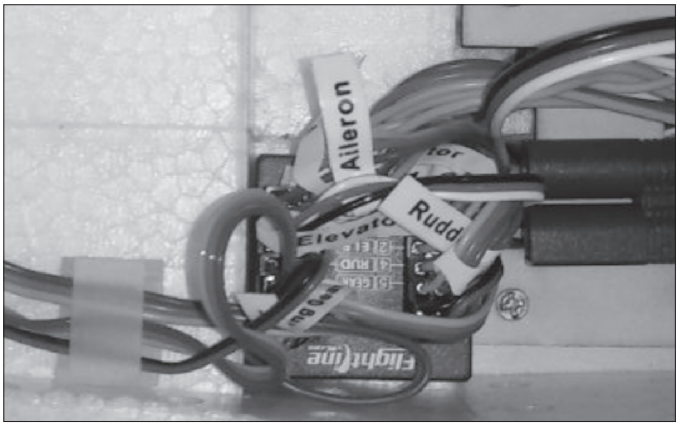
Pushrod diameter Ø1.5mm

Rudder pushrod mounting hole

Control Board Instructions



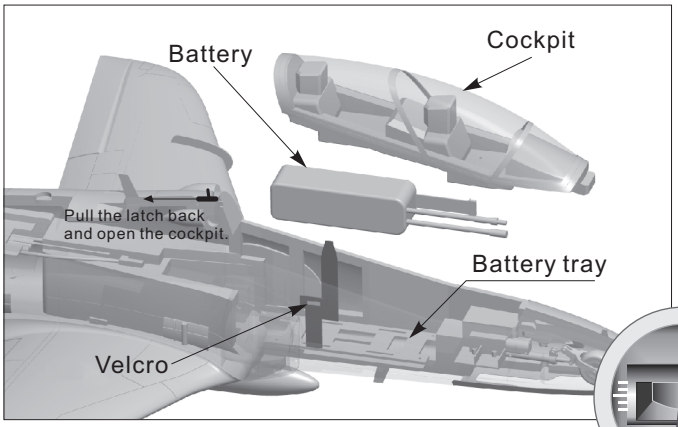


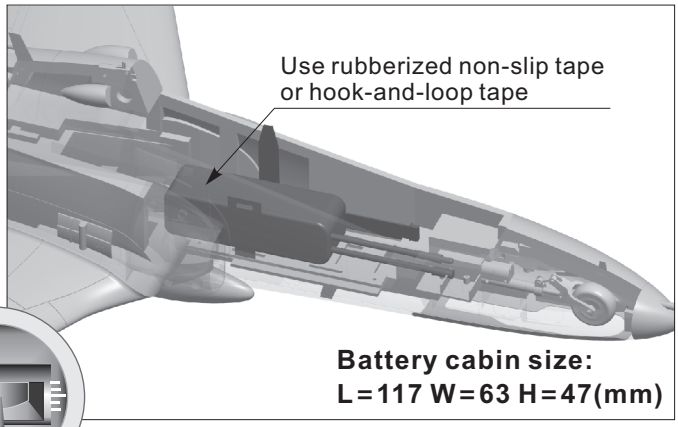


Insert each servo cable into its corresponding slot on the control board. Test and verify correct function of all control surfaces. After finishing the cables connection, attach the control board in the location as shown above.

PNP Installation Instructions

Battery Size





Before connecting the battery and receiver, please switch on the transmitter power and make sure the throttle stick is in the lowest position. Bind your receiver to your transmitter according to your transmitter's instruction manual.

