

EUROFIGHTER TYPHOON **V2**

USER MANUAL

Wingspan :960mm (37.8 in)



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Thanks for your purchasing Eurofighter V2. From 2009, Freewing Model pushed this Eurofighter 90mm EDF jet, we have past 4 years. During this time, Eurofighter is always a popular jet. During this period, we are also revising some small problems. But it can't suit for our today's demanding. So, we improved the Eurofighter V2, and the revised part is as following:

- Nose landing gear door use plastic cover to replace the foam cover.
- Increased rear landing gear door.
- Improved power system, use Freewing new 90mm 12-blade metal power system, more powerful.
- Improved rear landing gear structure.
- Increased plastic installing parts to achieve no-glue installation. Easier install, easier to take out.
- Improve to strengthen the main wing.
- Revised canard control structure and strengthened.

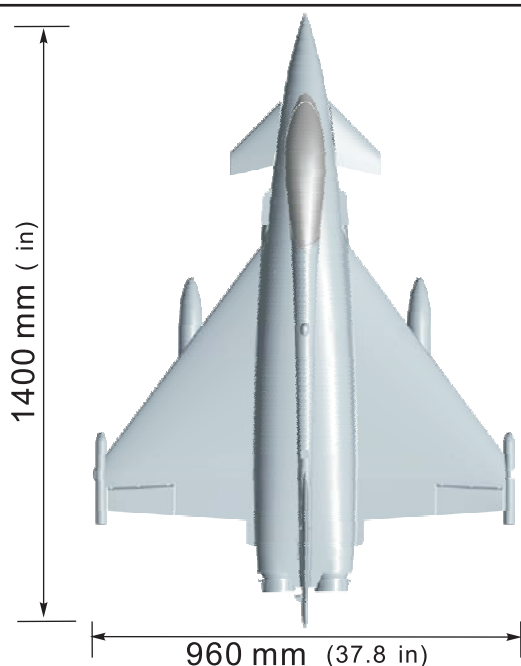
New Eurofighter V2 will bring your excellent flight! Before starting, please read our manual carefully.

⚠ 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! Operator should have a certain experience, beginners should operate under the guidance of professional players.
2. Before install, please read through the instructions carefully and operate strictly under instructions.
3. Cause of wrong operation, Freewing and its vendors will not be held responsible for any losses.
4. Model planes' players must be on the age of 14 years old.
5. This plane used the EPS 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.

Product basic information



- Motor
3748-1450KV
- ESC
100A ESC (UBEC 8A)
- Servo
9g Servos (12pcs)
- Battery
6S 22.2V 5000mAh 35C
- Ducted Fans
90mm EDF
- Take-off weight
3050g (107.5 oz.) (Use Freewing Battery-6S 22.2V 5000mAh 35C)
- Thrust
3200g (113 oz.)

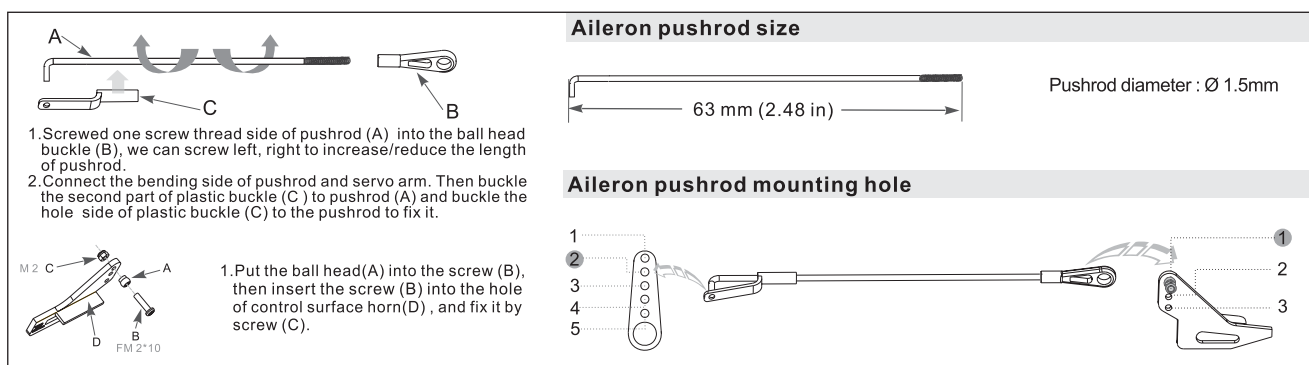
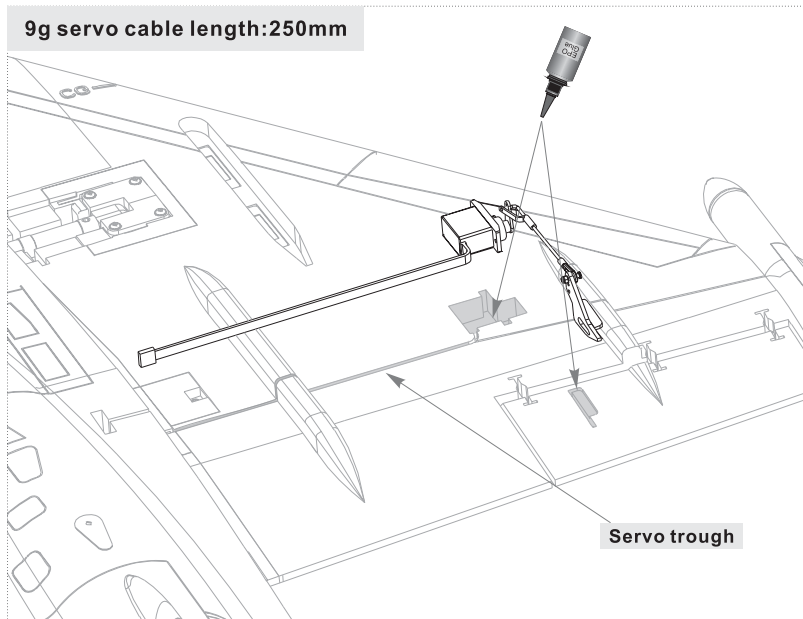
⚠ Note: The parameters in here are derived from test result using our accessories. If use other accessories, the test result will be different. Any problem since of using other accessories, we are not able to provide technical support.

Installing main Wing

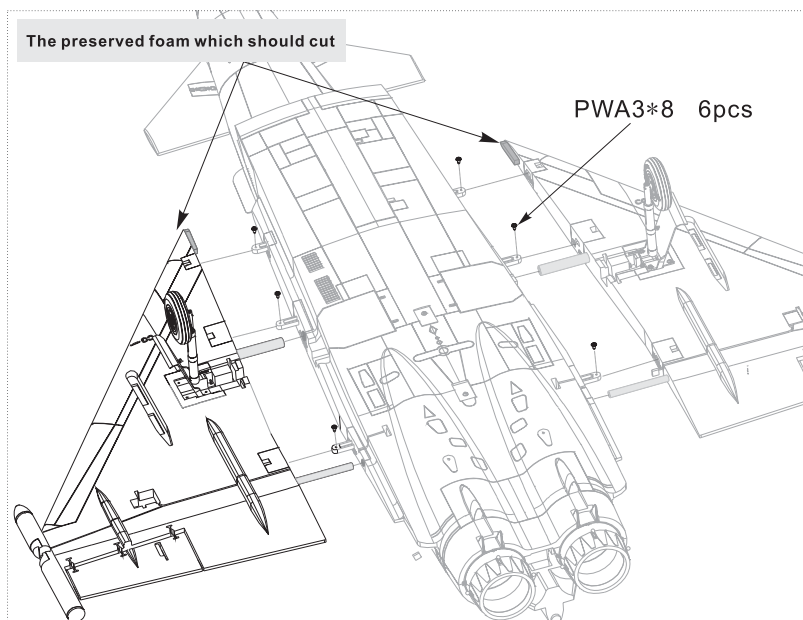
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⚠ Note: Before installing servo, use servo tester or radio to center servos. And install on the servo arm and test its position is correct.

1. Apply the glue on the indicated place on the main wing.
2. Attach the servo on the servo installing trough.
3. Attached the control surface horn.
4. Buckle the servo cable on the servo cable trough.
5. After solidify, use aileron pushrod to connect the servo arm and control surface horn.



1. Cut off the preserved foam in the main wing. (the indicated place as the right arrow shown)
2. Use fuselage extension line to connect main wing servo cable and LED light line.
3. Use carbon tube to connect the main wing and fuselage.
4. Close the main wing and fuselage.
5. Fix the Fuselage pin by screws.



