

Please review this entire manual before beginning assembly.

By doing so it will help you better understand each step as you progress in the actual building of your kit, and you will do a better job in assembly.

INCLUDED IN THIS KIT:

- All CNC router cut 6mm Depron parts
- Plywood motor mount
- All precut-to-length carbon fibers flat spars and rods
(1 x 33in 5mm flat, 1 x 10.5in 5mm flat, 2 x 3.5in 2mm rods, 2 x 5in 2mm rods)
- 4 laser cut control horns
- 8 pushrod wire ends + 8 shrink tubes

SPECIFICATION:

- Wing Span: 34 inch
- Length: 27 inch
- Weight with no battery: 8 oz (depending on motor & equipment used)
- Ready to Fly Weight: 9 - 10 oz with 850mAh 11.1v 3S Lipo

NEEDED BUILDING TOOLS:

- Foam Safe / Odorless CA glue + Foam Safe Accelerator
- 20 min or 30min Epoxy
- Latex or vinyl gloves
- Sandpaper
- Hobby Knife
- Ruler
- Blendederm Hinge Tape

REQUIRED EQUIPMENT:

- 4 Channel Transmitter + Micro Receiver
- 3 Micro Servos (9 grams)
(HXT900, TP90 or similar)
- 2730 motor 1300kv, 1500kv, or 1700kv (Keda, Hextronic, or Turnigy)
- ESC: 12Amp up to 20Amp, depending on motor used
- Prop: GWS 8040
- Lipo Battery: 460 ~ 850 mAh 11.1v 3S



The Depron parts will arrive as shown. Here are the ailerons and elevator are prebevelled and factory CNC hinged. Do not cut them out separately.

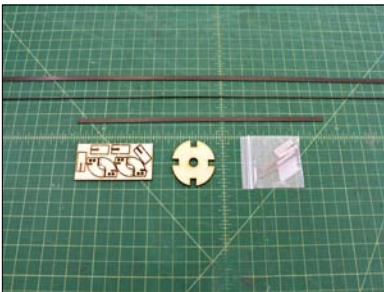


Carefully cut out all the parts by cutting the holding tabs.

Rudder is not prebevelled nor prehinged.



All the parts cut out.



The Carbon fiber and hardware package.



Your kit may already have pre-cut carbon fiber parts. If not then cut the main wing spar to 33 inches.



Lay out the wing bottom side up over some wax paper.

Before filling the slot with epoxy your kit may have some or all the slot open on the top side.

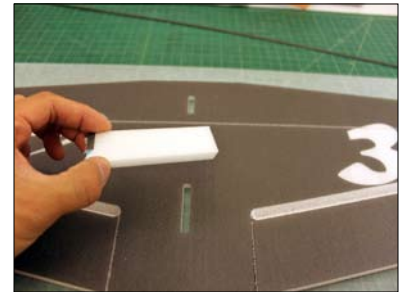


Apply some Scotch tape over the slot so that the epoxy doesn't seep out. Basically cover the slot on the top side completely.



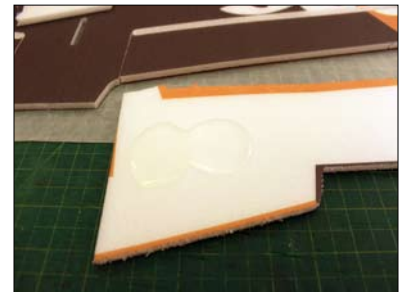
Flip the wing back over.

Next make a foam squeegee from the scrap parts. Simply cut out a rectangle and bevel one edge. Use the bevelled edge as a squeegee.

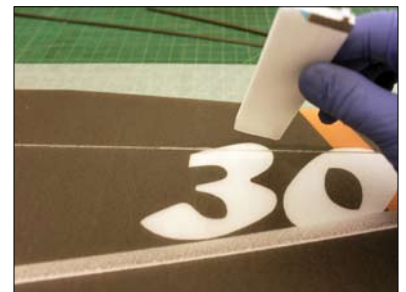


Mix up some 20 min epoxy.

