

**TWIN 64mm EDF JET**

# A-10 Thunderbolt II V3 USER MANUAL

Wingspan:1270mm Length:1143mm Empty Weight:2212g (W/O Battery W/O Missile)



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## Note:

- 1.This is not a toy! 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, 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.

**⚠ 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.

Thank you for purchasing our Freewing twin 64mm EDF model jet---A-10 Thunderbolt II V3. Before assembling this jet, please carefully read the instruction manual and assembly video, and assemble, set up, and debug it in the correct way. During this process, if you encounter special problems that cannot be solved on your own, please contact the dealer immediately or directly contact us for assistance.

The Freewing twin 64mm A-10 "Thunderbolt II" V3 model jet is a new upgraded product. Based on the latest thrust level, battery specifications, and user demand changes of the 64 series model jet, a systematic redesign has been carried out, achieving comprehensive innovation from structural planning to mold development. It will form a size differentiated product together with the 80mm A-10 80 model jet, meeting the needs of different model enthusiasts. The new 64mm A-10 Thunderbolt II V3 has a flight envelope almost identical to the Freewing 80 A-10 V2, provides an excellent flying experience!

## Features

### QUICK II screw-less portable install structure of main wing

-The revolutionary QUICK II & QuickLink screw-less quick release structure enables quick disassembly and assembly in the field, making transportation and storage more convenient

### Quick release tail wing

-Connect the circuit by the tail wing control board and ribbon wire, and tighten the tail wing with screws

### Quick release engine compartment

-Optimize the line connection between the power system and ESC, simplify the installation process, and avoid bumping the foam.

### Aviation lighting system

-Complete set of aviation lights/strobe lights/landing lights/formation lights system, looks more realistic.

### Shock absorbing landing gear and cabin door

-Metal shock-absorbing landing gear, matched with landing gear door, details comparable to real jet

### Expand and reinforce the battery compartment

-Reinforced structure of plastic parts to avoid cabin door wear caused by long-term use. Larger battery compartment space can accommodate larger capacity batteries, effectively improving battery life.

### Heat dissipation of battery compartment

-The airflow entering the nose cone passes through the hollow wooden battery tray to dissipate heat from the battery, achieving the unity of functionality and aesthetics

### Modular Components

-The laser locator (AAS-35) is fixed to the edge strip of the fuselage with screws and can be disassembled at any time for easy storage and transportation. The antenna/airspeed tube adopts a press type installation, with zero damage during transportation

### Strengthen the control surface structure

-The concealed/external hinges made of plastic molding, as well as the control surface arm fixed with screws and glue, combined with a high-precision ball joint linkage transmission mechanism, together constitute a control surface system that combines aesthetics, precision, reliability, and durability.

### Personalized color scheme

-It adopts the "Terrifying Termites" livery of the 47th Fighter Squadron and provides complete exclusive character patterns and aircraft number stickers.

### Fully armed mounting

-It is a realistic replica of the weapon model, with a slide rail structure that enables fast and non-destructive release.

### Appearance improvement

-It covers the engraved lines and rivets on the surface, simulates pilot figures and cockpit, and micro detail elements, enhancing the overall simulation of the model.

The finely engraved lines on the surface, imitation rivets, simulated pilot figures and cockpit, as well as various detailed elements scattered throughout the surface, jointly construct a highly realistic A-10 model.

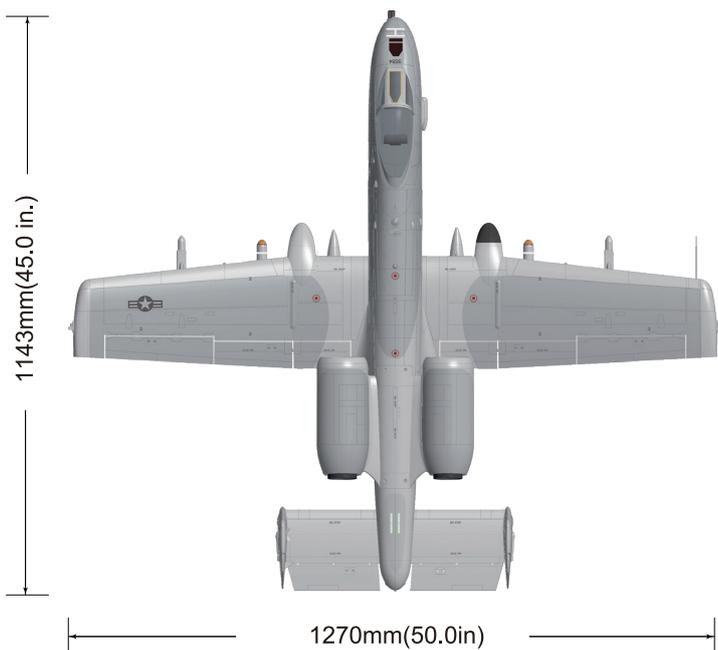
### Freewing Guard Gyro

-Freewing Guard six axis gyro further enhances flight quality and brings a better experience.

(Only partially included in the configuration)

### Center of Gravity

-There is a relief style CG marking line on the lower surface of the main wing, which can intuitively locate the center of gravity position and achieve quick calibration without the need to consult technical data.



**Standard Version**

Wingload: 113 g/dm<sup>2</sup>  
 Servo: 9g Digital plastic servo (1pcs)  
 9g Hybrid digital servo (9pcs)

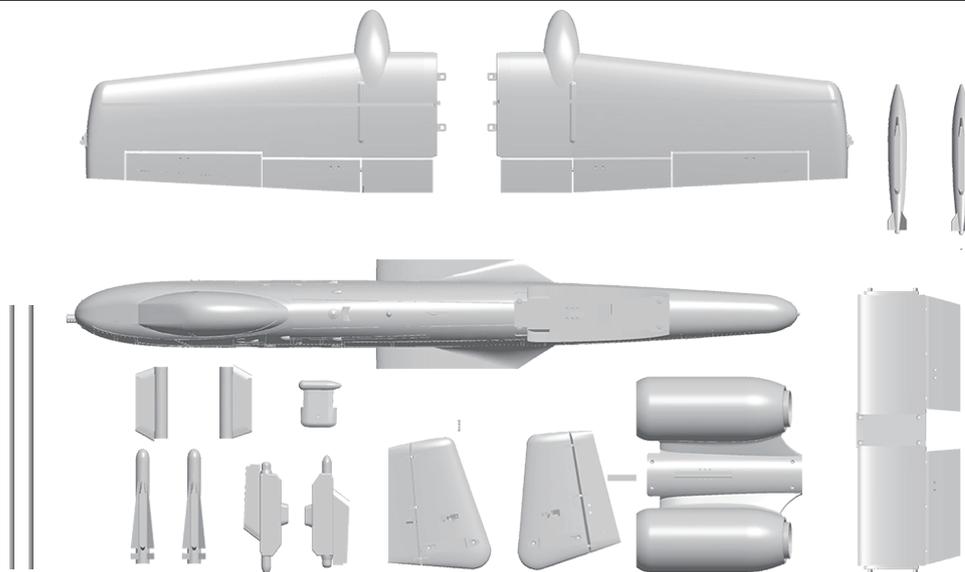
Motor: 2840-2200KV O/R Motor  
 Ducted fan: 64mm 12-blade fan  
 ESC: 50A Brushless ESC×2(7A UBEC)  
 Weight: 2212g(w/o Battery W/O Missile)

**Other Notes**

Landing gear: Electric landing gear  
 Li-Po Battery: 6S 4000-5000mAh  
 Cabin doors: Nose gear electric cabin door  
 Other: LED navigation lights,  
 simulated formation lights

**⚠ 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
1	Fuselage	Pre-installed all electronic parts	Pre-installed servo
2	Main wing	Pre-installed all electronic parts	Pre-installed servo
3	Vertical tail	Pre-installed all electronic parts	Pre-installed servo
4	Horizontal tail	Pre-installed all electronic parts	Pre-installed servo
5	Engine compartment	Pre-installed all electronic parts	✓

No.	Name	PNP	ARF Plus
6	Carbon tube	✓	✓
7	Missile	✓	✓
8	Annex bag	✓	✓
9	Manual	✓	✓

### Traction steelwire use instruction

Through investigation, excessive servo extension line will increase the risk of poor contact joints, and lead to the servo outages caused flight accidents. Because of A-10 large and flat trough interior space, we don't use the servo extension wire in this jet. As the below photo shown, package includes a traction steel wire, we can use it to pull the main wing/elevator/rudder servo cables to the battery compartment.