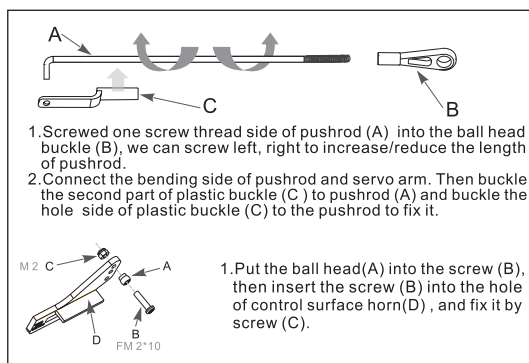
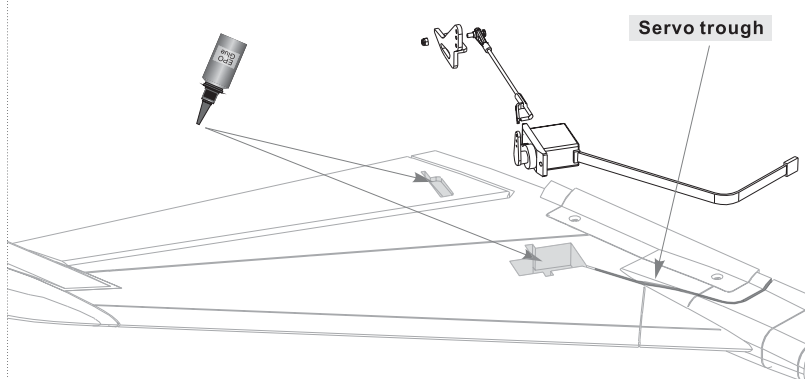
Installing rudder

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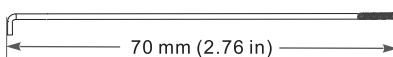
Note: Before installing servo, use servo tester or radio to center servos. And install on the servo arm and test its position is correct.

1. Apply the glue on the indicated place as the right photo shown.
2. Attach the servo on the servo installing trough.
3. Attached the control surface horn.
4. Buckle the servo cable on the servo cable trough.
5. After solidify, use aileron pushrod to connect the servo arm and control surface horn.

9g servo cable length:200mm



Rudder pushrod size

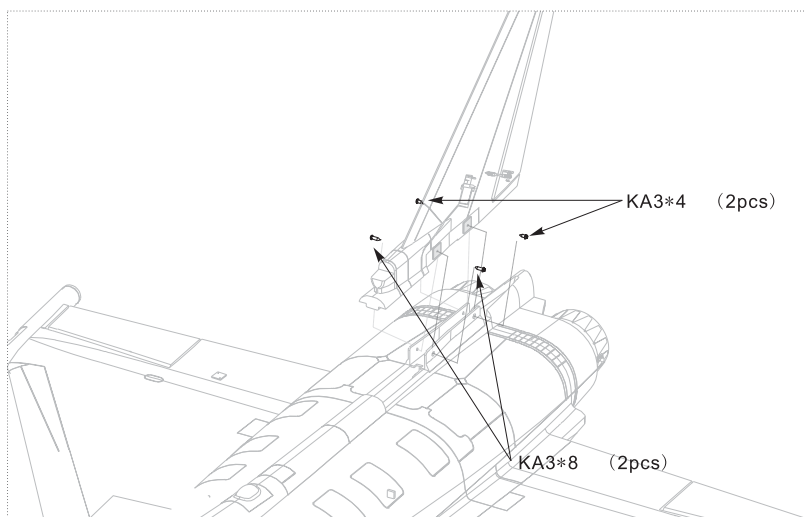
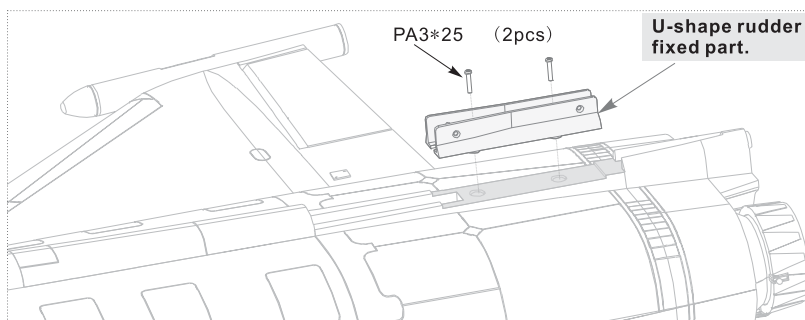


Pushrod diameter : Ø 1.5mm

Rudder pushrod mounting hole



1. Fix the U-shape rudder fixed part on the fuselage by screws.
(Indicated place as the right photo shown.)
2. Use fuselage extension line to connect rudder servo cable and LED light line.
3. Insert the rudder on the U-shape rudder fixed part.
4. Fix the rudder by screws.



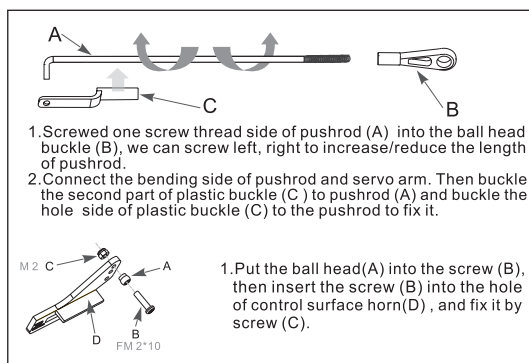
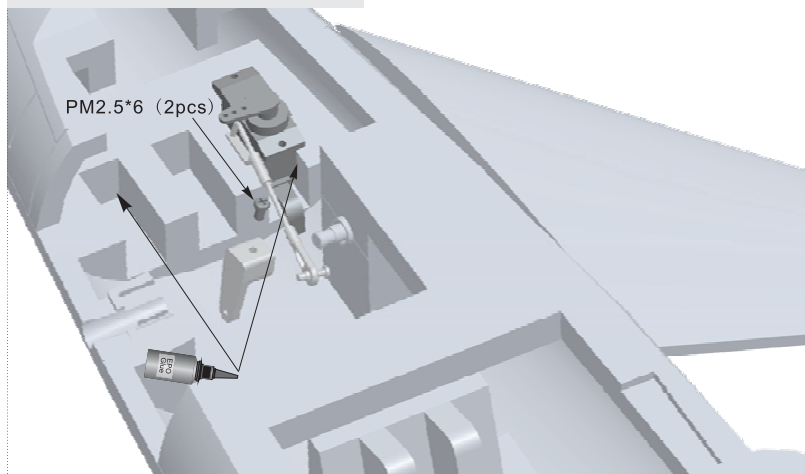
Installing canard

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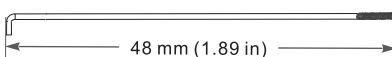
Note: Before installing servo, use servo tester or radio to center servos. And install on the servo arm and test its position is correct.

1. Apply the glue on the servo installing trough.
2. Fix the metal arm on the canard rotating shaft by screw.
3. Use pushrod to connect the servo arm and canard arm.

