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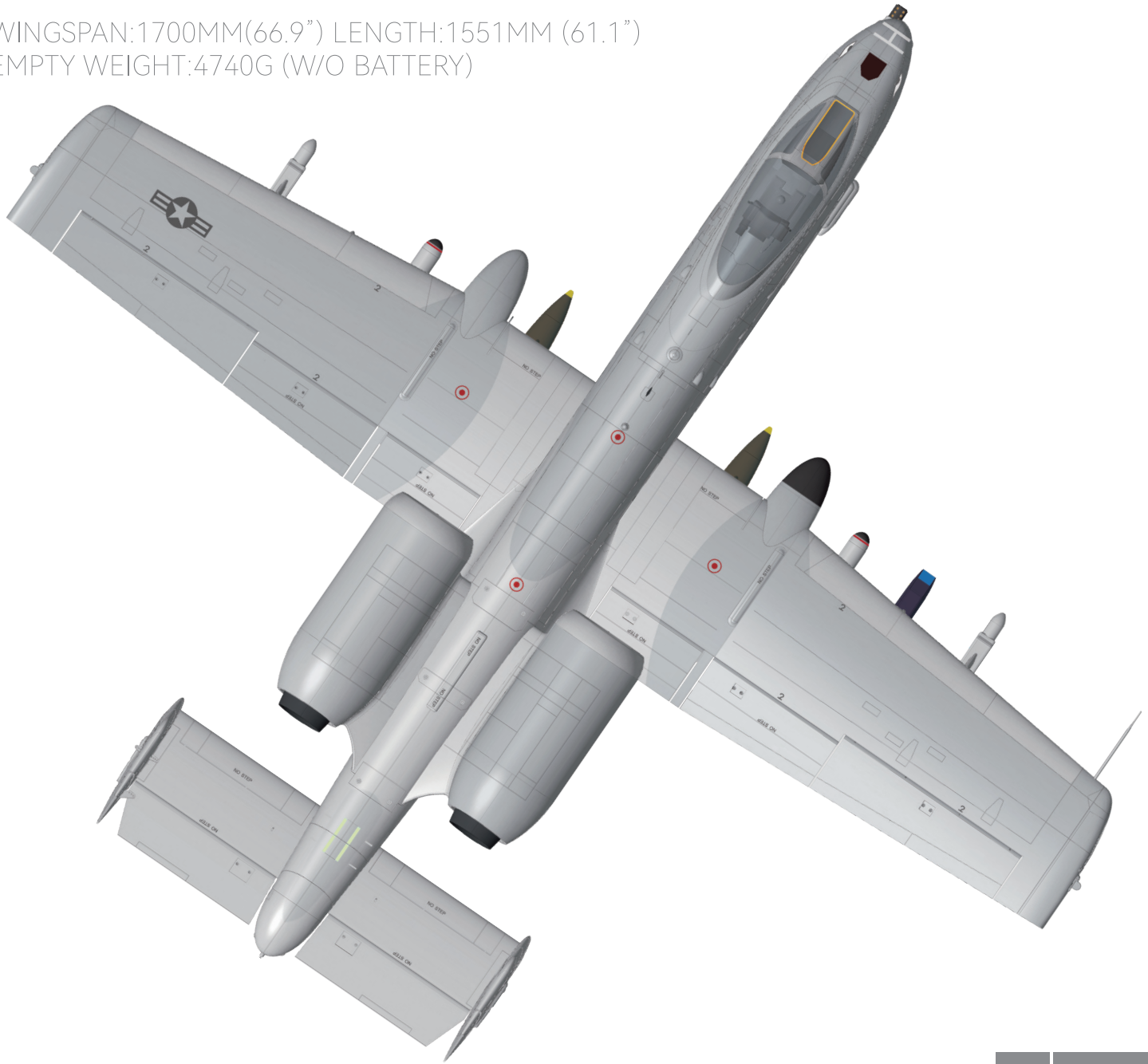
A-10 Thunderbolt II V2

Twin 80mm EDF Jet

USER MANUAL

WINGSPAN:1700MM(66.9") LENGTH:1551MM (61.1")
EMPTY WEIGHT:4740G (W/O BATTERY)



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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 combustionand 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.

Freewing A-10 introduction

Thank you for purchasing our Freewing twin 80mm EDF super scale electric model jet A-10 Thunderbolt II V2. 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.

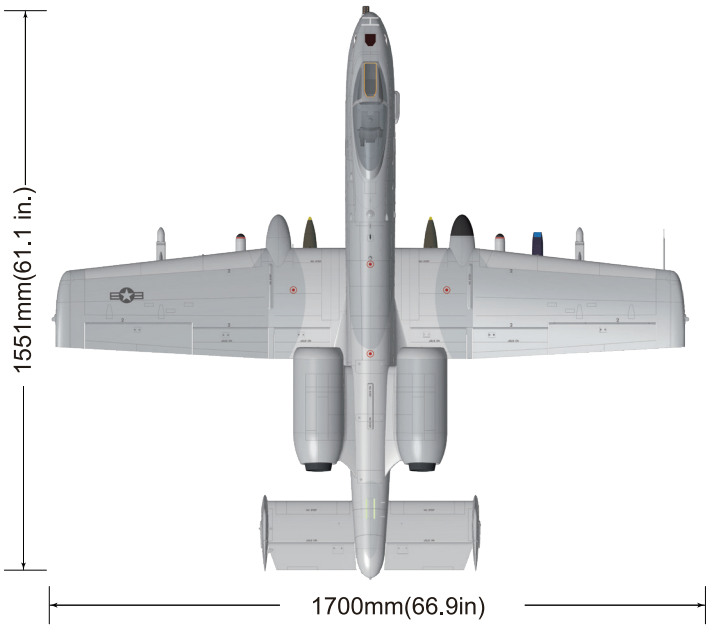
The V2 version, which has undergone significant updates, has many changes compared to the original version. The specific improvement content is as follows:

-Adopt QUICK II screw-less portable install structure of main wing
-Quick disassembly of front and rear fuselage
-Add plastic protective covers along the edge of the battery compartment
-The mounting type of AAS-35 receiver pod adopts a slide rail structure
-Upgrade and repair the appearance of AAS-35 receiver pod
-The mounting type of Wing root fuselage strake adopts a slide rail structure
-Optimize the battery compartment space and further expand the flexibility of battery usage;
-The CNC shock-absorbing landing gear with high simulation appearance has been sprayed with white paint at factory.
-Add main landing gear doors;
-Horizontal tail optimization design, adopts new elevator horn and use the 23g servo.
-Optimize the appearance of the front landing gear taxi lights and increase the number of lights.
-Add simulated formation lights
-Add the effect of GAU-8 cannon lights
-Simplify the circuit connection
-Use mechanical screws for assembly to improve service life.
-Glue free installation of small antenna components for easy storage.
-Add a plastic protective cover on the lower end face of the vertical tail to prevent it from touching the ground and scratching the vertical tail.

Freewing dual 80mm A-10 Thunderbolt II V2 has a wingspan of 1700mm, a length of 1551mm,and a weight of 4740g (PNP weight don't include the battery). Grey camouflage color scheme, universal decals already attached at the factory. And three different decals are given as gifts for you to choose from. The new front and rear landing gear design not only improves the simulation of the aircraft, but more importantly, its shock absorption effect is more obvious, effectively reducing bounce during grounding. The new combination of taxi lights and formation lights further enhances the aircraft's aerial recognition and makes it more realistic. In addition, the GAU-8 cannon light controlled by a separate switch channel simulate the fireworks effect when the cannon fires through high-frequency flashing, bringing you extra flying fun! The new structural optimization and QUICK II screw-less portable install structure of main wing make the assembly of this product easier and more convenient. The assembly process does not require any glue, making it easy to repackage the product and replace non-destructive parts.

After a series of optimization updates, this A-10 Thunderbolt II model jet has increased its weight by 400 grams compared to the V1 version, and the unit wing load has increased from 123g/dm^2 to 131.4g/dm^2, with a relatively small increment. During the comparative testing of the two versions, the aerial flight experience is consistent. The optimized V2 version makes it easier to maintain a certain angle of attack at low speeds during landing and slowly land on the ground.

Thank you again. We wish you a successful flight!