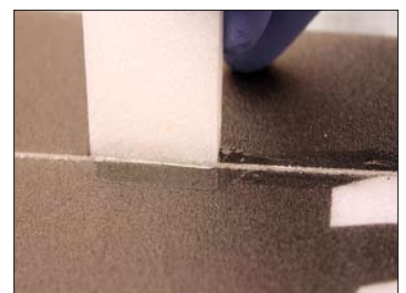
Don't forget to put on some gloves.

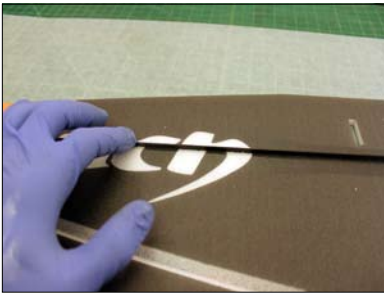


Use the squeegee to fill in the slot with epoxy.



Move slowly, fill and swipe repeatedly to fill the slot nicely with epoxy.

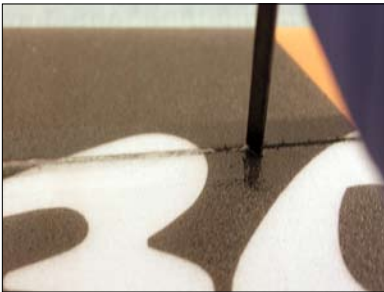




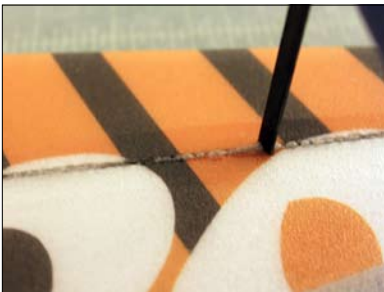
Insert the wing spar into the slot. Push it in carefully from one side to the other.



Use a screw driver tip or misc tool to press it in all the way. Be careful not to slip and puncture the foam.

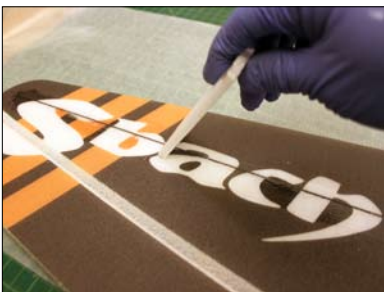


If you filled the slot properly with enough epoxy, then it will ooze out as the spar goes in.



You can see some bubbles squeezing out.

Finish fully pressing the spar into the slot.

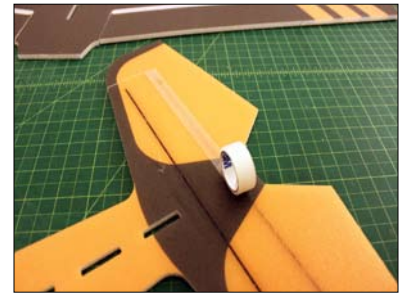


Then squeegee the remaining epoxy away.



If you didn't mix enough epoxy for the horizontal stabilizer slot then you can use Foam safe CA as an alternative. Fill the slot with CA then insert spar and top off with more CA. Swipe and spray accelerator.

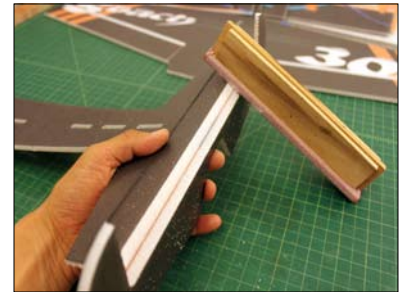
Flip over the fuse/ tail assembly and apply hinge tape over the hinge line of the elevator.



Flex the elevator back and forth to loosen it up.



Flip it over again and sand away the fuzzy parts in the inside of the hinge line.



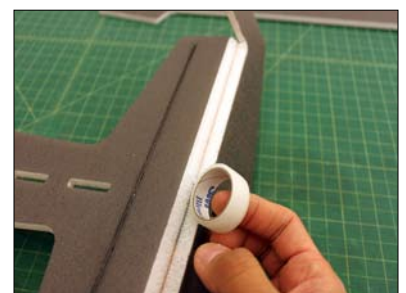
The edges will also have fuzzy parts.



