DOUBLE TROUBLE

Balsa Pro-Built Series

MAX-THRUST.COM

Statement

Warning:

This radio controlled model is not a toy. It requires skill to fly and is not recommended for use by beginners without assistance from an experienced model pilot. It should not be operated by children without the supervision of a suitably experienced adult.

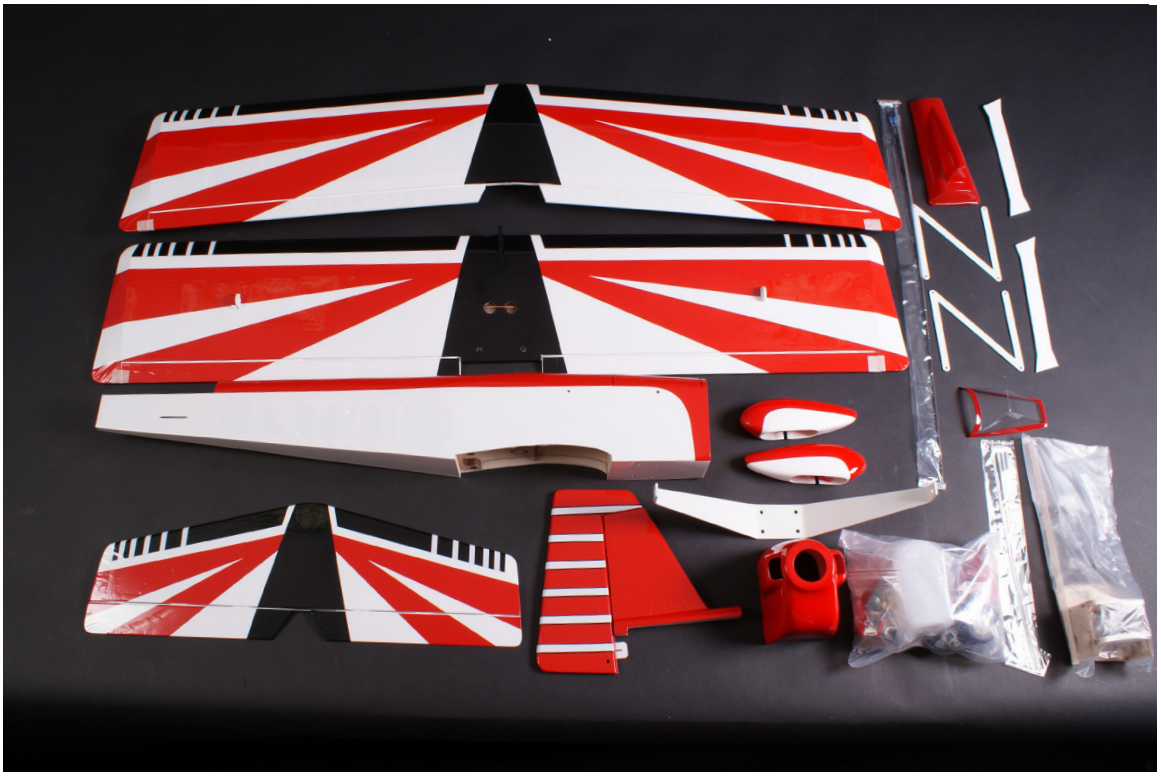
Max-Thrust reserves the right to modify the specification of this model at any time.

Safety Precautions

1. Do not attempt to repair or modify this aircraft with non-factory parts.
2. Never fly this model over roads, railway lines, near to power lines, airports, do not fly this model in excessively strong winds, in the rain, or thunderstorms.
3. Do not fly or launch the model towards people.
4. Keep hands and face away from rotating propeller at all times.
5. We strongly recommend that all fixings and fasteners used in the construction of this model are checked regularly for integrity. Failure to do so could cause a crash, injury to yourself or others around you.
6. We only recommend the use of 2.4GHz radio equipment with this model.

Disclaimer

1. This radio controlled model is not a toy. Used incorrectly it is capable of inflicting serious injury to persons or damage to property. The owner/pilot assumes all responsibility for any damage to persons or property resulting from the use of this product.
2. The manufacturer and distributor decline all responsibility for any liability arising from use of this product.
3. It is very important that you follow all instructions for assembling and setting up of this model. Failure to do so could result in a loss of control and possibly a crash



Items Required

Some pictures throughout this manual may be of the prototype model and some details may now have changed. If you have any questions please contact us info@centuryuk.com.

Tools:

Philips Screwdriver Medium
Philips Screwdriver Small
Modelling Knife and Spare Blades
3mm Allen Key
2mm Allen Key

30 Minute Epoxy Glue
Slow Cyanoacrylate Glue (Cyno)
Foam Padding

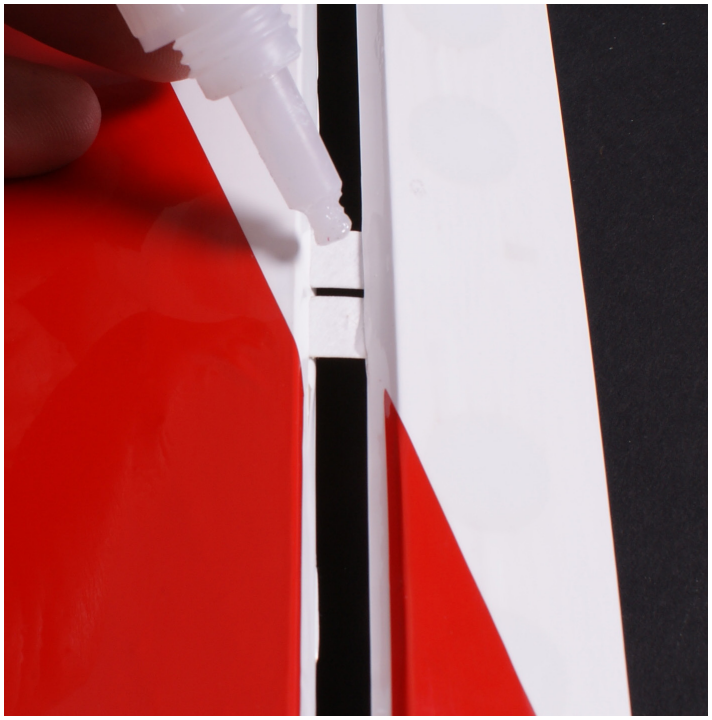
Equipment:

