

Sky-Walker Pro Installation Manual

Thank you for purchasing the Sky-Walker Pro plane. The Sky-walker Pro is designed for First-Person-Vision (FPV) application specifically. Due to the high wing and push prop design, the on-board camera could have a perfect view without being blocked. The large fuselage compartment design provides convenience to contain almost any hobby FPV equipment. Other than that, the Sky-Walker Pro is also suitable for the beginners to learn flying as a high stable trainer plane. Before you start the installation, please read this manual carefully to have an overall idea of what to do. In the same time, please check all parts before you begin. If you find any missing or defective parts, please contact your local dealer.

1, Required for Installation and Operation:

1.1 Required RC Equipments:

The below listed RC gears are not included. They may need to be purchased separately. For details, please check with your local hobby shop.

- Minimum 3~4 channel radio control system
- Minimum 2 pieces of 9g micro servos or similar. 4 servos are needed for full control of aileron, elevator and rudder
- 2 pieces of 25~30cm servo extension cables for aileron servos
- AXI 2814 KV920 out-runner brushless motor or equivalent
- 45A or above brushless ESC with 25~30cm length of the power input wire
- APC9060E propeller or equivalent
- 5000mAh 4S lithium-polymer battery pack or similar

You may need the following for FPV application:

- DC powered Camera
- Pan/ tilt camera mount with servos
- 6 or more channel radio control system, instead of 3~4 channels for basic flying
- Wireless transmitter and receiver for on-board video transmission
- On-Screen-Display(OSD) system
- 1000mAh 3S lithium-polymer battery pack or similar for the camera (refer to the manual of the camera system)

1.2 Required Tools and Material for Installation:

- Phillips screwdriver & allen key
- Sharp hobby knife
- Hobby scissors
- Needle nose pliers
- Wire cutters
- Awl
- Marker pen
- Foam double-sided tape
- Fibre tape
- Paper tape
- Cable tight
- Male & female velcro tape
- Hot glue and hot glue gun

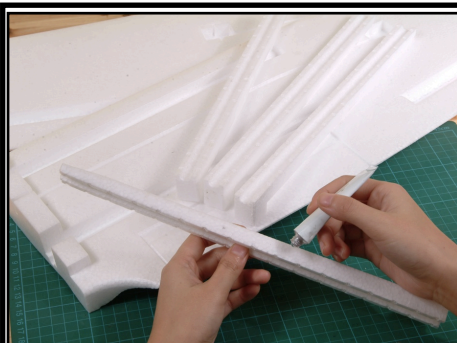


2, Assembly Steps:



Step 1:

Free the aileron control surfaces from the wing pieces with sharp hobby knife if the aileron control is needed. Trim off the un-necessary EPO material.



Step 2:

Apply a thin layer of the EPO glue for the 4 EPO carbon tube slot covers. It is not recommended to apply glue on the contact surface between the EPO material and carbon tubes, unless you are planning to join the two wing pieces permanently.



Step 3:

Similarly, Apply a thin layer of the EPO glue on the wing pieces at the joint area of the 4 EPO carbon tube slot covers.



Step 4:

Wait for about 1~2 minutes for the glue to solidified slightly before placing the 4 carbon tube covers.



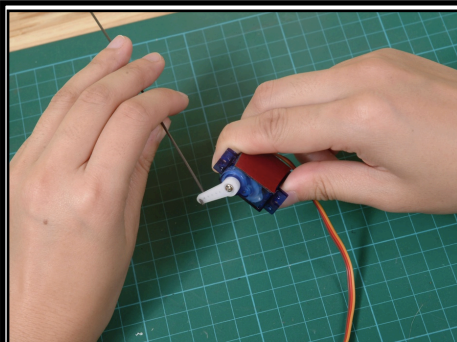
Step 5:

Insert the two carbon tubes with 630mm length into the tube slots on one side of the wing.



Step 6:

Join the two wing pieces. You may apply EPO glue at the joint area if you are planning to join the two wing pieces permanently. Skip step 7 and proceed to step 16 if aileron installation is not needed. But make sure the holes and cable slots of the aileron servos are covered with 15~30mm wide fibre tape (not included).



