Item No.:FJ309
Version No.:FJ309-V01

Freewing MODEL
www.sz-freewing.com

F-15 Eagle User Manual

Wingspan : 965mm

MADE IN CHINA

Introduction

Thank you for purchasing F-15 "Eagle" 90mm EDF jet! From the mid-1970s into service, F-15 has become the world's most respected once air superiority fighter, the McDonnell - Douglas F-15 "Eagle" is impressive main USAF air superiority fighter .

This 1:13 scale F-15 90mm EDF jet is the best proportion which suit for 90mm EDF jet. In this size, many details,such as various antennas and sensors, cockpit, pilots, weapons pylons , missiles, fuselage, tail and other parts of the nozzle, can be real show, realistic effects, its shocking!

F-15 used the 90mm EDF power system, designed by X-type airway design. Two excellent power system—Standard version and Deluxe version, bring you the best flying experience,especially the deluxe version equipped in-runner power system V2 silver version,showed us the “fast and furious” meaning. We all know, the real F-15 "Eagle" fighter has a very good aerodynamic shape and flight stability. The same, our model owned these excellent features!

We strongly recommend that you read the manual very carefully beofre install, and adjust it according to manual parameter. We wish you have a successful maiden flight and hope to give you a new flying experience!

Design features:

-Fuselage air-brake controlled by electric worm
-Scale LED light and LED light controll system
-Retract landing gear
-New aluminum shock absorber landing gear
-Cabin door and its control system
-Main wing strengthened by carbon tubes
-Removable main wing design.

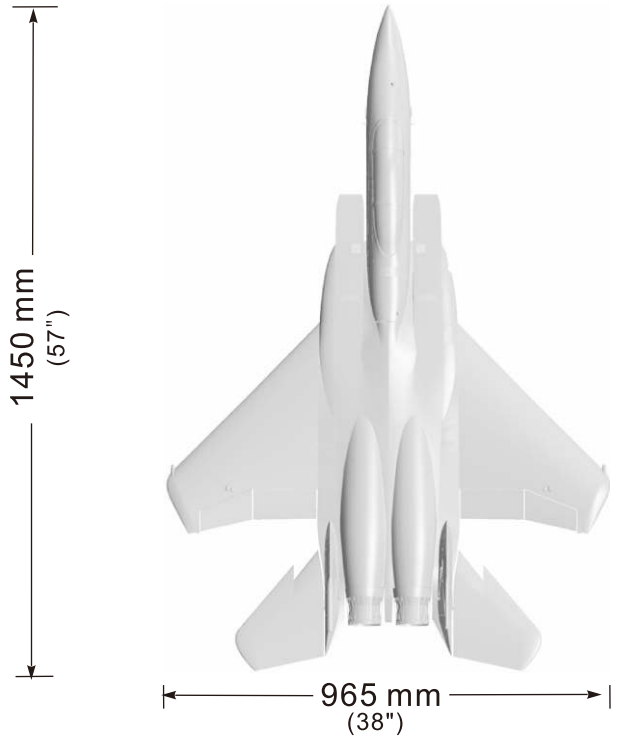
⚠ **NOTE:** This is not a toy. Not for children under 14 years.Young people under the age of 14 should only be permitted to operate this model under the instruction and supervision of an adult. Please keep these instructions for further reference after completing model assembly.

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.

Catalog

Product basic information



Standard Version

Wingload：209g/dm²
Motor: O/R BL 3748-1550KV
Servo: 9g / 17g MG servo (4 / 8pcs)
ESC: 130A with 8A UBEC
Ducted fan: 90mm 12-blade fan
Weight: 3080g (w/o Battery)
Thrust: 3600g

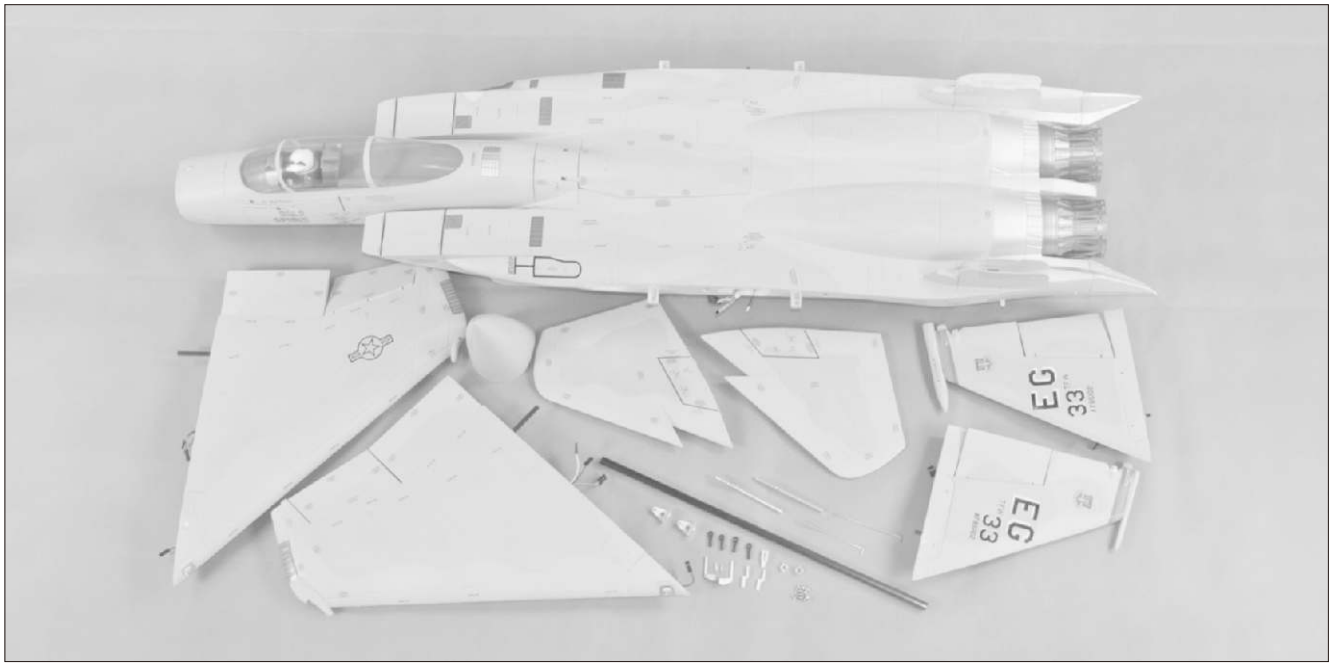
Deluxe Version

Wingload：214g/dm²
Motor: I/R BL 4068-1680KV
Servo: 9g / 17g MG servo (4 / 8pcs)
ESC: 130A with 8A UBEC
Ducted fan: 80mm 12-blade fan
Weight: 3200g (w/o Battery)
Thrust: 4200g

General function

-Retract landing gear controlled by electric worm
-Front,rear landing gear cabin door
-Scale high LED light set, nose take-off light.
-New aluminum shock absorber landing gear
-Fuselage air-brake controlled by electric worm
-Scale cockpit, pilot
-Removable main wing design.

Package list



Open package and check the package list. (Different version include different contents) Include ✓ Optional ● Not include ×

NO.	Parts Name	PNP	KIT Plus	KIT
1	Fuselage	✓	✓	✓
2	Main wing	✓	✓	✓
3	Elevator	✓	✓	✓
4	Rudder	✓	✓	✓
5	Nose cone	✓	✓	✓
6	Missiles and pylons	●	●	●
7	Retract landing gear	✓	✓	✓
8	LED light	✓	✓	✓
9	LED light controller Cabin door sequencer	✓	✓	✓
10	Servo	✓	✓	×
11	Motor	✓	×	×

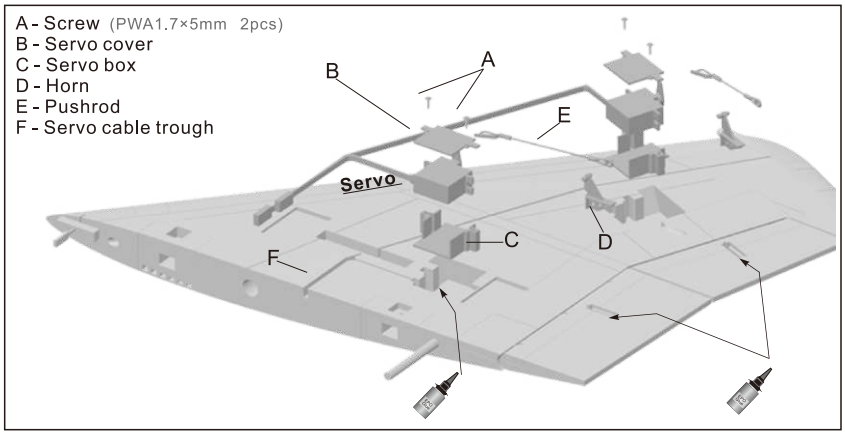
NO.	Parts Name	PNP	KIT Plus	KIT
12	EDF	✓	×	×
13	ESC	✓	×	×
14	Battery	●	●	●
15	Pilot	✓	✓	✓
16	Plastic part	✓	✓	✓
17	Screw bag	✓	✓	✓
18	Pushrod ,clevis	✓	✓	✓
19	Hardware	✓	✓	✓
20	Carbon tube	✓	✓	✓
21	Glue	✓	✓	✓
22	Manual	✓	✓	✓

Installation

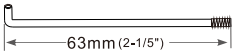
Main Wing

Install Main Wing Servo

1. Use servo tester or radio to center the servo arm.
2. Use glue to attach the 17g servo box (C) and horn (D) on the main wing.
3. Install the servo on the 17g servo box (C), and press the servo cable on the servo cable trough (F), cover the 17g servo cover (B) , and use 2pcs screws (A) to fix the servo.
4. Use Pushrod (E) to connect the servo arm and rudder horn (D).