Sand them smooth.



Vacuum up all the foam dust and then apply more hinge tape to the underside of the hinge line.





You may notice some binding of the elevator and ailerons at the edges. This is due to the roundness of the router bit. Simply cut the edges of the hinge square.



Bending the aileron up will produce a crease over the hinge line.



Apply hinge tape over the crease showing on the hinge line.



Again like the elevator, you might notice binding on the underside of the hinge near the base.



Carefully cut out the hinge to be squared and this end.



Flip over the hinge and sand the fuzzy part smooth.

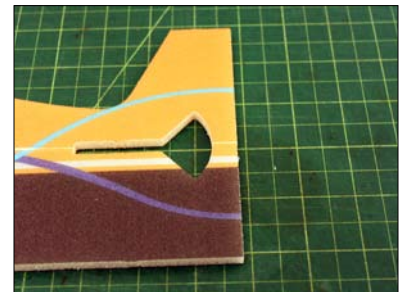
Be sure to sand all the foam dust before applying hinge tape.



Apply the hinge tape to the bottom hinge.



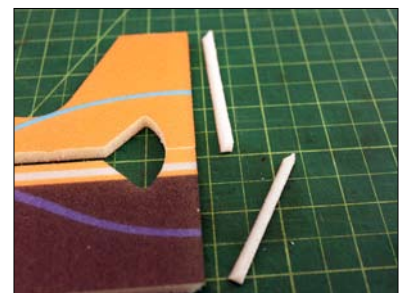
Place the top and bottom vertical fuselage parts together. Line them up perfectly at the rudder section.



Use a metal ruler or straight edge and bevel the vertical stabilizer. Rest the knife at a 45 degree angle and in light smooth strokes cut the bevel. Don't try to do it in one cut. Multiple strokes work well.

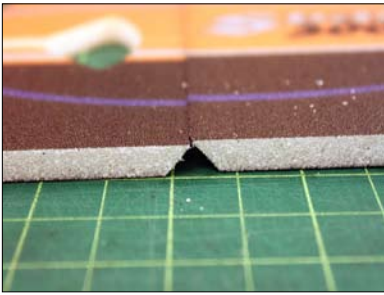


The bevelled pieces should be nice and straight.

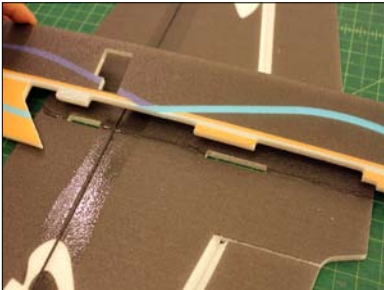


Bevel the rudder in the same way.





You should have at least 45 degrees on each side.



Apply glue along the wing where the bottom vertical fuselage part will be attached.



This is the bottom half assembly as shown.



Apply glue along the center line of the fuselage to attach the top part.

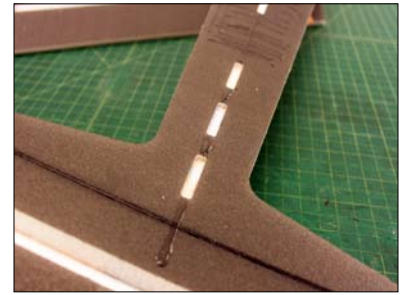


This is the top half assembly as shown.



Test fit the parts and mark where they join. Then fill in the area with glue where the top and bottom halves will attach.

Don't forget to apply glue along the center line of the fuselage.



Join the 2 assemblies together.



Prepare the rudder by applying hinge tape on the rudder side first.



Attach the rudder to the vertical stabilizer.



Flip it over and apply more hinge tape to the other side of the hinge.



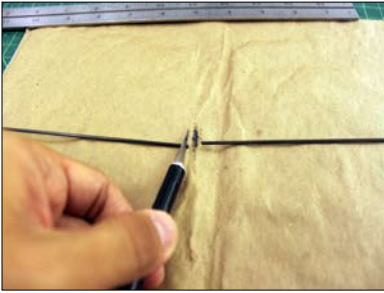
You kit may include precut carbon fiber already. If so just skip these steps. If not find the long 2mm rod and prepare to cut it.



