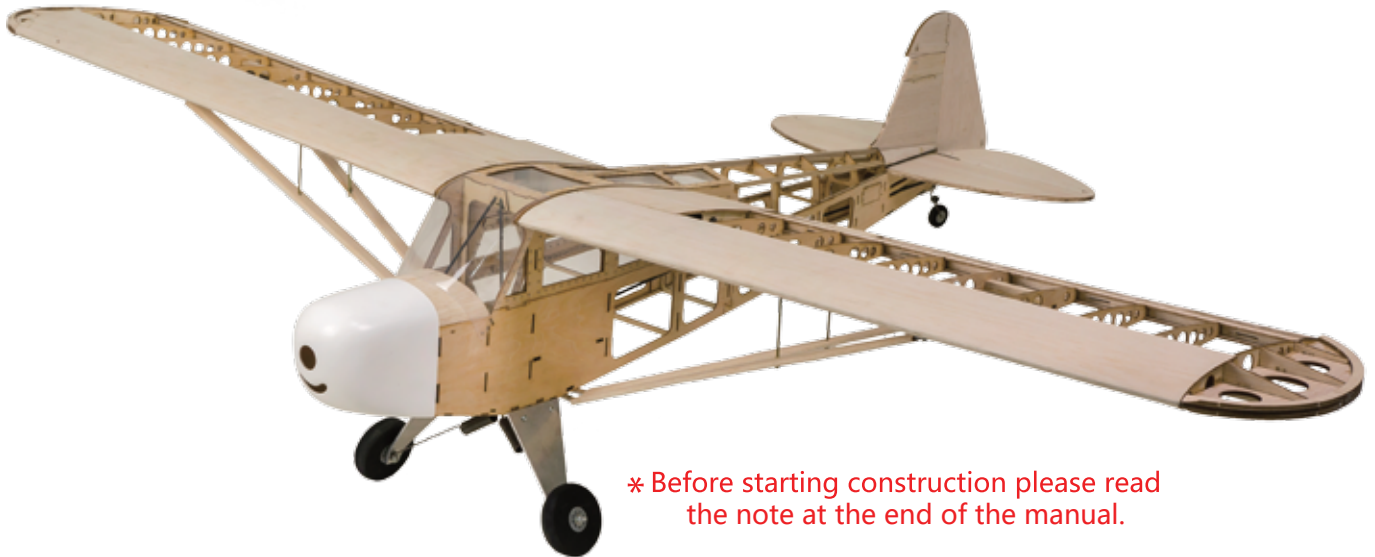


### Instruction Manual



\* Before starting construction please read the note at the end of the manual.

#### Historical Background

The Piper J-3 Cub is an American light aircraft that was built between 1937 and 1947 by Piper Aircraft. The aircraft has a simple, lightweight design which gives it good low-speed handling properties and short-field performance.

The Piper J-3 Cub was the most popular commercial aircraft of the 1930's. Barely seven yards long and instantly recognizable in its yellow-and-black paint scheme, Nearly twice that number of the classic airplane were purchased by the military services during World War II, when Cubs were used for training, liaison, medical-evacuation, observation, and many other tasks, and many of these beloved airplanes are still around today.

#### Specification

Wingspan: 1800mm  
Fuselage Length: 1150mm  
Flying Weight: ≈2.8kg

#### Suggested Equipment

Electric Motor Recommendations:

Suggested Motor: 3520 600KV  
Suggested Propeller: 11-12inch  
Suggested ESC: 60-80A  
Suggested Servo: 37gx4pcs Suggested  
Battery: 4-6S 3000-6000mAh Radio: 4CH  
or more

I.C. Engine Recommendations:

2-stroke 46-55 class Glowplug  
4-stroke 60-70 class Glowplug  
2-stroke 9cc-10cc Gasoline

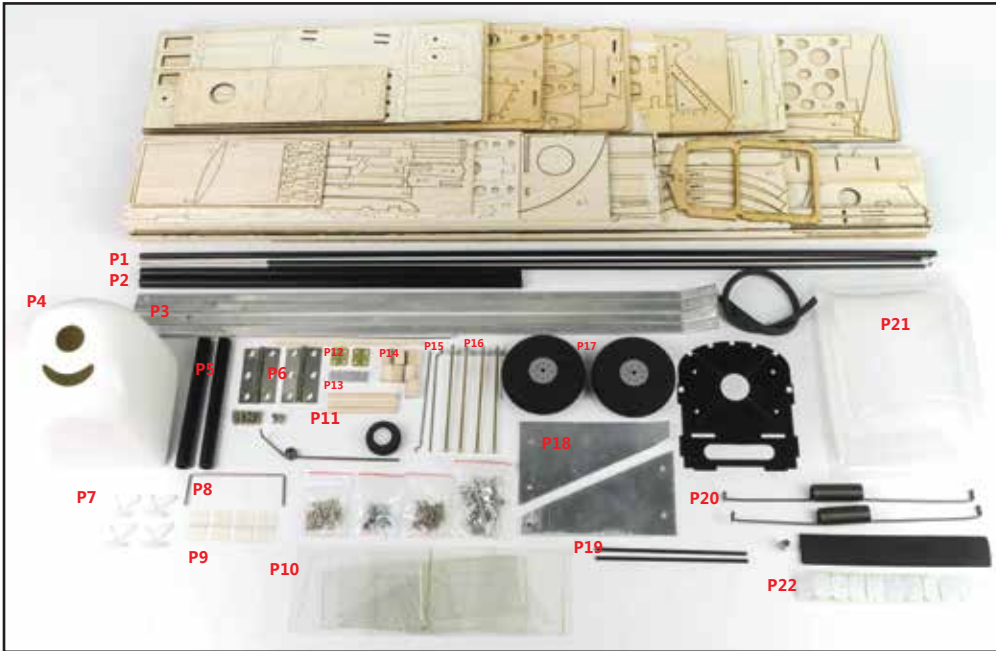
## SAFETY PRECAUTIONS

- **This product should not be considered a toy, but rather a complicated and sophisticated flying model. Your safety depends on how you use and fly it, if not correctly operated it could cause injury to you or your family members. Children must be accompanied by an adult at all times if operating this product. Not suitable for children under the age of 14. THIS IS NOT A TOY.**
- Do not fly around some restricted locations like airports, military bases, residential areas, etc.
- You will need to range check the transmitter to be sure you are not experiencing any interference problems.
- Always turn on the receiver last after turning on the transmitter and shut off the receiver first before turning off the transmitter.
- If you are only a beginner to the radio control model flying, do not attempt to fly your model without any assistance or advice from an experienced RC model pilot.
- Keep relevant items out of reach of children.
- This product has been flight tested to meet or exceed our rigid performance and reliability standards in normal use, if you plan to perform any high-stress flying you are solely responsible for taking any and all necessary steps to control movement range and reinforce the structural strength where necessary.
- This product may include some fiberglass and carbon-fiber reinforced plastic parts, which may cause eye and skin discomfort, please wear goggles or dust-proof clothes when needed.
- Due to air traffic safety control you may not receive the glue that appears in the list. Please understand and purchase this separately.

## PRE-FLIGHT CHECKS

- Check all servos and control surfaces are set at neutral, check that all controls operate in the correct direction.
- Check that the motor starts and rotates in the correct direction, apply a small amount of power and check that the model pulls forward.
- Check that the C of G is correct as shown in the manual. Add weight to the nose or tail to achieve the correct balance.
- Check that all the pushrods from the servos to the control surfaces are secure. Check the heat-shrink covering is secure and wrinkle free, make certain all screws and bolts are tight.
- Take great care when connecting/disconnecting the battery, recharge/store the battery according to your battery manufacturers instructions.
- This model uses a servo for each aileron and one each for rudder and elevator. A simple 4ch transmitter can be used with a Y lead for the ailerons or you can use a more sophisticated computer radio with mixing etc.
- When the power system and transmitter-receiver device are set up and used for the first time you may need to set the throttle range of the ESC. Please refer to the ESC manufacturers instruction leaflet on how to set this.

**KIT**

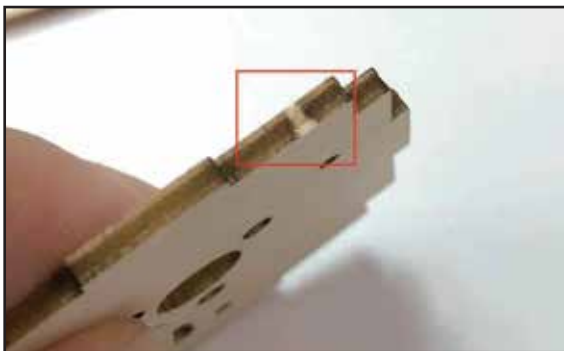


**Tools required**



Photos shown here are just for reference, the product you receive maybe differ slightly from the photos due to continuous improvement of our products.