Standard Version

Wingload：131 g/dm²
Servo：9g MG Digital Servo (1pcs)
17g MG Digital Servo (7pcs)
23g MG Digital Servo (2pcs)
30g MG Digital Servo (2pcs)
Motor：3530-1900KV O/R Motor
Ducted fan：80mm 9-blade fan
ESC：100A Brushless ESC(8A UBEC)×2
Weight：4740g(w/o Battery)
Thrust：5800g

Upgrade Version

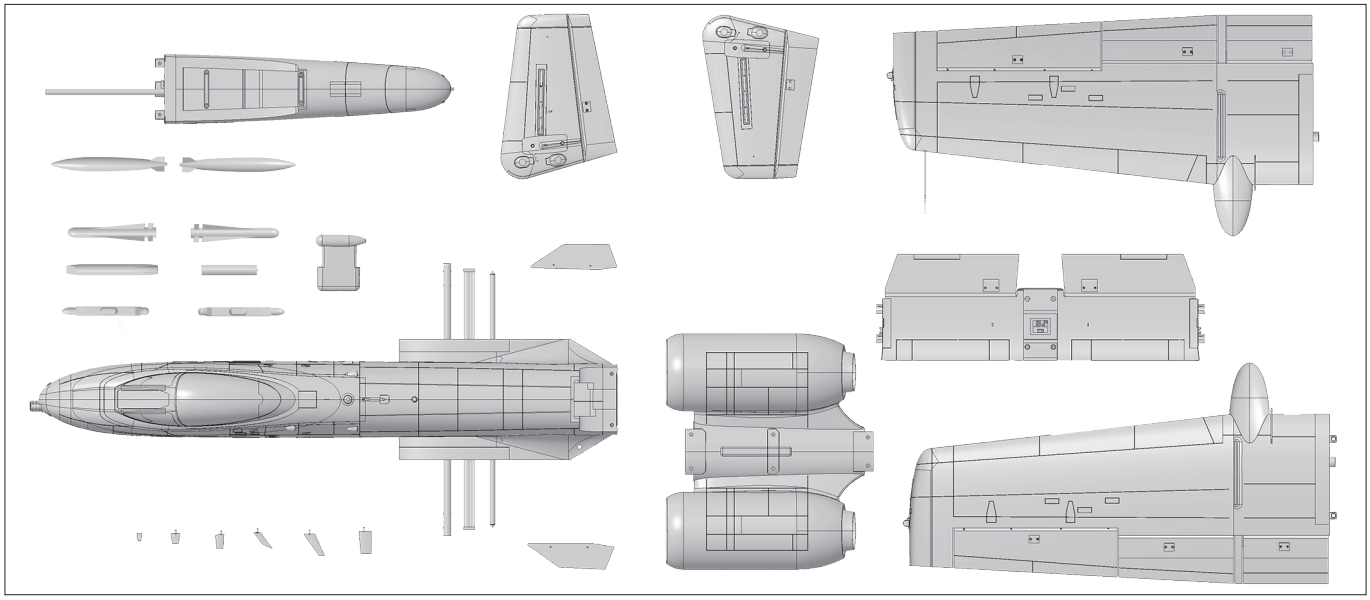
Wingload：134 g/dm²
Motor：3658-2150KV I/R Motor
Ducted fan：80mm 12-blade fan
Weight：4874g(w/o Battery)
Thrust：6600g

Other Notes

Landing gear：Electric landing gear
Li-Po Battery：6S 5000-6000mAh
Cabin doors: Nose gear electric cabin door
Other: LED navigation lights、cannon 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 a ccessories, we are not able to provide technical support.

Package List www.freewing-model.com



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	Cockpit	√	√
8	Landing gear	√	√
9	Missile，Annex bag	√	√
10	Manual	√	√

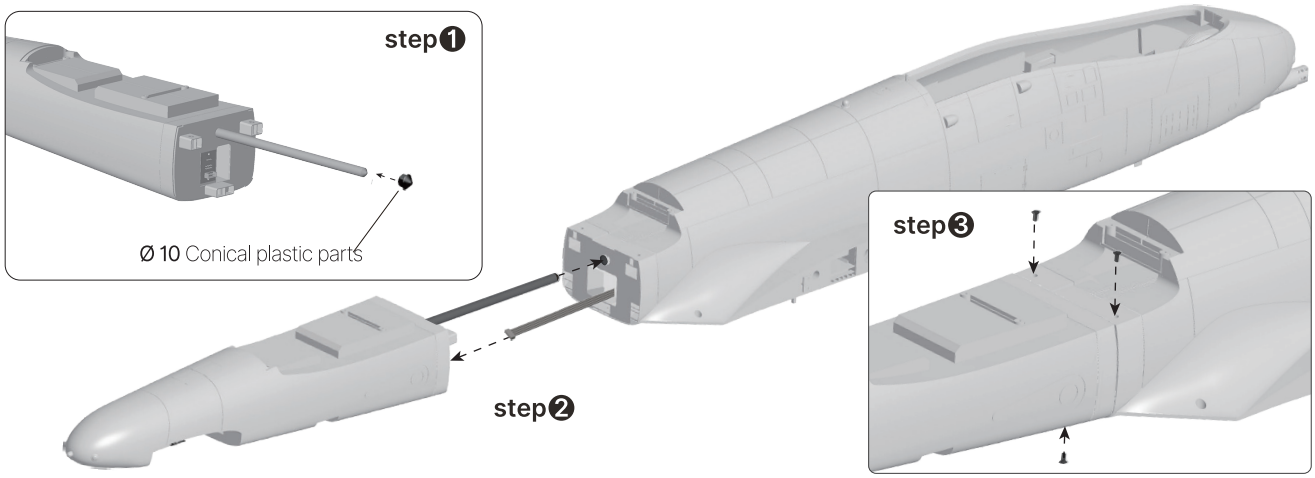
Traction steelwire use instruction

Through investigation, excessive servo extension line will increase the risk of poor contact ioints, and lead to theservo 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 fuselage

1. Use glue to fix the guide cone onto the carbon tube of the rear fuselage;
2. Align the carbon tube of the rear fuselage with the front fuselage, remove the ribbon cable from one end of the front fuselage, connect it to the socket of the rear fuselage (connect the wires of the front and rear fuselage), and install the front fuselage into the rear fuselage.
3. Then tighten with screws.

Screw (KM 3*7mm 3PCS)

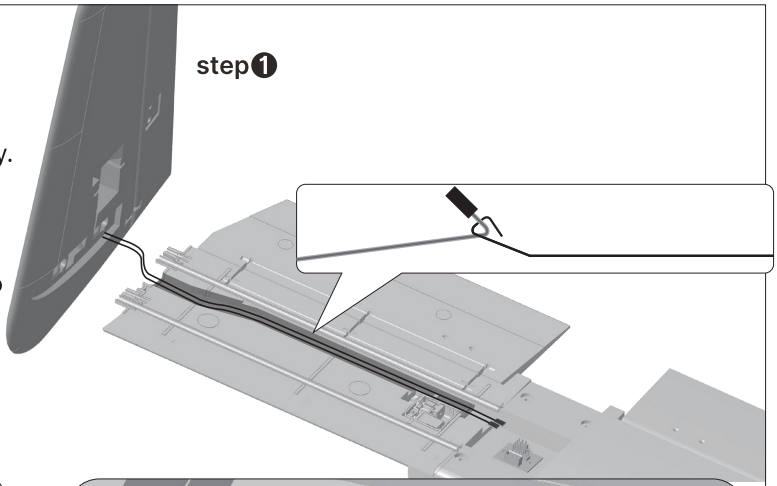


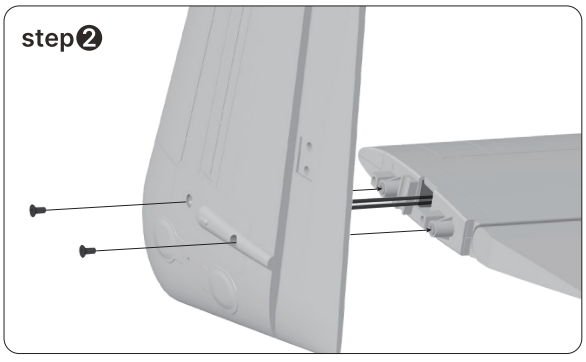
Install the Vertical tail

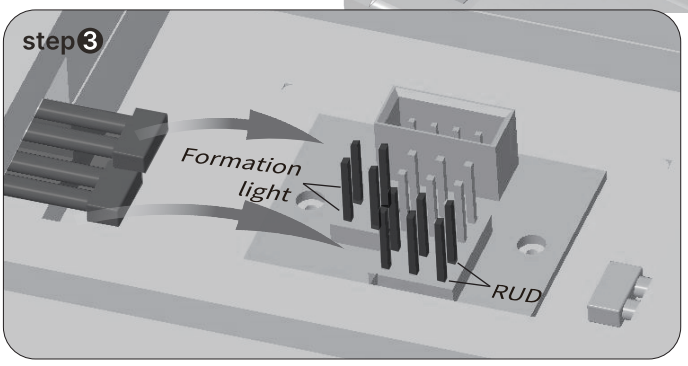
As the photo show:

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 (PA 3*7mm 4PCS)



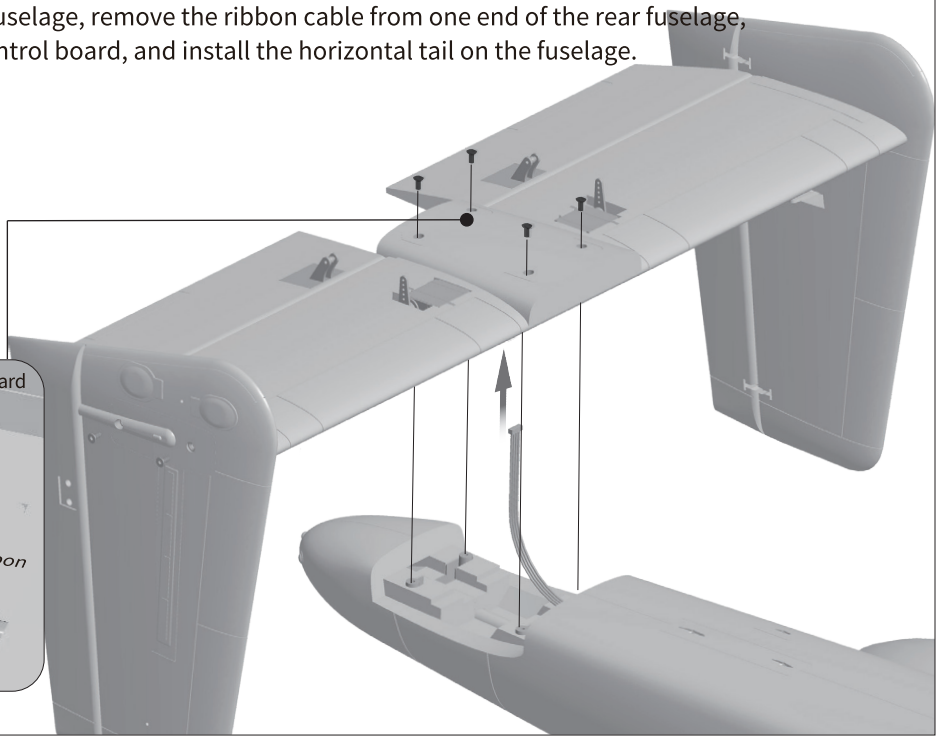


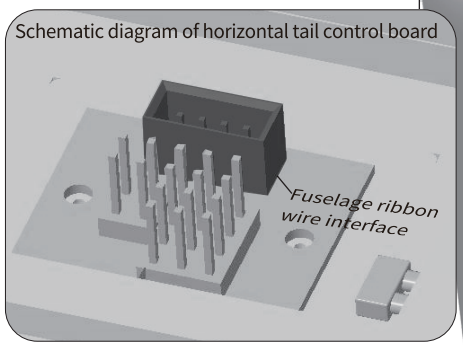


Install the Horizontal tail

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.