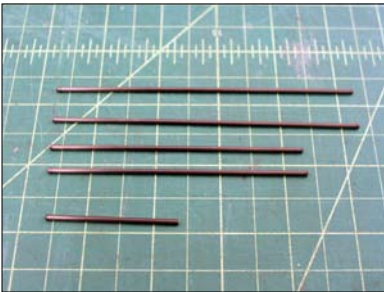


Lay the carbon fiber rod over some cardboard or thick paper. Measure 5 inches for elevator and rudder pushrods.

Cut with a rolling motion.

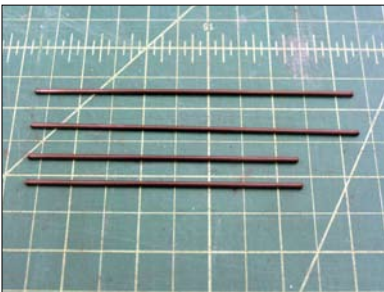


Press down and roll it back and forth, and it will cut easily.



The 1 long rod should be cut into 2 pcs x 5 inch lengths 2 pcs x 3.5 inch lengths.

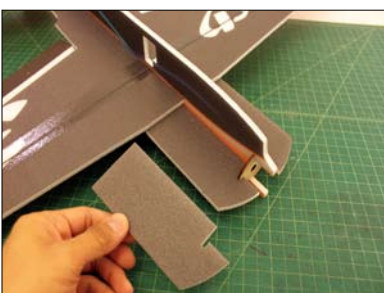
1 pcs remaining stub is scrap.



All you need is the 4 pushrods.
5" = Rud/Ele
3.5" = Aileron

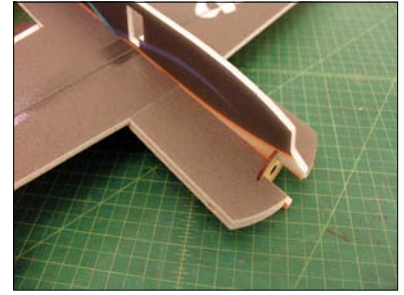


Glue the plywood motor mount as shown. Make sure it is seated squarely. Don't assume that it is square automatically. Many times it will not sit perfectly. You may need to adjust it

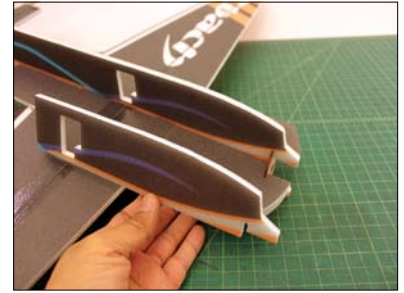


Glue the horizontal front fuse doublers on.

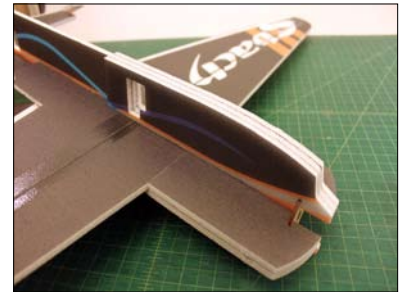
It should fit perfectly as shown.



Next glue on the fuselage side doublers. Gluing both sides is optional. (shown)



You may wish to only use 1 of these doublers if you want a more laterally balanced plane. Because the lipo would be closer to the center line if you do not attach 1 of the doublers on the side that the lipo will be attached.

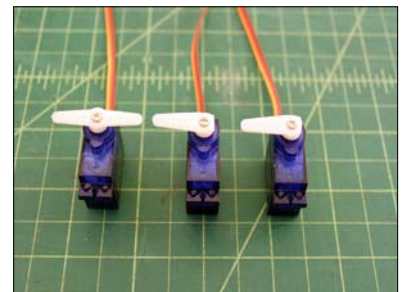


Prepare the servo arms. The cross servo arm has one long side that is longer than all the others. Cut off all the rest and leave it on. Do this for the elevator and rudder servo.