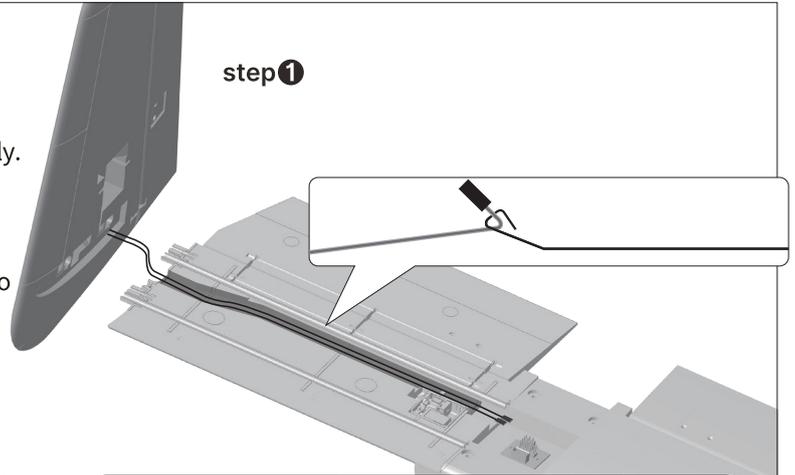
### Install the Vertical tail

As the photo show:

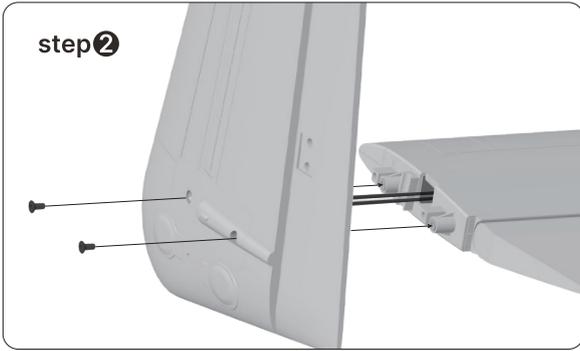
1. Pull the vertical tail servo wire and the formation light wire into the horizontal tail wire slot separately.
2. Install the vertical tail on the horizontal tail and fix the left/right vertical tails with 4 screws.
3. Insert the servo cable and formation light cable into the horizontal tail control board.

Screw (KM 3\*7mm 4PCS)

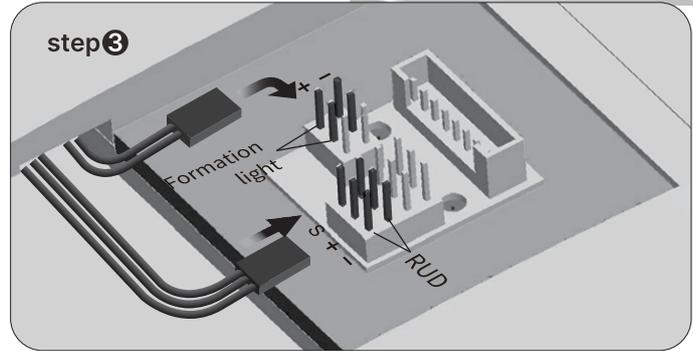
step ①



step ②



step ③

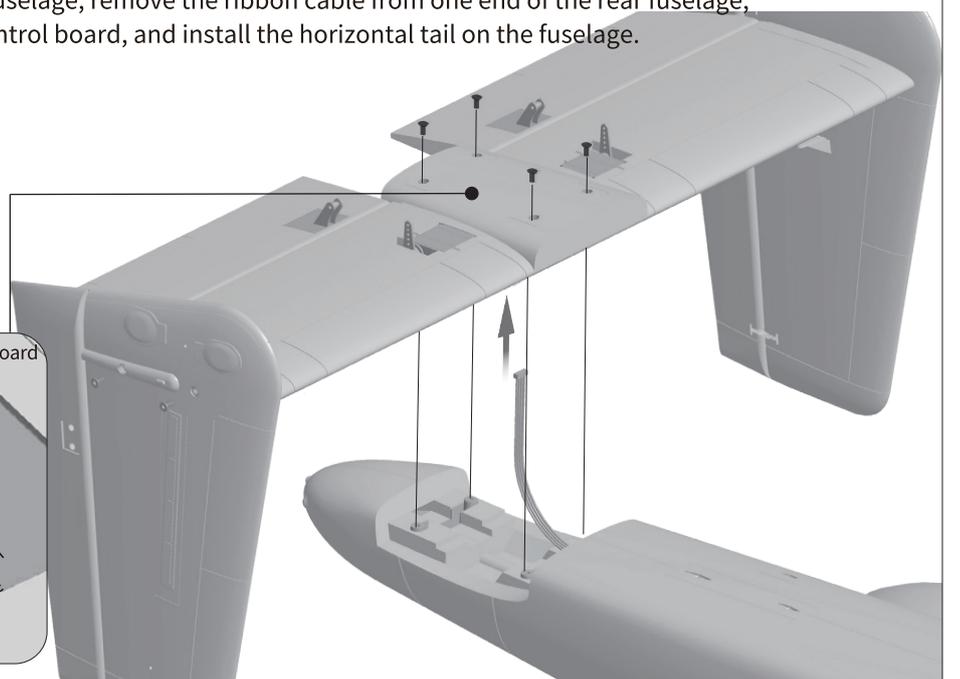
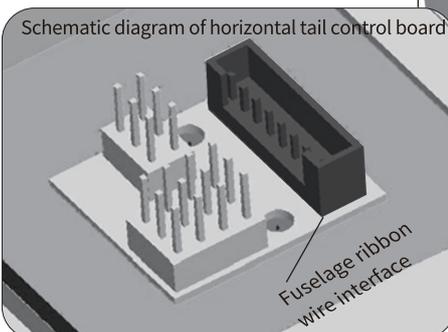


### Install the Horizontal tail

1. Align the horizontal tail with the fuselage, remove the ribbon cable from one end of the rear fuselage, connect it to the horizontal tail control board, and install the horizontal tail on the fuselage.
2. Then fix it with 4 screws.

