

THUNDER 180

USER MANUAL

THUNDER 180

EPS FOAM



Warning: This aircraft is a hobby grade product,
only for people 14-year old or above.

Before operating this unit, please read these instructions completely.

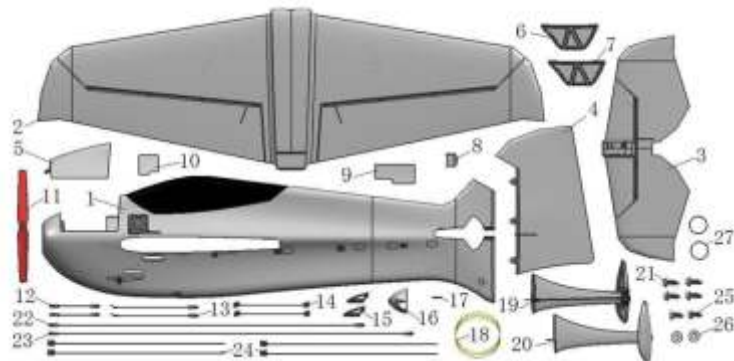
Examine your kit carefully!

Our model kits are subject to constant quality checks throughout the production process, and we sincerely hope that you are completely satisfied with the contents of your kit. However, we would ask you to check all the parts before you start construction, referring to the Parts List, as we cannot exchange components which you have already modified. If you find any part is not acceptable for any reason, we will readily correct or exchange it once we have examined the faulty component. Just send the offending part to our Model Department. Please be sure to include the enclosed complaint form, duly completed. We are constantly working on improving our models, and for this reason we must reserve the right to change the kit contents in terms of shape or dimensions of parts, technology, materials and fittings, without prior notification. Please understand that we cannot entertain claims against us if the kit contents do not agree in every respect with the instructions and the illustrations.

Caution!

Radio-controlled models, and especially model aircraft, are by no means playthings in the usual sense of the term. Building and operating them safely requires a certain level of technical competence and manual skill, together with discipline and a responsible attitude at the flying field. Errors and carelessness in building and flying the model can result in serious personal injury and damage to property. Since we, as manufacturers, have no control over the construction, maintenance and operation of our products, we are obliged to take this opportunity to point out these hazards and to emphasise your personal responsibility.

- Specifications
- Steps of assembly
- Choose a flying field
- Center of gravity
- Safety



1 Fuselage	1pc	15 Aileron servo control horn	2pcs
2 Wing	1pc	16 Spinner	1pc
3 Elevator	1pc	17 Spinner connecting part	1pc
4 Rudder	1pc	18 Rudder servo pull-pull fishing line	1pc
5 Equipment cabin	1pc	19 Right landing gear set	1pc
6 Right wing fence	1pc	20 Left landing gear set	1pc
7 Left wing fence	1pc	21 Screw (ST2*6)	4pcs
8 Rudder bolt	1pc	22 Elevator pushrod set	1pc
9 Elevator servo protector	1pc	23 Rudder pushrod set	1pc
10 Aileron servo protector	1pc	24 Wing bracings1	4pcs
11 GWS HD 8040	1pc	25 Screw (ST1.4*6)	2pcs
12 Aileron pushrod set 1	2pcs	26 Washer	2pcs
13 Aileron pushrod set2	2pcs	27 O ring	2pcs
14 Elevator bracings	1pc		

Features

- Indoor 3D for medium or advanced pilots
- Extreme torsional rigidity
- Ultra light weight, only 260gram in the air
- High maneuverability, you can experience best flying performance

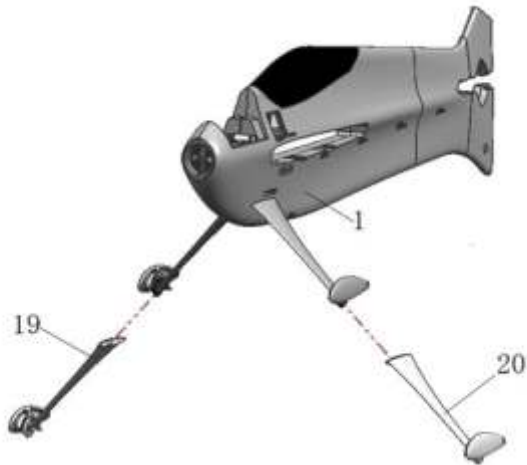
Specifications

Thunder	PNP	KIT+MOTOR
Motor At2204 KV1800	Installed	Installed
ESC 10A With BEC 2A	Installed	Needed to complete
Servos 8g servo	Installed	Needed to complete
Battery 2S 350mAh 20C Li-Po	Needed to complete	Needed to complete
Li-Po Charger	Needed to complete	Needed to complete
Receiver	Needed to complete	Needed to complete
Transmitter	Needed to complete	Needed to complete

