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Perfect Appearance    Excellent Performance

# 1030mm J-3 Cub

## OPERATING MANUAL



### Specifications

Wingspan.....	1030mm (40.5 in)
Length.....	750 mm (29.5 in)
Weight .....	540 g (19.0 oz)
Wing Area.....	15 dm <sup>2</sup> (233 in <sup>2</sup> )
Wing Load.....	35.9 g/dm <sup>2</sup> (0.08 oz/in <sup>2</sup> )
RC System.....	4 Channel



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[www.fmsmodel.com](http://www.fmsmodel.com)

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# 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 requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner 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 this manual prior to assembly, setup, or use, in order to operate correctly 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 the street or in populated areas for any reason.
- Carefully follow the directions and warnings for this and any optional support equipment (chargers, battery rechargeable packs, etc.) you use.
- 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 place any portion of your model in your mouth as it could cause serious injury or even death.

## **FMS MODEL Friendly Reminder**



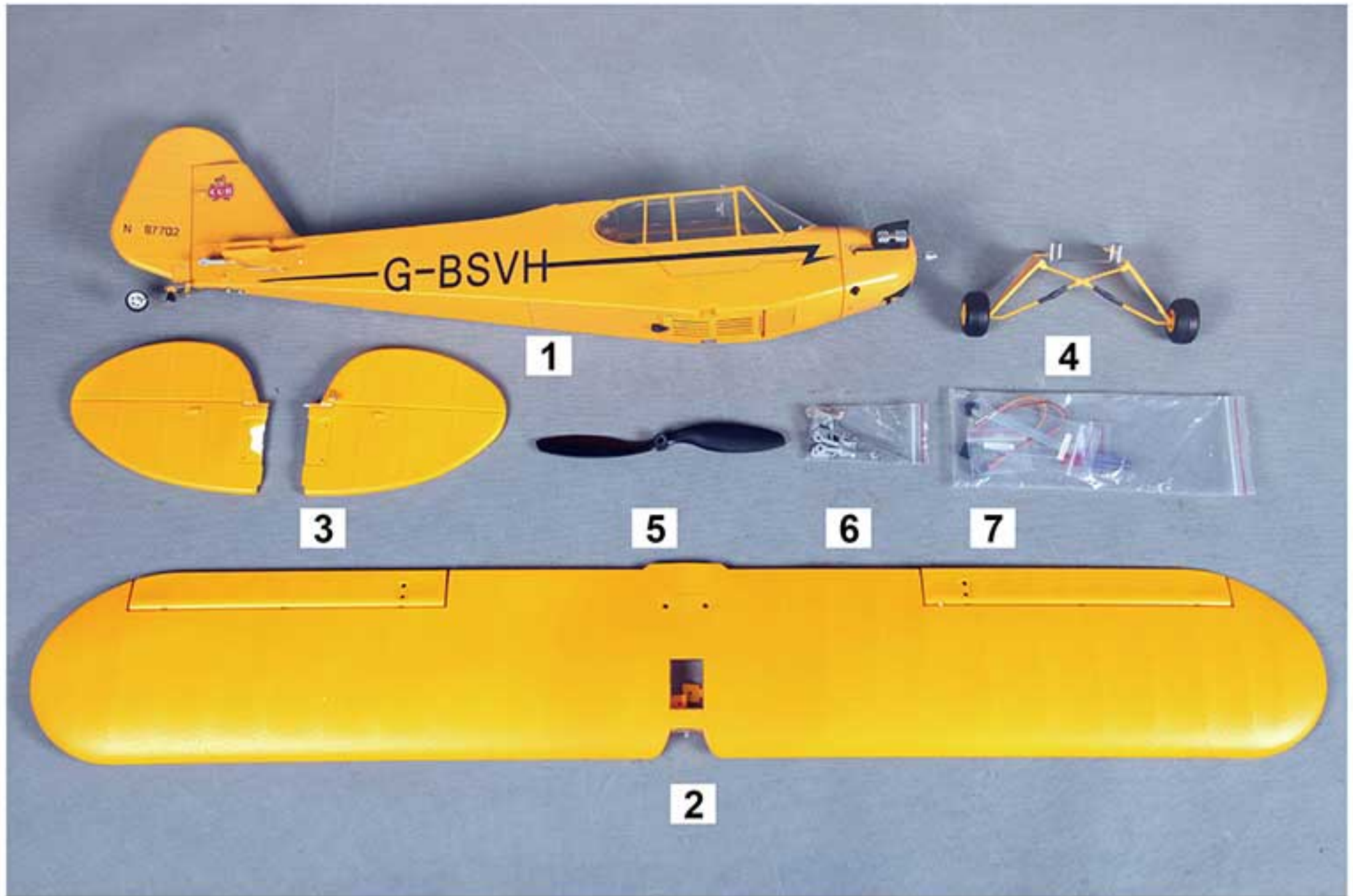
Thank you for purchasing a FMS MODEL product. Our goal is to provide high quality products and offer great customer service. If you have any problems with your product or want to offer suggestions for improvements (such as plane design, packaging, building instructions, etc.) please feel free to contact us at

[info@fmsmodel.com](mailto:info@fmsmodel.com)