1 x Transmitter and Receiver
5 x Standard or Small Servos IC version - 4 x Standard or Small Servos Electric Version
2 x 200mm Servo Extension Leads
1 x 200mm Y-Lead

Electric Version
1 x Overlander 5045/10 Thumper or Equivalent
1 x Electronic Speed-controller
1 x Suitable Propeller and Propeller Adapter
1 x Battery 14.8v 4s 3300-4250mAh
18.5v 5s 3300mAh

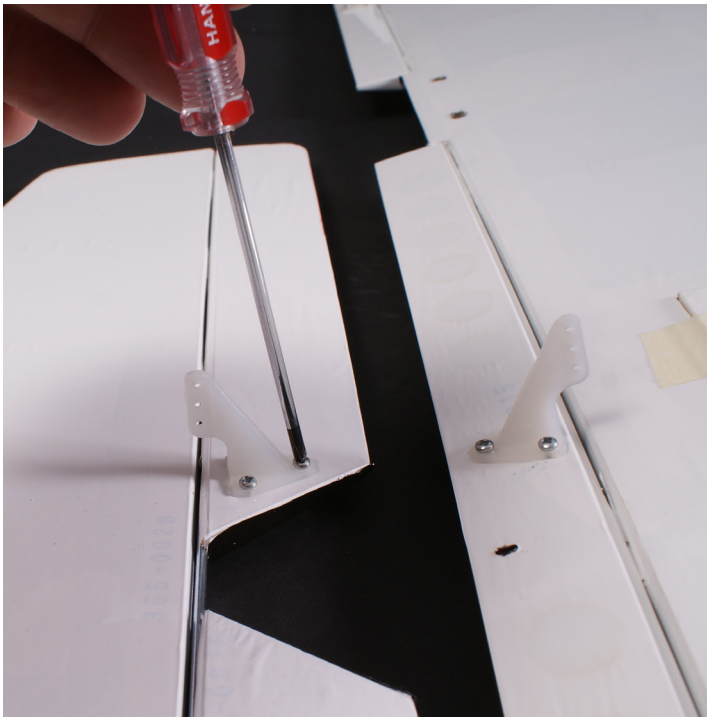
IC Version:
1 x 46-55 Size Model Engine
1 x Suitable Propeller
1 x Receiver Battery
1m Fuel Tube
1 x Fuel Filter

1. Start by glueing all of the hinges in place using CA Glue. Medium or Thick Slow set is best.

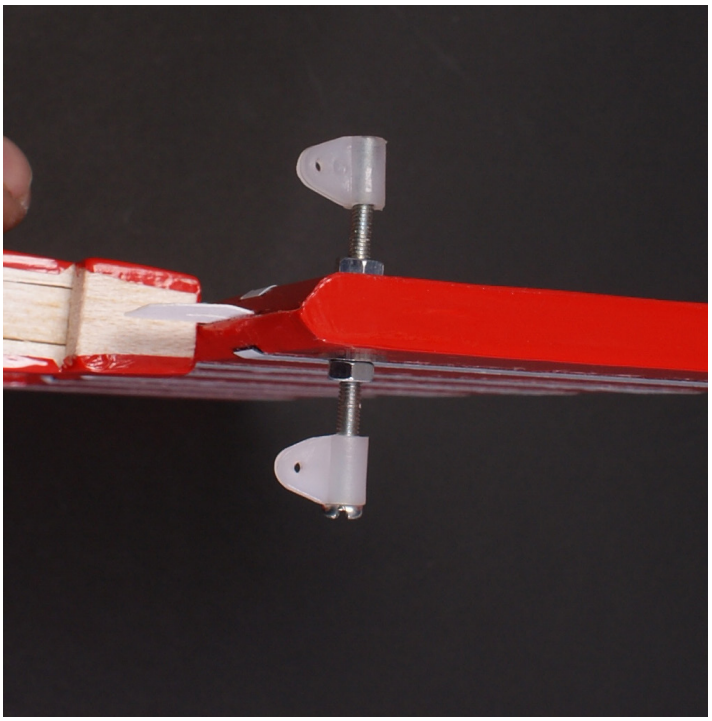


2. Check for any wrinkles in the covering and using a film iron shrink these back so the film is tight.

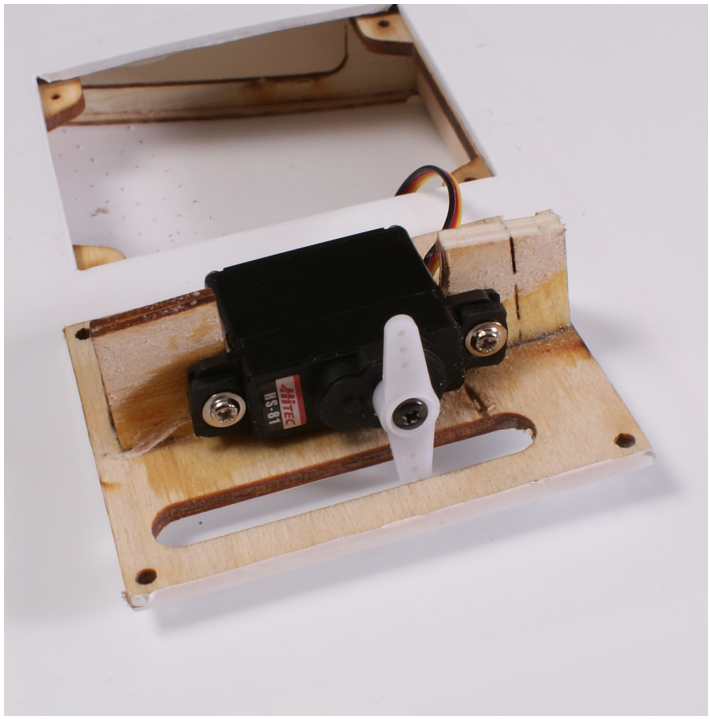
3. Install the control horns on to the Ailerons and also the upper and lower aileron connector plates. You can trim down the plates to make sure they do not protrude through the covering if you wish and also drill a small hole in the plate where it inserts in to the wing to give the 5 minute epoxy can grab through the connector. These connectors go under the top wing and on top of the bottom wing. Servo horns go on the under side of the bottom wing and under the elevator and are held in place with the M2 x 12mm self tapping screws.

