Item No.:FJ106

A-10 THUNDERBOLT II

DUAL 64MM EDF JET

USER MANUAL

WINGSPAN : 1130MM (44.49 IN.)

Version No.:FJ106-V02

MADE IN CHINA

Introduction

Thanks for your purchasing our Freewing A-10 model plane. Now A-10 is the main ground attack aircraft in the United States Air Force, nicknamed the" Warthog". Our A-10A use dual 64mm EDF. We refer to lots of data, try the best to restore the details of true aircraft. We use lots of plastic parts and carbon tube, it let the disassembly work easier. In addition, we also installed the electric retracts and flaps in this jet which its wingspan is only 1100mm,players will enjoy more flight fun.

This is a very beautiful scale model,it has excellent flight performance and graceful flight attitude,.A-10A is the most attractable plane when you fly.

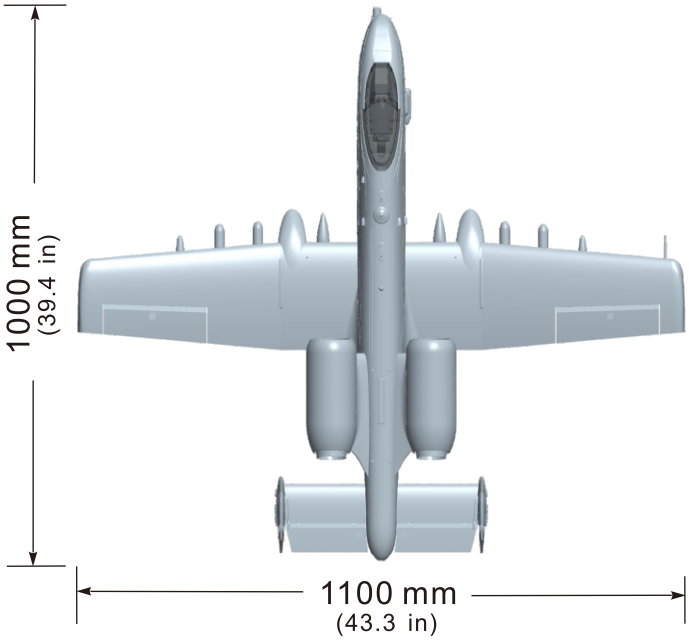
⚠ **NOTE:** This is not a toy. Not for children under 14 years. Young people under the age of 14 should only be permitted to operate this model under the instruction and supervision of an adult. Please keep these instructions for further reference after completing model assembly.

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.

Assembling Data Index

Product basic information



- Motor
  2840-2850KV
- ESC
  40A Brushless ESC
- Servo
  9g Servos 8pcs
- Battery
  4S 14. 8V 3300mAh 25C
- Ducted fans
  64mm EDF12-blade
- PNP weight
  1390g(w/o Battery)
- Thrust
  2800g (98.8oz.) (For 4S Battery)

⚠ 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.

Landing Gear	Aileron	Flaps	Elevator	Rudder	Throttle
Yes	Yes	Yes	Yes	Yes	Yes

Package list

Open package and check the package list. (Different version include different contents)

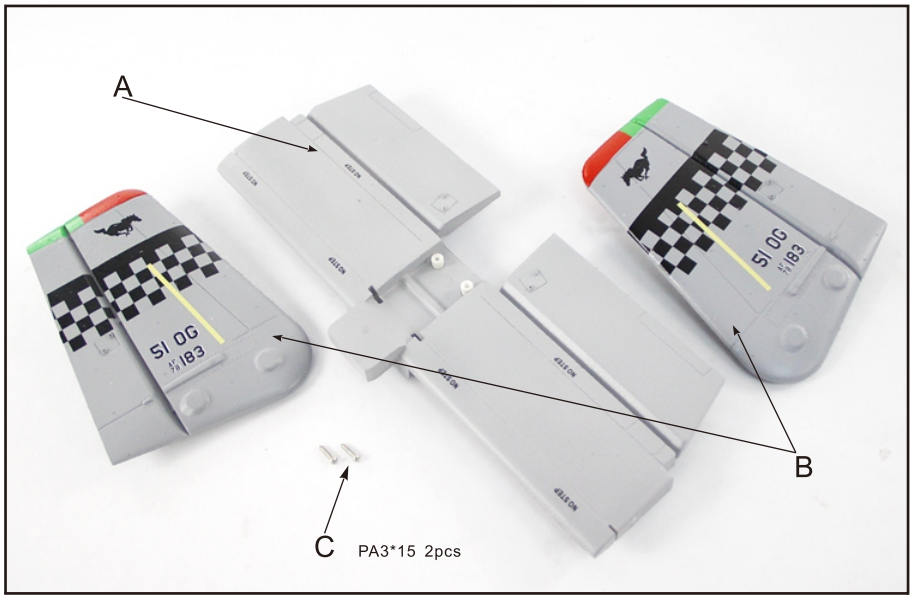
No.	Accessories Name	ARF	PNP	KIT
1	Fuselage set	Yes	Yes	Yes
2	Main wing set	Yes	Yes	Yes
3	Tail wing set	Yes	Yes	Yes
4	Engine compartment	Yes	Yes	Yes
5	Guided missiles & connecting part	Yes	Yes	Yes
6	ESC/motor/servo	Yes	Yes	No

No.	Accessories Name	ARF	PNP	KIT
7	EDF	Yes	Yes	Yes
8	Battery	Yes	No	No
9	Y-wire	Yes	Yes	Yes
10	Landing gear set	Yes	Yes	Yes
11	Plastic accessories	Yes	Yes	Yes
12	Screwdriver & screw accessories	Yes	Yes	Yes

Installing the tail wing

Firstly, we remove fuselage, tail wing, glue and screws from package, and prepare to install.

A-Elevator
B-Left / right rudder
C-Screws (PA3*15 2pcs)

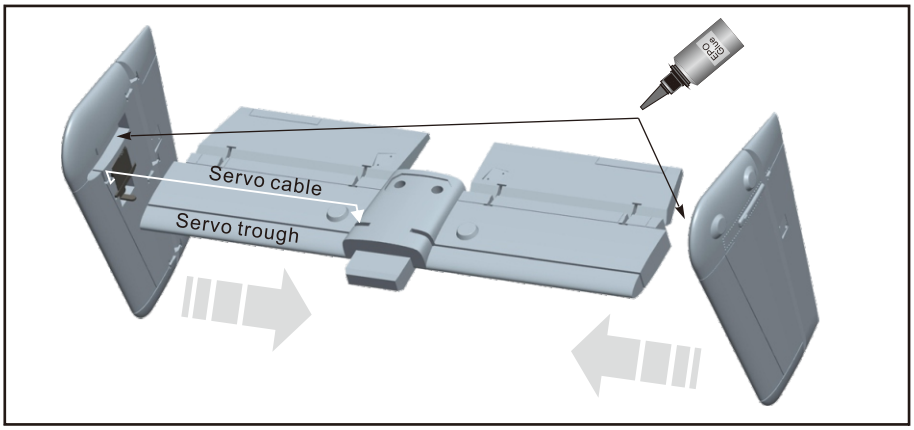


1.If installed the rudder' servo, we should loosen the rudder's servo wire.

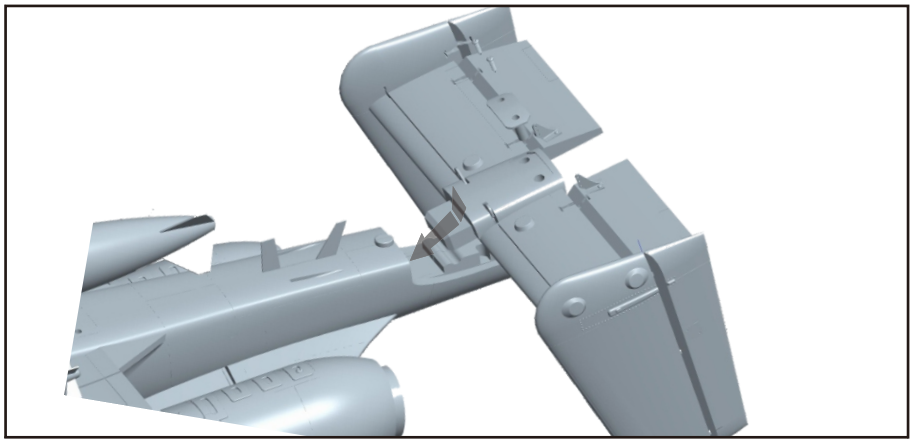
2.Glue on the indicated position and adhesive the rudder on the elevator.