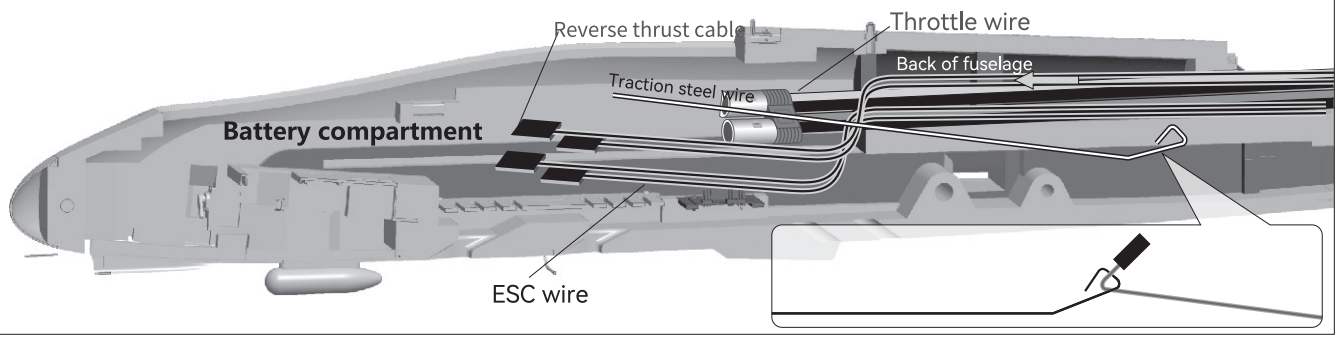
Screw (PA 3*7mm 4PCS)



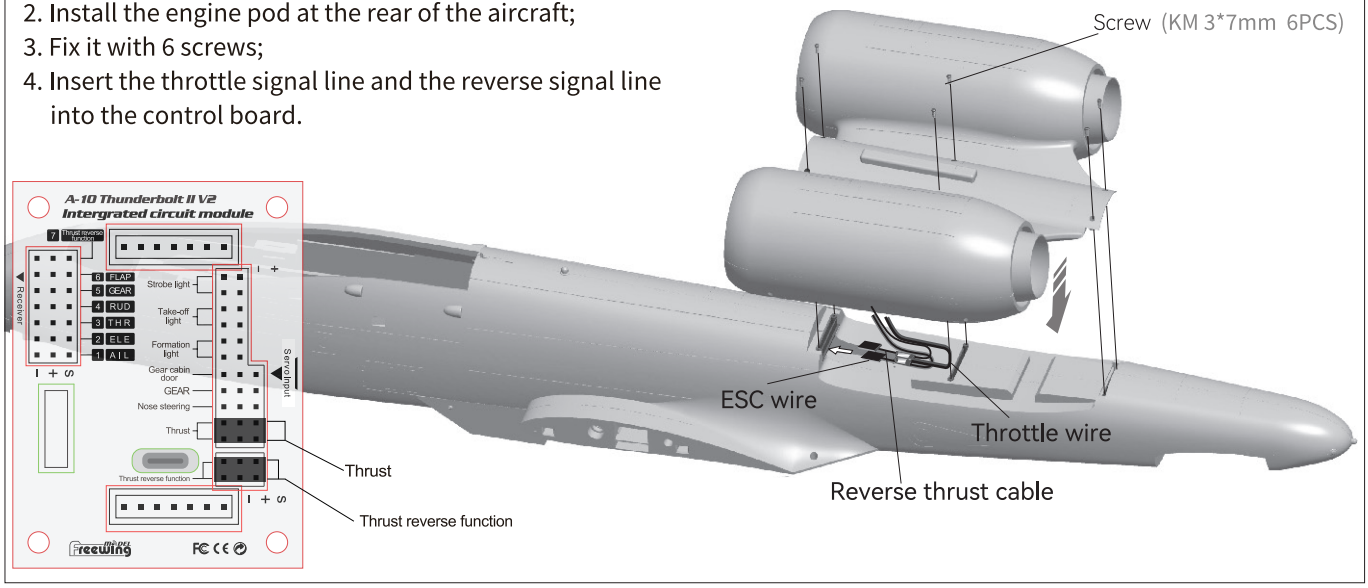


Install Engine compartment

1. Pull the ESC cable, throttle cable, and reverse thrust cable into the battery compartment separately



2. Install the engine pod at the rear of the aircraft;
3. Fix it with 6 screws;
4. Insert the throttle signal line and the reverse signal line into the control board.



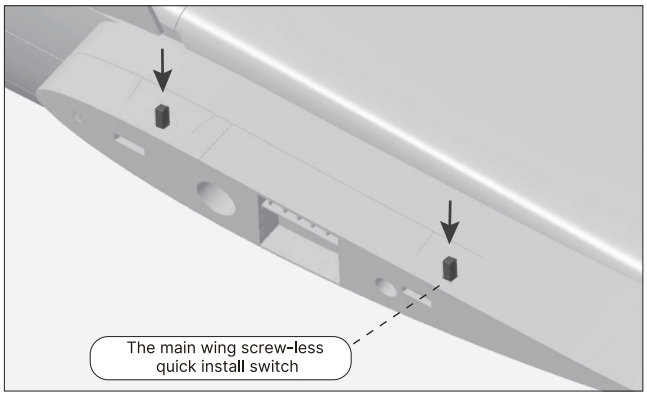
Install Main Wing

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

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)

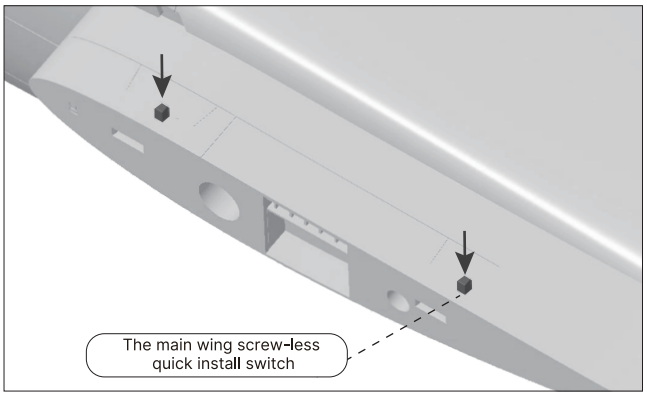
Unlock status

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.



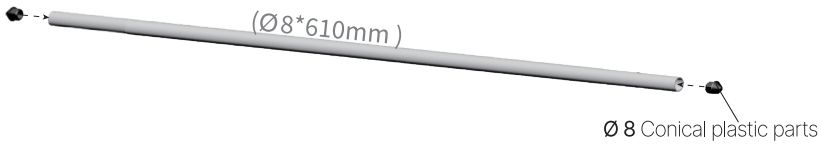
Install Main Wing

As the photo show:

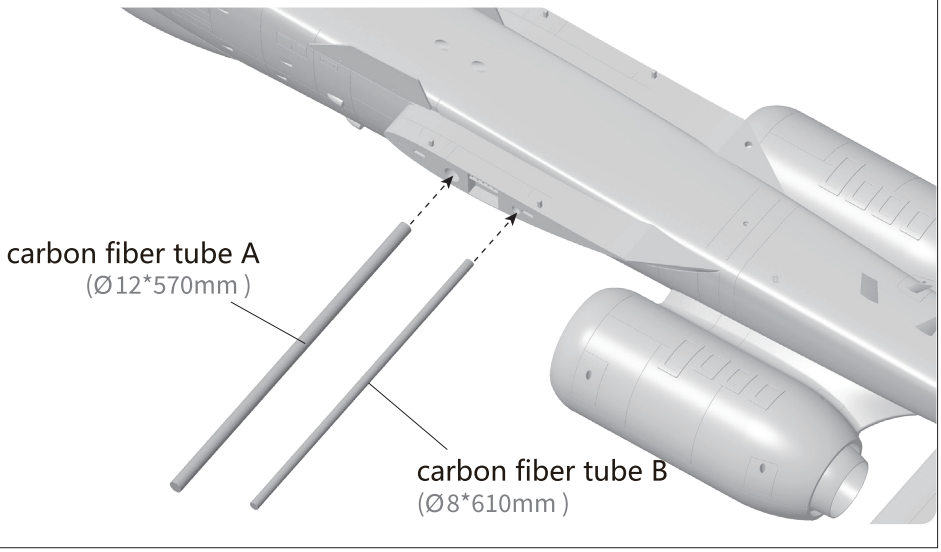
1. Use glue to fix the 【 Conical plastic part 】 on two carbon tubes respectively;

