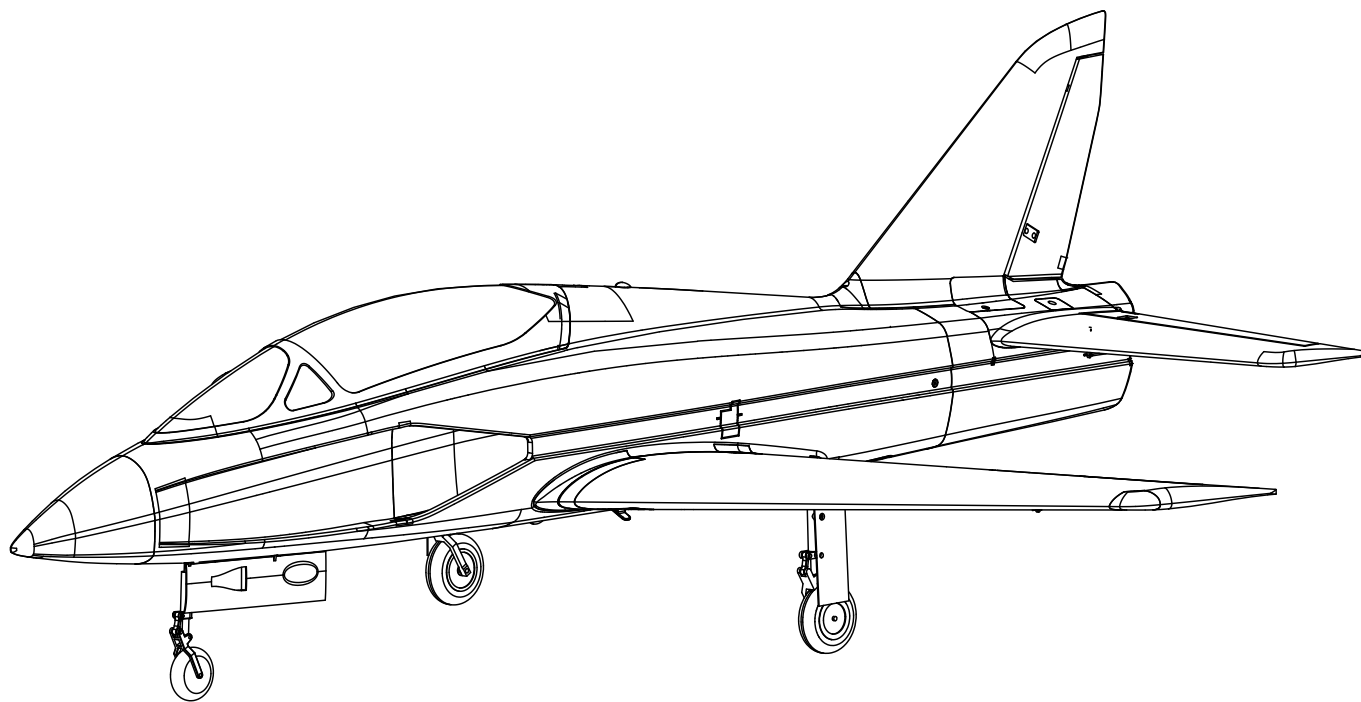




90MM MATRIX



Instruction Manual

操作手册

Pilot-rc.com

WARNING

WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product and NOT a toy. It must be operated with caution and common sense and failure to do so could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision.

This manual contains instructions for safety operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual prior to assembly, setup or use, in order to operate and avoid damage or serious injury.

Safety precautions and warnings

As the user of this product, you are solely responsible for operating in a manner that does not endanger yourself and others or result in damage to the product or the property of others. This model is controlled by a radio signal subject to interference from many sources outside your control. This interference can cause momentary loss of control so it is advisable to always keep a safe distance in all directions around your model, as this margin will help avoid collisions or injury.

Age Recommendation: Not for children under 14 years. This is not a toy.

- Never operate your model with low transmitter batteries.
- Always operate your model in an open area away from cars, traffic or people.
- Avoid operating your model in the street where injury or damage can occur.
- Never operate the model in populated areas for any reason.
- Carefully follow the directions and warnings for this and any optional support equipment you use (chargers, rechargeable battery packs, etc.)
- Keep all chemicals, small parts and anything electrical out of the reach of children.
- Moisture causes damage to electronics. Avoid water exposure to all equipment not specifically designed and protected for this purpose.
- Never lick or any place of any your model in your mouth as it could cause serious injury or even death.

Safety**Lithium Polymer (Li-Po) Battery Warning**

CAUTION: Always follow the manufacturer's instructions for safe use and disposal of batteries. Fire, property damage, or serious injury can result from the mishandling of Li-Po batteries.

- By handling, charging or using a Li-Po Battery you assume all risks associated with lithium batteries.
 - If at any time the batteries begin to swell or balloon, discontinue use immediately!
 - Always store the batteries at room temperature in a dry area to extend the life of the battery. Always transport or temporarily store the battery in a temperature range of 40-120F. Do not store the battery or model in a car or in direct sunlight.
 - If stored in a hot car, the battery can be damaged or even catch fire.
 - Never use a Ni-Mh Charger to charge Li-Po Batteries. Failure to charge the battery with a Li-Po compatible charger may cause fire resulting in personal injury and property damage.
 - Never discharge Li-Po Cells below 3V.
 - Never leave charging batteries unattended.
 - Never charge damaged batteries.
- Charging the Flight Battery Warning**
- Use a battery charger that is designed to safely charge the Li-Po Battery. Read the charger instructions carefully before use. When charging the battery, make certain the battery is on a heat resistant surface. It is also highly recommended to place the Li-Po Battery inside a fire resistant charging bag readily available at hobby shops or online.

Introduction

Legendary Matrix Performance, Now in Foam.

The Matrix Foam EDF project began as an idea in late 2024. Inspired by the outstanding success of the Matrix Composite Jet, we set ourselves a simple but ambitious goal: to bring the same high-performance flying experience into a compact foam platform that is more affordable, easier to transport, and accessible to pilots of all experience levels.

Development officially began in 2025 with the first prototype. What followed was over a year of intensive research, design, and flight testing. Every prototype taught us something new, leading to continuous refinements in aerodynamics, structure, and overall performance until we achieved the flying characteristics we were looking for.

Our objective was never to simply create another foam EDF. From day one, the focus was on capturing the unique personality of the Matrix Composite. Every design decision was made to preserve its precise handling, outstanding stability, forgiving slow-speed characteristics, and wide flight envelope while taking full advantage of the durability and convenience of modern foam construction.

Today, we are proud to introduce the final production version of the Pilot-RC Matrix Foam EDF—a new generation of foam jet designed to deliver the true Matrix experience in a package that is practical, affordable, and ready to fly almost anywhere.

Whether you're flying smooth precision aerobatics, high-speed passes, or slow high-alpha maneuvers, the aircraft remains predictable, stable, and easy to control. The optimized wing loading and carefully developed aerodynamics provide excellent tracking while maintaining outstanding agility throughout the entire flight envelope.

One of the key goals throughout development was to create an aircraft that is approachable for intermediate pilots while offering the performance and precision demanded by experienced EDF enthusiasts. The result is a jet that feels equally at home performing smooth sport flights, precision aerobatics, or 3D maneuvers.

Designed for Convenience

Performance means little if an aircraft is difficult to own or transport.

That is why the Matrix Foam EDF was designed to be compact, durable, and quick to assemble. Its practical size makes it easy to transport in most vehicles, while the lightweight foam construction provides excellent durability for regular flying sessions.

The integrated Quick-Release (QR) Wing System allows the wings to be installed or removed in just minutes, making transportation and field assembly fast and hassle-free.

The Matrix Foam EDF comes with wing bag. Whether you're heading to your local flying field or traveling to an event, the Matrix Foam EDF is designed to spend less time on the ground and more time in the air.

Convertible Flap System

The Matrix Foam EDF features a convertible flap system that can be easily configured as full-span ailerons with only linkage and servo modifications. This setup delivers increased roll authority and enhanced control response, making the Matrix Foam EDF even more capable for advanced 3D and thrust-vectoring flight.

Power Configurations

The Matrix Foam EDF comes standard with a high-performance 90mm EDF 6S power system, delivering an excellent balance of speed, efficiency, and predictable handling right out of the box.

Every standard kit also includes a custom-fitted wing bag for safe transportation and storage, making it easy to take your Matrix wherever you fly.

To achieve maximum performance and reliability, the complete EDF power system was specially developed in collaboration with Dualsky. The aircraft is equipped with a Dualsky ESC featuring ESC Forward Programming, allowing compatible transmitters to adjust ESC settings directly without disconnecting the ESC.

Introduction

The built-in telemetry system supports S.BUS2, EX Bus, SRXL2, CRSF, and S.Port protocols, providing real-time flight information directly on compatible radio systems, including:

- * Battery Voltage
- * Battery Current
- * Battery Power
- * Battery Capacity Consumed
- * BEC Voltage
- * BEC Current
- * BEC Capacity Consumed
- * Motor RPM
- * ESC temperature

For pilots looking to unlock even greater performance, two optional upgrade packages are available.

Optional 90mm EDF 8S Vector Thrust Upgrade

Designed for pilots who want to explore the full potential of modern 3D jet aerobatics, the optional 90mm EDF 8S Vector Thrust system delivers significantly more power and exceptional post-stall maneuverability while preserving the precise handling and stability that define the Matrix platform.

Whether you choose the standard 6S EDF setup, the optional 8S Vector Thrust upgrade, every configuration has been designed to deliver the unmistakable Matrix flying experience.

Kit contents

Before assembly, please inspect the contents of the kit. The photo below details the contents of the kit with labels. If any parts are missing or defective, please identify the name or part number (refer to the spare parts list near the end of the manual) then contact your local shop or email us: jeane@pilot-rc.com.

