

M^oDEL
Freewing

Freewing 80mm EDF JET

JAS-39 Gripen *User Manual*

Wingspan:882mm

Length:1613mm

Empty Weight:2350G[w/o Battery]



MADE IN CHINA



EN 1~9

中 10~18

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The JAS 39 Gripen is a stunning fighter aircraft manufactured by the historic Swedish aerospace company, Saab. Designed to be inherently unstable, the Gripen's unique delta wing is aided by canards to achieve an impressively maneuverable flight envelope. Flown by more than a dozen countries and interoperable with NATO standards, the Gripen is a Mach 2-capable multirole fighter whose 25 year service history shows no signs of stopping!

Freewing has raised the bar again for RC foam electric delta winged jets with the JAS 39 Gripen. This jet is precisely modeled for scale fidelity and practical RC performance, and assembles in minutes including pre-installed electronics and LED lighting. Powered by Freewing's popular 80mm 9-blade Inrunner EDF and a 100A ESC, the Freewing Gripen is designed for sport scale performance! 1613mm in length and sporting an 882mm wingspan, the Freewing Gripen is longer than its predecessor, the Freewing Typhoon. Referencing the full size Gripen's short take-off capabilities, the Freewing Gripen is optimized for short take-offs and surviving unkempt landing strips. Tall undercarriage with nose and tail wheel heights of 45mm and 70mm, respectively, are mounted on aluminum suspension struts and retracted with powerful 5kg and 13kg electric worm-drive retract units. A maximum level airspeed of 170kph/105mph is achievable, with an average mixed throttle flight duration surpassing 4-5 minutes.

Recommended for intermediate to advanced skill level pilots, the Freewing Gripen offers the power, size and speed of a 90mm super scale jet, in a lighter, faster, and more economical 80mm EDF Series package. Full-functioning canards enable stable high-alpha capabilities, and full-coverage gear doors improve the airframe's overall aerodynamics.

Freewing's chosen high-visibility "Heritage" livery commemorates the 100th anniversary of the Czech Air Force, fighting from 1918-2018 in service from World War 2 to various NATO Coalition conflicts to the present day. Honor the past to preserve the future!

⚠ 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.

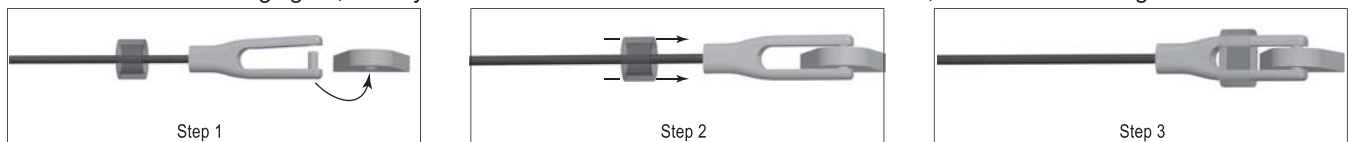
Note:

- 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 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.

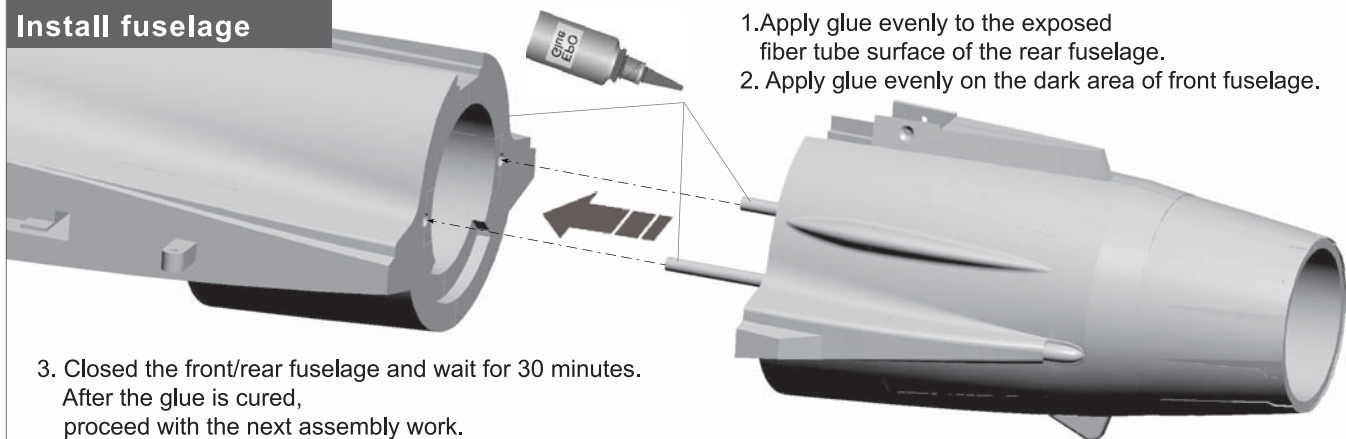
Important additional notes

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.