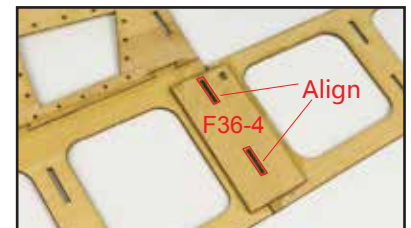
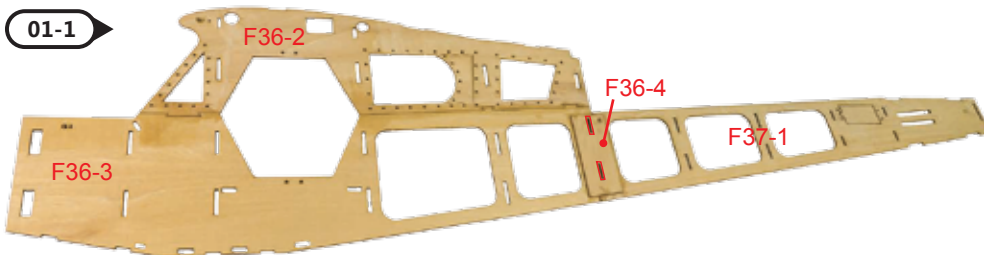
**How to Assemble**



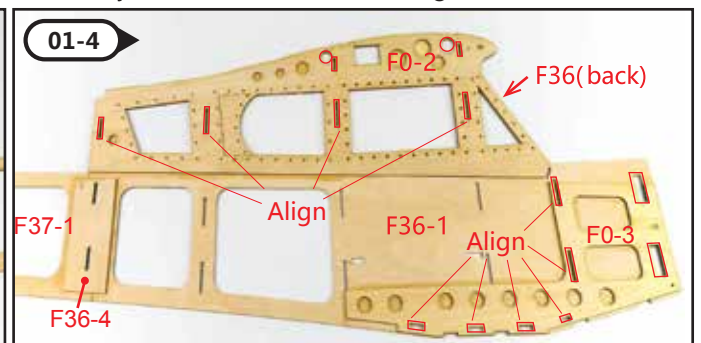
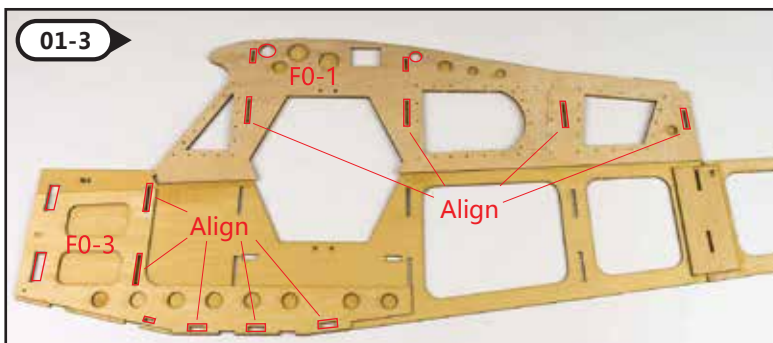
Remove the parts from the wood sheets using a modelling knife. Use a good quality white glue adhesive for the main joints, a fast setting CA can be used to hold parts in place whilst the white glue sets to speed up construction.

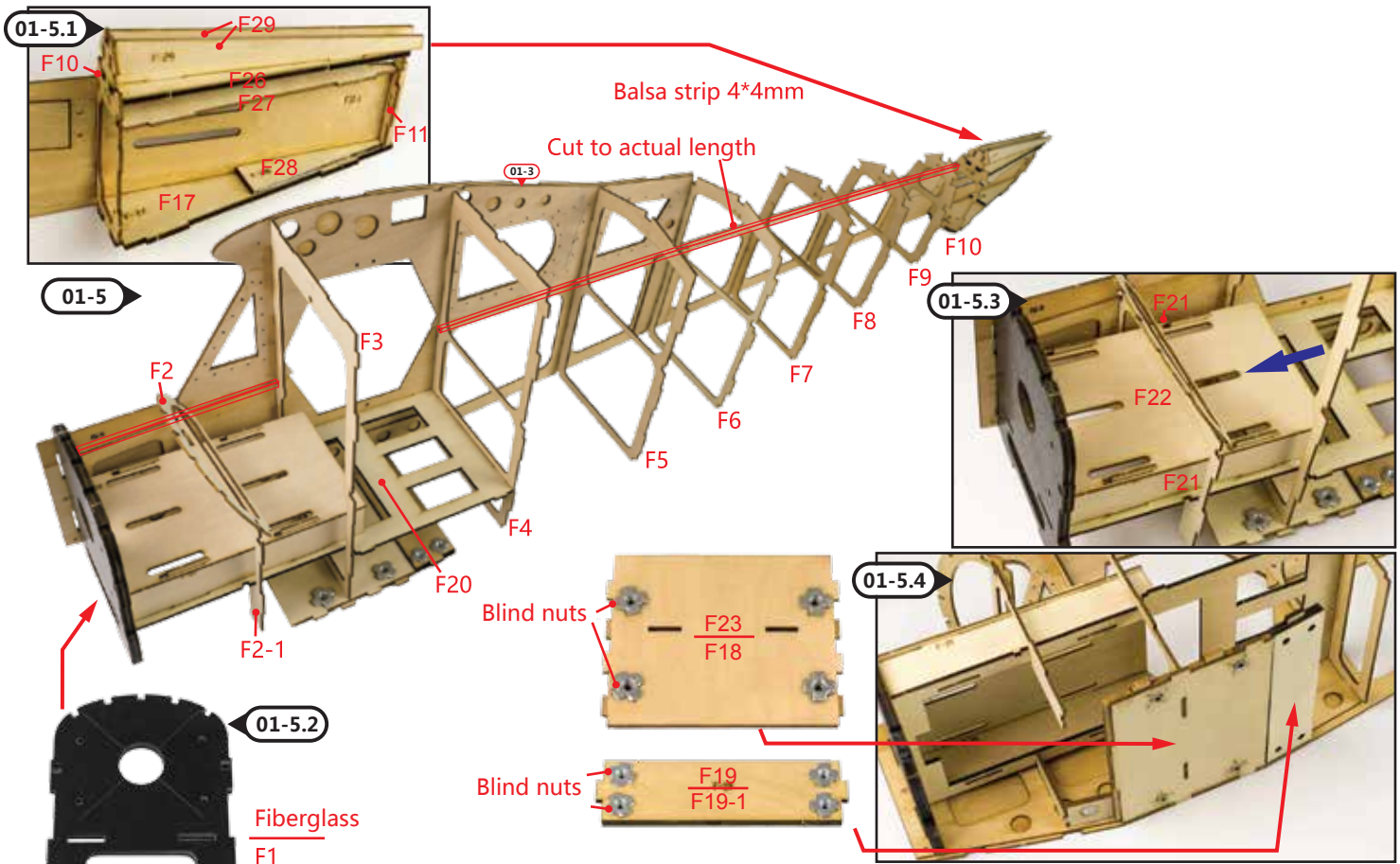
Please sand all parts before assembly.