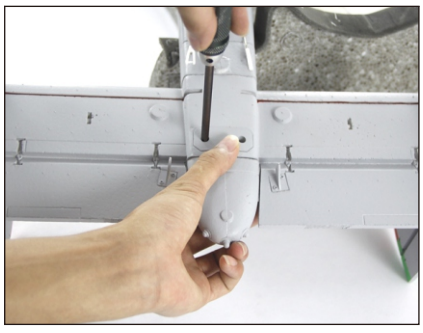
3.Press the rudder servo cable in the trough.

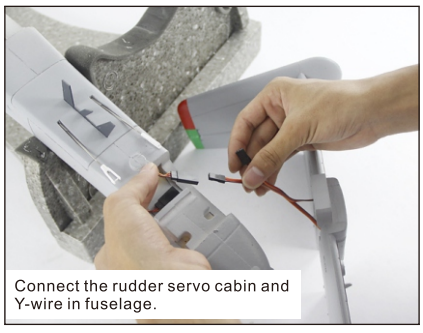
4.Connect the rudder servo cabin and Y-wire in fuselage.

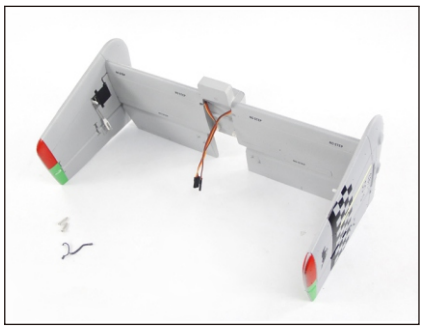


5.Fix the installed tail wing with two screws(C).



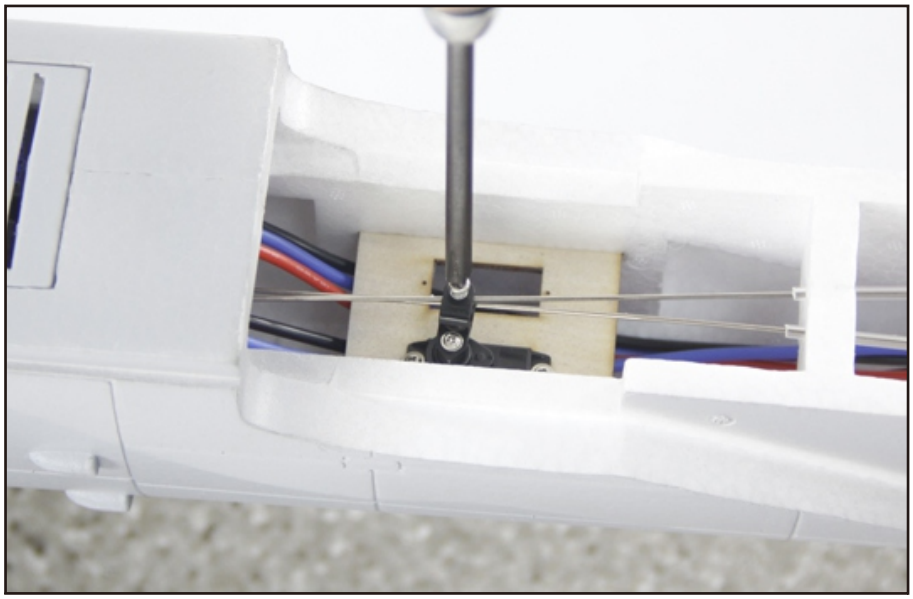



Connect the rudder servo cabin and Y-wire in fuselage.



Installing the elevator

After installed the tail wing set, we need to adjust the elevator, then continue to arrange the following work. Since after installed the main wing set, we need to adjust the elevator servo and pushrod, it can't operate.



1.Use servo tester or other machine to center the elevator servo.

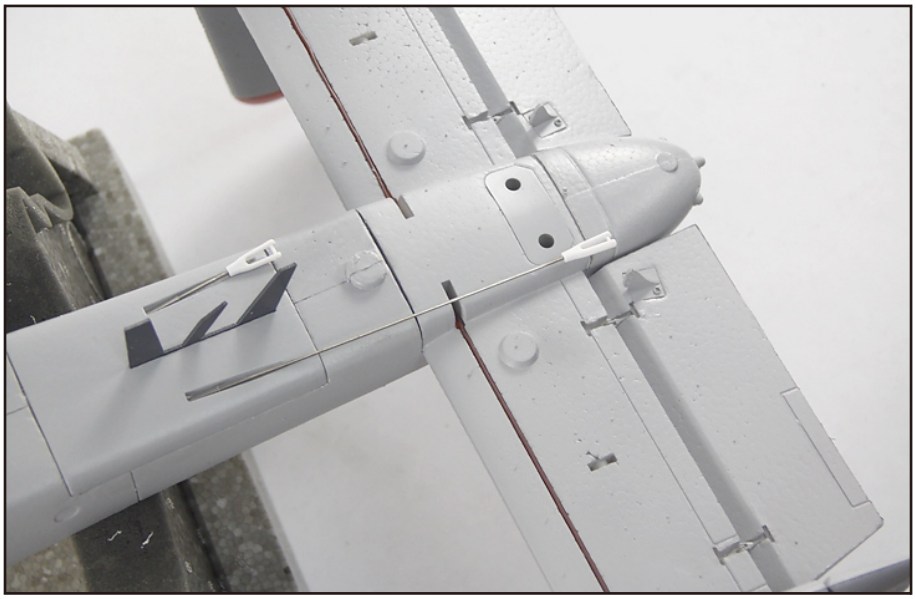
2.Loosen the metal wire of "U" shape servo arm, fixed the screw.

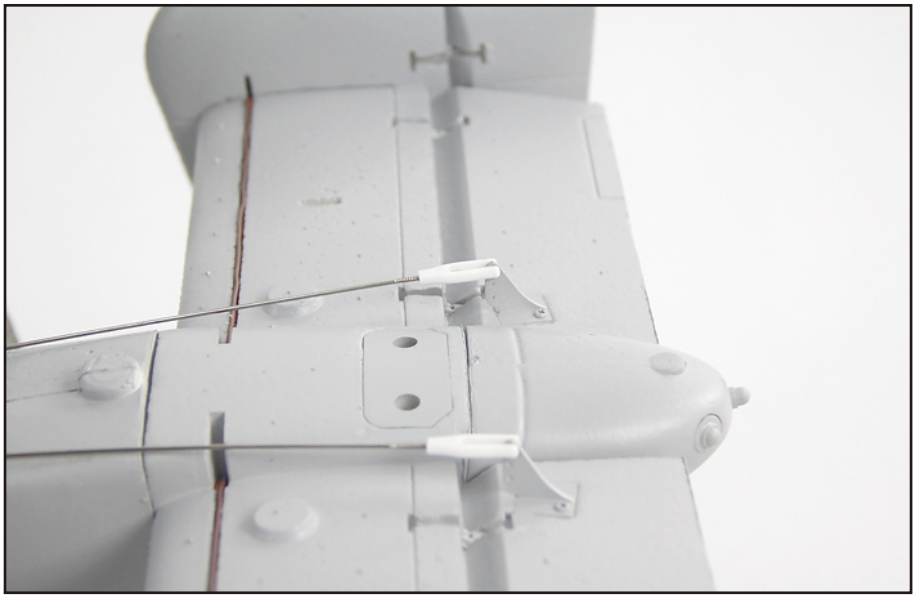
3.Pull the elevator pushrod out a proper distance.

4.Adjust the pushrod or clevis, when the elevator is centered, buckle the plastic clevis into the servo arm.

5.Use the same way to center another side of elevator.

6.At last, fixed the fixing screw of "U" shape servo arm.