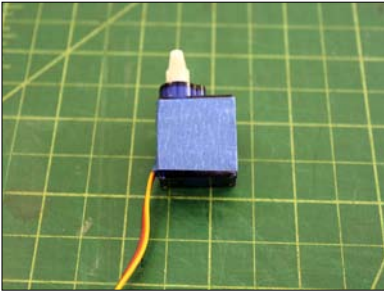
Set up the 3 servos as shown.

Make sure they are all centered properly. Once the aileron servo is installed you cannot change the centering.

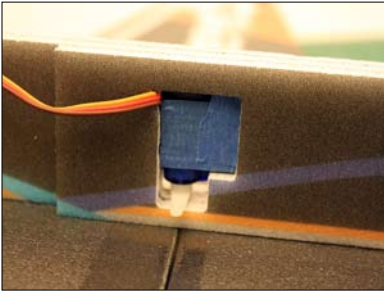


ONLY on the aileron servo, trim off the tabs.

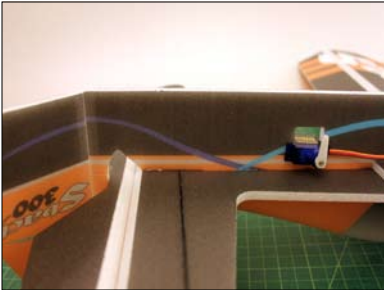




Wrap the servo with masking tape.

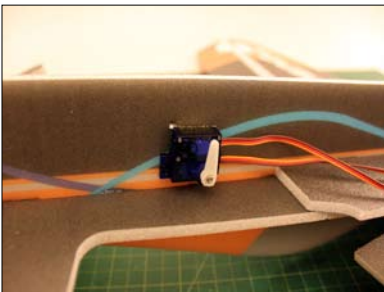


Insert the servo as shown. With the wire coming out on the left bottom side of the fuselage. (or with the bottom facing up it will be the right side)

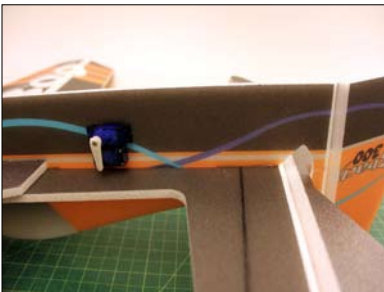


Insert the rudder servo first as shown. Install it so that the wire will come out on this side.

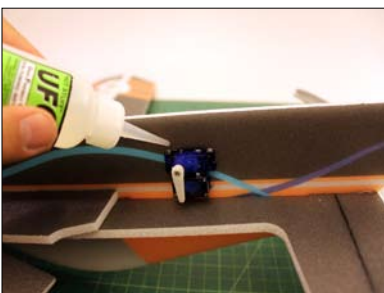
The same side as the wire from the aileron servo.



Next install the elevator servo. Also keep the wires on the same side as all the other servo wires. Pay attention to the servo arm positions.

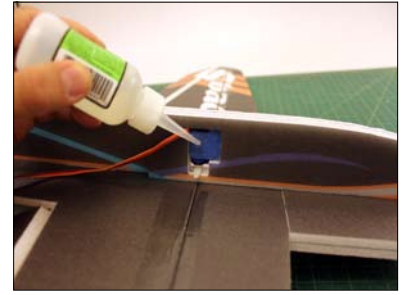


Pay attention to the servo arm positions.

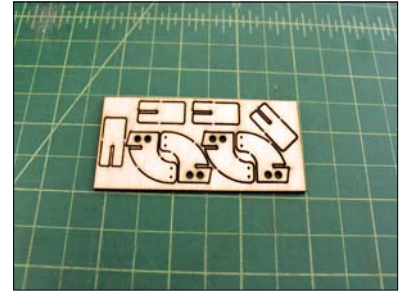


Glue the servos in position.

Once centered properly glue the servo in.



Cut out the control horns.



You may have to drill out the holes with a 1/32 drill bit. Be careful to not widen the hole larger than the pushrod wires. Check fit it first to be sure.