Carbon tube (Ø8*610mm 1PCS)

Conical plastic parts (Ø8mm 2PCS)



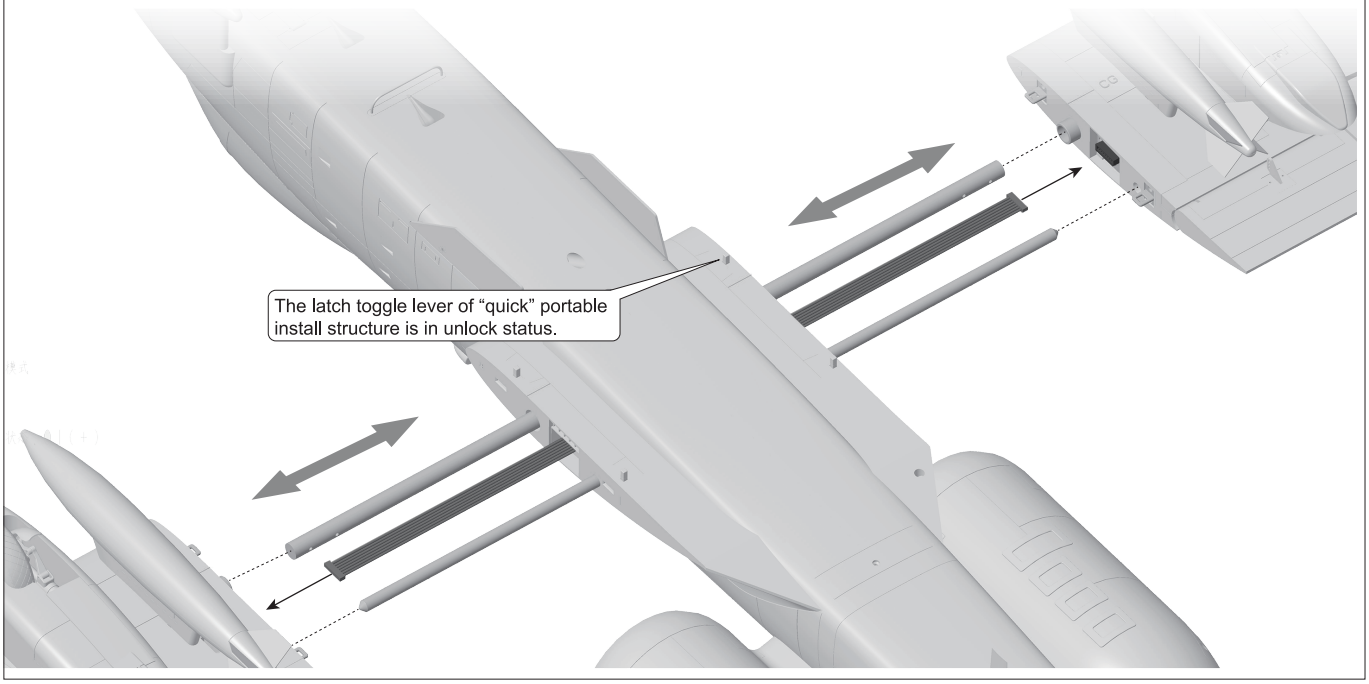
2.Insert carbon fiber tube A and carbon fiber tube B into the fuselage respectively



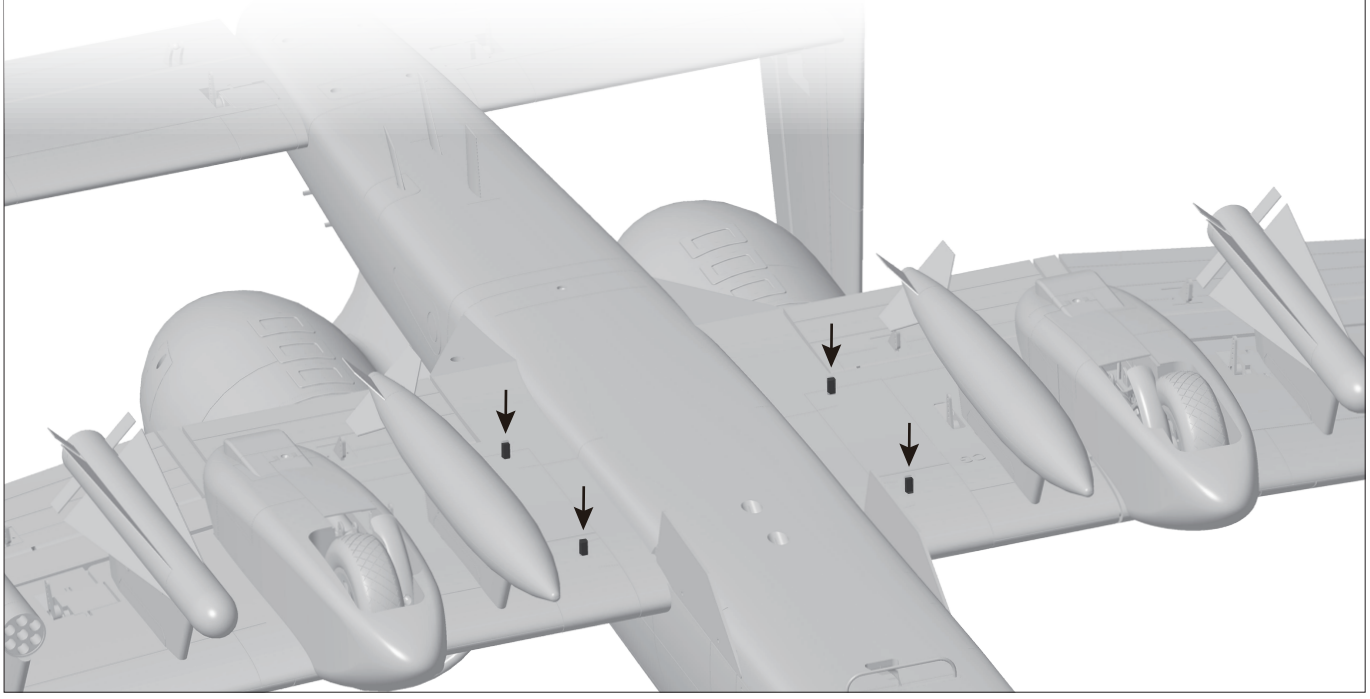
Install Main Wing

As the photo show:

3.Insert the ribbon cable into the main wing control board, and then install the left and right main wings on the fuselage.