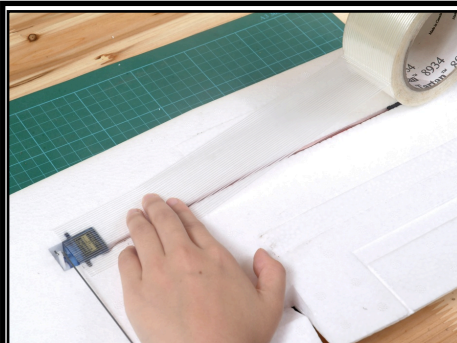
Step 7:

Apply the foam double-sided tape (not included) onto the two aileron servos. Install the Z-bended side of steel wires onto the servo arms for both servos. Enlarge the servo arm holes if necessary. Neutral the servos mechanically with servo tester or radio control system.



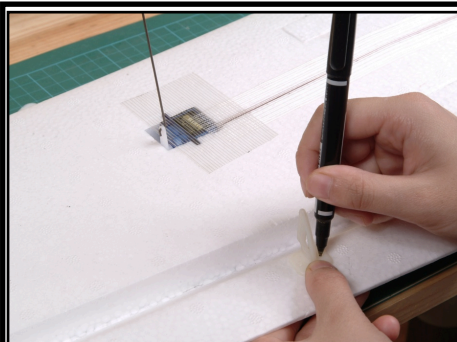
Step 8:

Place the two aileron servos into place at the both sides of bottom wing surfaces. Ensure the servo arm is vertical reference to the servo mounting surface.



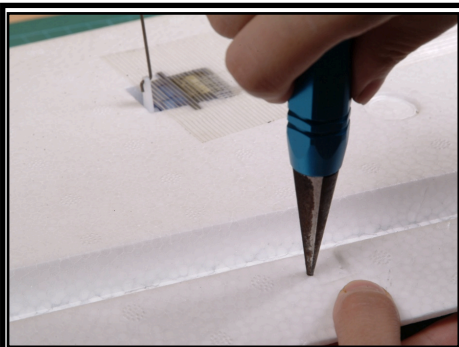
Step 9:

Connect the aileron servo extension cables (not included). Cover the two aileron servos and the servo wires with 15~30mm wide fibre tape.

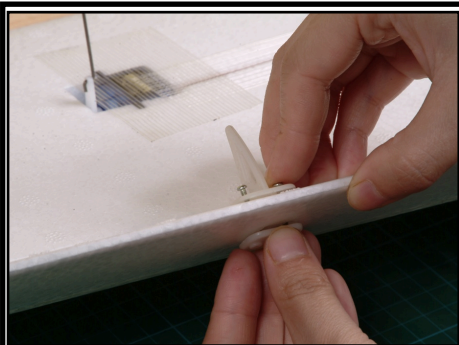


Step 10:

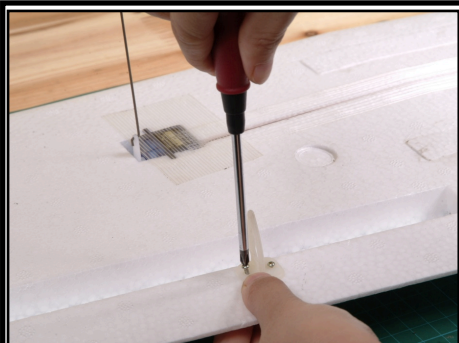
Mark the screw positions for plastic control horn installation around the square mark of the both aileron control surfaces with permanent marker pen.



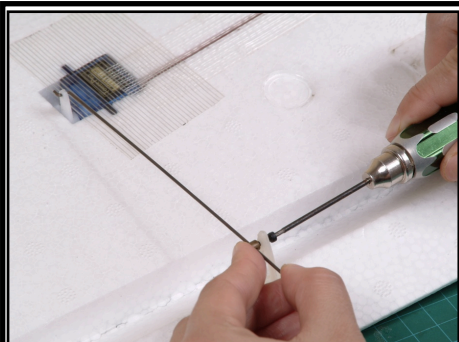
Step 11:
Drill the holes according to the marked position.



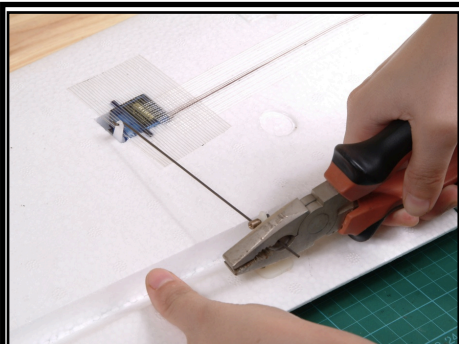
Step 12:
Insert the screws to fix the plastic control horns of the aileron control surfaces.