90mm EDF Matrix specification(6S version)

Wing span: 1413mm /55.6 in

Overall length: 1457mm /57.4 in

Flying weight: ~ 3400g

Motor size: Brushless 3670-KV1950

ESC: 130A with forwarding program function and the telemetry

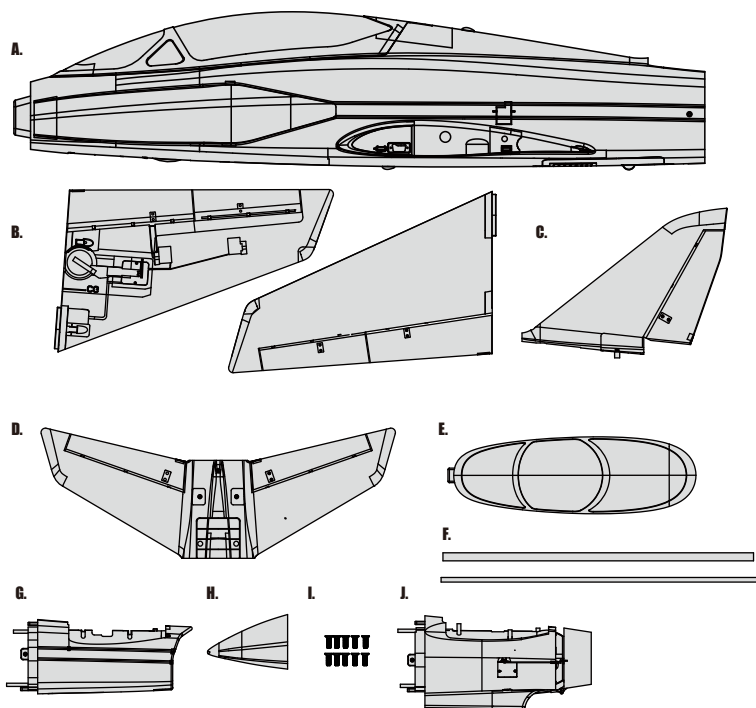
Servo: 13g*8pcs

Radio: 6 channel

CG: 135mm(from leading edge)

EDF: 90mm ducted fan (12-blade)

Recommended battery: Li-Po 22.2V 5000mAh-6000mAh 45+c



A: Front fuselage

B: Main wing

C: Vertical stabilizer

D: Horizontal stabilizer

E: Cockpit

F: Wing tubes

G: Rear fuselage

H: Nose cowl

I: Screws

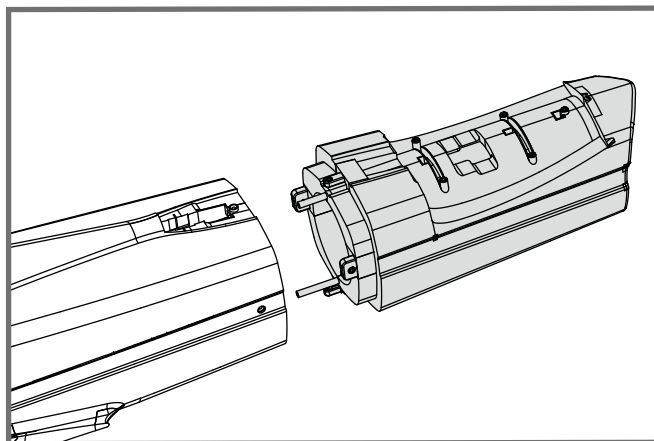
HKM3.0*16mm(8pcs)HKM3.0*10mm(2pcs)

J: Rear fuselage with vector tail nozzle
(optional part)

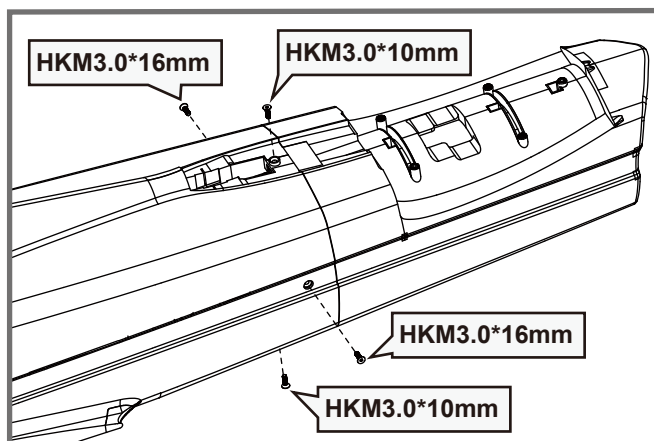
Model assembly

Fuselage installation

1. Align front and rear fuselage as shown.

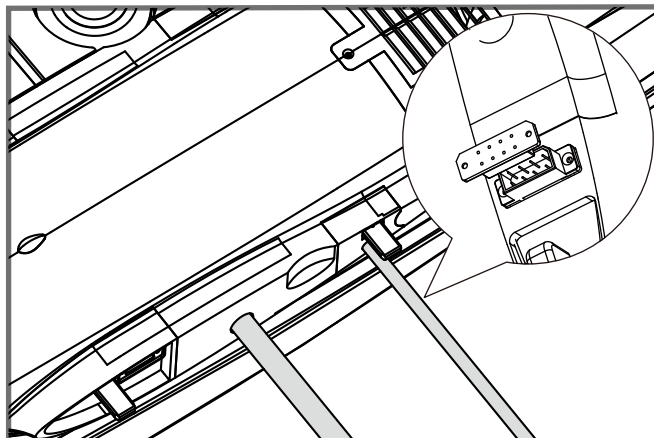
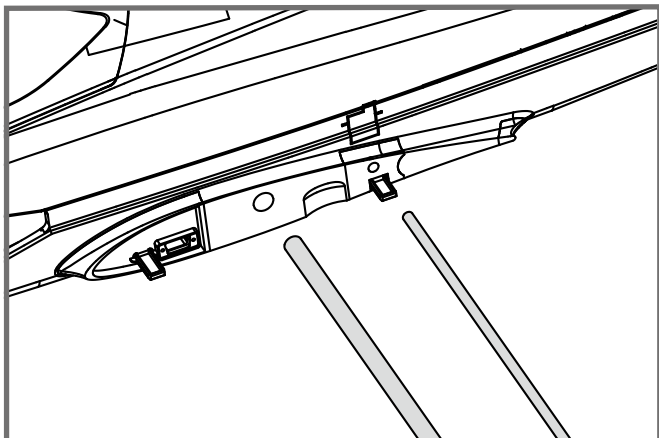


2. Use the attached screws (HKM3.0*10mm x 2, HKM3.0*16mm x 2) to secure the front and rear fuselage in place from the top, bottom, left, and right directions.



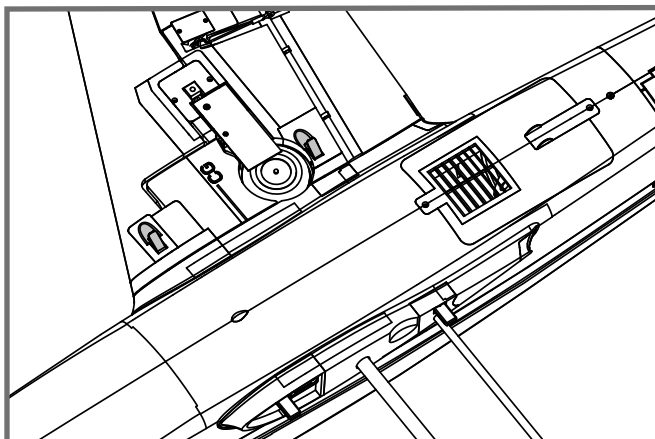
Main wing installation

1. Slide the two wing tubes into the fuselage slots as shown, then install both wings over the wing tubes and into the wing slots of the fuselage.



Model assembly

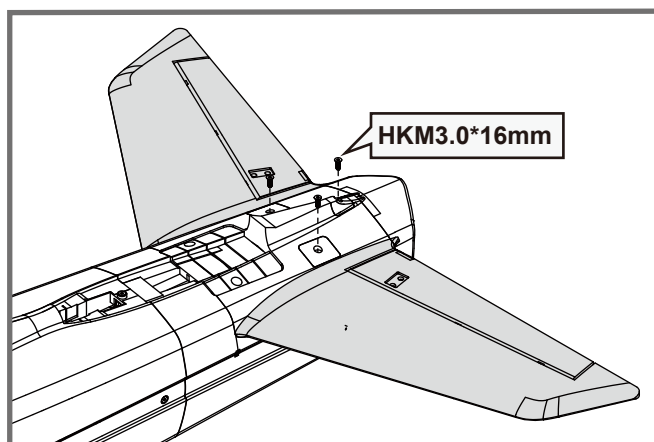
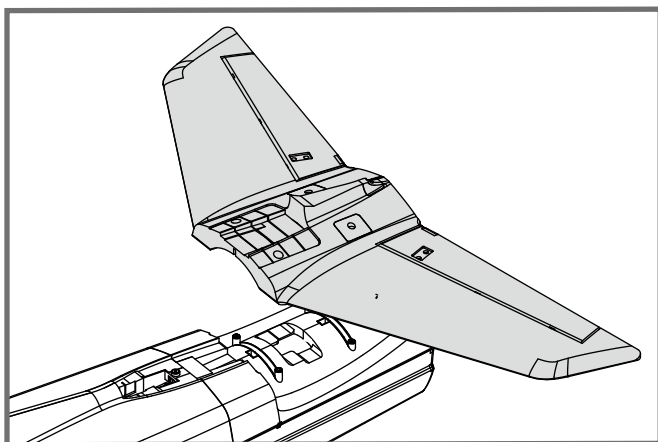
2.QR system wing lock without tools require .



Horizontal tail installation

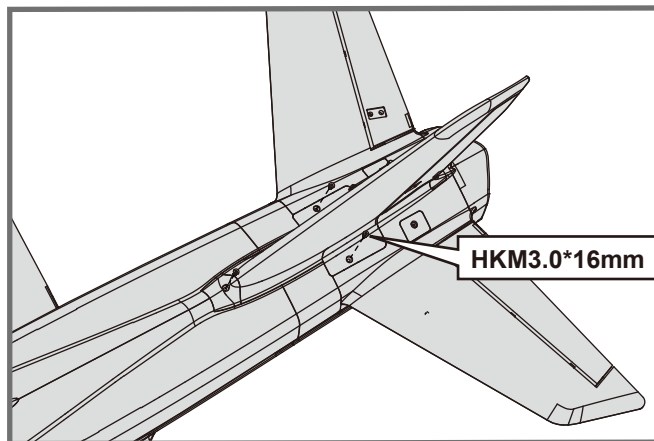
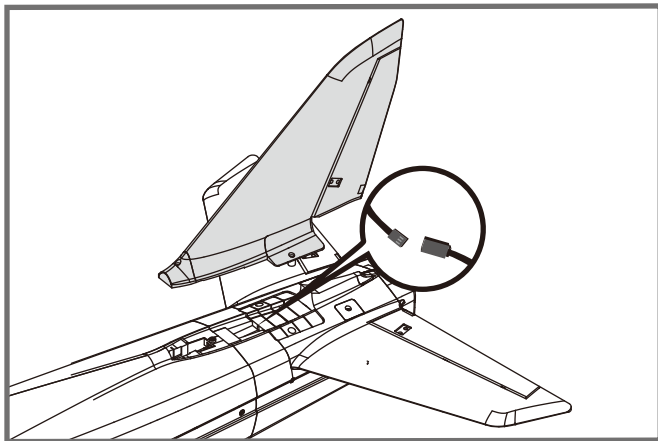
1.Open the accessory package and take out the Y-harness. Connect the left and right horizontal stabilizer servo wires to the Y-harness. Then, thread the other end of the Y-harness through the plastic piece as shown and connect it to the “ELE” extension wire in the fuselage.

2.Insert the horizontal tail at the rear of the fuselage and secure in place using the included screws.