Install fuselage



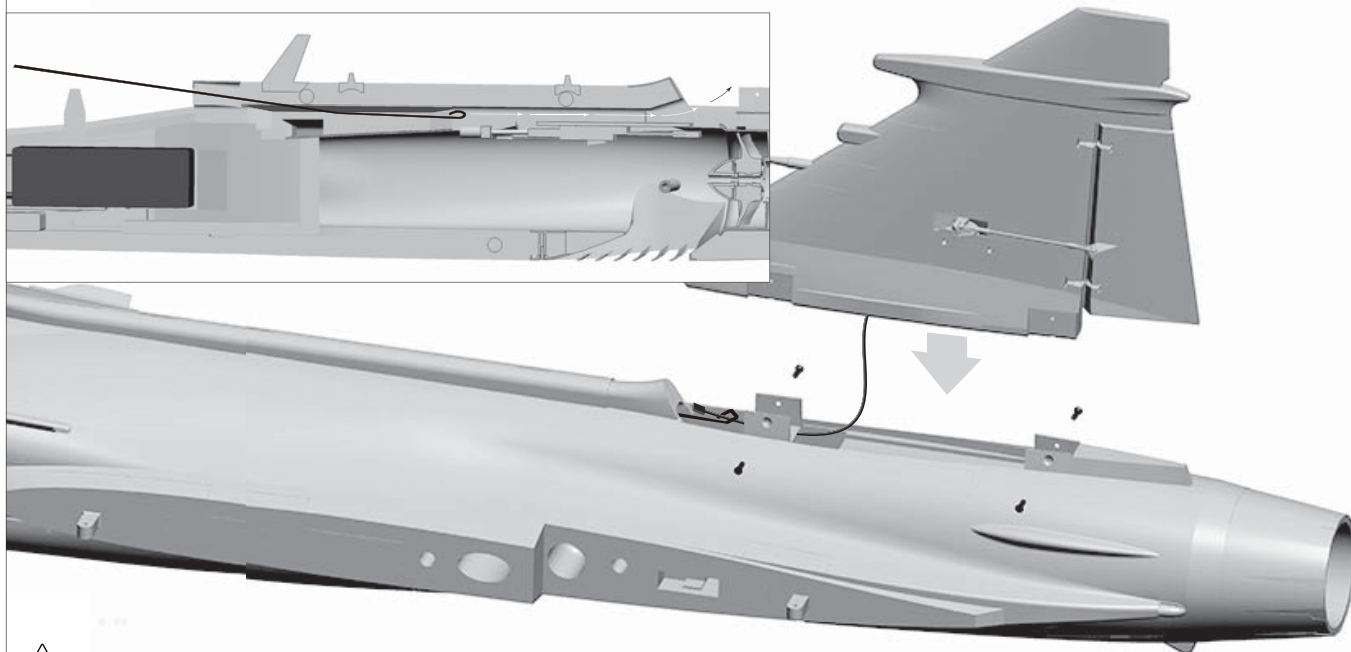
1. Apply glue evenly to the exposed fiber tube surface of the rear fuselage.
2. Apply glue evenly on the dark area of front fuselage.

3. Closed the front/rear fuselage and wait for 30 minutes. After the glue is cured, proceed with the next assembly work.

Install Vertical Stabilizer

Screw (FA3X10mm 4PCS)

1. Take out the traction wire from the packaging box, and insert the hooked end into the fuselage slot from the battery compartment.
2. Use the traction wire to hook the vertical stabilizer servo wire and pull it into the battery compartment along the wire groove.
3. At the same time, after the vertical stabilizer is installed at the rear of the fuselage, use 4 screws to lock the vertical stabilizer from both sides;