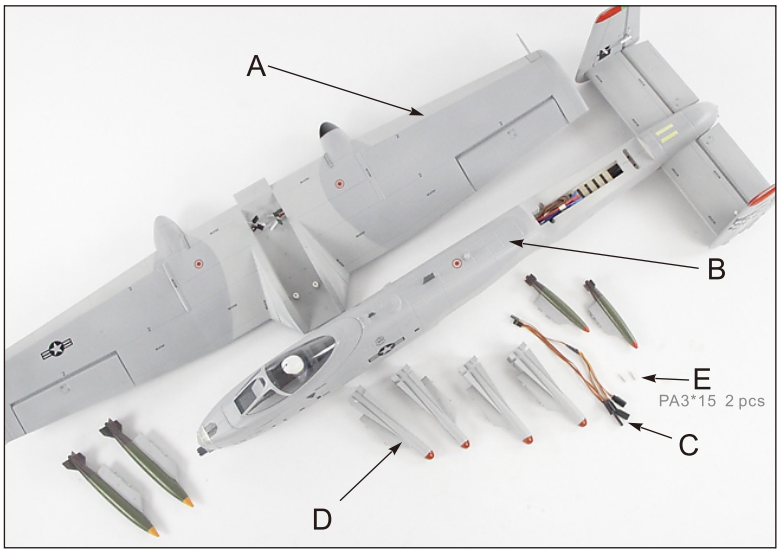




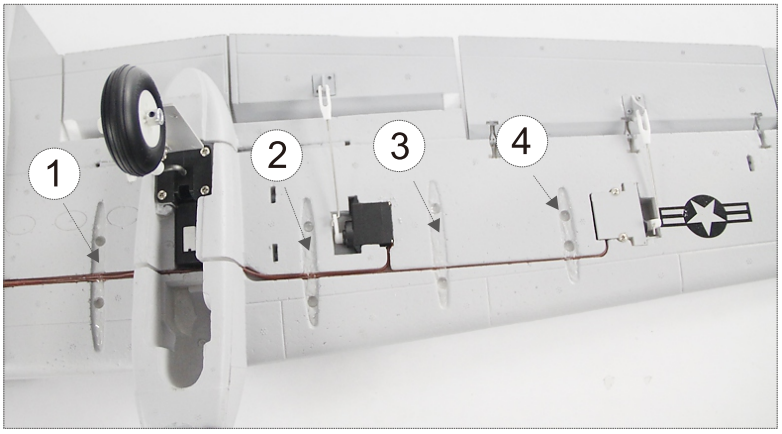
Installing the main wing

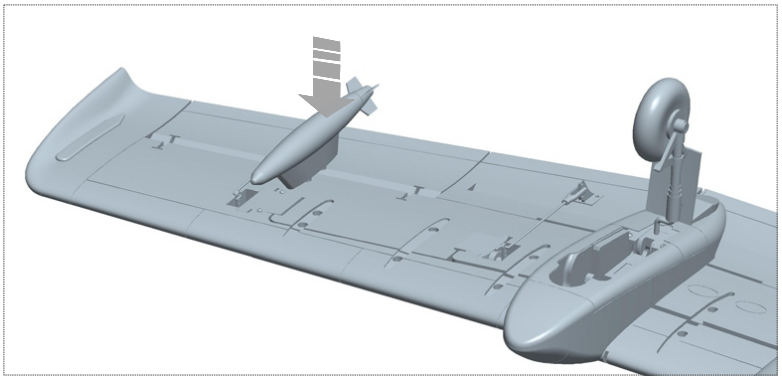
Remove these accessories

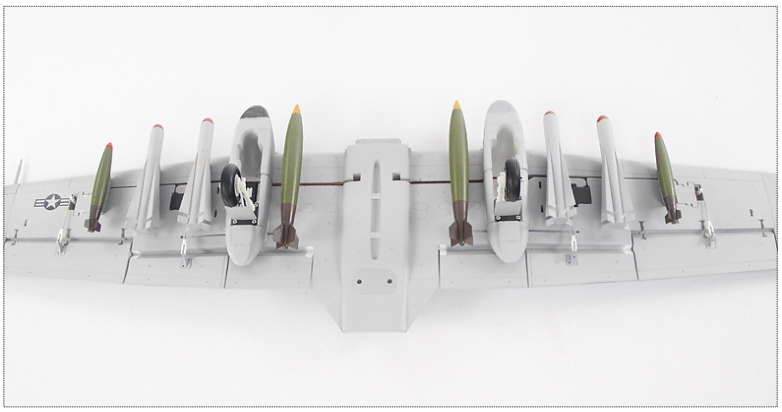
A-Main wing
B-Fuselage
C-Y wire (3 pcs)
D-Scale bombs (8 pcs)
E-Screw (PA3*15 2 pcs)



1.As the right photo show, apply the glue to the indicated position and affix the bombs on the main wing.





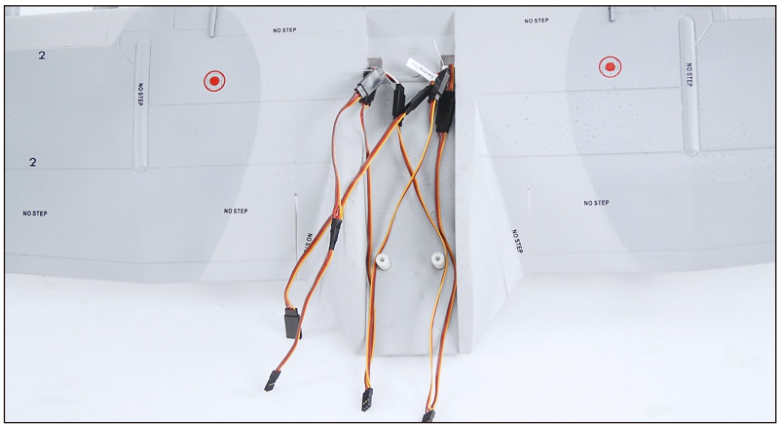


Installing the main wing

2.Use Y-wire to connect the left / right aileron servo.

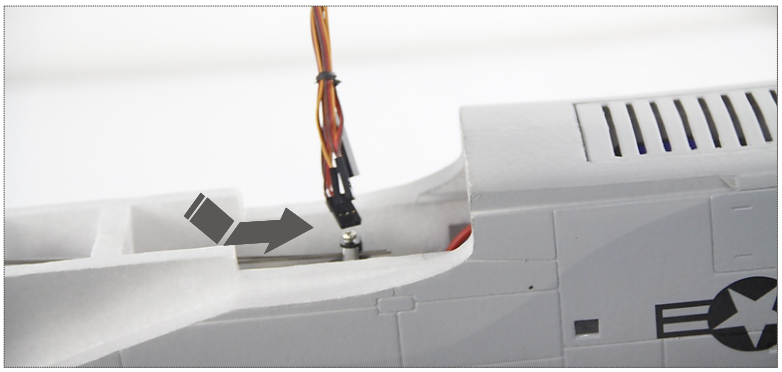
Use Y-wire to connect the left / right flap servo.

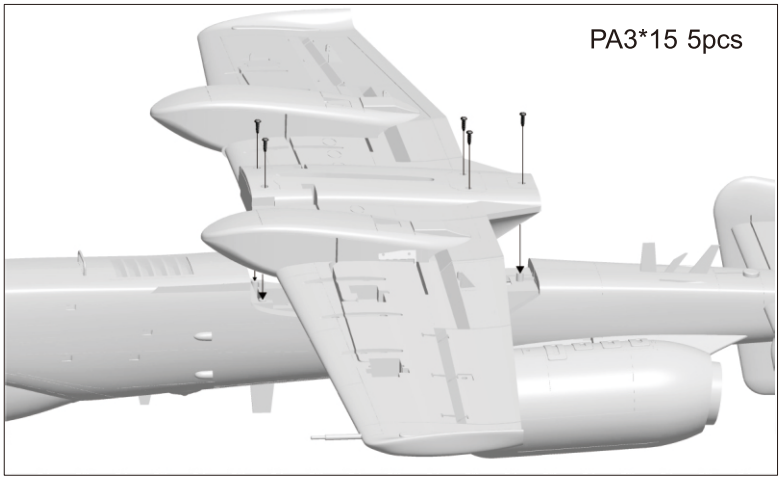
Use one “1 to 3” wire to connect the retracts, and reserve one cable to connect the nose retracts.



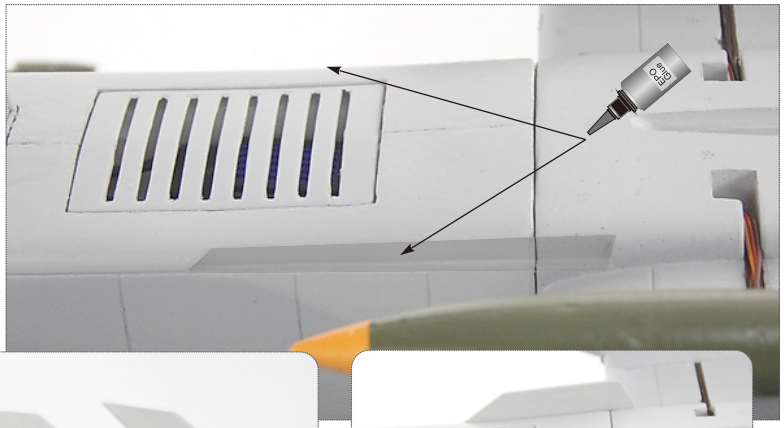
3.Bundled the Y-wires together with cable ties, and insert them into fuselage.