Vertical tail installation

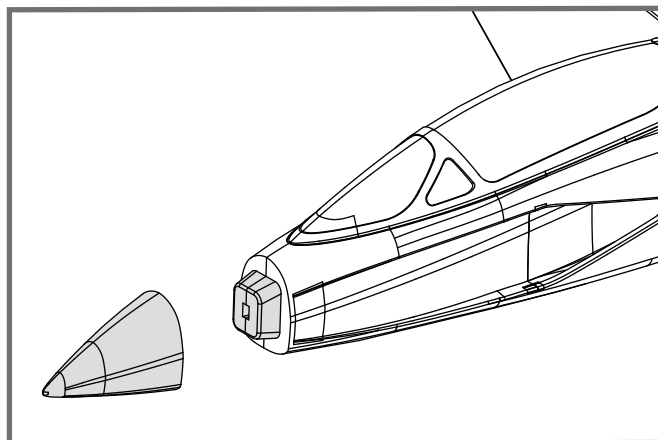
1.Connect the rudder servo wire to the “RUD” extension wire in the fuselage, then insert the vertical tail into the slot at the rear of the fuselage and secure in place using the included screws(HKM3.0*16mm x 3).



Model assembly

Cowl installation

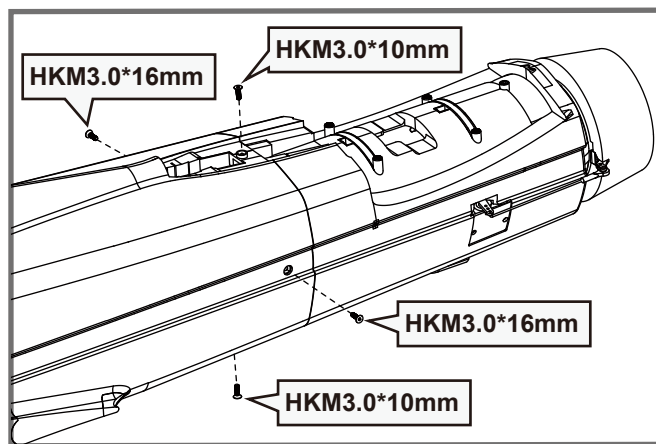
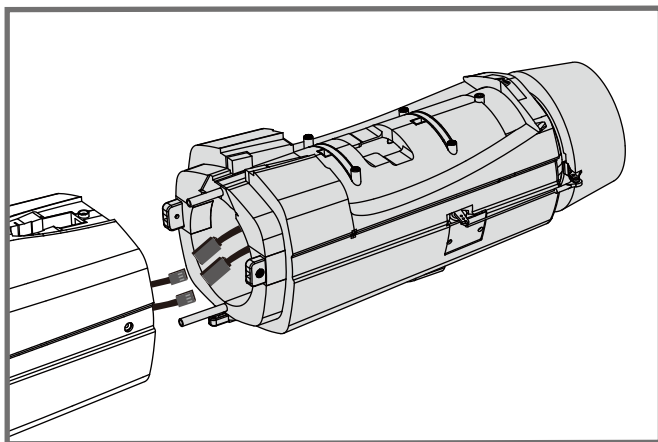
1. Install the cowl to the front of the fuselage, ensuring that the cowl is installed in the correct direction.



Rear fuselage with vector tail nozzle installation (purchased separately)

1. Open the accessory package and take out the extension wires as needed (if the number of receiver channels is insufficient, the package also includes two Y-harnesses for modelers to use). Connect the vector servo wires to the extension wires, then align front and rear fuselage as shown.

2. Use the attached screws (HKM3.0*10mm x 2, HKM3.0*16mm x 2) to secure the front and rear fuselage in place.

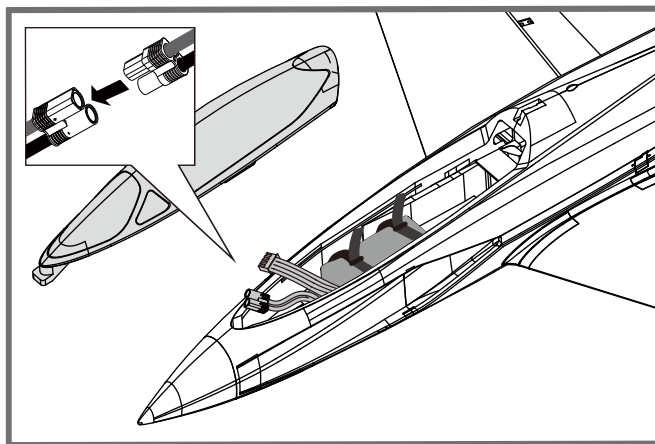


Battery installation

1. Pull back on the latch and remove the battery hatch.
2. Apply the hook tape to the cable end of the battery.
3. Slide the full charged battery into the battery compartment with the power supply cable toward the rear end of the plane.

Note: The center of gravity can be adjusted by moving the battery forward or aft. Having the correct center of gravity is critical to achieving proper flight characteristics.

Battery compartment size: 280 x 65 x 60mm



Receiver diagram

The cables from the servo connector board should be connected to your receiver in the order shown. Note that the LEDs can be powered by any spare channel on the receiver. Tuck the wire leads into the recessed cavity towards the rear of the battery hatch.

		Receiver
Aileron	1	Channel-1 — Aile
Elevator	2	Channel-2 — Elev
Throttle	3	Channel-3 — Thro
Rudder	4	Channel-4 — Rudd
Gear	5	Channel-5 — Gear
Flap	6	Channel-6 — Spare

Get your model ready to fly

Important information

1. The ESC included with the model has a safe start. If the motor battery is connected to the ESC and the throttle stick is not in the low throttle or off position, the motor will not start until the throttle stick is moved to the low throttle or off position. Once the throttle stick is moved to the low throttle or off position, the motor will emit a series of beeps. Several beeps with the same tune means the ESC has detected the cells of the battery. The count of the beeps equals the cells of the battery. The motor is now armed and will start when the throttle is moved.
2. The motor and ESC come pre-connected and the motor rotation should be correct. If for any reason the motor is rotating in the wrong direction, simply reverse two of the three motor wires to change the direction of rotation.
3. Battery Selection and Installation. We recommend the 22.2V 5000mAh-6000mAh 45c Li-Po battery. If using another battery, the battery must be at least a 22.2V 5000mAh-6000mAh 45c battery. Your battery should be approximately the same capacity, dimension and weight as the 22.2V 5000mAh-6000mAh 45c Li-Po battery to fit the fuselage without changing the center of gravity significantly.

Get your model ready to fly

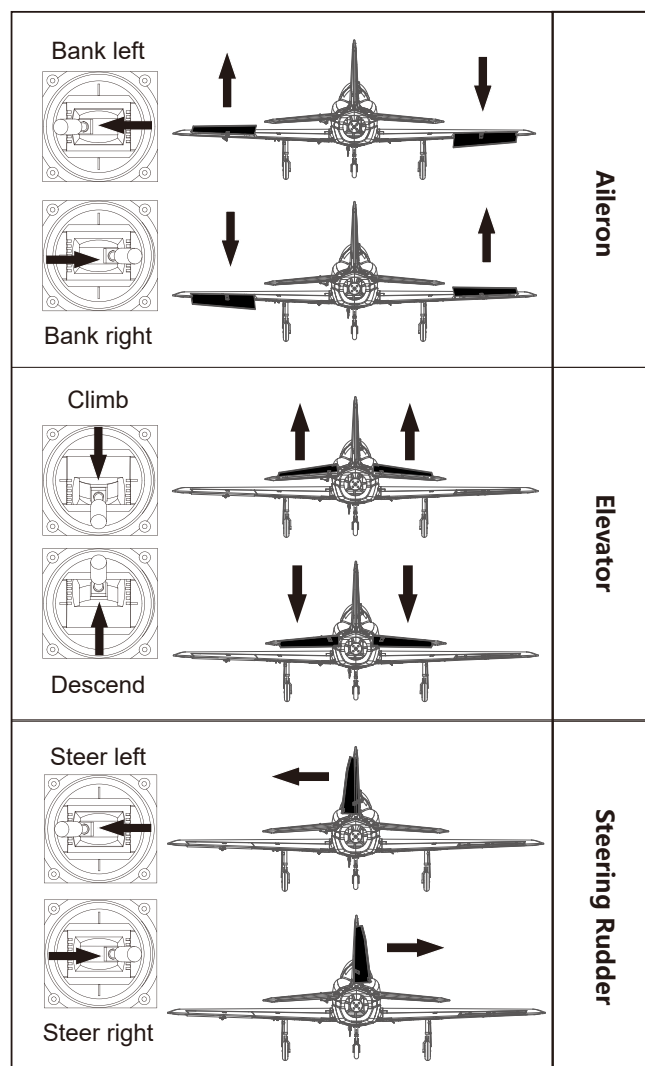
Transmitter and model setup

Before getting started, bind your receiver with your transmitter. Please refer to your Transmitter Manual for proper operation

CAUTION: To prevent personal injury, DO NOT install the propeller assembly onto the motor shaft while testing the control surfaces. DO NOT arm the ESC and do not turn on the transmitter until the Transmitter Manual instructs you to do so.

Tips: Make sure all control sticks on your radio are in the neutral position (rudder, elevator, ailerons) and the throttle is in the OFF position. Make sure both ailerons move up and down (travel) the same amount. This model tracks well when the left and right ailerons travel the same amount in response to the control stick.

1. Move the controls on the transmitter to make sure the aircraft control surface moves correctly. See diagrams below.



Control throws

The suggested control throw setting for this airplane are as follows (dual rate setting):

Tips: On the first flight, fly the model in low rate. The first time you use high rates, be sure to fly at low to medium speeds. High rate, as listed, is only for EXTREME maneuvering.

	High Rate	Low Rate
Elevator	15mm up / down	12mm up / down
Aileron	16mm up / down	12mm up / down
Rudder	22mm left / right	16mm left / right
Flap	50mm up / down	40mm up / down

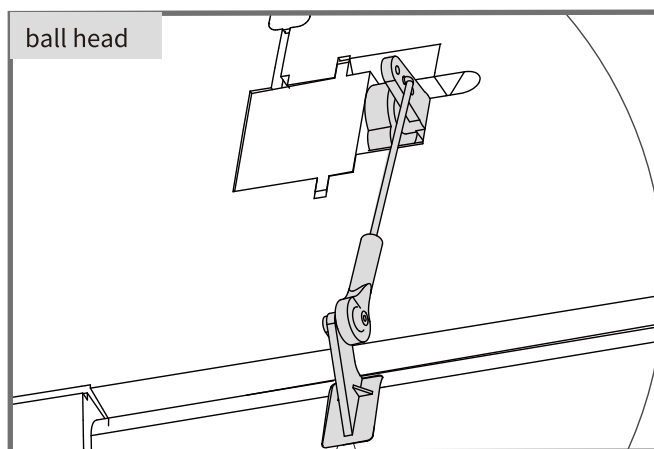
Control horn and servo arm settings

The table shows the factory settings for the control horns and servo arms. Fly the aircraft at the factory settings before making changes. After flying, you may choose to adjust the linkage positions for the desired control response.

	Horns	Arms	More control throw
Elevator			
Rudder			
Ailerons			
Flaps			
			Less control throw

Before installing the main wing, horizontal tail and vertical tail, the linkage rods for ailerons, flaps, elevators and rudder should be installed in advance.