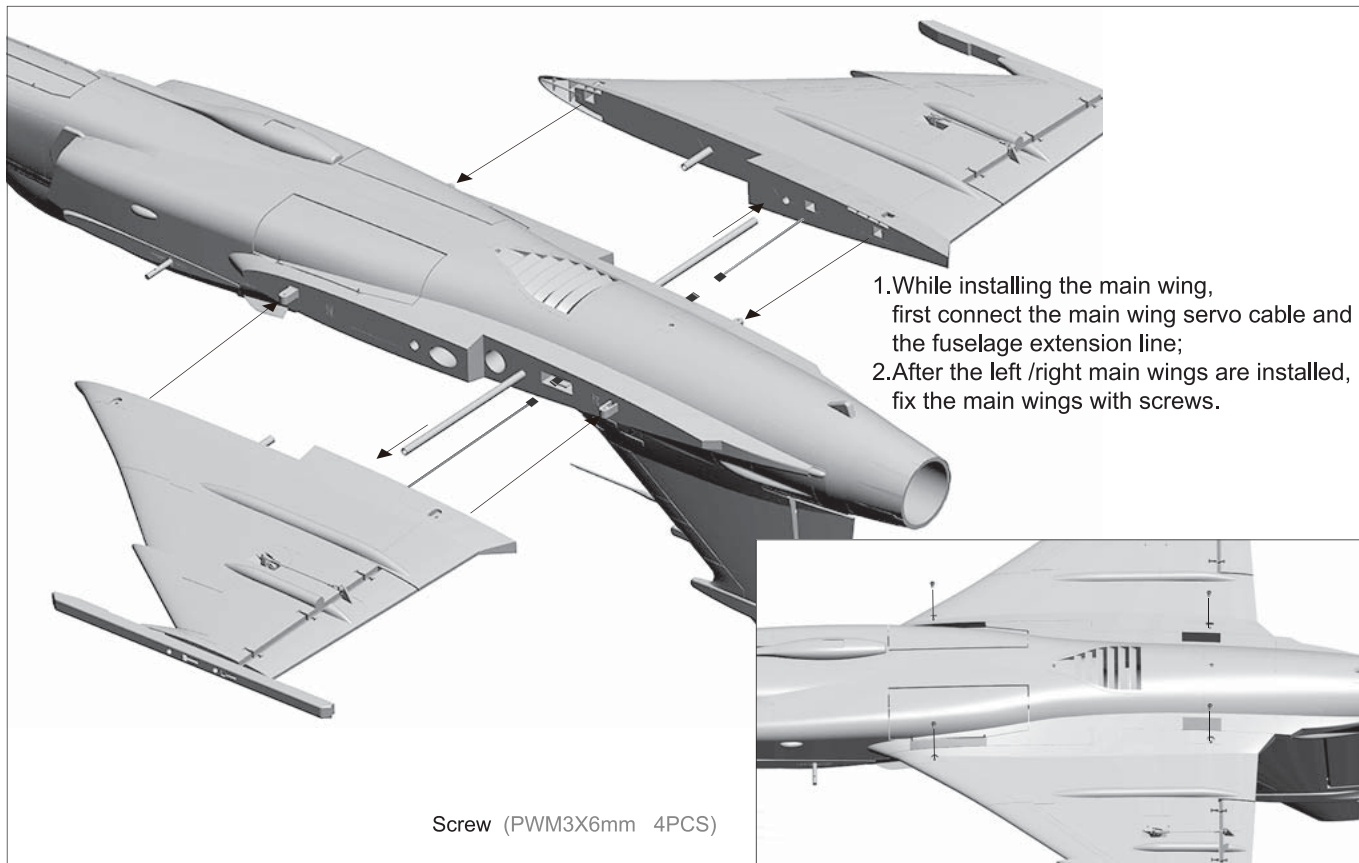
Note: The servo cable should pass through the vertical tail fixed plastic part

Install Main wing

Insert the carbon fiber tube into the fuselage, keeping the two ends exposed to the same length.

