EXTREME FLIGHT

3d hobby shop

60" Slick 580 EXP ARF

Instruction Manual



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Please take a few moments to read this instruction manual before beginning assembly. We have outlined a fast, clear and easy method to assemble this aircraft and familiarizing yourself with this process will aid in a quick, easy build.

Please read the following paragraph before beginning assembly of your aircraft!

THIS IS NOT A TOY! Serious injury, destruction of property, or even death may result from the misuse of this product. Extreme Flight RC is providing you, the consumer, with a very high quality model aircraft component kit, from which you, the consumer, will assemble a flying model. It is beyond our control to monitor the finished aircraft you produce. Extreme Flight RC will in no way accept or assume responsibility or liability for damages resulting from the use of this user assembled product. This aircraft should be flown in accordance with the AMA safety code. It is highly recommended that you join the Academy of Model Aeronautics in order to be properly insured and operate your model at AMA sanctioned flying fields only. If you are not willing to accept ALL liability for the use of this product, please return it to the place of purchase immediately.

Extreme Flight RC, Ltd. guarantees this kit to be free of defects in materials and workmanship for a period of 30 DAYS from the date of purchase. All warranty claims must be accompanied by the original dated receipt. This warranty is extended to the original purchaser of the aircraft kit only. Extreme Flight RC in no way warranties its aircraft against flutter. We have put these aircraft through the most grueling flight tests imaginable and have not experienced any control surface flutter. Proper servo selection and linkage set-up is absolutely essential. Inadequate servos or improper linkage set up may result in flutter and possibly the complete destruction of your aircraft. If you are not experienced in this type of linkage setup or have questions regarding servo choices, please contact us at info@extremeflightrc.com or 770-887-1794. It is *your* responsibility to ensure the airworthiness of your model.

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Items needed for completion:

- ✓ **Masking tape.**
- ✓ **Hobby knife with #11 blades.**
- ✓ **Thin and medium CA. We highly recommend Mercury M5T thin and M100XF medium formulas as well as the Mercury glue tips.**
- ✓ **30 minute epoxy.**
- ✓ **Blue Loctite.**
- ✓ **Electric drill with an assortment of small drill bits.**
- ✓ **Small flat head and Phillips head screw drivers.**
- ✓ **Standard and needle nose pliers.**
- ✓ **Side cutter.**
- ✓ **Metric ball driver or allen key set.**
- ✓ **Sanding block and sandpaper.**
- ✓ **4 x METAL GEARED servos with a minimum of 76oz of torque. All flight testing was performed with Hitec HS-7245MH.**
- ✓ **3 Extreme Flight Lighweight 1.25" aluminum servo arms**
- ✓ **1 Extreme Flight Lightweight 3" aluminum servo arm**
- ✓ **2 x 6” Extreme Flight Servo Extensions for the Ailerons.**
- ✓ **1 x 24” Extreme Flight Servo Extension for the elevator servo**
- ✓ **Torque 4016T/500 MKII Brushless Outrunner.**
- ✓ **Airboss Elite 80 Amp ESC.**
- ✓ **6S 3300-4000 mah LiPo battery.**
- ✓ **16 x 7 Xoar PJN prop**
- ✓ **Pacer canopy glue and shoe goo adhesive.**

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Tips for Success:

1. **Before starting assembly, take a few minutes to read the entire instruction manual to familiarize yourself with the assembly process.**

2. **Due to climate changes, wrinkles may develop in the covering. These are easily removed with a little bit of heat. Use your heat gun or a covering iron with a soft cotton iron sock, medium heat, and a gentle technique. Be careful not to use too much heat as the covering may shrink too much and begin to lift at the edges. Take your time, and the beautiful glossy finish can be easily maintained.**

3. **Apply a bead of Pacer Formula 560 Canopy Glue at the intersection of the plastic canopy and its wooden frame.**

4. **Take a few minutes and apply CA to high stress areas such as servo mounting trays, landing gear mounts, anti-rotation pins, and motor box joints.**

5. **By the time your aircraft arrives at your door step, it will have been handled by a lot of people. Occasionally, there are small dings or imperfections on some of the surfaces. An effective method to restore these imperfections to original condition is to use a very fine tipped hypodermic needle and inject a drop of water under the covering material and into the ding in the wood. Apply heat to the area with a sealing iron and the imperfection will disappear. Deeper marks may require that this process be repeated a couple of times to achieve the desired result, but you will be surprised at how well this technique works.**

6. **Use a high quality epoxy for installing the composite control horns. We highly recommend a 30 minute Pacer Z-poxy.**

7. **Take the time to properly balance and trim your aircraft and set up rates and exponential values. Your flying experience will be greatly enhanced once your plane is properly dialed in.**

NOTE: Some photos in this manual use another of our 50E aircraft, but all of our 50E sized aerobatic aircraft assemble nearly identically.

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Let's begin!

1. **Locate the 2 wing panels as well as the composite aileron control horns. Use a soldering iron or sharp hobby blade to remove the covering over the servo opening and the slot for the aileron horn. Make sure you are doing this on the bottom of the aileron!**



2. Use sandpaper to scuff the portion of the horn that will be inserted into the aileron. Glue the horn into the aileron as shown, making sure adequate epoxy is in the slot for a good bond. Wipe away any excess epoxy with a cloth soaked in denatured alcohol.