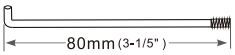
Aileron pushrod size



Pushrod diameter : Ø 1.5 mm

Aileron pushrod mounting hole

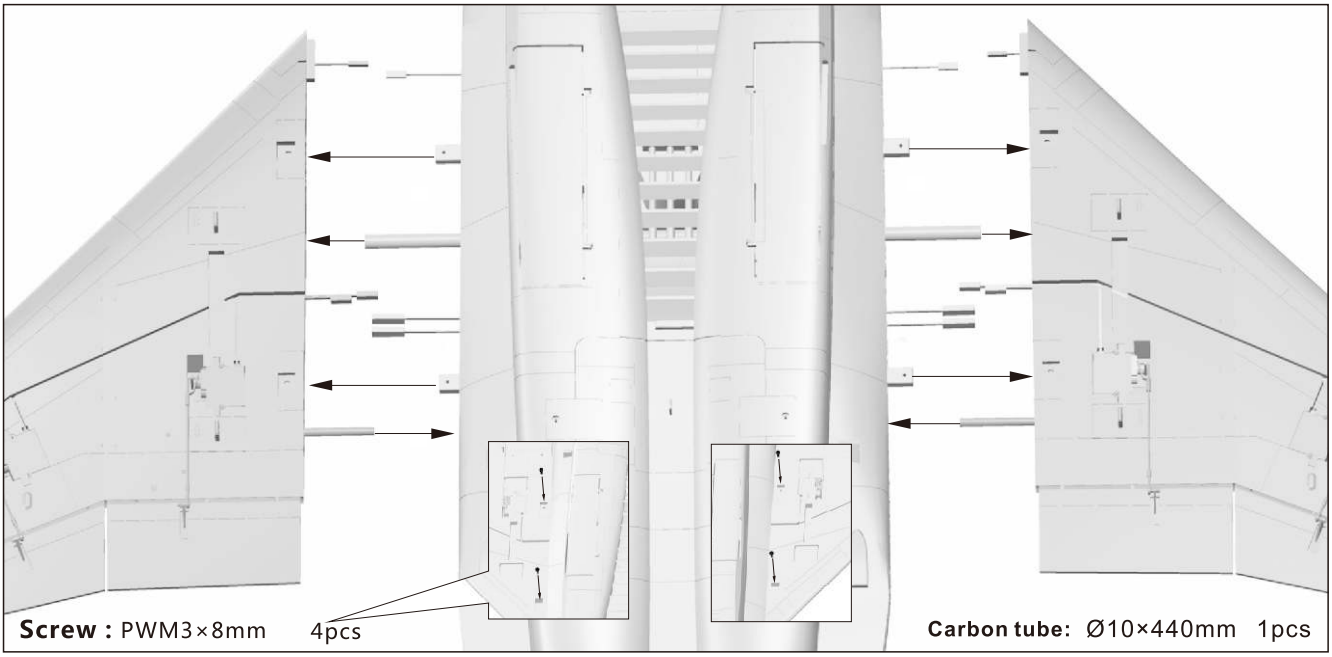
Flap pushrod size



Pushrod diameter : Ø 1.5 mm

Flap pushrod mounting hole

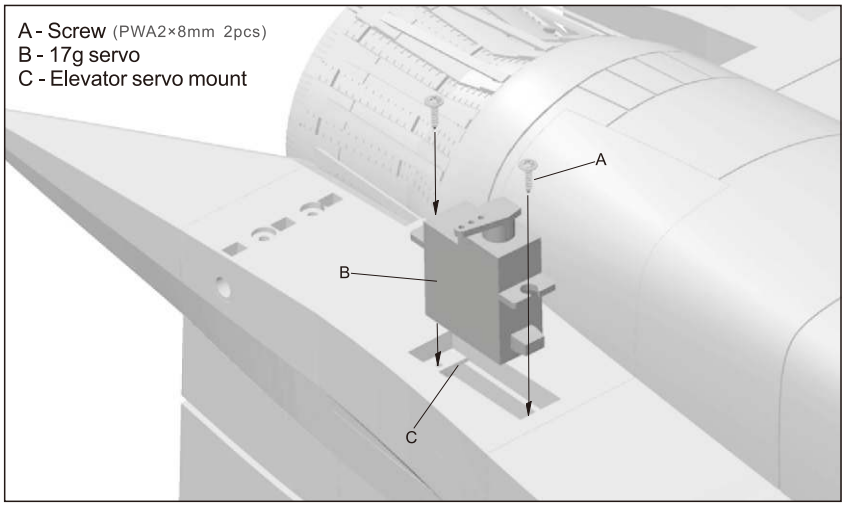
Install main wing



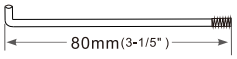
Elevator

Install elevator servos

1. Use servo tester or radio to center the servo arm.
2. Use screw (A) to fix servo (B) on the elevator servo mount (C).
3. Repeat the above steps to install on the other side servo.



Elevator pushrod size



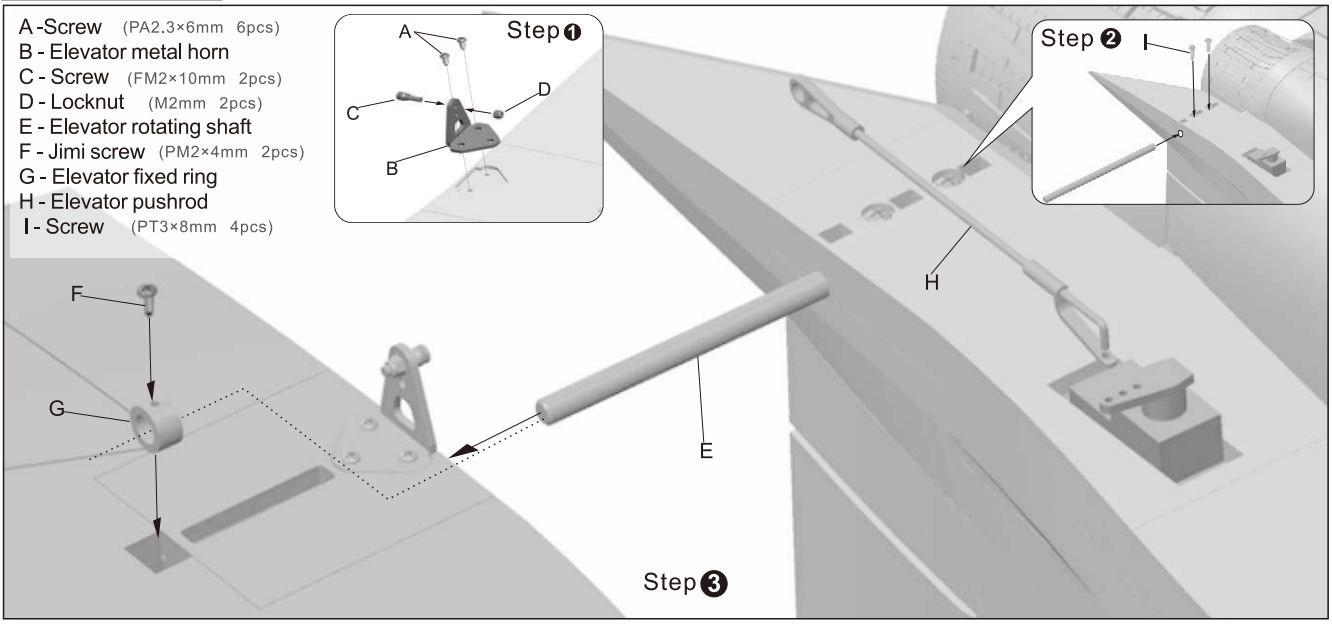
Pushrod diameter : Ø 1.5 mm

Elevator pushrod mounting hole

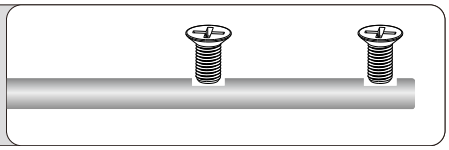
Installation

Install Elevator

A -Screw (PA2.3×6mm 6pcs)
B - Elevator metal horn
C - Screw (FM2×10mm 2pcs)
D - Locknut (M2mm 2pcs)
E - Elevator rotating shaft
F - Jimi screw (PM2×4mm 2pcs)
G - Elevator fixed ring
H - Elevator pushrod
I - Screw (PT3×8mm 4pcs)



Note: when use screw I to fix the elevator rotating shaft, we need to control the screw depth, make sure the screw reach to the notch position of elevator rotating shaft, also make sure the elevator rotate smoothly. We can try to pull out the elevator to test the screw reach to the correct depth or not.

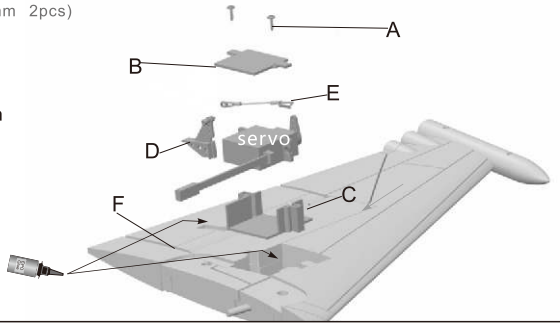


Rudder

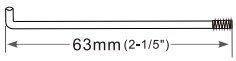
Install rudder servos

1. Use servo tester or radio to center the servo arm.
2. Use glue to attach the 17g servo box (C) and rudder horn (D) on the rudder.
3. Install the servo on the 17g servo box (C), and press the servo cable on the servo cable trough (F), cover the 17g servo cover (B) , and use 2pcs screws (A) to fix the servo.
4. Use rudder pushrod (E) to connect the servo arm and rudder horn (D).