9g servo cable length:400mm

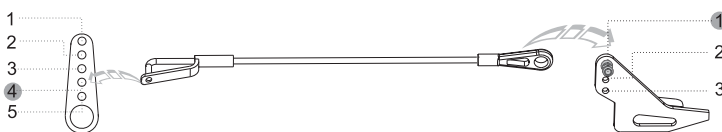


Canard pushrod size

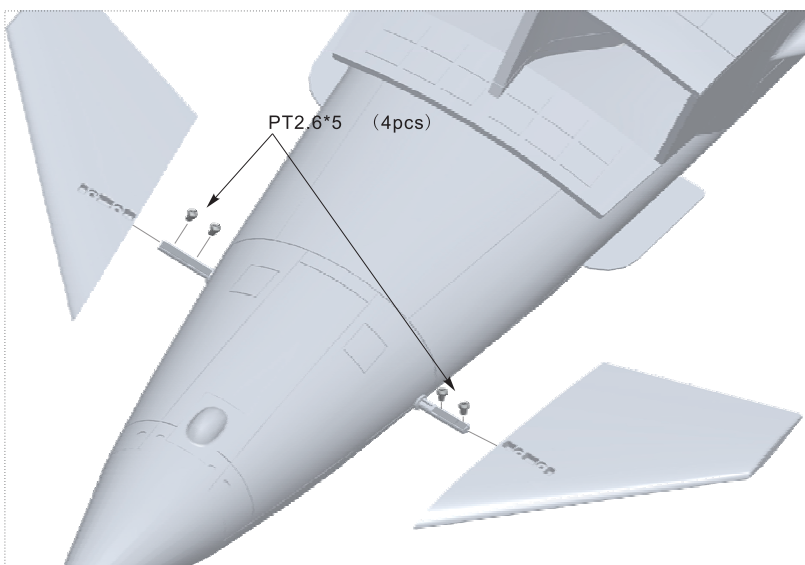


Pushrod diameter : Ø 1.5mm

Canard pushrod mounting hole



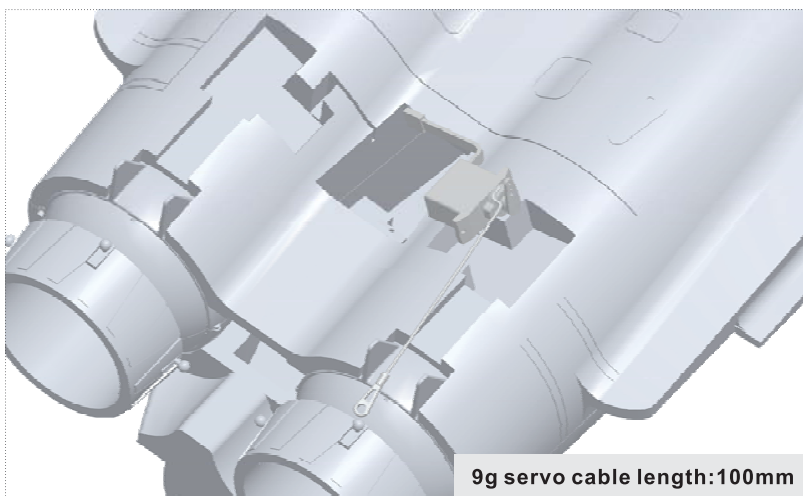
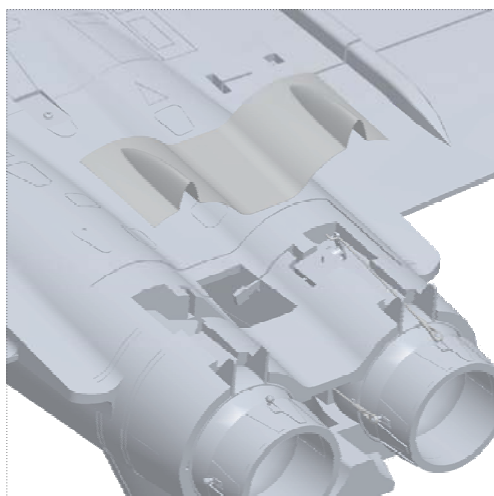
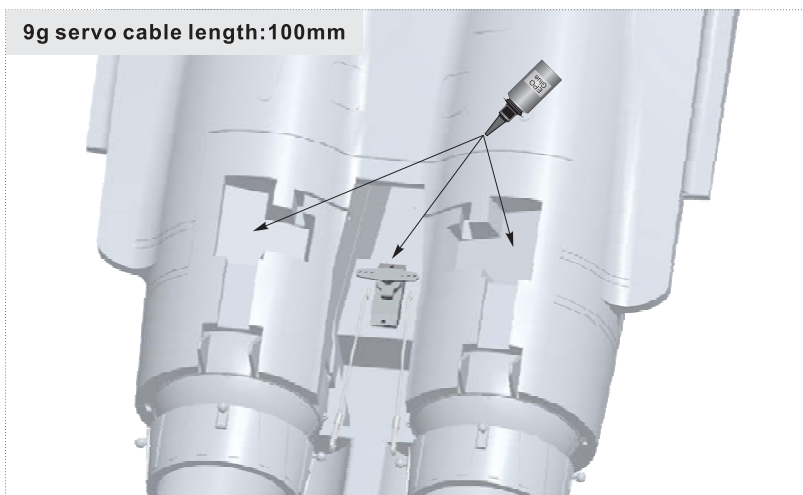
1. Insert the left/right canard on the rotating shaft.
2. Fixed the left, right canard by screws.



Note: Before installing servo, use servo tester or radio to center servos. And install on the servo arm and test its position is correct.

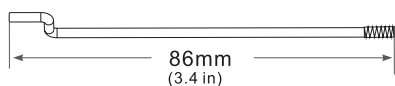
1. Apply the glue on the indicated place as the arrow shown, and attached the servo.
2. Use pushrod to connect the servo arm and vector arm.
3. Finish installation, apply glue to attach the protecting cover on the fuselage.

9g servo cable length:100mm



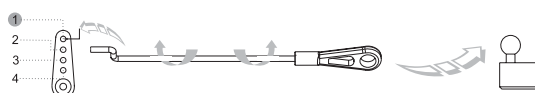
9g servo cable length:100mm

Vector pushrod length (Vertically)

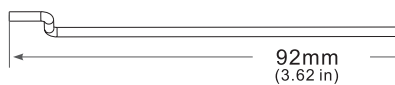


Pushrod diameter : Ø 1.2mm

Installing hole of Vector pushrod (Vertically)

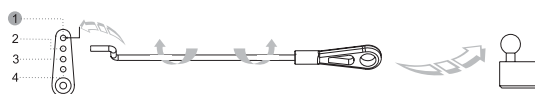


Vector pushrod length (Horizontally)



Pushrod diameter : Ø 1.2mm

Installing hole of Vector pushrod (Horizontally)



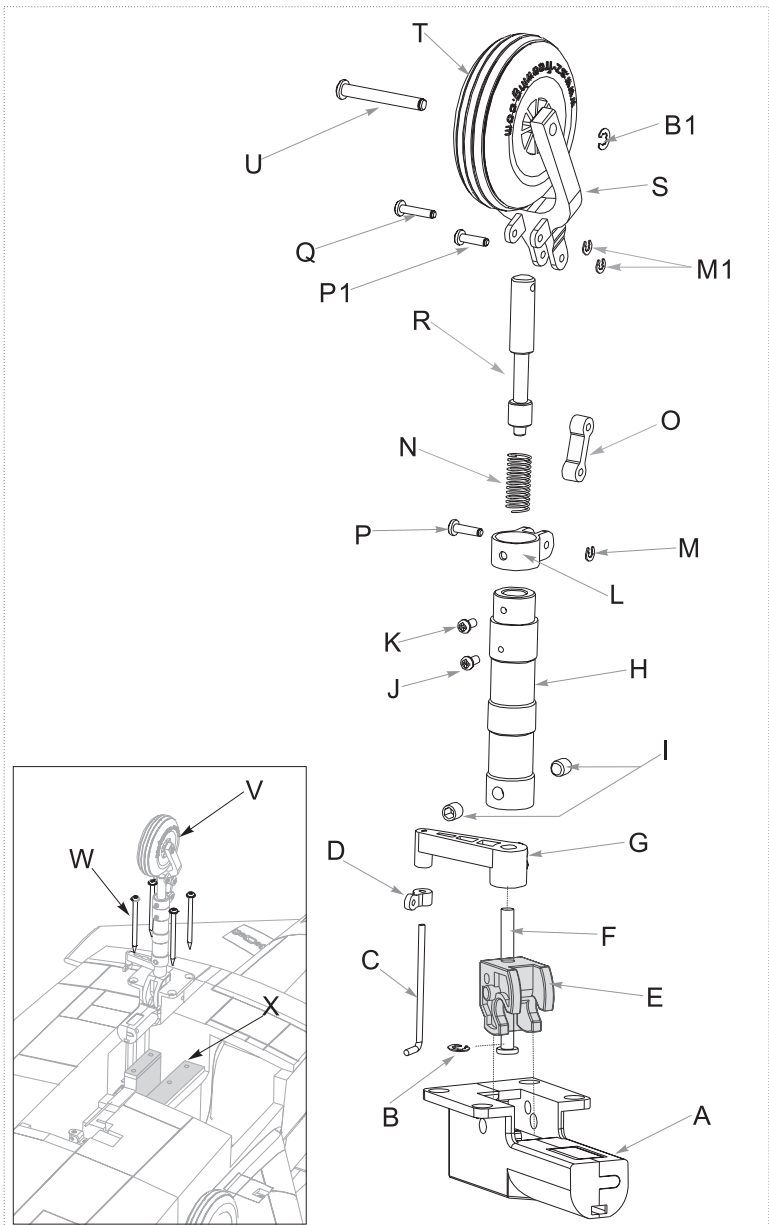
Installing landing gear

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Nose landing gear accessories list:

- A - Landing gear electric base
- B - E-buckle (Ø2.0 pcs)
- C - Nose landing gear steering pushrod
- D - Nose landing gear steering control ring
- E - Landing gear rotating arm
- F - Nose landing gear metal wire
- G - L-shape arm
- H - Nose landing gear main strut
- I - Jimi screw (M4*4 2pcs)
- J - Screw (PM2*4 1pcs)
- K - Screw (PM2*3 1pcs)
- L - U-shape damping arm.
- M - E-buckle (Ø1.5 pcs)
- N - Spring
- O - "8" shape damping shaft
- P - Pin
- Q - Pin
- R - Damping active lever
- S - U-shape slant supporting rod
- T - Wheel
- U - Wheel shaft
- V - Nose landing gear installed set
- W - Nose gear mount
- X - Screw (PA3*40 4pcs)