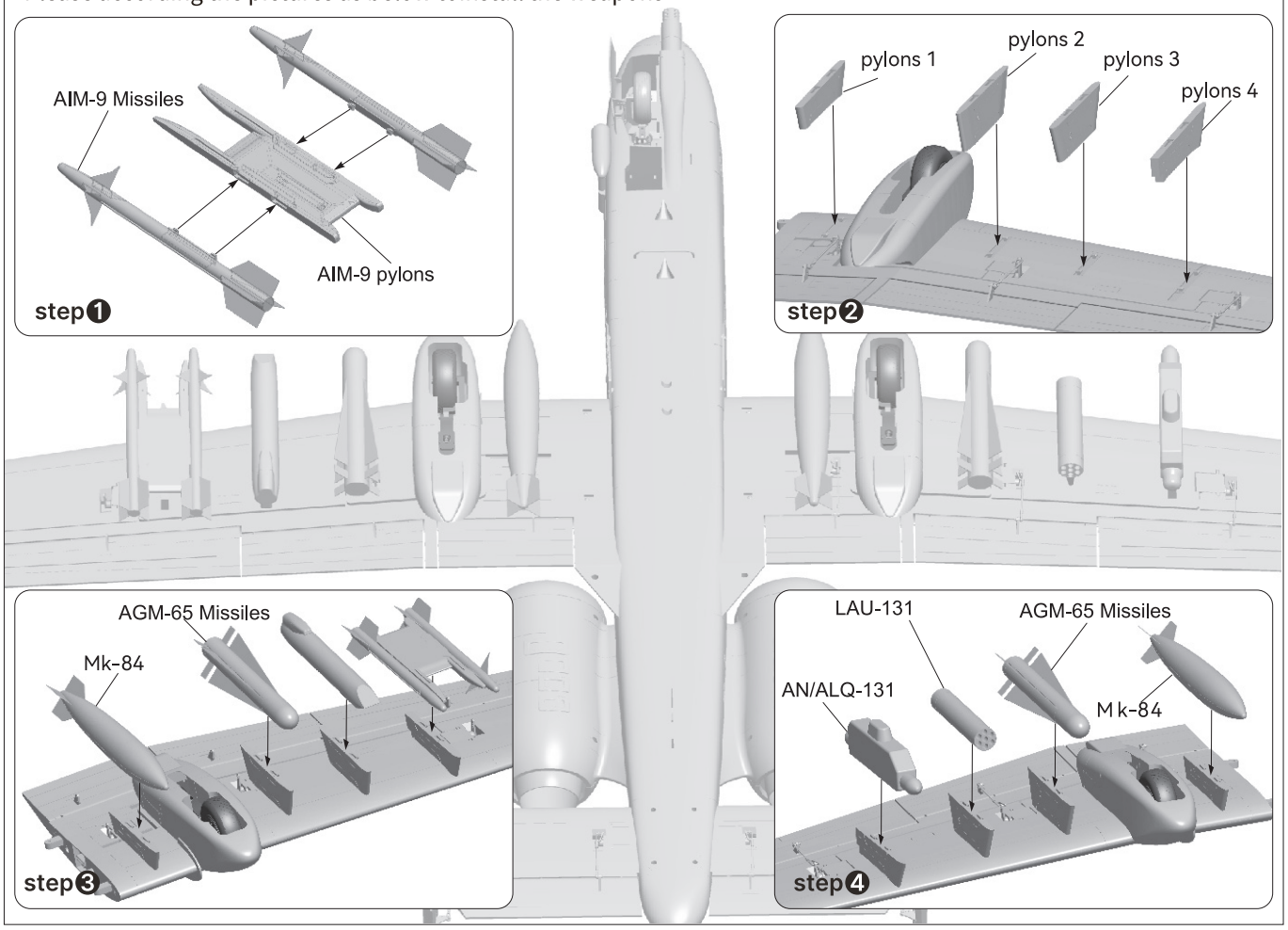


4. Press 4pcs fuselage screw-less quick install switch, put it in the locked status.

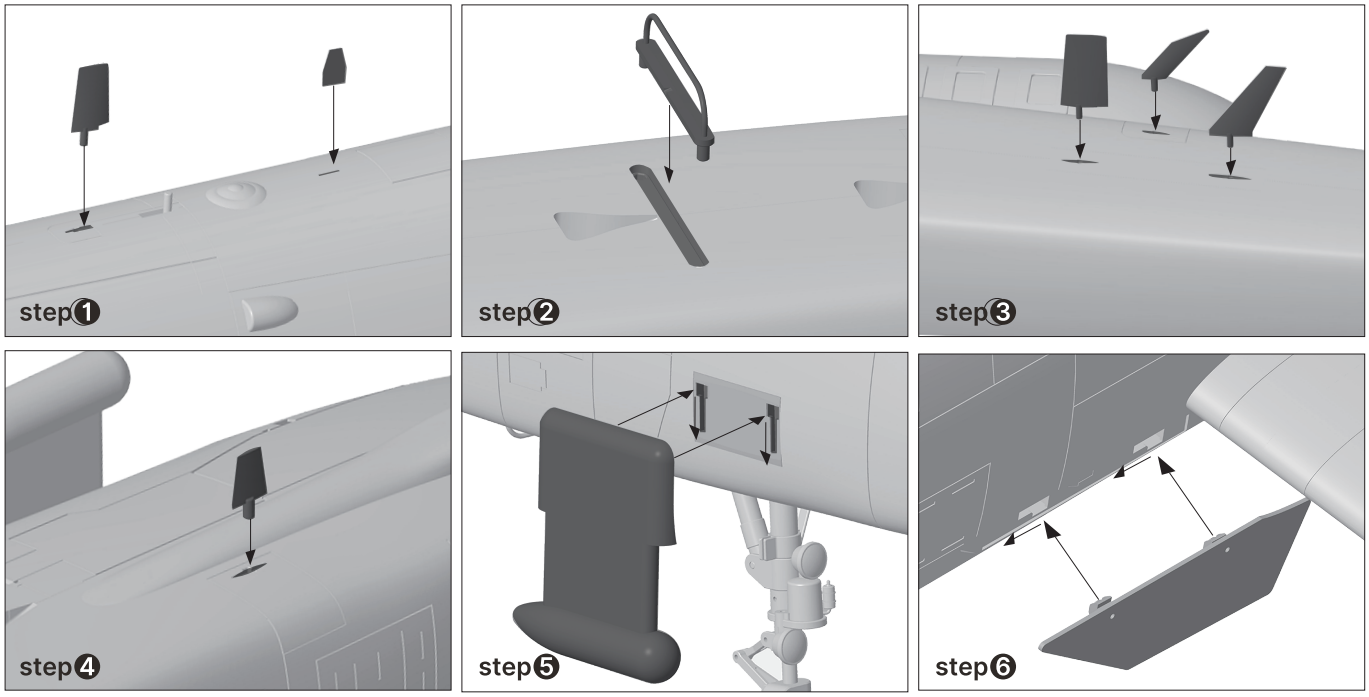


Install Missiles

Please according the pictures as below toinstall the weapons

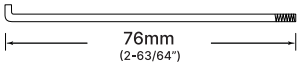


Antenna instal



Pushrod Instructions

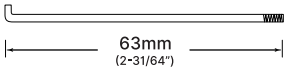
Flap pushrod length（In-side）



Pushrod diameter Ø 1.5mm

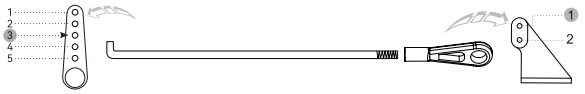
Flap pushrod mounting hole（In-side）

Flap pushrod length（Outer-side）

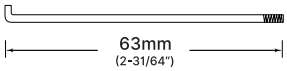


Pushrod diameter Ø 1.5mm

Flap pushrod mounting hole（Outer-side）



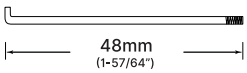
Aileron pushrod length



Pushrod diameter Ø 1.5mm

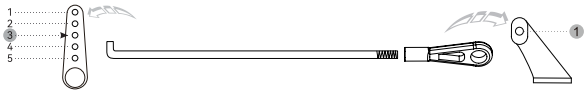
Aileron pushrod mounting hole

Elevator pushrod length

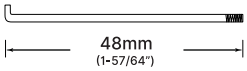


Pushrod diameter Ø 1.5mm

Elevator pushrod mounting hole



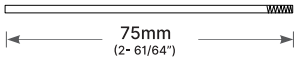
Rudder pushrod length



Pushrod diameter Ø 1.5mm

Rudder pushrod mounting hole

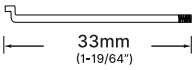
Nose gear steering pushrod length



Pushrod diameter Ø 1.5mm

Nose gear steering pushrod mounting hole

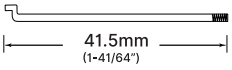
Nose Cabin door pushrod length



Pushrod diameter Ø 1.2mm

Nose Cabin door pushrod mounting hole

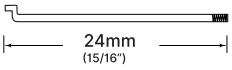
Nose follow Cabin door pushrod length



Pushrod diameter Ø 1.2mm

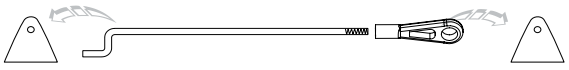
Nose follow Cabin door pushrod mounting hole