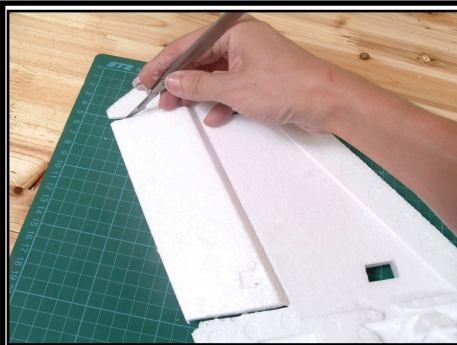
Step 13:
Tighten the screws to fix the both plastic control horns into place.



Step 14:
Enlarge the hole on the plastic control horns if necessary. Install the linkage stoppers to secure the connections between the steel wire and plastic control horns. The recommended travel for both control surfaces is not more than $\pm 15^\circ$.



Step 15:
Trim the steel wires with the wire cutters.



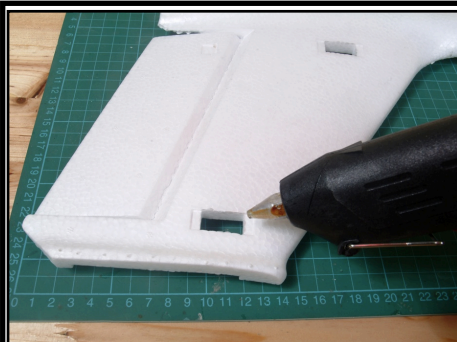
Step 16:

Free the rudder control surface from the vertical stabiliser with sharp hobby knife. Trim off the unnecessary EPO material.



Step 17:

Apply some hot glue at the tail rudder servo mount.



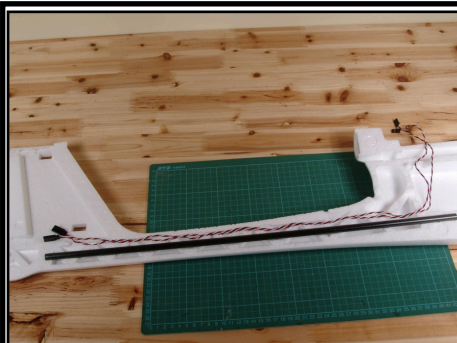
Step 18:

Apply some hot glue at the tail elevator servo mount.



Step 19:

Place the two servos into the slots. Neutral the servos mechanically with servo tester or radio control system.



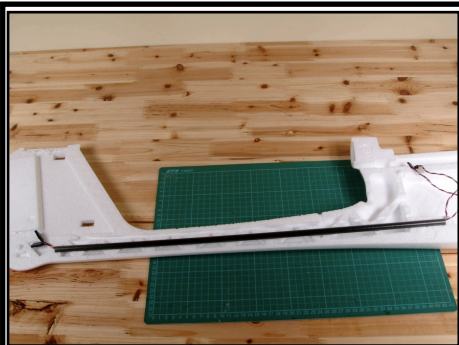
Step 20A:

Place the supplied servo extension cables into the slot above the 600mm length fuselage reinforce carbon tube slot. It is recommended to fix the cables at few points with minimum amount of the hot glue. If you have any other cables for wireless modem, GPS or other sensors, place them at the same time.



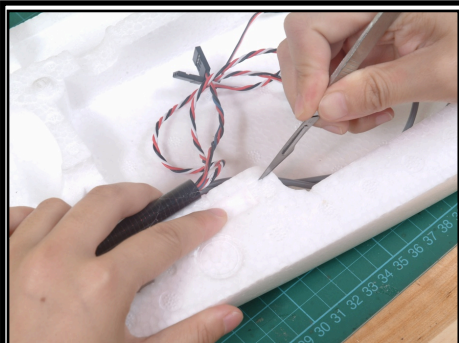
Step 20B1:

Beside Step 20A, Alternatively, you may run these cables through the fuselage reinforce carbon tube.



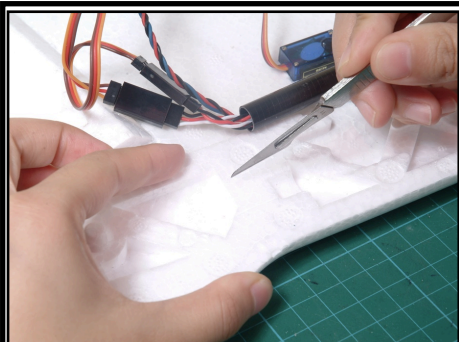
Step 20B2:

Place the fuselage reinforce carbon tube into the slot in the fuselage.