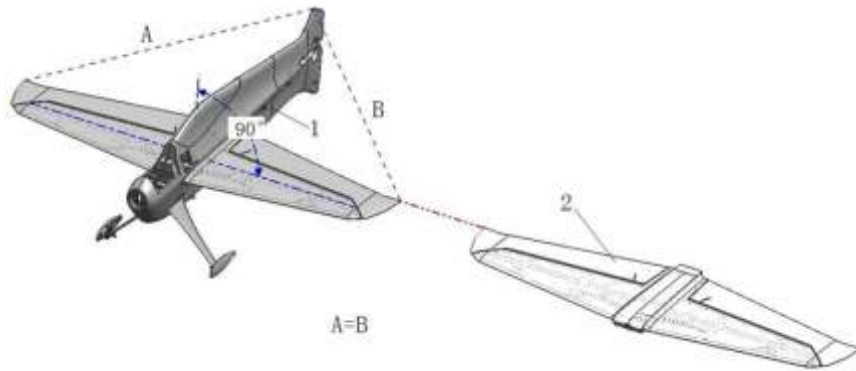
THUNDER Specification

Wingspan	35.4 in (900 mm)
Length	38.4 in (976 mm)
Weight (with battery)	0.56 lb-0.59 lb (250g-265g)
Propeller:	SF 8040 prop or SF 9050 prop

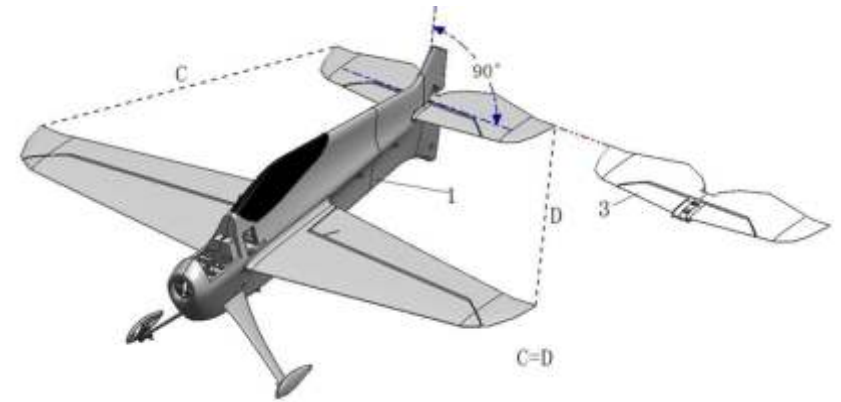
Steps of ASSEMBLY



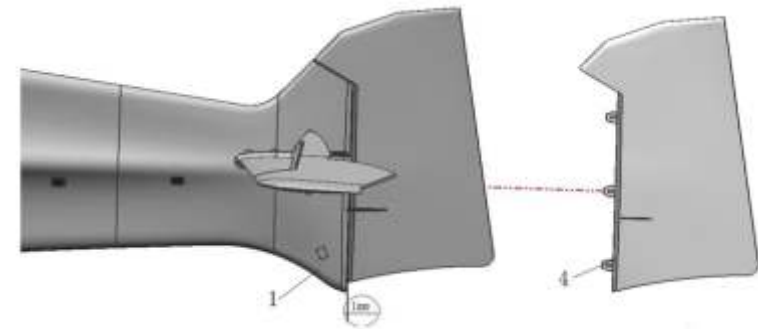
1. Install left landing gear set and right landing gear set into corresponding slot on fuselage, drop some CA on the joint of fuselage and left/right landing gear.



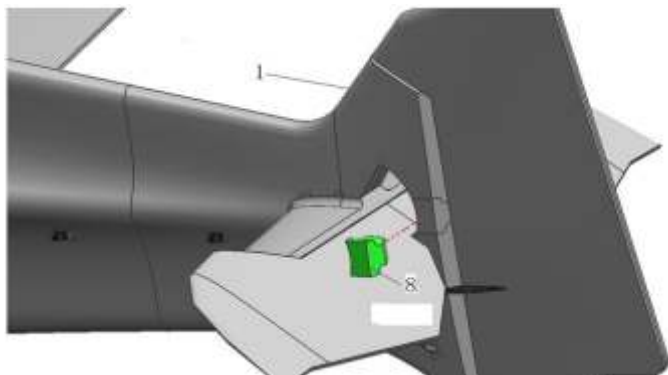
2. Insert wing into corresponding slot on fuselage, ensure $A=B$, wing and fuselage is perpendicular to each other, drop some CA on the joint of wing and fuselage.



3. Insert elevator into corresponding fuselage slot, ensure $C=D$, elevator and fuselage is perpendicular to each other, drop some CA on the joint of elevator and fuselage.



4. Insert rudder into the corresponding slot on fuselage, ensure 1mm gap between fuselage and rudder, drop some CA on the joint of rudder and fuselage.