Nose gear steering pushrod length



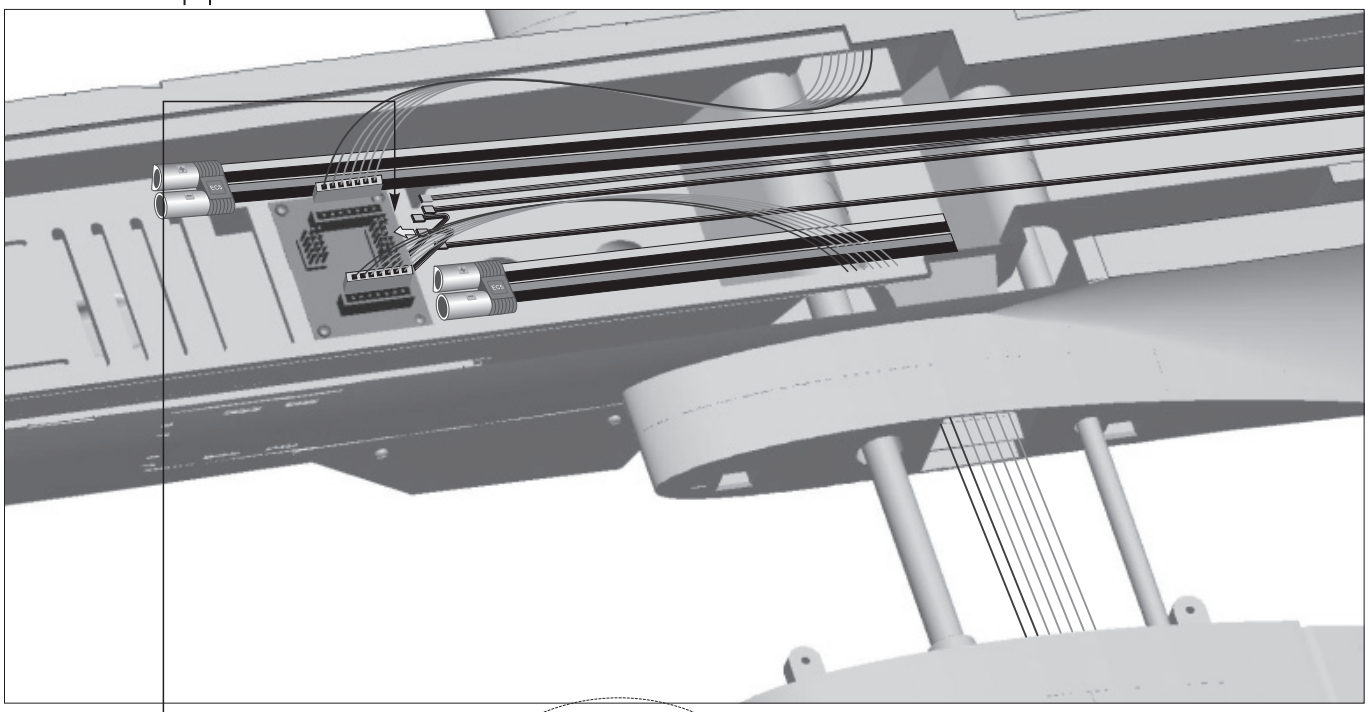
Pushrod diameter Ø 1.2mm

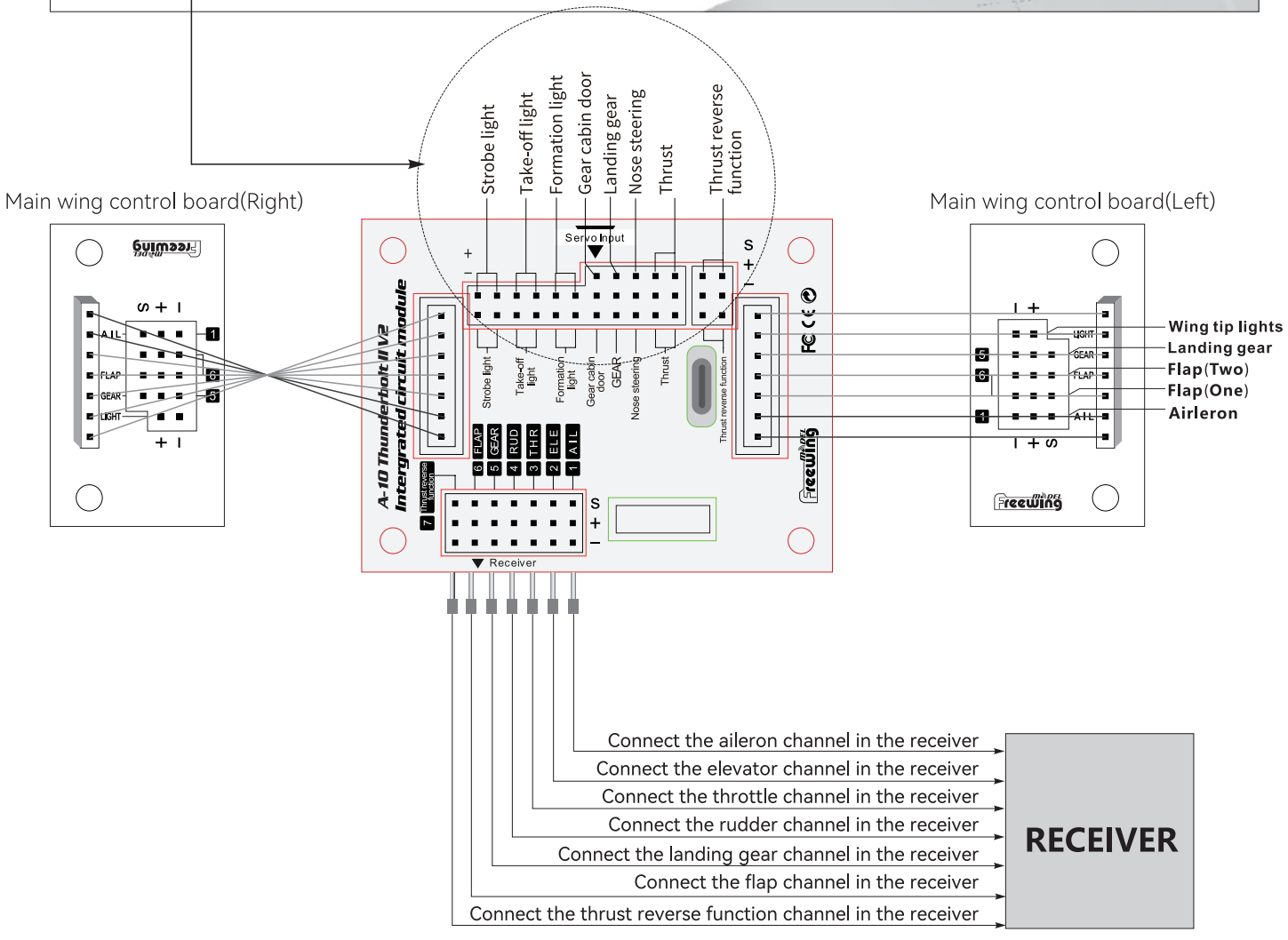
Nose gear steering pushrod mounting hole



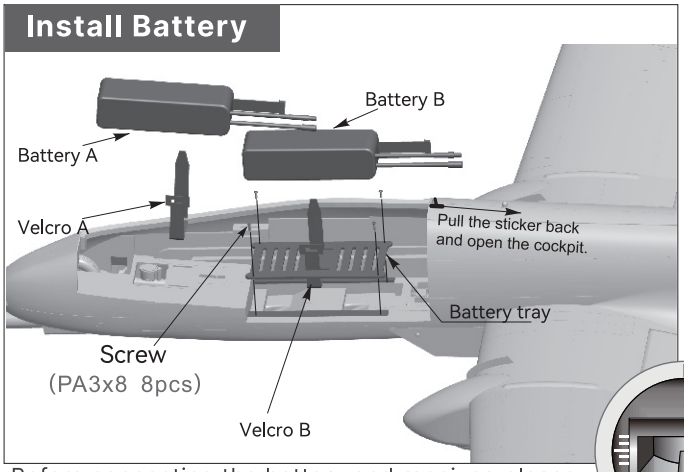
Control board connection diagram

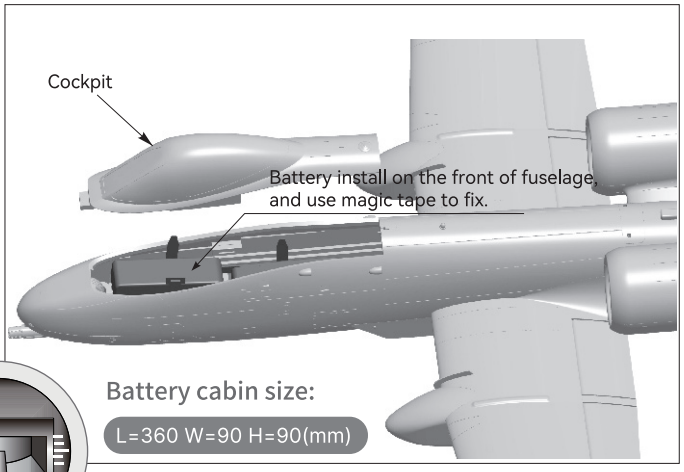
A-10 model plane used the ribbon wire, in order to use more convenient. Please refer to the following photo, connect the electronic equipment.





Install Battery





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.

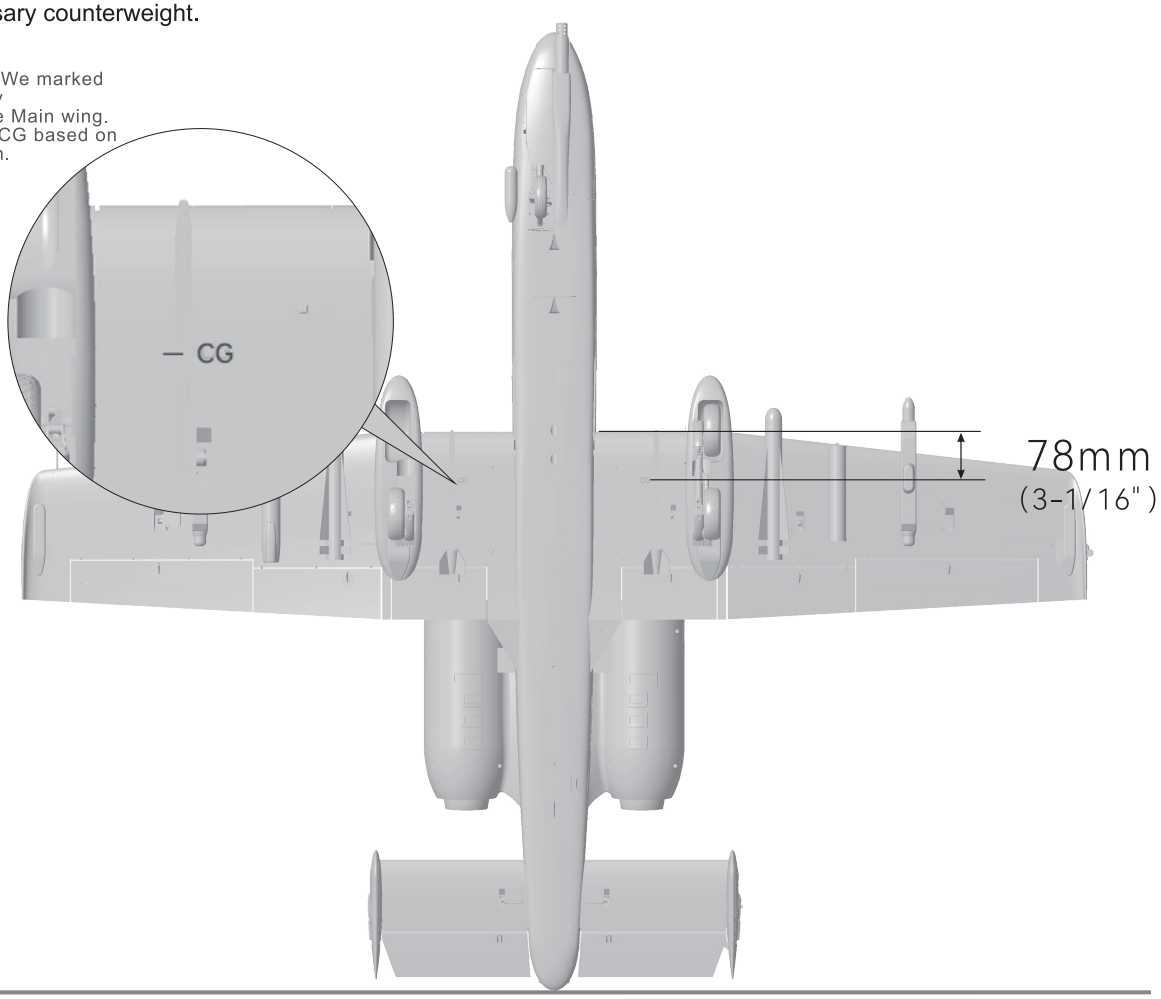
We recommend the following LiPo battery:
6S 22.2V 5000mAh~6S 22.2V 6000mAh (2pcs)
Discharge rate of C ≥35C

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 choosen 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.