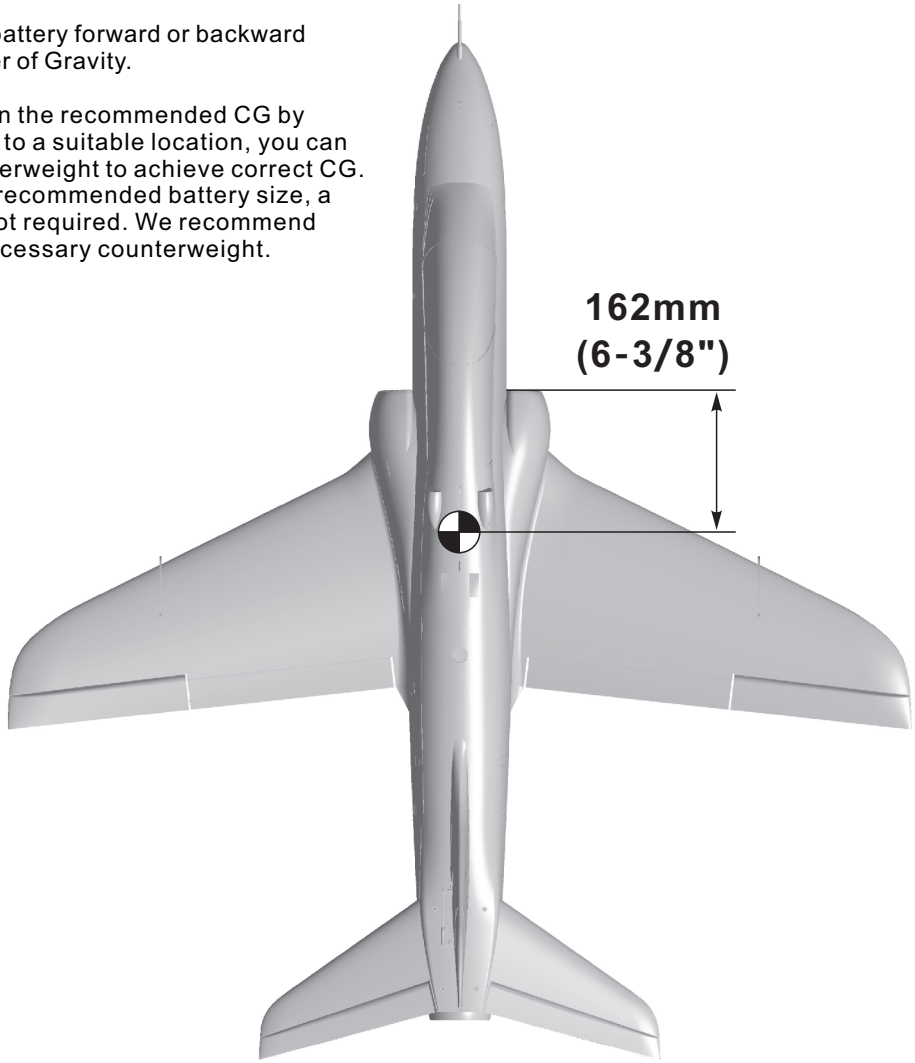
We recommend the following LiPo battery:
6S 22.2V 2600mAh ~ 6S 22.2V 4500mAh(1pcs)
Discharge rate of C ⩾ 30C

Center of Gravity

Correct Center of Gravity ("CG") is critical for enabling safe aircraft control. Please refer to the following CG diagram to adjust your aircraft's Center of Gravity.

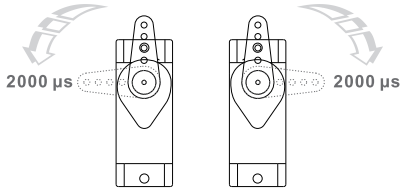
- You can move the battery forward or backward to adjust the Center of Gravity.

- If you cannot obtain the recommended CG by moving the battery to a suitable location, you can also install a counterweight to achieve correct CG. However, with the recommended battery size, a counterweight is not required. We recommend flying without unnecessary counterweight.