A - Screw (PWA1.7×5mm 2pcs)
B - Servo cover
C - Servo box
D - Rudder horn
E - Rudder pushrod
F - Servo cable trough

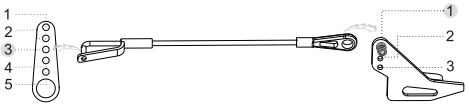


Rudder pushrod size



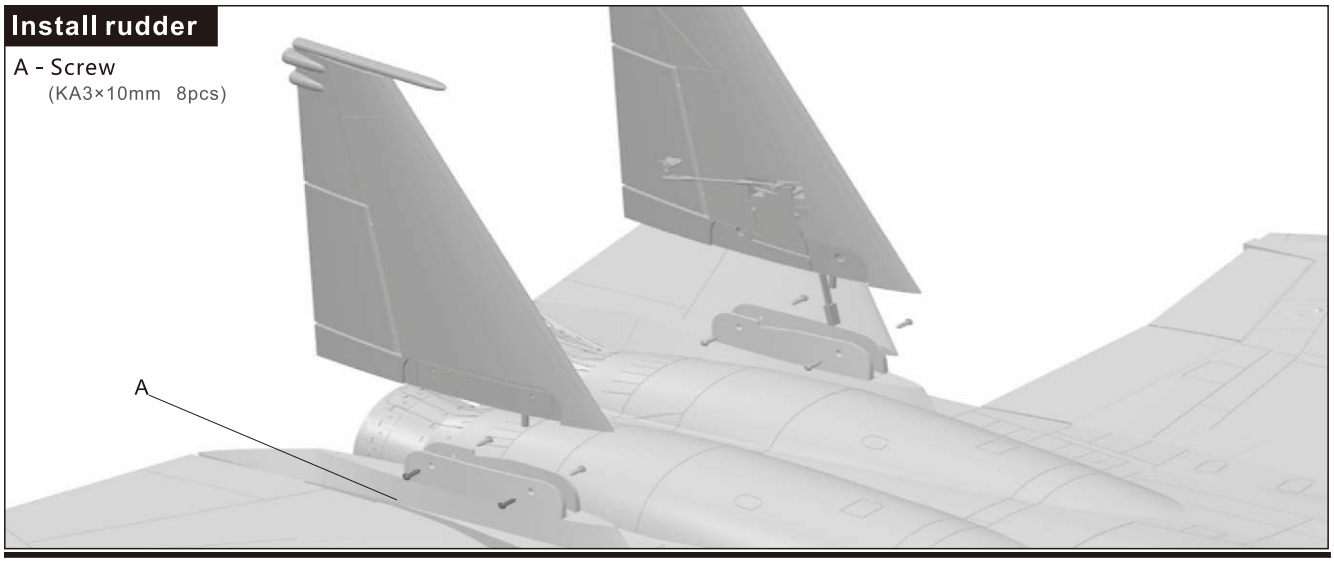
Pushrod diameter : Ø 1.5 mm

Rudder pushrod mounting hole



Install rudder

A - Screw
(KA3×10mm 8pcs)

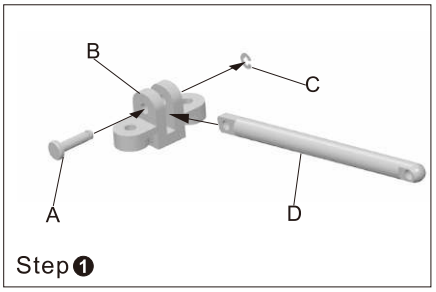


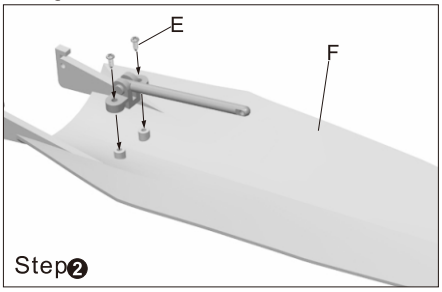
Install air-brake

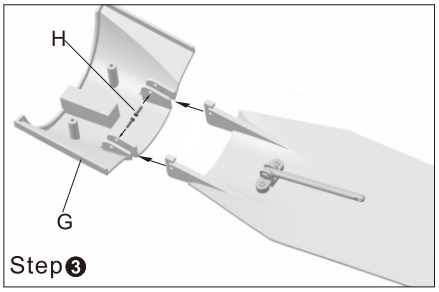
Please refer to the following photo, install/replace/revise air-brake.

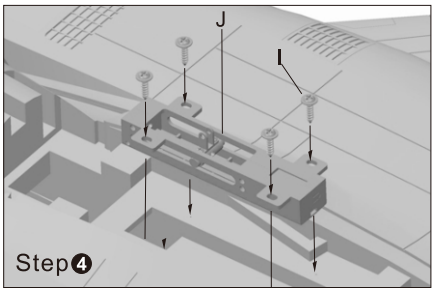
Sparepart name and specification

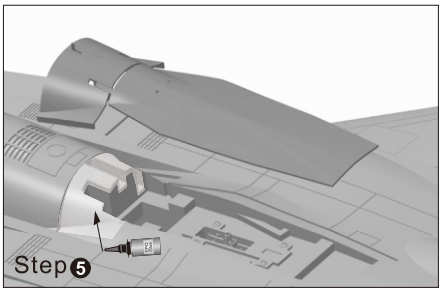
A-Pin (Ø3.5×9.2mm)
B-Connect arm 1
C-E-buckle (内径Ø1.5mm)
D-Air-brake slant rod
E-Screw (PT2.6×5mm 2pcs)
F-Air-brake
G-Air-brake fixed plastic part
H-Plastic rotating shaft
I-Screw (PWA3×8mm 4pcs)
J-Air-brake controller
K-Screw (FM2×10mm 1pcs)
L-Nut (M2mm 1pcs)
M-Blister cover

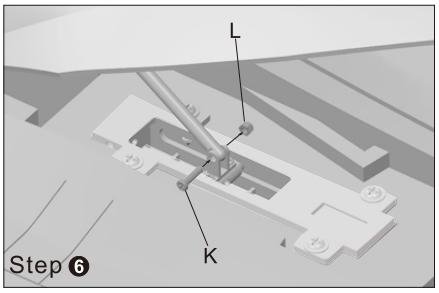


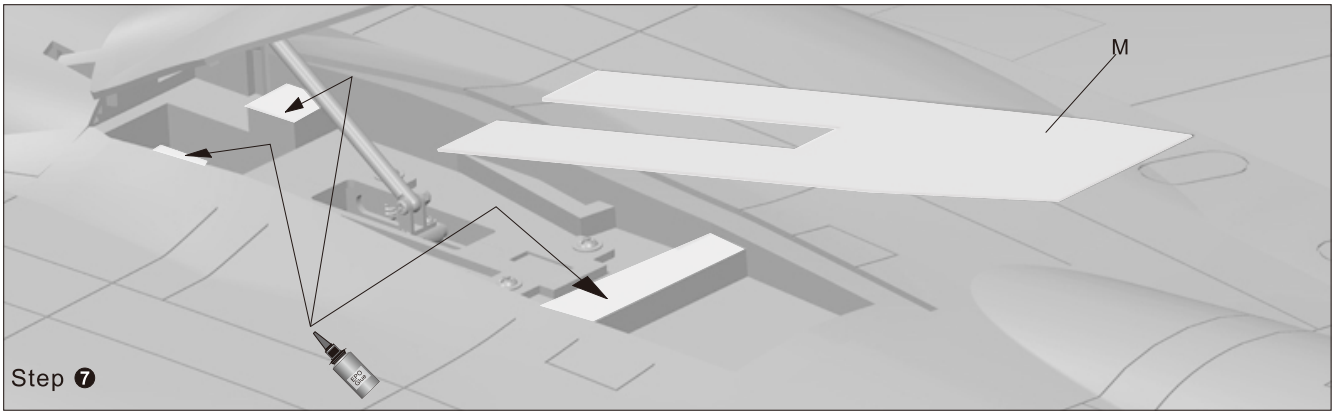










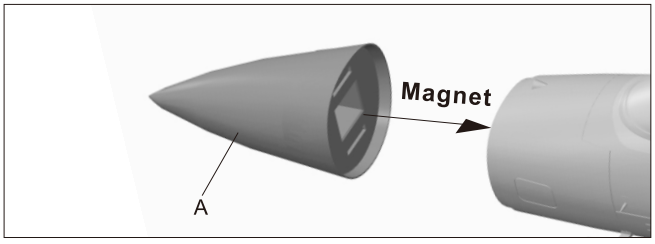


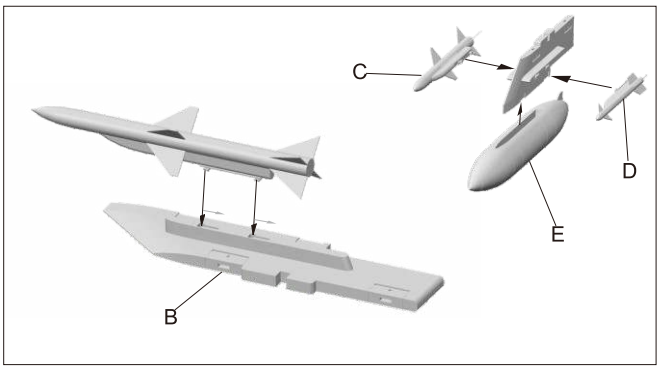
Install nose cone,missiles, pylons.