**01 Assemble the Fuselage**



Assembly details on the other fuselage side

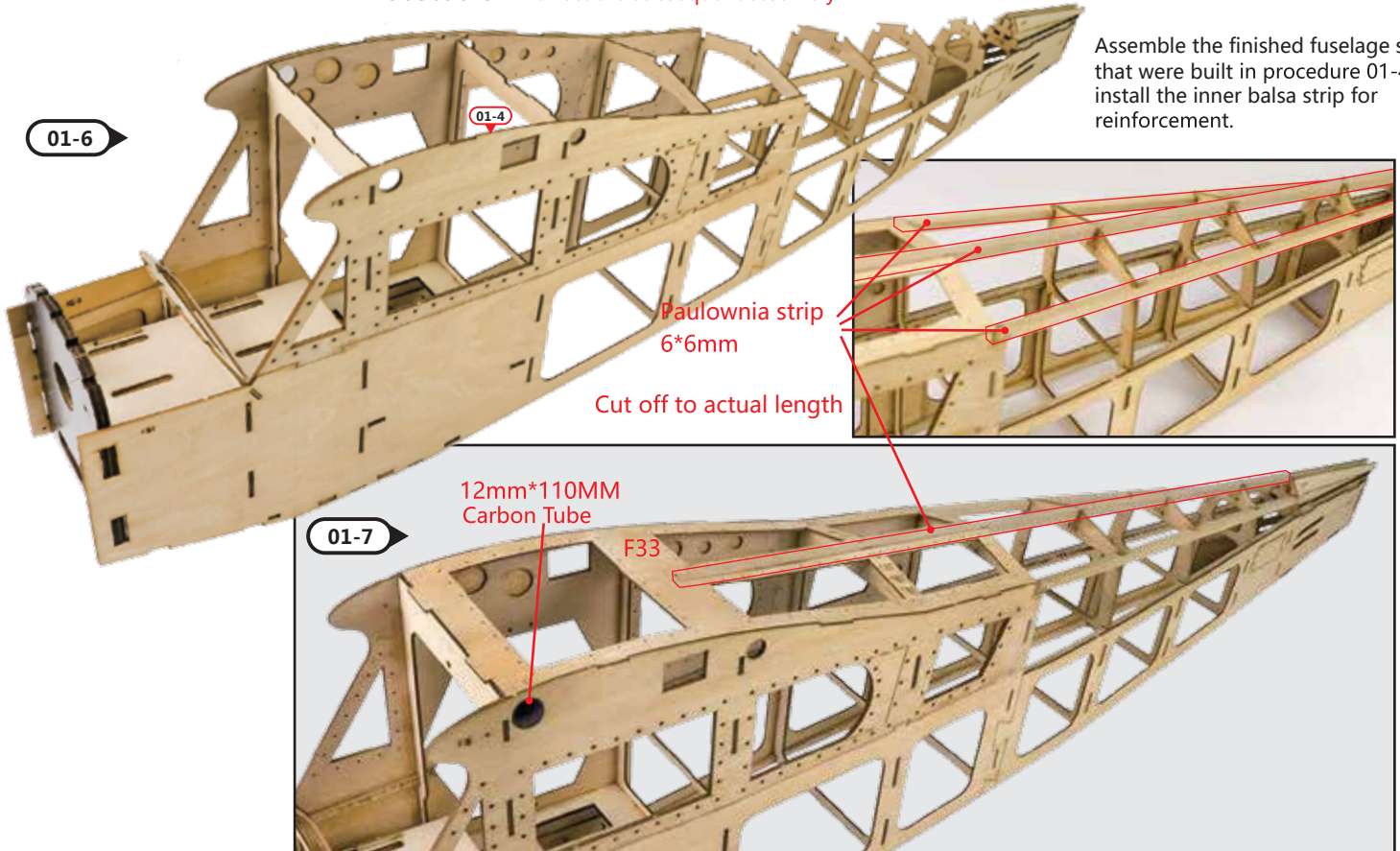


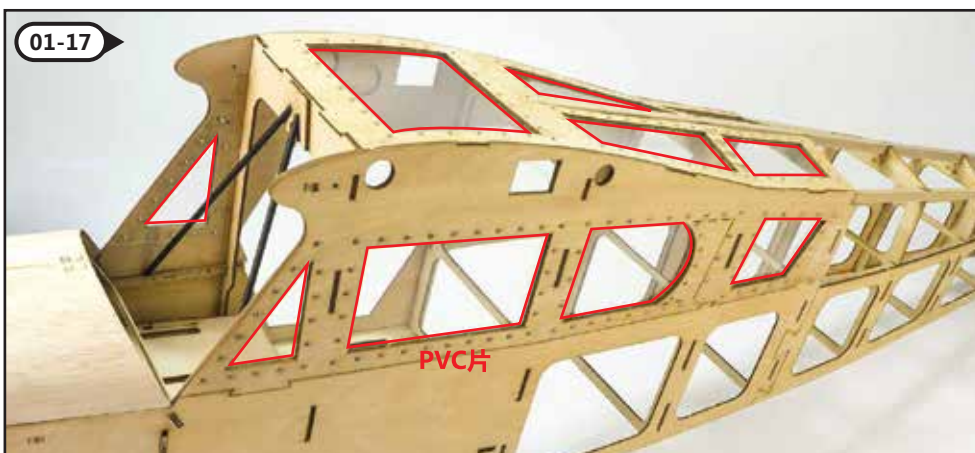
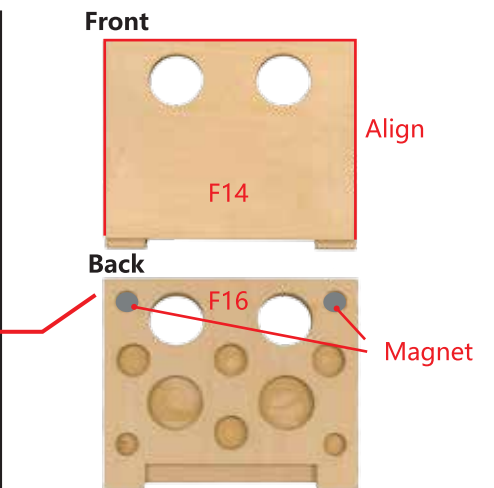
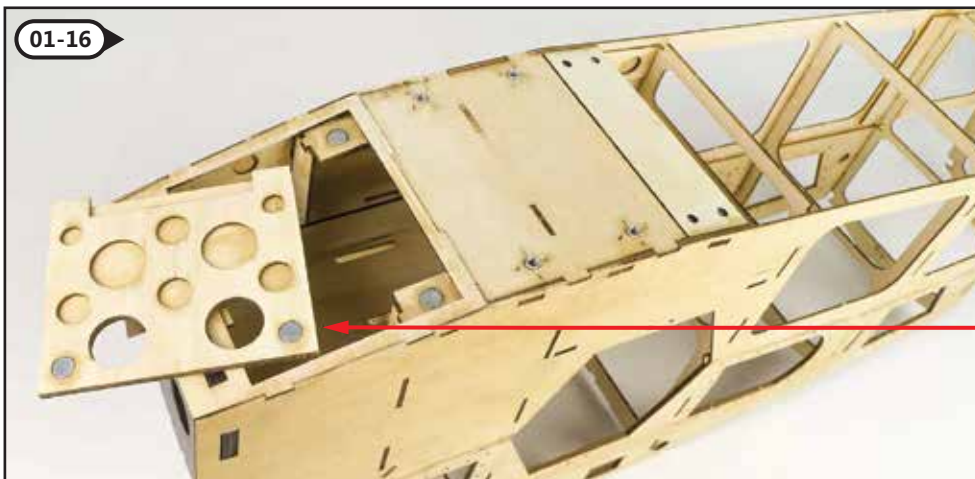
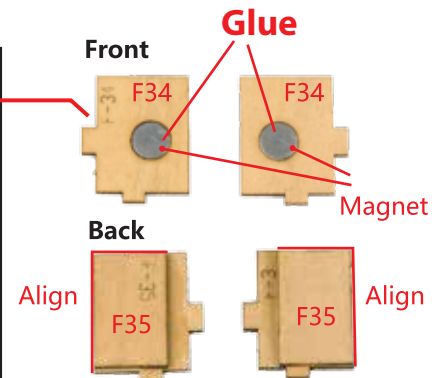
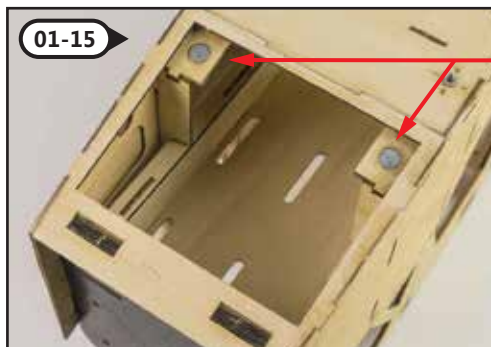
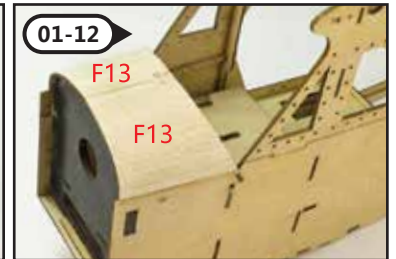
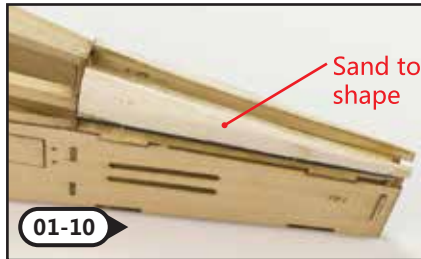
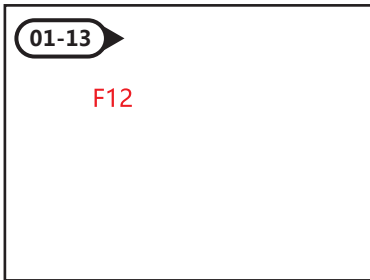
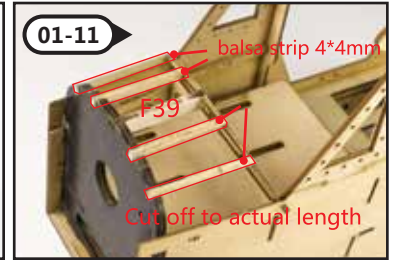
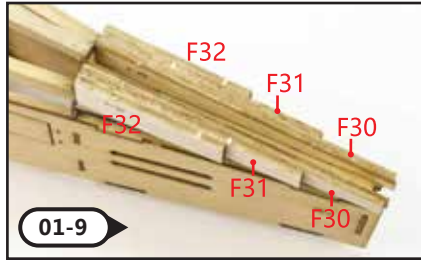
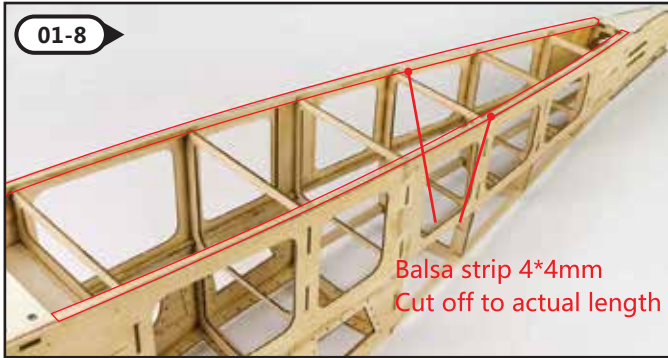


Note: Here the blind nut is installed as shown in the picture, please do not install it on the wrong side as this will affect the subsequent assembly.

Please make sure the blind nut faces into the fuselage when installing.

