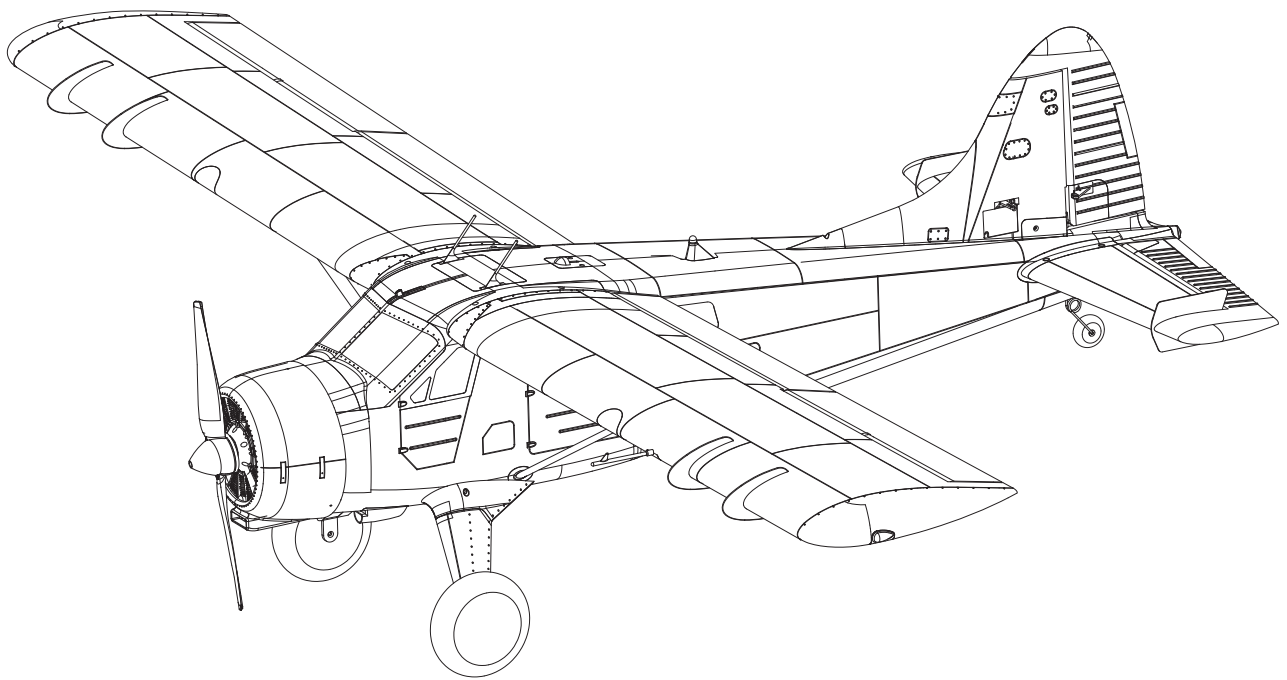




2000mm Beaver V2



Instruction Manual
Bedienungsanleitung
Manuel d'utilisation
操作手册

SIMPLE
• Simple assembly

FLOATS
• Optional floats

RIGID
• Strong durable EPO

FMSMODEL.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

FMS 2000mm Beaver V2 Official release notes!

The FMS 2000mm Beaver V2 is a real "pilot's plane". Weighing in at just 3800g and having over 5000g of thrust- the Beaver V2 is a trainer with predictable handling characteristics, a weekend flyer with STOL capabilities and is, quite surprisingly, an aerobatic powerhouse that could even hover, if you ask it to! Realistic ailerons and flaps built into the hollowed-out wing structure gives the Beaver V2 excellent slow speed characteristics. Landing lights, navigation lights and working strobes give that final touch of realism while optional floats and glider hitch add to the versatility of this versatile aircraft. Despite its large wingspan, the quick-release connector system on the wings and fuselage allow the Beaver to be easily transported.

The FMS 2000mm Beaver V2 builds on the success of the original FMS Beaver. Key differences include:

1. Upgraded interior- the Beaver V2 now features transparent windows with a cabin.
 2. Upgraded landing gear- New ball-bearing equipped wheels minimize rolling resistance and increases the service life of the landing gear.
 3. Servo connector built into the floats make float installation a breeze.
 4. Different trim scheme- An attractive red trim scheme now adorns the FMS 2000mm Beaver V2
- If you want versatile, endless fun- look no further than the FMS 2000mm Beaver V2!

Features:

- Wing and fuselage connectors eliminate the need to plug in individual servo leads
- Hollowed wing design reduces flying weight
- Metal landing gear withstands the hardest of landings
- LED landing ,navigation and strobe lights pre-installed
- Realistic flaps for excellent slow speed performance
- Oversized tires allow rough-field operations
- Hassle-free, screw-together assembly
- Servo box design for easy maintenance
- Oversized battery bay allows up to 6S batteries to fit comfortably
- Long flight times!
- Optional glider tow hitch
- Optional floats

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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: support@fmsmodel.com.