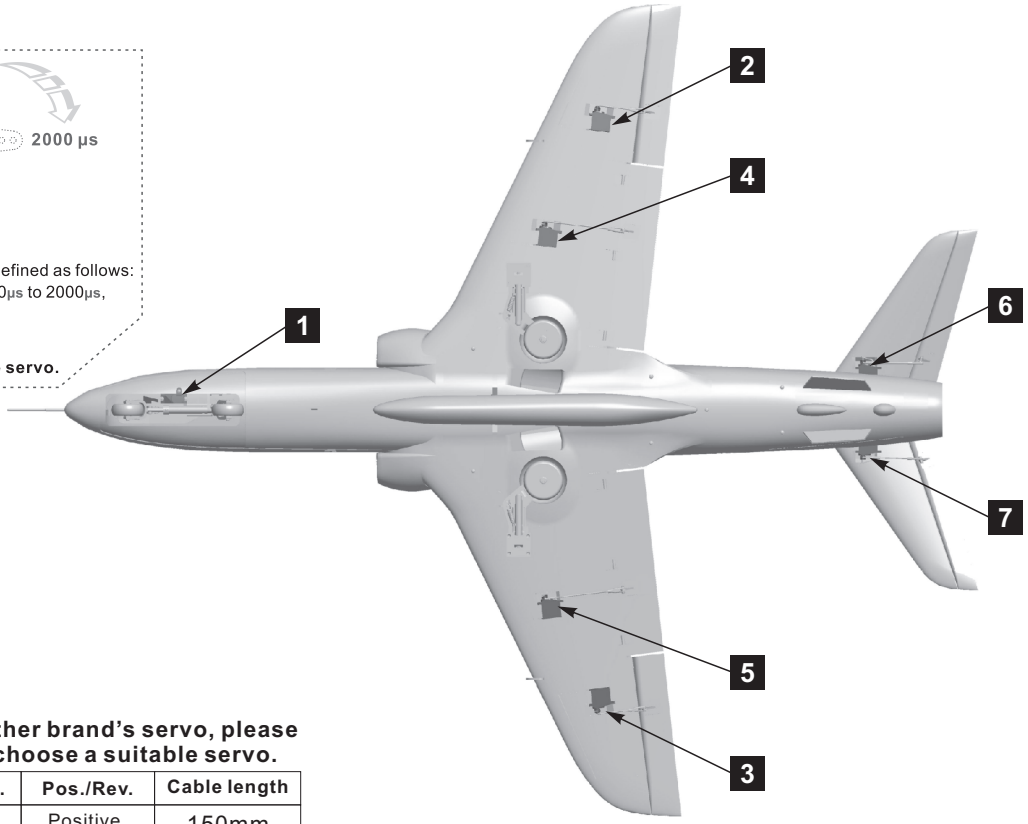


PNP Installation Instructions

Servo Direction

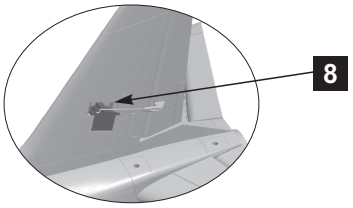


The servo positive or reverse rotation is defined as follows:
When servo input signal change from 1000μs to 2000μs,
The servo arm is
rotated clockwise, its **positive servo.**
The servo arm is
rotated counterclockwise, its **reverse servo.**

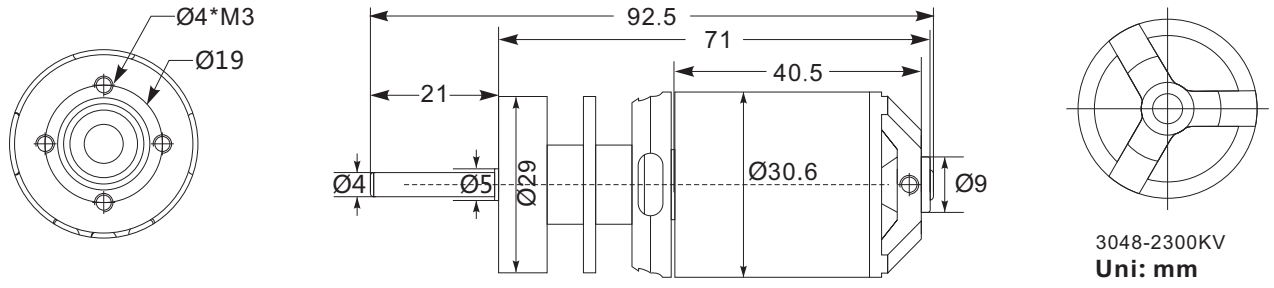


If you need to purchase another brand's servo, please refer to the following list to choose a suitable servo.

Position	Servo regulation	No.	Pos./Rev.	Cable length
Nose gear steering servo	9g Digital-MG	1	Positive	150mm
Aileron(L)	9g Digital-MG	2	Positive	800mm
Aileron(R)	9g Digital-MG	3	Positive	800mm
Flap(L)	9g Digital-MG	4	Positive	750mm
Flap(R)	9g Digital-MG	5	Positive	750mm
Elevator(L)	9g Digital-MG	6	Positive	900mm
Elevator(R)	9g Digital-MG	7	**Reverse**	900mm
Rudder	9g Digital-MG	8	Positive	850mm