Make sure the servos are in neutral position. Attach the “Z” bend end of aileron, flap, elevator and rudder linkage rods to the corresponding holes in the aileron, flap, elevator and rudder control arms from the outside as shown (Please refer to the **control horn and servo arm settings** sections in manual). And then install the ball buckle at the other end of the linkage rods to ball head at each control horn on control surfaces.

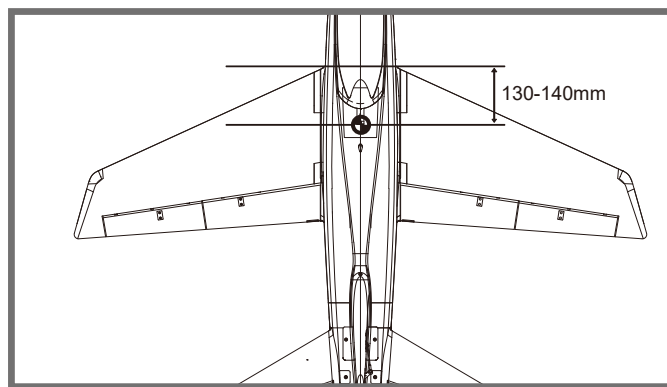


Check the C.G. (Center of gravity)

When balancing your model, adjust the motor battery as necessary so the model is level or slightly nose down. This is the correct balance point for your model. After the first flights, the CG position can be adjusted for your personal preference.

1. The recommended Center of Gravity (CG) location for your model is (130-140mm) from the leading edge of the main wing (as shown) with the battery pack installed. Mark the location of the CG on top of the wing.

2. When balancing your model, support the plane at the marks made on the bottom of the main wing with your fingers or a commercially available balancing stand. This is the correct balance point for your model. Make sure the model is assembled and ready for flight before balancing.



Before flying the model

Find a suitable flying site

Find a flying site clear of buildings, trees, power lines and other obstructions. Until you know how much area will be required and have mastered flying your plane in confined spaces, choose a site which is at least the size of two to three football fields - a flying field specifically for R/C planes is best. Never fly near people - especially children, who can wander unpredictably

Perform the range check for your plane

As a precaution, an operational ground range test should be performed before the first flight each time you go out. Performing a range test is a good way to detect problems that could cause loss of control such as low batteries, defective or damaged radio components, or radio interference. This usually requires an assistant and should be done at the actual flying site you will be using.

First turn on the transmitter, then install a fully-charged battery into the fuselage. Connect the battery and install the hatch. Remember, use care not to bump the throttle stick. Otherwise, the propeller/fan will turn and possibly cause damage or injury

Note: Please refer to your Transmitter Manual that came with your radio control system to perform a ground range check. If the controls are not working correctly or if anything seems wrong, do not fly the model until you correct the problem. Make certain all the servo wires are securely connected to the receiver and the transmitter batteries have a good connection.

Monitor your flight time

Monitor and limit your flight time using a timer (such as on a wristwatch or in your transmitter if available). When the batteries are getting low you will usually notice a performance drop before the ESC cuts off motor power, so when the plane starts flying slower you should land. Often (but not always) power can be briefly restored after the motor cuts off by holding the throttle stick all the way down for a few seconds.

To avoid an unexpected dead-stick landing on your first flight, set your timer to a conservative 4 minutes. When your alarm sounds you should land right away.

Flying course

Take off

While applying power, slowly steer to keep the model straight. The model should accelerate quickly.

As the model gains flight speed you will want to climb at a steady and even rate. It will climb out at a nice angle of attack (AOA).

Flying

Always choose a wide-open space for flying your plane. It is ideal for you to fly at a sanctioned flying field. If you are not flying at an approved site always avoid flying near houses, trees, wires and buildings. You should also be careful to avoid flying in areas where there are many people, such as busy parks, schoolyards, or soccer fields. Consult laws and ordinances before choosing a location to fly your aircraft. After takeoff, gain some altitude. Climb to a safe height before trying technical manoeuvres, including high speed passes, inverted flight, loops, and point rolls.

Maintenance

Repairs to the foam should be made with foam safe adhesives such as hot glue, foam safe CA, and 5min epoxy. When parts are not repairable, see the Spare Parts List for ordering by item number.

Always check to make sure all screws on the aircraft are tightened. Pay special attention to make sure the spinner is firmly in place before every flight.

Flying course

Landing

Land the model when you hear the motor pulsing (LVC) or if you notice a reduction in power. If using a transmitter with a timer, set the timer so you have enough flight time to make several landing approaches.

The model's three point landing gear allows the model to land on hard surfaces. Align model directly into the wind and fly down to the ground. Fly the airplane down to the ground using 1/4-1/3 throttle to keep enough energy for proper flare. Before the model touches down, always fully decrease the throttle to avoid damaging the propeller or other components. The key to a great landing is to manage the power and elevator all the way to the ground and set down lightly on the main landing gear. After a few flights you will find the model can be set down lightly on the mains and you can hold the nose wheel off balancing the model on the mains until it slows and gently settles the nose.

Trouble shooting

Problem	Possible Cause	Solution
Aircraft will not respond to the throttle but responds to other controls.	-ESC is not armed. -Throttle channel is reversed.	-Lower throttle stick and throttle trim to lowest settings. -Reverse throttle channel on transmitter.
Extra propeller noise or extra vibration.	-Damaged spinner, propeller, motor or motor mount. -Loose propeller and spinner parts. -Propeller installed backwards.	-Replace damaged parts. -Tighten parts for propeller adapter, propeller and spinner. -Remove and install propeller correctly.
Reduced flight time or aircraft underpowered.	-Flight battery charge is low. -propeller installed backward. -Flight battery damaged.	-Completely recharge flight battery. -Replace flight battery and follow flight battery instructions.
Control surface does not move, or is slow to respond to control inputs.	-Control surface, control horn, linkage or servo damage. -Wire damaged or connections loose.	-Replace or repair damaged parts and adjust controls. -Do a check of connections for loose wiring.
Controls reversed.	Channels are reversed in the transmitter.	Do the control direction test and adjust controls for aircraft and transmitter.
-Motor loses power -Motor power pulses then motor loses power.	-Damage to motor, or battery. -Loss of power to aircraft. -ESC uses default soft Low Voltage Cutoff (LVC).	-Do a check of batteries, transmitter, receiver, ESC, motor and wiring for damage (replace as needed). -Land aircraft immediately and recharge flight battery.
LED on receiver flashes slowly.	Power loss to receiver.	-Check connection from ESC to receiver. -Check servos for damage. -Check linkages for binding.

Spare parts list content

P9OMTX101	90mm Matrix Rear fuselage with vector tail nozzle
P9OMTX102	90mm Matrix front Fuselage without decal and electronic component
P9OMTX103	90mm Matrix Rear Fueslage
P9OMTX104	90mm Matrix Left wing
P9OMTX105	90mm Matrix Right wing
P9OMTX106	90mm Matrix Vertical Stabilizer
P9OMTX107	90mm Matrix Horizontal Stabilizer
P9OMTX109	90mm Matrix Canopy
P9OMTX110	Front landing gear set with LED light
P9OMTX111	90mm Matrix Main L landing gear set
P9OMTX112	90mm Matrix Main R landing gear set
P9OMTX113	90mm Matrix Struct Front Landing Gear with wheel / LED
P9OMTX114	90mm Matrix Struct Landing Gear with wheel / Left
P9OMTX115	90mm Matrix Struct Landing Gear with wheel / Right
P9OMTX116	90mm Matrix Retract Unit only for nose Landing gear
P9OMTX117	90mm Matrix Retract Unit only for main Landing gear
P9OMTX118	90mm Matrix Steering L part for nose landing gear
P9OMTX119	90mm Matrix Aluminum rotating component for nose gear
P9OMTX120	90mm Matrix Aluminum rotating component for main gear
P9OMTX121	90mm Matrix Front Landing gear Door
P9OMTX122	90mm Matrix Main landing gear Cover
P9OMTX123	90mm Matrix Linkage Rod
P9OMTX124	90mm Matrix LED set
P9OMTX125	90mm Matrix Front landing gear set with led
P9OMTX126	90mm Matrix Lamp cover
P9OMTX127	90mm Matrix Wheel set
P9OMTX128	90mm Matrix Wing tube set
P9OMTX129	90mm Matrix Decals
P9OMTX130	Matrix Screw Set
P9OMTX132	3670-KV1950 motor
P9OMTX133	PY13HP digital metal gear servo positive with 300mm wire
P9OMTX134	PY13HP digital metal gear servo negative with 300mm wire
P9OMTX135	Multi-connector set for wing and fuselage
P9OMTX136	Electronic board connector for fuselage
P9OMTX139	Fuselage bag for 90EDF Matrixv
P9OMTX140	Wing bag for 90EDF Matrix

Visit our website: www.pilot-rc.com to see photo of this product. Enter the key word "ESC" in the search bar for the stock ESC instruction manual.

User Manual of Brushless Speed Controller

Specifications

Model (Regular)	Cont. Current	Peak Current	Input Voltage	BEC Output	Weight	Size
P130TLM (Summit 130LITE)	130A	160A	3-6S	6V Continuous output current 7A, Burst output current 10A	105g	84*36*14.2mm

User Guide

Throttle calibration

Power up :



Throttle signal detected
(arming sequence start):



When throttle is above midstick (measuring max throttle):



If throttle is above midstick for 3 seconds:



This beep sequence indicates that max throttle has been stored.

When throttle is below midstick (measuring min throttle):



If throttle is below midstick for 3 seconds:



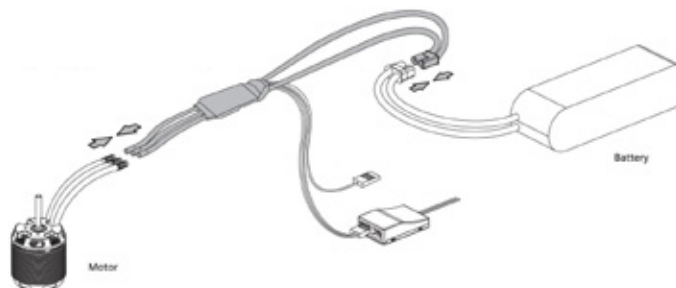
This beep sequence indicates that min throttle signal has been stored.

At this point throttle calibration values are stored. You may remove power from the ESC, or just continue running your ESC.

For more information, please check the Summit Lite ESC manual which comes with the plane.

ESC Programming for Brake reverser

Visit our website: www.pilot-rc.com to see photo of this product. Enter the key word "ESC" in the search bar for the ESC instruction manual and video.