Step 20B3:

Trim off the EPO materials at the end of the equipment compartment side of the carbon tube to allow the cables run into the equipment compartment.



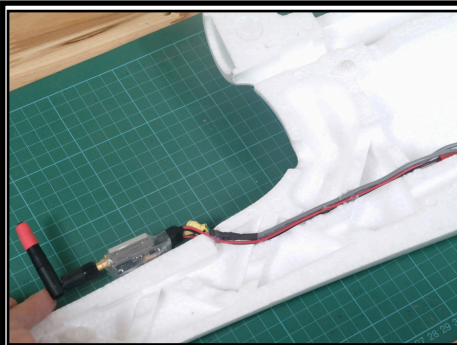
Step 20B4:

Trim off the EPO materials at the end of the rear side of the carbon tube to allow the cables run into the chamber inside the vertical stabiliser.



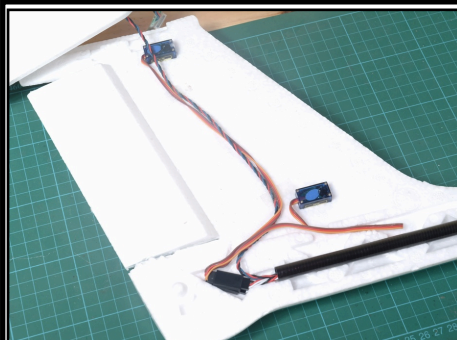
Step 21:

Place the video transmitter cable behind the equipment compartment. Fix the cable with minimum amount of the hot glue.



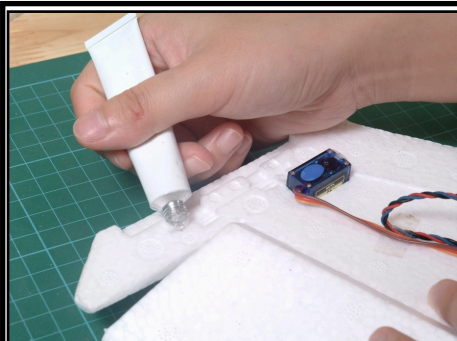
Step 22:

Run the video transmitter cable into the equipment compartment.



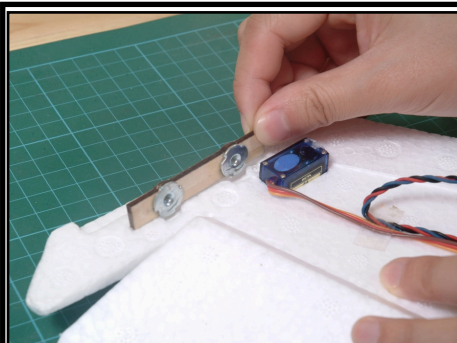
Step 23:

Place the tail servo cables and any other cables in the chamber inside the vertical stabiliser. Fix the cable with tape or small amount of hot glue.



Step 24:

Apply a thin layer of the EPO glue at the wooden horizontal stabiliser base slot at the top of vertical stabiliser.



Step 25:

Wait for about 1~2 minutes for the glue to solidified slightly before placing the wooden horizontal stabiliser base.



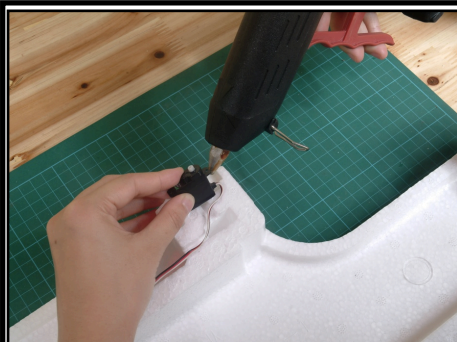
Step 26:

Apply a thin layer of the EPO glue at the wooden canopy base slot at the front of fuselage.



Step 27:

Wait for about 1~2 minutes for the glue to solidified slightly before placing the wooden canopy base.



Step 28:

Fix the pan motion servo for the pan/ tilt camera mount. Skip this step if your Sky-Walker Pro is not for FPV application. Run the servo cable into the equipment compartment.



Step 29:

Apply a thin layer of the EPO glue at the contact surface of two fuselage pieces and around the fuselage reinforce carbon tube.