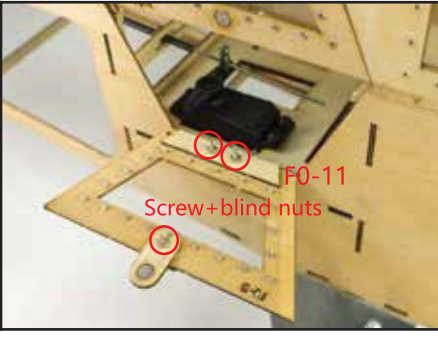
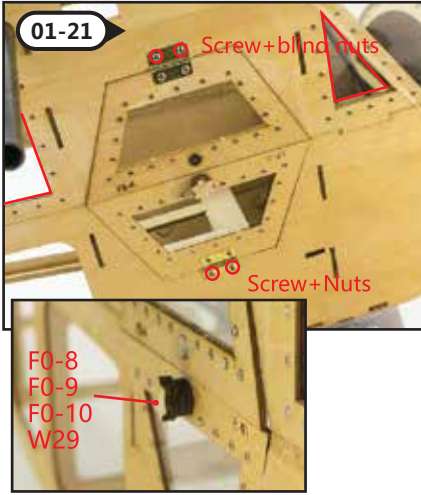
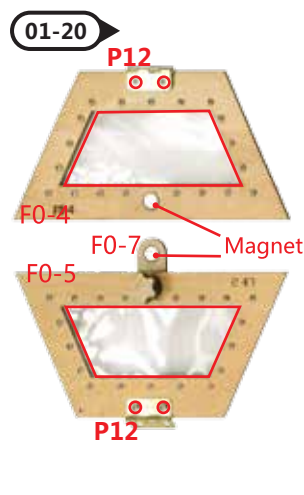
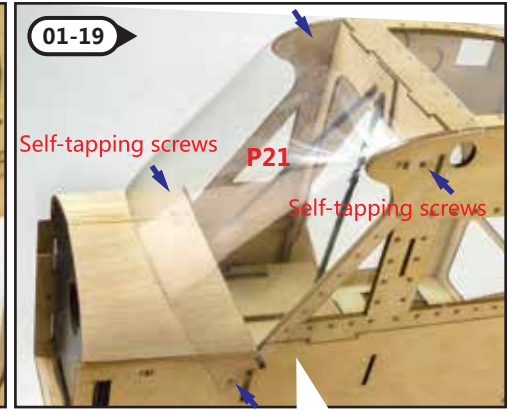
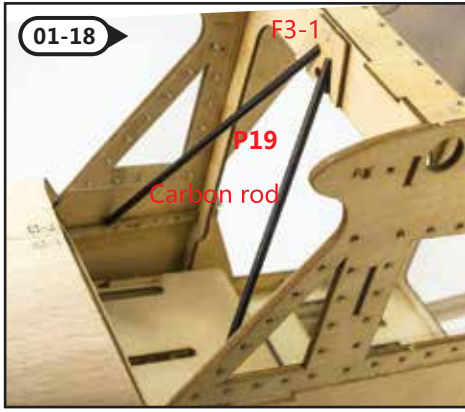
Assemble the finished fuselage sides that were built in procedure 01-4, install the inner balsa strip for reinforcement.





The clear PVC windows have been pre-drilled and attach to the inside of the fuselage cabin components. Attach the windows with the screws provided as shown. See note at end of manual as it would be best to cover the model before the windows are fitted.

PVC window and screws installation details.

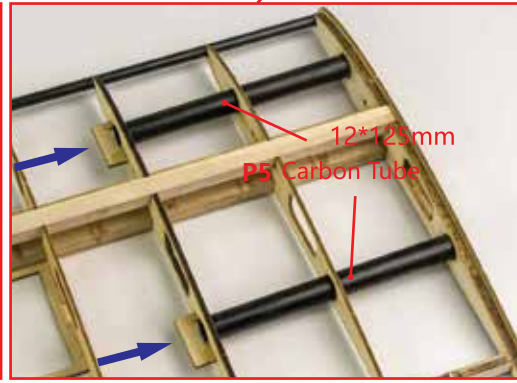
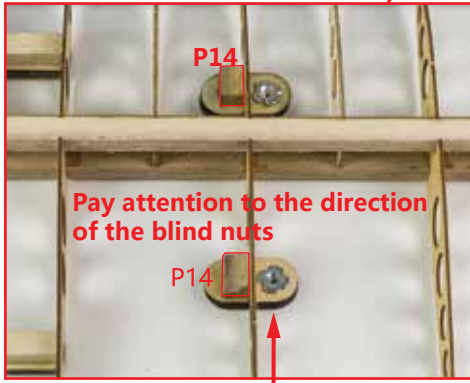
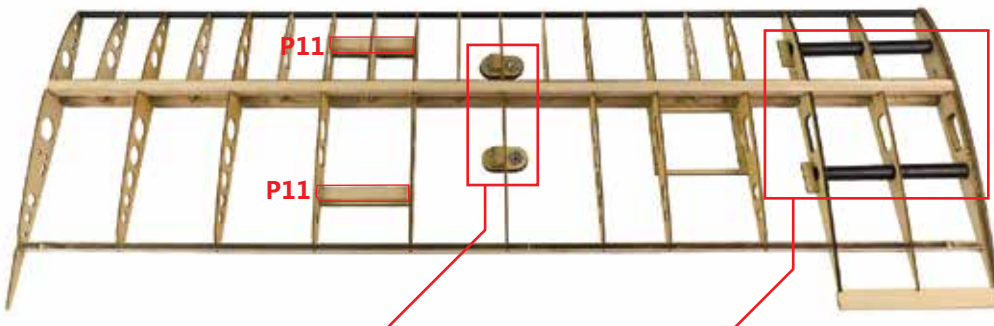


Trim the PVC windshield to fit as shown. After trimming install the windshield to the fuselage with self-tapping screws. See note at end of manual.

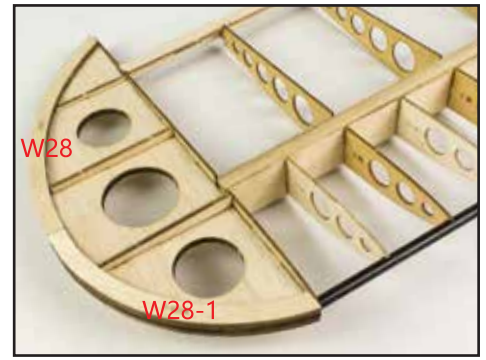
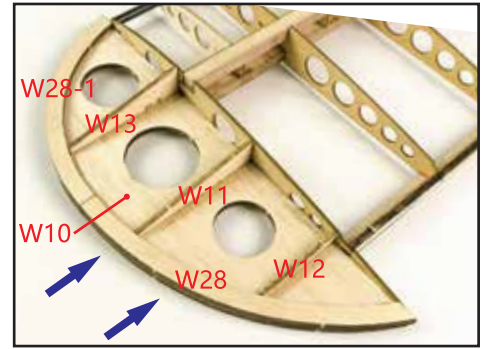
## 02 Assemble the Main Wing

The wing is assembled as per the 1:1 drawing. Build the assembly on a flat surface to ensure it is built flat and without warps. See below for some details.

### Detail#1 Main wing panel completed



### Detail#2 Assemble the wing tips



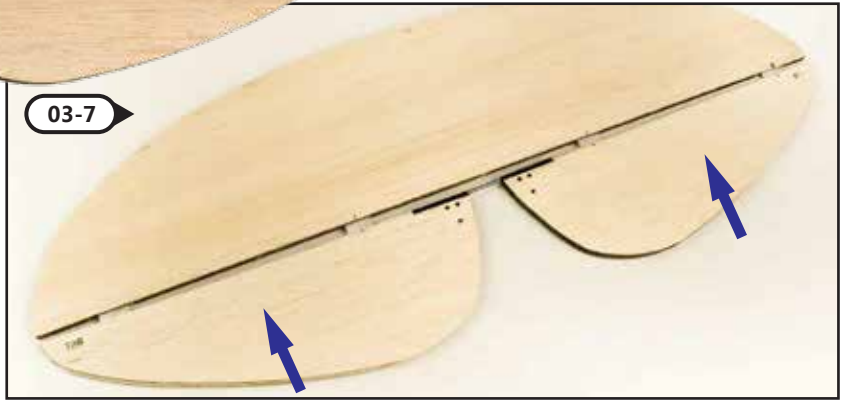




03-6

Use a modelling knife to cut a small groove in the elevator in the positions shown. Insert the mylar hinges and fix with a small amount of CA glue. (As shown above)

Align the elevator with the horizontal stabilizer and mark the hinge positions onto the stabilizer. Cut the grooves in the stabilizer for the hinges and check the fit. **See the note at the end of the manual as final hinging is best done after applying the covering.**



03-7

After the wing and fuselage assemblies are complete give them all a light sand. Then cover with a covering film of your choice all the individual components as per the note at the end of the manual before final assembly.

## 04 Assemble the horizontal and vertical stabilizer and tail wheel to the fuselage



04-1

Insert the elevator into the rear of the fuselage as shown and glue the elevator joining rod into position.



04-2

**Horizontal stabilizer**

Insert the horizontal stabilizer through the slot in the rear of the fuselage. Check the alignment then glue into place. Glue the elevator hinges into the stabilizer. Ensure you leave a small gap so that the elevator moves freely.



04-3

**P13**

Slide a wheel collar onto the tailwheel wire then feed the wire through the aluminum bracket P13.

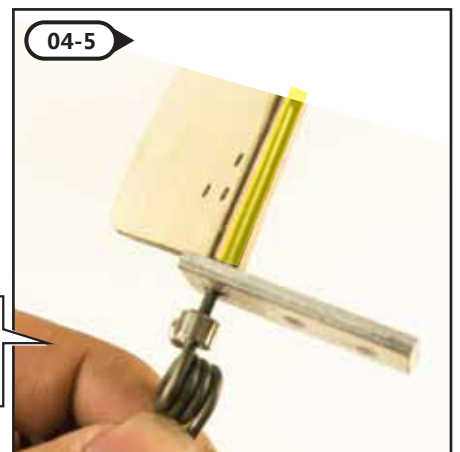
04-4

Bend the steel wire through 90° with pliers as shown. Install the tailwheel and secure with a wheel collar.

wheel collar

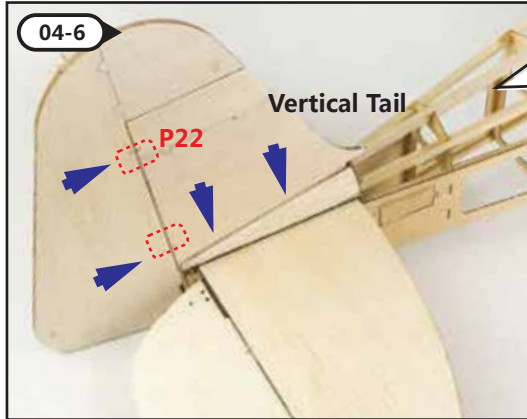


Securely glue the 90° bent wire into the bottom of the rudder as shown.