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# Kit Contents

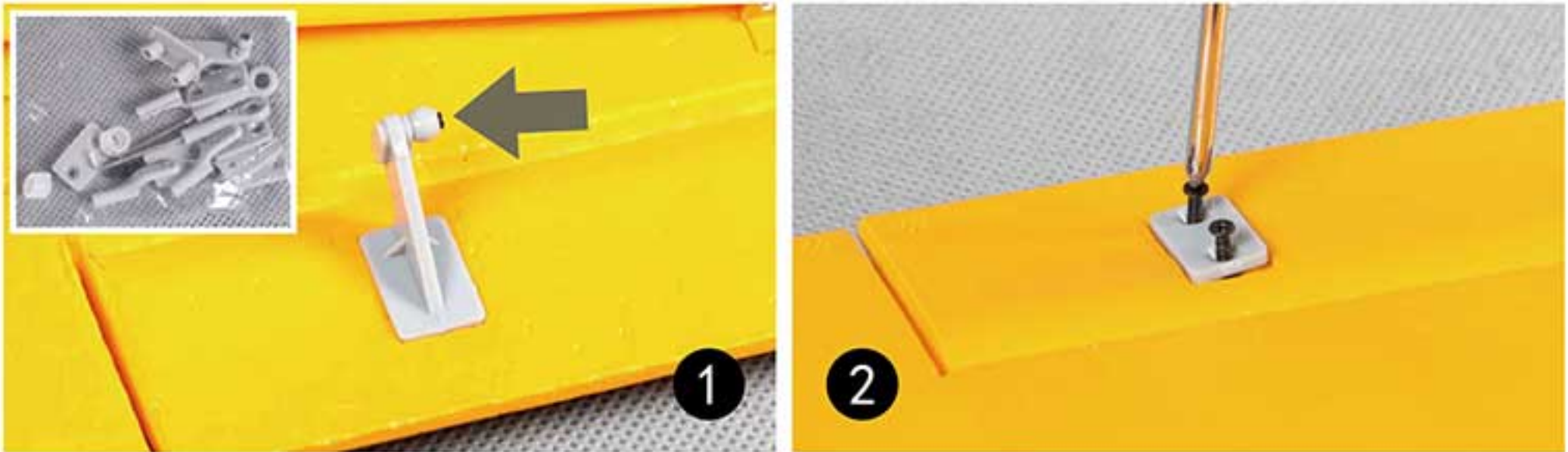


1. The fuselage assembly (With the motor, the canopy, the electronic parts, ESC)
2. Main wing ( With all electric device installed)
3. Horizontal stabilizer with elevator joiner installed
4. landing gear set
5. Propeller
6. Spare parts bag
7. wires and screw driver

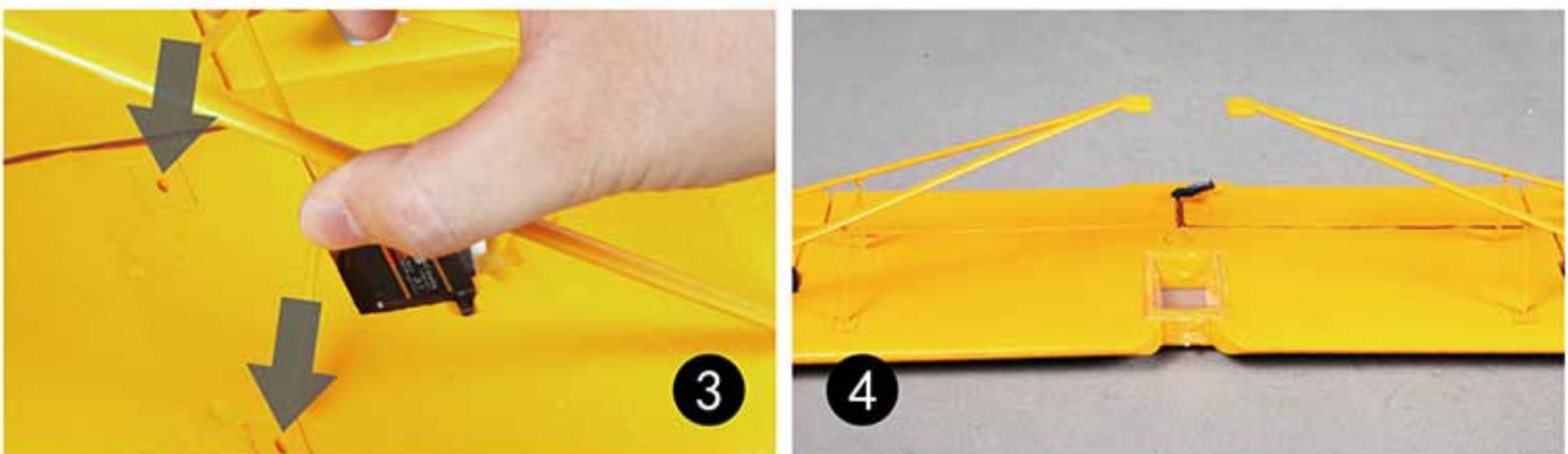
# Fuselage/tail assembly

1. Place the ball-linked control horn on the aileron surface. Make sure that the orientation of the ball-link is placed as shown on the picture below. (Fig.1)

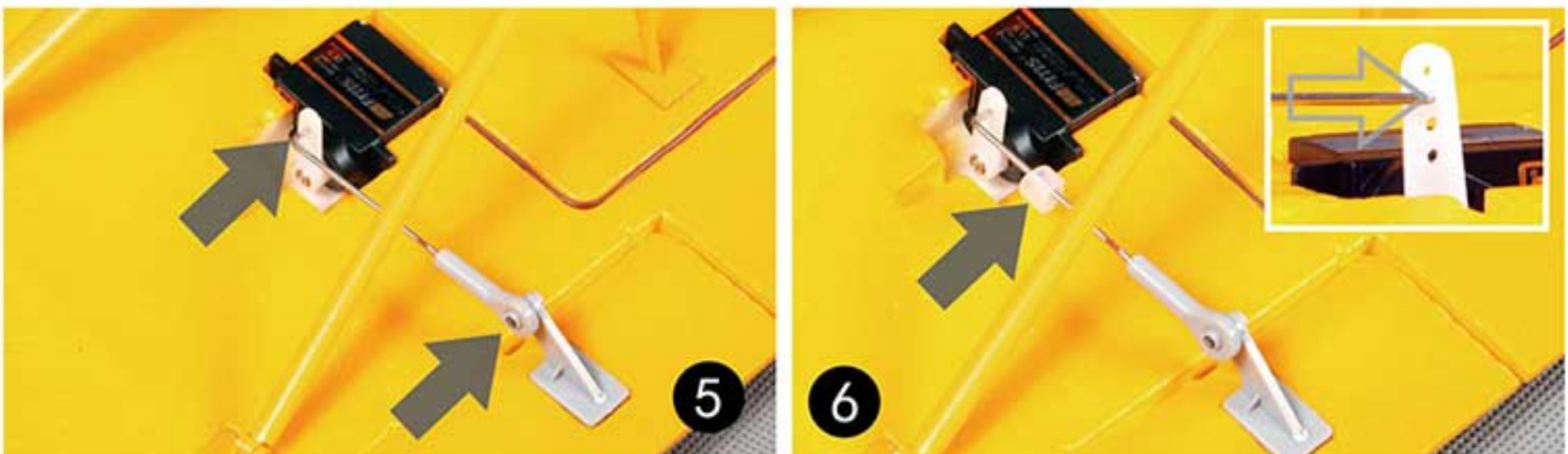
2. Once aligned, secure the control horn on the aileron surface with the included screws. (Fig.2)