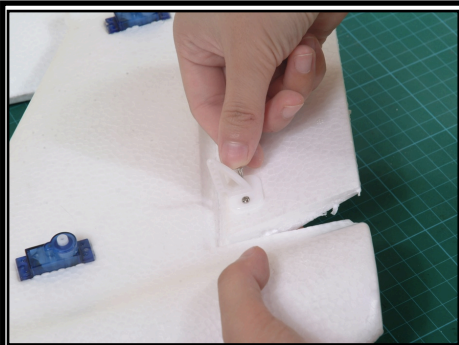
Step 30:

Wait for about 1~2 minutes for the glue to solidified slightly before joint/ closing the two fuselage pieces. You may use paper tapes to secure the two fuselage pieces for not less than 3 hours before the glue to be solidified completely.



Step 31:

Mark the screw positions for plastic control horn installation around the square mark of the rudder control surface with permanent marker pen. Drill the holes according to the marked position.



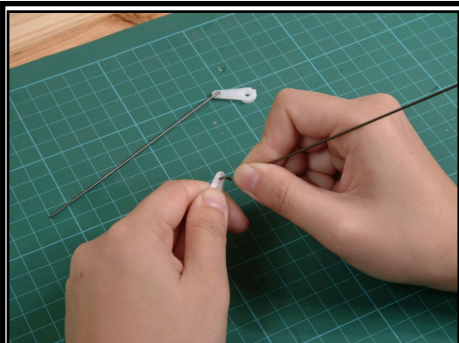
Step 32:

Insert the screws to fix the plastic control horn of the rudder control surface.



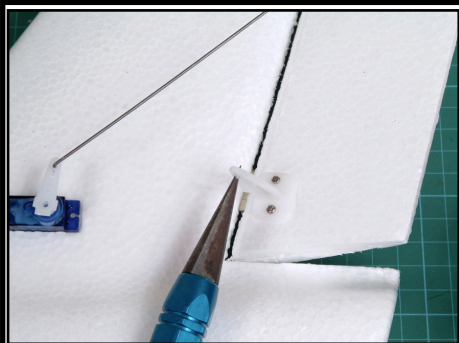
Step 33:

Tighten the screws to fix the rudder plastic control horn into place.



Step 34:

Install the Z-bended side of steel wires onto the servo arms for the elevator and rudder servos. Enlarge the servo arm holes if necessary.



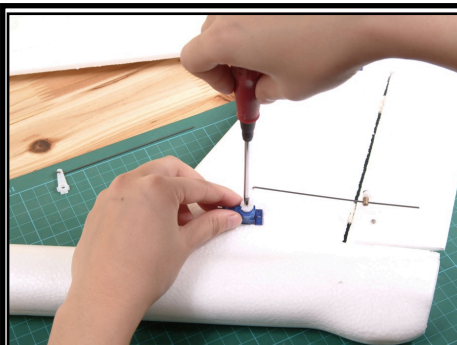
Step 35:

Install the servo arm onto the rudder servo. Ensure the servo arm is vertical reference to the line connecting the selected hole on the servo arm and plastic control horn. Enlarge the hole on the plastic control horn if necessary.



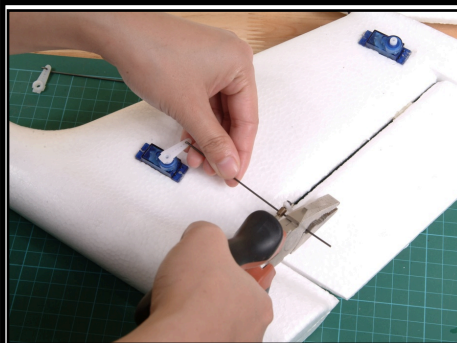
Step 36:

Install the linkage stopper to secure the connection between the steel wire and rudder plastic control horn. The recommended travel for rudder control surfaces is not more than $\pm 15^\circ$.



Step 37:

Insert and tighten the screw to fix the rudder servo arm.



Step 38:

Trim the steel wire with the wire cutters.



Step 39:

Apply a thin layer of the EPO glue at the contact surface between the horizontal stabiliser and wooden screw pad. Wait for about 1~2 minutes for the glue to solidified slightly before placing the wooden screw pad into place.