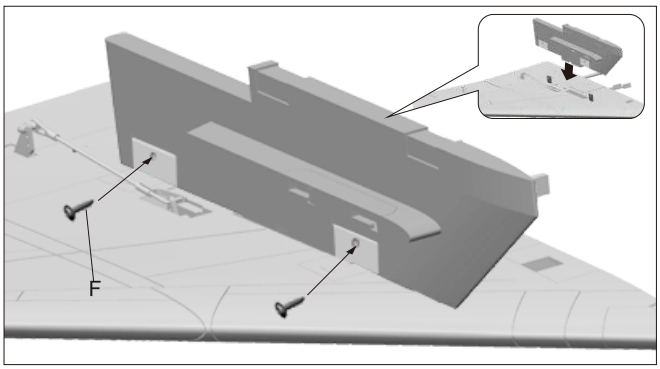
Please refer to the following photo, install missiles and pylons.

Sparepart name and specification

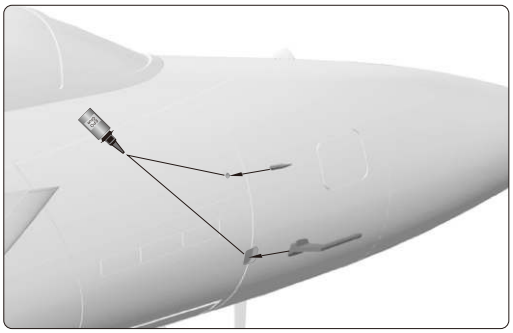
A-Nose cone
B-Missile pylons
C-AIM-7 missiles
D-AIM-9 missiles
E-Drop tank
F-Screw (PWA3×12mm 4pcs)

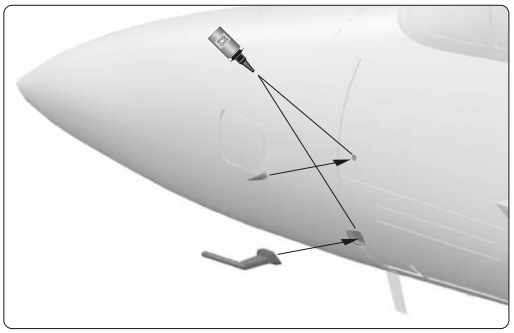






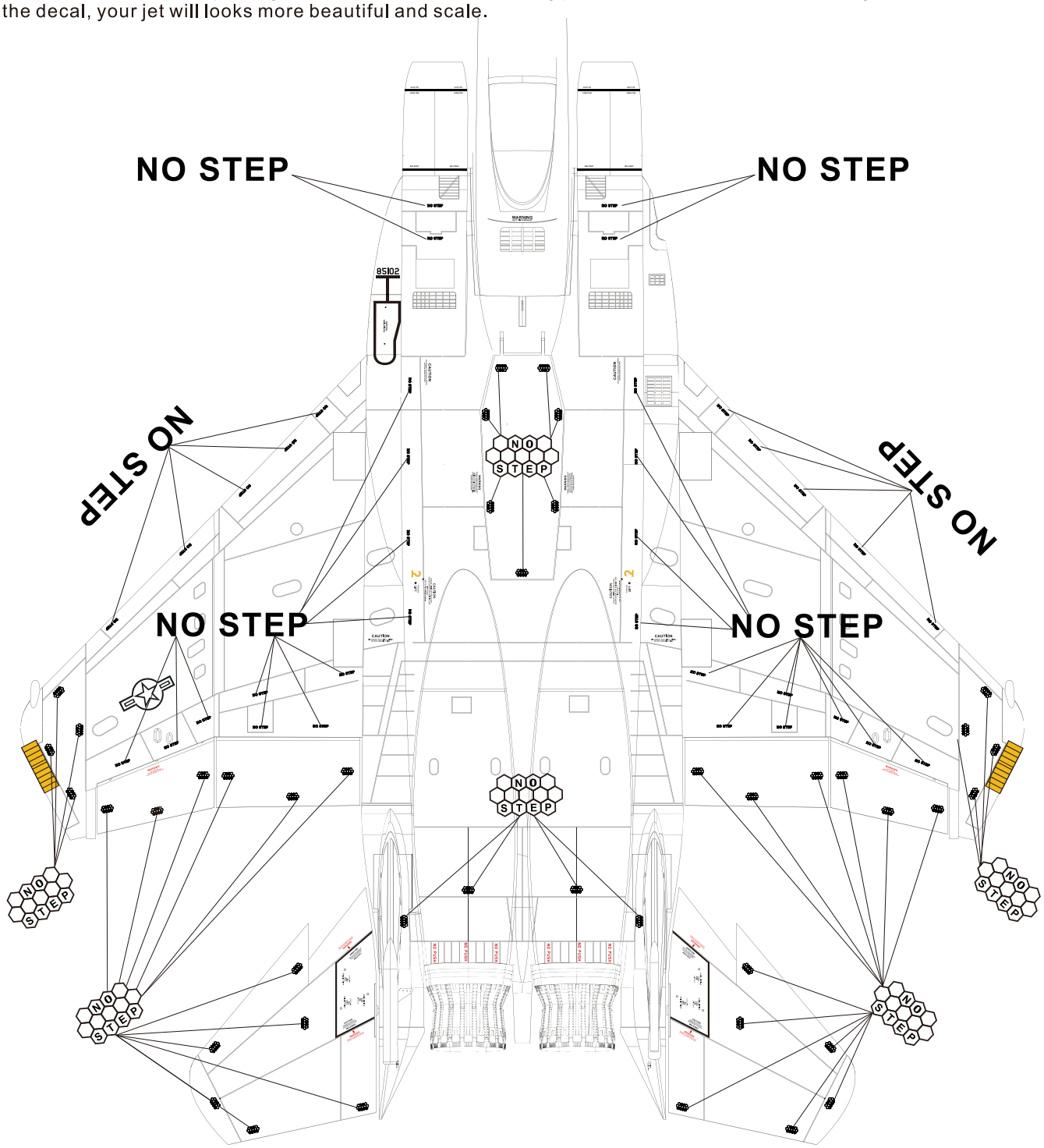
Installation





Decal position

We provided a decal in package. Please refer to the following photo to stick the decal on fuselage surface. Sticked the decal, your jet will looks more beautiful and scale.



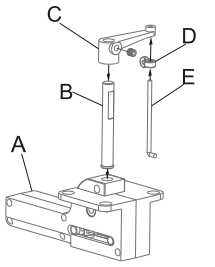
Install landing gear

Nose Landing Gear Assemble

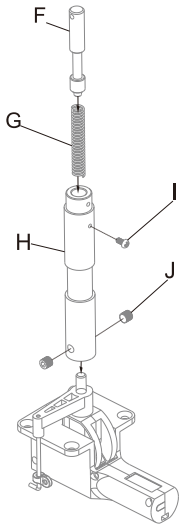
Please assemble、 disassemble the nose landing gear according to the following photo.

Accessories name and specification

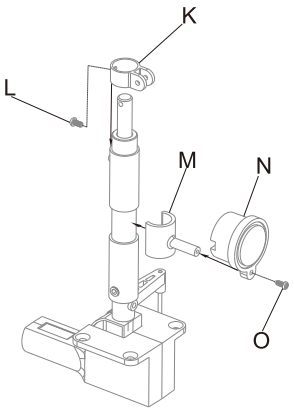
A-Retract controller
B-Nose gear main rod
C-Nose gear steering arm
D-Nose gear steering control ring
E-Nose gear steering rod
F-Nose gear shock absorber active rod
G-Spring
H-Nose gear main supporting rod
I-Screw (PM2×4mm 1pcs)
J-Screw (M4×4mm 2pcs)
K-O-shape connecting arm
L-Screw (PM2×3mm 1pcs)
M-LED light fixed arm
N-LED light
O-Screw (PA2×8mm 1pcs)
P-Wheel (Ø45×15mm)
Q-Nose gear axle (Ø5×25.5mm)
R-U-shape slant supporting rod
S-8-shape connecting arm
T-E-buckle (内径Ø2.0mm)
U-Pin (Ø3.5×9.2mm)
V-Pin (Ø3.5×11.3mm)
W-E-buckle (内径Ø1.5mm)



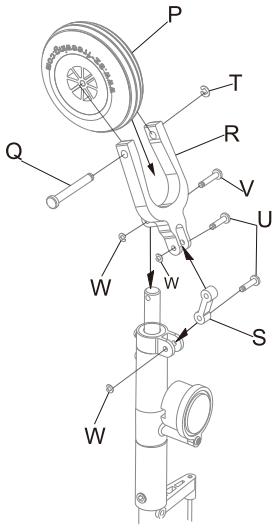
Step ❶



Step ❷



Step ❸



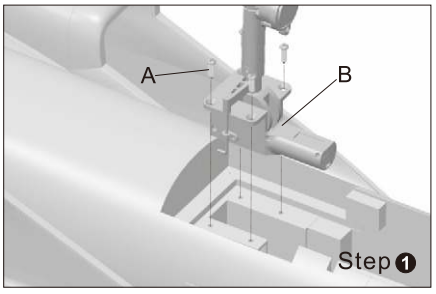
Step ❹

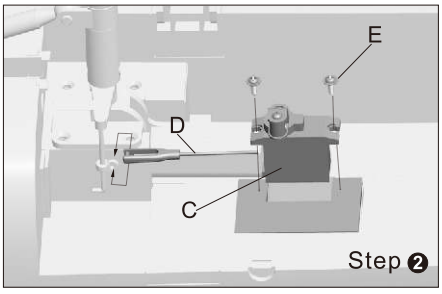
Install nose steering servo, cabin door

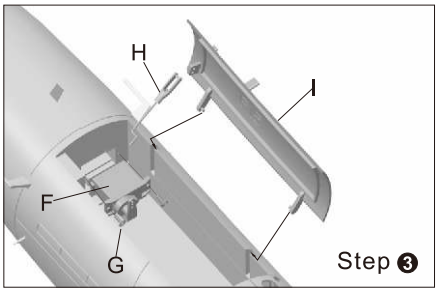
Please refer to the following photo to install、 replace/revise nose gear cabin door.