3. Attach the wing-brace to the attachment points on the wing. (Fig.3 and 4)

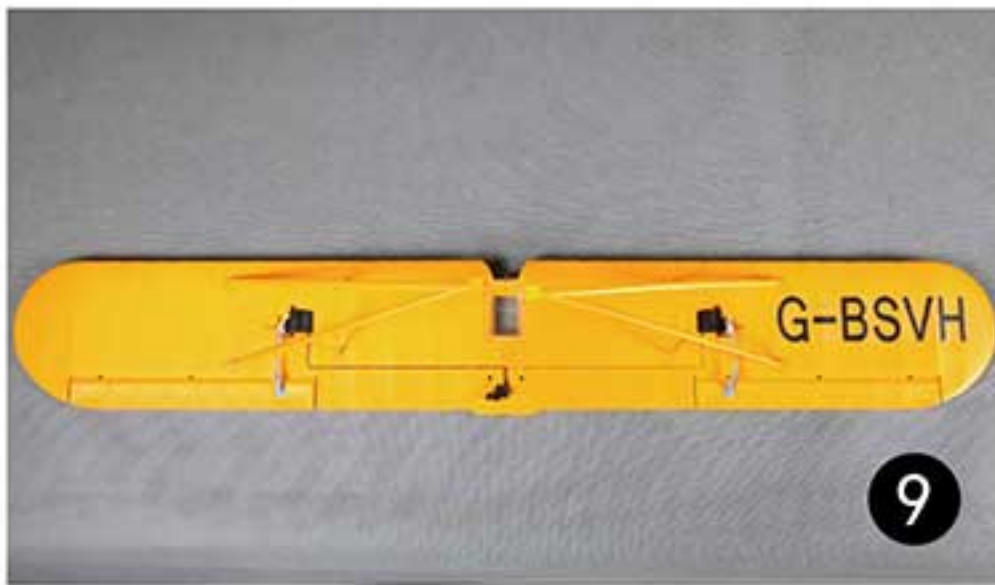


4. Connect the pushrods to the ball-links; make sure that the pushrod goes through the second hole of the servo arm. Finish by attaching the plastic retainers so that the pushrod does not detach from the servo arm. (Fig. 5-8)

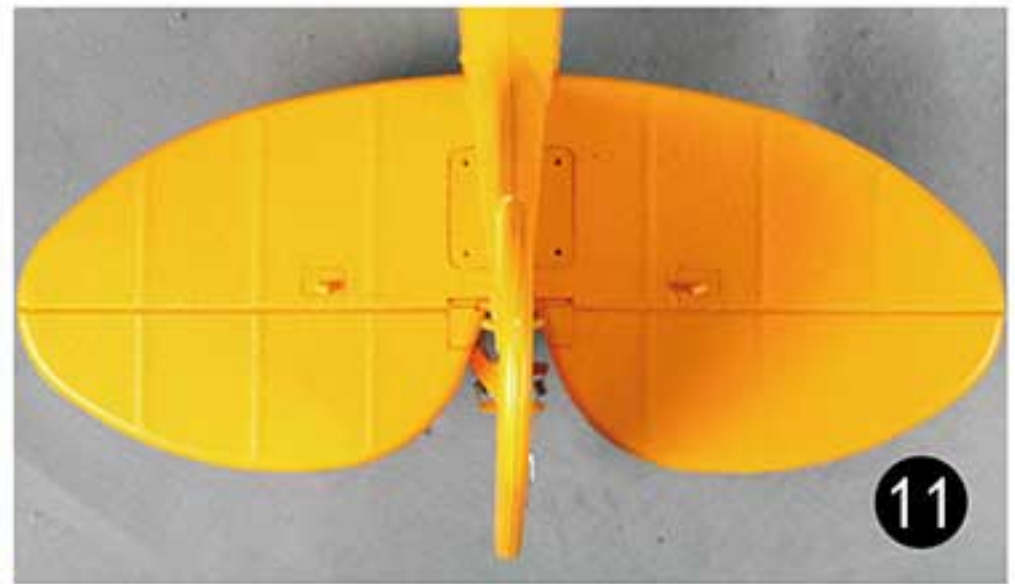




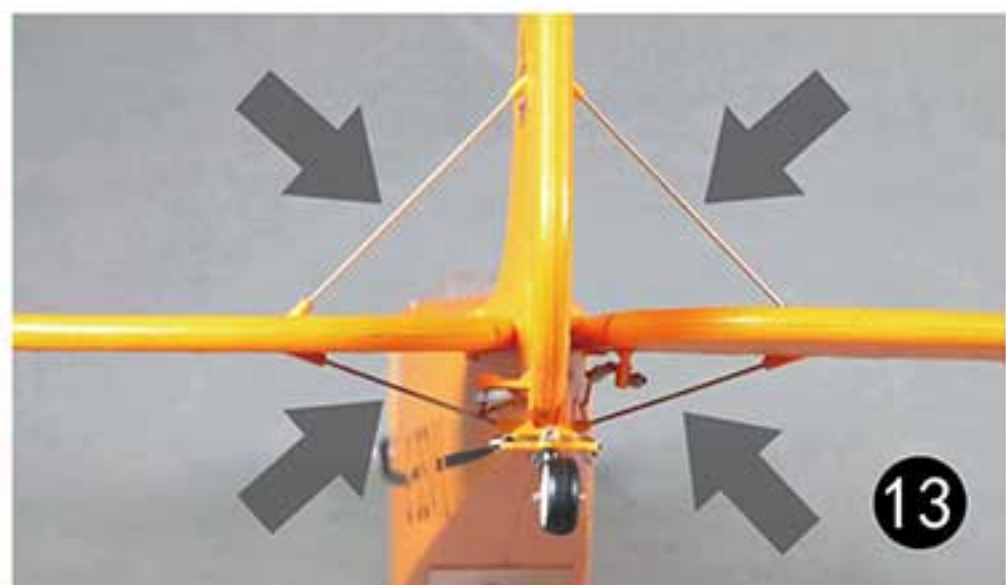
5.Repeat steps 1-4 for the opposing wing.(fig.9)



6.Insert the horizontal-stabilizer as shown in the picture below. Check that the control horn and ball-link are located on the starboard horizontal stabilizer (right of the fuselage). (fig.10-11)