Carbon tube size: $\varnothing 8 \times 610\text{mm}$



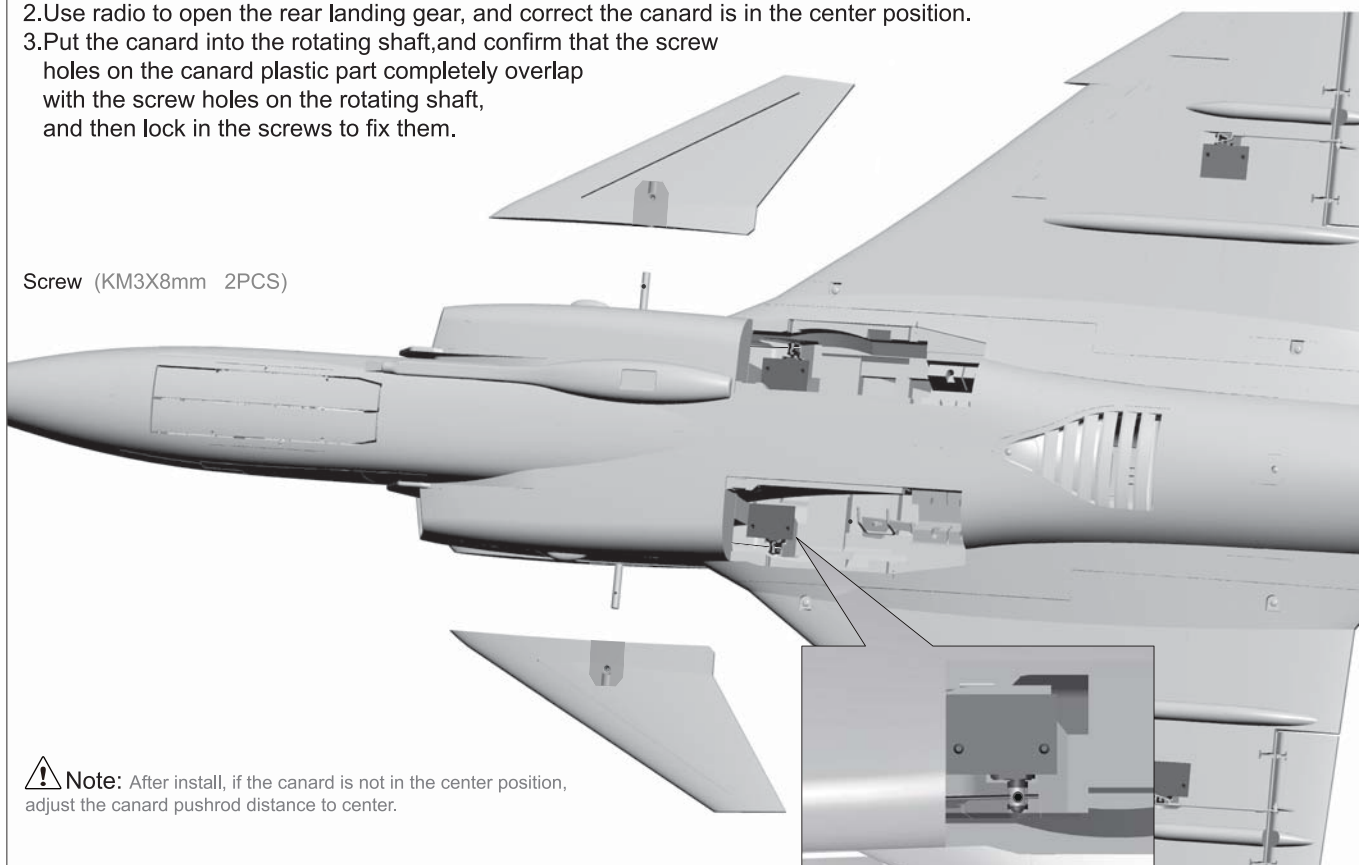


1. While installing the main wing, first connect the main wing servo cable and the fuselage extension line;
2. After the left /right main wings are installed, fix the main wings with screws.

Screw (PWM3X6mm 4PCS)

Install Canard

1. Turn over the fuselage to belly up, then install the canard.
2. Use radio to open the rear landing gear, and correct the canard is in the center position.
3. Put the canard into the rotating shaft, and confirm that the screw holes on the canard plastic part completely overlap with the screw holes on the rotating shaft, and then lock in the screws to fix them.



Screw (KM3X8mm 2PCS)

⚠ Note: After install, if the canard is not in the center position, adjust the canard pushrod distance to center.

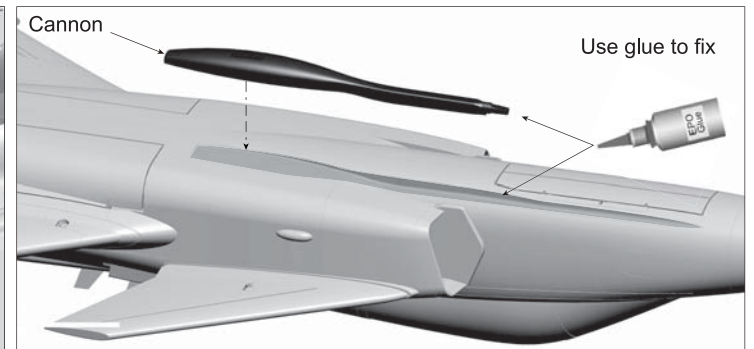
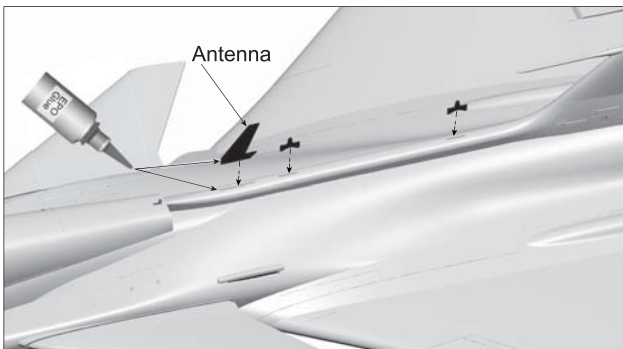
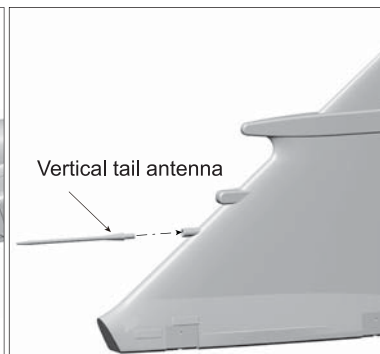
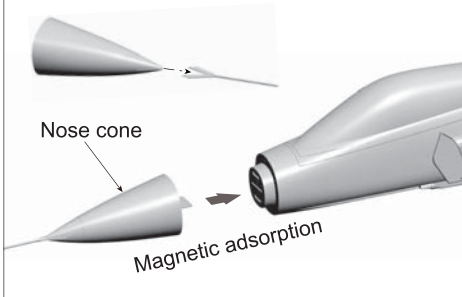
Install Pylons

Use 4pcs screws to fix the wingtip tanks.