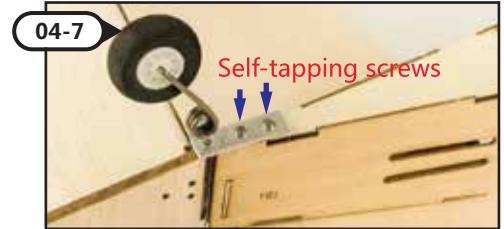
04-5



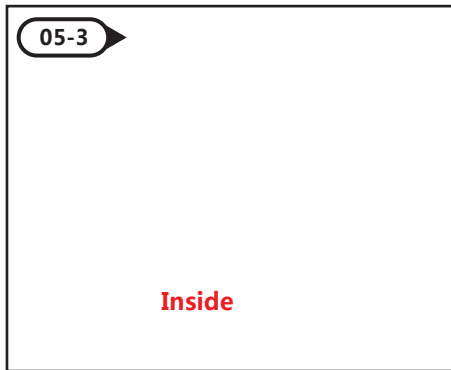
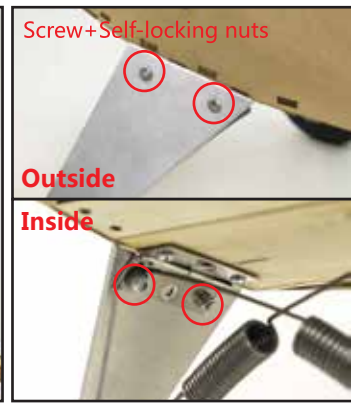
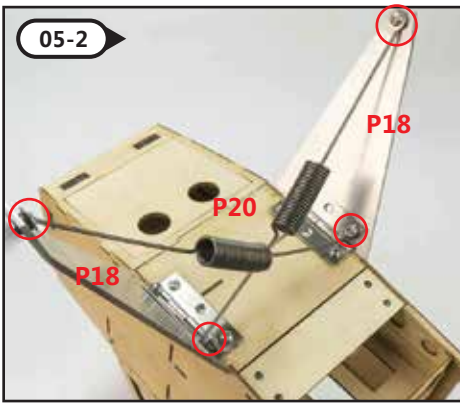
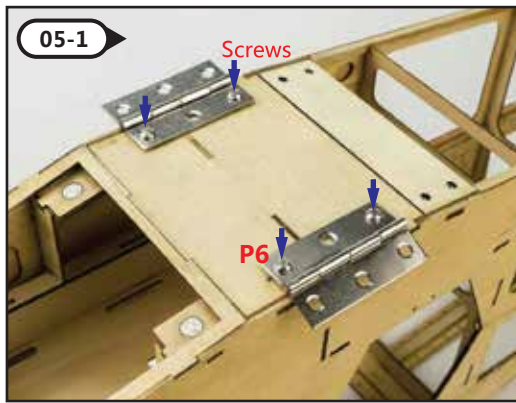


Insert the vertical stabilizer into the rear of the fuselage, ensure it is perpendicular to the fuselage, glue into place using either CA or epoxy.

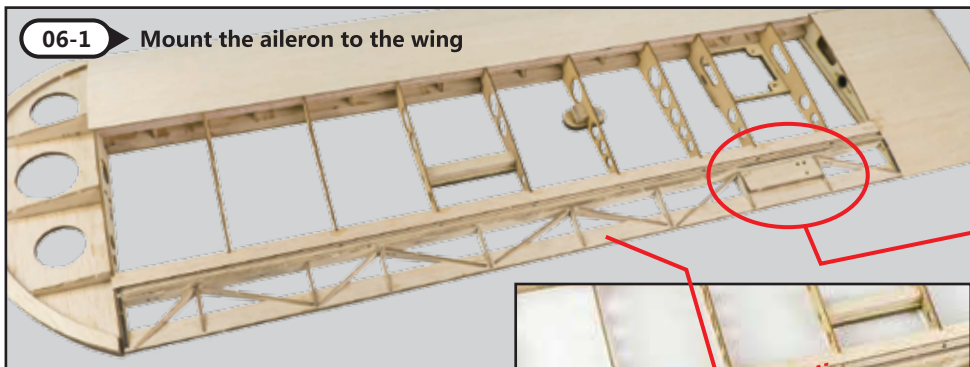
Hinge the rudder in the same way as the elevator. Then fit the rudder to the vertical stabilizer, ensure you leave a small gap to allow the rudder to move freely. Once again see the note at the end of the manual.



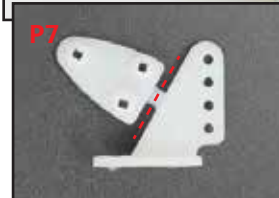
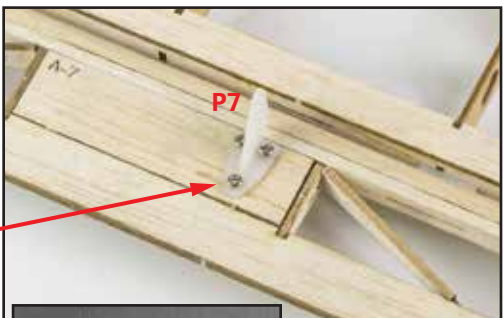
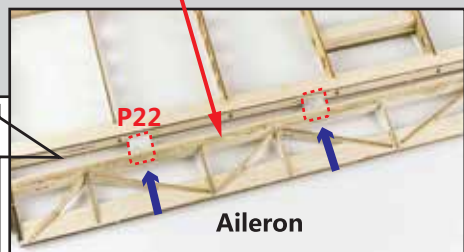
## 05 Assemble the Landing Gear



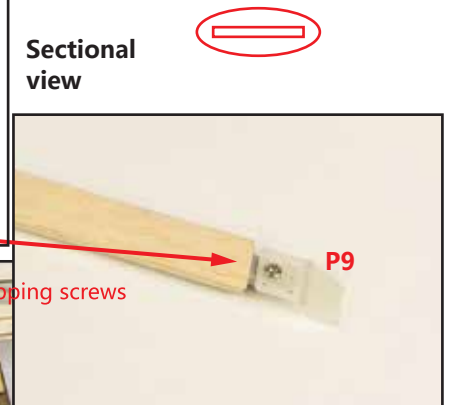
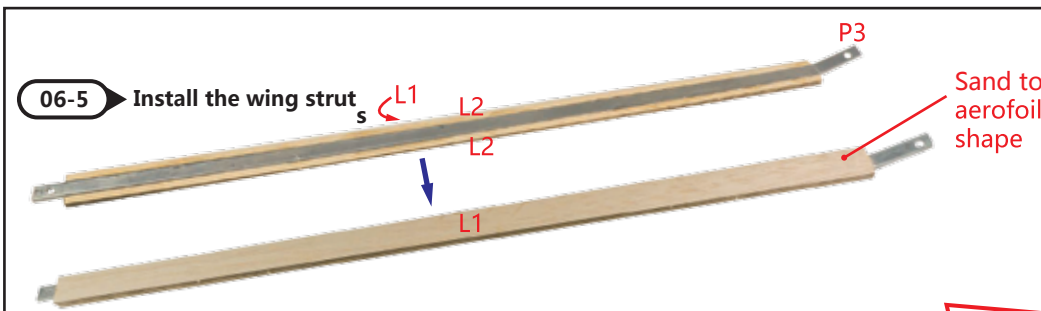
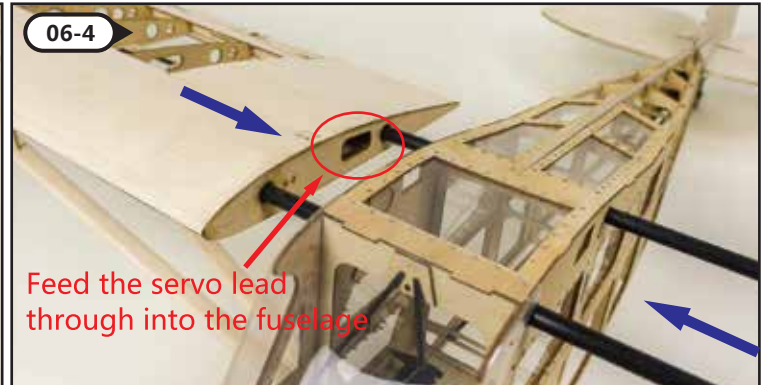
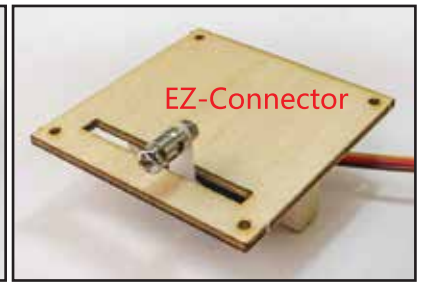
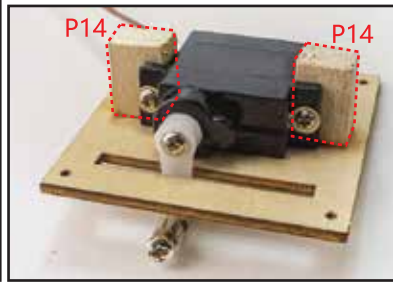
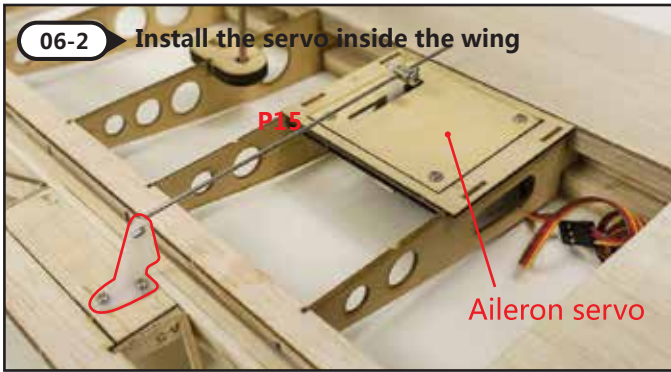
## 06 Mount the wing to the fuselage