1. At first, Insert the "Nose landing gear metal wire (F)" into the "Landing gear rotating arm (E)", and buckle the "E-buckle (B)" on the "Nose landing gear metal wire (F)" to prevent its fall off.
2. Put the "Nose landing gear steering control ring (D)" in the "Nose landing gear steering pushrod (C)", screw one screw thread side of "Nose landing gear steering pushrod (C)" on the "L-shape arm (G)".
3. Put the installed "L-shape arm (G)" in the "Nose landing gear metal wire (F)", and fix it by screw.
4. Next, put the "Nose landing gear main strut (H)" into the "Nose landing gear metal wire (F)", and fix it by Jimi screws.
5. Put the "Spring (N)" in the "Nose landing gear main strut (H)", then insert the "Damping active lever (R)" into the "Nose landing gear main strut (H)", press down the "Damping active lever (R)", and lock "the screw (J)" in the "Nose landing gear main strut (H)", to prevent "Damping active lever (R)" fall off.
6. Put the "U-shape damping arm (L)" on the "Nose landing gear main strut (H)", and fix it by "screw (K)".
7. Use "Pin (P)", "E-buckle (M)" to fix the "U-shape slant supporting rod (S)" on the "Damping active lever (R)", then use "8- shape damping shaft (O)", "Pin (P)", "E-buckle (M)" to connect the "U-shape slant supporting rod (S)" and "U-shape damping arm (L)".
8. Use "wheel shaft (U)" and "E-buckle (B1)" to fix the "Wheel (T)" in the "U-shape slant supporting rod (S)".
9. Install the "Nose landing gear installed set (V)" on the "Nose gear mount (W)", and fix it by "screw (X)".



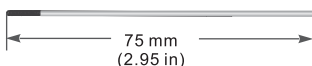
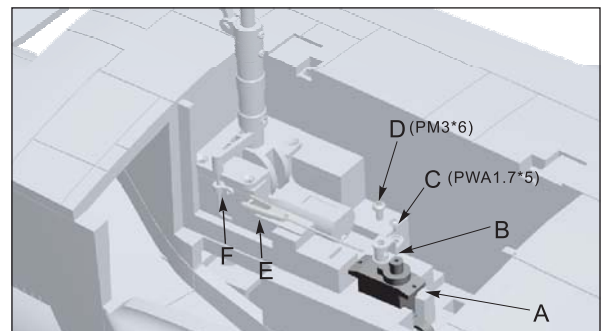
Note: When installing, please check the flat position of spareparts, when screw to fix, the flat position must fact to the screw hole, just like this, it can fix successfully, the spareparts don't rotate and fall off.

Nose landing gear

Accessories list:

- A - 9g metal gear servo.
- B - U-shape servo arm
- C - Screw
- D - Screw
- E - Landing gear pushrod
- F - Landing gear steering control ring

1. Apply the glue to attach the "servo (A)", then install the "U-shape servo arm (B)" on the servo and fix it by "screw (C)".
2. Buckle the clevis of "landing gear pushrod (E)" into the "landing gear steering control ring (F)", insert the other side in the "U-shape servo arm (B)", adjust its depth to center the nose wheel.
3. Use "Screw (D)" to fix the "landing gear pushrod (E)".



Pushrod diameter : Ø 1.2mm



Installing landing gear

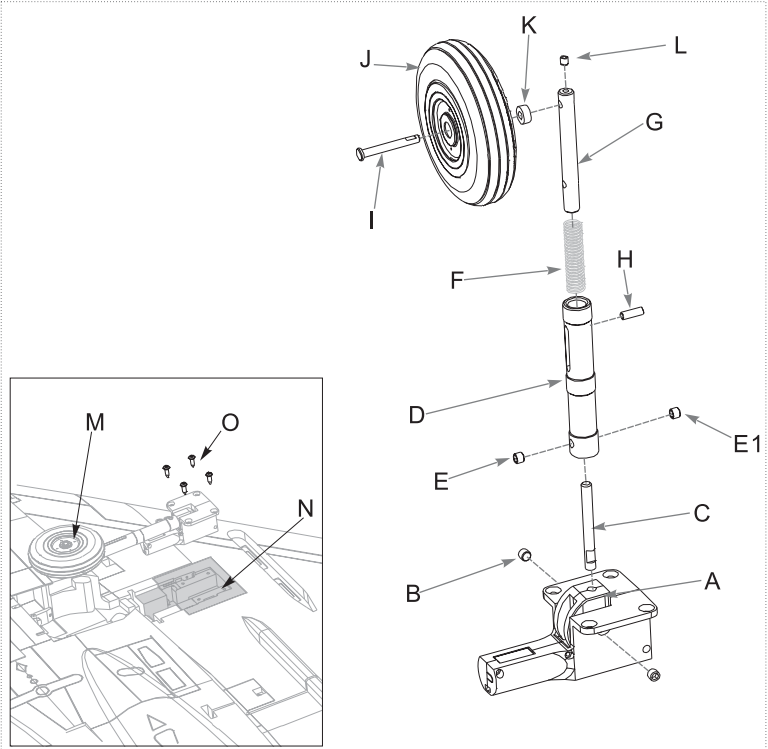
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Rear landing gear accessories list:

- A -Landing gear rotating arm
- B -Jimi screw (M3*5 2pcs)
- C -Rear landing gear metal wire
- D - Rear landing gear main strut
- E -Jimi screw (M4*4 2pcs)
- F -Spring
- G -Rear landing gear damping active lever
- H -Pin
- I - Rear wheel shaft
- J -Wheel
- K -Gasket
- L -Jimi screw (M3*5 1pcs)
- M -Rear landing gear installed set
- N -Rear gear mount
- O -Screw (PWA3*12 4pcs)

1. Insert the "rear landing gear metal wire (C)" into the "landing gear rotating arm (A)", and use 2pcs "jimi screws (B)" to fix.
2. Put the "Rear landing gear main strut (D)" in the "rear landing gear metal wire (C)", and lock it by "jimi screws (E)".
3. Put the "Spring (F)" in the "Rear landing gear main strut (D)", and press the "Rear landing gear damping active lever (G)" in the "Rear landing gear main strut (D)", at the same time, press the "Pin (H)" in the hole of "Rear landing gear damping active lever (G)".
4. Put the "wheel (J)" in the "rear wheel shaft (I)", then put the "gasket (K)", at last insert the "rear wheel shaft (I)" into the hole of "Rear landing gear damping active lever (G)", and lock it by "Jimi screw (L)".
5. Install the "Rear landing gear installed set (M)" on the "Rear gear mount (N)", and fix it by 4pcs "screw (O)".

⚠ 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.



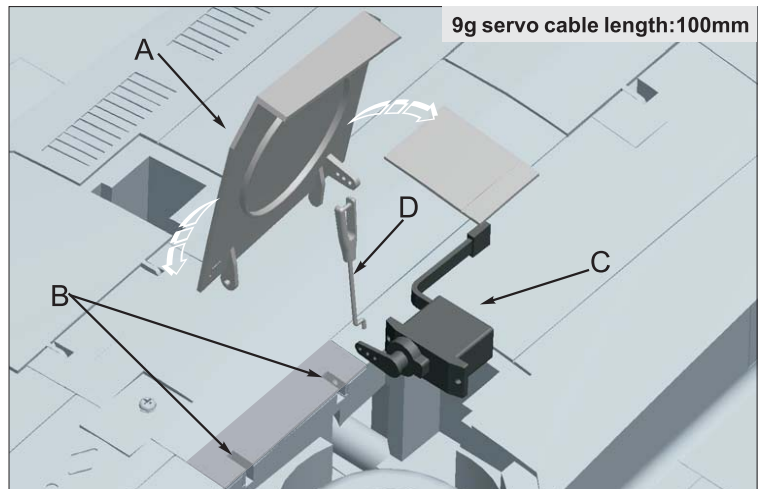
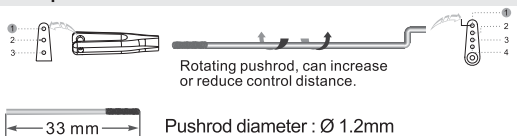
Installing landing gear cabin

Installing rear landing gear main door

1. Press the "rear landing gear main door A" inward from two side and let it curve, buckle the rotating shaft of "rear landing gear main door A" in the hole of "rear landing gear door fixing part B". when we loosen, the plastic will return to the original, the rear landing gear door A installed.
2. At first, adjust the landing gear door servo arm to the max travel and fix the servo (C) by glue. Use pushrod (D) to connect the door and servo arm.
3. Do the test of cabin door open/close. If found the door don't close tightly, we need to adjust the "Rear cabin door pushrod" shorter. And if found the door close too tightly and also can hear the "zi-zi-zi" voice from servo, we need to adjust the "Rear cabin door pushrod" longer.