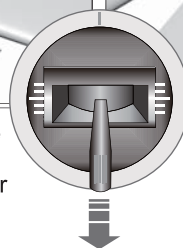
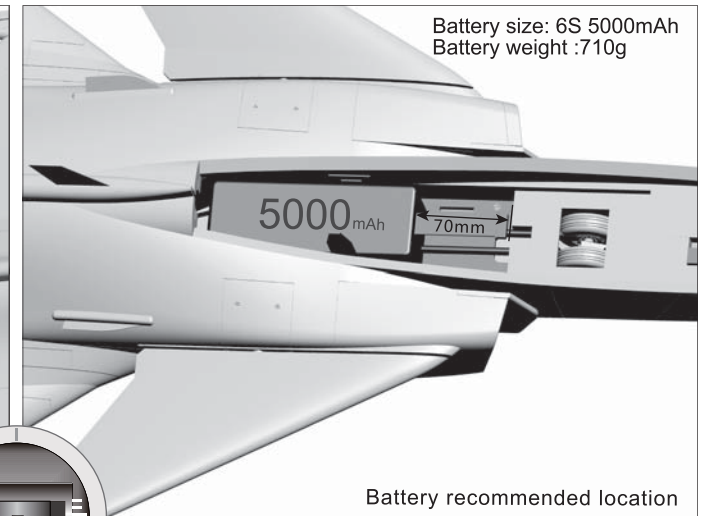
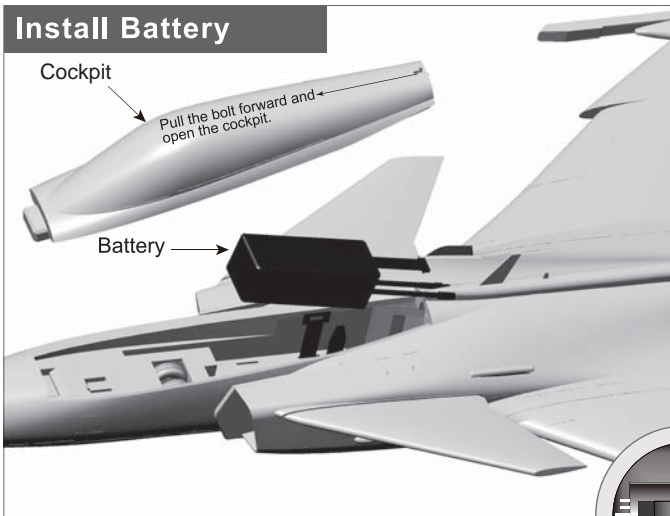


Screw (PA3X10mm 2PCS)

Install small plastic parts



Install Battery

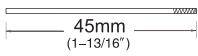


Before connecting the battery and receiver, please switch on the transmitter power and make sure the throttle stick is in the lowest position. Bind your receiver to your transmitter according to your transmitter's instruction manual.

We recommend the following LiPo battery:
6S 22.2V 4000mAh~6S 22.2V 5000mAh
Discharge rate of C ≥ 35C