5. Insert rudder bolt into corresponding slot on fuselage, then fix with CA.

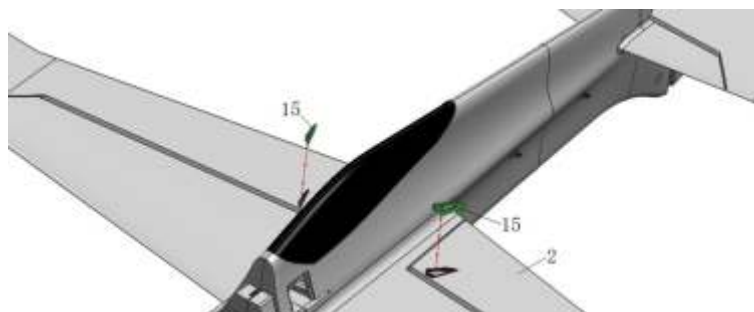
There're 2 options to control ailerons for your choice.

Option 1. Ailerons controlled by one aileron servo. Servo installed on fuselage.

Refer to step 6.

Option 2. Ailerons controlled by two aileron servos. Servos installed on left and right wing.

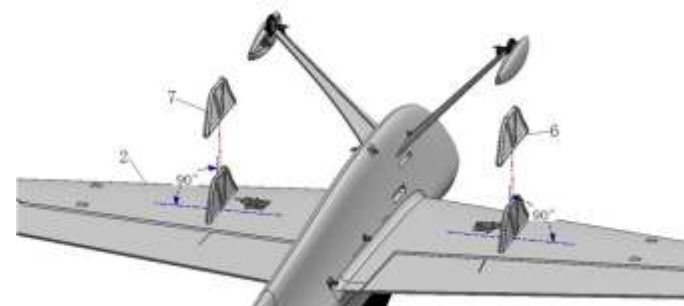
Refer to step 7



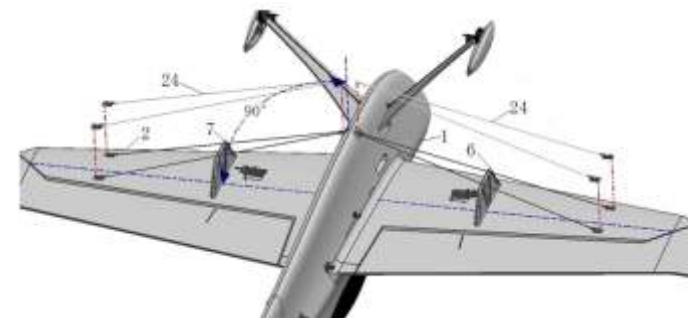
6. Insert aileron servo control horn into corresponding slot on top aileron as picture shown, and fix with CA.



7. Insert aileron servo control horn into corresponding slot on bottom aileron as picture shown, and fix with CA.



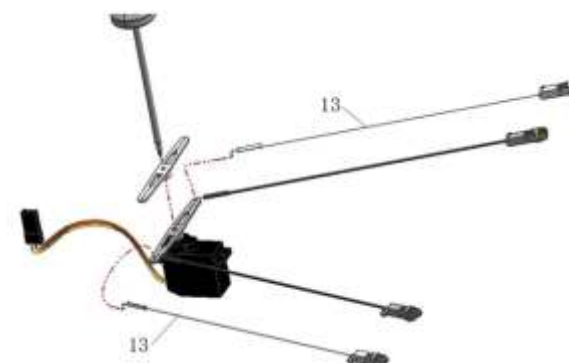
8. Insert right and left wing fence into corresponding slots on wing, ensure the wing fence be perpendicular to wing, then fix with CA.

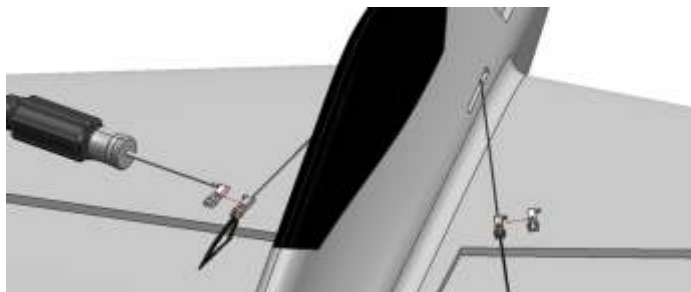
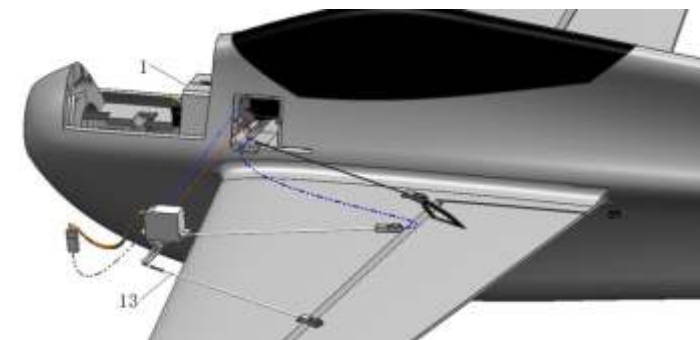