Specifications

Wingspan: 2000mm(78.7in)

Overall Length: 1304mm(51.3in)

Flying Weight: ~3800g

Motor Size: 4258-KV550

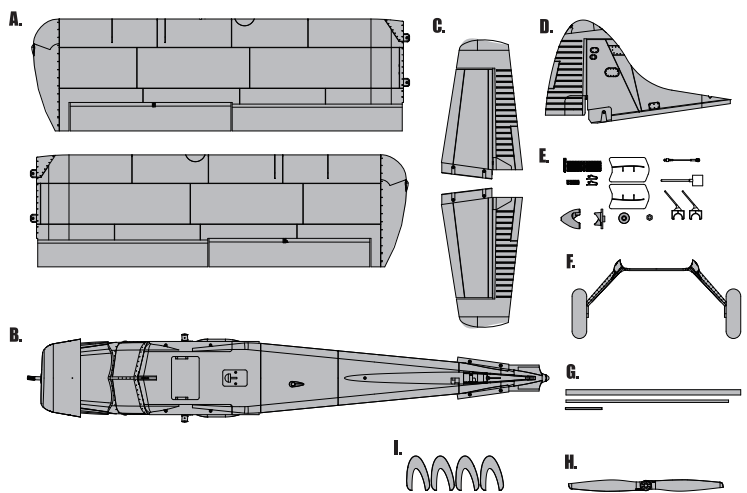
Wing Load: 71.1g/dm²(0.16oz/in²)

Wing Area: 53.4dm²(827.7sq.in)

ESC: 60A

Servo: 17g Servo x 6

Recommended Battery: 22.2V 4000mAh 35C



A: Main wing

B: Fuselage

C: Horizontal stabilizer

D: Vertical stabilizer

E: Spinner set and hardware

F: Main landing gear

G: Wing spar

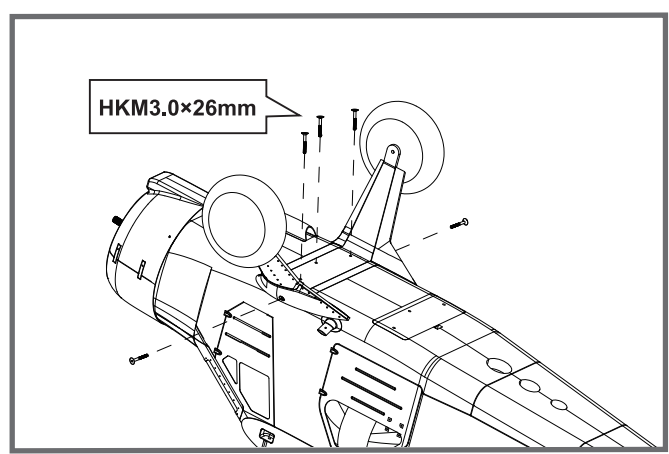
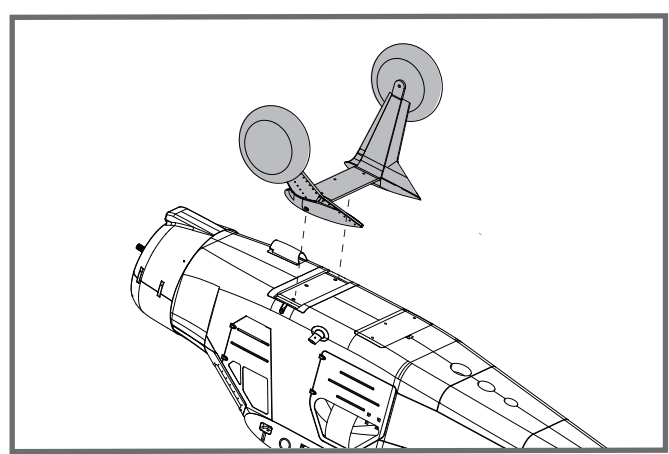
H: Propeller

I: Vortex Generator

Model assembly

Landing gear set installation

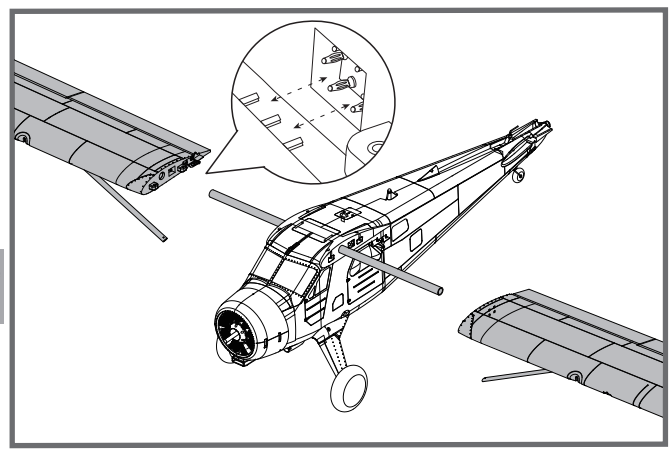
1. Attach the landing gear set to the landing gear slot on the underside of the fuselage. The five screws are installed as shown .