Motor Specification



3048-2300KV

Uni: mm

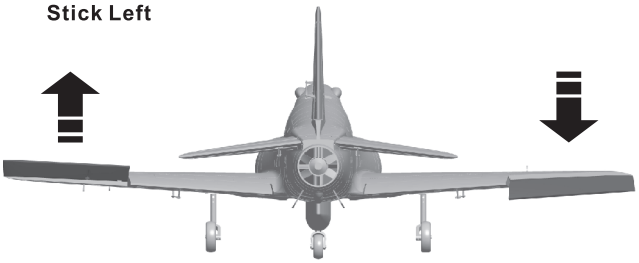
Item No.	EDF Fans	Use voltage (V)	Current(A)	Max power (W)	Thrust(kg)	Efficiency (g/w)	Motor Specifications (KV)	Rotating speed (rpm)	Weight (g)
E7217	70mm 12-blade EDF	22.2(6S)	65-72	1510	2.3-2.5	1.6	3048-2300	51000	150

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

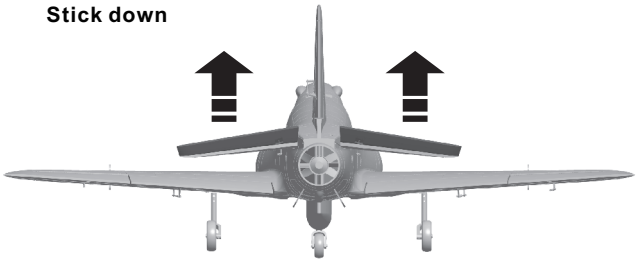
Stick Left



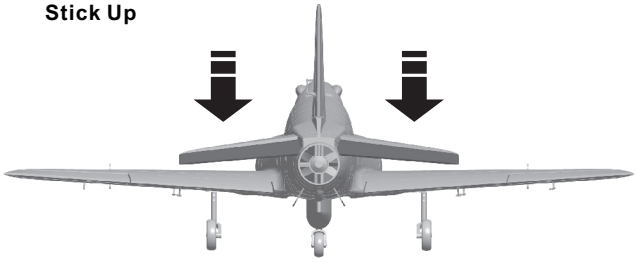
Stick Right

Elevator

Stick down

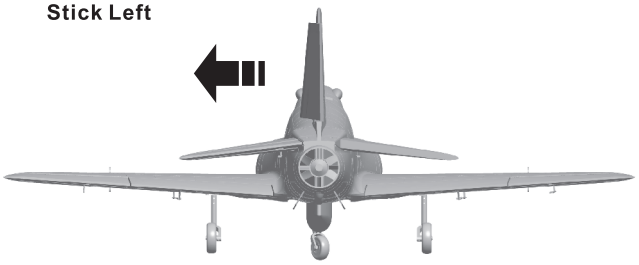


Stick Up

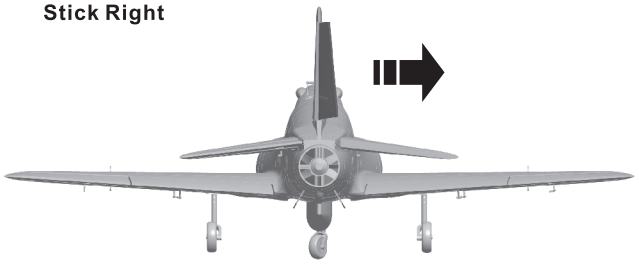


Rudder

Stick Left

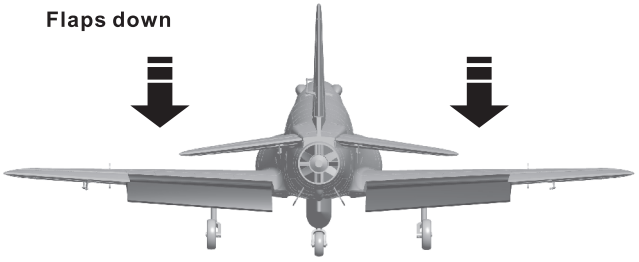


Stick Right



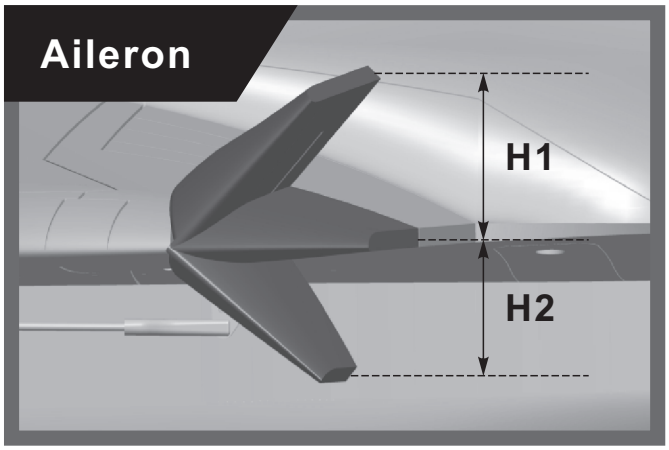
Flaps

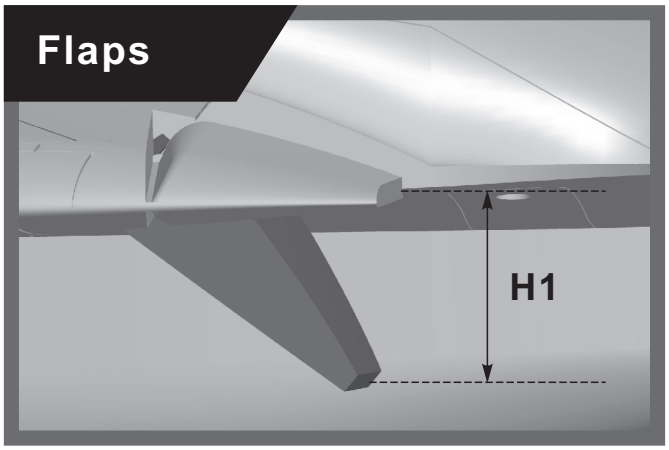
Flaps down

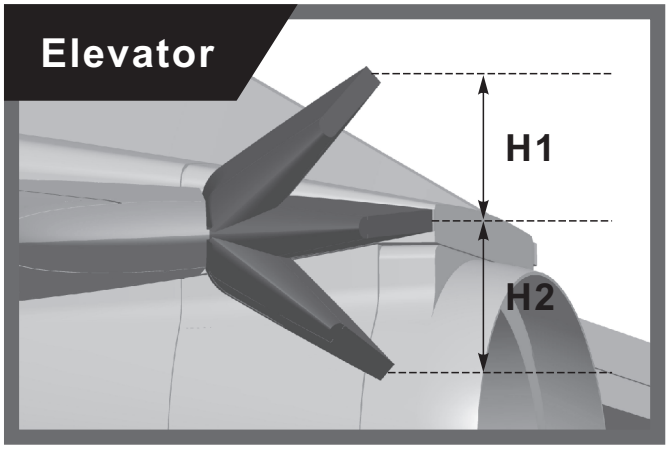