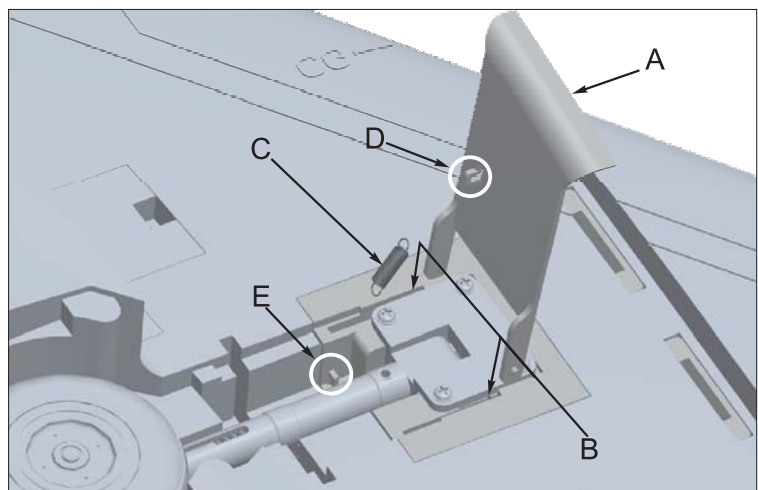
⚠ Note: because the cabin door use the removable column design, when we install, we need some force to curve the cabin door, then buckle the rotating shaft of cabin door to the hole. Since of its plastic material, these columns is easy to break, we need to use correct way to assemble/disassemble the cabin door.

The pushrod size of cabin door



Installing rear landing gear side door

1. Press the "rear landing gear side door A" inward from two side and let it curve, buckle the rotating shaft of "rear landing gear side door A" in the hole of "rear landing gear door fixing part B". when we loosen, the plastic will return to the original, the rear landing gear door A installed.
2. Buckle the Spring C into the "plastic buckle D, E" to finish its install.

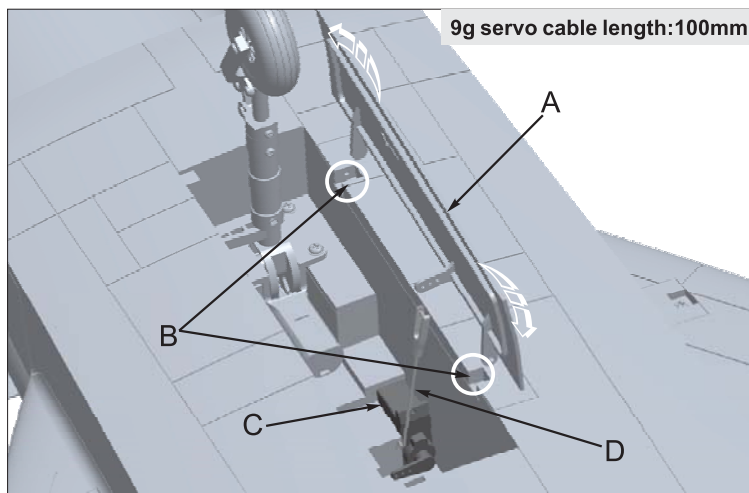
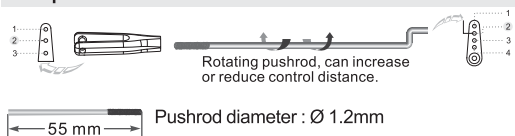


Installing nose landing gear door

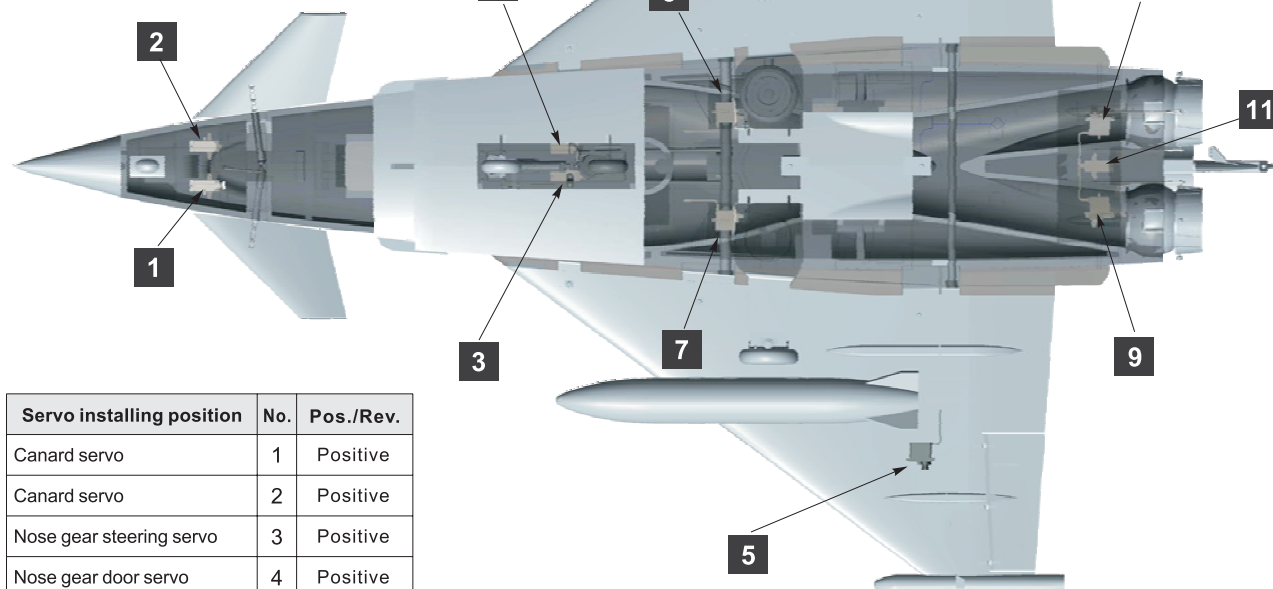
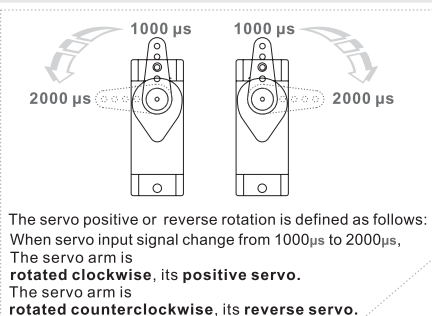
1. Press the "nose landing gear main door A" inward from two side and let it curve, buckle the rotating shaft of "nose landing gear main door A" in the hole of "nose landing gear door fixing part B". when we loosen, the plastic will return to the original, the nose landing gear door A installed.
2. At first, adjust the landing gear door servo arm to the max travel and fix the servo C by glue. Use pushrod (D) to connect the door and servo arm.
3. Do the test of cabin door open/close. If found the door don't close tightly, we need to adjust the "Nose cabin door pushrod" shorter. And if found the door close too tightly and also can hear the "zi-zi-zi" voice from servo, we need to adjust the "Nose cabin door pushrod" longer.

Note: because the cabin door use the removable column design, when we install, we need some force to curve the cabin door, then buckle the rotating shaft of cabin door to the hole. Since of its plastic material, these columns is easy to break, we need to use correct way to assemble/disassemble the cabin door.