Main wing installation

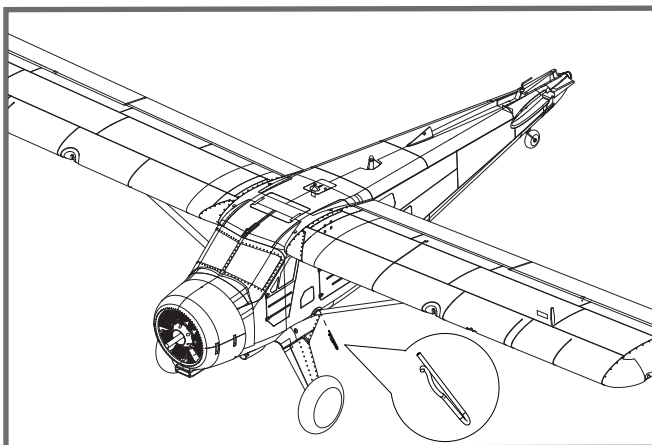
1. Slide the wing spar into the fuselage then install both wings over the wing spar and into the fuselage pass-through of the fuselage.

NOTE: The connectors on both the wing and fuselage should be firmly and precisely attached.

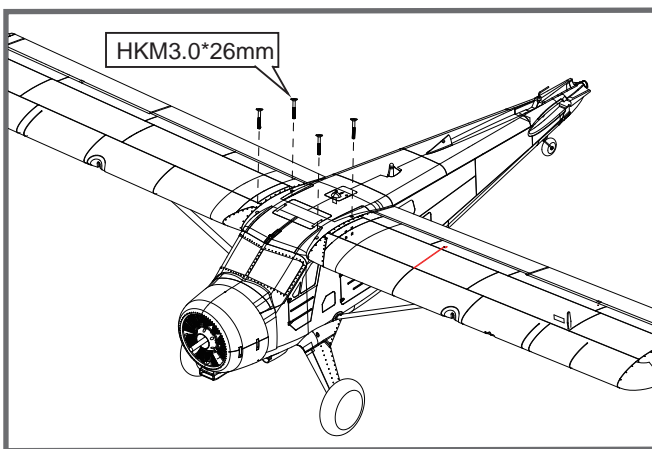


Model assembly

2. Install the 2 wing struts on the fuselage mount using 2 R-clips.

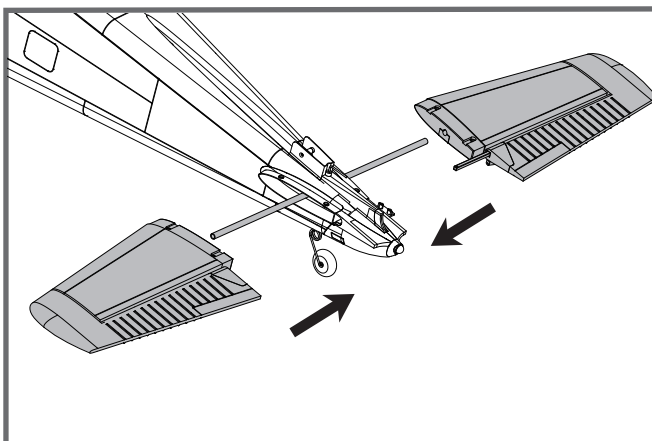


3. Secure the wing structure onto the fuselage using 4 screws as shown. Ensure that these screws are securely tightened.



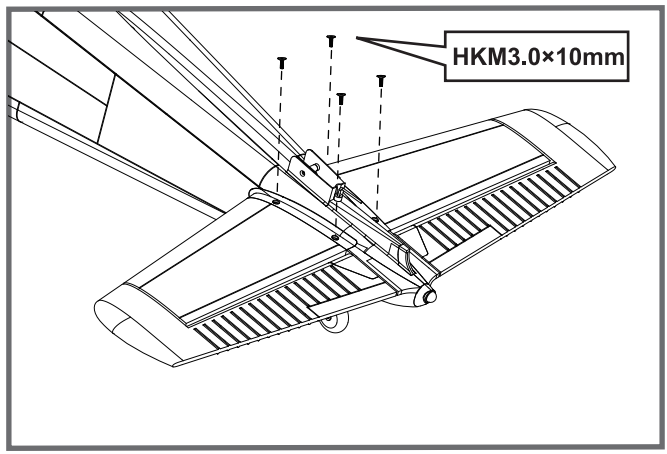
Horizontal stabilizer installation

1. Slide the horizontal stabilizer round spar into the pass through at the rear of the aircraft. Slide the square spar into the right piece of horizontal stabilizer in place as shown.
2. Install the 2 piece (left and right) horizontal stabilizer as shown. Ensure the control horn faces down.