Screw (KM 3\*7mm 4PCS)

Schematic diagram of horizontal tail control board



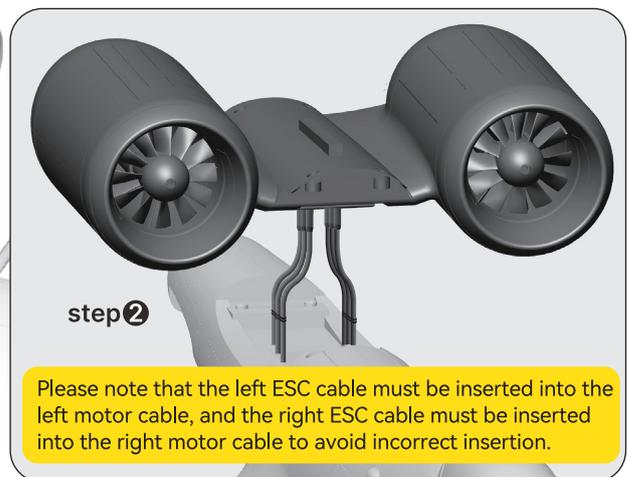
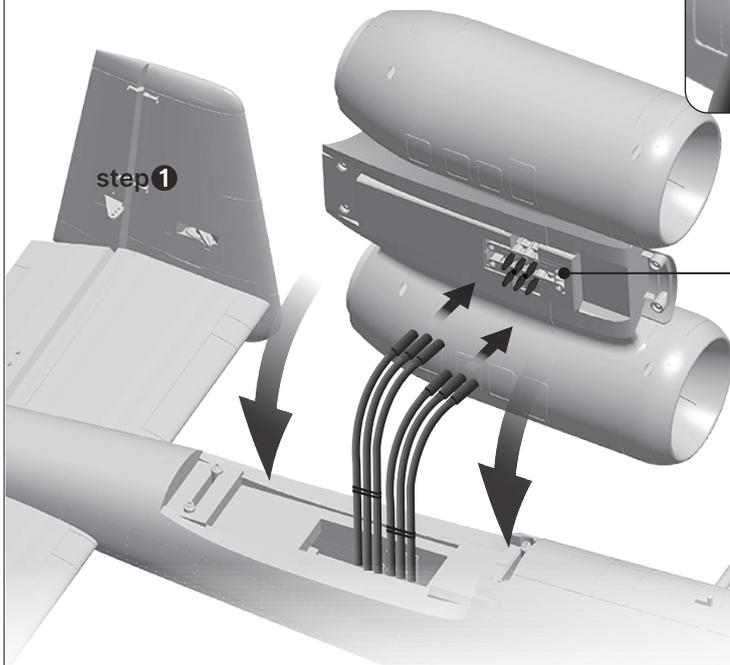
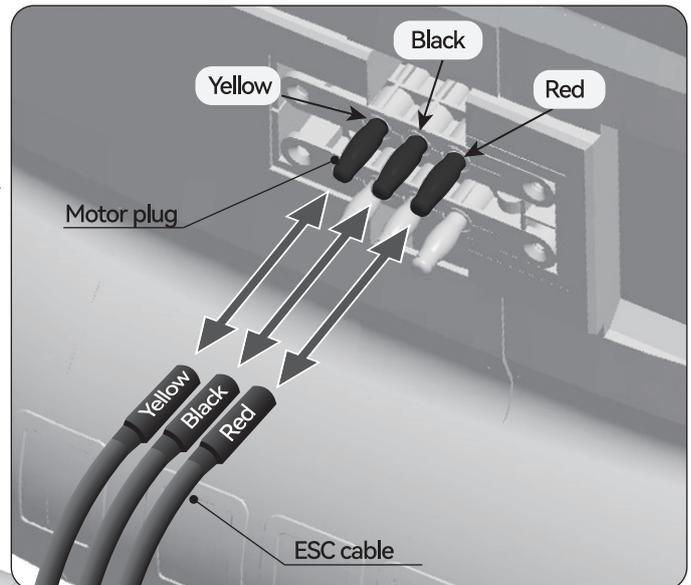
## Install Engine compartment

As the photo show:

1. Align the ESC cable with the motor plug in the engine compartment correctly;
2. Insert the ESC cable into the motor plug of the same color.

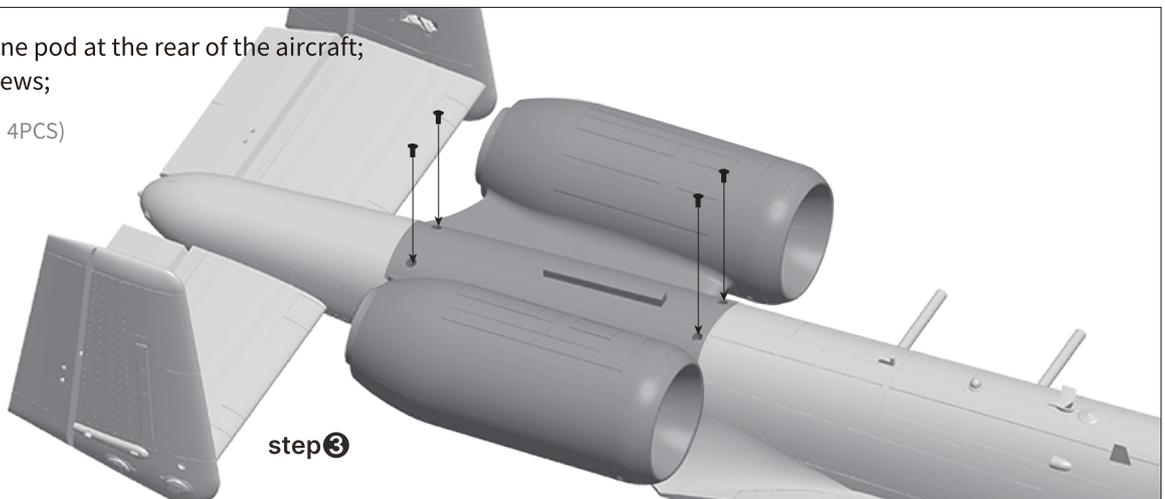
**⚠** Note:

Please note that the ESC cable of the same color heat shrink tubing is inserted into the motor plug of the same color heat shrink tubing.



3. Install the engine pod at the rear of the aircraft;
4. Fix it with 4 screws;

Screw (KM 3\*7mm 4PCS)



## Install Main Wing

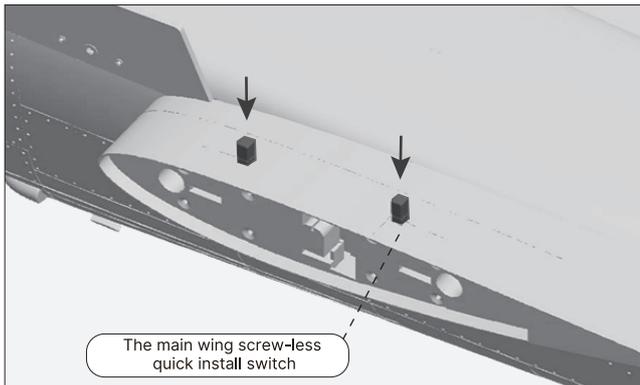
As the photo show: Press the fuselage screw-less quick install switch to unlock it ❶;

- Two different status diagrams of the main wing screw-less quick install switch: (The working mode is to press the button to the bottom and release it. The button pops up to the highest position, which is the unlocked status. Once the button is pressed to the bottom again and released, but the button does not pop up, which is the locked status)

### Unlock status

As shown in the following photo:

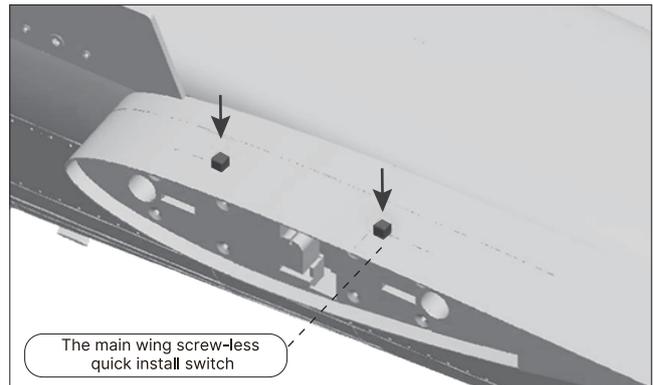
Press the main wing screw-less quick install switch to the bottom and release it. The button pops up to the highest position, indicating that the main wing has been unlocked and can be easily removed and installed.