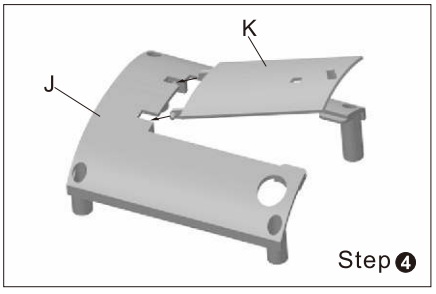
Accessories name and specification

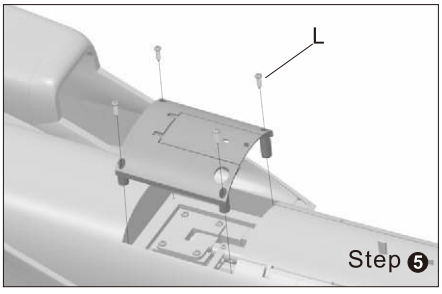
A-Screw (PWA3×12mm 4pcs)
B-Nose landing gear
C-9g servo
D-Nose steering pushrod
E-Screw (PWA2×8mm 2pcs)
F-9g servo
G-Screw (PWA2×8mm 2pcs)
H-Nose cabin door pushrod
I-Nose cabin door
J-Servo door fixed frame
K-Servo door
L-Screw (PA2.6×10mm 4pcs)
M-Cork
N-Spring

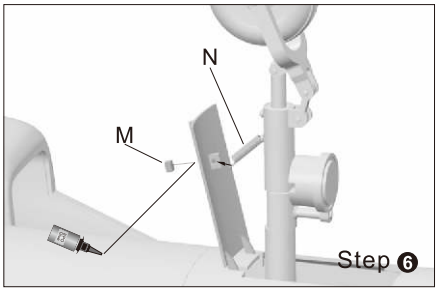












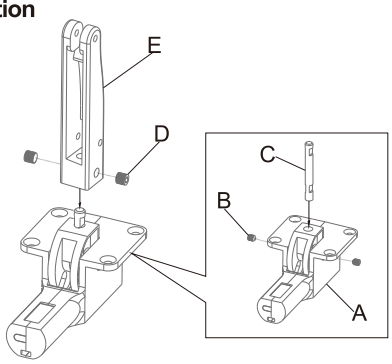
Install landing gear

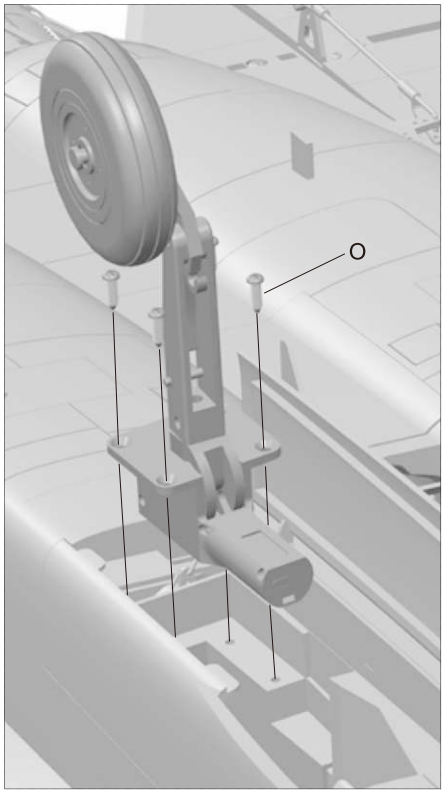
Rear Landing Gear Assemble

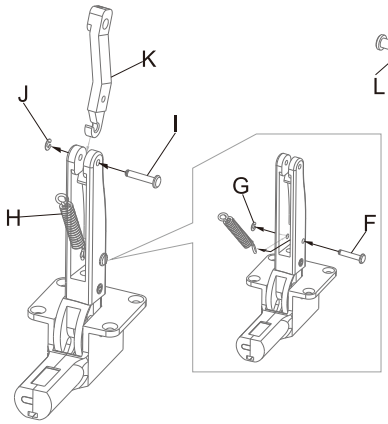
Please assemble、 disassemble the rear landing gear according to the following photo.

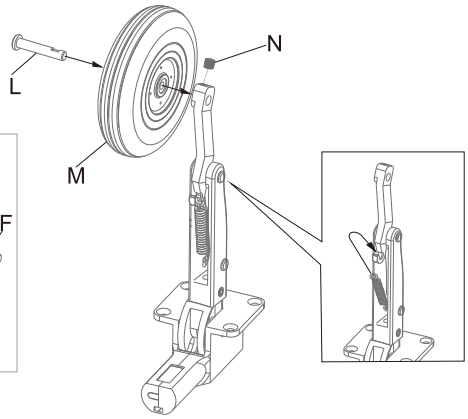
Accessories name and specification

A -Retract controller
B -Jimi screw (M3×5mm 2pcs)
C -Rear gear main rod
D -Jimi screw (M4×4mm 2pcs)
E -Rear gear main supporting rod
F -Pin (Ø2×11.1mm)
G -E-buckle (内径Ø1.5mm)
H -Spring
I -Pin (Ø2×11.1mm)
J -E-buckle (内径Ø1.5mm)
K -Rear gear slant supporting rod
L -Rear gear axle (Ø6.5 / Ø4×24mm)
M -Wheel (Ø60×16mm)
N -Jimi screw (M4×4mm 1pcs)
O -Screw (PWA3×12mm 4pcs)









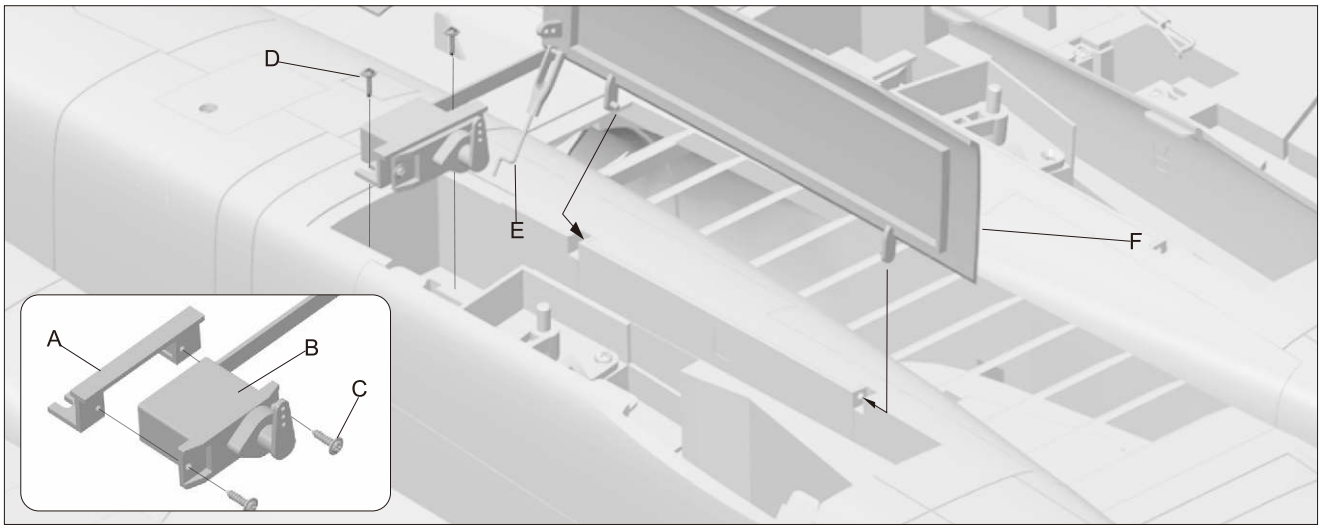
Step❶ Step❷ Step❸

Install rear landing gear cabin door

Please refer to the following photo , install/replace/revise rear landing gear cabin door

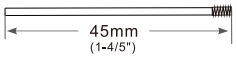
Accessories name and specification

A - Servo fixed frame
B - 9g servo
C - Screw (PWA2×8mm 2pcs)
D - Screw (PWA2×8mm 2pcs)
E - Rear gear cabin door pushrod
F - Rear gear cabin door