9. Install wing bracings as picture shown. Make sure fuselage is perpendicular to wing, then fix bracings with CA.

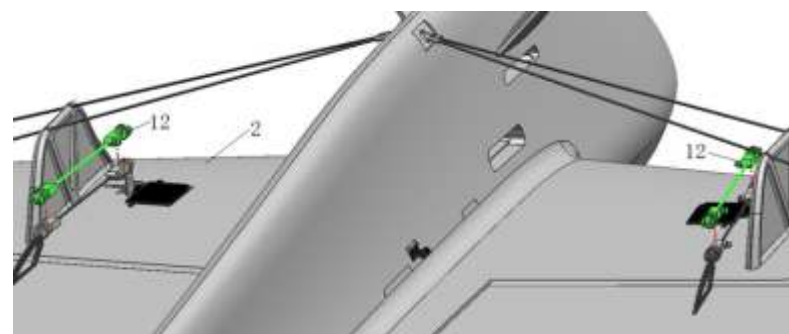
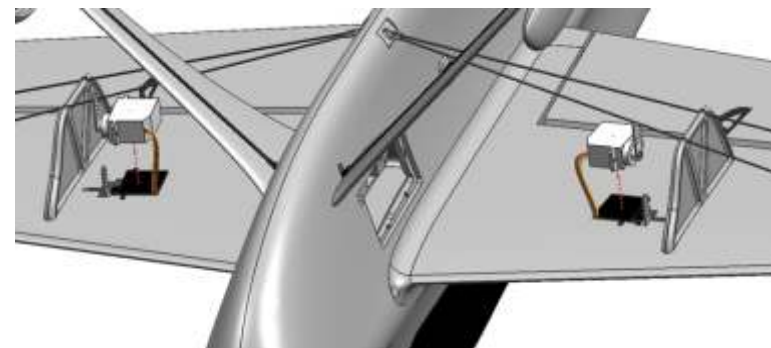
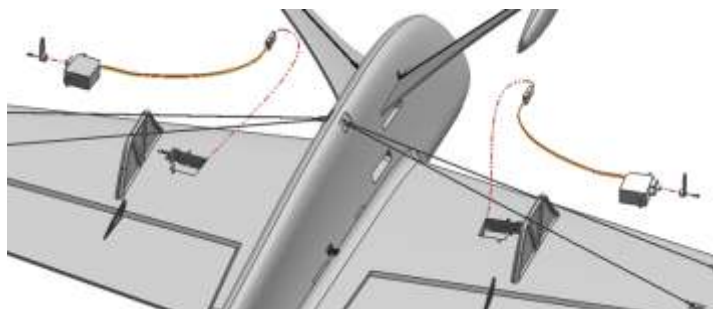
Ailerons controlled by one servo, please refer to step 10.

Ailerons controlled by two servos, please refer to step 11.

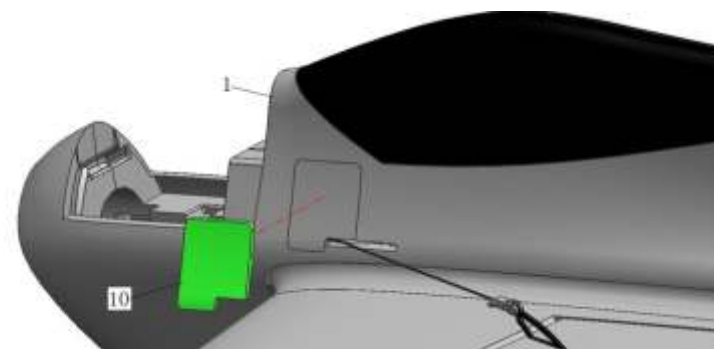




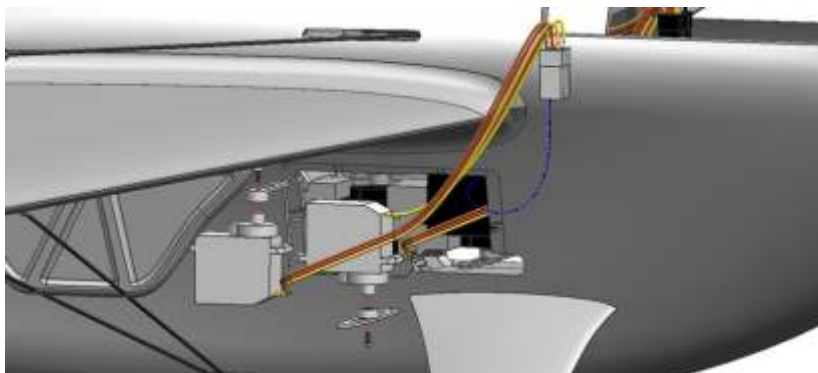
- 10.1. Insert Z bend of aileron pushrod set 2 into aileron servo arm, and fix servo arm with screw (servo was set in neutral).
- 10.2. Threading aileron servo wires into the corresponding slot on fuselage, and put one side of aileron pushrod set 2 crossing fuselage.
- 10.3. Insert aileron servo into the corresponding slot, and fix with CA.
- 10.4. Connect clip of aileron pushrod set 2 to aileron servo control horn, and adjust the pushrod to proper length by screw on clip.