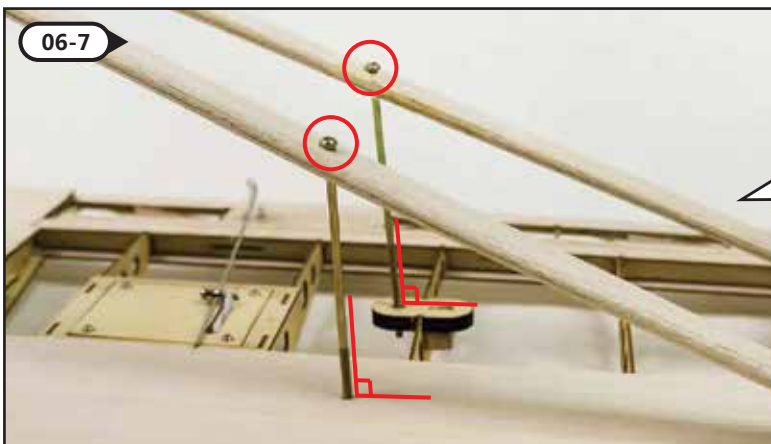
Fit the hinges into the ailerons and to the wing as you did the rudder and elevator. Ensure you leave a small gap to allow them to move freely. See note at end of manual.



Use a modelling knife to separate the horn components.



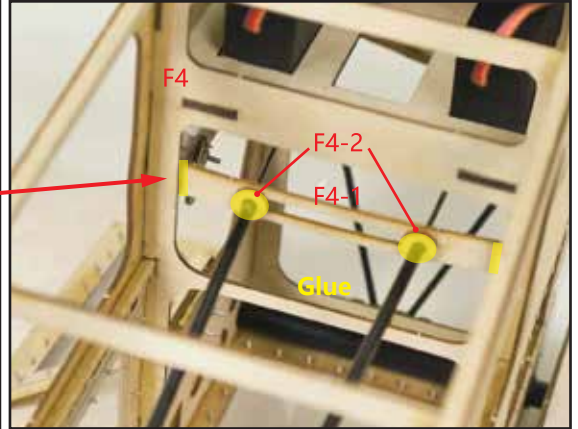
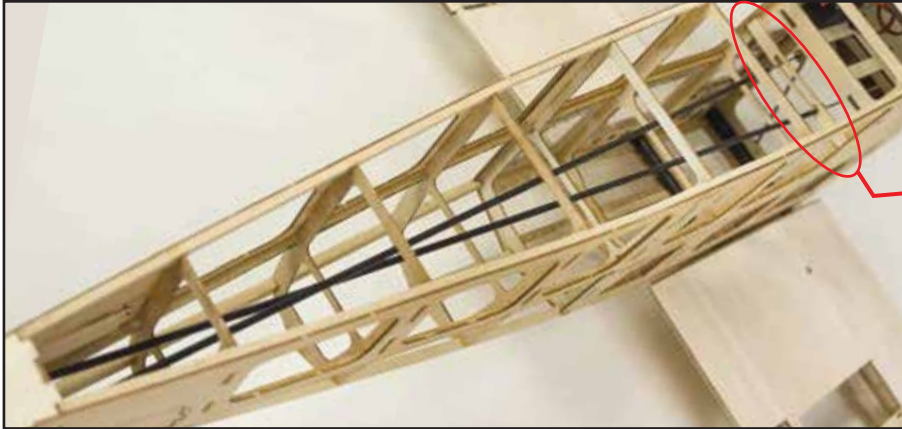
When fixing the front strut press the wing gently with your fingers to find the embedded hardwood block. Screw the self-tapping screws into the hardwood block.



Install the intermediate wing brace as shown in the picture. When installing the threaded brace first carefully mark where the 2mm hole needs to be drilled in the diagonal strut, ensure this is directly inline with the blind nuts in the wing. Drill the holes then pass the threaded brace through the diagonal strut and screw into the blind nuts.

# 07 Install servos and pushrods inside the fuselage

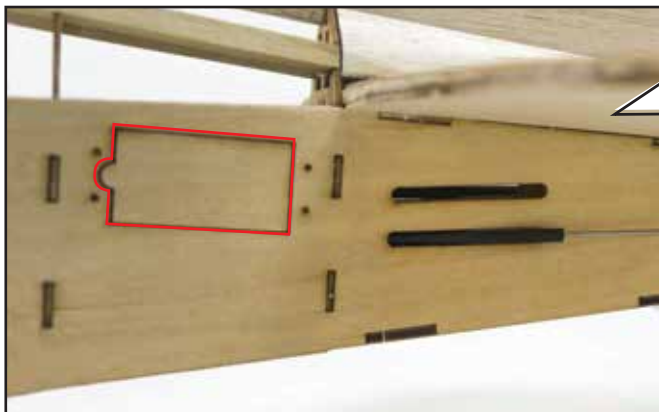
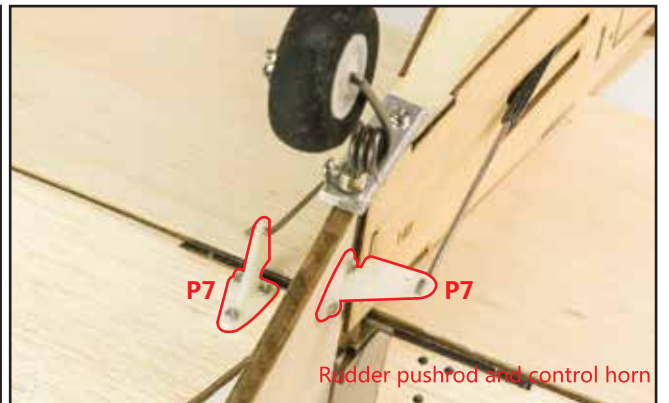
The elevator and rudder pushrods are wire inside a fiberglass tube. The elevator pushrod starts on the left side of the servo bay and exits the rear of the fuselage on the right. The rudder pushrod does the opposite.



Note: The bracket F4-1 is glued into place after the steel wire rod and the servo arms are connected and fixed.

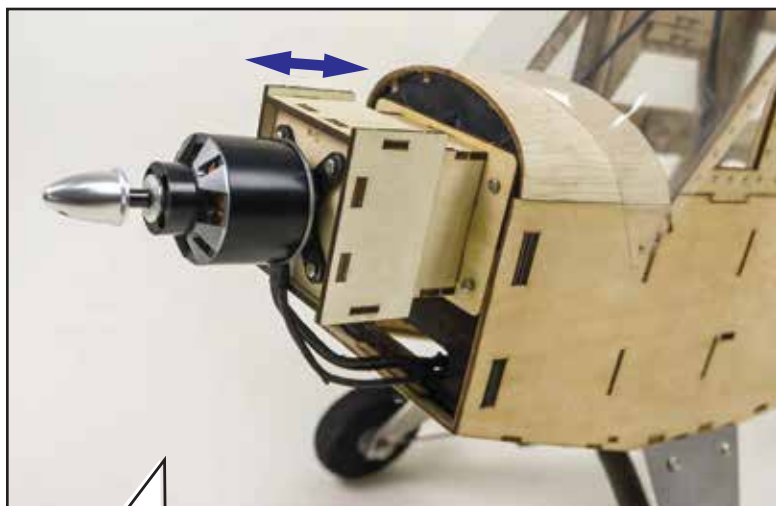
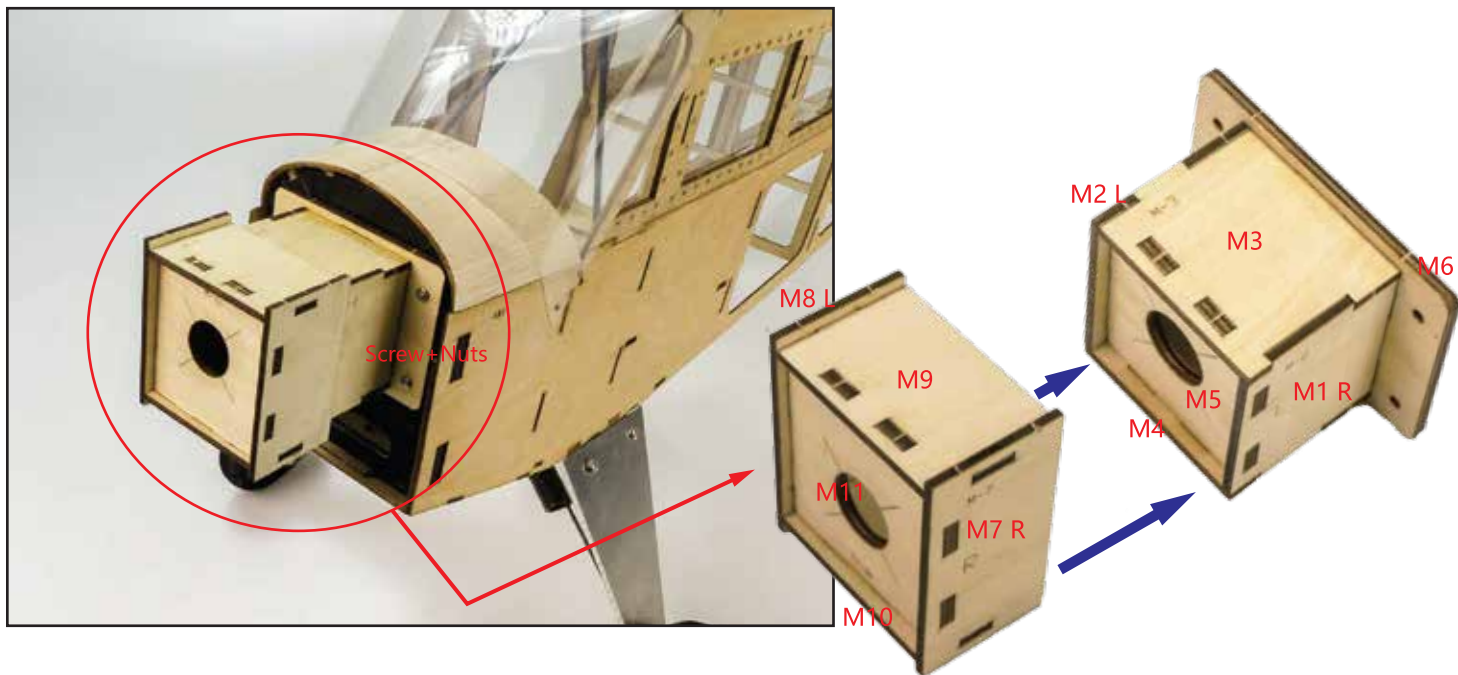