Pushrod instructions

Nose gear steering pushrod length

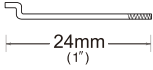


Pushrod diameter $\varnothing 1.2\text{mm}$

Nose gear steering pushrod mounting hole



Nose cabin door pushrod length

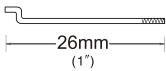


Pushrod diameter $\varnothing 1.2\text{mm}$

Nose cabin door pushrod mounting hole



Rear cabin door pushrod length

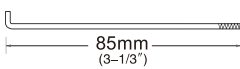


Pushrod diameter $\varnothing 1.2\text{mm}$

Rear cabin door pushrod mounting hole



Rudder pushrod length

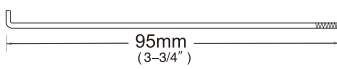


Pushrod diameter $\varnothing 1.5\text{mm}$

Rudder pushrod mounting hole



Aileron pushrod length

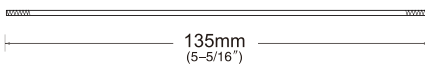


Pushrod diameter $\varnothing 1.5\text{mm}$

Aileron pushrod mounting hole

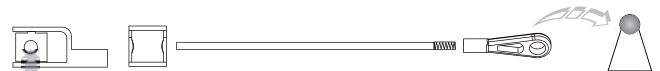


Canard pushrod length



Pushrod diameter $\varnothing 1.5\text{mm}$

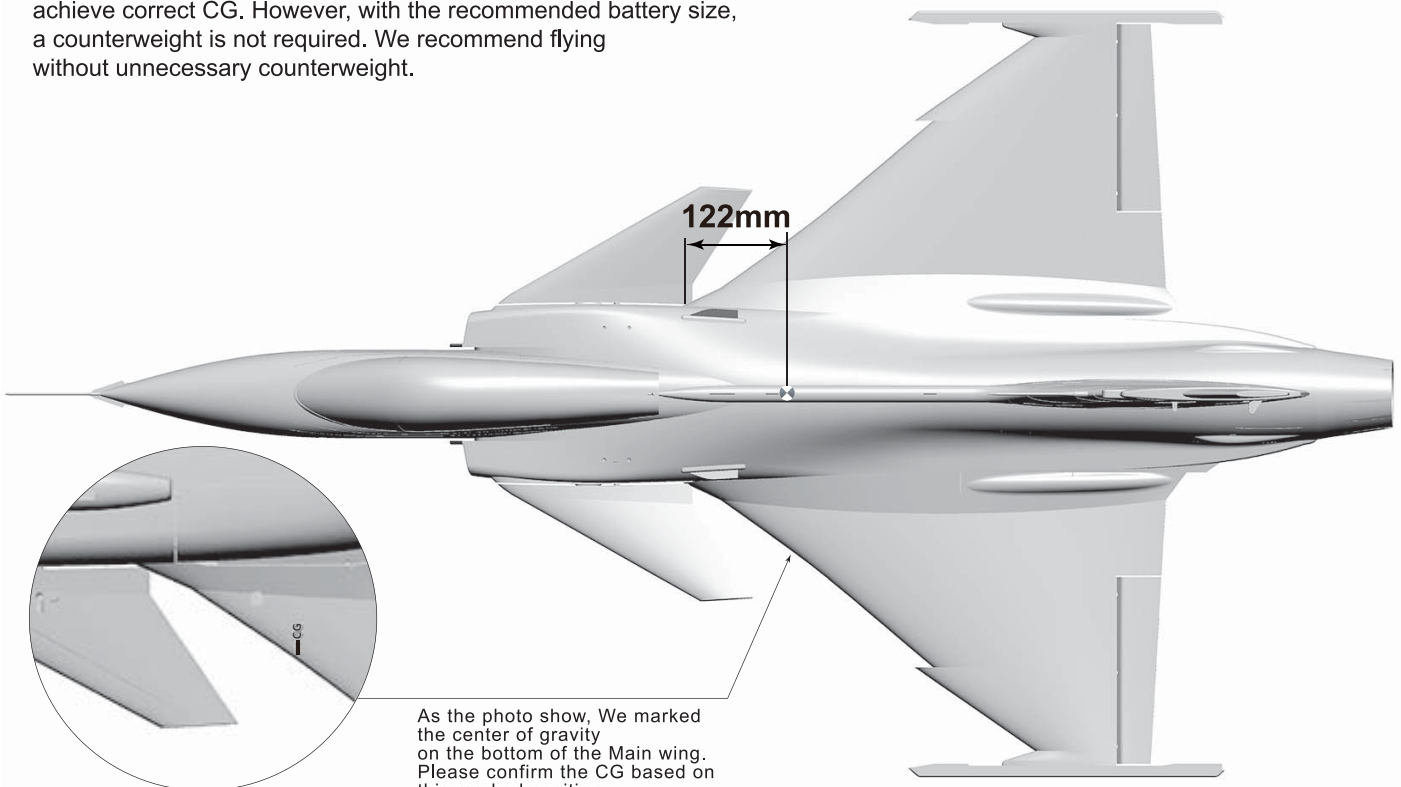
Canard pushrod mounting hole



Center of Gravity

Correct Center of Gravity ("CG") is critical for enabling safe aircraft stability and responsive control. Please refer to the following CG diagram to adjust your aircraft's Center of Gravity.

- Depending on the capacity and weight of your chosen flight batteries, move the battery forward or backward to adjust the Center of Gravity.
- If you cannot obtain the recommended CG by moving the battery to a suitable location, you can also install a counterweight to achieve correct CG. However, with the recommended battery size, a counterweight is not required. We recommend flying without unnecessary counterweight.



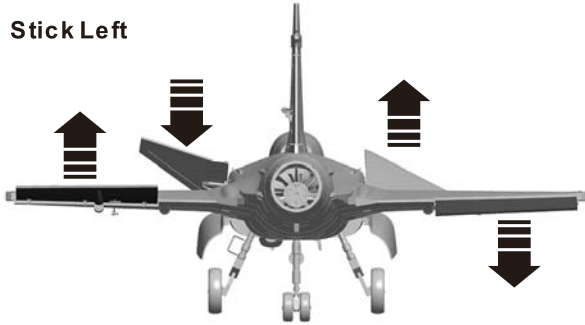
As the photo show, We marked the center of gravity on the bottom of the Main wing. Please confirm the CG based on this marked position.

Control Direction Test

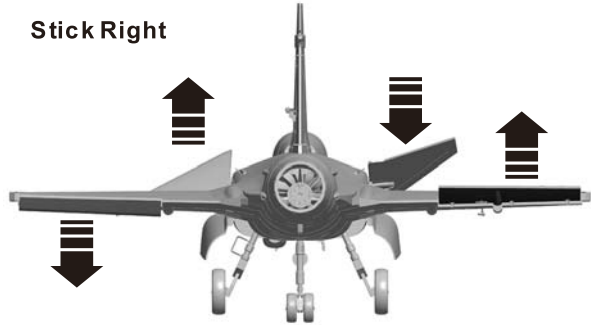
After installed the plane, before flying, we need a fully charged battery and connect to the ESC, then use radio to test and check that every control surface work properly.