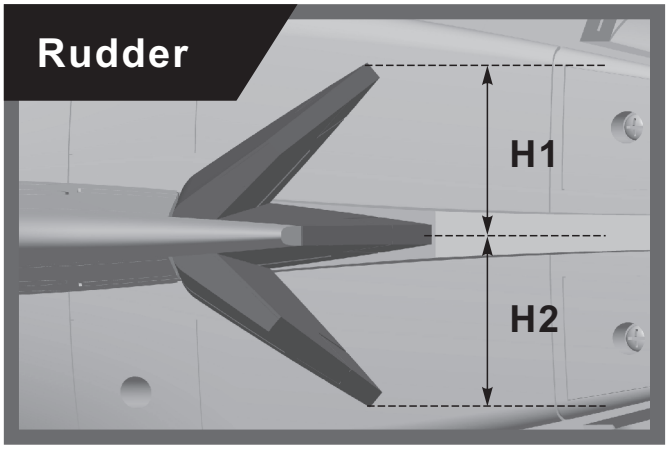
Dual Rates

According to our testing experience, use the following parameters to set Aileron/Elevator Rate. Program your preferred Exponential % in your radio transmitter. We recommend using High Rate for the first flight, and switching to Low Rate if you desire a lower sensitivity. On successive flights, adjust the Rates and Expo to suit your preference.









	Aileron(measured closest to the fuselage)	Elevator(measured closest to the fuselage)	Rudder(Measured from the bottom)	Flaps
Low Rate	H1/H2 18mm/18mm D/R Rate：70%	H1/H2 22mm/22mm D/R Rate：80%	H1/H2 22mm/22mm D/R Rate：80%	H1 14mm
High Rate	H1/H2 21mm/21mm D/R Rate：100%	H1/H2 25mm/25mm D/R Rate：100%	H1/H2 26mm/26mm D/R Rate：100%	H1 23mm

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