### Lock status

As shown in the following photo:

After installed the main wing, press again the main wing screw-less quick install switch to the bottom and release it. If the button does not pop up, it is the locked status. At this point, pull the main wing outward and can not remove it.



## Install Main Wing

As the photo show:

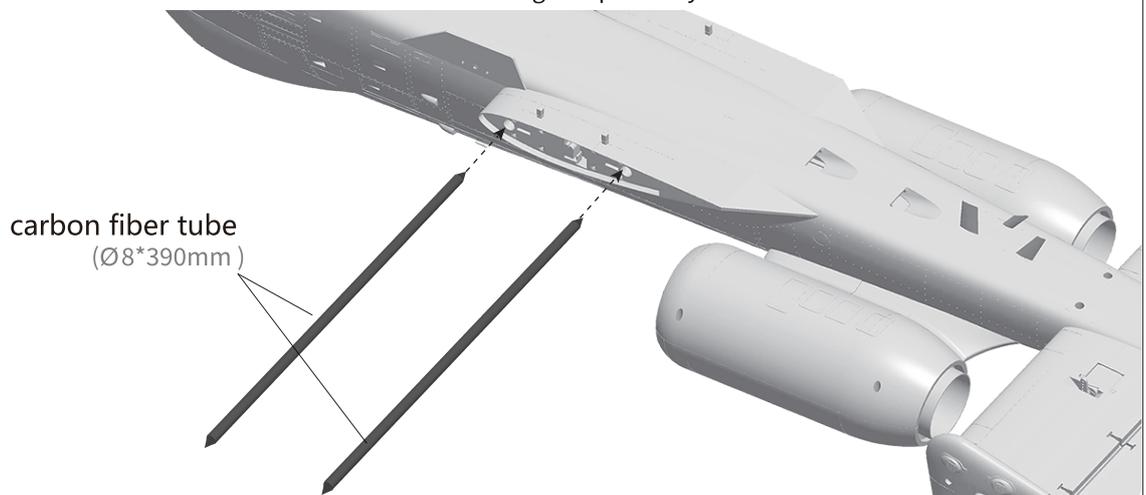
- Use glue to fix the **【 Conical plastic part 】** on two carbon tubes respectively;

Carbon tube (Ø8\*390mm)

Conical plastic parts (Ø8mm)



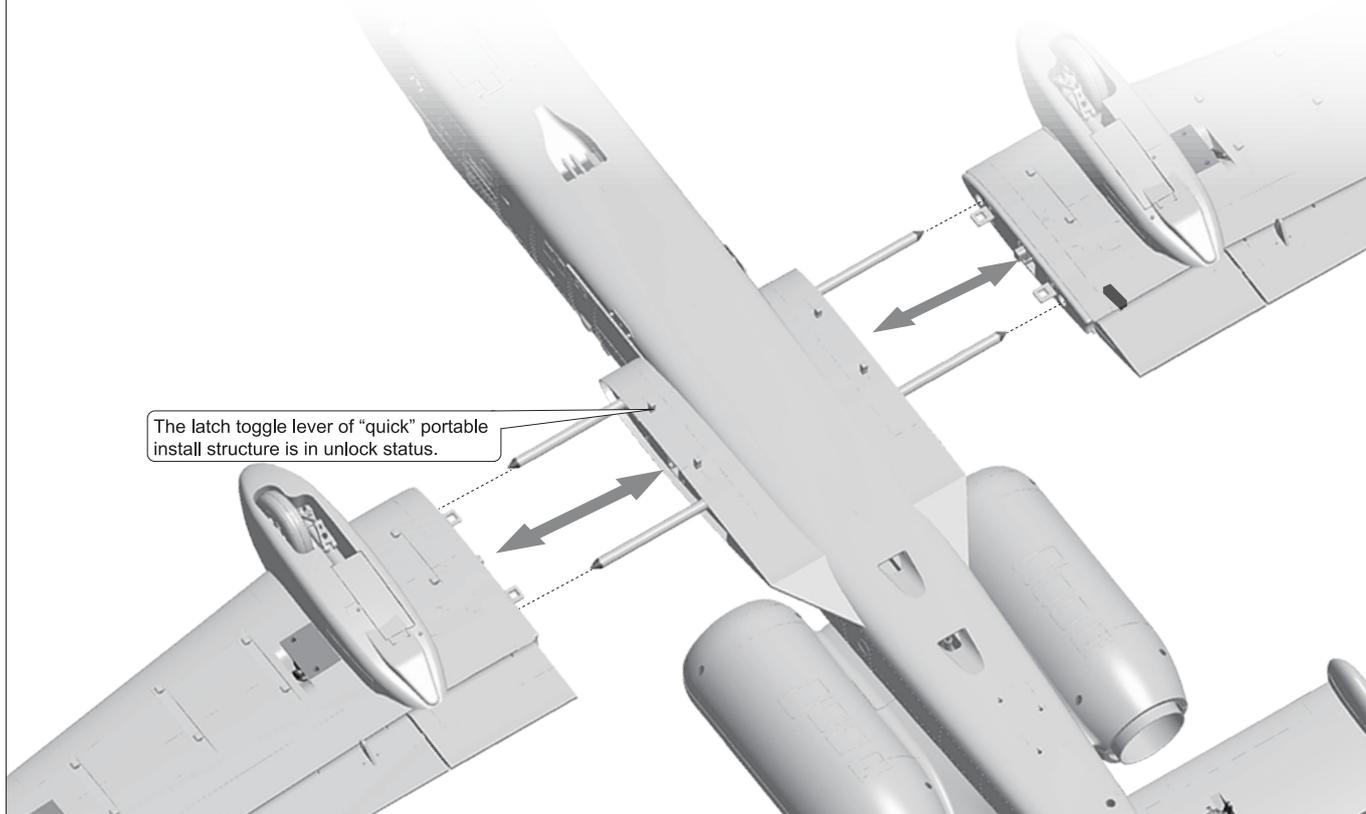
- Insert carbon fiber tube A and carbon fiber tube B into the fuselage respectively