Aileron

Stick Left



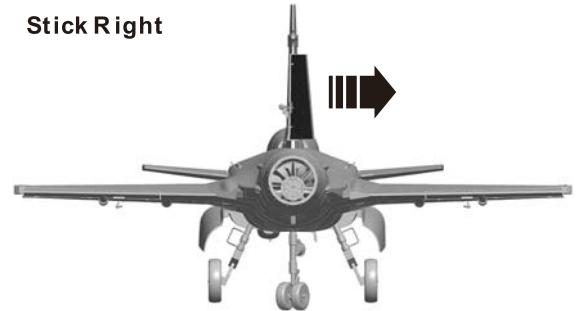
Stick Right

**Rudder**

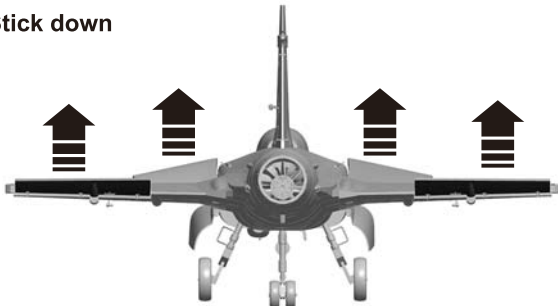
Stick Left



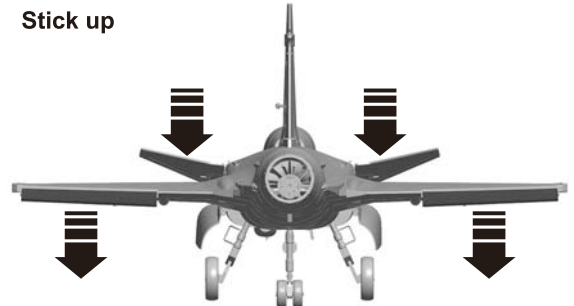
Stick Right

**Elevator**

Stick down

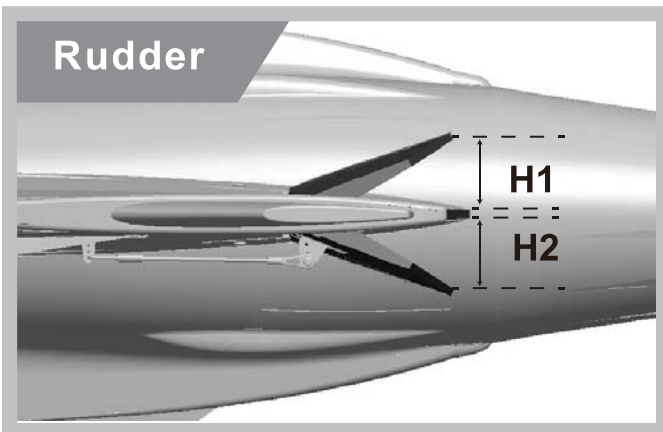
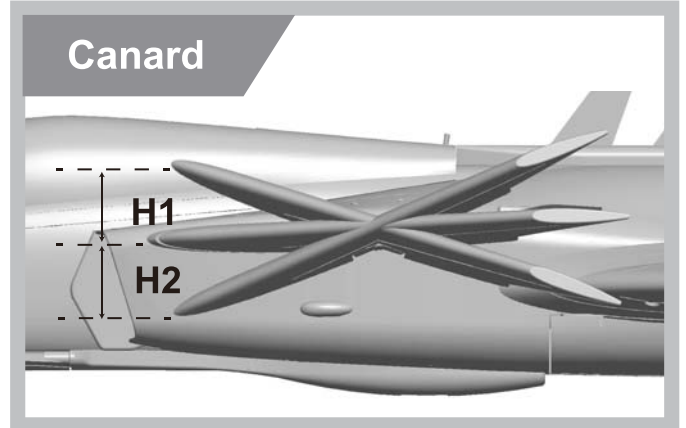
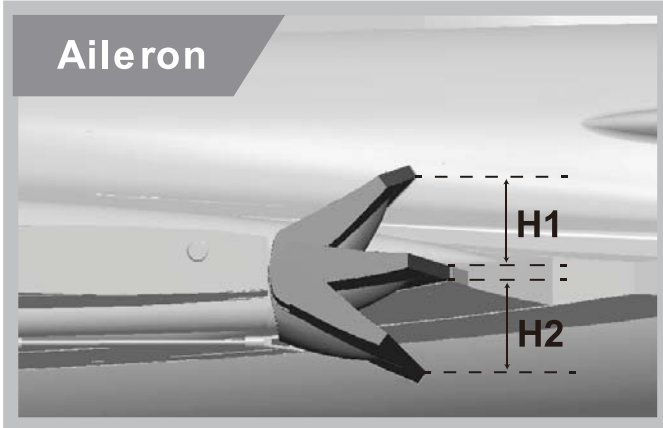