- 11.1. Fix servo arm on servo with screw (servo was set in neutral), threading aileron servo wires into the corresponding slots as picture shown.
- 11.2. Insert aileron servo into corresponding slot one wing, and fix with CA.
- 11.3. Connect one end of aileron pushrod set 1 to servo arm, and connect another end to aileron servo control horn, then adjust pushrod to proper length by screw on clip.

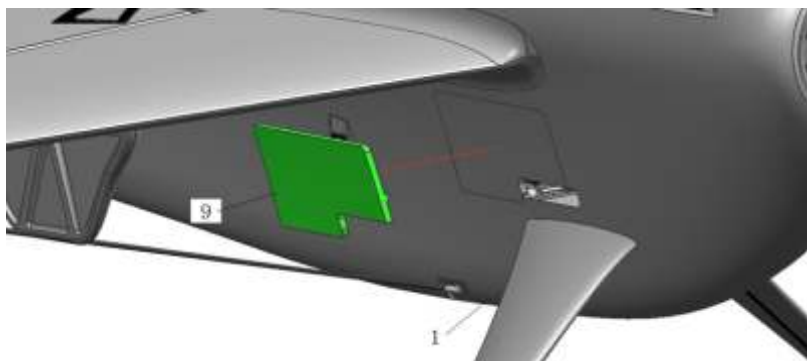


12. Install aileron servo protector as picture shown, then fix with CA.

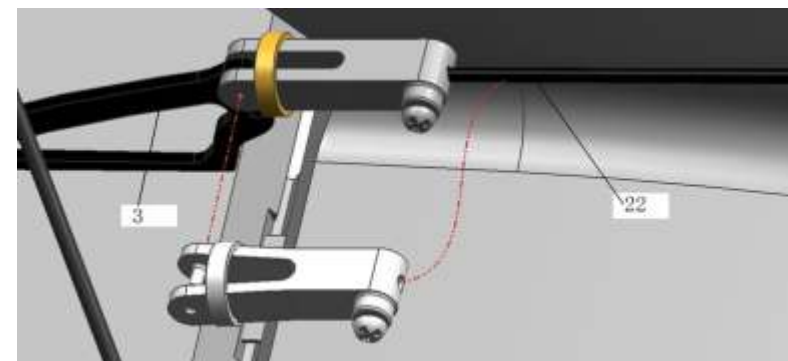
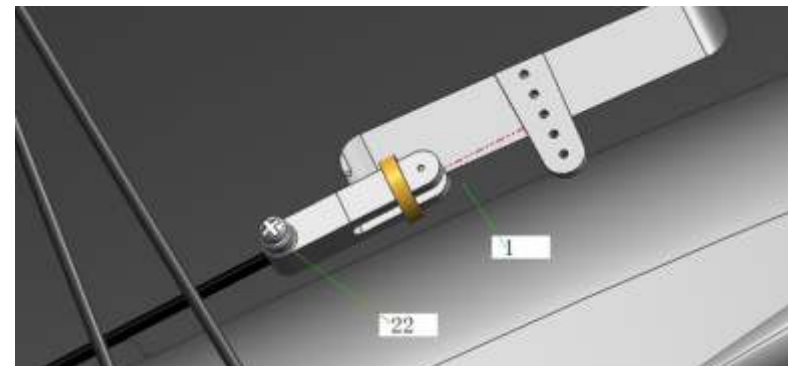
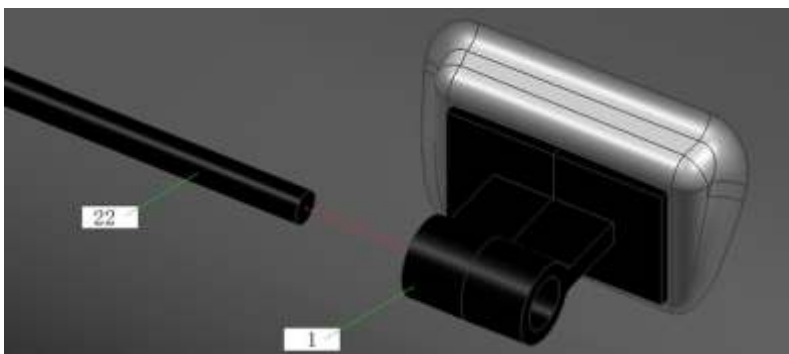


13.1. Fix servo arm on servo with screw (the servo was set in neutral), threading servo wires into the corresponding slot on fuselage.

13.2. Install servo as picture shown, and fix with CA.



14. Install elevator servo protector as picture shown, then fix with CA.



15.1. Remove one clip from elevator pushrod set, cross into pushrod guide slot on fuselage.

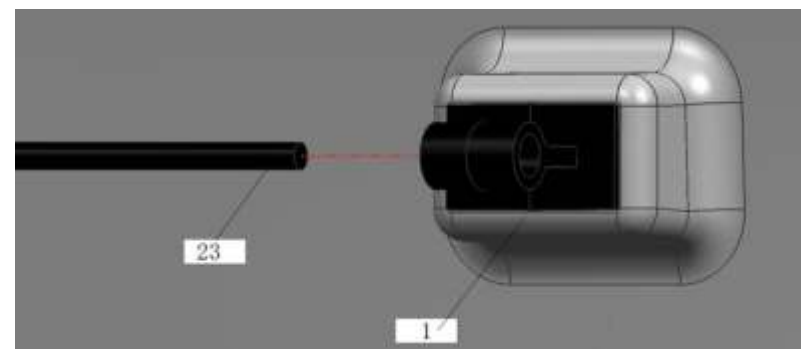
15.2. Install another end of pushrod with clip on elevator servo arm.