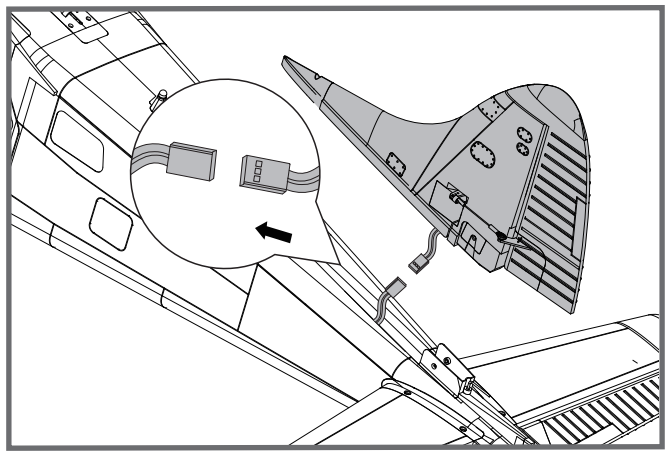
Model assembly

3. Install the 4 included screws to secure the stabilizer halves.

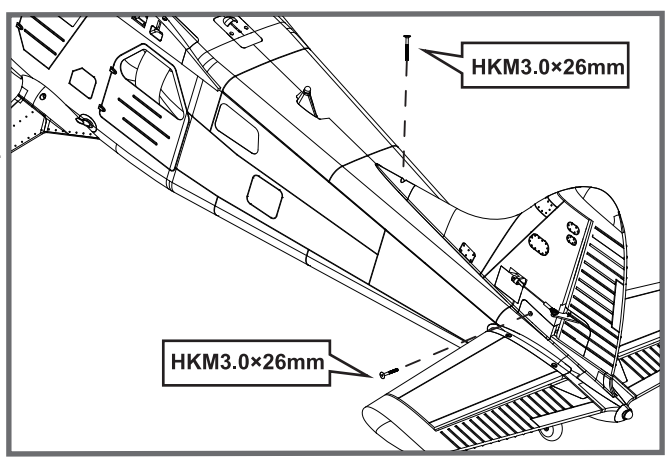


Vertical stabilizer installation

1. Connect the rudder and elevator servo connectors to the servo extensions in the fuselage.
 2. Slide the vertical tail assembly into slot in the fuselage.
CAUTION: DO NOT crush or damage the wiring when attaching the vertical tail assembly to the fuselage.



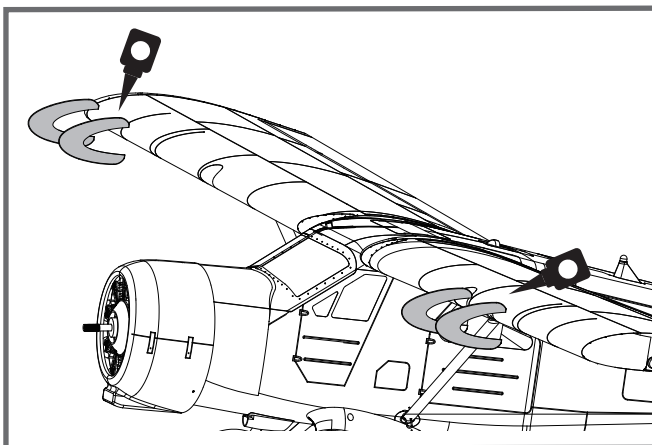
3. Secure the assembly to the fuselage using 2 screws as shown.
CAUTION: Ensure that the screw has been securely tightened, as the vertical stabilizer is subject to high aerodynamic stress. When needed, disassemble in reverse order.



Model assembly

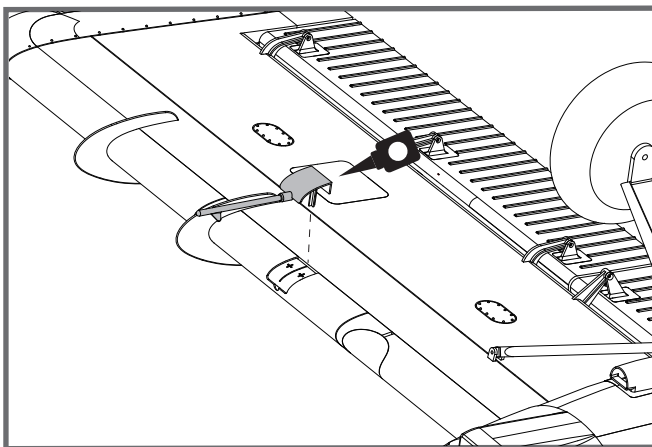
Installation of the vortex generators

1. Carefully apply CA to the indentations located on the leading edge of the wings.
2. Carefully slide the vortex generators onto the indentations as shown.