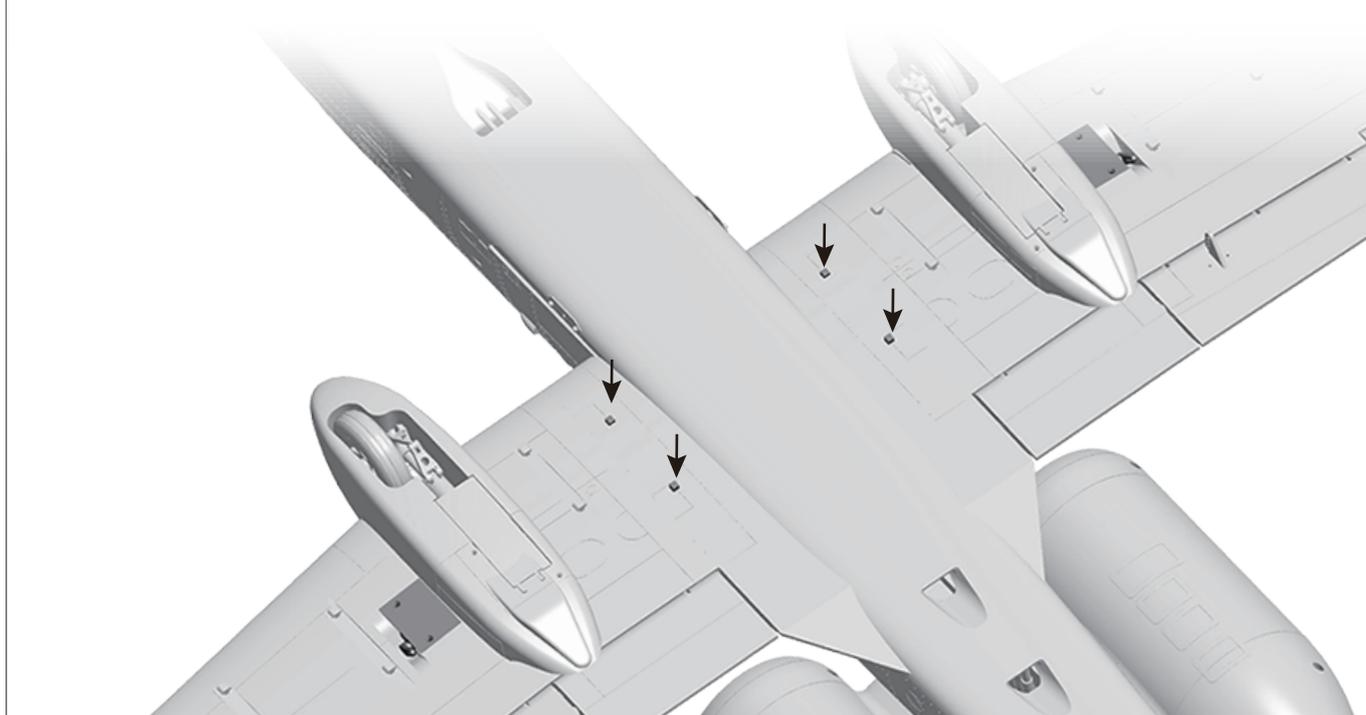
**Install Main Wing**

As the photo show:

3. Install the left and right main wings on the fuselage.

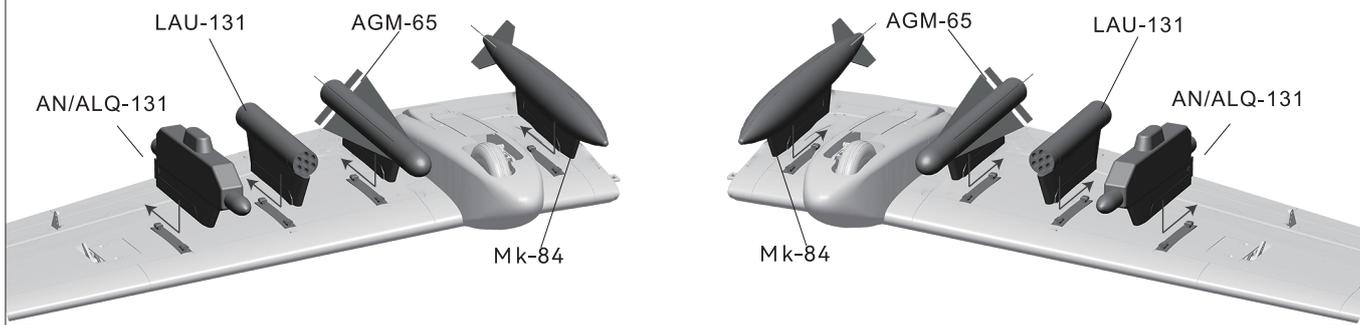


4. Press 4pcs fuselage screw-less quick install switch, put it in the locked status.

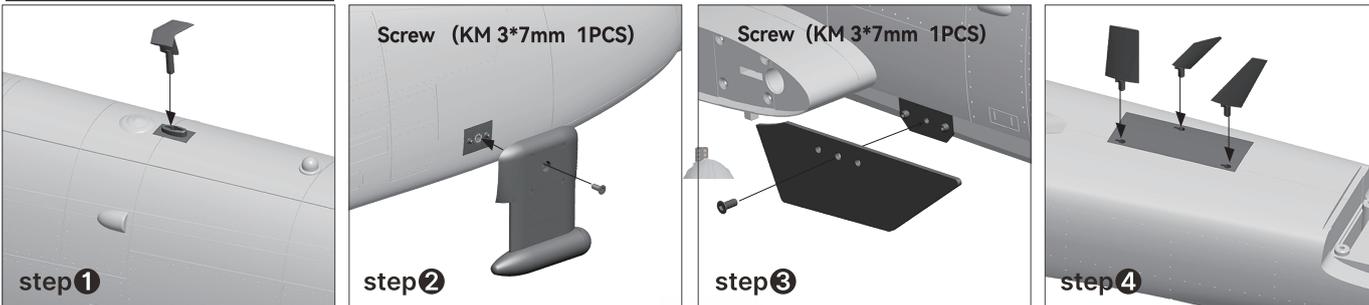


**Install Missiles**

Please install the weapons according to the pictures as below

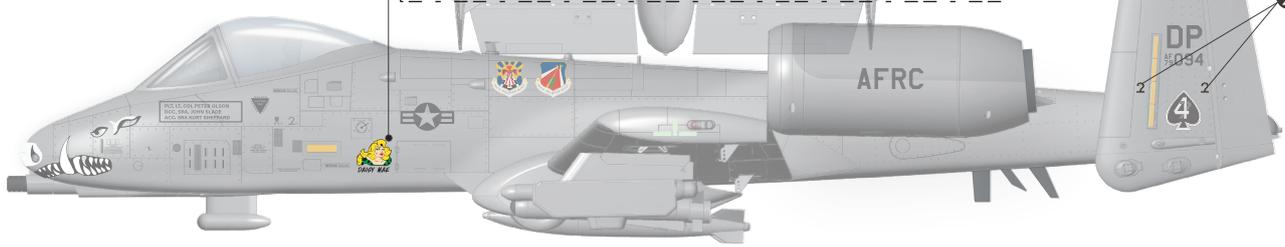
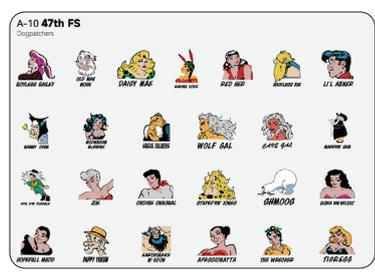
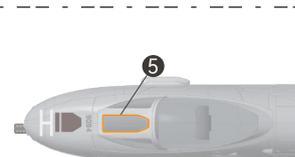
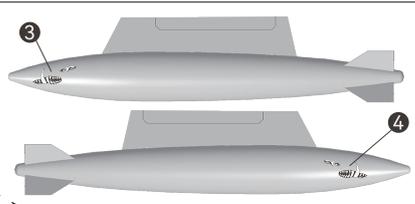
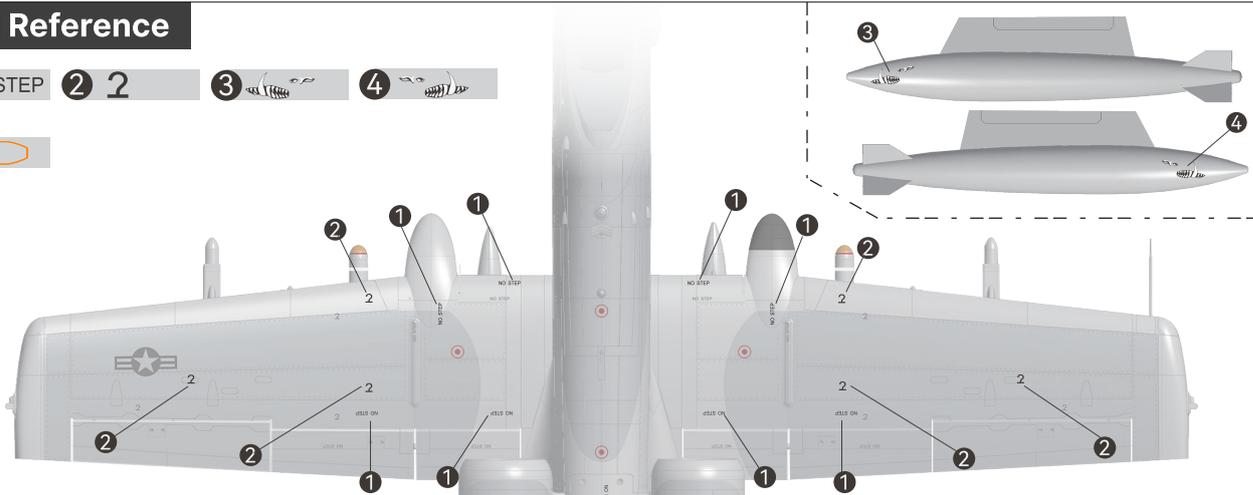