\* If fitting an I.C. motor then see the steps below for a different servo arrangement.

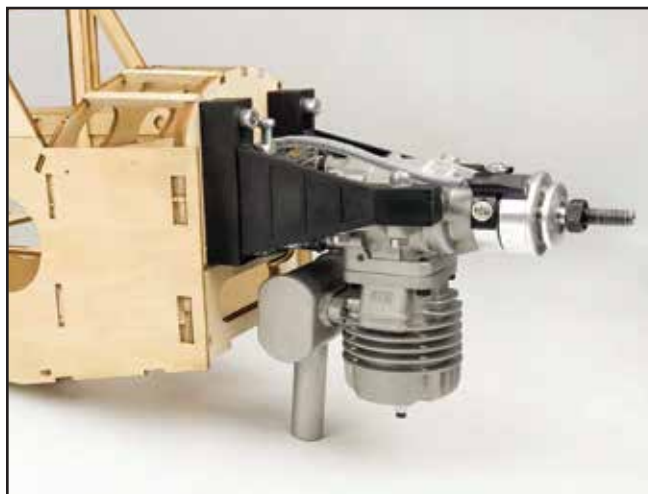


Optional rear servo mounting slots.  
 If you plan to use an I.C. engine then we recommend that you mount the elevator and rudder servos in the slots at the rear of the fuselage. This helps with the C of G of the model.

## 08 Install the motor mount and electric/IC motor



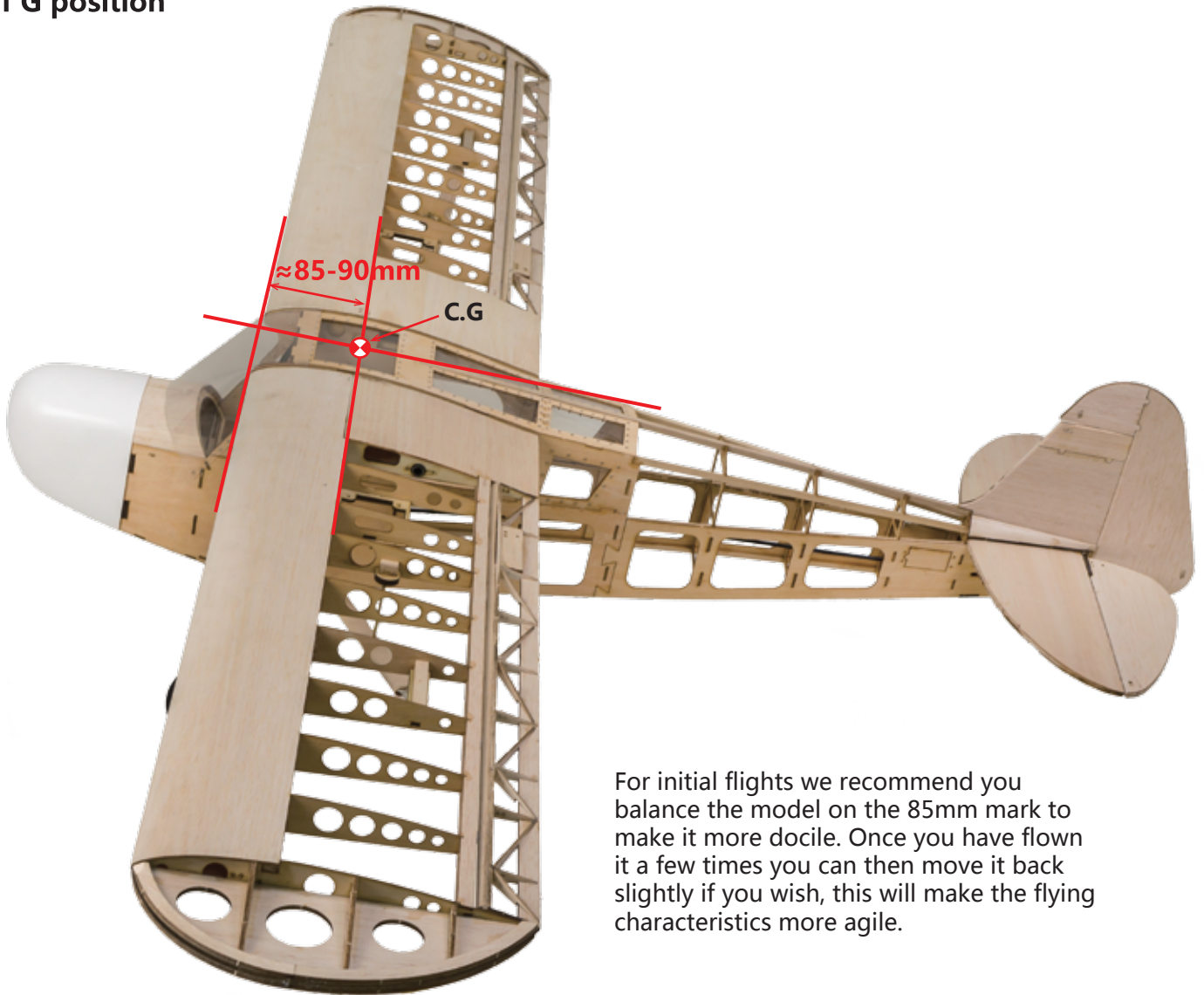
The motor mounting box is adjustable fore and aft to allow for different motors. Determine the length of your motor set up so that the prop driver clears the front of the cowl. Once set glue the motor box into position with CA or epoxy glue.



This model is designed for an electric motor. If you wish to install an I.C. engine then the installation needs certain modification and reinforcement. You will need to modify the airframe yourself.

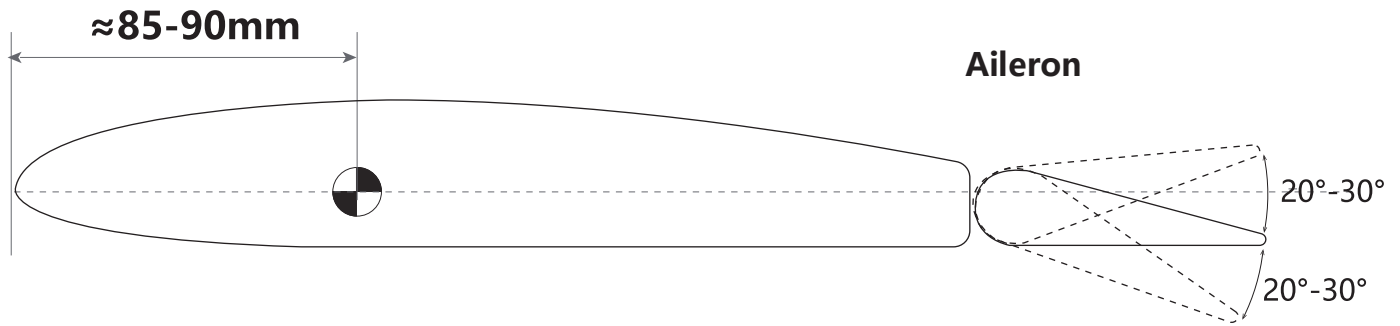
## 09 Set and Adjust

### C of G position

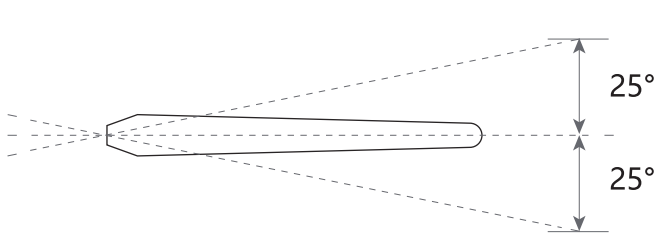


For initial flights we recommend you balance the model on the 85mm mark to make it more docile. Once you have flown it a few times you can then move it back slightly if you wish, this will make the flying characteristics more agile.