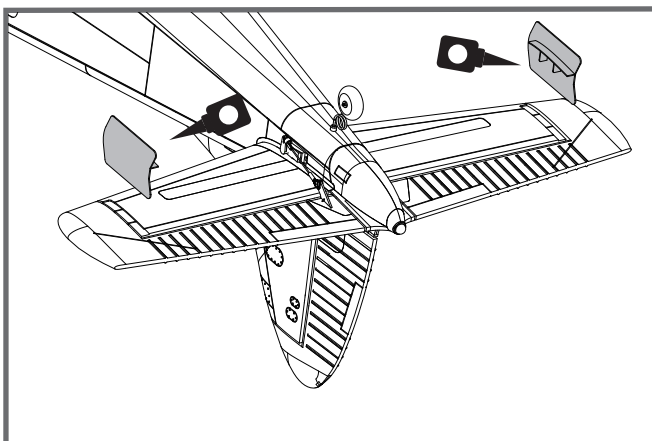


Installation of other scale components

1. Carefully adhere the pitot tube to the leading edge of the wing as shown.

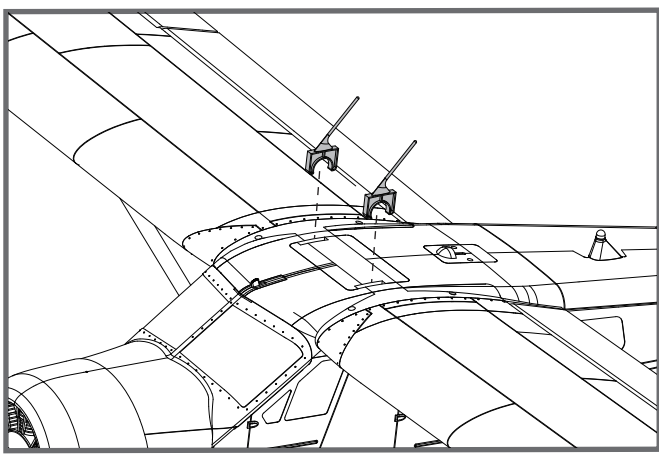


2. Carefully apply CA to the indentations as shown.
3. Carefully slide the vortex generators onto the indentations.



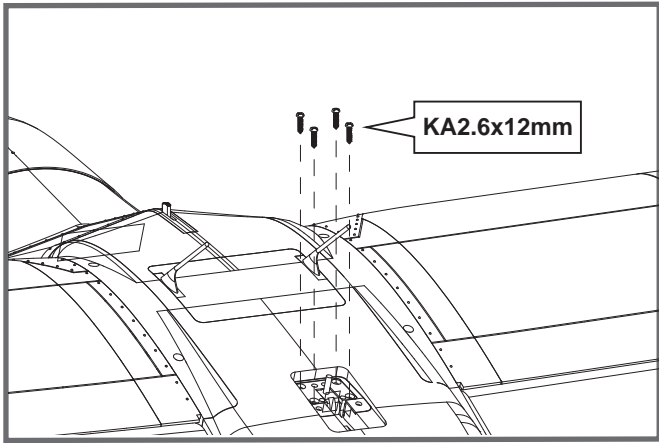
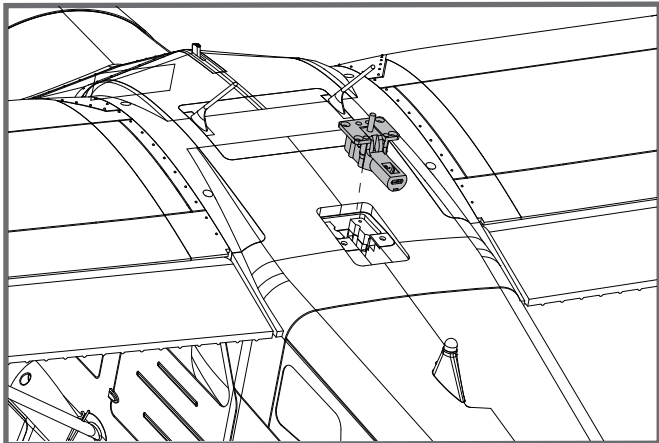
Model assembly

4. Adhere the antenna to the top of the center wing box.



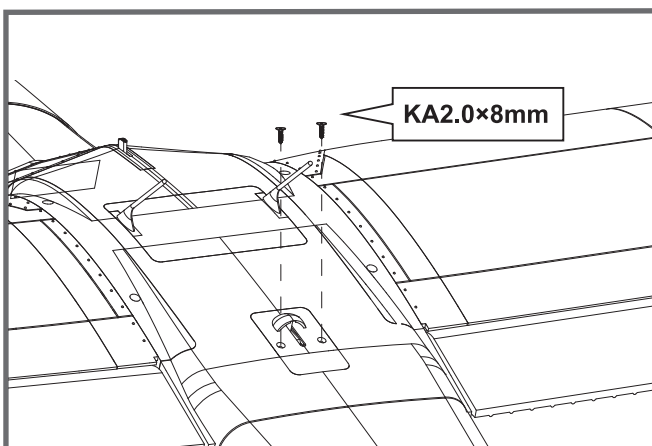
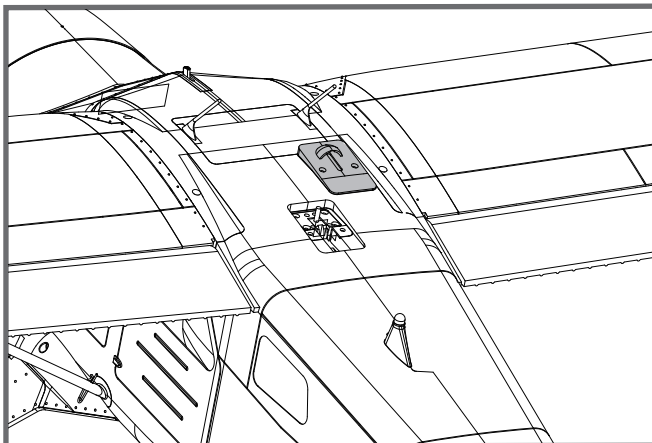
Optional glider release hitch installation