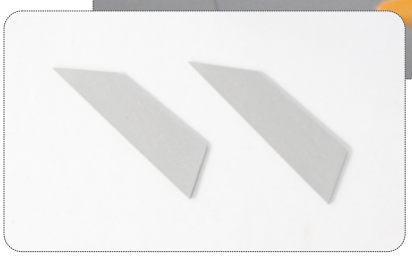
4.Press the main wing on the fuselage and fixed by two screws.





5.Installed main wing, then we glue the two pieces plastic decorated fins into the fuselage.





Installing the engine compartment

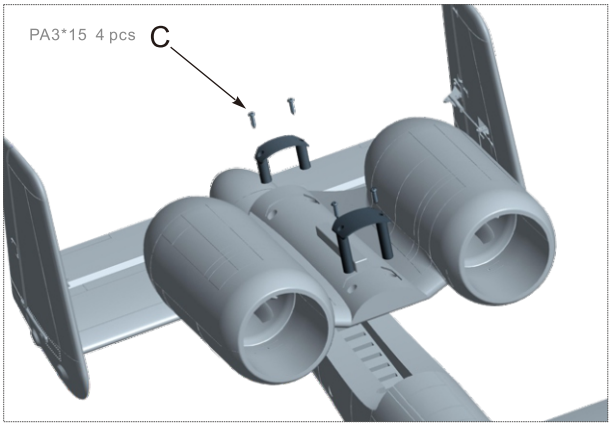
Firstly, remove these accessories

A-Engine compartment
B-Fuselage
C-Screw (PA3*15 4 pcs)

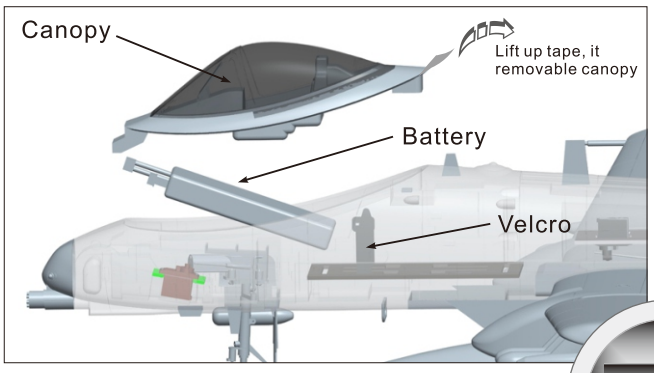
⚠ **Note:** If you purchased KIT version, please refer to **Page 14**, installed the EDF power system firstly, then you can do the following steps.

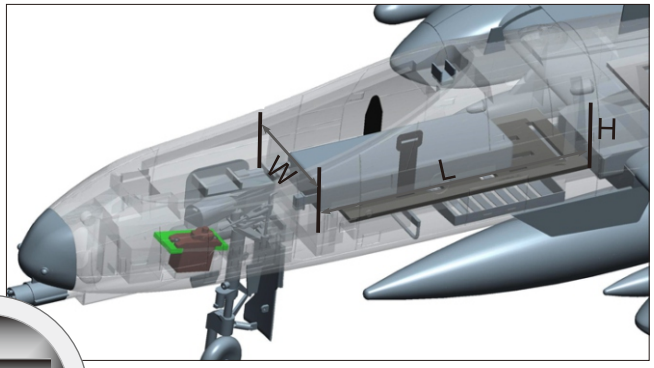
1.Connect the motor wire and ESC extention wire.

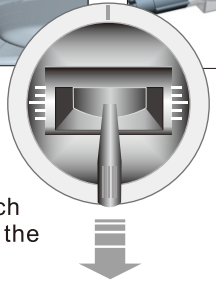
2.Put the engine compartment (A) on the fuselage(B), and install the “engine compartment fixed plastic part” ,then fixed by 4pcs screws(C).



Install on battery







Lift up tape,it removable canopy, then bundled battery with Velcro.

Before connect battery and receiver, please switch on the transmitter and check that the throttle is in the low position.

Our standard battery is :
4S 14.8V 3300mAh 25C
You can choose the battery refer to the battery cabin size.
L=190mm W=53mm H=40mm
The battery capacity and discharge rate we advise is in the following:

4S 14.8V 3000mAh ~ 4S 14.8V 3700mAh
Discharge rate≥ 25C

Different weight battery may affect its CG, please the correct range of CG indication.

Installing landing gear

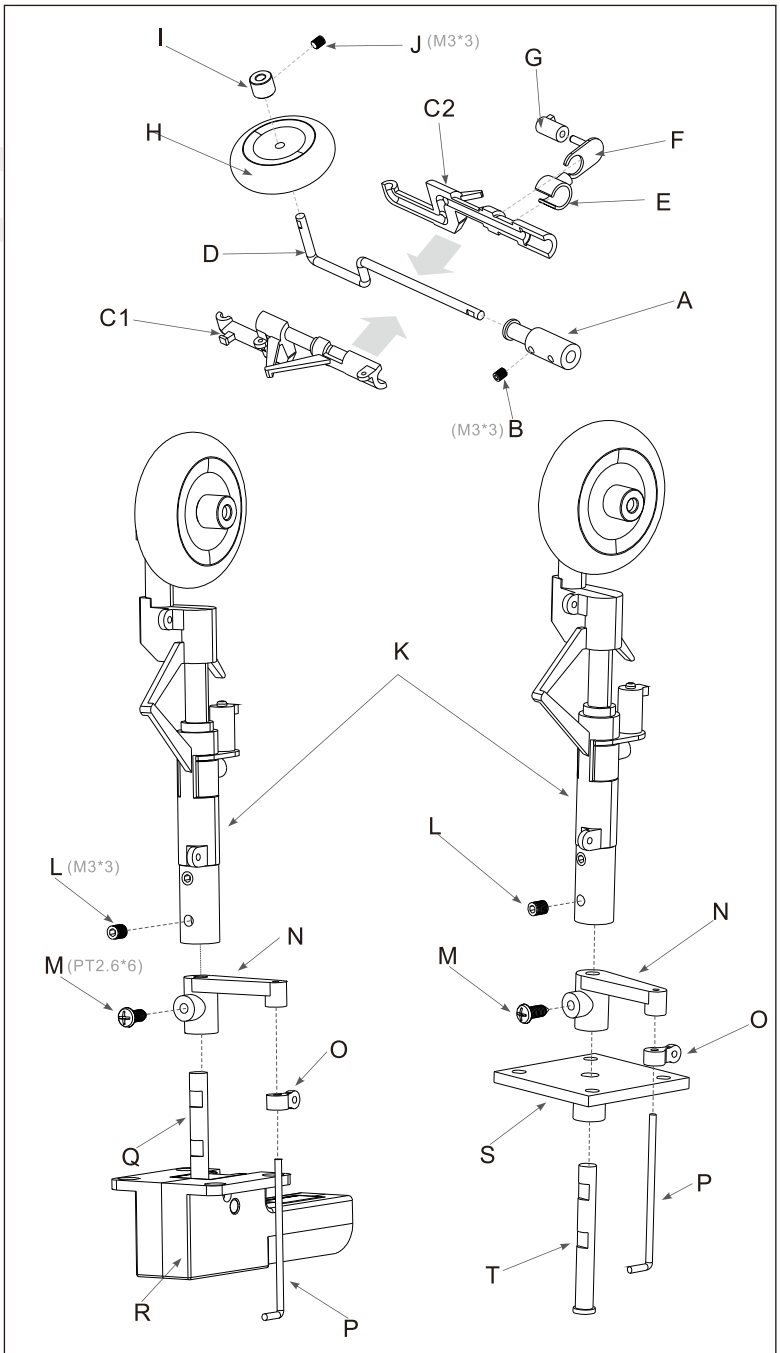
A-10 has two landing gear configuration, fixed landing gear and electric retractable landing gear. In here, we introduce two kinds of installing method of landing gear, for your repair or replacement of reference.
If you choosed the low fixed landing gear version, you can purchase our electric retractable part, to adapt electric retractable landing gear. You need to pay attention is, except one metal wire of nose landing gear, the other parts are the same, don't need to purchase additional!