As the photo show, We marked the center of gravity on the bottom of the Main wing. Please confirm the CG based on this marked position.



Control direction test

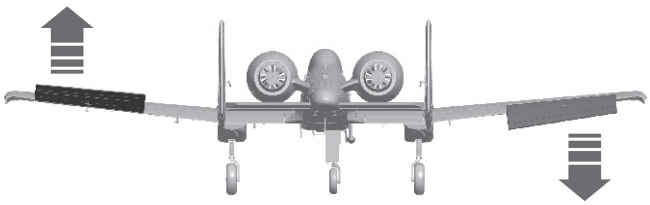
After installed this A-10 model plane, please connect to the receiver and power on, then adjust it.

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;

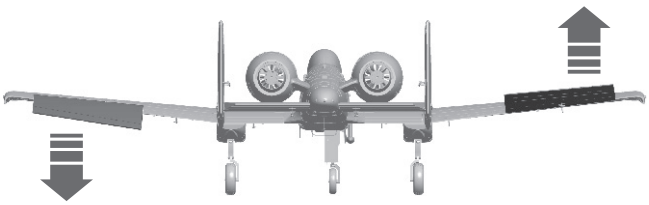
2.Please refer to the diagram below and use the radio to test each control surface to ensure that its movement direction matches the diagram. If the opposite movement occurs, first check whether the relevant channel in the radio has enabled the reverse function; If the problem persists, please contact us for assistance in resolving it.

Aileron

Stick Left

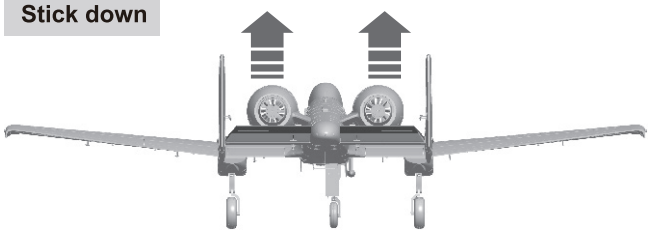


Stick Right

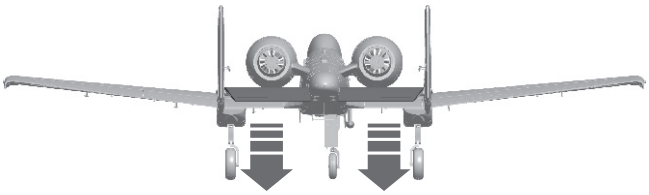


Elevator

Stick down

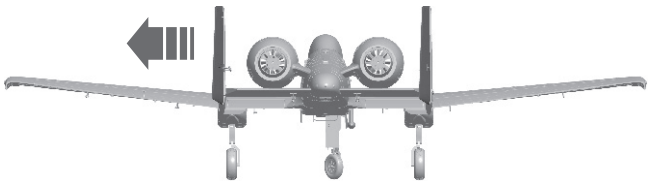


Stick up

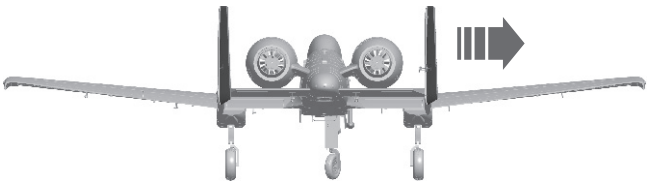


Rudder

Stick Left

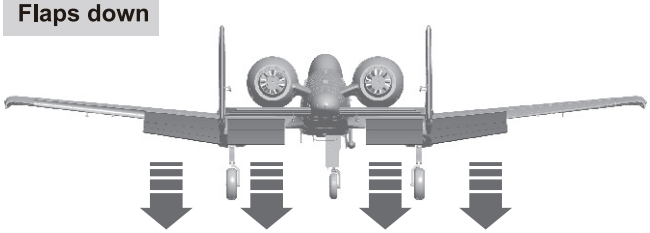


Stick Right



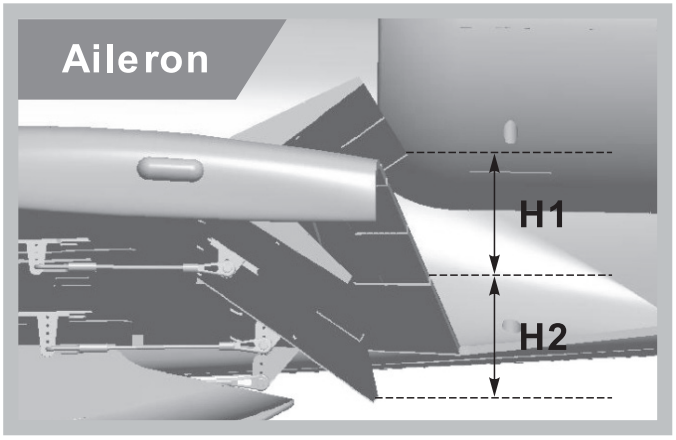
Flaps

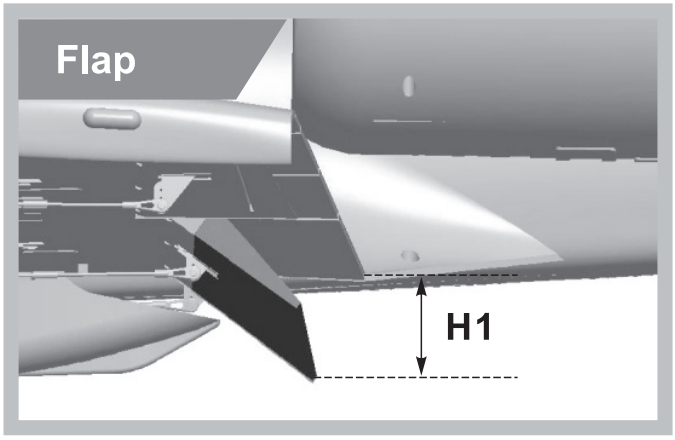
Flaps down

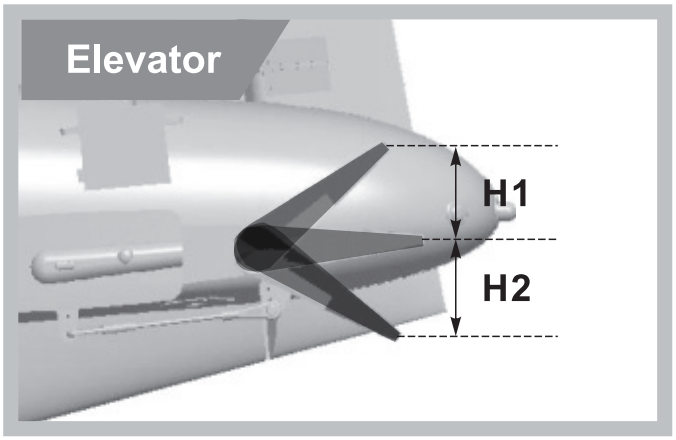


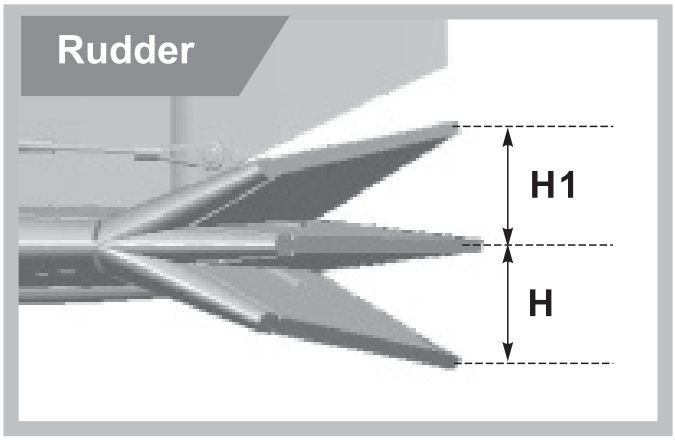
Dual Rates

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.









	Aileron (Measured closest to the fuselage)	Elevator	Rudder (Measured from the bottom)	Flaps Measured closest to the fuselage
Low Rate	H1/H2 38mm/38mm D/R Rate: 80%	H1/H2 24mm/24mm D/R Rate: 80%	H1/H2 16mm/16mm D/R Rate: 60%	H1 18mm
High Rate	H1/H2 44mm/44mm D/R Rate: 100%	H1/H2 31mm/31mm D/R Rate: 100%	H1/H2 22mm/22m D/R Rate: 80%	H1 25mm

⚠ Flight Attention:

1.Correct elevator center position

After install, we need to adjust the elevator, correct elevator center position, please refer to the right photo. After adjust, elevator looks a little up, it has a little up elevator.

2.Flap-elevator mix parameter

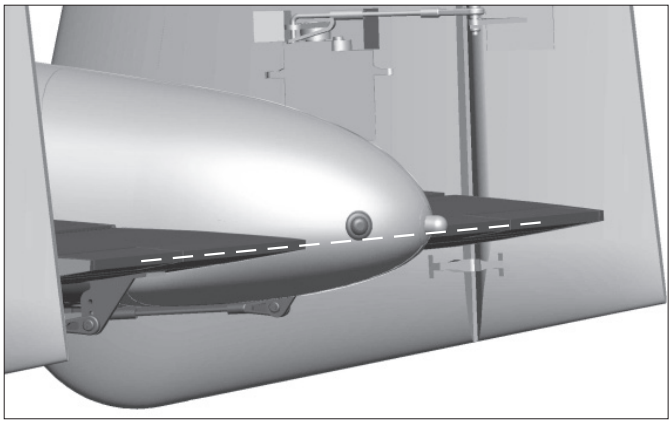
When open the flap, the jet will change the flight direction, it will fly up the sky. In order to operate better, we advise you set the “Flap-elevator mix” in radio. In this case, when you open the flap, the jet don’t change its flight.