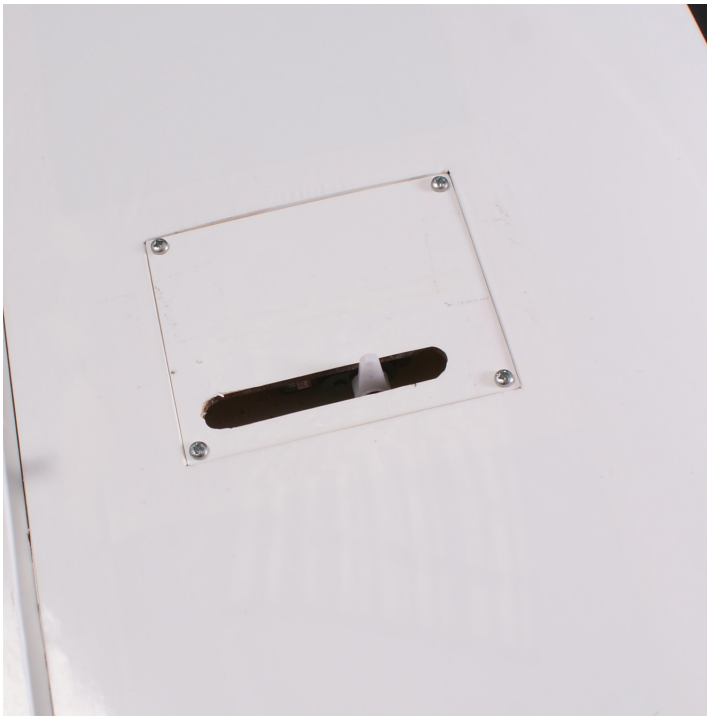


4. Next is the rudder horn which is made up by using a M3 x 45mm screw, 2 x nylon adaptors, 2 x M3 Nuts and 2 washers. Thread the plastic adaptor to the end of the screw and then run a 3mm nut followed by a washer to just past the middle of the screw. Put the assembly through the whole in the rudder and then repeat the steps in reverse, washer, nut, plastic adaptor. Make sure it is centered and tighten the nuts together. A small drop of thread lock or cyno will stop the nuts coming loose.

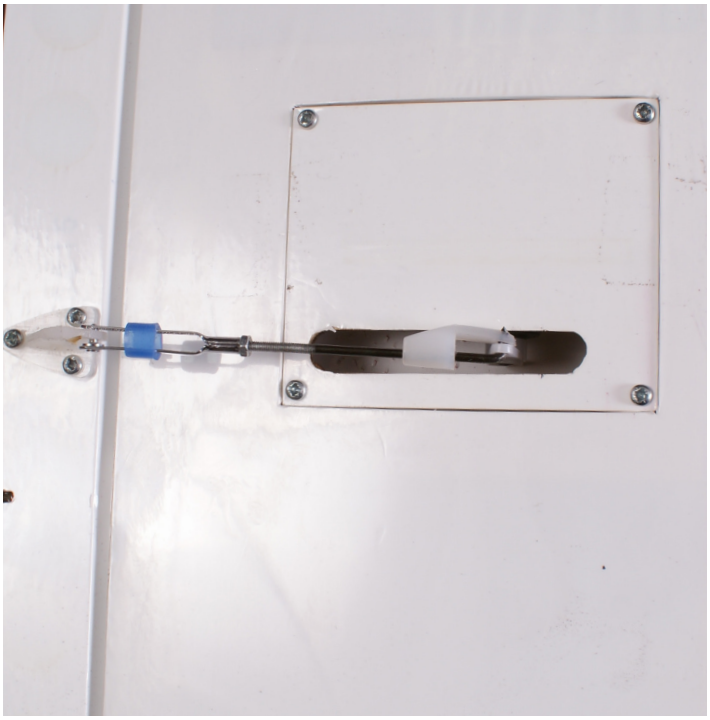


5. Installing the aileron servos. Remove the cover and cut the servo area to fit your choice of servo. Screw the servos in to the covers using the screws supplied with your servos. Make sure you centre the servo and fit the servo control arm. Use the string provided to pull the servo wires through the wing, you may need servo extension leads depending on your servos. Screw the assembly in to place using 4 M2 x 12mm self tapping screws.



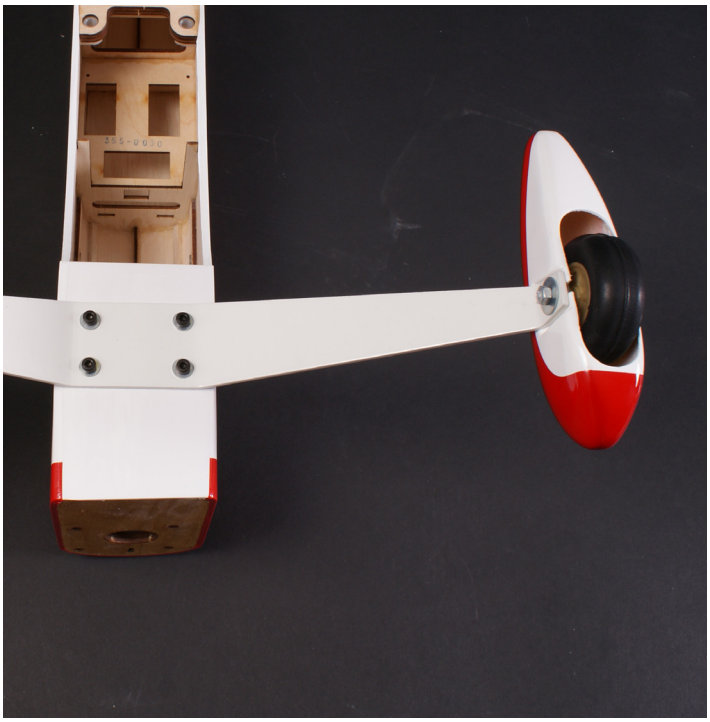


6. Connect the ailerons to the servo using the short push rods. You will need to either put a z-bend in the push rod to suit your servo position or a 90 degree bend and use swing keeper to hold it on to the servo arm, you can then do the final adjustments using the metal quick link.