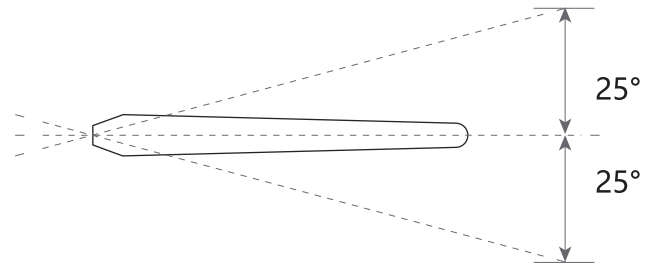
## C of G:



## Suggested control throws:



**Elevator**



**Rudder**

(Normal Flying)

Aileron      $\pm$  (15°-30°)  
 Elevator     $\pm$ 15°  
 Rudder      $\pm$ 15°

(3D Flying only support some models)

$\pm$ 45° (or larger)  
 $\pm$ 45° (or larger)  
 $\pm$ 45° (or larger)

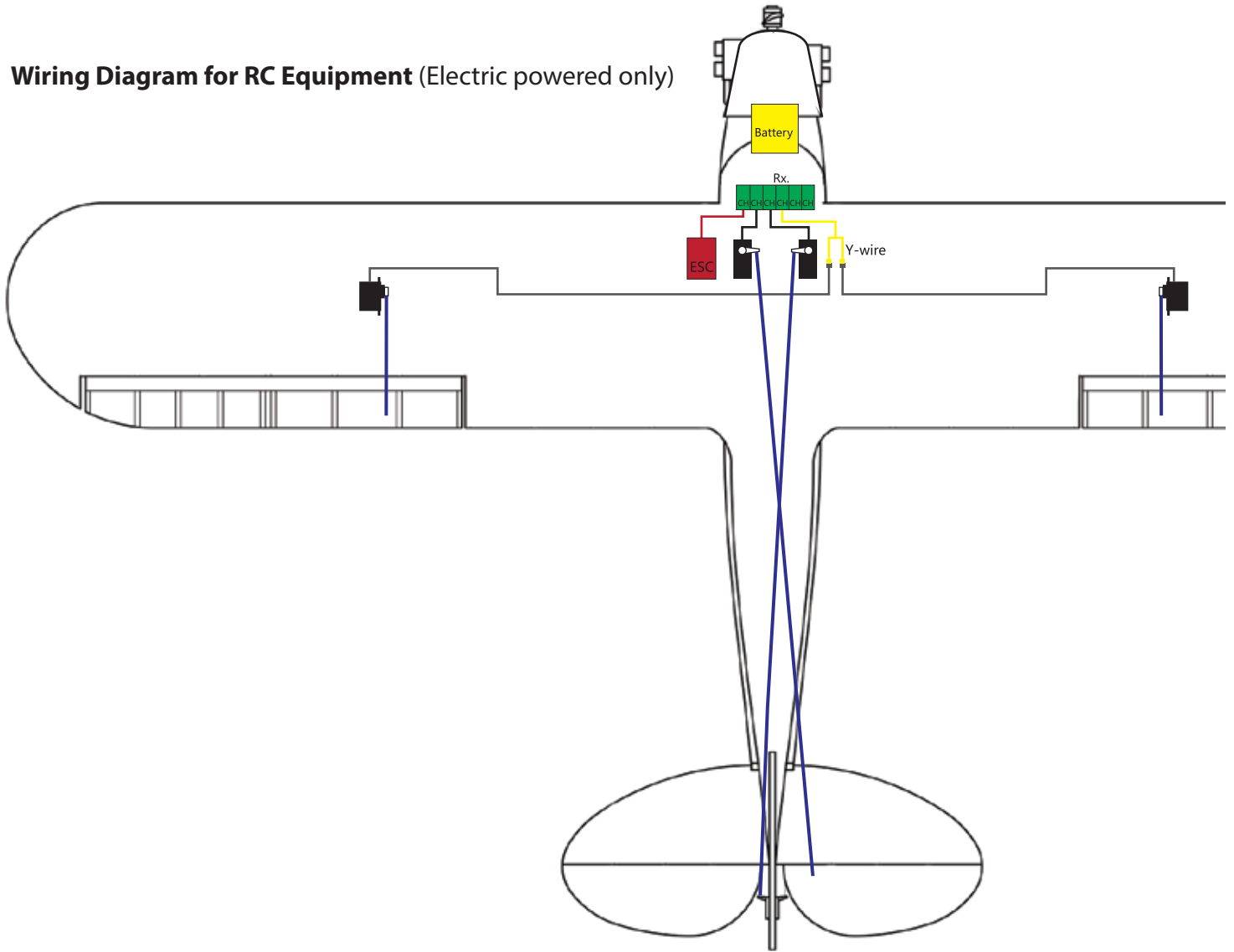
The above control deflections are for reference only. If you are inexperienced we recommend small deflections and also that you enlist the help of an experienced RC pilot.

## 10 Install the scale parts (OPTIONAL)

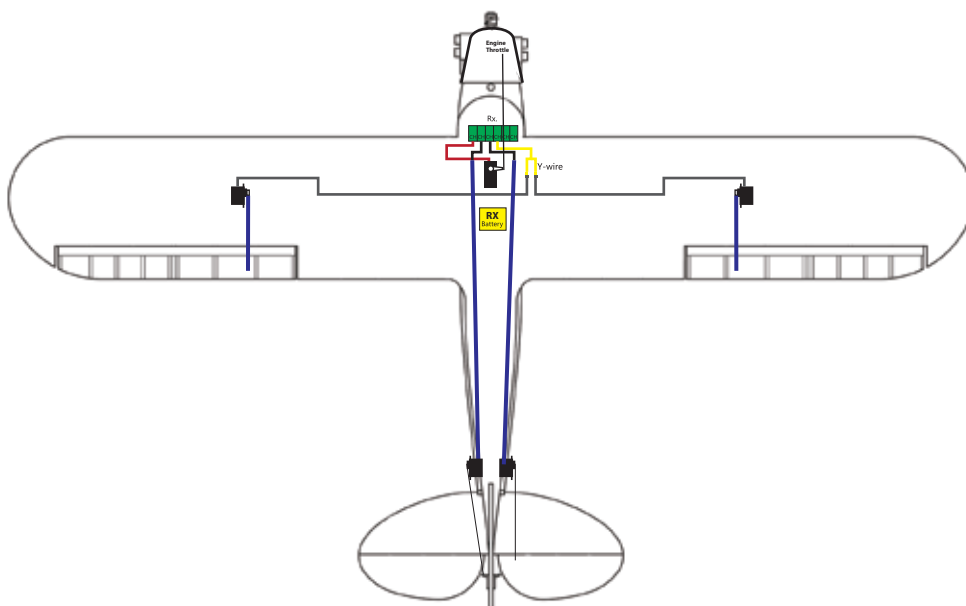
Install the scale engine parts



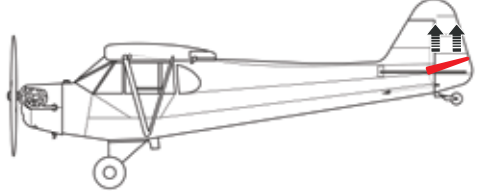
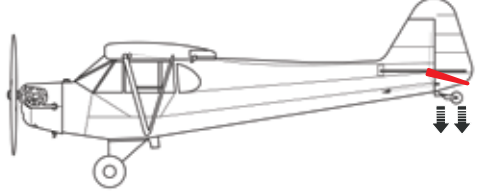


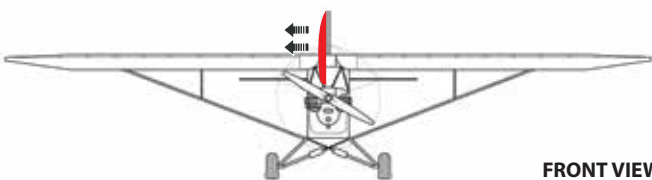
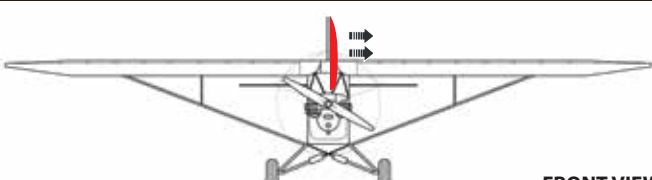
**Wiring Diagram for RC Equipment (Electric powered only)**



**Wiring Diagram for RC Equipment (IC Engine only)**



## Control Direction Tests

	Transmitter Command	Aircraft Reaction
<b>Elevator</b>	Elevator stick down	 SIDE VIEW
	Elevator stick up	 SIDE VIEW
<b>Aileron</b>	Aileron stick to the right	 FRONT VIEW
	Aileron stick to the left	 FRONT VIEW
<b>Rudder</b>	Rudder stick to the right	 FRONT VIEW
	Rudder stick to the left	 FRONT VIEW

**Note:**

This instruction manual shows the construction of the wooden airframe and the installation of the RC equipment. Prior to complete assembly we recommend that each component is covered separately first with the iron on covering of your choice. So this is before all the control surfaces are finally hinged, before the tail parts are glued in place etc etc. This will make the covering very much easier and will also help with the final assembly.