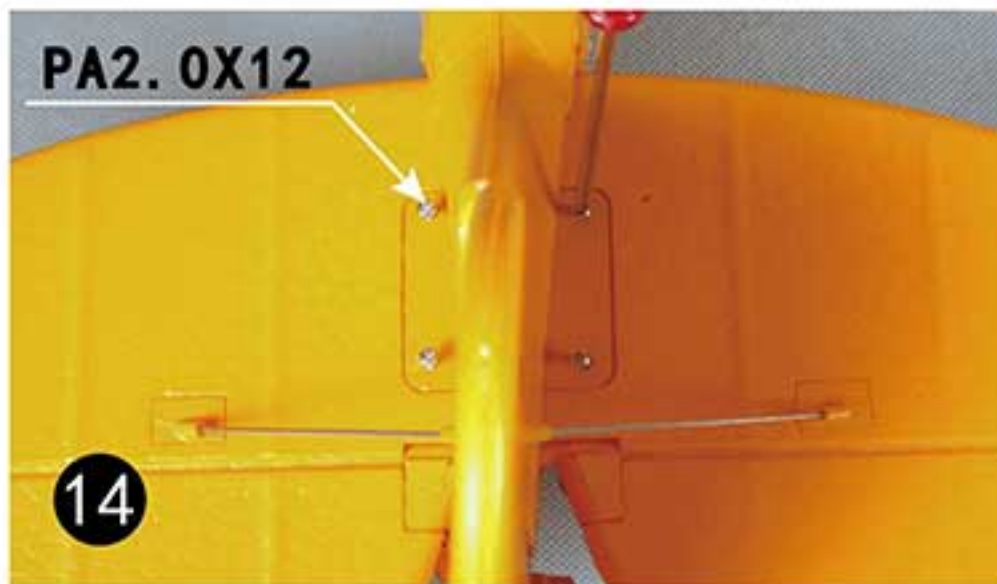


7. Install the braces that hold the horizontal stabilizer in place. (fig. 12-13)



8. Secure the horizontal stabilizer by attaching PA2.0x12 screws to the top of the horizontal stabilizer. (fig.14)

9. Please secure the pushrod to the ball link while ensuring that the elevator surface is level with the rest of the horizontal stabilizer; if not, please adjust the length of the linkage accordingly. (fig. 15)



10. Repeat step 9 for the rudder push rod and control horn. (fig. 16)



11. Open the electronics hatch by loosening the screw shown on the picture below (fig. 17-18)



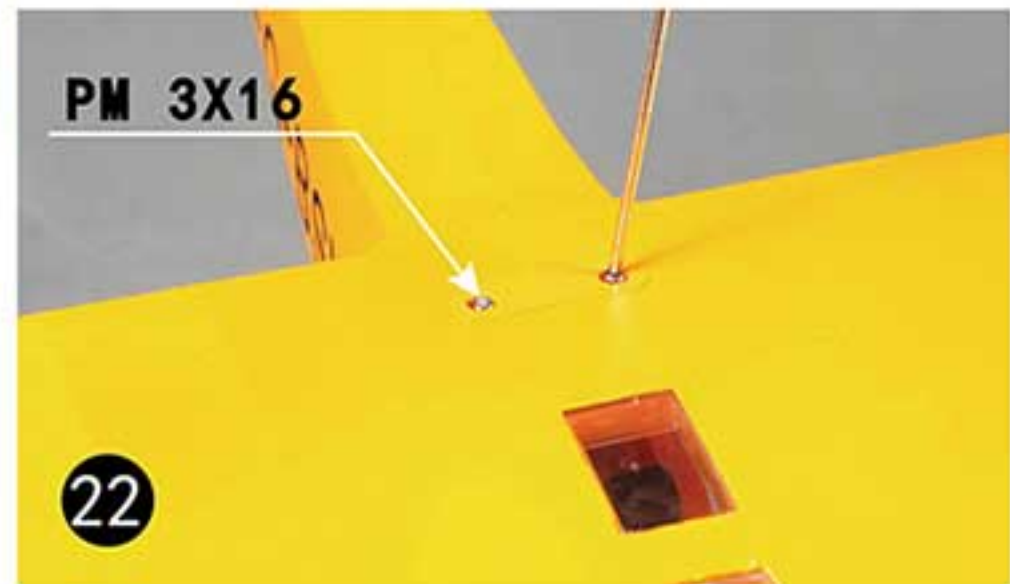
12. Route the Y-harness into the electronics hatch (Sequence: CH1-Aileron, CH2-Elevator, CH3-Throttle, CH4- Rudder); secure the electronics bay by tightening the screw (fig.19)

13. Connect the Y-harness with the 2 aileron servo leads on the wing.(fig.20)



14. Attach the wing to the fuselage by sliding the wing into the top of the clear plastic windshield. (fig.21)

15. Attach the wing-bolt to the top of the fuselage. (fig.22) (PM3x16/2pcs)





16.Align the wing-brace to the bottom of the fuselage. (fig.23)



17.Align and secure the landing gear to the hard points on the fuselage; secure the wing-brace to the bottom of the fuselage. (fig. 24-25) (PA 2.6x10/2pcs)



18.Insert the propeller onto the motor hub; make sure that the molded letters on the propellers face outwards, and then attach and tighten the prop nut with the included screwdriver. (fig.26-28)





19. Your aircraft is now fully assembled.



# Final assembly and set-up procedures

Before getting started, rebind your receiver with your transmitter if necessary.

**CAUTION:** To prevent personal injury, DO NOT install the propeller assembly onto the motor shaft while testing the control surfaces .