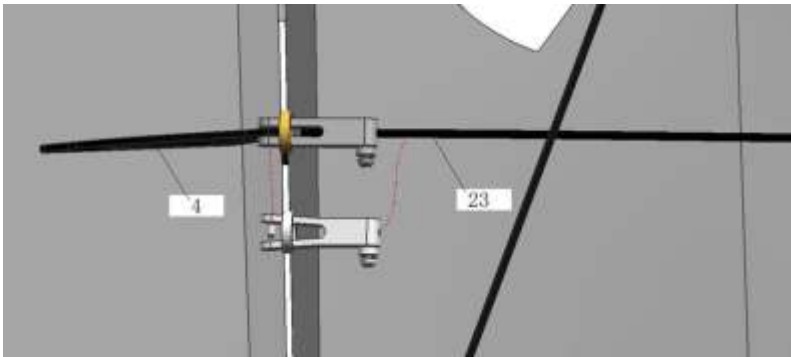
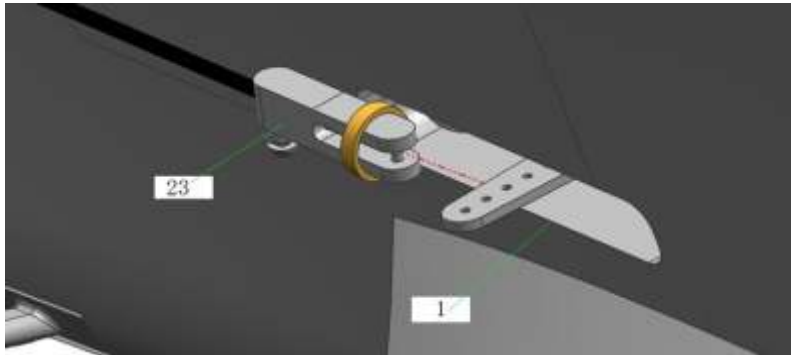
15.3. Reinstall the clip on elevator pushrod, and install it on elevator control horn, then adjust pushrod to proper length by screw on clip.

Two ways to control rudder for your choice:

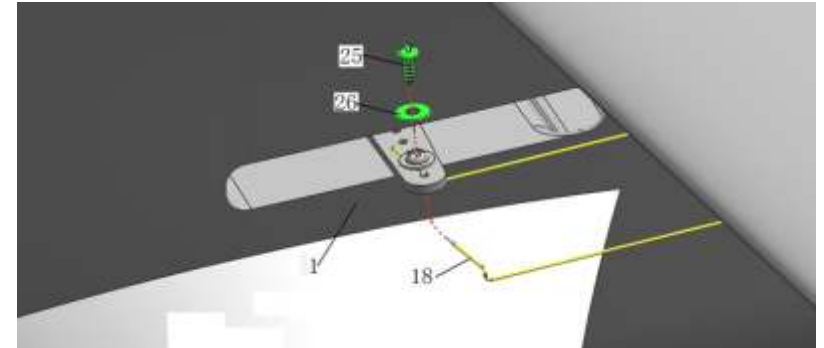
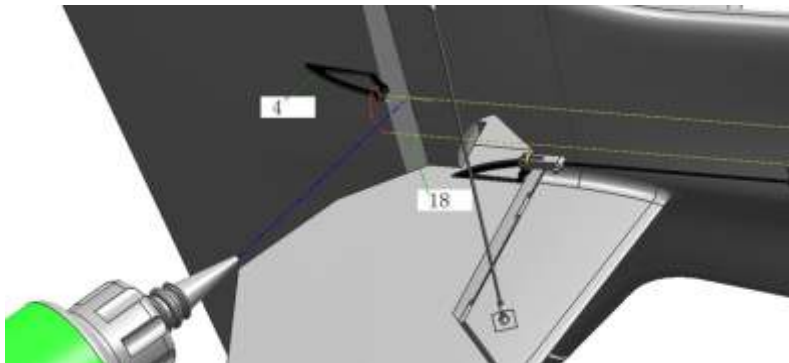
Option 1: use pushrod, refer to step 16.

Option 2: use pull-pull fishing line, refer to step 17.