**Install Accessories**



**Decal Reference**

- 1 NO STEP
- 2 2
- 3
- 4
- 5



**Pushrod Instructions**

**Flap pushrod length**



Pushrod diameter  $\varnothing$  1.2mm

**Flap pushrod mounting hole**



**Aileron pushrod length**



Pushrod diameter  $\varnothing$  1.2mm

**Aileron pushrod mounting hole**



**Elevator pushrod length**

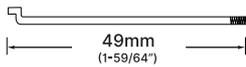


Pushrod diameter  $\varnothing$  1.2mm

**Elevator pushrod mounting hole**



**Rudder pushrod length**



Pushrod diameter  $\varnothing$  1.2mm

**Rudder pushrod mounting hole**



**Nose gear steering pushrod length**

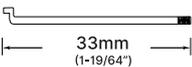


Pushrod diameter  $\varnothing$  1.5mm

**Nose gear steering pushrod mounting hole**



**Nose Cabin door pushrod length**



Pushrod diameter  $\varnothing$  1.2mm

**Nose Cabin door pushrod mounting hole**



**Nose follow Cabin door pushrod length**

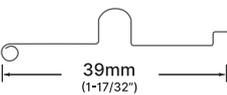


Pushrod diameter  $\varnothing$  1.2mm

**Nose follow Cabin door pushrod mounting hole**

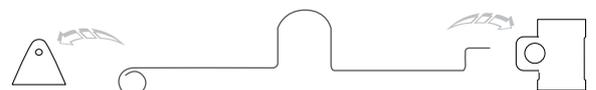


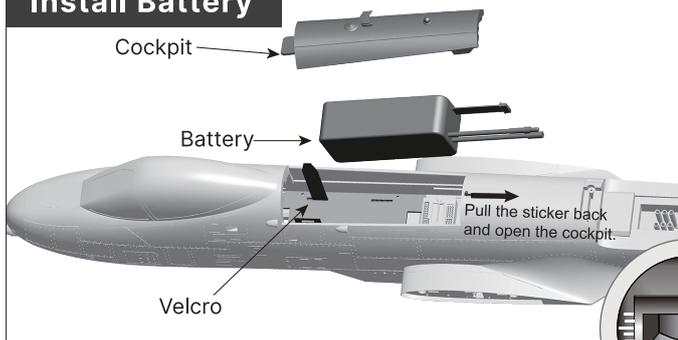
**Rear follow Cabin door pushrod length**



Pushrod diameter  $\varnothing$  0.6mm

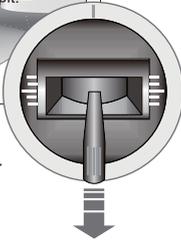
**Rear follow Cabin door pushrod mounting hole**



**Install Battery**

Battery cabin size: L=230 W=63 H=68(mm)

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.

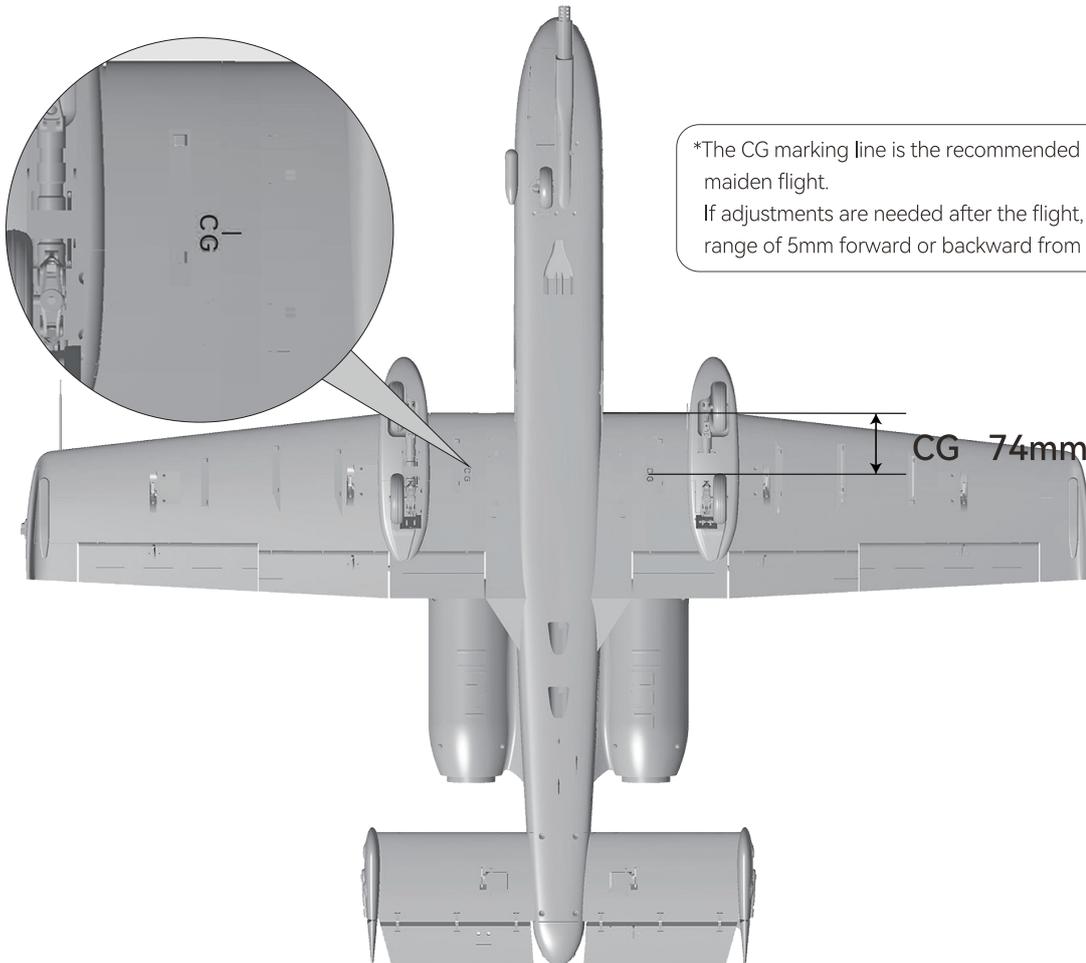


We recommend the following LiPo battery:  
**6S 22.2V 4000mAh~6S 22.2V 5000mAh (1pcs)**  
 Discharge rate of C ≥40C

**Center of Gravity**

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

- Depending on the capacity and weight of your chosen flight batteries, 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.



\*The CG marking line is the recommended center of gravity position for your maiden flight.

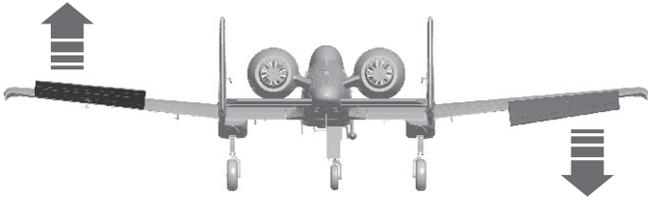
If adjustments are needed after the flight, fine-tuning can be done within a range of 5mm forward or backward from the CG marking line.