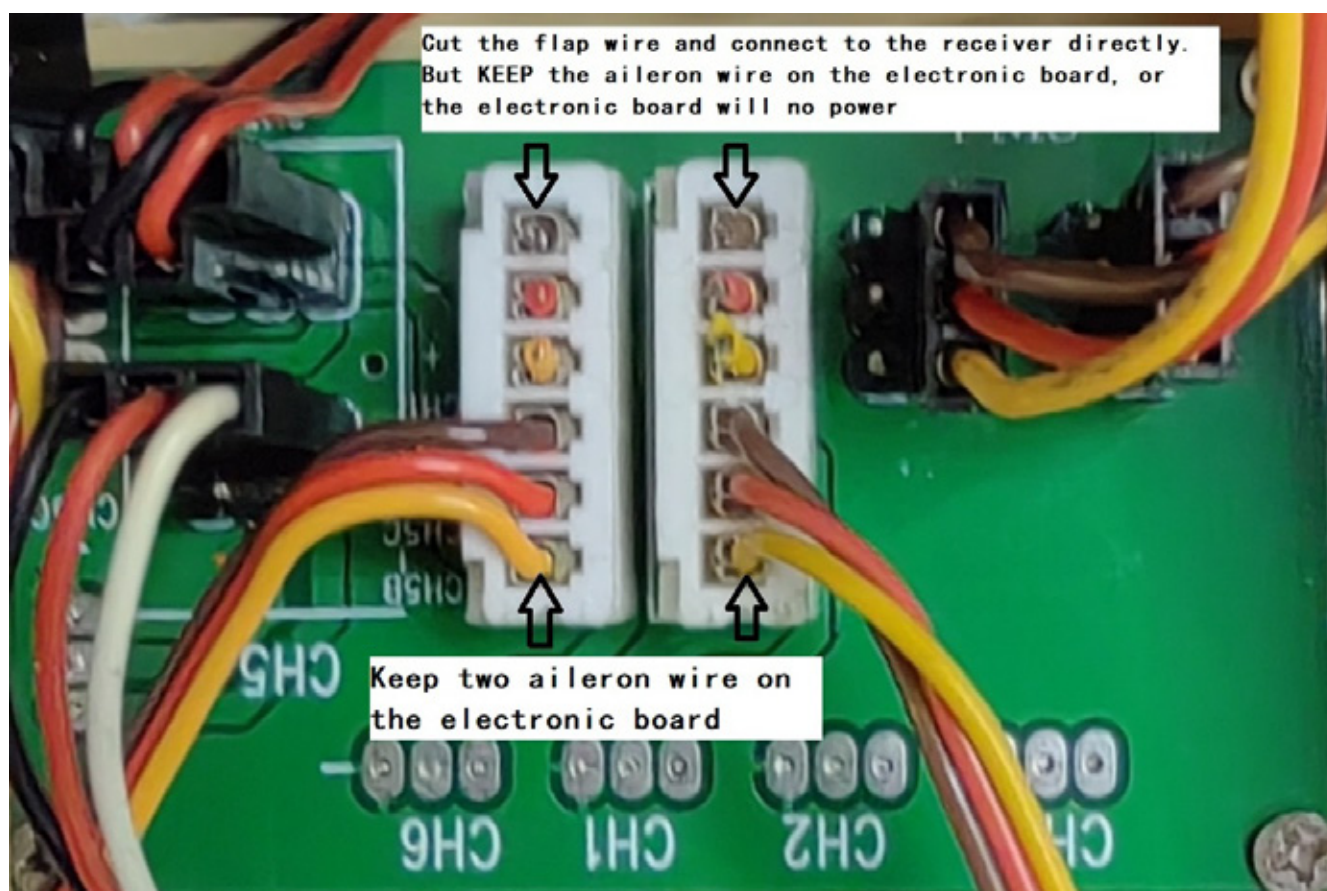
Strong Command : Telemetry warning

We strongly command to set telemetry warning on your radio because the ESC will cut 50% power when the ESC temperature increase to 140 degree Celsius.

Convertible Flap System

The Matrix Foam EDF features a convertible flap system that can be easily configured as full-span ailerons with only linkage and servo modifications.

1. Change the flap push rod to 80mm push rod which comes with the plane.
2. Cut the wire on the electronic board connector which on the back of the canopy in fuselage. See below photos.



3. Make the connector for the wire which you cut, it is for the flap. Then you can connect to the receiver directly to make the flap can move up and down as aileron.

警告



警告：在组装、调整及飞行前请务必认真阅读产品说明书以熟知产品的特性。请严格按照说明书提示进行飞机的组装、调整及飞行。如操作不当会造成产品本身损坏及其它财产损失，甚至造成严重的人身伤害。

声明：模型不是玩具，具有一定的危险性，操作者需要具备一定的飞行经验，初学者请在专业人士指导下操作。禁止十四岁以下儿童操作、飞行。

安全须知

本产品飞行由无线电遥控器控制，在飞行过程中可能会受到外界强信号源干扰而导致失控，甚至坠机。因此，在飞行过程中务必始终与飞机保持一定的安全距离，避免意外碰撞、受伤。

- 请勿在发射器电池低电量的情况下操纵模型飞机。
- 请勿在公路、人群、高压线密集区、机场附近及其它法律法规明确禁止飞行的场合飞行。
- 请勿在雷雨、大风、大雪或者其它恶劣气象环境下飞行。
- 请严格遵照产品指导说明及安全警告操作本产品及其相关配置（例如充电器、电池等）。
- 请勿将相关化工类产品、零部件、电子部件等置于儿童可触及的范围。
- 请勿将电子件暴露于潮湿的环境中，以免造成损坏。
- 请勿将本品任意处置于口中，以免造成人身伤亡。

锂聚合物电池使用安全须知

- 使用锂聚合物电池时，须严格遵守制造商说明、要求并了解相关风险，使用不当会导致锂聚合物电池起火，从而造成严重的财产损失甚至人身伤害。
- 禁止使用变形、胀气的锂聚合物电池。
- 禁止使用过充、放电的锂聚合物电池，避免发生危险。长时间不使用须将锂聚合物电池放电至存储电压（3.8~3.85V / 节）。锂聚合物电池须储存在室内干燥区域（4.5~48.5℃），禁止将锂聚合物电池置于阳光下暴晒或车内，高温可能会导致锂聚合物电池起火，造成财产损失和人身伤害。
- 请使用专用充电器对锂聚合物电池进行充放电，禁止使用其它如：镍氢电池充电器。充放电时，禁止将锂电池放置于高温物体表面，建议使用锂电池防爆袋。不正确的充放电操作会对锂聚合物电池造成损伤，甚至会引起火灾，造成财产损失和人身伤害。
- 禁止将锂聚合物电池单节电压放至低于 3V，禁止给已损坏的锂聚合物电池充电。
- 锂聚合物电池充放电须在有人看管的情况下进行，避免发生意外造成不必要的损失。

飞机电池充电警告：

请确保使用合格的电池充电器给锂电池充电。在使用充电器前，请认真阅读充电器说明书。充电过程中，请确保把电池置于耐热的表面。建议把锂电池置于防火充电袋内充电，防火充电袋可在相关模型实体店或网上买到。

产品特点

传奇 Matrix 性能，90mm 涵道机型全新呈现

Matrix 泡沫涵道机项目始于 2024 年末。受 Matrix 复合材料喷气机卓越成功的启发，我们设定了一个简单而雄心勃勃的目标：将同样的高性能飞行体验融入更紧凑、更经济实惠、更易于运输且适合所有经验水平飞行员的泡沫平台。2025 年，首个原型机问世，项目正式启动。随后，我们投入了一年多的时间进行密集的研究、设计和飞行测试。每个原型机都让我们有所收获，促使我们在空气动力学、结构和整体性能方面不断改进，直至达到我们理想的飞行特性。我们的目标绝非仅仅是制造另一款泡沫涵道机。从一开始，我们就专注于捕捉 Matrix 复合材料的独特个性。每一个设计决策都旨在保留其精准的操控性、卓越的稳定性、宽容的低速性能和宽广的飞行包线，同时充分利用现代泡沫材料的耐用性和便捷性。今天，我们荣幸地推出中山领航90mm涵道Matrix的最终量产版本。

一款新一代泡沫涵道飞机，旨在以实用、经济且几乎可在任何地方起飞的方式，为您带来真正的Matrix飞行体验。专为卓越性能而生，90mm涵道Matrix的设计旨在让您在飞行的每个阶段都充满信心。无论您是进行流畅精准的特技飞行、高速掠过，还是低速高攻角机动，飞机都能保持可预测性、稳定性和易于操控性。优化的翼载荷和精心设计的空气动力学性能，确保了飞机在整个飞行包线内拥有出色的循迹性，同时保持了卓越的灵活性。

整个研发过程中，关键目标之一是打造一款既适合中低级飞行员操作，又能满足经验丰富的涵道风扇飞机爱好者对性能和精准度要求的飞机。最终成果是一款涵道飞机，无论是平稳的运动飞行、精准的特技飞行还是3D机动，都能轻松胜任。

快拆便捷设计

如果飞机难以拥有或运输，那么再好的性能也无济于事。因此，Matrix Foam EDF的设计理念是紧凑、耐用且易于组装。其适中的尺寸使其能够轻松放入大多数车辆中运输，而轻质泡沫结构则确保了其在日常飞行中的出色耐用性。机翼快拆系统使飞机的安装或拆卸只需几分钟即可完成，从而简化了运输和现场组装流程。飞机标配机翼袋，无论您是前往当地的飞行场地还是参加飞行活动，90mm涵道Matrix都能让您减少地面停留时间，尽情享受飞行乐趣。

襟翼切换副翼系统

90mm涵道Matrix配备可转换副翼的襟翼系统，只需更换襟翼推杆并对舵机连接线进行少许改动，即可轻松将襟翼作为副翼使用。此配置可提升滚转控制能力和操控响应，使90mm涵道Matrix更适合高级 3D 飞行和推力矢量飞行。

动力配置

90mm涵道Matrix标配高性能 90mm EDF 6S 动力系统，开箱即可实现速度、效率和可预测操控性的完美平衡。飞机标配一个定制机翼袋，方便安全运输和存放，让您轻松携带 Matrix 前往任何飞行地点。为了实现最佳性能和可靠性，整套 EDF 动力系统由我们与双天模型合作开发。该飞行器配备了定制的双天电调，支持电调正向编程，用Type C连接线接到电脑即可直接调整电调参数，设置涵道反转达到刹车效果。

电调内置遥测系统支持S.BUS2、EX Bus、SRXL2、CRSF和S.Port协议，可直接在兼容的遥控器上显示实时飞行信息，包括：

- * 电池电压
- * 电池电流
- * 电池功率
- * 电池容量消耗（可设置低电量警报，准确掌握飞行时间）
- * BEC电压
- * BEC电流
- * BEC容量消耗
- * 电机转速
- * 电调温度（可设置超温报警及保护）

对于希望获得更佳性能的飞行员，我们提供两种可选升级套件。可选的90mm涵道风扇8S矢量推力升级套件专为希望充分发挥现代3D涵道特技飞行潜力的飞行员而设计，8S矢量推力系统可提供更强劲的动力和卓越的失速后机动性，同时保持Matrix机型一贯的精准操控性和稳定性。无论您选择标准的6S普通涵道配置，还是可选的8S矢量推力升级，每种配置都旨在提供无可比拟的Matrix飞行体验。

产品组成

90mm 涵道Matrix规格表(6S版本)