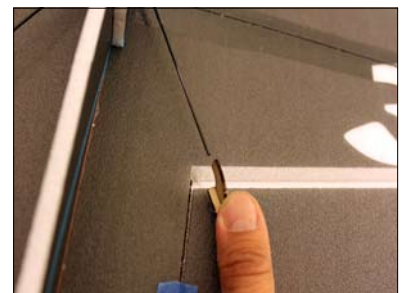
Assemble the control horns. There is no need to glue them together as they will get glued together when you install them on the foam.

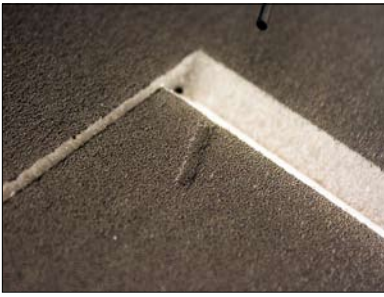


Prepare the 2 aileron push rods with the shrink tube. Heat them with a lighter, heat gun or solder iron tip before installing them. ONLY do half the sides for now.

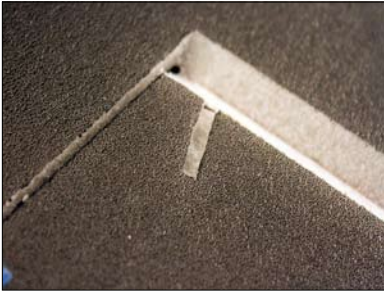


Insert the wire on the servo arm and position the carbon rods to get the proper angle to install the control horn. Once positioned, press down hard.





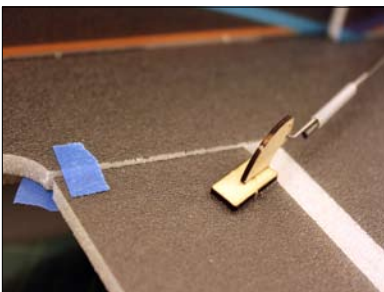
It will have left an indentation.



Cut out some foam where it left a mark.



Make sure the control horn holes are lined up over the hinge line.



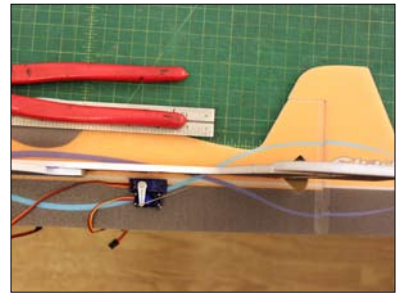
Use low tack blue painters tape to line up the aileron in neutral position. Then insert the wire pushrod over the carbon rod with shrink tube.



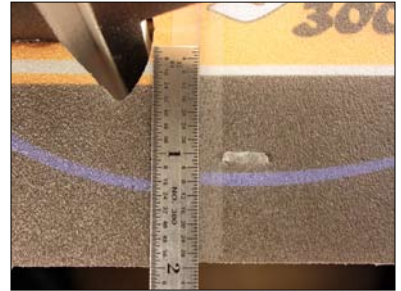
Confirm that the servo is remaining in neutral/center position then lay down some thick paper to protect the foam while you shrink the tube with a lighter or solder iron tip.



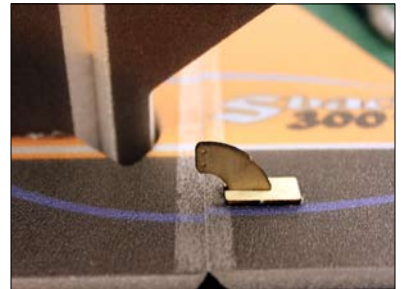
Glue the wire to the carbon rod by applying thin CA to the shrink tube, and let it wick inside the tube.



Lay the airplane on edge of the table to get a good working angle to prepare the rudder linkage.



Mark and cut out the control horn position 1 inch down from the center line.



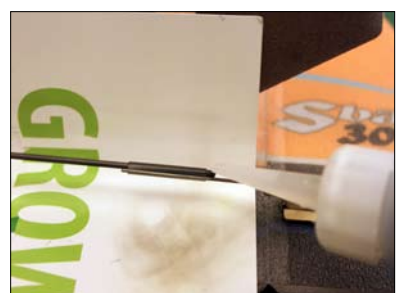
Again, make sure that the holes are lined up over the hinge line.