Stick up



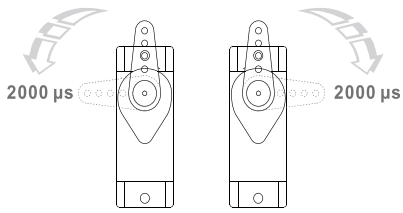
Dual Rates

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

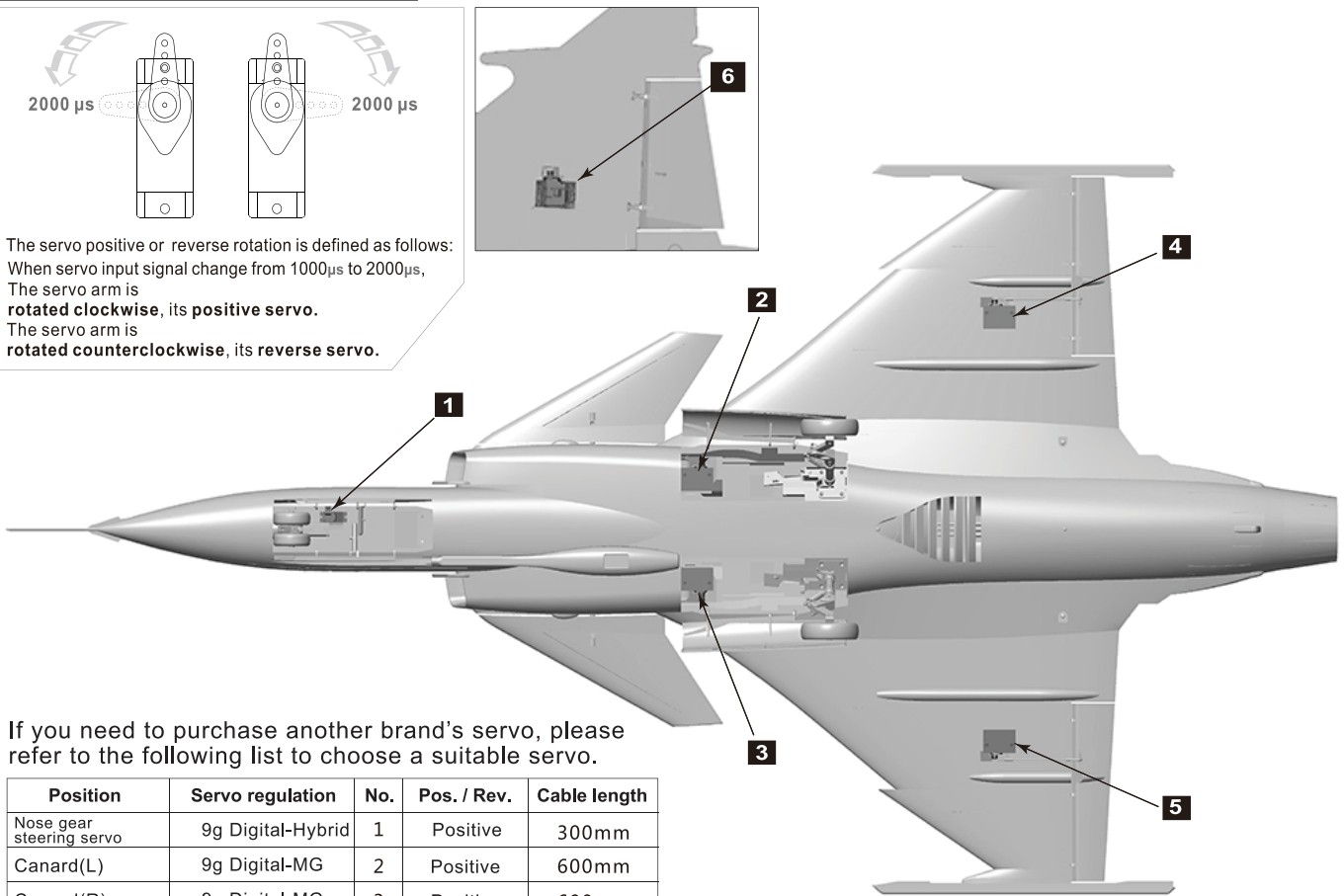


	Canard (Canard wing tip)	Aileron (Measured closest to the fuselage)	Rudder (Measured from the bottom)
Low Rate	H1/H2 27mm/27mm D/R Rate : 70%	H1/H2 17mm/17mm D/R Rate : 70%	H1/H2 27mm/27mm D/R Rate : 80%
High Rate	H1/H2 35mm/35mm D/R Rate : 100%	H1/H2 23mm/23mm D/R Rate : 100%	H1/H2 32mm/32mm D/R Rate : 100%

Servo Direction



The servo positive or reverse rotation is defined as follows:
 When servo input signal change from 1000 μ s to 2000 μ s,
 The servo arm is
rotated clockwise, its positive servo.
 The servo arm is
rotated counterclockwise, its reverse servo.

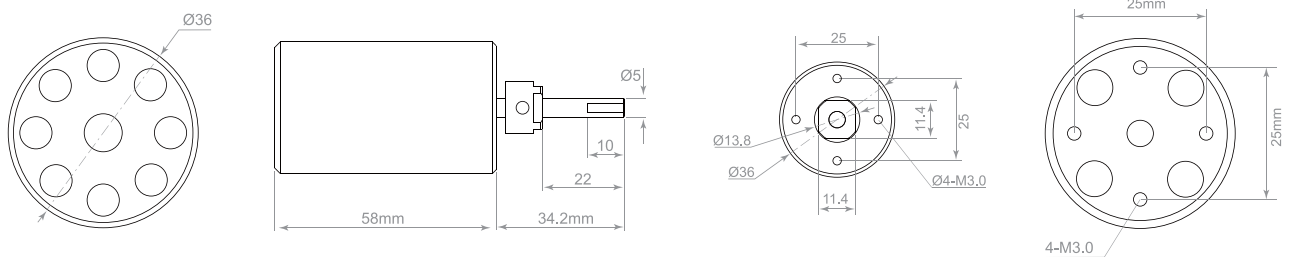


If you need to purchase another brand's servo, please refer to the following list to choose a suitable servo.

Position	Servo regulation	No.	Pos. / Rev.	Cable length
Nose gear steering servo	9g Digital-Hybrid	1	Positive	300mm
Canard(L)	9g Digital-MG	2	Positive	600mm
Canard(R)	9g Digital-MG	3	Positive	600mm
Aileron(L)	9g Digital-Hybrid	4	Positive	200mm
Aileron(R)	9g Digital-Hybrid	5	Positive	200mm
Rudder	9g Digital-Hybrid	6	Positive	1050mm

Motor Specification

#MOI36584
3658-1920KV



Unit: mm

Item No.	Fan size	Motor specifications	Voltage (V)	Current (A)	Max power (W)	Thrust (g)	Efficiency (g/w)	Speed (rpm)	Weight (g)
E72313	80mm 9-Blade	3658-1920KV	22.2	90	2000	3400	1.7	42000	345



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