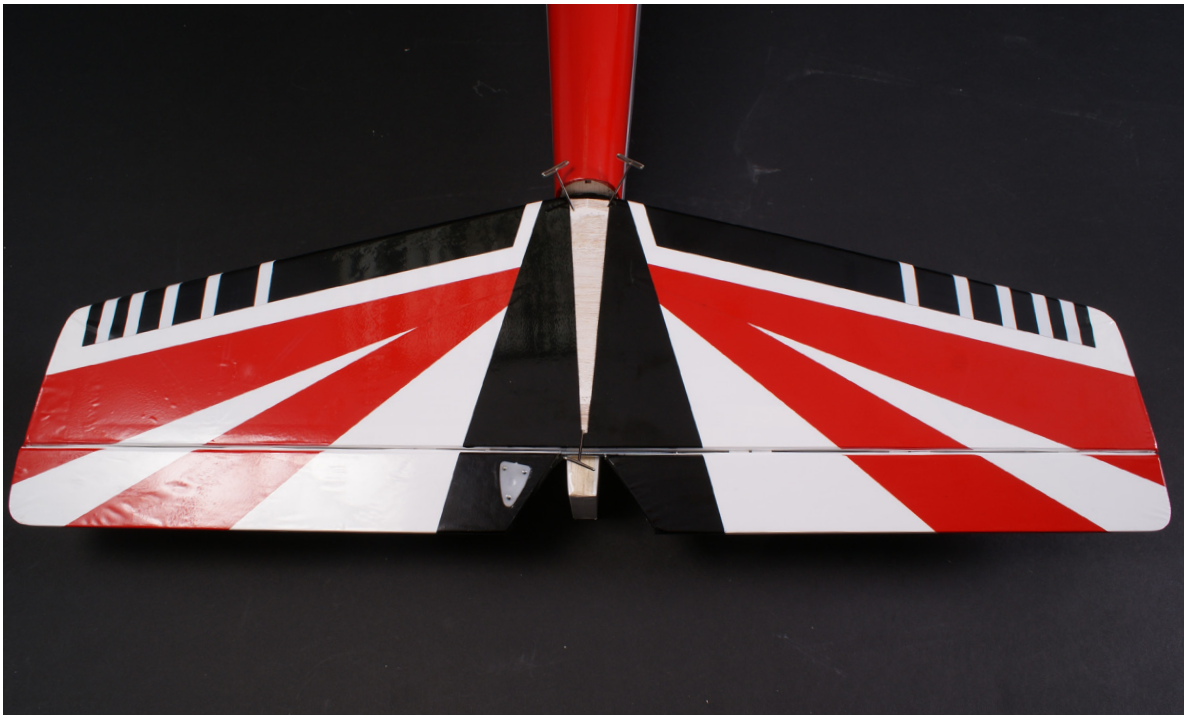
7. Landing gear. Put a wheel on the axle by removing the collet, the collet should be flush with the end of the axle and the wheel should spin freely. Run a nut and then a washer on to the threaded section and place the wheel inside the spat. Push the axle thread though the landing strut making sure it is on the correct side and then add the other washer and nut and secure in place. Make sure the wheel still spins freely and secure the nuts with a dab of cyno or thread lock to stop them coming loose.

8. The landing gear is held in place on the fuselage by four M4 x 20mm cap head screws and washers.



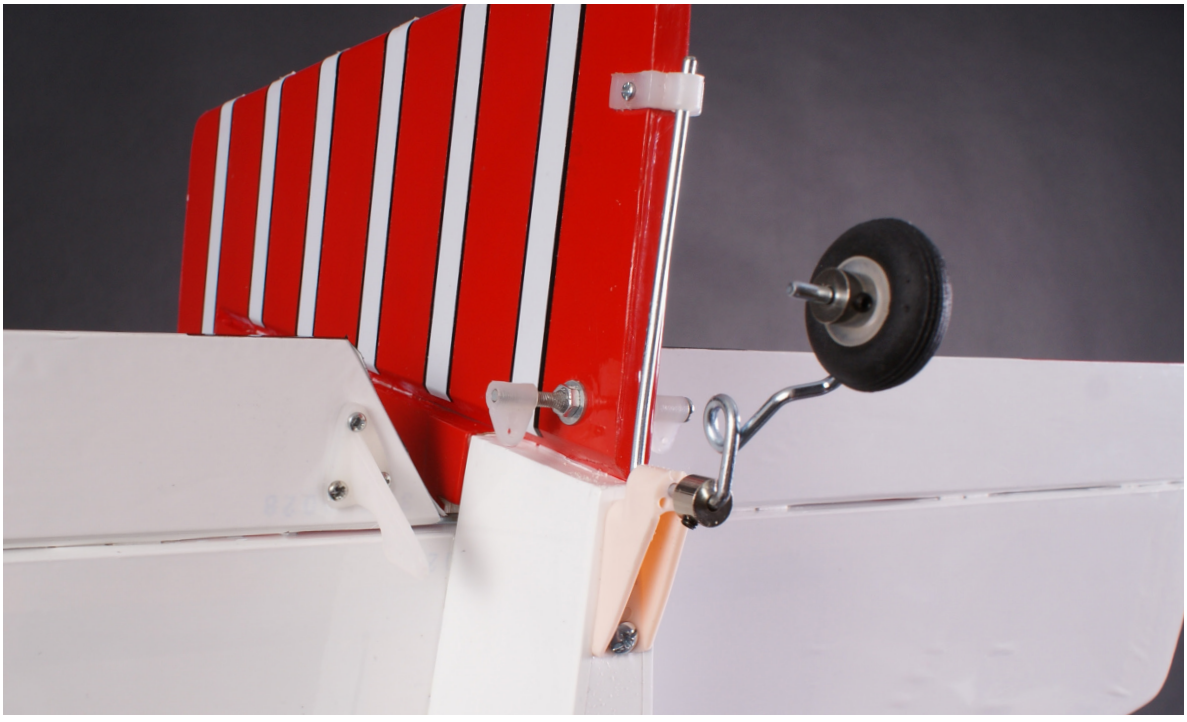
9. Tail Feathers. First step is to place the tailplane in position and then mark and remove a triangular section of the film from both sides of the tail plane so that the glue can stick to the balsa correctly. Make this slightly smaller on the top to the bottom as the fin fairings are slightly smaller than the tail plane seat on the fuselage. When cutting the film cut approx 1mm inside of your marked line so no wood shows and make sure not to cut the wood underneath as this could weaken the tailplane.