Install landing gear

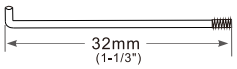
Nose steering pushrod size



Pushrod diameter : Ø 1.2mm

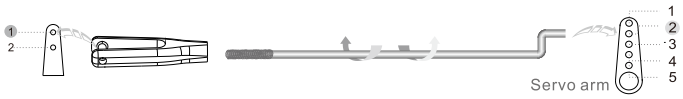
Servo pushrod installing hole

Nose cabin door pushrod size

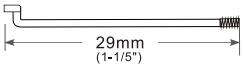


Pushrod diameter : Ø 1.0mm

Servo pushrod installing hole

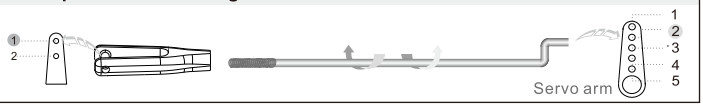


Rear cabin door pushrod size

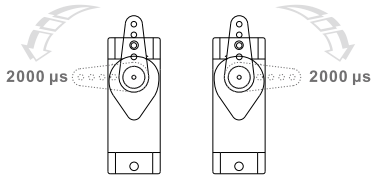


Pushrod diameter : Ø 1.2mm

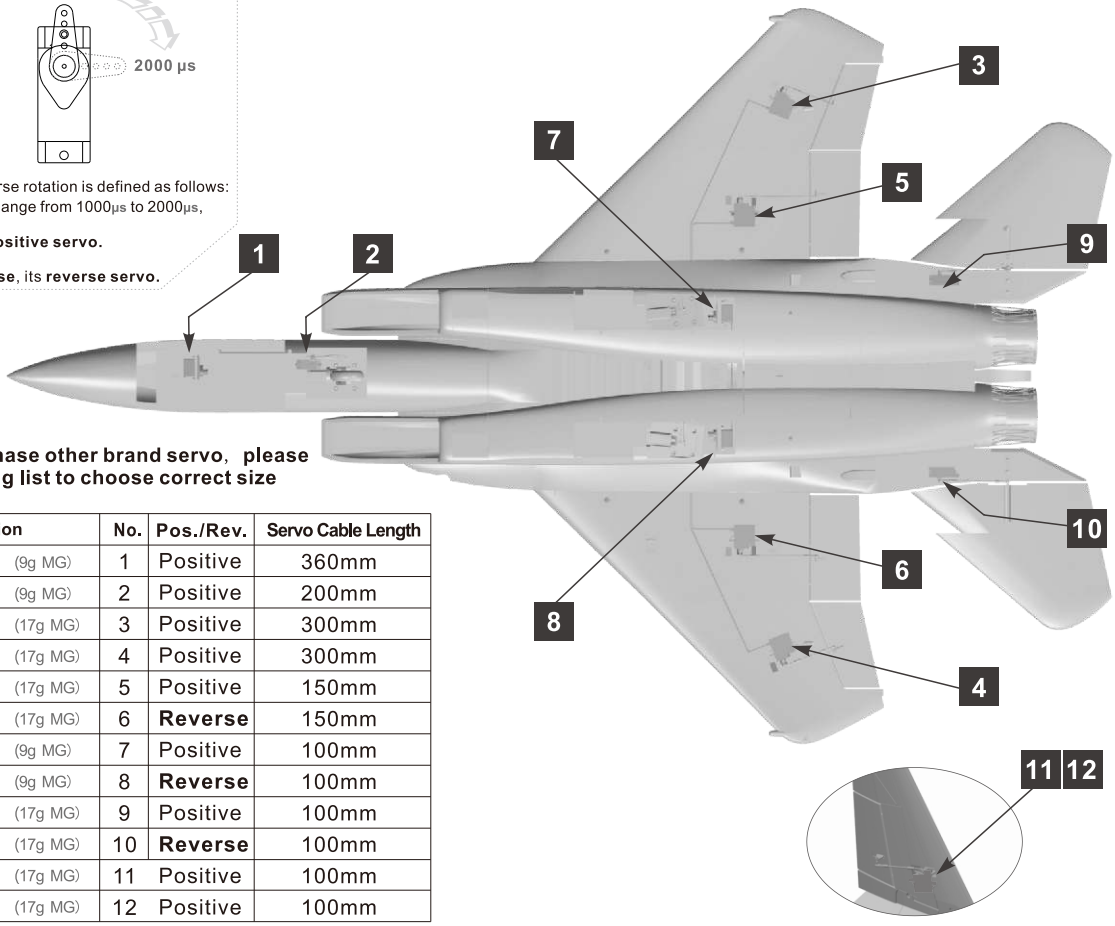
Servo pushrod installing hole



Servo Introduction



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 other brand servo, please refer to the following list to choose correct size servo.

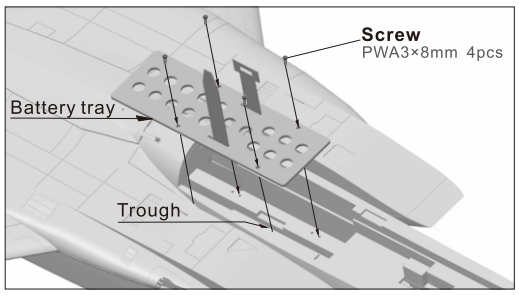
Installing position		No.	Pos./Rev.	Servo Cable Length
Front cabin door	(9g MG)	1	Positive	360mm
Nose gear steering	(9g MG)	2	Positive	200mm
Aileron(L)	(17g MG)	3	Positive	300mm
Aileron(R)	(17g MG)	4	Positive	300mm
Flap(L)	(17g MG)	5	Positive	150mm
Flap(R)	(17g MG)	6	**Reverse**	150mm
Rear cabin door	(9g MG)	7	Positive	100mm
Rear cabin door	(9g MG)	8	**Reverse**	100mm
Elevator(L)	(17g MG)	9	Positive	100mm
Elevator(R)	(17g MG)	10	**Reverse**	100mm
Rudder(L)	(17g MG)	11	Positive	100mm
Rudder(R)	(17g MG)	12	Positive	100mm

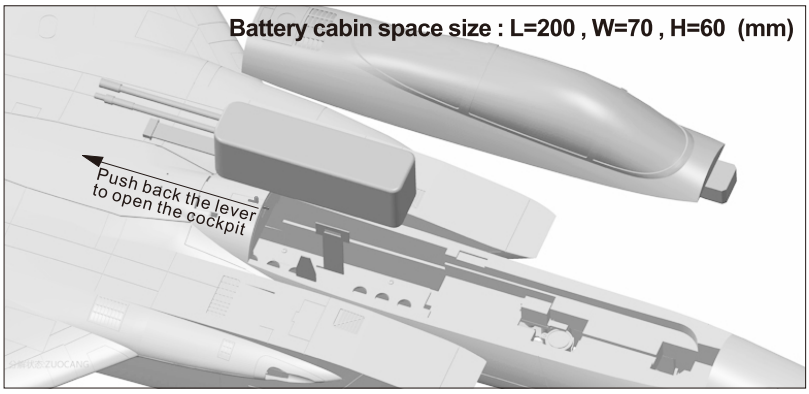
Install on battery

The battery capacity and discharge rate we advise is in the following:

6S 22.2V 5000mAh ~ 6S 22.2V 6000mAh

Discharge rate of C ⩾ 35C

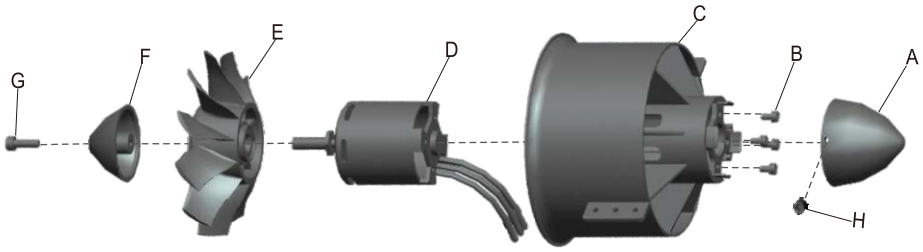




Install power system

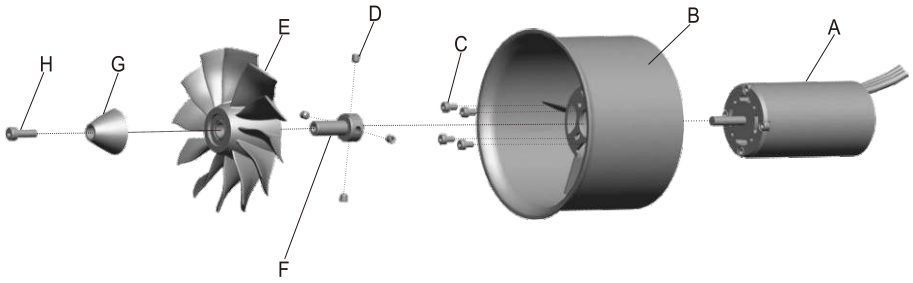
Standard version

A-Motor spinner
B-Screw (HM3×6mm 4pcs)
C-90mm ducted fan metal frame for outrunner motor
D-3748-1550KV motor
E-90mm 12-blade ducted fan
F-Spinner
G-Screw (HM4×14mm 1pcs)
H-Screw (M3×3mm 2pcs)