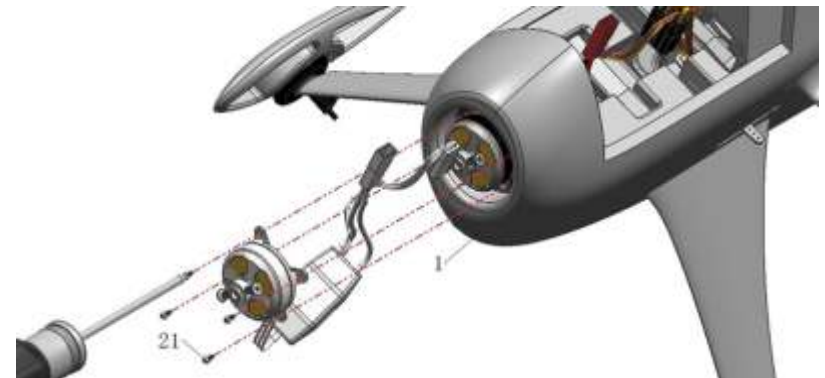




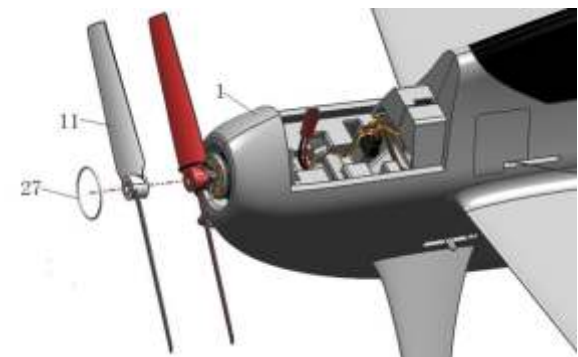
- 16.1. Remove one clip from rudder pushrod set, cross into pushrod guide slot on fuselage.
- 16.2. Install another end of pushrod with clip on rudder servo arm.
- 16.3. Reinstall the clip on rudder pushrod, and install it on rudder control horn, then adjust pushrod to proper length by screw on clip.



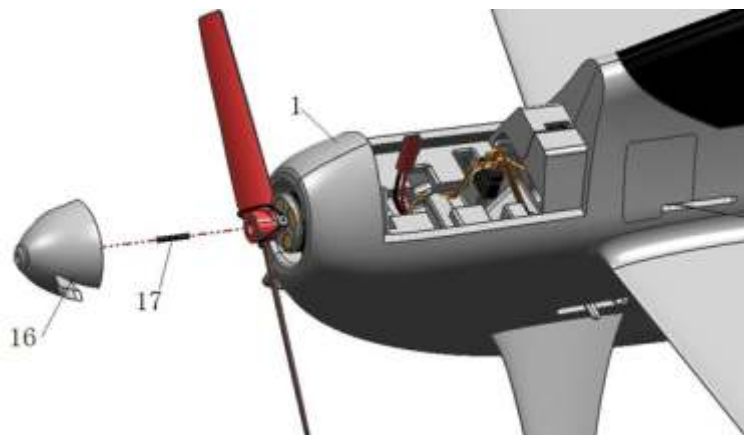
- 17.1. Cross rudder servo pull-pull fishing line to hole of rudder control horn, and fix with CA.
- 17.2. Adjust the pull-pull fishing line to a proper length, and pass another end through rudder servo arm, and fix it on servo arm with screw(ST1.4*6)via washer.
- 17.3. Same step as 1 and 2 for another side of pull-pull fishing line



- 18. Install motor onto motor mount in fuselage, and fix with screw(ST2*6).



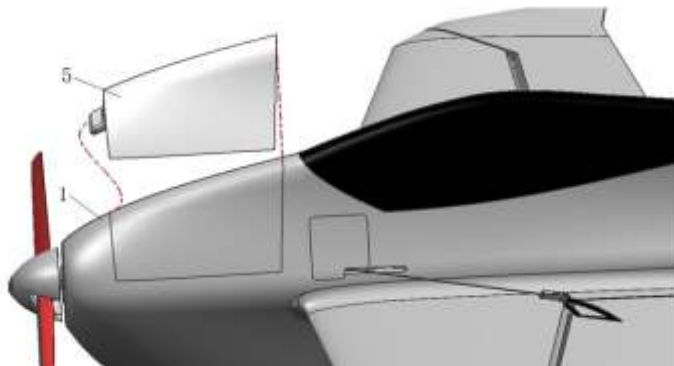
- 19. Fix GWS HD 8040 propeller on motor with O ring.



- 20.1. Insert one side of spinner connecting part into middle hole of propeller (no need to drop CA).
 20.2. Another side match with corresponding hole of spinner, fix with CA.



21. Put receiver and battery into the corresponding slot of equipment cabin on fuselage.



22. Install equipment cabin cover in place.

Choose a Flying Field

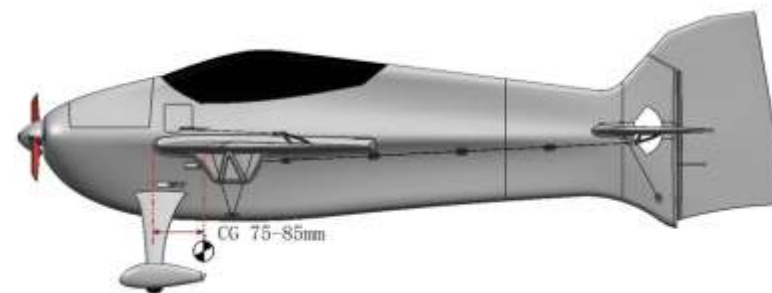
In order to have the most success and to protect your property and aircraft, it is very important to select a place to fly that is very open. Consult local laws and ordinances before choosing a location to fly your aircraft.