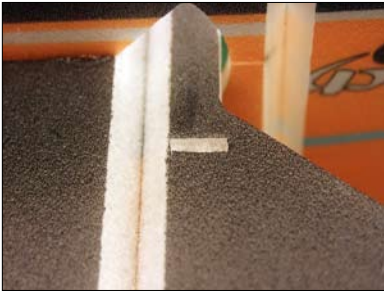
Hook up the wire to the servo arm and control horn, then slip the shrink tube and carbon rod over them. Use the 5 inch rods here.



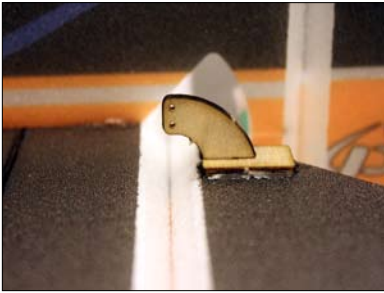
Again make sure everything is centered and lined up correctly. Again use the thick paper to protect the foam while you shrink the tube.



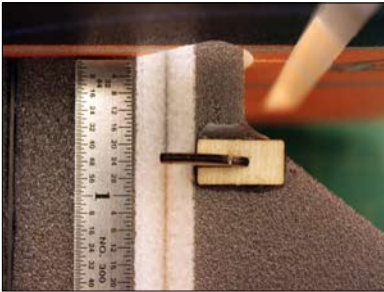
Do the same for the rudder side and apply thin CA to the tube to glue the wire and carbon rod together.



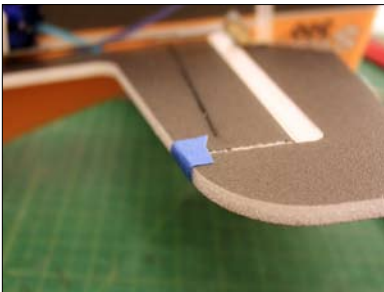
Flip the plane over on its back and work on the elevator linkages. Again position the control horn to line up and make the indentation and cut out some foam.



Glue in the control horn to make sure the holes are over the hinge line.



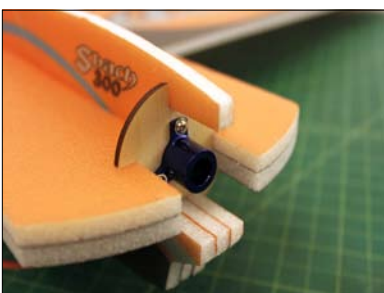
The distance should be where you can install the horn over sufficient foam area on the elevator. About 3/4 inch down from the center line.



Use some blue tape to secure the elevator in neutral position.

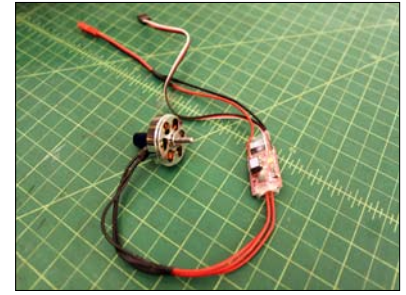


Again set up the wire and the carbon rods with shrink tube as before. Shrink the tube and a drop of thin CA.

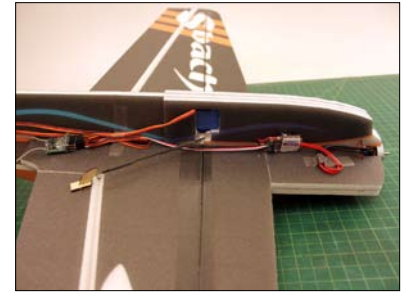


Next Install the motor mount.

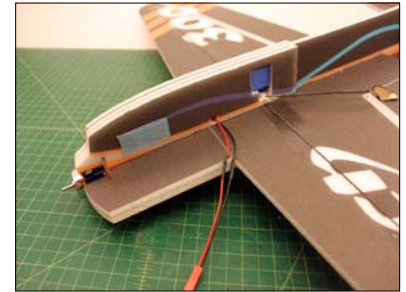
Prepare the motor and ESC assembly. You can use bullets or solder the wires directly. Be sure to test the motor spin direction before you apply the shrink tube.