翼展：1413毫米

机身长：1457毫米

起飞重量：约3400克

电机规格：无刷电机 3670-KV1950

电调：130A，带回传，可直接连接电脑调参，可设置反向刹车

舵机：13克*8个

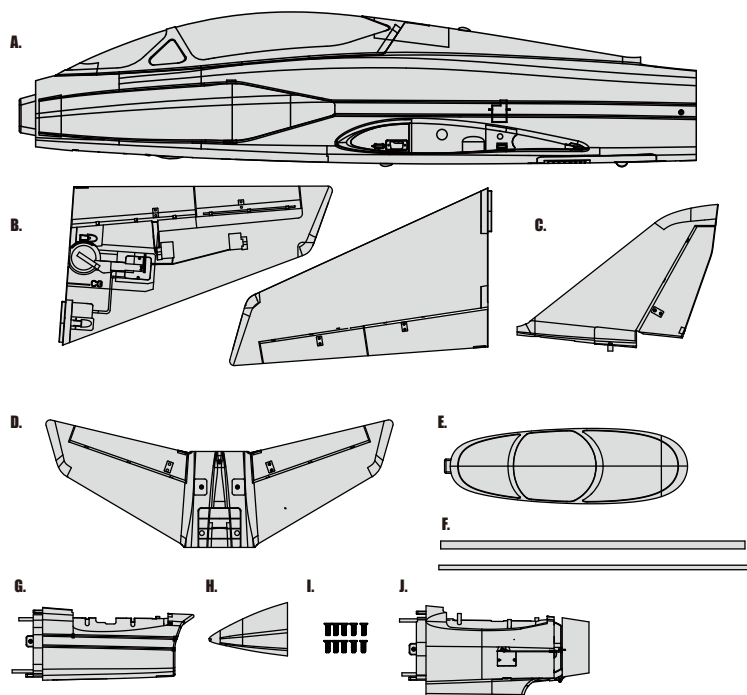
遥控器：6通道

重心：135mm(距机翼前缘)

涵道风扇：90毫米12叶

建议电池：Li-Po 22.2V 5000mAh-6000mAh 45+c

产品组成



A:前机身

B:主翼

C:垂尾

D:平尾

E:座舱组

F:主翼连接杆

G:后机身

H:机头罩

I:螺丝组

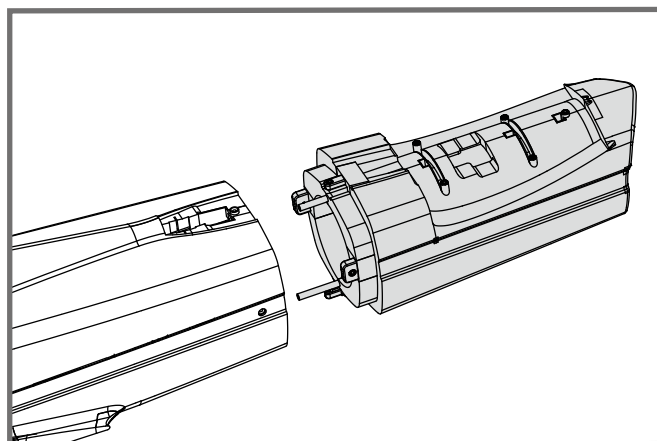
HKM3.0*16mm(8pcs)HKM3.0*10mm(2pcs)

J:矢量后机身（需另购）

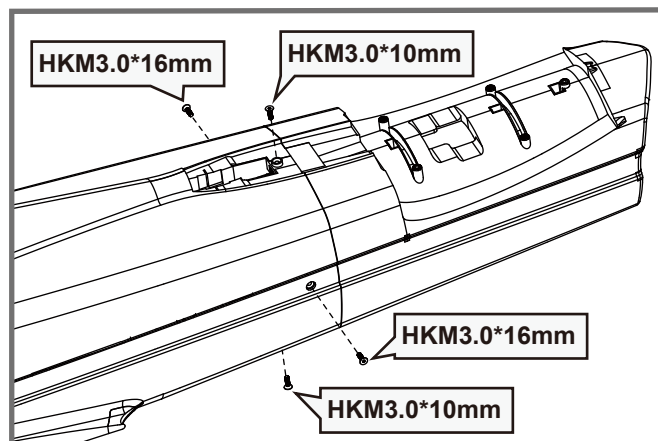
机体安装

机身安装

1. 如图所示,对准安装前、后机身。



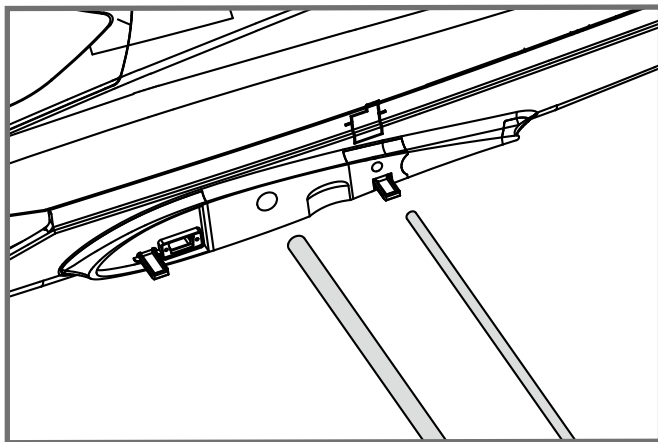
2. 使用所附螺丝 (HKM3.0*10mm x 2, HKM3.0*16mm x 2) 分别从上、下、左、右四个方向将前后机身固定到位。



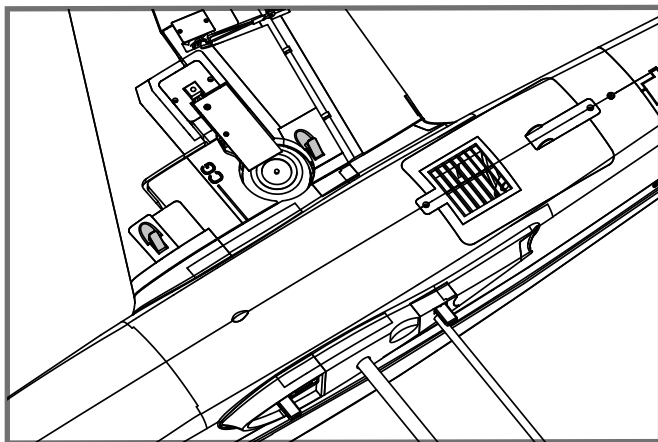
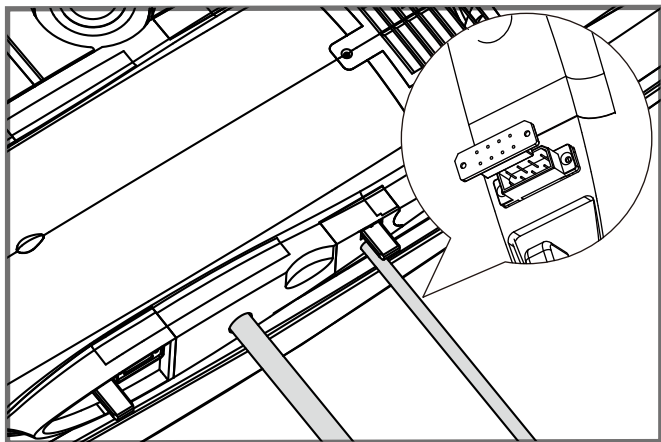
机体安装

主翼安装

1. 如图所示，将两根主翼对接管装入机身槽位。

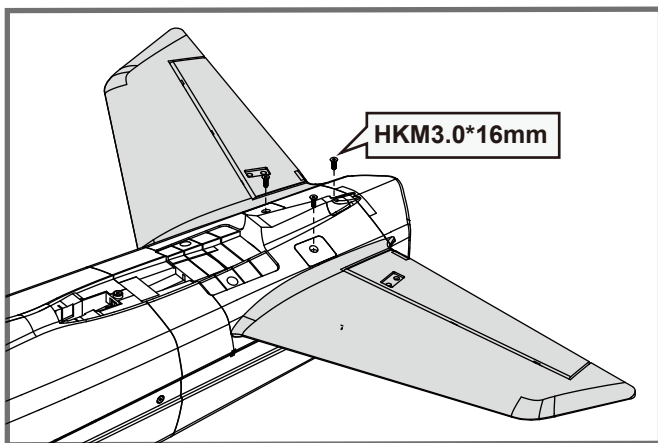
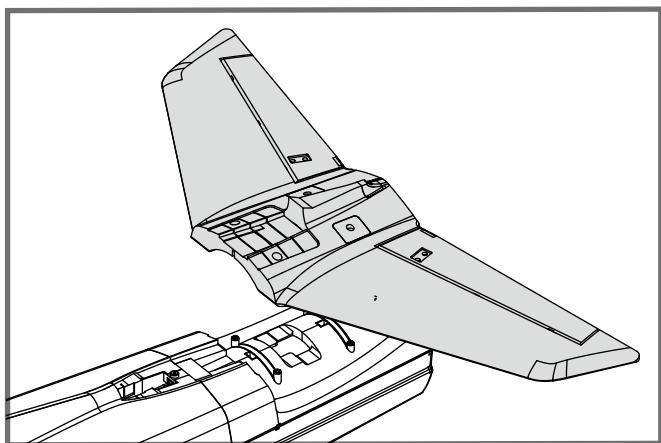


2. 安装左右两侧机翼至机身。
3. 无需工具的机翼快拆系统。



平尾安装

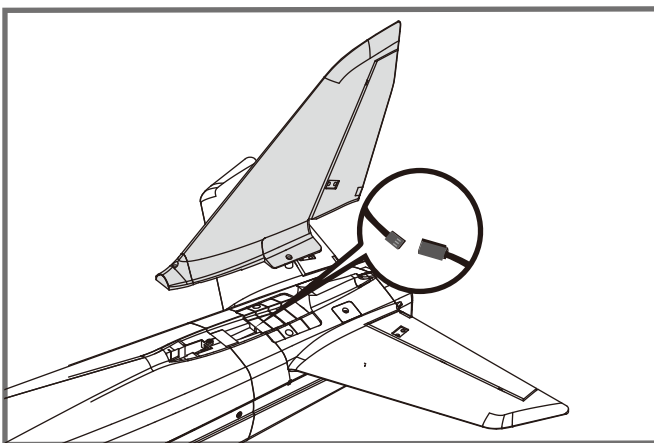
1. 打开附件包取出 Y 线，连接左右平尾舵机线至 Y 线，再将 Y 线的另一端从图示胶件的底部穿过，与机身预埋的平尾通道延长线连接。
2. 将平尾安装至机身尾部槽位，并使用所附螺丝 (HKM3.0*16mm x 3) 固定。