The site should:

- Have a minimum of 200m of clear space in all directions.
- Stay clear of pedestrians.
- Stay free of trees, buildings, cars, power lines or anything that could entangle your aircraft or interfere with your line of sight.

Plan on flying in an area that gives you more space than you think you need, especially with first flights.

Center Of Gravity



The centre of gravity (CG) should be at a position of 75mm-85mm away from leading edge, please refer to above picture.

Safety

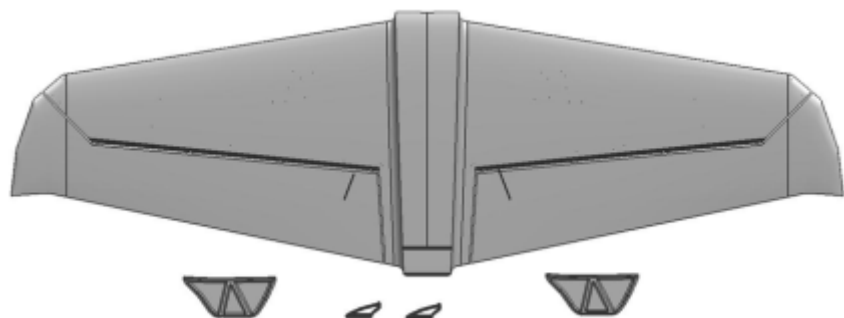
Safety is the First Commandment when flying any model aircraft.

Third party insurance should be considered a basic essential. If you join a model club suitable cover will usually be available through the organisation. It is your personal responsibility to ensure that your insurance is adequate. Make it your job to keep your models and your radio control system in perfect order at all times. Check the correct charging procedure for the batteries you are using. Make use of all sensible safety systems and precautions which are advised for your system. An excellent source of practical accessories is the main catalogue, as our products are designed and manufactured exclusively by practising modellers for other practising modellers.

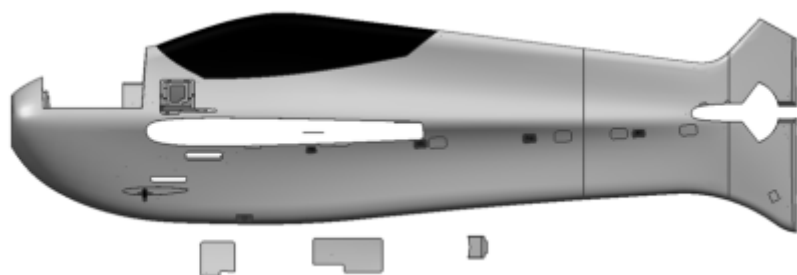
Always fly with a responsible attitude. You may think that flying low over other people's heads is proof of your piloting skill; others know better. The real expert does not need to prove himself in such childish ways. Let other pilots know that this is what you think too.

Always fly in such a way that you do not endanger yourself or others. Bear in mind that even the best RC system in the world is subject to outside interference. No matter how many years of accident-free flying you have under your belt, you have no idea what will happen in the next minute.

Our team - hope you have many hours of pleasure building and flying your new model.



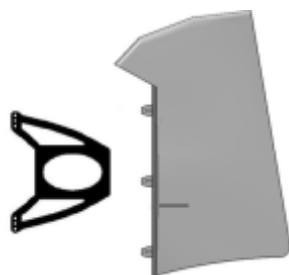
Wing



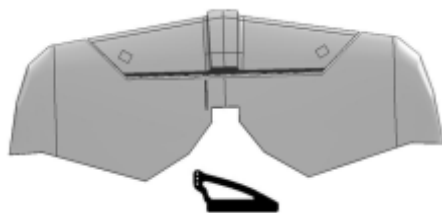
Fuselage



Equipment cabin cover



Vertical fin



Stabilizer



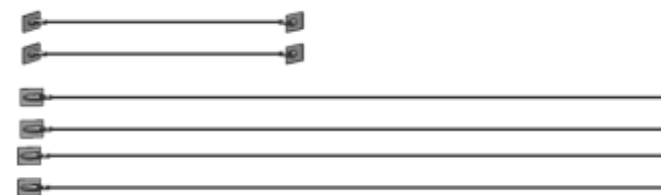
Landing gear set



Spinner



pushrod set



bracings



O ring



Other accessories



Motor : 2204 KV1800



Servo: 8g micro servo



ESC : 10Amp



Propeller: 8040 SF prop



Battery: 350mah 7.4V lipo 20c

Thunder

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Thunder

A series of horizontal lines for writing, consisting of 16 evenly spaced lines across the page.