After installed this A-10 model plane, please connect to the receiver and power on, then adjust it.

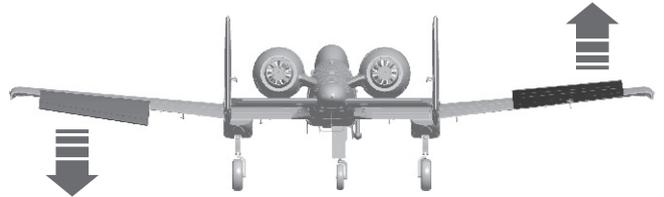
1. When all channels of radio are fine tuned to zero and the control stick is centered: check whether each control surface on the aircraft is in the center position. If it is found that the control surface is not in the center position, please adjust the control rod to center it;
2. Please refer to the diagram below and use the radio to test each control surface to ensure that its movement direction matches the diagram. If the opposite movement occurs, first check whether the relevant channel in the radio has enabled the reverse function; if the problem persists, please contact us for assistance in resolving it.

## Aileron

Stick Left

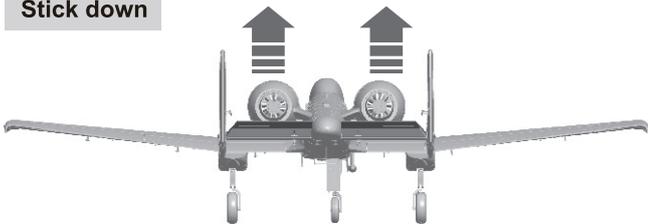


Stick Right

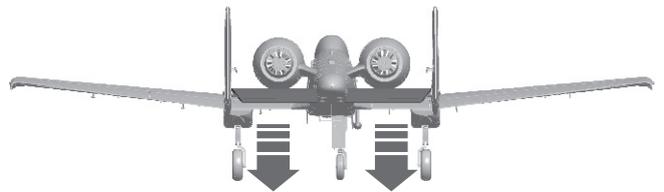


## Elevator

Stick down



Stick up



## Rudder

Stick Left

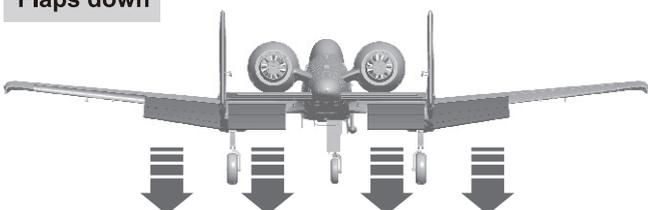


Stick Right



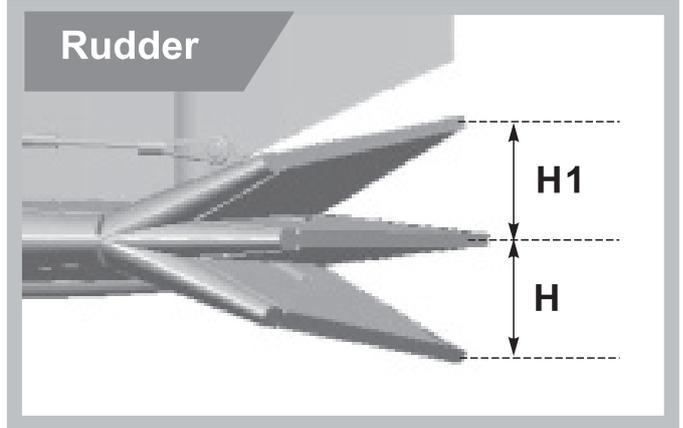
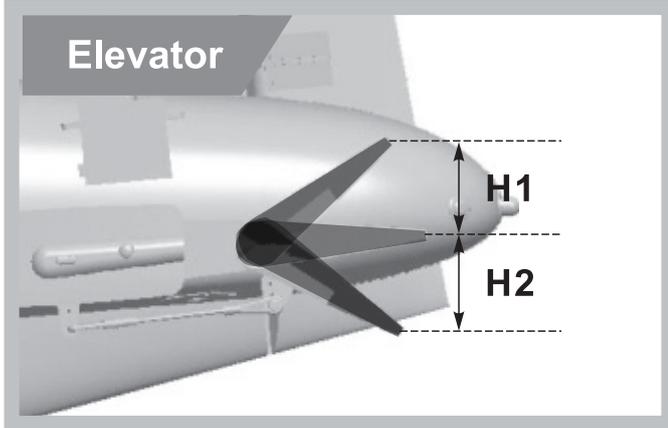
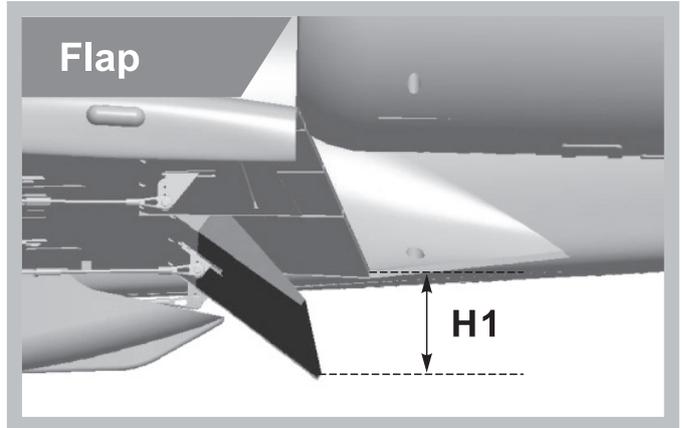
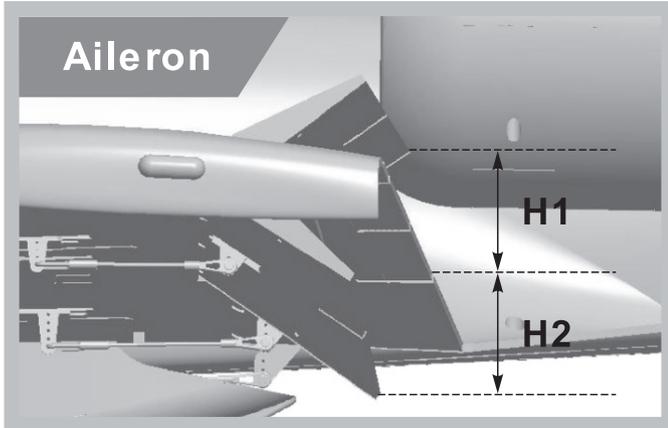
## Flaps

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.



	<b>Aileron</b> (Measured closest to the fuselage)	<b>Elevator</b> (Measured closest to the fuselage)	<b>Rudder</b> (Measured from the bottom)	<b>Flaps</b> Measured closest to the fuselage
<b>Low Rate</b>	H1/H2 21mm/21mm D/R Rate: 100%	H1/H2 11mm/11mm D/R Rate: 80%	H1/H2 13mm/13mm D/R Rate: 80%	H1 10mm
<b>High Rate</b>	H1/H2 24mm/24mm D/R Rate: 120%	H1/H2 15mm/15mm D/R Rate: 100%	H1/H2 16mm/16mm D/R Rate: 100%	H1 15mm

**! Flight Attention:**

**1. Please refer to the right photo and adjust the elevator to the correct center position**

The distance between the elevator rear end and the vertical tail marking : 4mm

**2. Flap-elevator mix parameter**

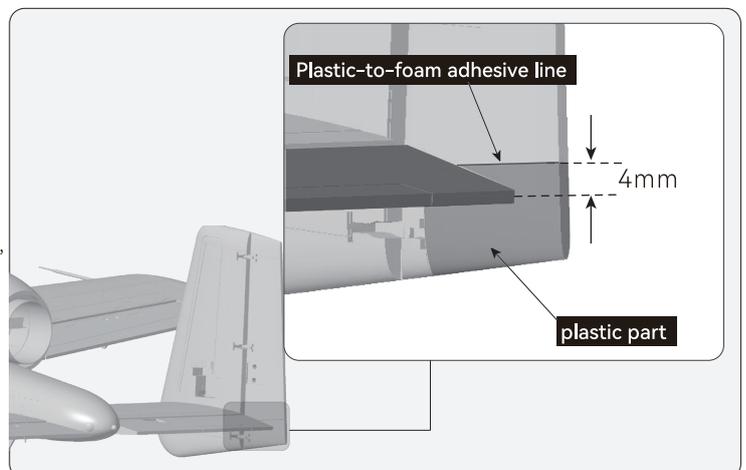
When deploy the flap, the jet will change the flight direction, it will fly up the sky. In order to operate better, we advise you set the "Flap-elevator mix" in radio. In this case, when you deploy the flap, the jet don't change its flight.