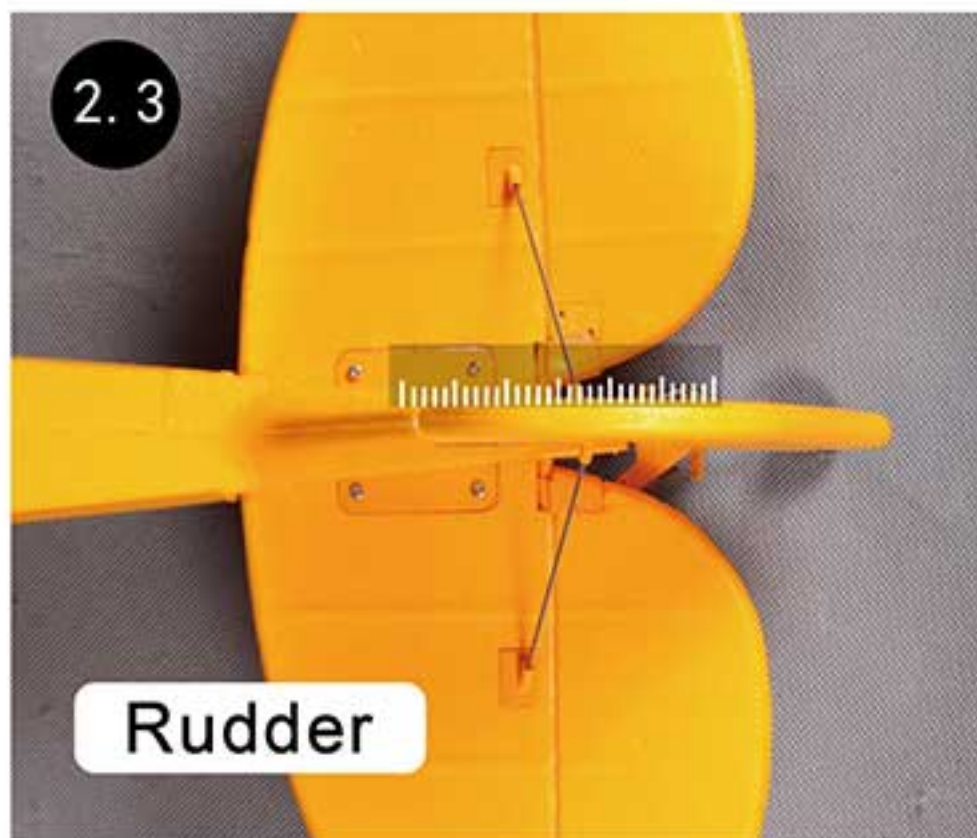
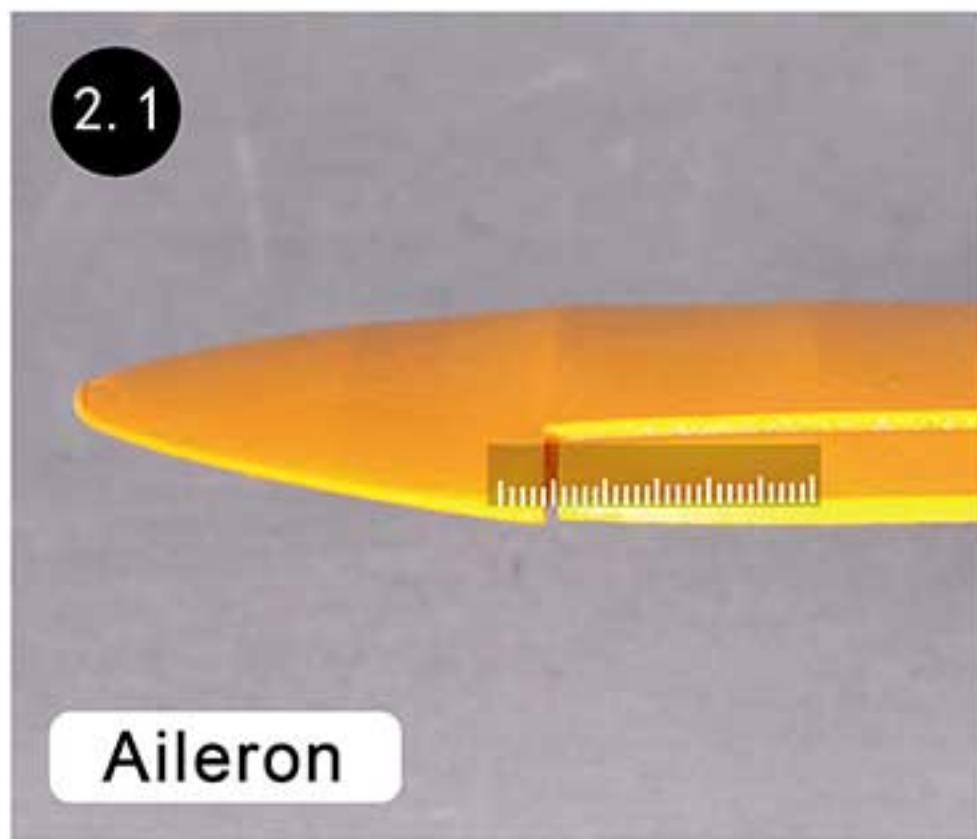
**Tips:** Make sure all control sticks on your radio are in the neutral position (rudder, elevator, ailerons) and the throttle in the OFF position. Make sure both ailerons move up and down (travel) the same amount. This model tracks well when the left and right ailerons travel the same amount in response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

1. Move the controls on the transmitter to make sure aircraft control surface move correctly. See diagrams below. If controls respond in the opposite direction, reverse the direction of the flight controls. Refer to your transmitter's instructions for changing direction of transmitter flight controls.

	Bank Left		Aileron
	Bank Right		
	Climb		Elevator
	Descend		
	Yaw Left		Rudder/ Steering
	Yaw Right		

## The transmitter and model set up

2. Recheck to align the control surfaces well by trim the control channel.  
The ailerons align with the trailing edge of the wing tip.



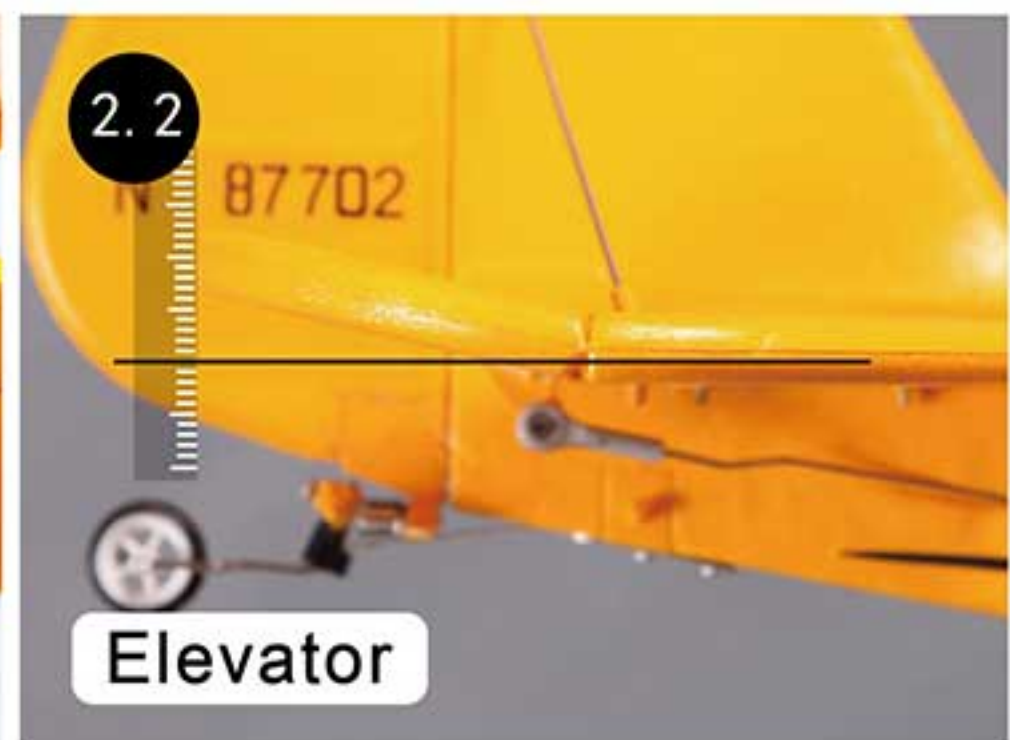
## Check the control throws

1. Adjust ATV/travel adjustment on your transmitter until you obtain the following control surface travel. Do not adjust dual rates until you have correctly adjusted the total travel.