Nose landing gear sparepart list:

A-Nose gear wire connecting post
B-Jimi screw (M3*3)
C-Nose gear decorated plastic part
D-Nose gear damping wire
E-Nose gear decorated part 1
F-Nose gear decorated part 2
G-Nose gear decorated part 3
H-Nose wheel
I-Nose wheel fixing bolt
J-Jimi screw (M3*3)
K-Nose landing gear semi-finished set
L-Jimi screw (M3*3)
M-Screw (PT2.6*6)
N-Nose landing gear steering arm
O-Nose landing gear steering ring
P-Nose gear steering pushrod

Electric retractable landing gear
Q-Nose gear metal wire
R-Electric retractable controller

Fixed landing gear
S-Nose gear fixed mount
T-Nose gear metal wire



Installing nose landing gear semi-finished set

1. Insert nose gear damping wire (D) into nose gear wire connecting post (A), and use Jimi screw (B) to fix.
2. Fix the nose gear decorated plastic part (C1. C2)on the nose gear damping wire (D) and nose gear wire connecting post (A) with glue.
3. Then fix the nose gear decorated part (E .F. G) on the nose gear decorated plastic part (C1 .C2) with glue.
4. Penetrate the nose wheel (H) into the nose gear damping wire (D), and put the nose wheel fixing bolt(I), then use jimi screw (J) to fix the nose wheel fixing bolt (I).

⚠ **Note:** when installing, please check the flat position of spareparts, when screw to fix, the flat position must fact to the screw hole, just like this, it can fix successfully , the spareparts don't rotate and fall off.

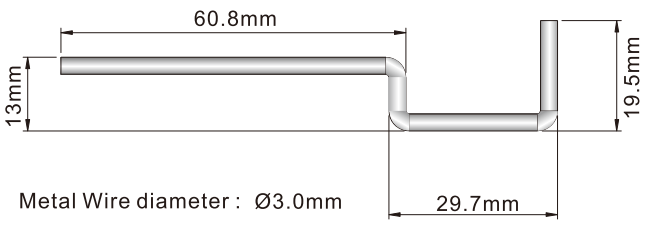
Installing nose electric retractable landing gear

5. Install the nose gear metal wire (Q) in the electric retractable controller (R),
6. Insert the nose landing gear steering arm (N)into the nose gear metal wire (Q), use screw (M) to fix.
7. Also, insert the nose landing gear semi-finished set (K) into the nose gear metal wire (Q), use jimi screw (L) to fix.
8. Put the nose landing gear steering ring (O) in the nose gear steering pushrod (P), then, insert the threaded side of nose gear steering pushrod (P) into the nose landing gear steering arm (N).

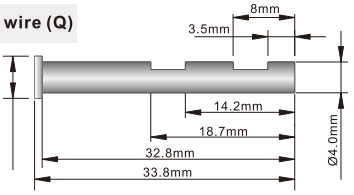
Installing fixed landing gear

1. Penetrate nose gear metal wire (T) into the nose gear fixed mount (S).
2. Insert the nose landing gear steering arm (N) into the nose gear metal wire (T) , use screw (M) to fix.
3. Also, insert the nose landing gear semi-finished set (K) into the nose gear metal wire (T), use jimi screw (L) to fix.
4. Put the nose landing gear steering ring (O) in the nose gear steering pushrod (P), then, insert the threaded side of nose gear steering pushrod (P) into the nose landing gear steering arm (N).

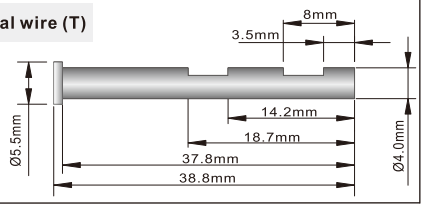
Nose gear damping wire (D)



Nose gear metal wire (Q)

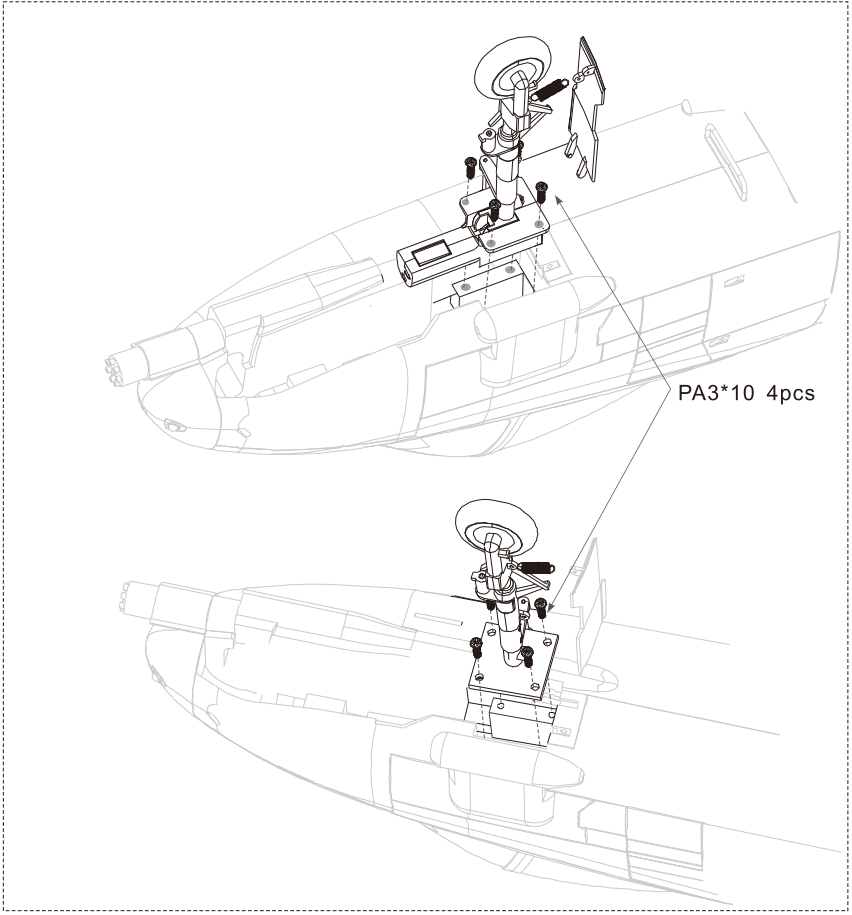


Nose gear metal wire (T)



Installing landing gear

Whether electric retractable landing gear or fixed landing gear, when we installed, fix the landing gear on the nose gear plastic fixed mount by 4pcs screws.

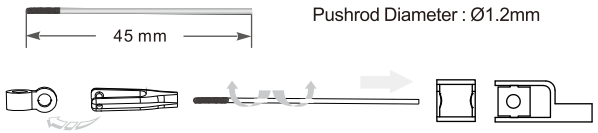


Installing steering servo of nose gear

Sparepart list:

A-9g gear servo
B-Screw PWA2*8
C-Screw PWA1.7*5
D-Screw PM3*6
E-"U" shape servo arm
F-Pushrod
G-Nose landing gear steering ring

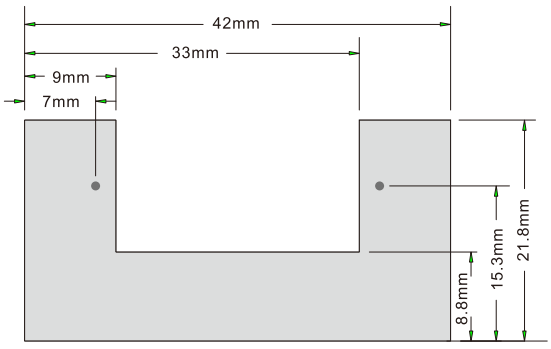
1.Install the servo (A) on the wood piece, and fix it by screw (B). Then install the "U" shape servo arm (E) on the servo (A) and use screw (C) to fix.
2.Put one side of pushrod (F) into the nose landing gear steering ring (G), and another side of pushrod (F) penetrate into "U" shape servo arm (E), adjust its depth to center the nose wheel.
3.Fix the pushrod (F) by screw (D).