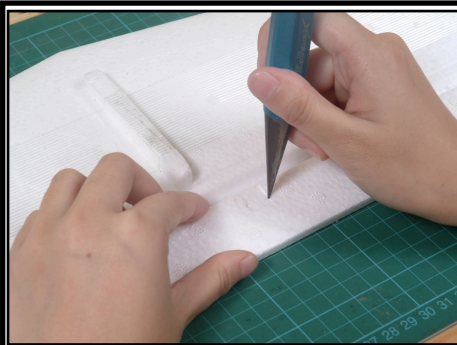
Step 40:

Free the elevator control surface from the horizontal stabiliser with sharp hobby knife. Trim off the unnecessary EPO material.

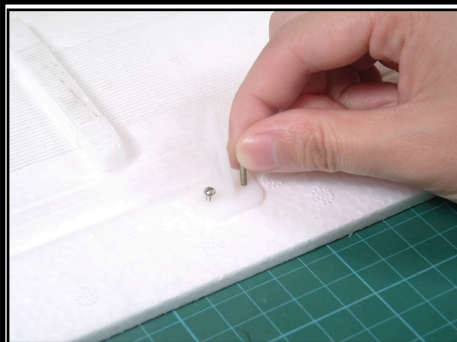


Step 41:

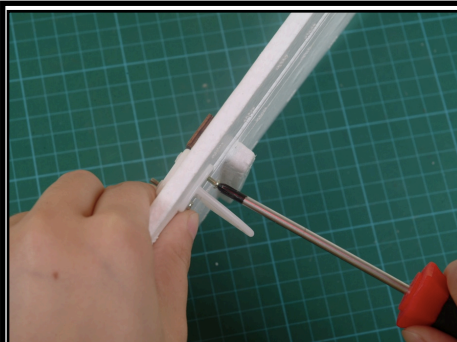
Mark the screw positions for plastic control horn installation around the square mark of the elevator control surface with permanent marker pen.



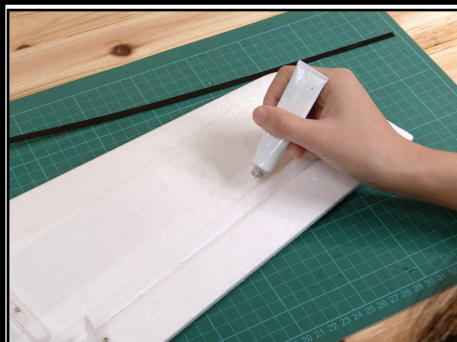
Step 42:
Drill the holes according to the marked position.



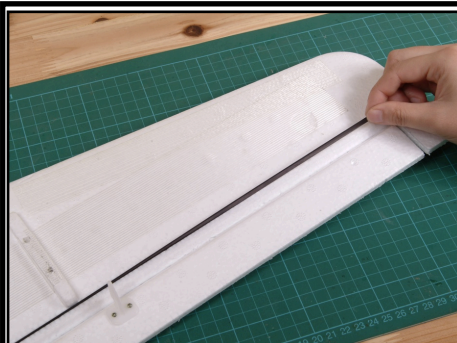
Step 43:
Insert the screws to fix the plastic control horn of the elevator control surface.



Step 44:
Tighten the screws to fix the plastic control horn into place.



Step 45:
Apply a thin layer of the EPO glue into the slot for horizontal stabiliser reinforce carbon strip.



Step 46:
Wait for about 30 seconds for the glue to solidified slightly before placing the carbon strip into place.



Step 47:

Cover the horizontal stabiliser reinforce carbon strip with the 8~12mm wide fibre tape (not included).



Step 48:

Drill through the screw holes on the horizontal stabiliser according to the holes on the wooden screw pad. Place the horizontal stabiliser on the top of vertical stabiliser. Insert the two 3mm allen screws to fix the horizontal stabiliser.



Step 49:

Tighten the screws with allen key to secure the horizontal stabiliser.



Step 50:

Install the servo arm onto the elevator servo. Ensure the servo arm is vertical reference to the line connecting the selected hole on the servo arm and elevator plastic control horn. Enlarge the hole on the plastic control horn if necessary. Install the linkage stopper.



Step 51:

Tighten the screw on the linkage stopper to secure the connection between the steel wire and elevator plastic control horn. The recommended travel for elevator control surfaces is not more than $\pm 15^\circ$.



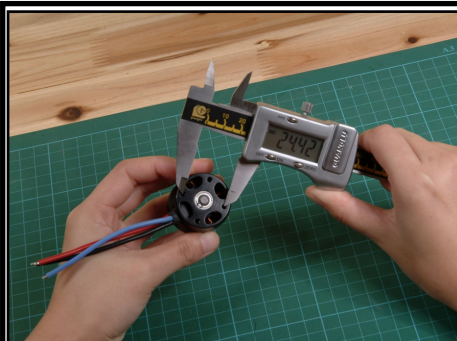
Step 52:

Insert and tighten the screw to fix the elevator servo arm.