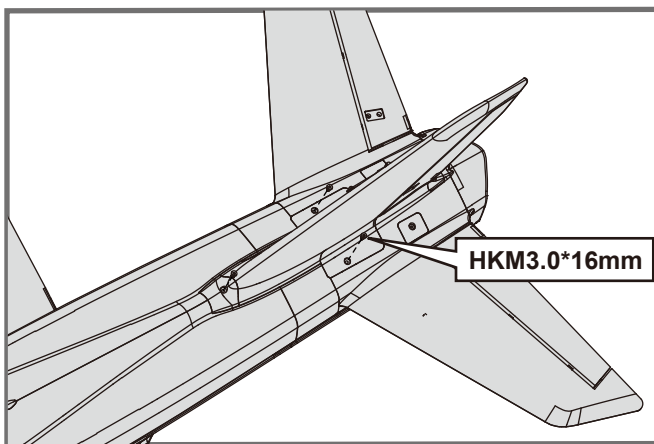
机体安装

垂尾安装

1. 如图所示，连接垂尾舵机线和与机身预埋的舵机延长线，安装垂尾至机身尾部垂尾槽位。

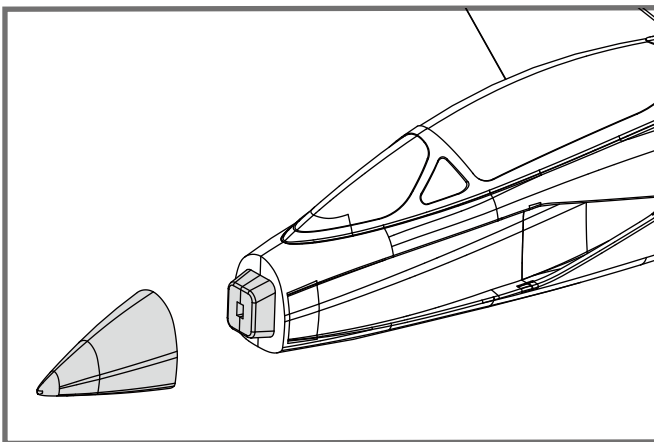


2. 并使用所附螺丝(HKM3.0*16mm x 3)将垂尾固定到位。



机头罩安装

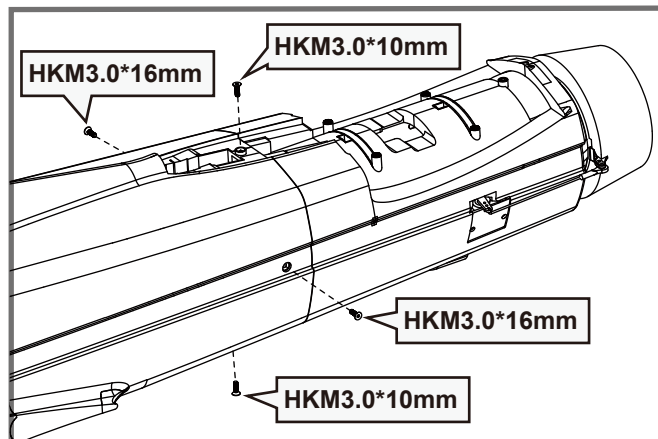
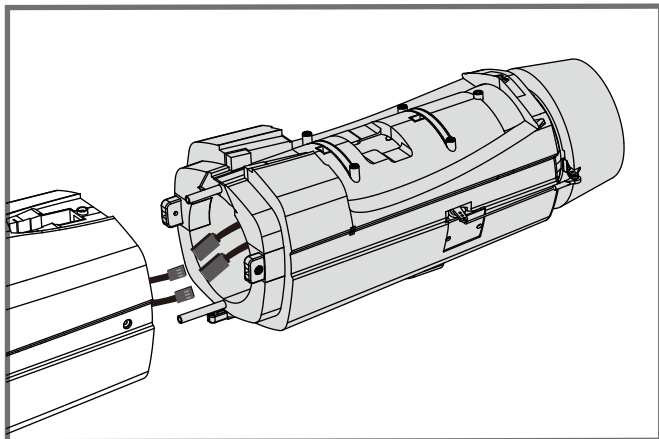
1. 将机头罩安装至机身前端，确保机头罩安装方向正确。



机体安装

矢量尾喷安装(需另购)

1. 打开附件包根据所需取出延长线(如接收机通道数量不够, 附件包里另备有两根Y线以供玩家取用), 连接矢量舵机线与延长线, 然后对准安装前后机身。
2. 使用所附螺丝(HKM3.0*10mm x 2, HKM3.0*16mm x 2)将前后机身固定到位。

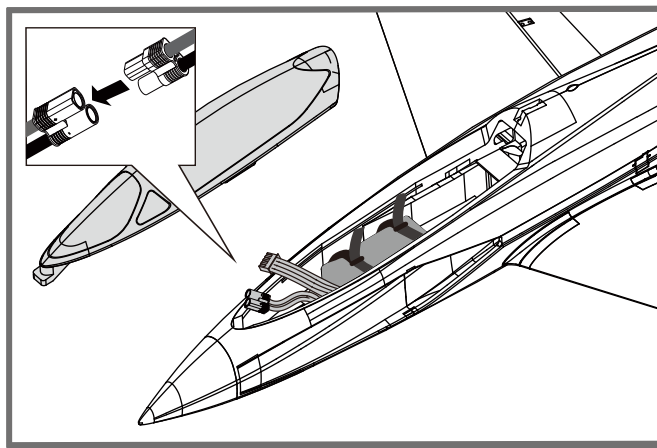


电池安装

1. 移开座舱。
2. 取下电池板上的魔术贴(毛面)贴于电池表面。
3. 如图所示, 将电池置于电池舱内, 用魔术带绑紧, 使有电源线的那端朝向飞机的尾部。

注意: 由于不同电池厂家生产的电池重量有轻微的差异, 需要调整电池的前后位置来平衡飞机的重心位置。

电池仓尺寸: 280 x 65 x 60mm



接收机连接示意图

如图所示,以 Futaba 遥控器为例,将副翼舵机信号线插入接收机副翼通道、升降舵舵机信号线插入接收机升降舵通道、方向舵舵机信号线插入接收机方向舵通道、电调信号线插入接收机油门通道。最后将所有连接线整理整齐并固定在电池仓后部的凹槽内,随后固定好接收机。

		Receiver
副翼	1	Channel-1 — Aile
平尾	2	Channel-2 — Elev
油门	3	Channel-3 — Thro
垂尾	4	Channel-4 — Rudd
起落架	5	Channel-5 — Gear
襟翼	6	Channel-6 — Spare

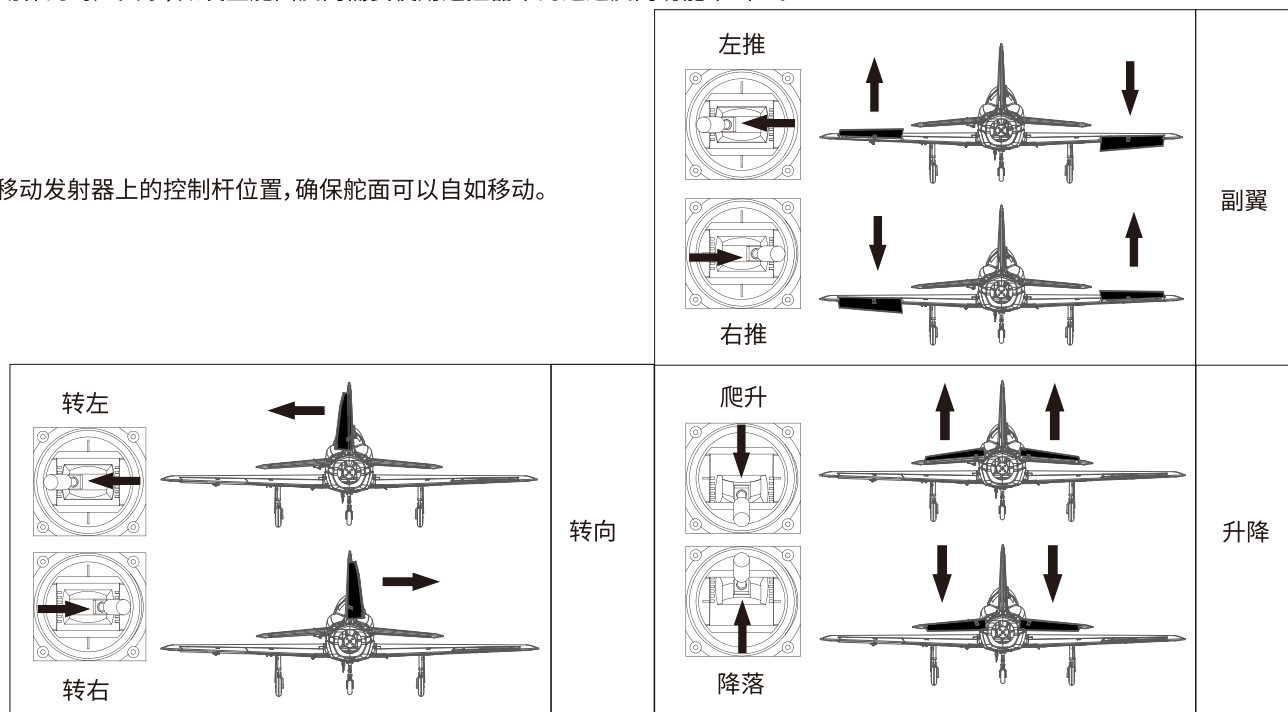
重要信息

1. 此模型附带的电调(ESC)具有安全启动功能。如果电机电池已连接到电调,但油门杆不在低油门或关闭位置,则电机将不会启动,直到将油门杆移动到低油门或关闭位置。一旦油门杆移动到低油门或关闭位置,电机将发出一系列蜂鸣声。相同曲调的多个蜂鸣声表示电调已检测到电池的单片节数。蜂鸣声的数量等于电池的单片节数数量。电机现在已经准备就绪,并将在移动油门杆时启动。
2. 电机和电调器已预先连接,并且电机的旋转方向应该是正确的。如果出于任何原因电机旋转方向错误,只需交换电机三根导线中的两根即可更改旋转方向。
3. 电池的选择和安装:我们推荐使用22.2V 5000mAh-6000mAh 45c 电池。如果玩家选购其它电池,我们建议所选电池容量不低于推荐电池。玩家选购的电池在容量、尺寸和重量上需近乎与我们推荐的电池相同,这样在电池装入机身以后才不会对飞机重心产生太大的影响。

遥控器设置

警告:为保证安全,在遥控器参数设置及舵面调整过程中,请务必拆下螺旋桨,以免电机意外启动发生事故。遥控器发射机开机前,确保油门杆在最低位置,其它摇杆在中立位置。开发射机并给接收机通电,随后听到电调初始化音(音符释义见后文“电子调速器说明书”)。观察所有舵面是否回中,如果没有回中,尽量通过调整舵机摇臂角度、连杆长度的方式来使舵面回中,若调整长度在安全范围内仍未回中,则使用遥控器通道微调或者菜单中的“SubTrim”选项来使舵面归中。如下图所示观察摇杆动作与舵面动作的对应关系,如发生舵面反向需要使用遥控器中的通道反向功能来纠正。

1. 移动发射器上的控制杆位置,确保舵面可以自如移动。



遥控器设置

推荐舵面行程

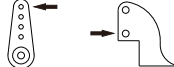
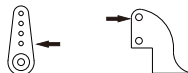
温馨提示:首飞建议用小舵面行程