The pushrod size of cabin door



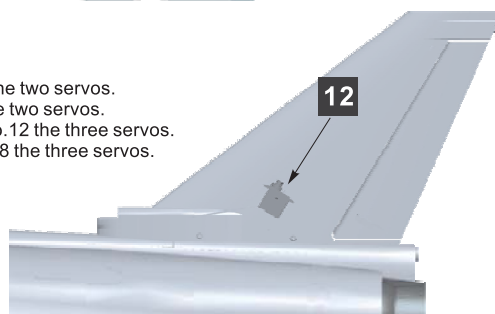
Servo introduction

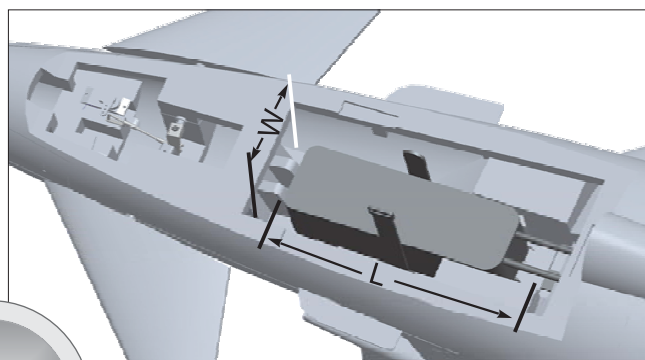
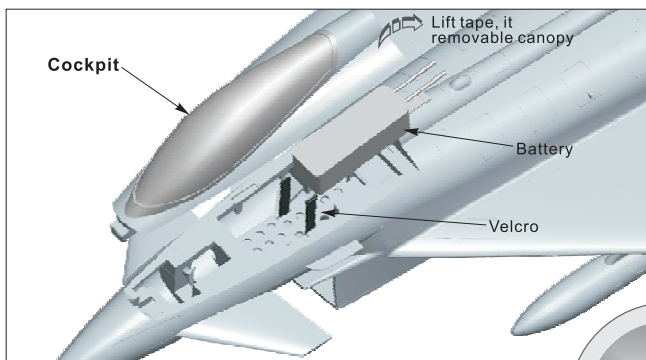


Servo installing position	No.	Pos./Rev.
Canard servo	1	Positive
Canard servo	2	Positive
Nose gear steering servo	3	Positive
Nose gear door servo	4	Positive
Aileron servo	5	Positive
Aileron servo	6	Positive
Rear landing gear door servo	7	Positive
Rear landing gear door servo	8	Reverse
Vector servo (vertically)	9	Positive
Vector servo (vertically)	10	Positive
Vector servo (Horizontally)	11	Positive
Rudder servo	12	Positive

Servo connection instruction

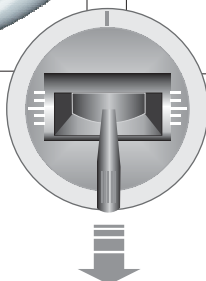
1. Use Y-wire to connect the No.6 and No.10 the two servos.
2. Use Y-wire to connect the No.5 and No.9 the two servos.
3. Use 1to3 wire to connect the No.3, No.11, No.12 the three servos.
4. Use 1to3 wire to connect the No.4, No.7, No.8 the three servos.





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: **6S 22.2V 5000mAh 35C**
You can choose the battery refer to the battery cabin size:

L=193mm; W=52mm; H=56mm

6S 22.2V 3200mAh ~ 6S 22.2V 5500mAh
Discharge rate of C > 35C

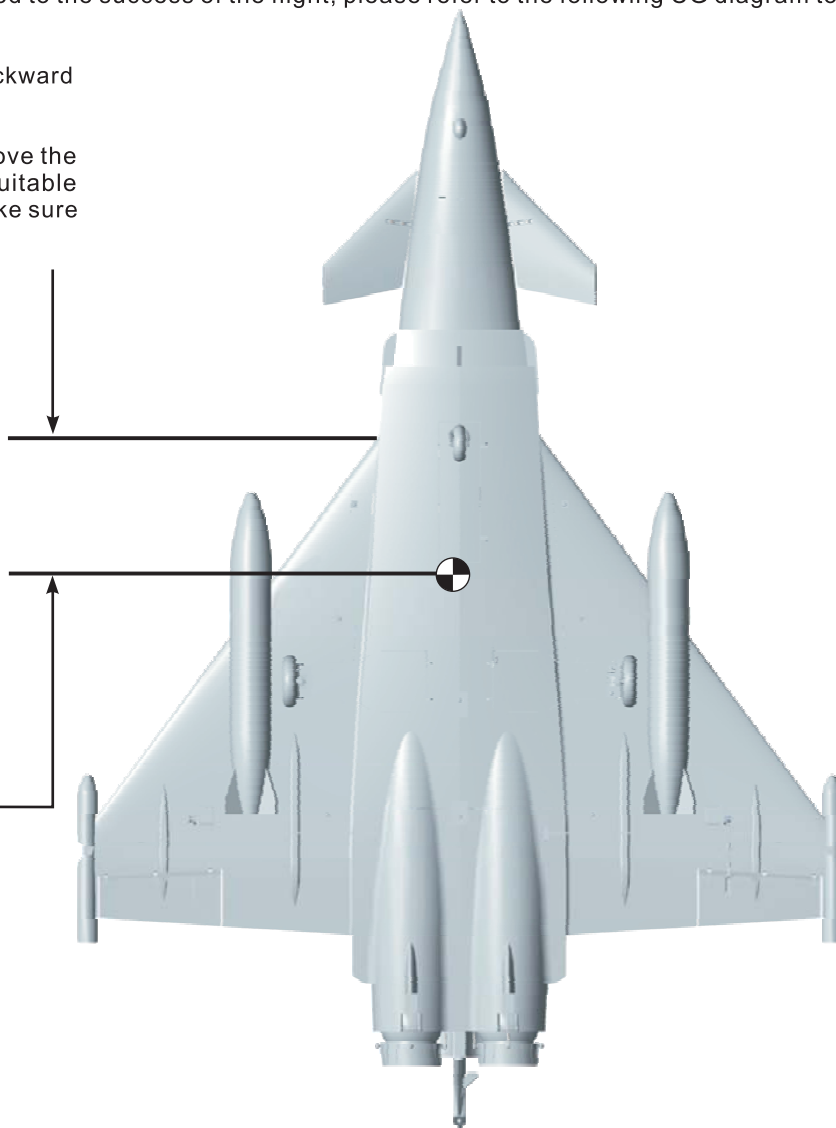
Different weight battery may affect its CG, please the correct range of CG indication.

Center of Gravity

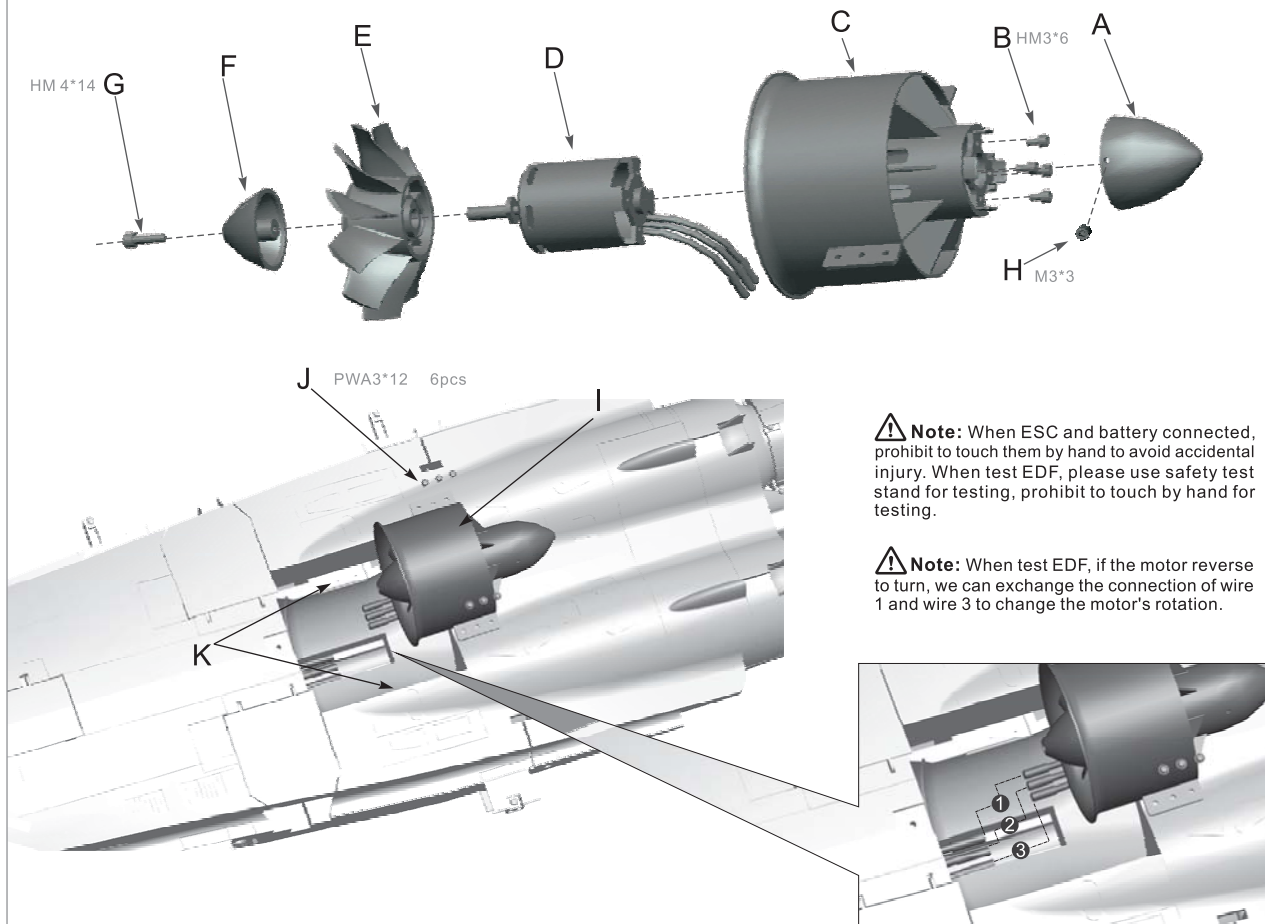
Correct center of gravity is directly related to the success of the flight, please refer to the following CG diagram to adjust your plane's center of gravity.