**Ailerons** : 12mm up and down (both ailerons), refers to the flaps up position.

**Elevator** : 18mm up and down, measured at the elevator root.

**Rudder** : 15mm left and right, refers to the centerline of the vertical fin.

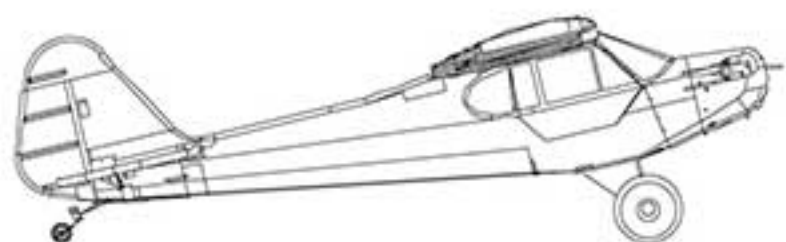


# Flight control

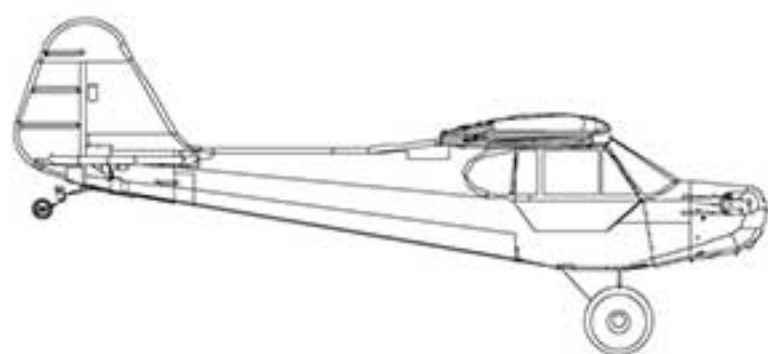
for smooth control of your aircraft, always make small control moves. All directions are described as if you were sitting in the air craft.

## Tips:

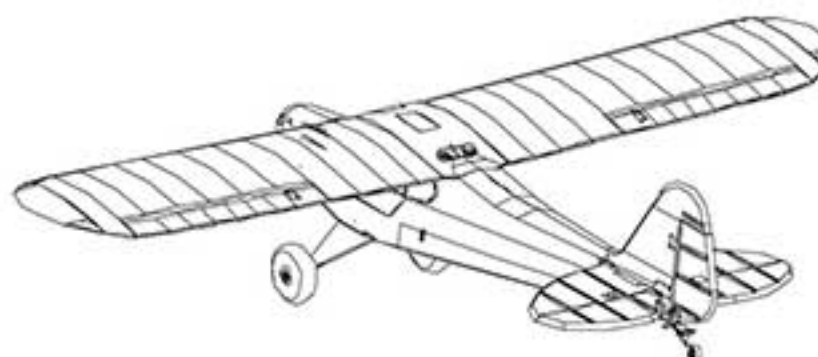
1. Flying faster and slower: When your aircraft is stable in the air, push the throttle stick up to make the aircraft go faster, and pull the throttle stick back to slow down. The aircraft will climb when the throttle is increased.
2. bank right and left: Move the aileron stick right to make the aircraft bank right and move the aileron stick left to bank left.
3. Elevator up and down: Push the elevator stick forward to make the aircraft go down and pull the elevator stick back to go up.