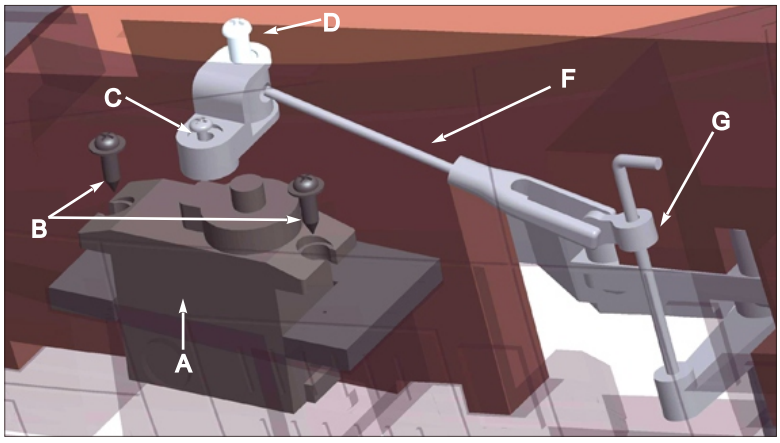


Pushrod Diameter : Ø1.2mm

Turn the clevis clockwise or counterclockwise on the pushrod, can increase or reduce the control distance.

Mount size parameter of nose gear steering servo





Installing rear landing gear

Rear landing gear sparepart list:

A-Jimi screw
B-Wheel fixing bolt
C-Rear wheel
D-Rear gear damping wire
E-Rear gear decorated part
F-Jimi screw

Electric retractable landing gear
G-Electric retractable controller

Fixed landing gear
H-Rear gear fixed mount.
I-Rear gear fixing bolt

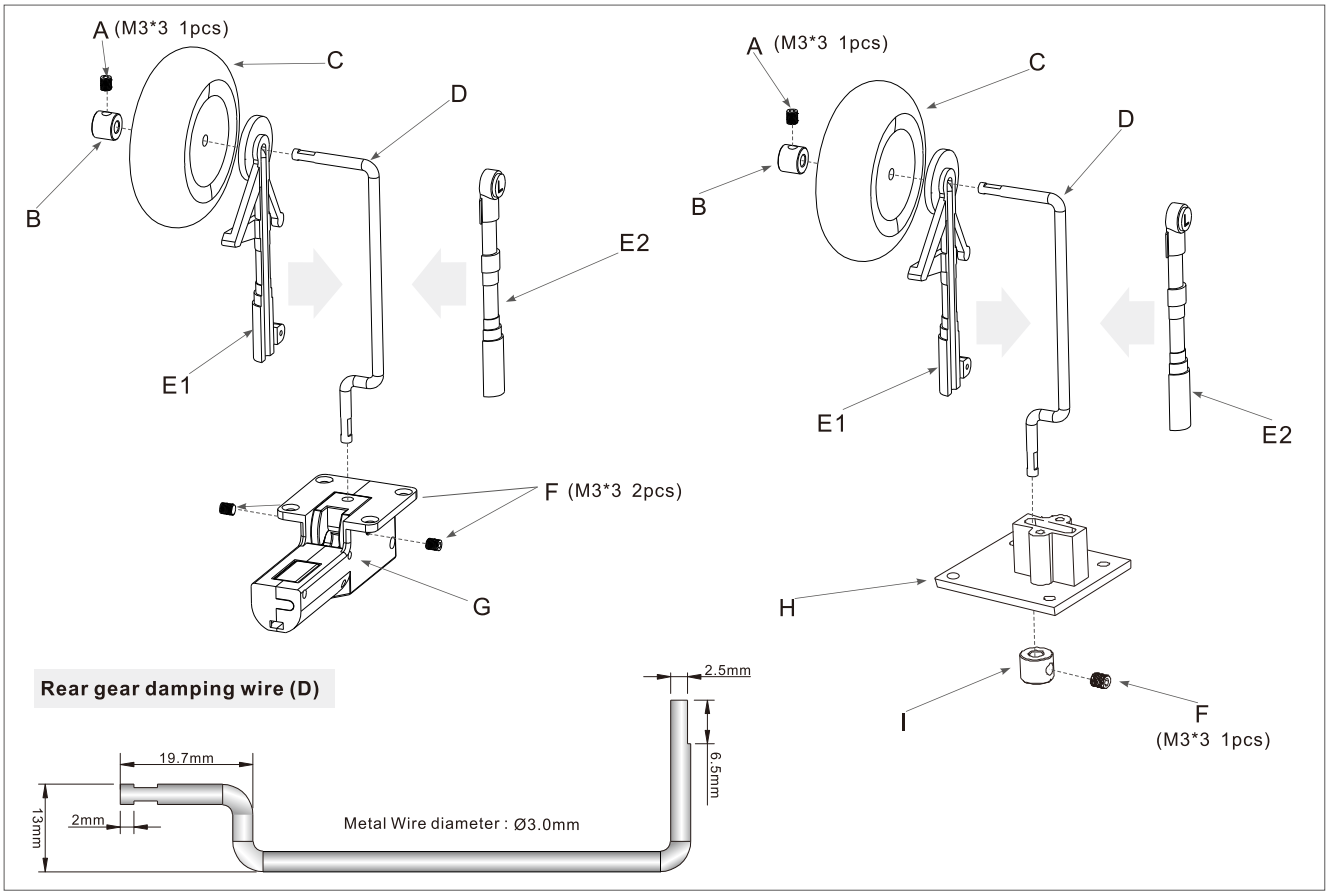
Installing electric retractable landing gear

1. Insert the rear gear damping wire (D) into the electric retractable controller (G), and fixed by 2pcs jimi screws (F).
2. Apply the glue to the rear gear decorated part (E) and attach it on the rear gear damping wire (D).
3. According to the sequence in turn, put the rear wheel (C) and wheel fixing bolt (B) into the rear gear damping wire (D), then use 1 pcs jimi screws (A) to fix the wheel fixing bolt (B).

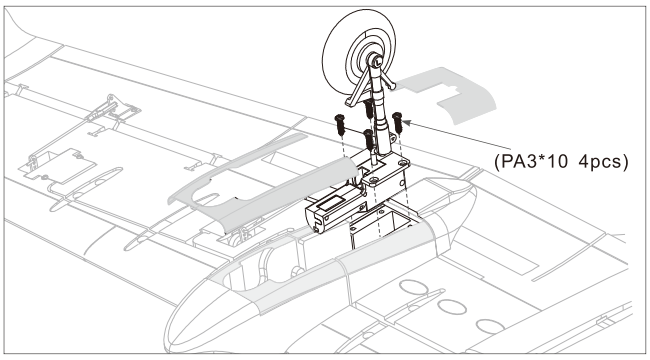
Installing fixed landing gear

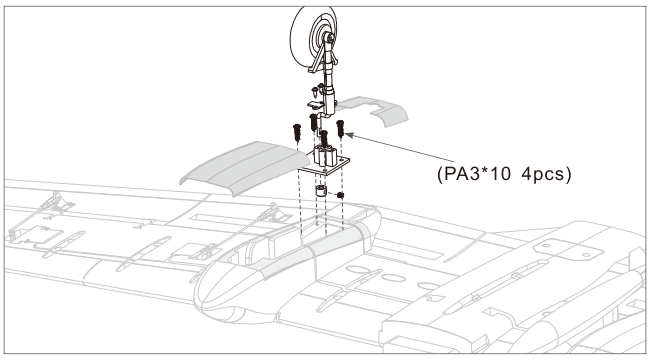
1. Insert the rear gear damping wire (D) into the rear gear fixed mount (H), and put the rear gear fixing bolt in it, then use 1 pcs jimi screws (F) to fix.
2. Apply the glue to the rear gear decorated part (E) and attach it on the rear gear damping wire (D).
3. According to the sequence in turn, put the rear wheel (C) and wheel fixing bolt (B) into the rear gear damping wire (D), then use 1 pcs jimi screws (A) to fix the wheel fixing bolt (B).

⚠ **Note:** when installing, please check the flat position of spareparts, when screw to fix, the flat position must fact to the screw hole, just like this, it can fix successfully ,the spareparts don't rotate and fall off !



Whether electric retractable landing gear or fixed landing gear, when we installed, fix the landing gear on the rear gear plastic fixed mount by 4pcs screws.