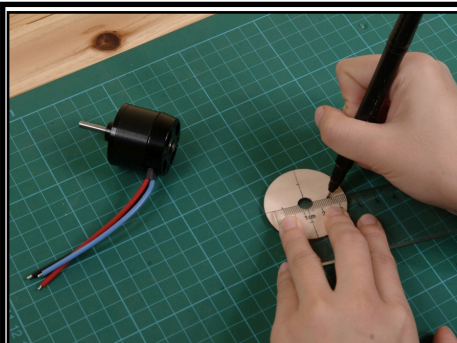
Step 53:

Trim the steel wire with the wire cutters.



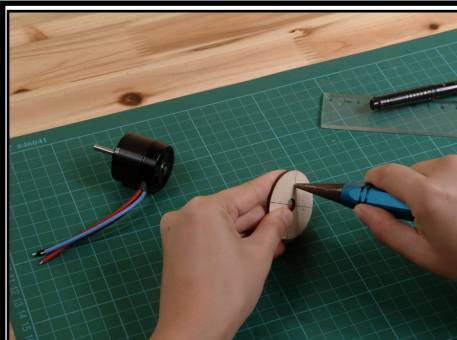
Step 54:

Measure the distance between installation holes on the brushless motor (not included).



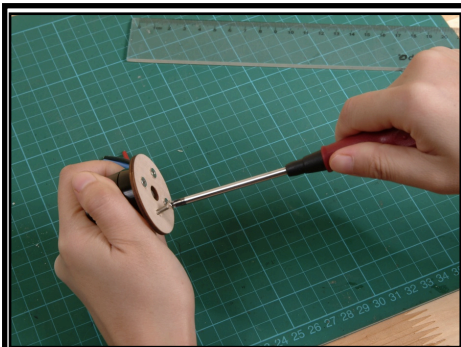
Step 55:

Mark the hole positions on the supplied wooden firewall with a marker pen. Make sure the motor shaft is pointing at the centre of firewall. Enlarge the hole at the centre of firewall if necessary.



Step 56:

Drill the holes on the wooden firewall according to the marked position.



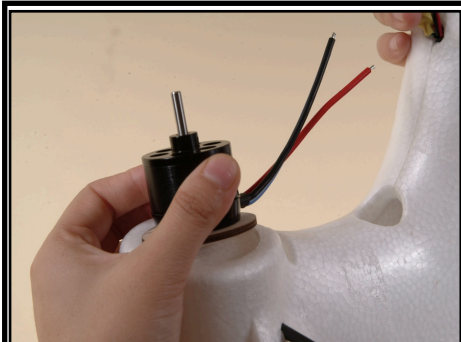
Step 57:

Install the brushless motor into place with screws. The screws may be supplied together with brushless motor.



Step 58:

Apply a thin layer of the EPO glue at the contact surface between the fuselage motor mounting seat and wooden firewall.



Step 59:

Wait for about 1~2 minutes for the glue to solidified slightly before placing the wooden firewall onto the fuselage motor mounting seat. Install the propeller with prop-adaptor (not included).



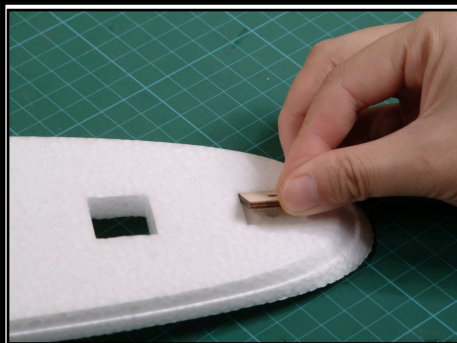
Step 60:

Trim the plastic canopy cover with hobby scissors along the line.



Step 61:

Apply a thin layer of the EPO glue at the contact surface between the canopy and wooden screw pad.



Step 62:

Wait for about 1~2 minutes for the glue to solidified slightly before placing the wooden screw pad into place.



Step 63:

Place the plastic canopy cover onto the EPO canopy temporarily. Drill a hole on the plastic cover to allow the screw driver to reach the canopy locking screw.



Step 64:

Insert the 3mm philips screw to secure the canopy.