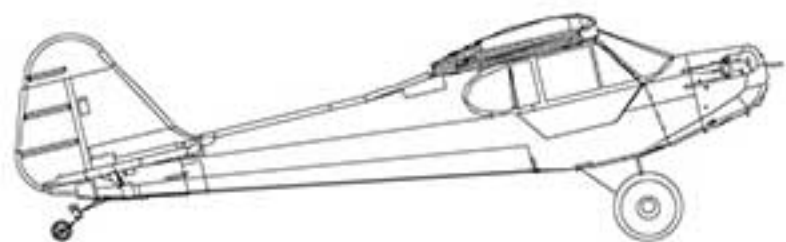
**Throttle up to fly faster**



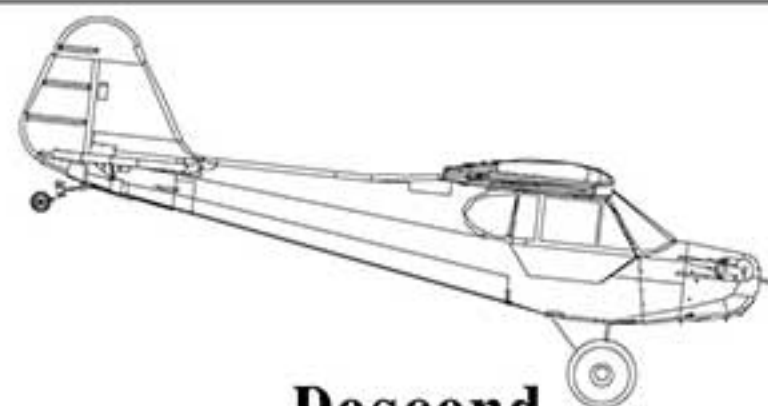
**Aileron: Bank Left**



**Bank Right**



**Elevator: Climb**



**Descend**



**Rudder: Yaw Left**



**Yaw Right**

# Assemble the plane

## Check the C.G. (Center of Gravity)

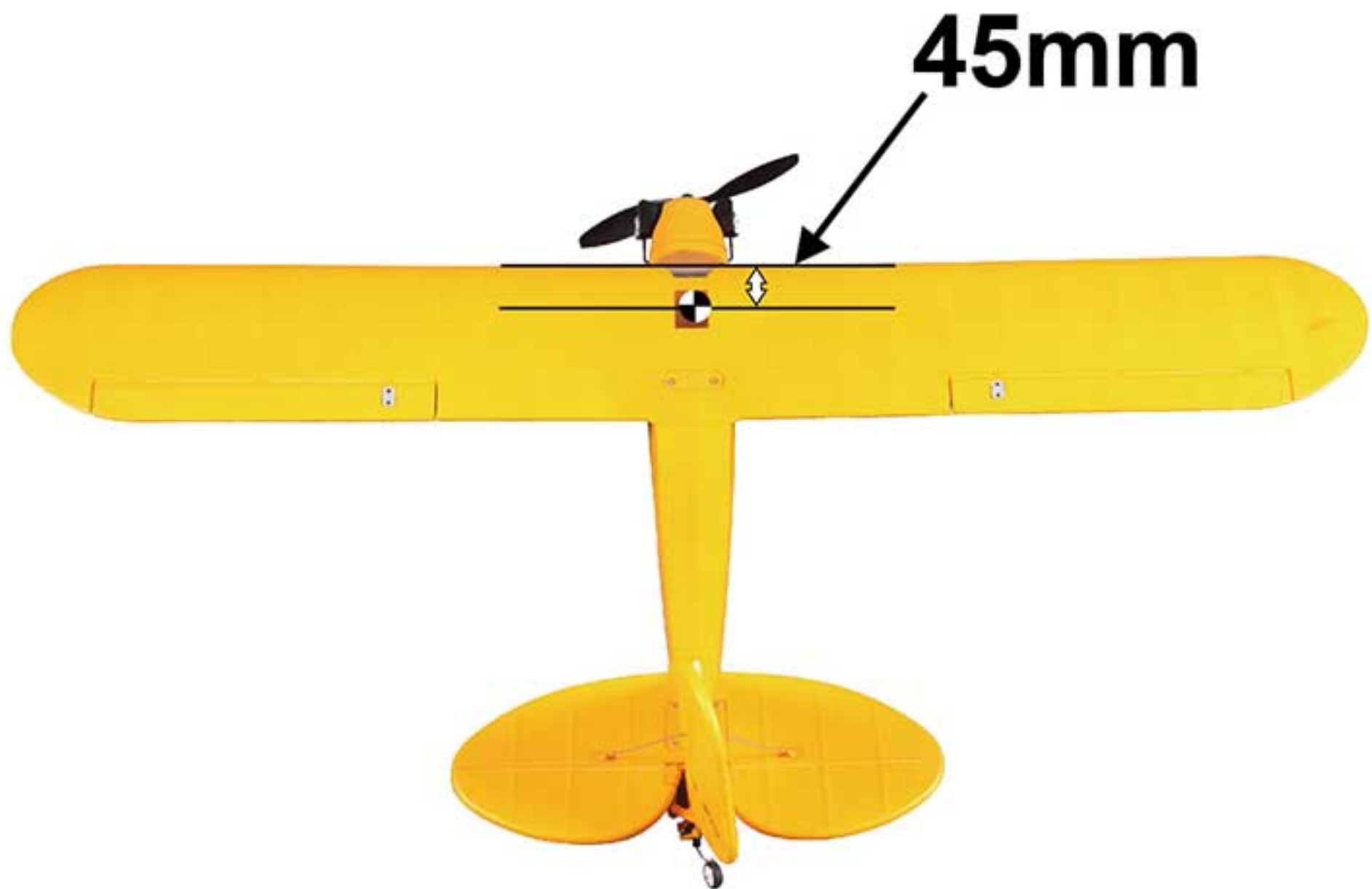
### Center of Gravity

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 (**45 mm**) back from the leading edge of the top 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 inverted at the marks made on the top 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.

**Note:** Always balance the plane with the retracts down.



## **Center of Gravity**

Before balancing your model, make sure the it is completely assembled, the battery is installed, and the retractable landing gear is in the lowered position. The recommended center of gravity (CG) for your model is 50-55 mm from the wing's leading edge (measured at point of contact with fuselage). Lightly mark the ideal center of gravity position on the top surface of the wing on each side of the fuselage. Support the plane inverted at the marks made on the top of the wing with your fingers or a commercially available balancing stand. It should be level or just slightly nose down. Adjust the position of battery as necessary to achieve the proper balance.

## **Pre-flight Checklist**

Prior to first flight:

1. Ensure your transmitter and ESC batteries are fully charged per manufacturer's instructions.
2. Ensure propeller is properly secured.
3. Ensure receiver and ESC battery are secure.
4. Check all control surface actuating hardware (linkages, screws, nuts, bolts, etc.)
5. Perform a range test on the radio equipment.
6. Check control surfaces for proper direction and throw.
7. Check center adjustment of each control surface.
8. With someone holding the aircraft, start the motor and make sure it runs smoothly and in a CCW direction when viewed from the front. Ensure it will transition from off to high throttle and back to off.

## **Flight Safety**

1. Do not fly in strong winds or bad weather.
2. Never fly in crowded areas near people, cars, buildings, power lines, airports, etc. The plane can travel at high speed so choose a wide open space and give yourself plenty of room to operate. Remember you are responsible for the safety of others.
3. Not recommended for children under 14 years of age. Children under 12 must have adult supervision.
4. Never use or leave the battery charger in a wet environment.
5. Keep the model away from heat which can easily destroy the foam structure of the plane, the electronics, or the battery.
6. Do not attempt to catch the model while flying.
7. Stay clear of the propeller at all times, even when it is not moving because the transmitter could easily be bumped and cause the propeller to move without warning.
8. Never leave the model unattended with a battery installed. Injury could be caused by children or unaware adults turning on the transmitter.
9. When preparing for flight, turn the transmitter on and ensure the throttle is off before connecting the battery.



## Daily Flight Checks

Prior to first flight:

1. Check condition of major components. Ensure wing, tail, motor, and landing gear are secure.
2. Check condition of propeller.
3. Check all control surface actuating hardware (linkages, screws, nuts, bolts, etc.)
4. Check the voltage on the transmitter and ESC batteries.
5. Perform a range test on the radio equipment.
6. Check control surfaces for proper direction and throw.
7. Check center adjustment of each control surface.

Post flight:

1. Disconnect ESC battery
2. Turn off transmitter
3. Remove ESC battery from model.
4. Recharge ESC battery.
5. Store ESC battery away from model in fire proof container.
6. Repair or replace any damaged parts on the model airplane.

## Maiden Flight Tips

If this is your first RC Model Airplane, you may want to seek the help of an experienced pilot to assist you on the first flight. You can usually find people that are happy to assist at a local RC Club. You can also inquire at your local hobby shop. Often hobby shop employees will know where to go locally for flight assistance.