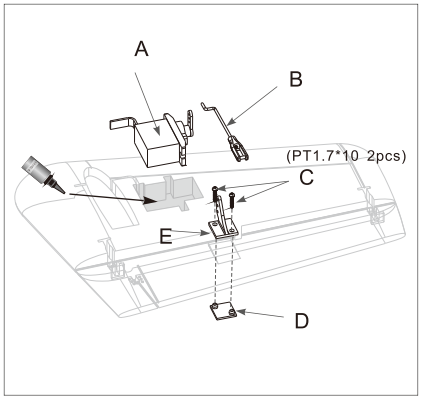




Installing servo

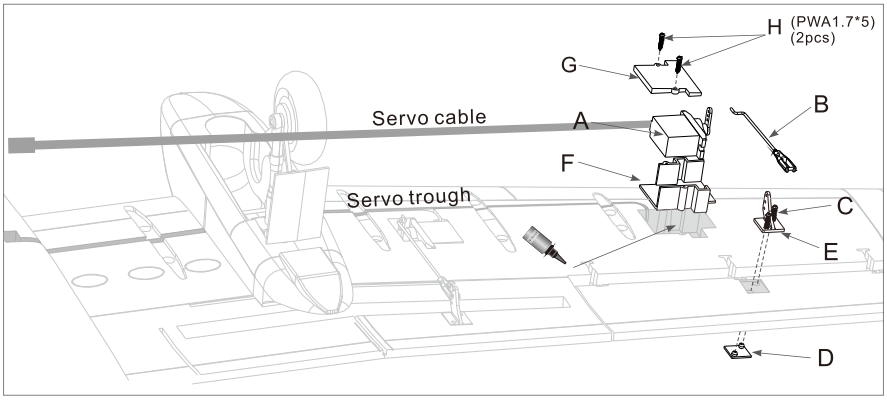
Installing the servo of rudder

1.Fix the control surface horn (E) and control surface spacer (D) on the rudder by 2pcs screws (C).
2.Apply the glue on the indicated place, and attach the servo (A)on the rudder.
3.Connect the servo arm and control surface horn with pushrod (B).
4.Center the control surface.



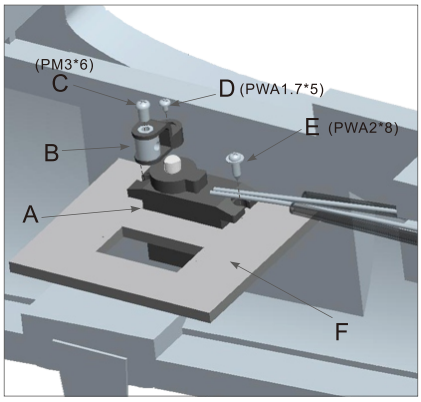
Installing the servo of aileron

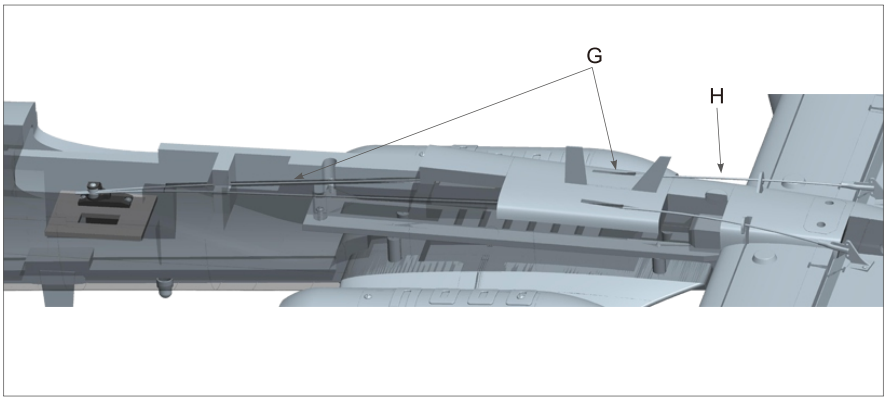
1.Fix the control surface horn (E) and control surface spacer (D) on the main wing by 2pcs screws (C).
2.Apply the glue on the indicated place, and attach the servo box (F) on the main wing.
3.Press the servo (A) into the the servo box (F), and press the servo cable on the trough, then cover the servo box cover (G) and fix it by 2 pcs screws (H).
4.Connect the servo arm and control surface horn with pushrod (B).
5.Center the control surface.



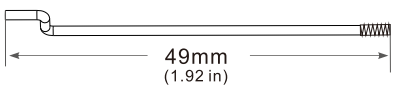
Installing the servo of elevator

1.Install the servo (A) in the wood piece (F), and fix the servo by 2 pcs screws (E).
2.Fix the U shape servo arm (B) on the servo by 1 pcs screw (D).
3.Nsert the elevator pushrod (H) into the plastic tube (G) of fuselage, the elevator pushrod (H) should penetrate the the plastic tube (G) to the position of elevator servo. And insert one side of elevator pushrod to the fixing bolt of U shape servo arm (B). Use the same way to install another elevator pushrod.
4.Under the condition of elevator centered, put the clevis into the elevator surface horn.
5.At last, use screw (C) to fix the pushrod.



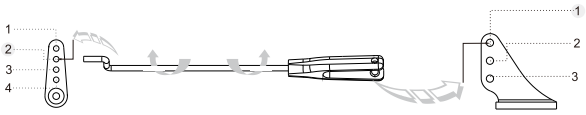


Aileron pushrod size

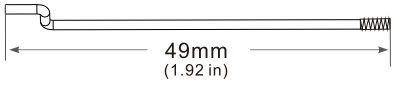


Pushrod Diameter : Ø1.2mm

Aileron pushrod mounting hole

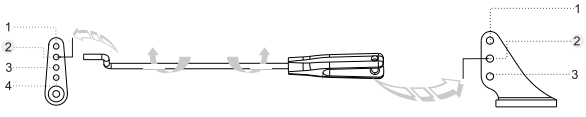


Rudder pushrod size

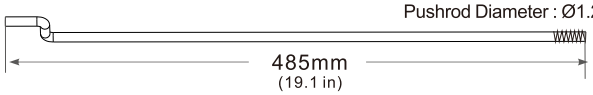


Pushrod Diameter : Ø1.2mm

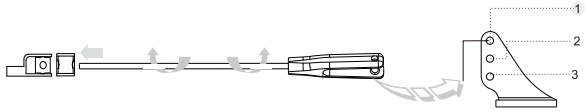
Rudder pushrod mounting hole



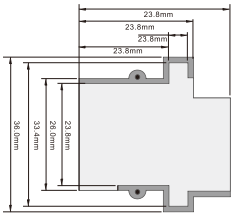
Elevator pushrod size



Elevator pushrod mounting hole



Note: we have installed all the servo box in aircraft, when players disassemble the servo, it will not damage the foam surface. If need to replace servo, please purchase **Freewing** servo ,or refer to the following drawing, choose the correct size servo!

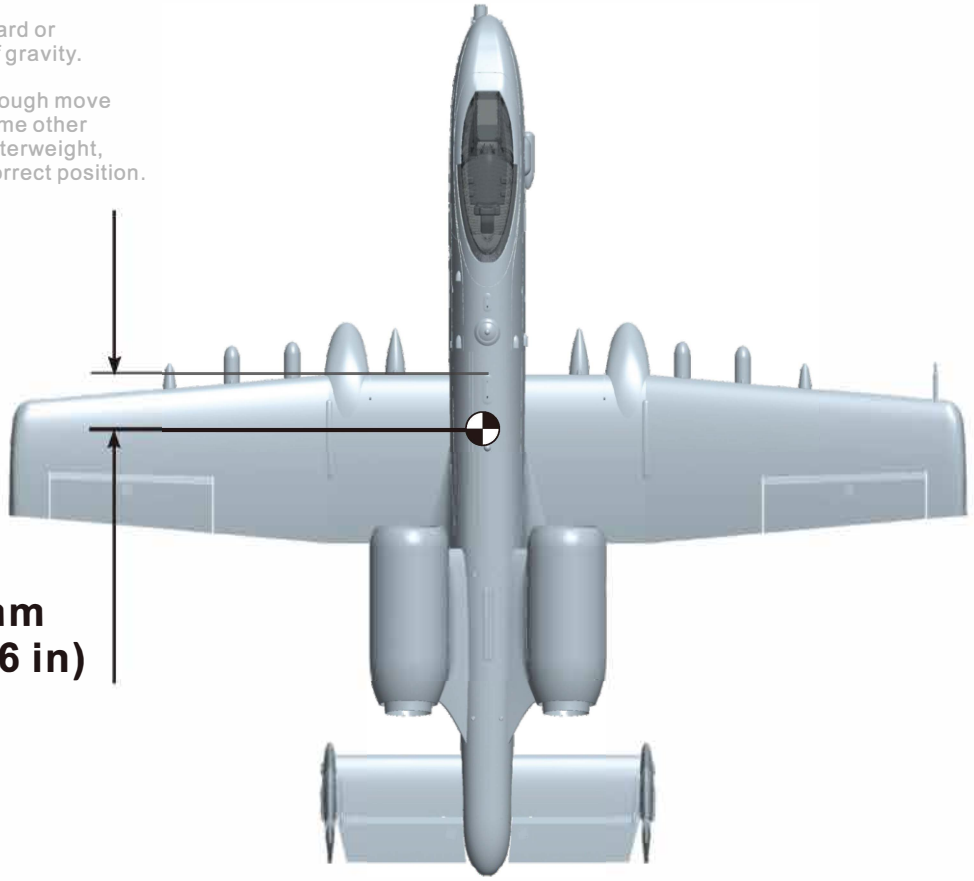


Center of Gravity

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.