1. Install the glider release mechanism to the top of the fuselage and secure with 4 screws as shown.



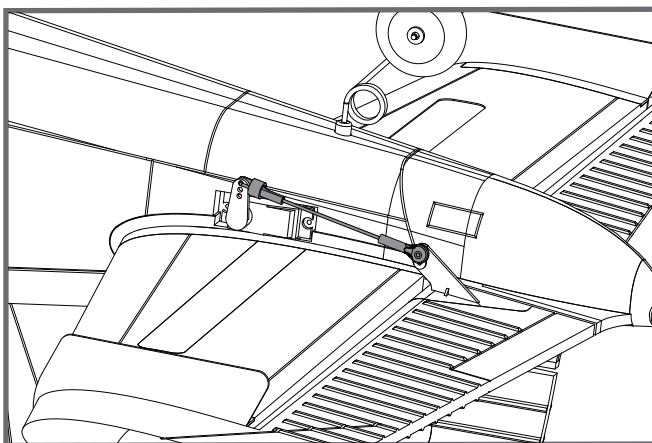
Model assembly

2. Install the aerodynamic fairing for the mechanism to the top of the fuselage and secure with two screws.



Linkage rod installation

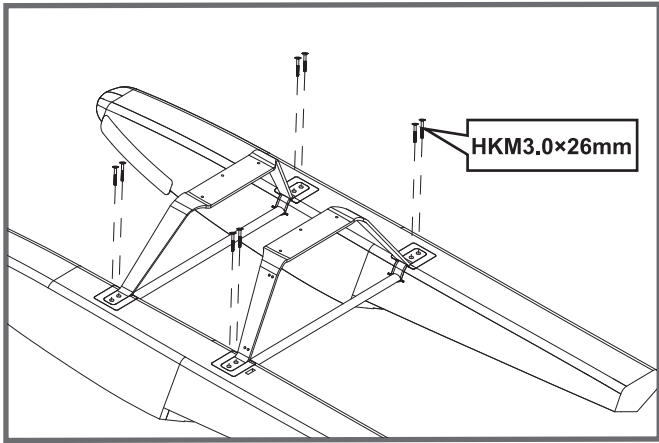
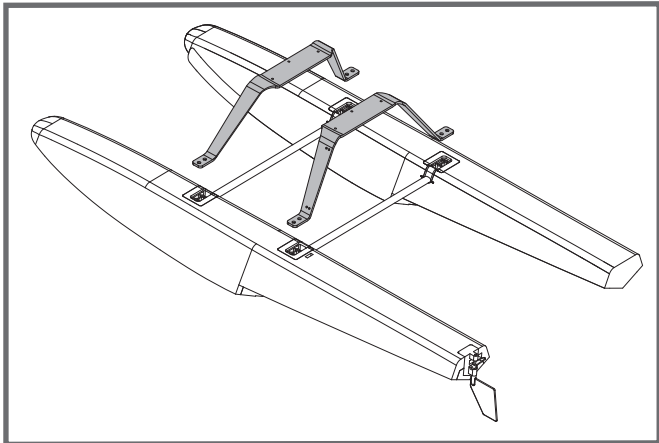
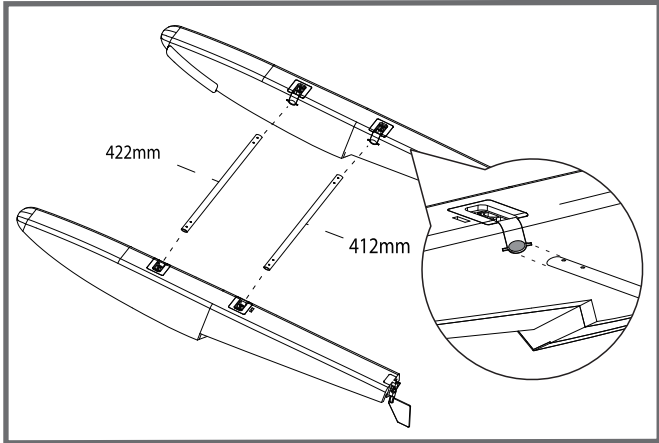
1. With the servo centered, install and adjust the pushrod and clevises. Connect the clevis to the outermost hole on the control horn.



Model assembly

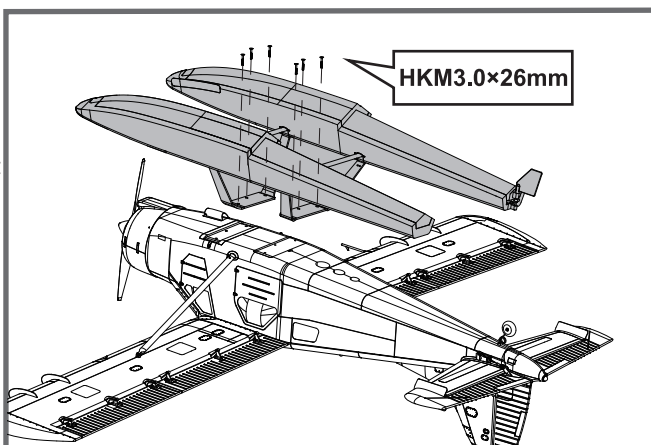
Optional float installation

- 1. Install the struts to both sides of the float. The front strut is longer with 422mm length, the rear strut is shorter with 412mm length. Wrong installation will cause difficulty landing and taking off.
- 2. Install the float strut to the float with 8 screws as picture shows.