Whether you are a new or experienced pilot, the maiden flight for any new RC model can often be challenging. Even if you have followed all the instructions exactly and adjusted all the control surfaces to their neutral positions, the model will likely need to be "trimmed out". Once you have the plane in the air, immediately climb to a safe altitude. Many RC Pilots will tell you that a safe altitude is "three mistakes high". Reduce throttle to half. Put the plane on a straight and level trajectory. While trimming, hold your transmitter up high near eye level; this will make it easier to see your plane and your trim settings at the same time. The goal of trimming the plane is to adjust it so it will maintain straight and level flight with no control inputs. For example, if the plane climbs, add down elevator trim. If it dives, add up trim. You may also need to adjust rudder trim (and aileron trim if applicable). Make as many passes as necessary, putting the plane on a straight and level trajectory and making required trim corrections until the plane flies straight and level.

Monitor and limit your flight time using a timer (in your transmitter if available, or a wrist watch). To avoid a dead-stick landing on your first flight, conservatively set the timer to four minutes. When you hear the alarm, land your plane as soon as possible.

## Routine Maintenance

Store Li-Po batteries at room temperature in a dry environment in a fire proof container. Periodically check the cell voltage. Do not let the voltage drop below the manufacturer's recommended minimum storage voltage (typically around 3.3V per cell).

Repairs to foam should be made with foam safe adhesives such as hot glue, foam safe CA, and 5 min epoxy.

# Troubleshooting

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.
Excessive propeller noise or extra vibration.	Damaged spinner or propeller. Motor is not mounted. Loose propeller and spinner parts. Propeller installed backwards.	Replaced damaged parts. Tighten parts for propeller adapter, propeller and spinner.
Reduced flight time or aircraft underpowered.	Flight battery charge is low. Propeller installed backward. Flight battery damaged.	Remove and install propeller correctly. Completely recharge flight battery. Remove and install propeller correctly. Replace flight battery and obey flight battery instructions.
Control surface does not move, or is slow to respond to control inputs.	Control surface, control horn, linkage or servo damaged or disconnected or loose.	Replace or repair damaged parts and adjust controls. Do a check of connections for loose wiring.
Control is reversed.	Channels need to be reversed in the transmitter.	Do the Control Direction Test and adjust controls for aircraft and transmitter.
Motor loses power. Motor pulses then motor loses power.	Damage to motor or battery. Loss of power to aircraft. ESC uses default of 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**

MR101-YEL Fuselage

MR102-YEL Main wing set

MR103-YEL Horizontal Stabilizer(one elevator)

MR104-YEL Stay Bar(one set)

MR105- Propeller

MR106- Canopy

MR107- Screws(one set)

MR204-YEL Landing gear set

MR301-YEL Sticker

MR302-YEL Motor Mount

MR303-YEL Cowl

MR304 Motor Board

MR305 Propeller Nut

FMSSER9GP Servo

FMS-Motor-KV1300 Brushless Motor

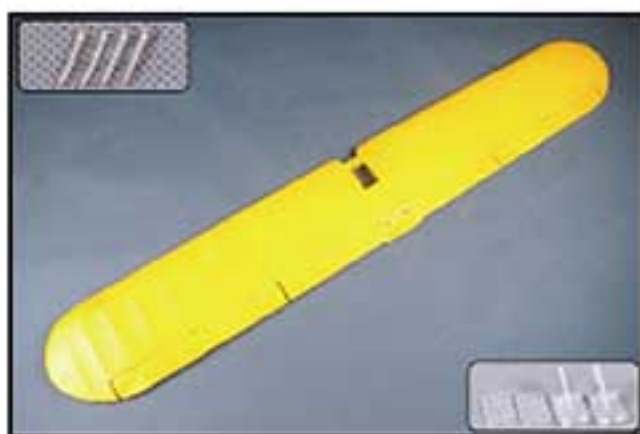
FMS-ESC-20A Brushless ESC

Note:All of the parts are painted with no decal applied.

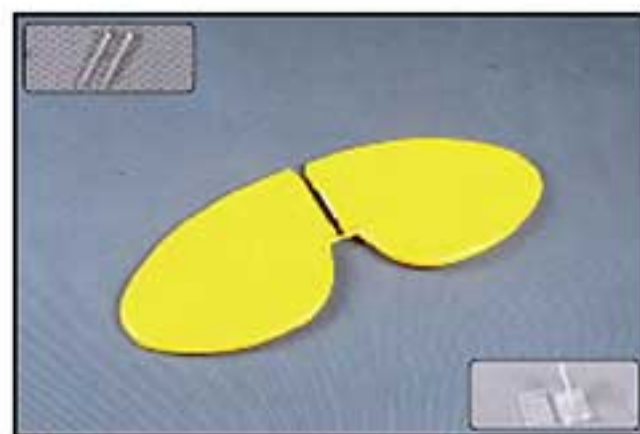
# Spare parts list content



MR101-YEL



MR102-YEL



MR103-YEL



MR104YEL



MR105



MR106



MR107



MR204-YEL



MR301-YEL



MR302-YEL



MR303-YEL



MR304



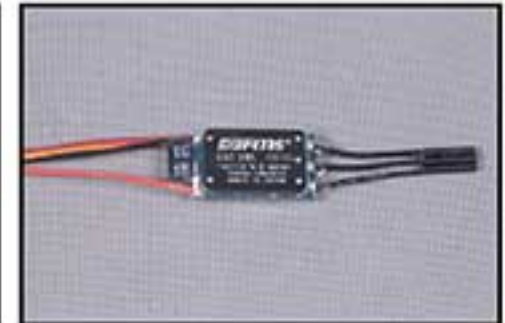
MR305



FMSSER9GP



FMS-Motor-KV1300



FMS-ESC-20A

## Customer Support and Spare Parts Contact Information

### FMS Team Product Support

3/F, Building B, 3<sup>rd</sup> Industry Zone, Matigang, Dalingshan Town,  
Dongguan City, P.R.C.

Phone: 0086-769-86976655

Email: [info@fmsmodel.com](mailto:info@fmsmodel.com)

## Charging the Flight Battery

The Battery Charger is designed to safely charge the Li-Po battery,

**Caution:** All instructions and warnings must be followed exactly. Mishandling of Li-Po batteries can result in fire, personal injury, or property damage.

### Battery warning:

- ◆ By handling, charging or using the included 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! Charging or discharging a swelling or ballooning battery can result in fire.
- ◆ 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 40-120°F. Do not store 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. Failure to charge the battery with a compatible charger may cause fire resulting in personal injury and property damage.
- ◆ Never discharge Li-Po cells to below 3V.
- ◆ Never leave charging batteries unattended.
- ◆ Never charge damaged batteries.

### Charging the flight battery

When charging the battery, make certain the battery is on a heat-resistant surface, charge the battery before assembly of the airplane. Install the fully charged battery to perform control tests and binding.



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