- 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.

**200mm
(7.87 in)**

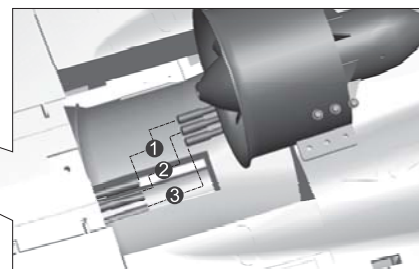


1. Install the "motor (D)" in the "ducted fan housing (C)".
2. Fix the motor by 4pcs "cup head screws (B)".
3. Put the "rotor (E)" in the motor shaft.
(During this process, please note the hardware platform of rotor should be alignment with the motor shaft platform)
4. Use "spinner (F)" to cover the rotor, and fix the "spinner (F)" by "cup-head-screw (G)".
5. Install the "tail fan cowl (A)" on the bottom of "ducted fan housing (C)" and fix it by 2pcs "Jimi screws (H)".
6. Connect the motor and ESC.
7. Put the installed "EDF (I)" in the "fuselage (K)".
8. At last use 6pcs "screws (J)" to lock the "EDF (I)" on the fixing wood piece.

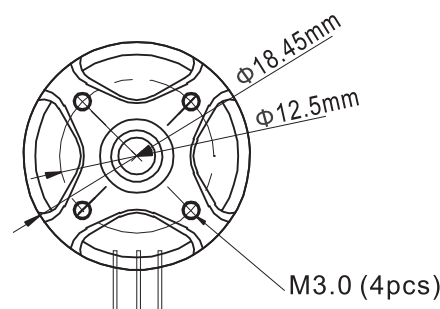
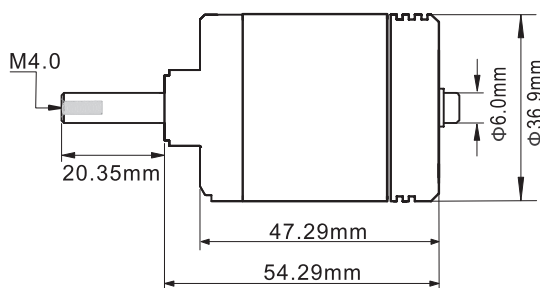
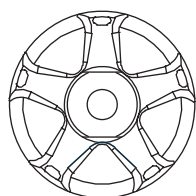


⚠ Note: When ESC and battery connected, prohibit to touch them by hand to avoid accidental injury. When test EDF, please use safety test stand for testing, prohibit to touch by hand for testing.

⚠ Note: When test EDF, if the motor reverse to turn, we can exchange the connection of wire 1 and wire 3 to change the motor's rotation.



Motor parameters



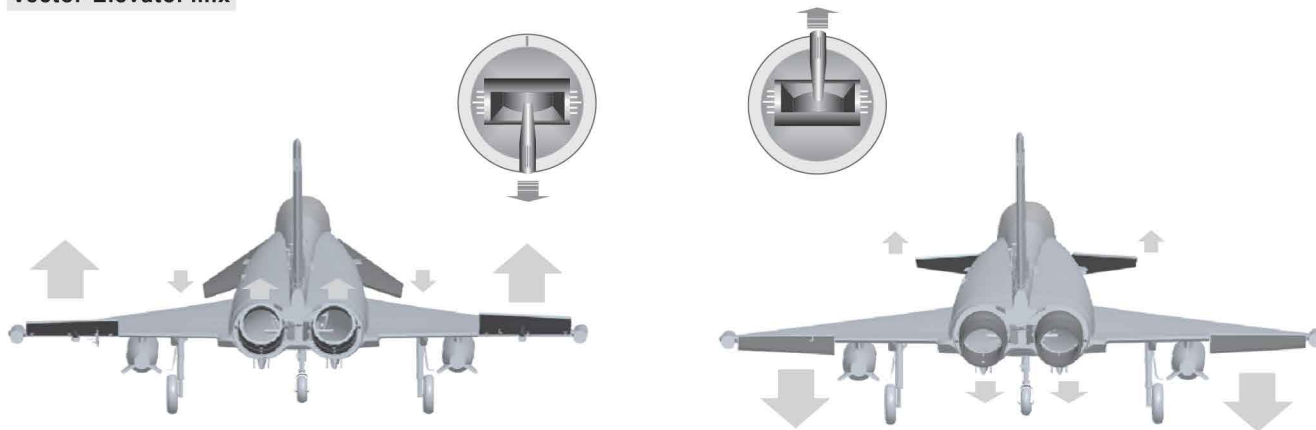
⚠ Note: If you need other motor to use, please refer to the dimension shown on the left to select your motor, to make sure that the motor you purchased can install successfully.

Item No.	KV Value	Voltage (V)	Current (A)	Pull (g)	Motor Resistance	Weight (g)	No Load Current	Propeller	ESC
MO03712	1450RPM/V	22.2	80	3600	0.02 Ω	195	2.7A/10V	90mm Ducted Fan	≥95A

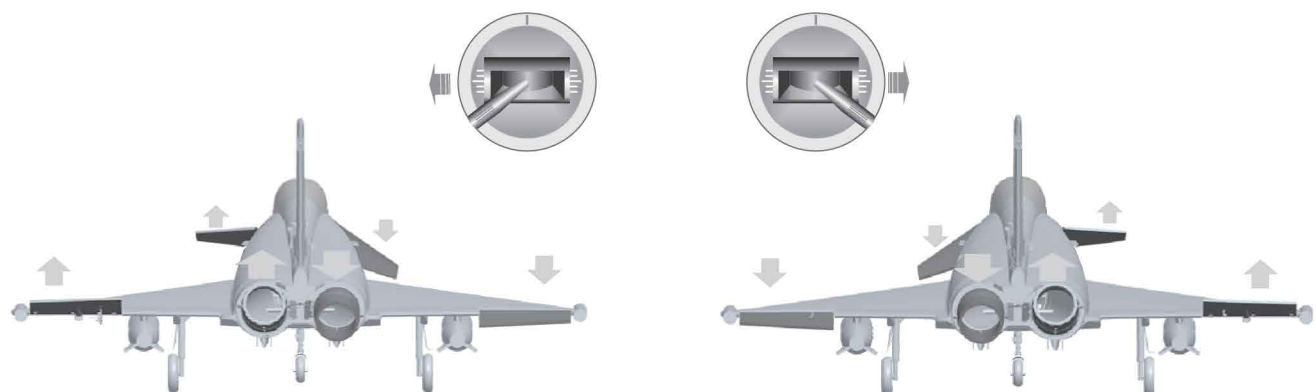
Note: This jet have the vector function,so you need the 7CH+ radio, and it must have the programming function.

- 1.Use Y-wire to connect the left aileron servo and left side of vector servo (Vertically), and insert the Y-wire to the receiver Aileron channel.
- 2.Use Y-wire to connect the right aileron servo and right side of vector servo (Vertically), and insert the Y-wire to the receiver elevator channel.
- 3.Use Y-wire to connect left/right canard servo, and insert to the free channel of receiver.
- 4.Adjust the flight mode to set up Delta mold in radio.
- 5.Enter into the canard channel for programming, this channel is set to keep the same movement with aileron.
- 6.Enter into the canard channel for programming, this channel is set to keep the same movement with elevator.