Deluxe Version

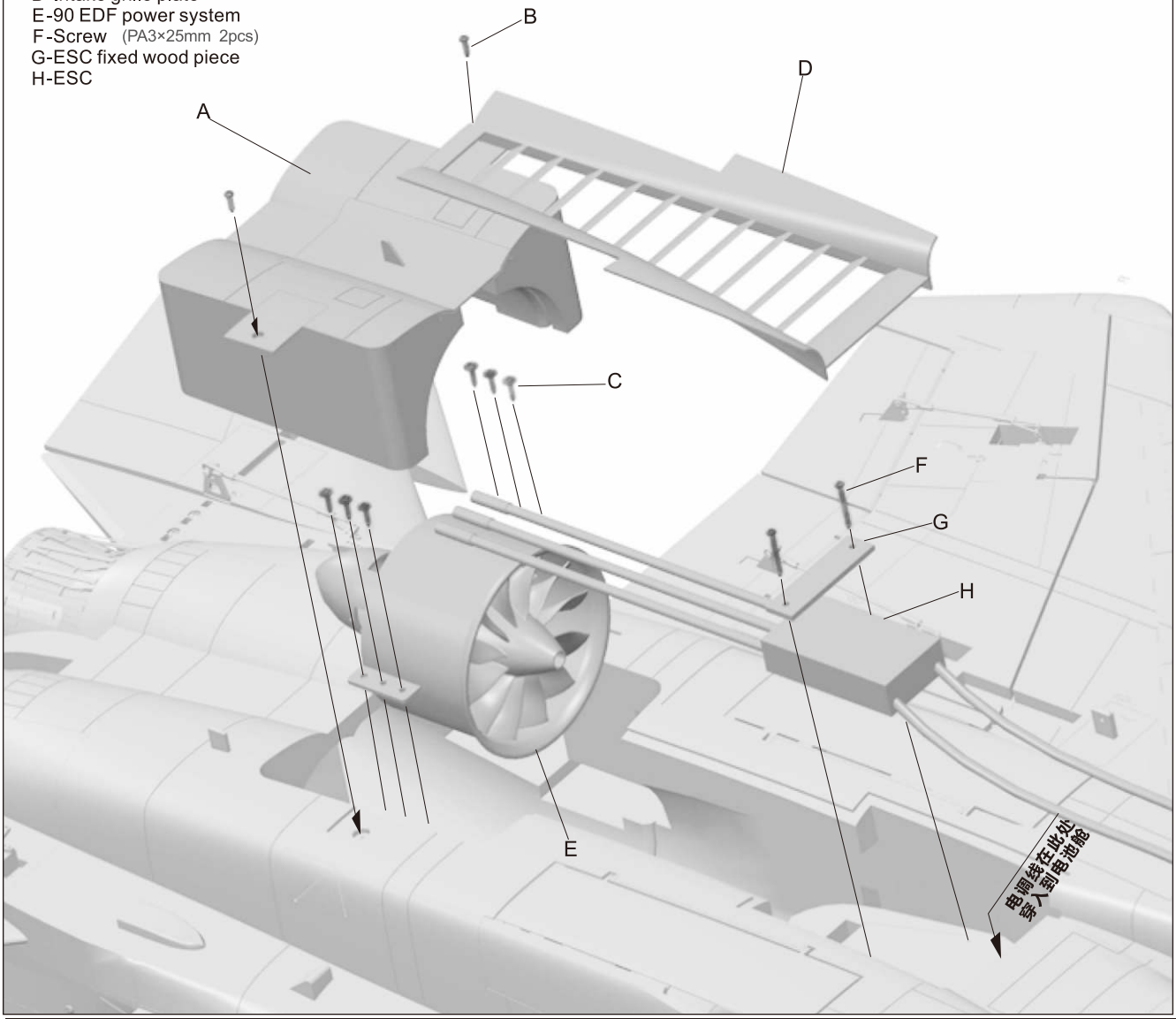
A-4068-1680KV in-runner brushless motor
B-90mm ducted fan metal frame for in-runner motor
C-Screw (HM3×6mm 4pcs)
D-Screw (M4×4mm 4pcs)
E-90mm 12-blade ducted fan
F-Fan clip
G-Spinner
H-Screw (HM4×14mm 1pcs)



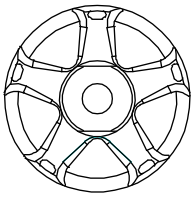
Refer to the following photo, install power system and ESC.

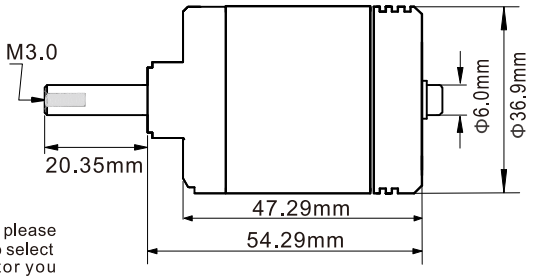
A-Ducted fan cover
B-Screw (PA3×10mm 2pcs)
C-Screw (PWA3×12mm 6pcs)
D-Intake grille plate
E-90 EDF power system
F-Screw (PA3×25mm 2pcs)
G-ESC fixed wood piece
H-ESC

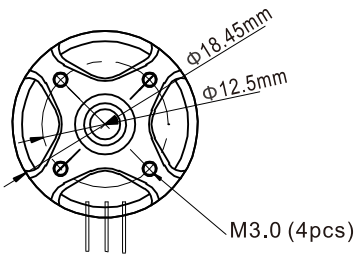
Note: When ESC and battery connected, prohibit to touch them by hand to avoid accidental injury. When test EDF, please use safety test stand for testing, prohibit to touch by hand for testing.



Motor parameters



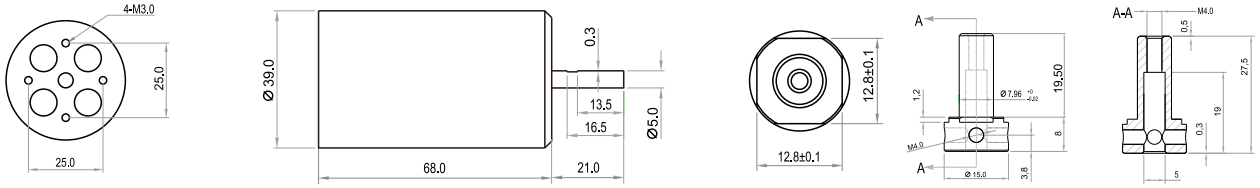




Note: If you need other motor to use, please refer to the dimension shown on the left to select your motor, to make sure that the motor you purchased can install successfully.

Item No.	KV Value	Volate (V)	Current (A)	Pull (g)	Motor Resistance	Weight (g)	No Load Current	Ducted Fan	ESC
MO037482	1550RPM/V	22.2	95	3600	0.02Ω	195	2.7A/10V	#P0902	⩾110A

Unit : mm



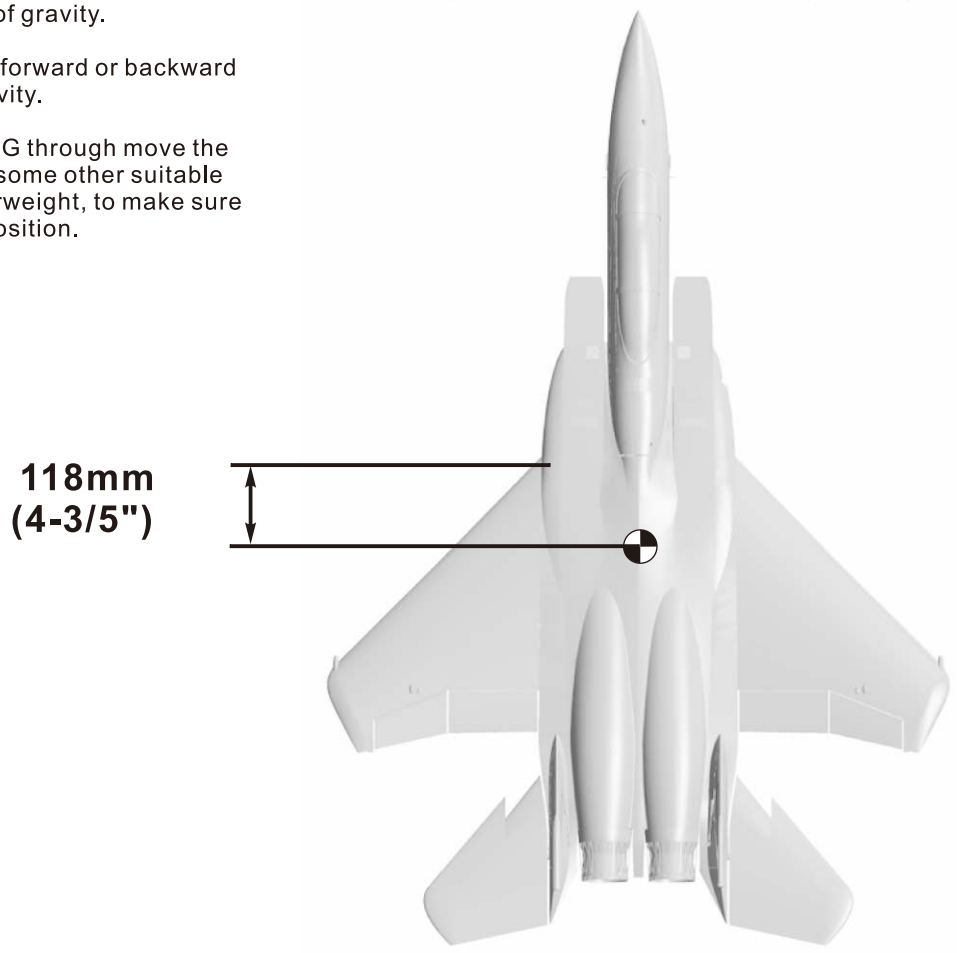
Item No.	KV Value	Volate (V)	Current (A)	Pull (g)	Motor Resistance	Weight (g)	No Load Current	Ducted Fan	ESC
MI040681	1680RPM/V	22.2	115	4300	0.01Ω	300	2.2A / 8V	#P0904	⩾130A

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.



Control direction test

After installed the plane, before flying, we need a fully charged battery and connect to the ESC, then use radio to test and check that every control surface work properly.