Step 65:

Apply a thin layer of the EPO glue at the contact surface between the canopy and plastic cover.



Step 66:

Wait for about 1~2 minutes for the glue to solidified slightly before placing the plastic canopy cover into place.



Step 67:

Place the assembled canopy. Cover the camera pan motion servo slot behind the canopy with fibre tape if no servo installed.



Step 68:

Tighten the screw to fix the canopy.



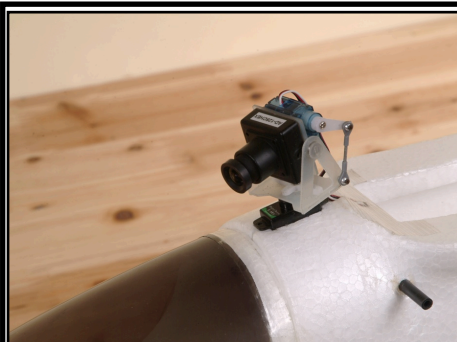
Step 69:

Apply a thin layer of the EPO glue around the two short carbon tubes. Wait for about 30 seconds for the glue to solidified slightly before inserting the tubes into place.



Step 70:

Place the wing on the top of fuselage. Secure the wing with supplied rubber band. Install the battery at front of fuselage. Adjust battery and electronic gears to ensure the C.G. to be located at about 75mm from the leading edge of the wing.



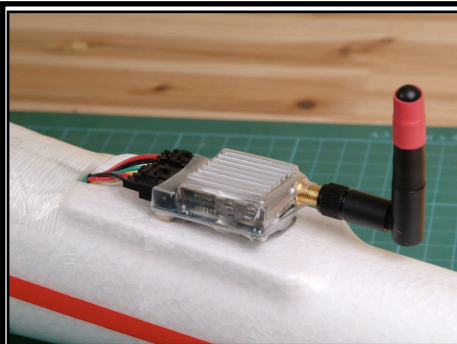
Step 71A:

Install the rest of the camera pan/ tilt mount if there is any.



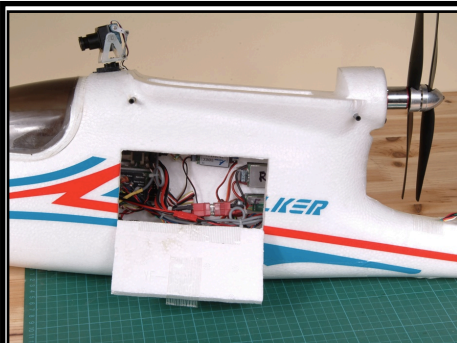
Step 71B:

Alternatively, you may install the fixed camera at the front of canopy. Remove part of the plastic canopy cover if necessary.



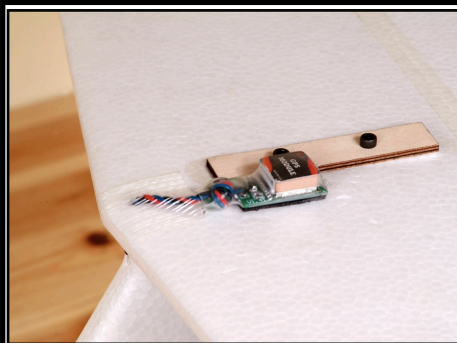
Step 72:

Secure the video transmitter behind the propeller with double-sided tape.



Step 73:

You may cut any the side of fuselage along the line to open a door for easy accessing to the equipment installed inside the equipment compartment.



Step 74:

The GPS receiver module or any other module for OSD/ FPV system can be installed on top surface of horizontal stabiliser for best position of view to the surroundings.

3, Before Taking-off:

3.1 Pre-flight Checks:

- Fully charge the battery packs for radio transmitter, motor power and FPV gears
- Ensure the CG is at the right place, and will not be shifted by losing battery
- Always check the all control surfaces. They must be operating without friction and/ or free-play
- Performing function checking of radio control, radio telemetric link and FPV/ autonomous system, if there is any. Especially a range test for the radio control system
- Check the wind direction. Always take-off and land the model into the wind

3.2 Safety Warnings:

- This radio control model is not a toy!

- Ensure the airfield is spacious enough. Fly it outdoors in safe areas with no obstacles
- Ensure the propeller is securely installed
- Never fly model alone if you are a beginner. Consult local hobbyist with experience
- Never fly in strong and/ or side wind
- Never use defective propellers
- Do not fly before confirming the correct location of the CG
- If the model is not function correctly anytime, land it immediately