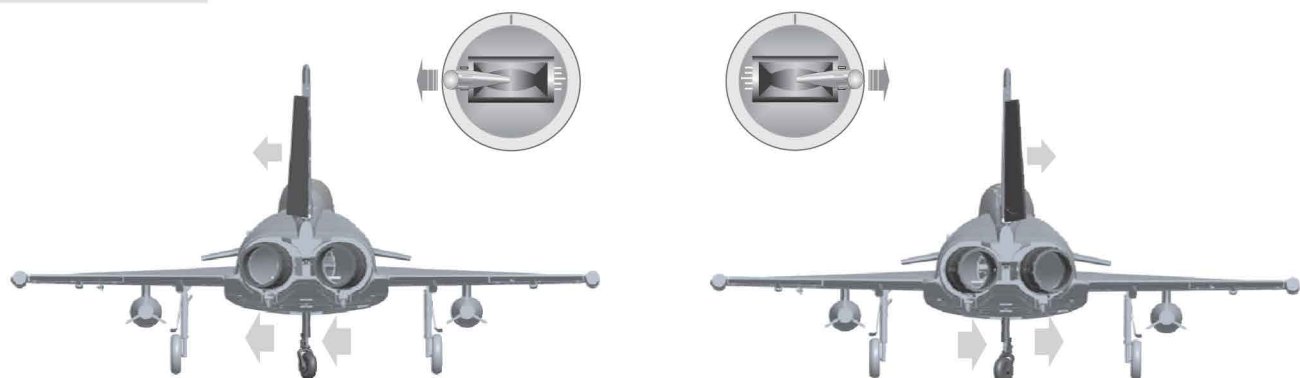
Vector-Elevator mix



Vector – Aileron mix



Vector-Rudder mix



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

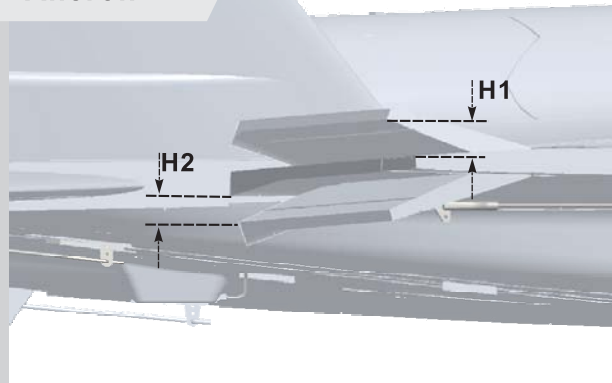
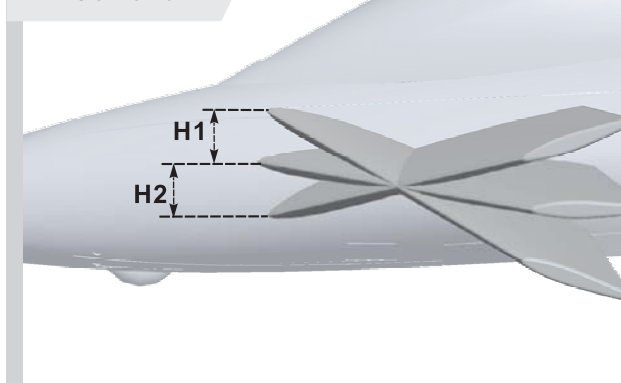
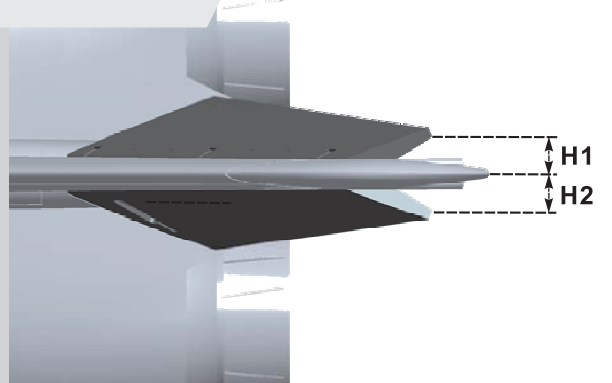
Stick Left



Stick Right

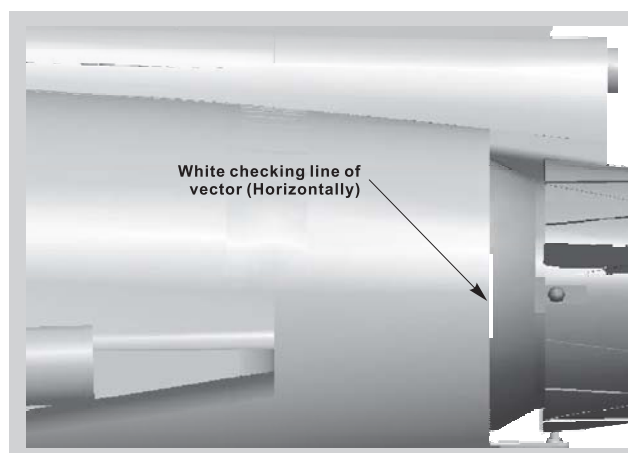
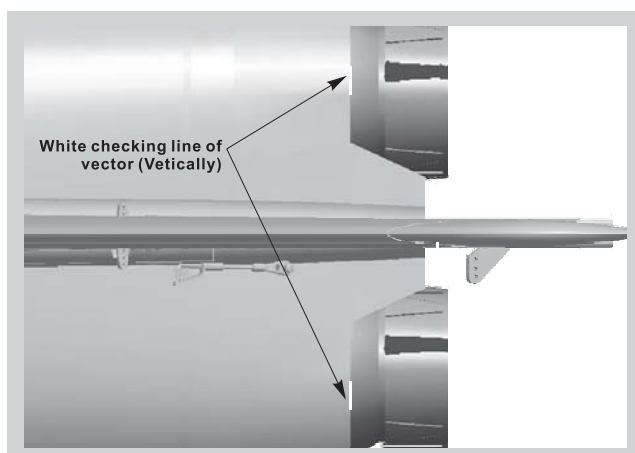


According to our testing experience, according to the following parameters to set the aileron/elevator rate, it will be useful for flight. In low rate, its good for flight control and its suitable for the initial flight or less skilled players. According to your own circumstance, choose one rate in flight.

Aileron**Canard****Rudder**

	Aileron	Canard	Rudder
Low Rate	H1/H2 14mm/14mm	H1/H2 9mm/9mm	H1/H2 13mm/13mm
High Rate	H1/H2 20mm/20mm	H1/H2 13mm/13mm	H1/H2 19mm/19mm

Vector center diagram



Motor does not turn on	A) Li-Po battery depleted	A) Recharge Li-Po battery
	B) Transmitter batteries depleted	B) Replace or recharge batteries
	C) Transmitter not turned on	C) Turn on transmitter
	D) Li-Po battery not plugged in	D) Plug in Li-Po battery
	E) Motor not armed	E) Arm motor
	F) A crash has damaged an internal component	F) Replace
	G) ESC or other damaged	G) Check ESC or contact local distributor
Cub is difficult to control	A) You are flying in too much wind	A) Fly when there is no wind
	B) Li-Po battery depleted	B) Recharge Li-Po battery
	C) Transmitter batteries depleted	C) Replace or recharge batteries
	D) Transmitter antenna not extended completely	D) Extend transmitter antenna completely
	E) Surface control rate is too high	E) Use low rate to fly
The nose always move down when fly, always need to up elevator	A) CG is forward	A) Adjust CG backward refer to instruction
Cub constantly climbs or descends, or turns right or left without control input	A) The aircraft is out of trim adjustment	A) Adjust the transmitter trim tabs
	B) You are flying in too much wind	B) Fly when there is no wind
Elevator is too flexible, up and down is not stable	A) CG is backward	A) Adjust CG forward refer to instruction
Plane will be slant when taxi on the runway	A) Nose gear is not center.	A) Center nose gear
	B) Rudder is not center.	B) Center rudder
Take off is difficult	A) Thrust is not on the high position	A) Thrust is on the high position
	B) Taxi distance is not enough	B) Long taxi distance
	C) Elevator rate is not enough high	C) Use high rate of elevator
Cub will not climb	A) Li-Po battery is depleted	A) Recharge Li-Po battery
	B) Ducted fan is damaged	B) Check and replace ducted fan
	C) Motor is damaged	C) Check and replace motor
	D) ESC overheat protection,power reduction.	D) Landing firstly, check and select a more powerful ESC
Li-Po battery is slightly warm after charging	A) This is normal	A) The Li-Po battery may be slightly warm when fully charged. It should not be hot to the touch.
Motor vibrates excessively	A) Ducted fan is damaged	A) Check and replace ducted fan
	B) Motor is damaged	B) Check and replace motor
	C) Ducted fan is not balance	C) Adjust the ducted fan balance
	D) High speed will happen slightly vibrate	D) Its normal to use
Control surface move the wrong direction	A) Servo direction is reversed	A) Adjust servo reversing function



Dongguan Freewing Electronic Technology Ltd
HK Freewing Model International Limited

Add.: FeiYi Building, face to Labor Bureau, Fumin Middle Road, Dalang Town,
Dongguan City, Guangdong Province, China

Web: <http://www.sz-freewing.com>

Email: freewing@sz-freewing.com

Tel: 86-769-82669669 Fax: 86-769-82033233

东莞市飞翼电子科技有限公司
香港飞翼模型国际有限公司

地址: 广东省东莞市大朗镇富民中路402-408号飞翼楼四楼

Web: <http://www.sz-freewing.com>

Email: freewing@sz-freewing.com

Tel: 86-769-82669669 Fax: 86-769-82033233