10. Make sure the tail plane sits square on the fuselage and then glue in place using 5 or 30 minute epoxy and pin in place Fit the elevator control horn.

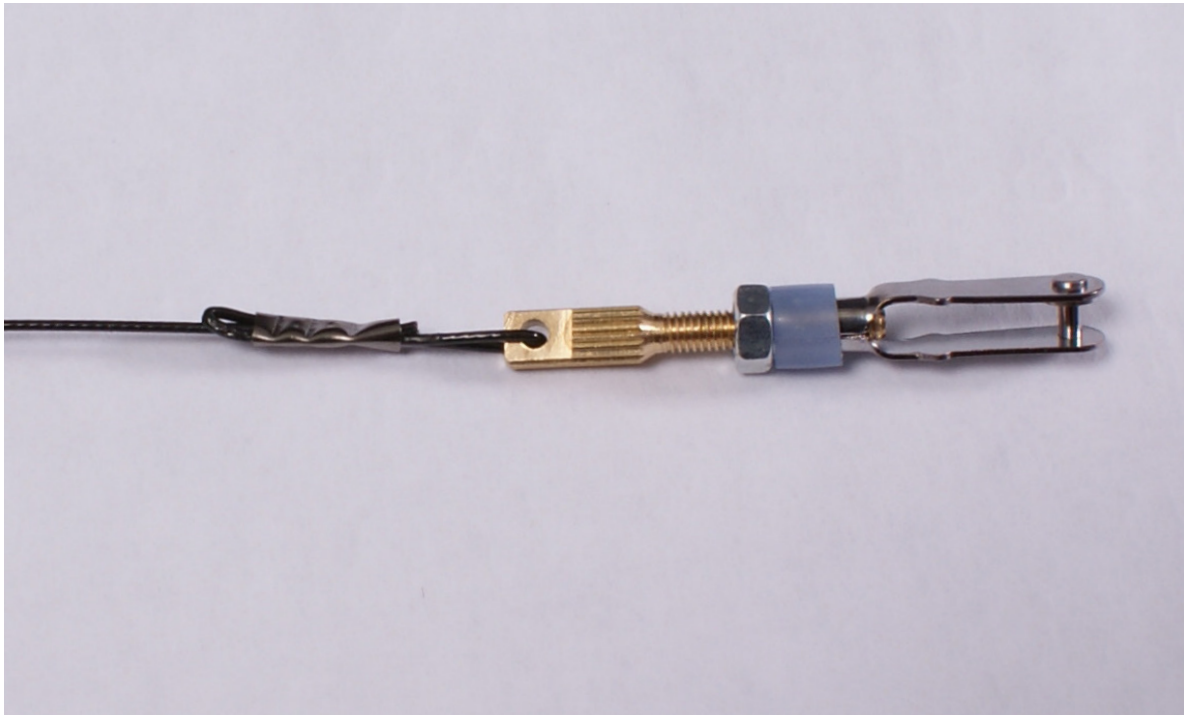


11. Once the tailplane is glued in place you can fit the fin and rudder again using either 5 or 30 minute epoxy. Make sure the lower rudder hinge is located in place before gluing the assembly in place.

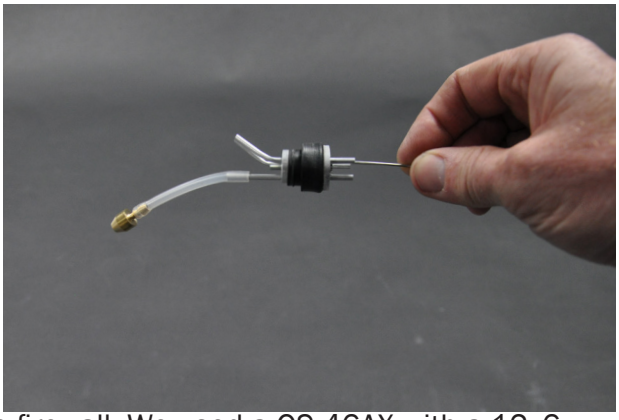
12. Offer the tail wheel assembly to the fuselage and mark the screw locations and pilot drill 2mm holes and then fit using the screws provided. Fit the rudder cradle to the rudder and secure in place using the 2mm nut and bolt.