Aileron

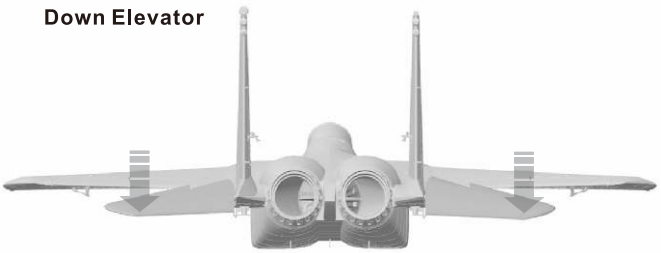
Stick Left

Stick Right

Elevator

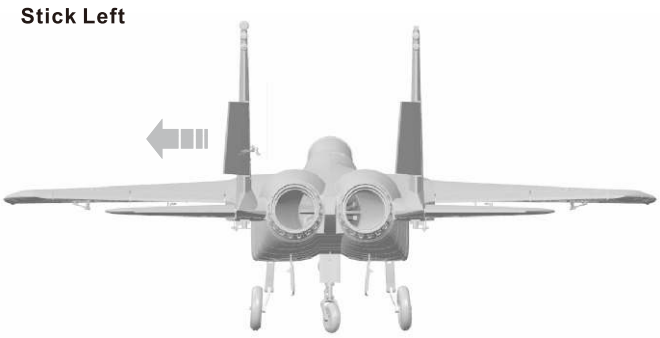
Up Elevator

Down Elevator

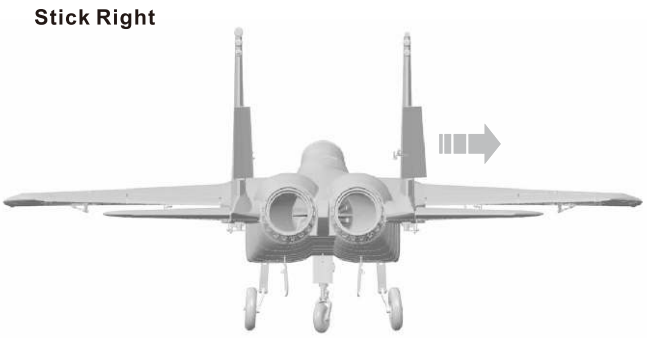


Rudder

Stick Left

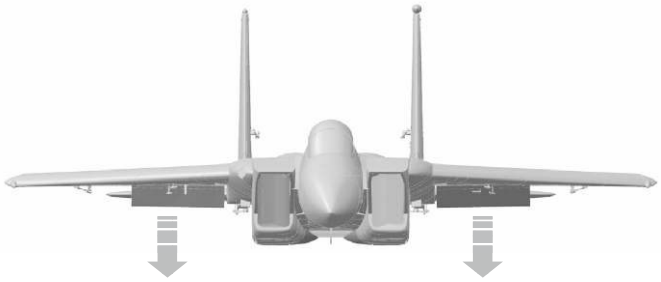


Stick Right



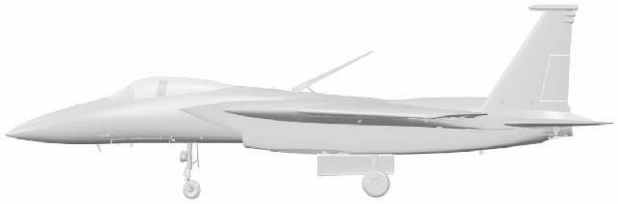
Optional Flaps

Flaps down



Air-brake

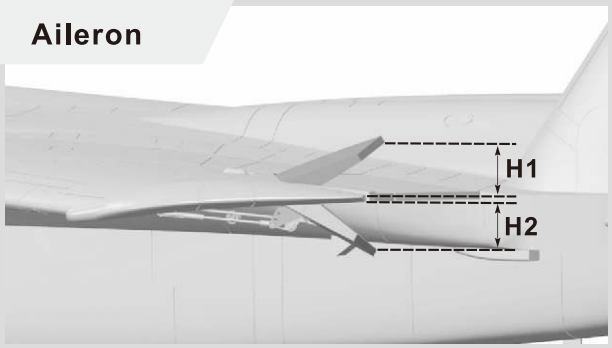
Open air-brake



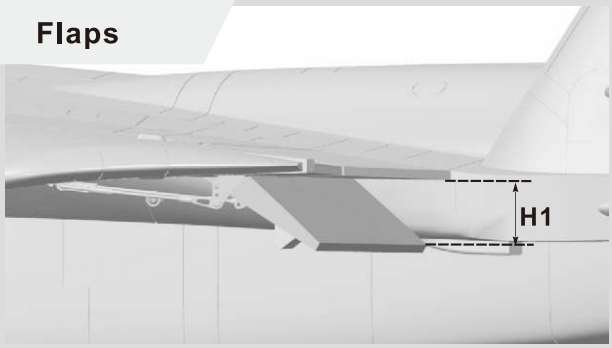
Dual Rates

According to our testing experience, according to the following parameters to set the aileron/elevator rate, it will be useful for flight. In low rate, its good for flight control and its suitable for the initial flight or less skilled players. According to your own circumstance, choose one rate in flight.

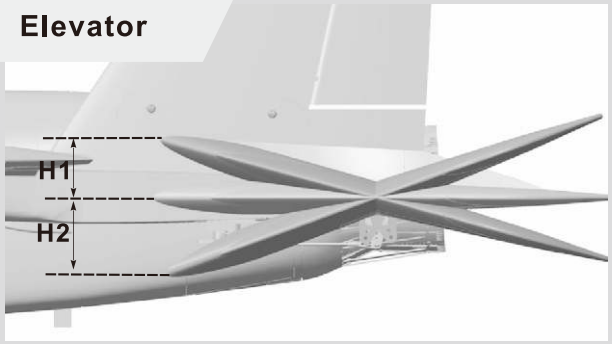
Aileron



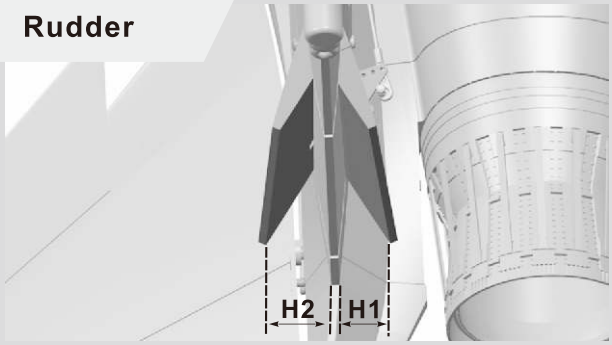
Flaps



Elevator



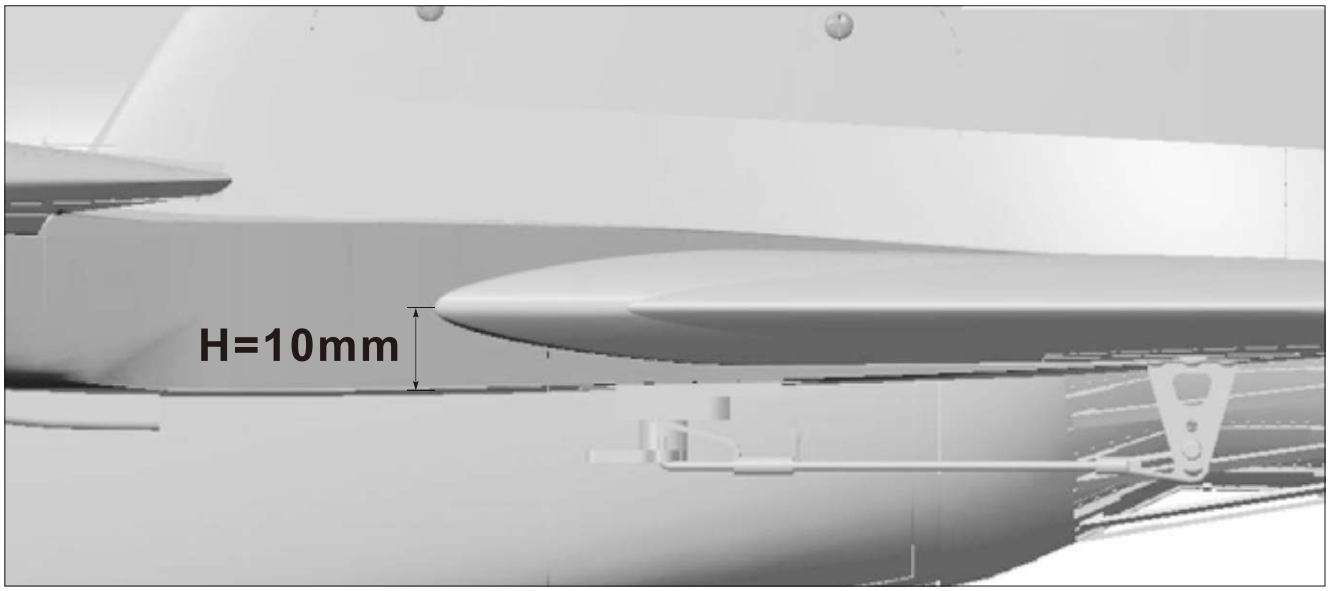
Rudder



	Aileron	Elevator	Rudder	Flaps
Low Rate	H1/H2 18mm/18mm D/R Rate : 60%	H1/H2 19mm/19mm D/R Rate : 60%	H1/H2 18mm/18mm D/R Rate : 60%	H1 22mm
High Rate	H1/H2 30mm/30mm D/R Rate : 100%	H1/H2 33mm/33mm D/R Rate : 100%	H1/H2 30mm/30mm D/R Rate : 100%	H1 38mm

Elevator install angle correction

Caution: Neutral point of full elevator should be correct, it affects your flight directly. Please refer to the photo to correct your full elevator install angle!



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