Setting range is as following:

Open flap 25mm, pre-set 2mm elevator down

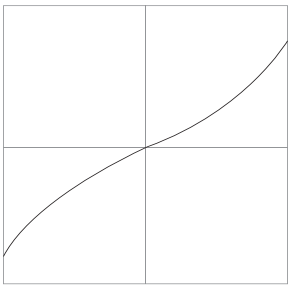
Open flap 18mm, pre-set 1mm elevator down

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



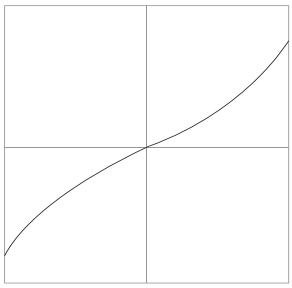
Remote Control EXP Setting Suggestion

1.Aileron EXP curve is shown as below :



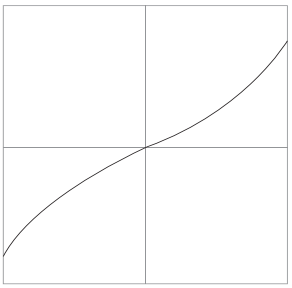
Futaba brand Remote Control : EXP A -30
EXP B -30
Spektrum brand Remote Control : EXPO 30% 30%

2.Elevator EXP curve is shown as below :



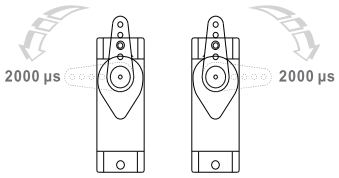
Futaba brand Remote Control : EXP A -30
EXP B -30
Spektrum brand Remote Control : EXPO 30% 30%

3.Rudder EXP curve is shown as below :

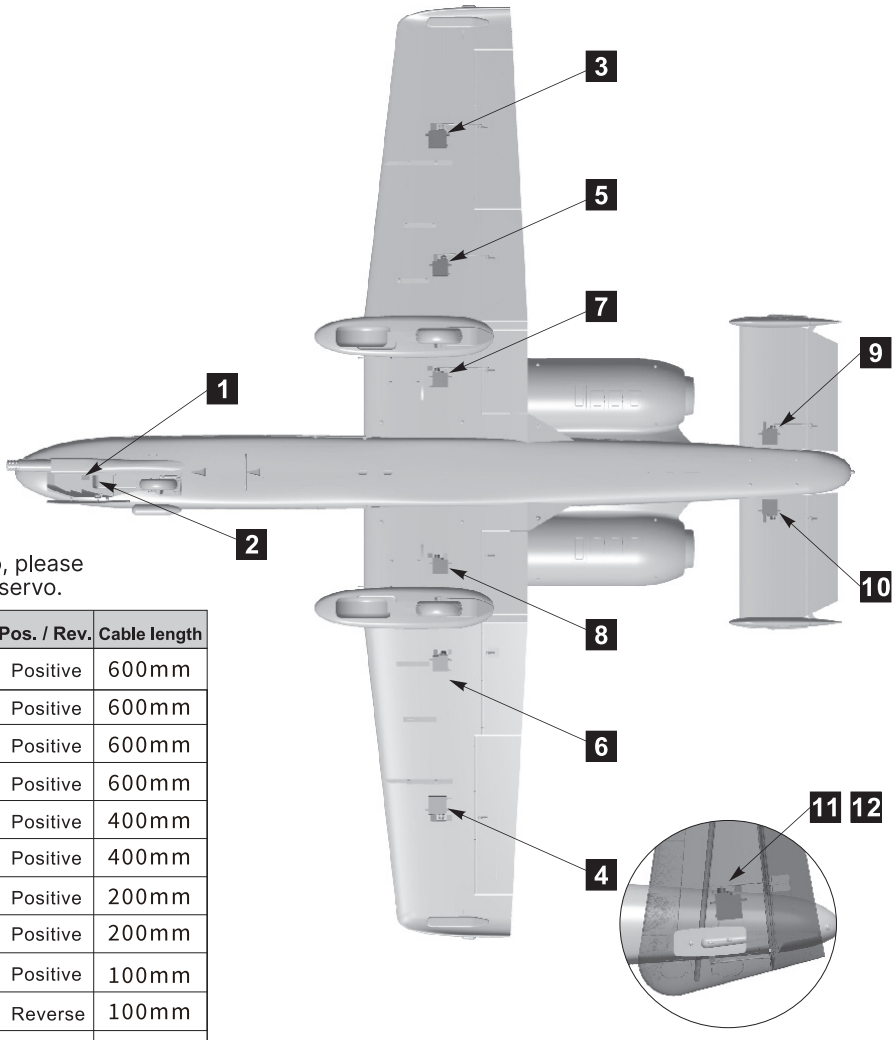


Futaba brand Remote Control : EXP A -30
EXP B -30
Spektrum brand Remote Control : EXPO 30% 30%

Servo Direction



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.**

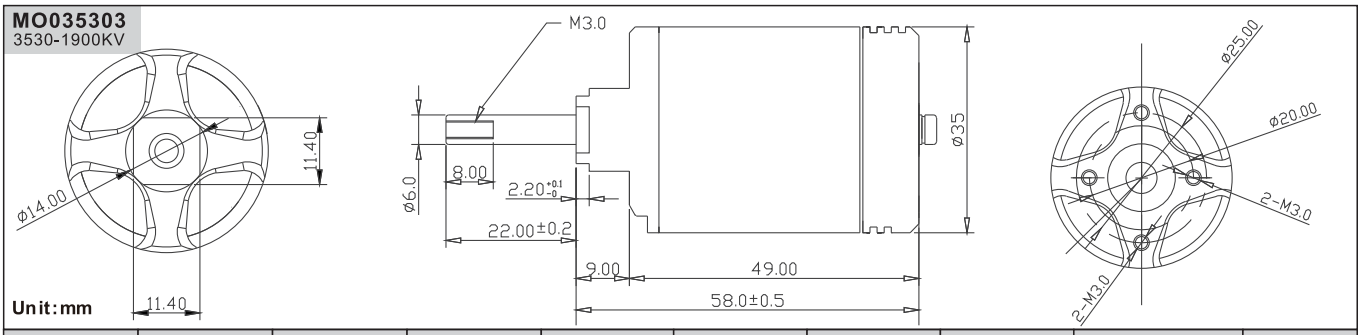


If you need to purchase another brand's servo, please refer to the following list to choose a suitable servo.

Position	Servo regulation	No.	Pos. / Rev.	Cable length
Nose gear steering servo	17g Digital-MG	1	Positive	600mm
Nose cabin door	9g Digital-MG	2	Positive	600mm
Aileron(L)	30g Digital-MG	3	Positive	600mm
Aileron(R)	30g Digital-MG	4	Positive	600mm
Flap(L)	17g Digital-MG	5	Positive	400mm
Flap(R)	17g Digital-MG	6	Positive	400mm
Flap(L)	17g Digital-MG	7	Positive	200mm
Flap(R)	17g Digital-MG	8	Positive	200mm
Elevator(L)	23g Digital-MG	9	Positive	100mm
Elevator(R)	23g Digital-MG	10	Reverse	100mm
Rudder(L)	17g Digital-MG	11	Positive	400mm
Rudder(R)	17g Digital-MG	12	Positive	400mm

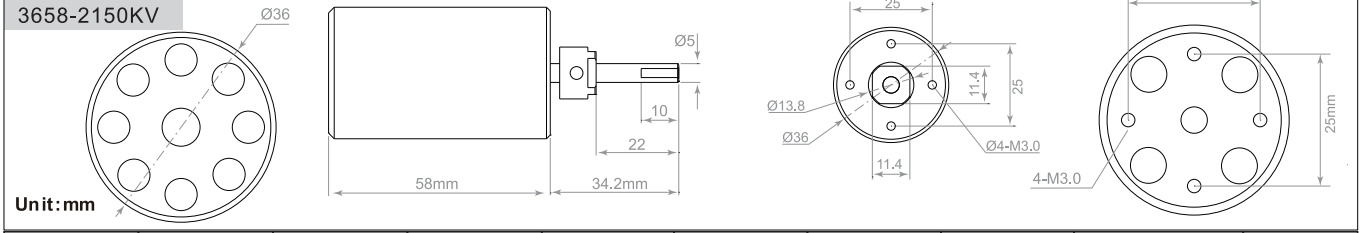
Motor Specification

MO035303
3530-1900KV



Item No.	Use motor	motor(KV)	Thrust(g)	Current(A)	Use voltage (V)	Use ESC (A)	EDF Weight (g)	Max power (W)	Efficiency (g/w)
E723910	O/R 3530	1900	2900	85	23 (6S)	100	278	1955	1.48

#MOI36585
3658-2150KV



Item No.	Use motor	motor(KV)	Thrust(g)	Current(A)	Use voltage (V)	Use ESC (A)	EDF Weight (g)	Max power (W)	Efficiency (g/w)
E72314	I/R 3658	2150	3550	95	22.2	100	340	2100	1.7