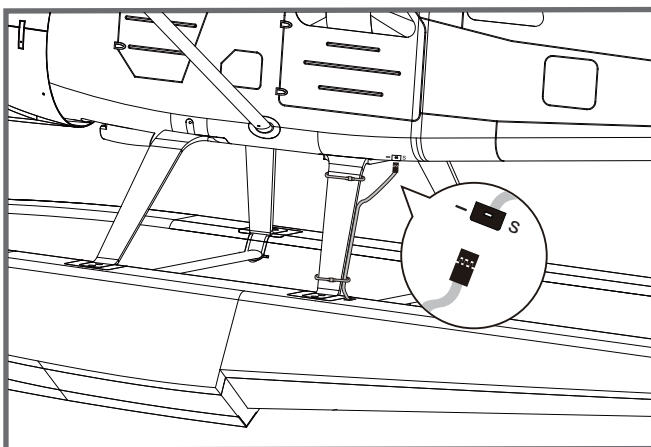
Model assembly

3. With the fuselage bottom facing up, carefully install the float set to the fuselage with 6 screws.



4. Connect the float servo and fuselage connector.

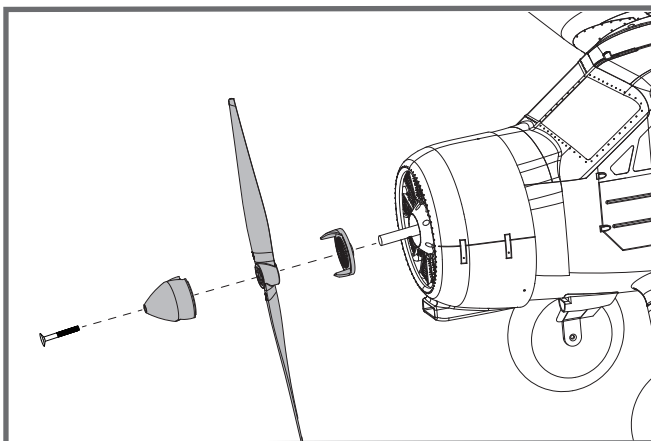
Note: black wire to mark "-", yellow wire to mark "s"



Propeller installation

1. Assemble the spinner and propeller as shown.

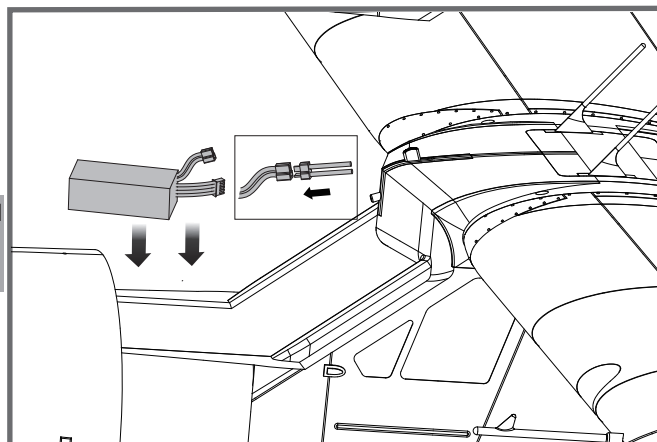
Note: the motor should rotate clockwise when viewing the plane from the rear.



Battery installation

1. Pull back on the release tab and remove the battery hatch.
2. Apply hook tape to the cable end of the battery.
3. Make sure the battery is secured using hook tape.

Note: batteries from different manufacturers will vary in weight and size, it is therefore important to check the center of gravity of the aircraft before every flight.



Receiver diagram

The cables from the servo connector board should be connected to your receiver in the order shown. 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 |
| spare | | Spare Channel |