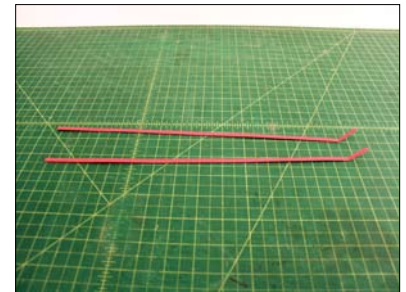
Install your receiver and tape down your wires neatly.



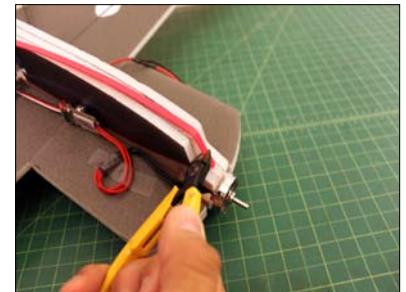
Cut out a small hole and feed the battery connector from the ESC through the other side. Apply Velcro to the side.



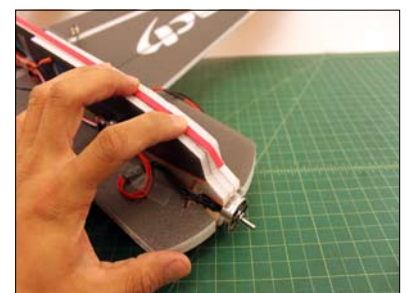
Prepare the 2 zip ties to use as skids.

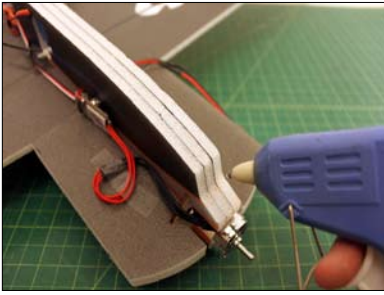


Use 1 of the 15 inch long pieces as the center skid. Trim the front to match the profile.



Lay the first strip down the middle.





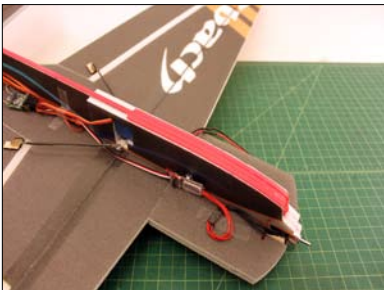
Use Hot glue to attach it.



Cut the remaining long piece into 2 smaller pieces.



Bend the tips to match the front profile.



Hot glue them to the sides. Now you will have a strong skid that will keep your plane bottom clean and prevent it from losing chunks of foam when landing.



Congratulations! You are done!

Warning! This aircraft is not a toy. If built or flown incorrectly, this plane can cause damage property or injury to people. User assumes all responsibility and risk. It should be flown only in fields specifically reserved for RC aircraft which have been approved by the AMA. Also It is highly recommended that you join the AMA if you are not already a member.

Airplane Characteristics:

This plane is simply a blast to fly, it is fully aerobatic and just a fun plane to fly. It is best classified as a / aerobatic/sport/profile plane. With great racer looks, it can be a super choice for park pylon racers too!

Weight without battery: about 8 oz

Weight with 850 11.1v 3S lipo: about 9-10 oz

Center of Gravity: Start with about 1/3 wing chord. Test fly it then move the battery forward or rearward to suit your 3D needs. The plane should fly hands off in straight level flight both upright and inverted when proper CG is used.

Aileron , Elevator, and Rudder Throws:

30 to 45+ degrees deflection for each direction depending on your preference. Dual Rates optional.

Expo is at your preference 20% to 40%

Recommended/power set up:

Motor: Black Magic BM2208-1260 kv

ESC: ZTW 20Amp

Battery: Nano-Power 850mAh 3S 11.1V 45C Lipoly Pack

Prop: GWS 8040

Economy/light set up:

Motor: Keda BR2730 - 1300kv, 1500kv, or 1700kv

ESC: ZTW 12amp

Battery: 460mAh 3S 11.1V

Prop: GWS 8040