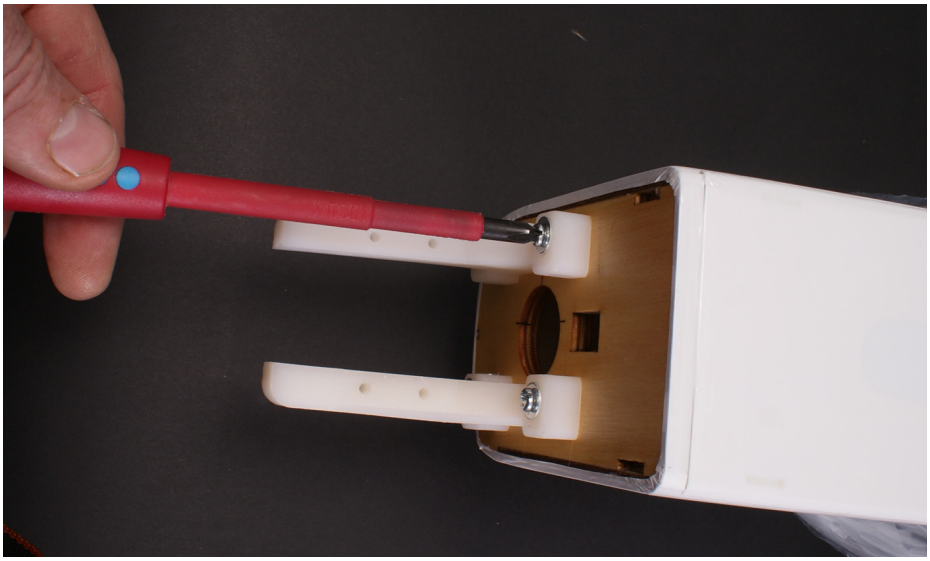
13. Make up the rudder pull pull system by fitting a metal quick link on to the brass adaptor with a nut. Put a metal ferrule on to the wire and then take the wire through the eyelet and then back through the ferrule and loop it back through and tuck the end in to the ferrule and crimp the ferrule tight. Do this for both sides but only at the rudder end for now.



14. Thread the cables through the pre-ftted tubes in the fuselage to the servo bay and then fit the links to the rudder. You may need to use a sharp knife to trim the film carefully around the openings for both the rudder and elevator controls. Fit the elevator control rod as shown in the picture.

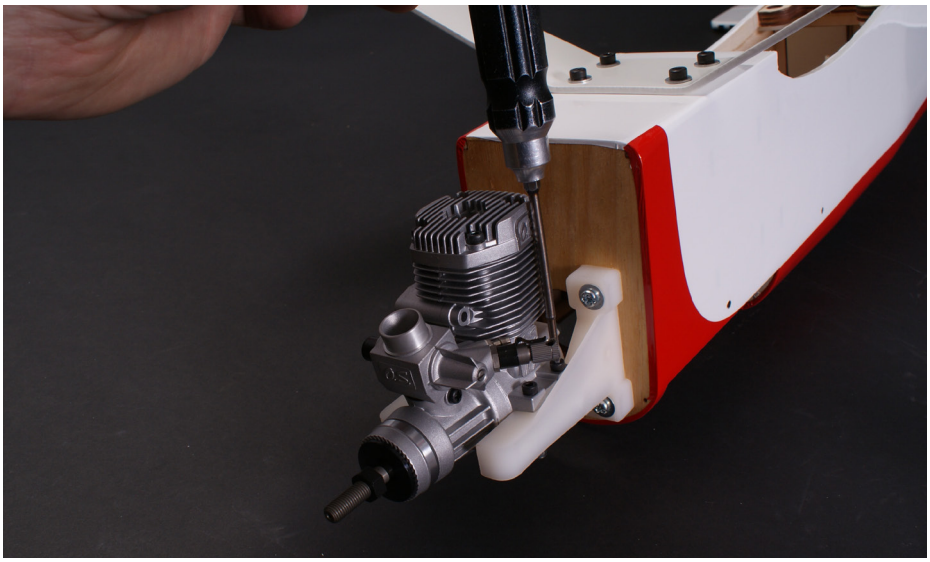


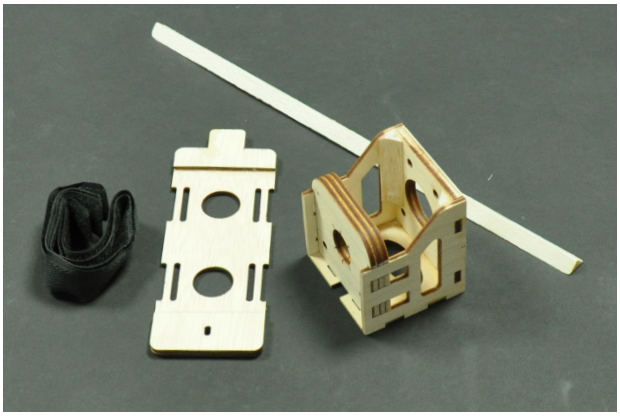
1. IC Version. Install the T-mounts for the engine to the firewall, We used a OS 46AX with a 12x6 Gemfan prop in the prototype model. There is 3.5 degrees of side thrust built into the mount so the mount make look like it is off centre. You will need to adjust the engine mount position to suit your motor. Use the M4 x 20mm cap head screws to secure the engine to the mount.



2. Test mount the cowl and carefully cut out for the exhaust, plug and carb/needle valve. Always cut the holes under size to start with and slowly make bigger to suit your engine.

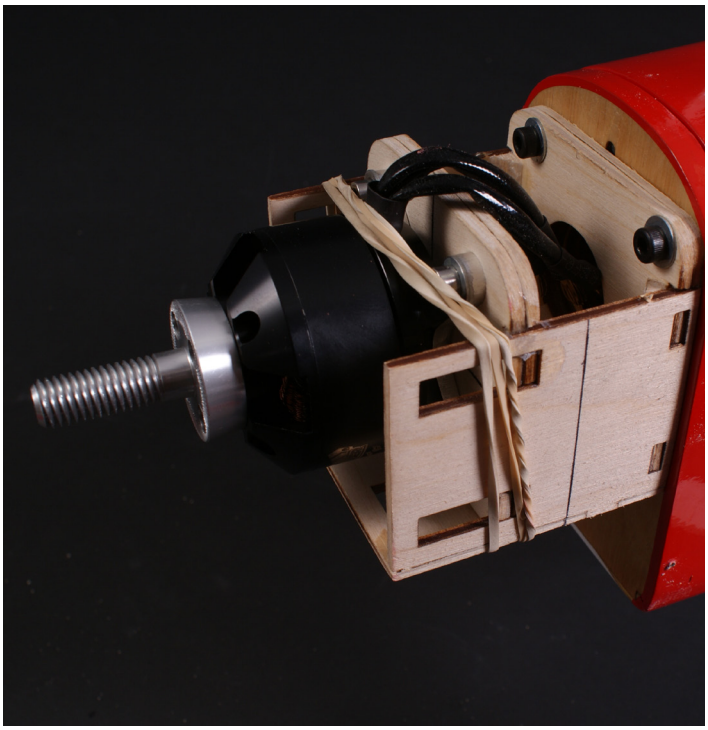
3. Install the throttle push-rod assembly and then assemble and install the fuel tank, use the Velcro straps to hold the tank in place. Plumb the engine to the tank with the fuel tube. Fit the cowling in place with the 3x8mm self taping screws and fit your propeller and spinner.