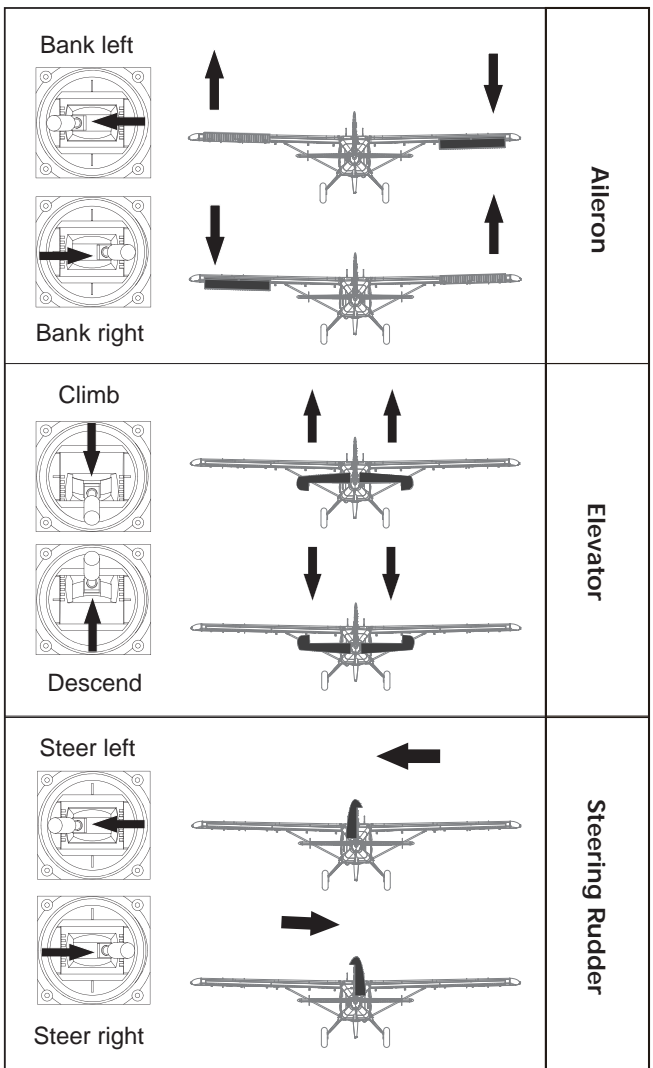
Get your model ready to fly

Important ESC and model 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. The motor has an optional brake setting. The ESC comes with brake switched off and we recommend that the model be flown with the brake off. However, the brake could be accidentally switched on if the motor battery is connected to the ESC while the throttle stick is set at full throttle. To switch the brake off, move the throttle stick to full throttle and plug in the motor battery. The motor will beep one time. Move the throttle stick to low throttle or the off position. The motor is ready to run and the brake will be switched off.
4. Battery Selection and Installation. We recommend the 22.2V 4000mAh 35C Li-Po battery. If using another battery, the battery must be at least a 22.2V 4000mAh 35C battery. Your battery should be approximately the same capacity, dimension and weight as the 22.2V 4000mAh 35C Li-Po battery to fit the fuselage without changing the center of gravity significantly.

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



Control throws

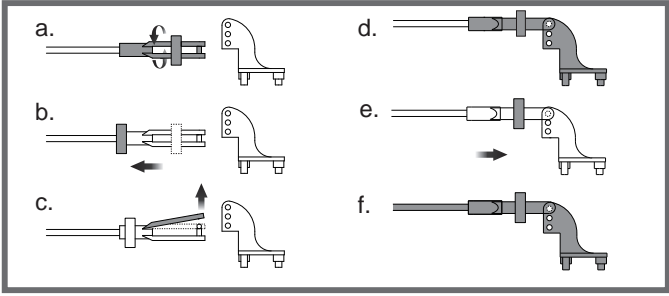
The suggested control throw setting for the Beaver V2 are as follows (dual rate setting):

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 | 16mm up/down | 10mm up/down |
| Aileron | 24mm up/down | 20mm up/down |
| Rudder | 16mm left/right | 12mm left/right |

Clevis installation

1. Pull the tube from the clevis to the linkage.
2. Carefully spread the clevis, then insert the clevis pin into the desired hole in the control horn.
3. Move the tube to hold the clevis on the control horn.



Control horn and servo arm settings

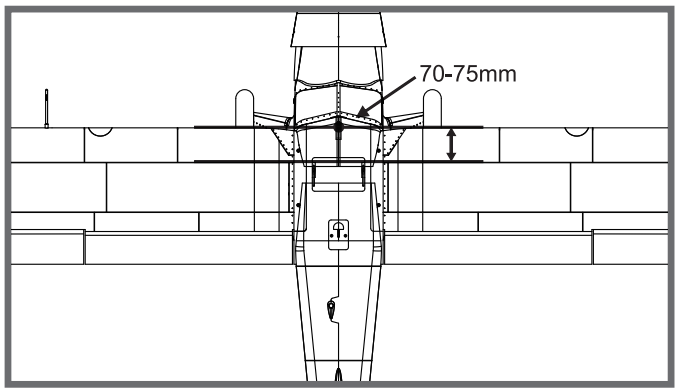
The table shows the factory settings for the control horns and servo arms. Fly the aircraft at the factory settings before making changes. After flying, you may choose to adjust the linkage positions for the desired control response.

| | Horns | Arms | More control throw |
|----------|-------|------|--------------------|
| Elevator | | | |
| Rudder | | | |
| Ailerons | | | |

Check the C.G. (Center of gravity)

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

1. The recommended Center of Gravity (CG) location for your model is (70-75mm) 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.

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.

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.

Trouble shooting

| Problem | Possible Cause | Solution |
|--|--|--|
| Aircraft will not respond to the throttlebut 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. -Propellor 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

| | | | |
|------------|-----------------------|-------------|--------------------------------|
| FMSPQ101-1 | Fuselage | FMSPQ116 | Linkage Rod |
| FMSPQ102-1 | Main Wing Set | FMSPQ117 | Screws Set |
| FMSPQ103-1 | Horizontal Stabilizer | FMSPQ118 | Pipe |
| FMSPQ104-1 | Vertical Stabilizer | FMSPQ119-1 | Decal Sheet |
| FMSPQ105-1 | Battery Hatch | FMSFLT002-1 | Float Set |
| FMSPQ106 | Antenna Foam Cover | FMSFLT003-1 | Float Strut Set |
| FMSPQ107-1 | Cowl | FMSPROP035 | Propeller |
| FMSPQ108 | Spinner | FMSBM029 | Motor Board |
| FMSPQ109-1 | Engine | FMSDJ014 | Motor Mount |
| FMSPQ110-1 | Vortex Generator | FMSDZ005 | Motor Shaft |
| FMSPQ111-1 | Airspeed Head Set | FMSKV550 | Brushless Motor |
| FMSPQ112 | Antenna | PRESC030 | 60A ESC |
| FMSPQ113 | Servo Cover | FMS17GAP | 17g analog gear servo positive |
| FMSPQ114-1 | Main Landing Gear Set | FMSCON003 | Multi Connector System |
| FMSPQ115-1 | Wing Strut Set | FMSRE015 | Retract |

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