	大	小
升降舵	15mm 上/下	12mm上/下
副翼舵	16mm 上/下	12mm 上/下
方向舵	22mm 左/右	16mm 左/右
襟 翼	50mm 上/下	40mm 上/下

舵角和舵机摇臂安装

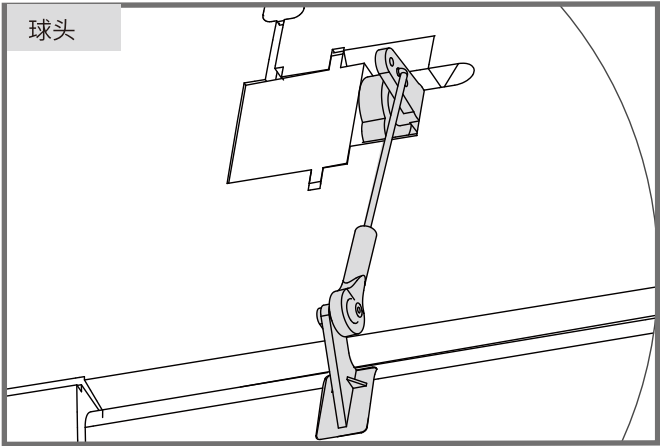
图示是舵角和舵面摇臂的出厂设置。首飞建议用出厂设置的舵角飞行。首飞后,可按图调整舵角。

	舵角	摇臂
平尾		
垂尾		
副翼		
襟翼		

大舵面

小舵面


连接钢丝安装

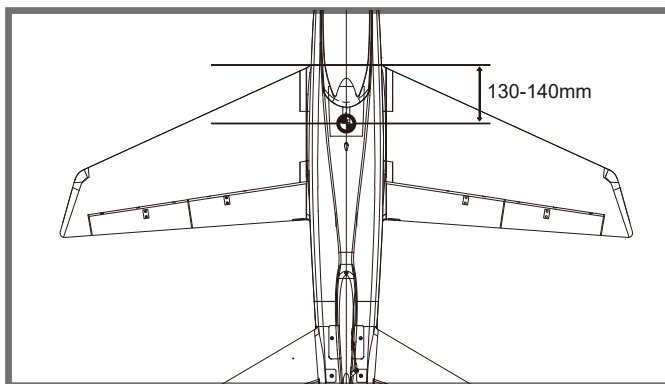
在安装主翼、平尾、垂尾之前需先安装副翼、襟翼、升降舵、方向舵的连接杆。具体步骤如下：保持舵机在回中状态，将副翼、襟翼、升降舵、方向舵舵面的连接钢丝有“Z”型折弯的一头由外侧装入相应的舵机摇臂孔位（请参考“舵角和舵机摇臂安装”相关步骤）再将钢丝另一端的球头扣安装到各舵角相应的球头上。



重心调整

通过移动电池在电池舱内的前后位置调整飞机的重心,使飞机保持水平或稍微头重的状态。首飞以后,重心位置可以根据你自己的飞行偏好再做更改。

- 1.如图所示,推荐重心位置是机翼前缘往后 130-140mm处(安装电池以后)。推荐把食指放在机翼下面的重心位置来帮助调整重心。
- 2.在调整飞机重心时请确定飞机处于组装完毕待飞的状态。



飞行前准备

起飞前的检查

每次飞行前须做严格的地面检查,可有效避免飞行事故的发生。

1. 检查全机螺丝是否安装到位、舵角摇臂连接可靠。机翼快拆装置已锁紧。
2. 安装电池,并调整飞机重心到说明书推荐位置。
3. 动力电池、遥控器发射机电池等已充满电,处于可靠工作状态。
4. 发射机油门杆保持在最低位(推荐使用带有油门锁定功能的遥控设备),打开发射机,随后连接动力电池,待电调初始化完成后检查各个舵面是否回中,是否动作正确。
5. 轻推油门观察螺旋桨转向是否正确。

所有检查完成后,方可进行飞行,初学者首次飞行需要有经验的爱好者协助完成,避免因操作不当发生飞行事故。

合适的飞行场地

航模飞行须远离人群、建筑物、树木、高压线及禁飞区的空旷场地(至少 2-3 个足球场大小)。初学者飞行前需要向有经验的爱好者询问相关安全事宜。

关于飞行时间

厂家推荐的飞行时间是使用厂家推荐型号的电池,由有经验的爱好者在微风天完成飞行测试得到的飞行时间,该时间与电池参数、飞机全备重量、飞行条件以及飞行手法相关,不同飞行条件可能得到不同的飞行时间。

建议爱好者在飞行时使用遥控器的“计时功能”,建议初始飞行时间设定为 4 分钟,飞行时间倒计时告警后,降落飞机并测量电池电压,方可估算飞行时间并重新调整遥控器计时。如发射机没有计时功能,需要其他设备辅助测算飞行时间,以保证飞行安全。

在电池放电后期,禁止将飞机飞入下风区(风向指向的远端),防止动力不足而导致飞机不能安全返航。

故障检修指导

问题	问题原因	解决方式
油门推杆无响应, 但舵机有响应	——电调未连接电机 ——油门通道反向	——降低油门推杆和油门微调设定 ——反过来重新装油门通道
桨的噪音过大或者震动过大	——桨罩、桨、电机、电机架坏了 ——桨或者桨罩的小部件松动了 ——桨装反了	——更换损坏的配件 ——把桨、桨夹和桨罩的小部件拧紧 ——反过来重新装桨
飞行时间变短, 飞机无力	——电池电量低 ——桨装反了 ——电池坏了	——重新给电池充电 ——依照电池说明书更换新的电池
飞舵面不动, 或者动作响应较慢	——舵面、舵角、连接杆、舵机坏了 ——连接线坏了或者接头松了	——更换或者维修坏了的配件 ——检查所有连接线, 确保所有接头无松动现象
舵面反向	——遥控器发射机通道反向	——检查通道控制(舵面)方向, 调试飞机舵面和遥控器的舵面控制杆
电机无力	——电机或电池坏了 ——电调用了不合适的低压保护装置	——检查电池、发射机、接收机、电调、电机是否有损坏(如有, 请及时更换) ——立刻操控飞机降落, 重新给电池充电
接收器的 LED 灯慢闪	——接收器低电量	——检查电调和接收器之间的连接 ——检查舵机是否受损 ——检查连接杆是否安装到位

配件列表

P9OMTX101	90mm 矩阵带矢量后段机身 (含矢量舵机)	P9OMTX124	90mm矩阵成套LED灯组
P9OMTX102	90mm 矩阵前段机身 (无贴纸无电子设备)	P9OMTX125	90mm 矩阵起落架LED灯组
P9OMTX103	90mm 矩阵普通后段机身	P9OMTX126	90mm 矩阵成套灯罩
P9OMTX104	90mm 矩阵左机翼	P9OMTX127	90mm 矩阵成套轮子(共三个)
P9OMTX105	90mm 矩阵右机翼	P9OMTX128	90mm 矩阵机翼管(共两条)
P9OMTX106	90mm 矩阵垂直尾翼	P9OMTX129	90mm矩阵全套贴纸
P9OMTX107	90mm 矩阵水平尾翼	P9OMTX130	Matrix 矩阵全套螺丝
P9OMTX109	90mm 矩阵座舱	P9OMTX132	3670-KV1950 电机
P9OMTX110	90mm 矩阵前起落架总成 (含收放座带LED灯)	P9OMTX133	PY13HP 正向舵机
P9OMTX111	90mm 矩阵左后起落架总成 (含收放座)	P9OMTX134	PY13HP 反向舵机
P9OMTX112	90mm矩阵右后起落架总成(含收放座)	P9OMTX135	快拆组合接头(机身连接机翼用)
P9OMTX113	90mm矩阵前起落架带轮腿杆(不含收放座, 带L灯)	P9OMTX136	集线板
P9OMTX114	90mm矩阵左起落架带轮腿杆(不含收放座)	P9OMTX139	90mm涵道运动机机翼袋(可用于FMS阿凡提及毒蛇)
P9OMTX115	90mm矩阵右起落架带轮腿杆(不含收放座)	P9OMTX140	90mm矩阵机身袋
P9OMTX116	90mm矩阵前起落架收放座		
P9OMTX117	90mm 矩阵后起落架收放座		
P9OMTX118	90mm 矩阵前起落架L型转向杆		
P9OMTX119	90mm 矩阵前起落架旋转头		
P9OMTX120	90mm 矩阵后起落架旋转头		
P9OMTX121	90mm 矩阵前起落架舱门盖板		
P9OMTX122	90mm 矩阵后起落架舱门盖板		
P9OMTX123	90mm 矩阵推杆组		

电调使用说明

产品规格

型号	持续电流	瞬时电流	输入电压	BEC	重量	尺寸
P130TLM (双天Summit 130LITE定制版)	130A	160A	3-6S	6V, 持续电流7A, 峰值电流10A	105g	84*36*14.2mm

使用向导

油门校准

接通电源:



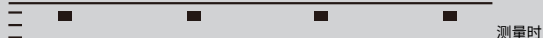
鸣响3声

油门信号检测:
(初始化开始):



鸣响1长声

当油门摇杆高于中间位置(检测最大油门):



测量时

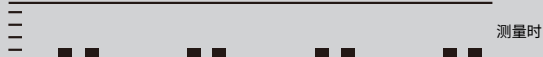
当油门摇杆高于中间位置超过 3 秒:



检测完成

此鸣叫声表示最大油门已被存储

当油门摇杆低于中间位置(检测最小油门):



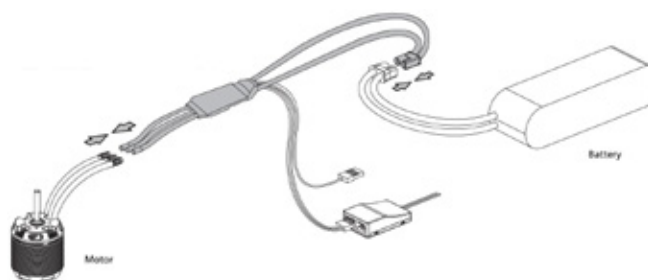
测量时

当油门摇杆低于中间位置超过 3 秒:



检测完成

此鸣叫声表示最小油门已被存储



此时，油门校准值被存储。可以移除 ESC 的电源，或者继续运行ESC。

详细的电调设置、反推刹车及回传设置，请参考飞机箱内带的电调说明书。

强烈建议：设置回传数据警报

我们强烈建议在遥控器上设置遥测回传数据警报，因为电调出厂默认设置温度超过140度的时候，电调输出功率会自动降50%。

襟翼改副翼系统

90涵道Matrix的襟翼虽然在出厂时候默认是只能往下转动，但是，襟翼是可以上下移动作为副翼使用的，改动步骤如下：

- 1，把襟翼推杆改成随飞机配来的80mm推杆。
- 2，把集线板上的襟翼导线切断（如下图所示），做上JR接头，直接接到接收机上，然后在接收机上把襟翼设置成带副翼功能。

注意：绝对不要把集线板上的副翼导线切断，否则将会导致集线板没有电源供应。