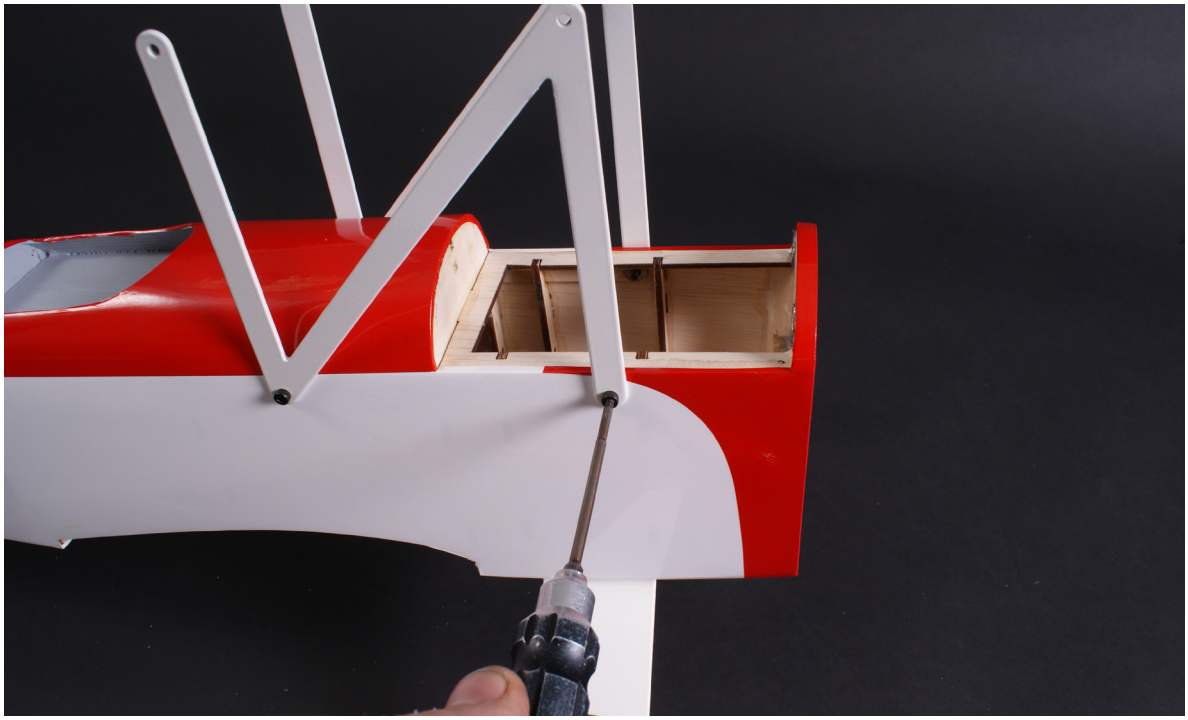
1. Electric Version. Screw the wooden motor mount on using the 4mm x 14mm cap head screws and washers. Centre your motor on the mount and mark the bolt hole locations on the motor mounting plate and then drill these to suit. Mount the brushless motor using the cap head screws and captive nuts on to the centre line of the mount. The mount is off set to allow for 3.5 Degrees of side thrust.

2. Test fit the cowl and adjust the motor position forwards or backwards to make sure the spinner and prop clear the cowl. Temporally hold in place with bands so you test fit the cowling. Once you have the motor in the correct position you can glue the adjustable mount in place using 5 minute epoxy. We then recommend running some medium C/A down all the motor mount joints and apply triangular balsa to reinforce the joints.



3. Fit the cowl using the 3x8mm big head self tapping screws. If you want you can add an additional cooling slot on the underside of the cowl to let the hot air out. Fit your prop and the spinner to finish off the front section. We used a 13x6.5 Gemfan prop and suitable spinner on the prototype model.

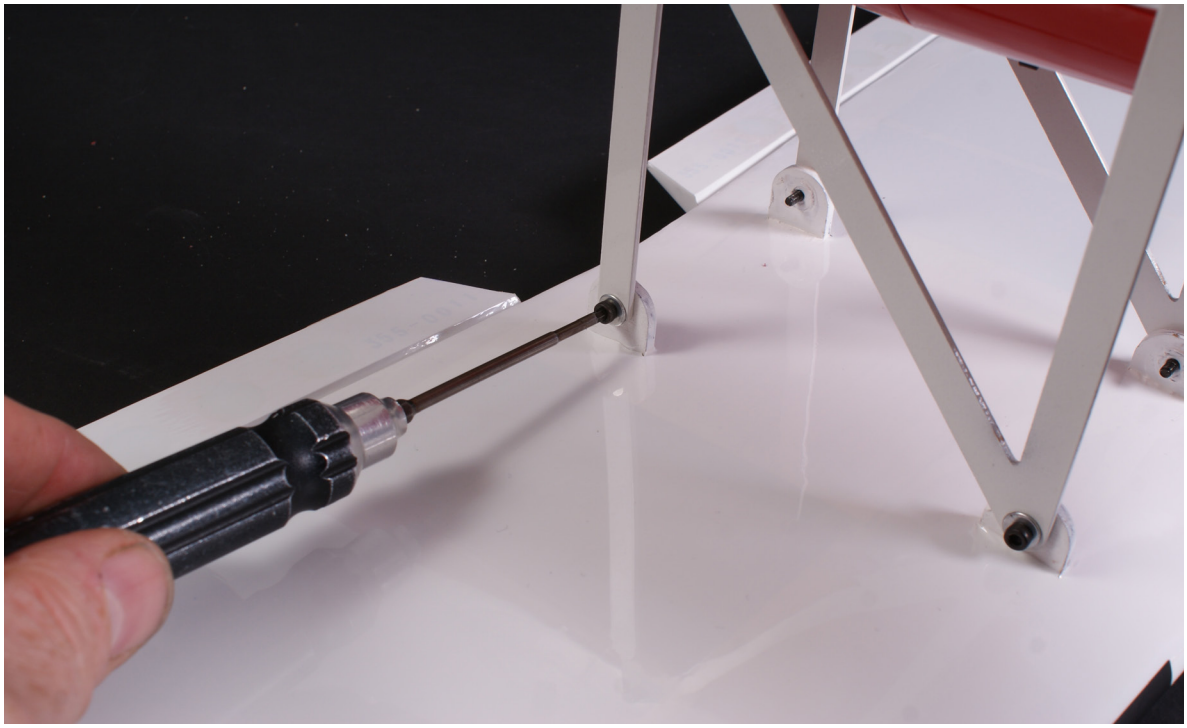
15. Fit the upper wing supports using the M3 x 12mm Cap Head Screws.