The detail is as below:

With low rate flaps deployed, mix 0.8mm of DOWN elevator.

With high rate flaps deployed, mix 1.0mm of DOWN elevator.

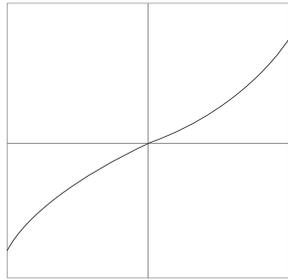
At last, according to your operating, you can increase or reduce its rate



**3. Please note that the elevators on both sides should be adjusted to the same height position for flight stability**

### Remote Control EXP Setting Suggestion

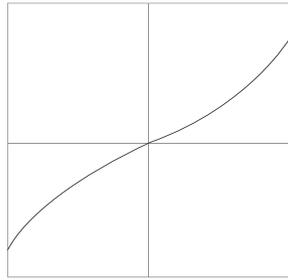
1. Aileron EXP curve is shown as below :



Futaba brand Remote Control : EXP A -30  
EXP B -30

Spektrum brand Remote Control : EXPO 30% 30%

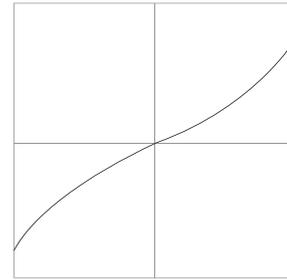
2. Elevator EXP curve is shown as below :



Futaba brand Remote Control : EXP A -40  
EXP B -40

Spektrum brand Remote Control : EXPO 40% 40%

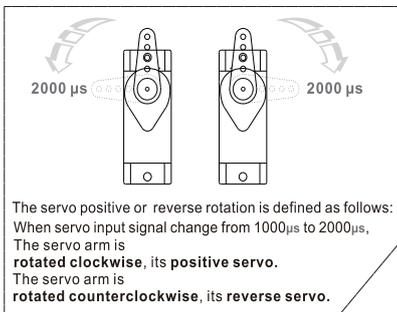
3. Rudder EXP curve is shown as below :



Futaba brand Remote Control : EXP A -30  
EXP B -30

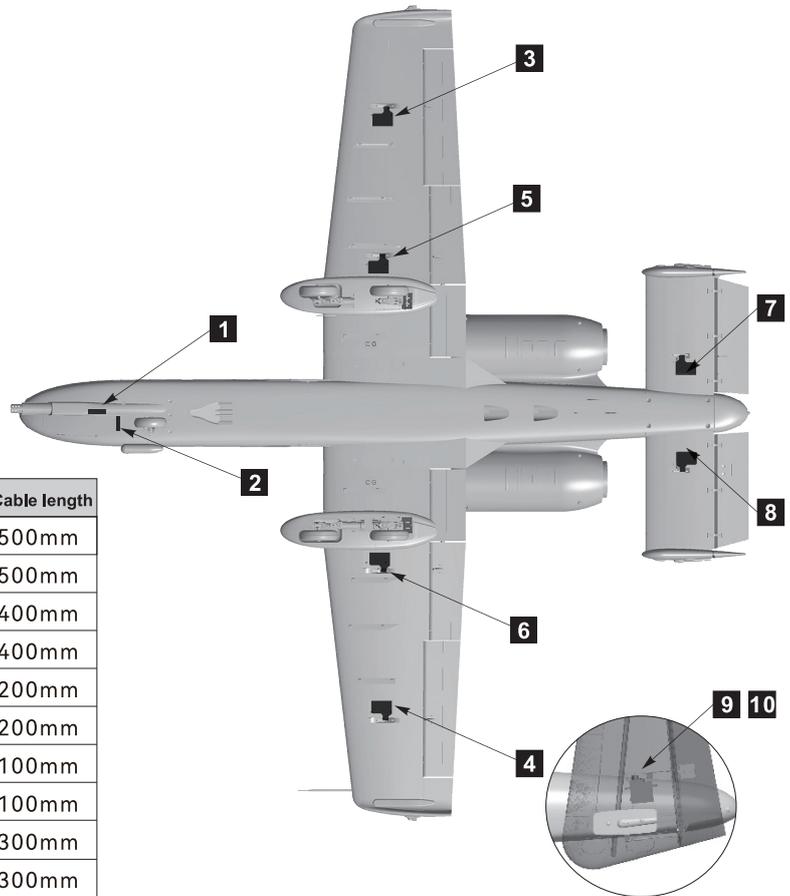
Spektrum brand Remote Control : EXPO 30% 30%

### Servo Direction

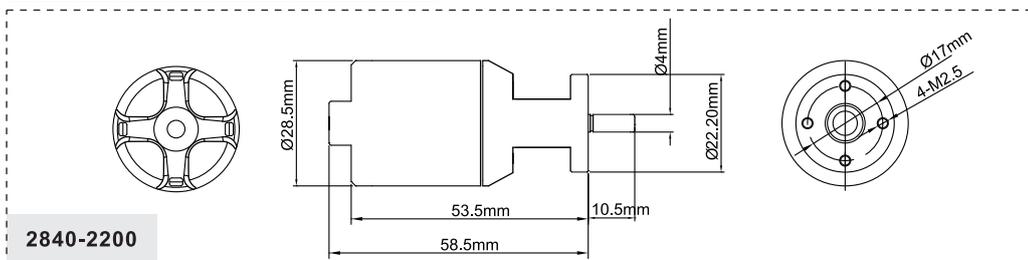


If you need to purchase another brand's servo, please refer to the following list to choose a suitable servo.

Position	Servo regulation	No.	Pos. / Rev.	Cable length
Nose gear steering servo	9g Digital-Hybrid	1	Positive	500mm
Nose cabin door	9g plastic servo	2	Positive	500mm
Aileron(L)	9g Digital-Hybrid	3	Positive	400mm
Aileron(R)	9g Digital-Hybrid	4	Positive	400mm
Flap(L)	9g Digital-Hybrid	5	Positive	200mm
Flap(R)	9g Digital-Hybrid	6	Reverse	200mm
Elevator(L)	9g Digital-Hybrid	7	Positive	100mm
Elevator(R)	9g Digital-Hybrid	8	Reverse	100mm
Rudder(L)	9g Digital-Hybrid	9	Positive	300mm
Rudder(R)	9g Digital-Hybrid	10	Positive	300mm



### Motor Specification



2840-2200KV brushless motor use 6S 22.2V lipo battery and 50A ESC.

**⚠ Note:** If you need other motor to use, please refer to the dimension shown on the left to select your motor, to make sure that the motor you purchased can install successfully.

Model	KV Value	Volute (V)	Current (A)	Pull (g)	RPM	Weight (g)	No Load Current	Propeller	ESC
2840-2200KV	2200RPM/V	22.2	50	1400	48800	151	2.7A	64mm Ducted Fan	50A