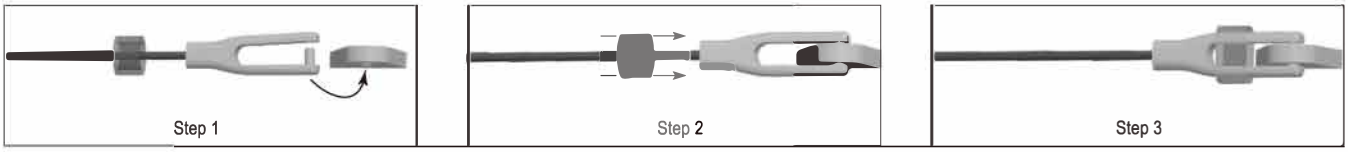
- You can move the battery forward or backward to adjust the center of gravity.

-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.

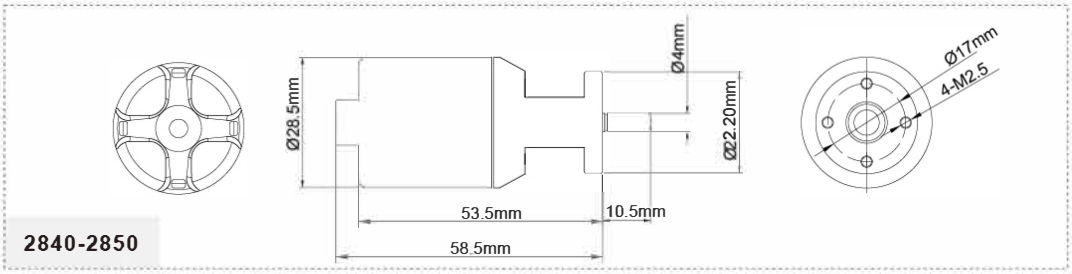


Important additional notes

The Y-type clevis used in this product is equipped with a transparent silicone ring for secondary reinforcement, which can effectively prevent the clevis from accidentally loosening.
As shown in the following figure, when you buckle the clevis into the control surface horn, use the silicone ring to cover the clevis.



Motor Specification



2840-2850KV brushless motor use 4S 14.8V lipo battery and 40A 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	Volate (V)	Current (A)	Pull (g)	RPM	Weight (g)	No Load Current	Propeller	ESC
2840-2850KV	2850RPM/V	14.8	40	1350	42180	145	2.7A	64mm Ducted Fan	40A

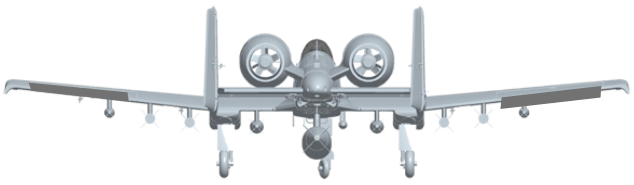
Control surface direction and set up

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

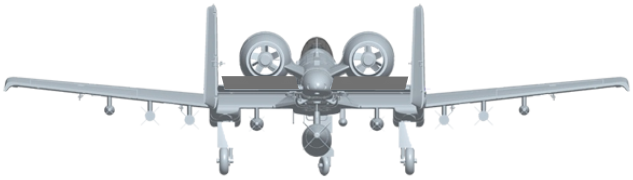
Stick Left

Stick Right

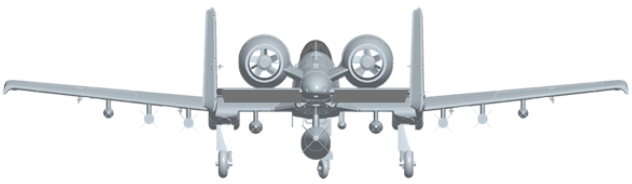


Elevator

Up Elevator



Down Elevator



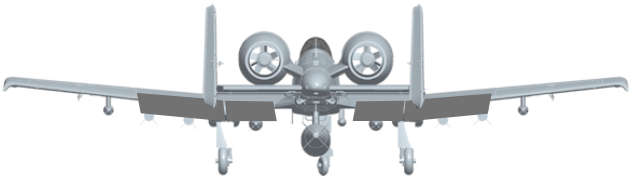
Rudder

Stick Left

Stick Right

Optional Flaps

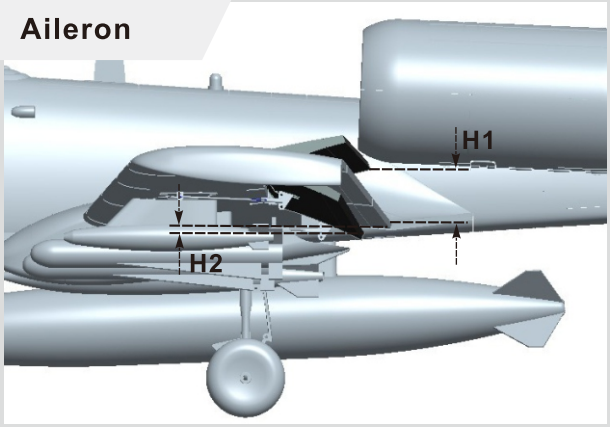
Flaps Down



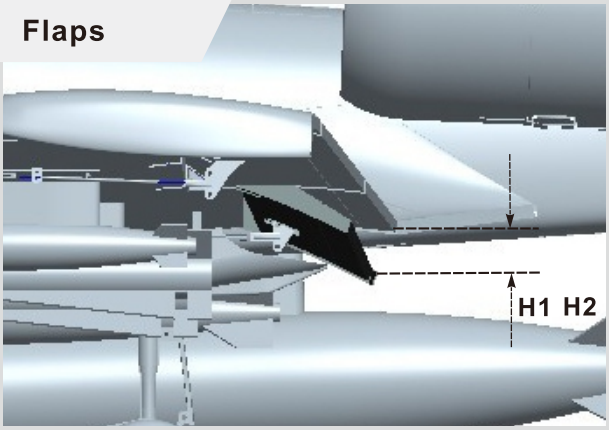
Dual Rates

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

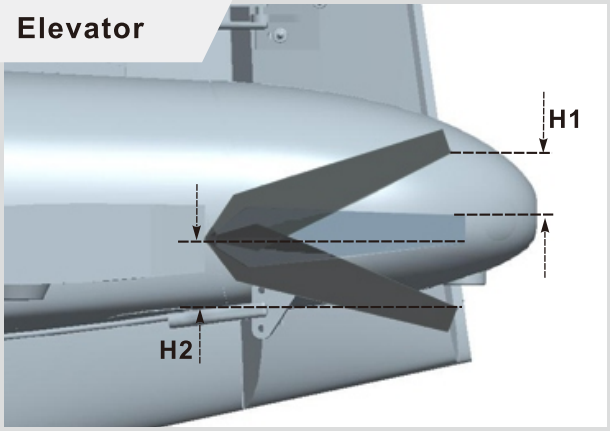
Aileron



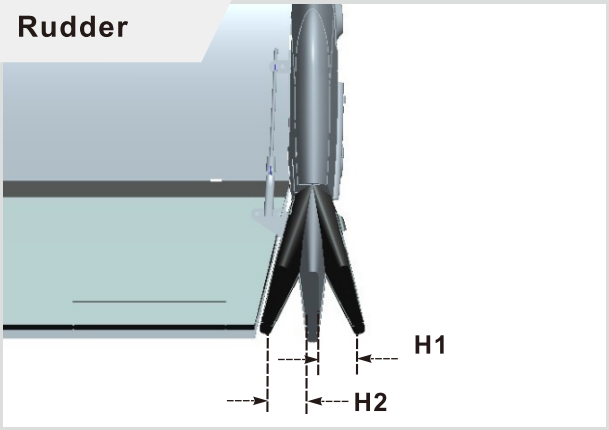
Flaps



Elevator



Rudder



	Aileron	Flaps	Elevator	Rudder
Low Rate	H1/H2 8mm/8mm	H1 14mm	H1/H2 4mm/4mm	H1/H2 5mm/5mm
High Rate	H1/H2 14mm/14mm	H2 21mm	H1/H2 8mm/8mm	H1/H2 9mm/9mm