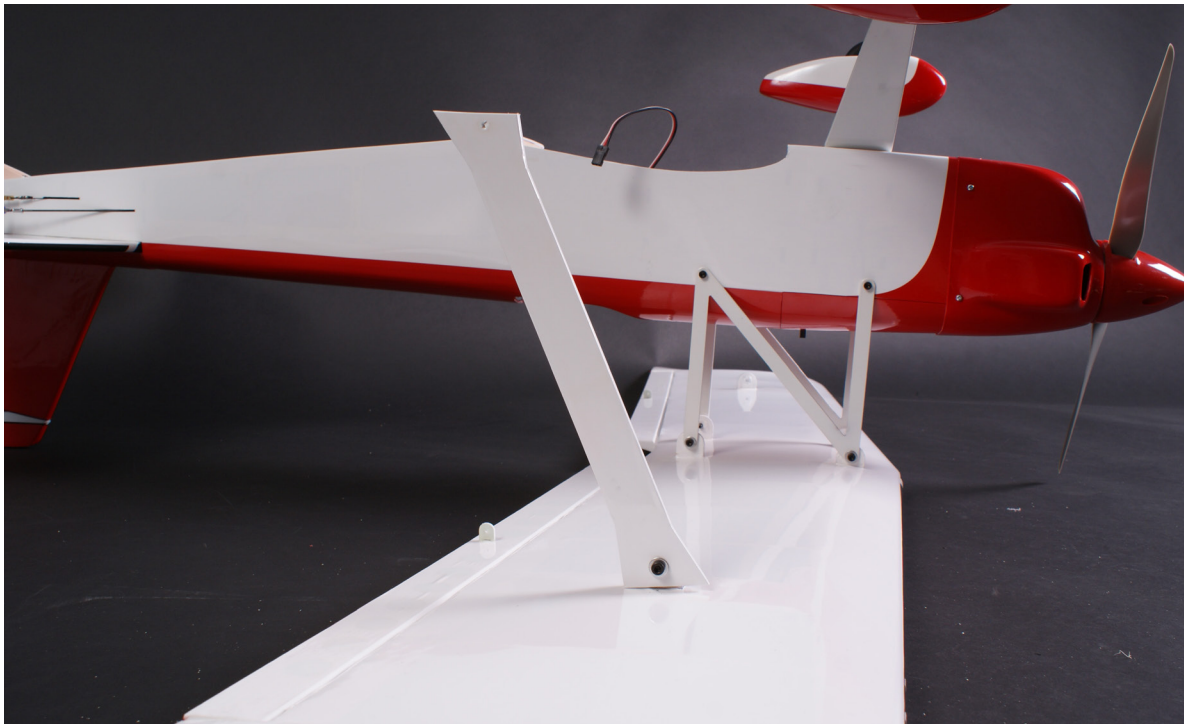
16. Turn the model over and sit it on the wing supports and fin, from here you can now fit the rudder and elevator servos. If you are building the IC version you can now install the throttle servo and switch to the non exhaust side of the model in the pre cut hole.

17. Once the servos are installed you can finish of the rudder pull pull system by repeating the process in the same way as before, make sure to pull them tight and try and get both sides the same length. The elevator rod will need bending and cutting to suit your servo position and securing to the servo arm with a swing keeper or you can make a z-bend.

18. Bolt the top wing in to position on the centre struts using the M3 x 12mm cap head bolts and washers, these can be fully tightened at this stage (if you wish you could fit m3 nylock nuts for added security but this will add to the assembly time at the field but a good idea if you are leaving it assembled)



19. Screw the outer wing struts in to place also using M3 x 12mm cap head bolts and washers but do not fully tighten until the bottom wing is in place. These should rake backwards towards the tail.



20. Next install the lower wing and secure using the M8 Thumb screws, line up the outer wing struts and secure in place with the M3 x 12mm Cap head screws and washers. You can now fully tighten all the bolts for the wing struts.

Prototype model shown with an uncovered lower wing.

21. Make sure the ailerons are all level and connect up the lower and upper ailerons with the control rods supplied. Cut and bend to suit and secure in place using the swing keeper and metal quick link. Make sure both sides match and adjust if necessary.

22. The pilot, screen and fairing are optional parts to fit. The screen needs to be cut to suit and we added some red trim to the back of the screen to finish it off. Secure the screen and fairing in place using Zap-A-Dap-A-Goo directly to the film covering. Epoxy the pilot in place.

23. Final Setup.

Centre of Gravity.

The C of G is set between 11 and 12cm back from the leading edge of the top wing. This can be adjusted to suit after initial flights. If you need to add nose weight do this under the motor mount as far forwards as possible

Control throws for first flight.

Aileron	8mm each way
Elevator	8mm each way
Rudder	20mm each way

You can increase these to suit your flying style after initial test flight are done.

Happy Flying and Landings, Mark Tilbury.

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