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3. Flex the ailerons fully up and down, check for free action.



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4. Making sure the aileron is properly aligned between the wing root and wing tip, hold the aileron fully deflected and apply a few drops of thin CA to each hinge. Flip the wing over and repeat.



5. Before installing the aileron servo, take a minute and apply some CA to the servo tray and the anti-rotation pins.

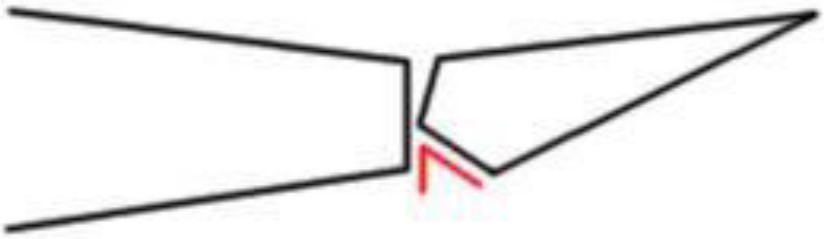


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6. Before moving to the next step, it would be a good time to seal the hinge gap with a strip of Ultracote or Blenderm tape. Be sure to fully deflect the control surface when sealing the gap to allow for full deflection once the gap is sealed.

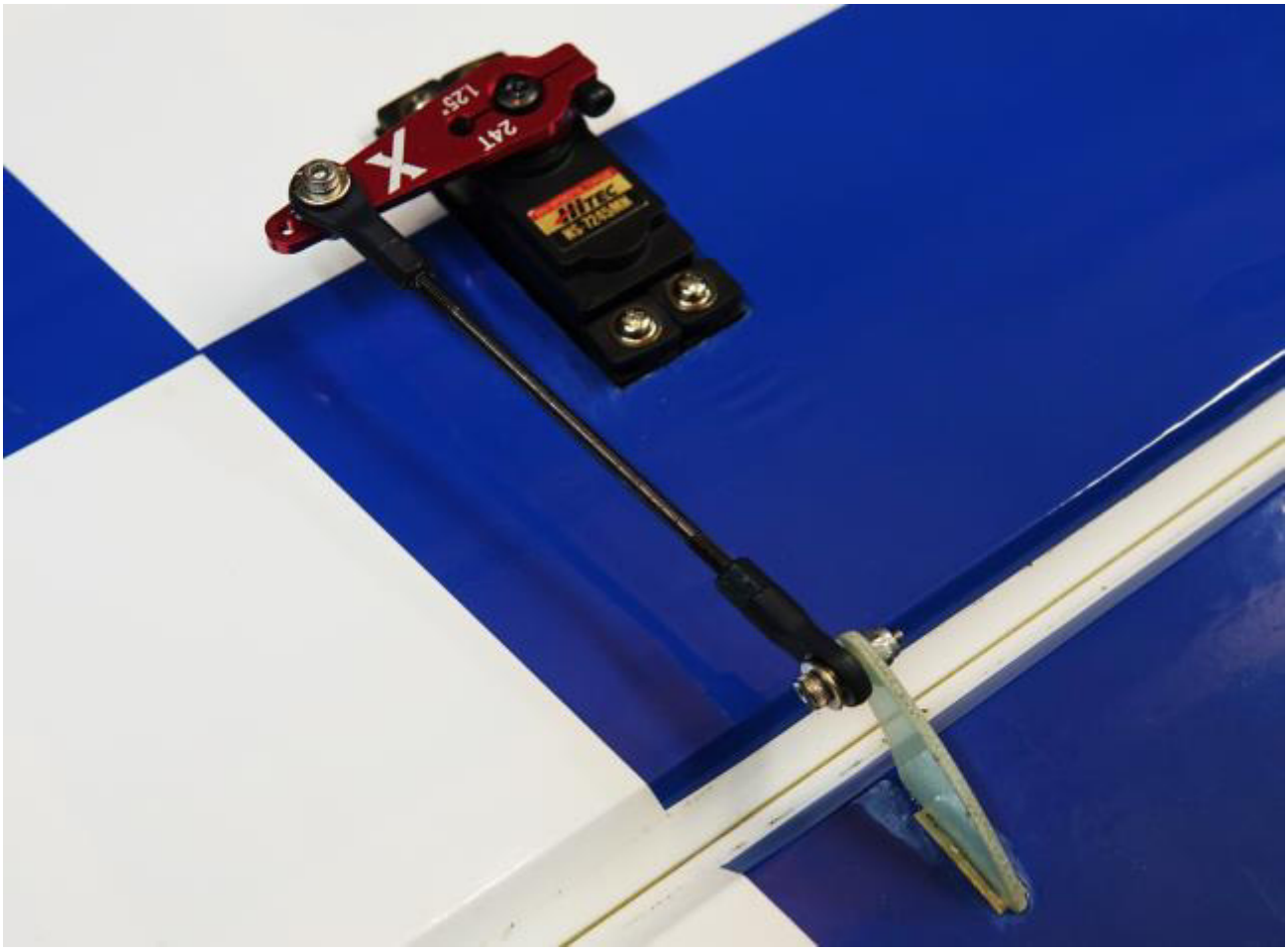
Sealing the hinge gaps on your model improves control feel and response, but it is important that the seal not create too much drag, leading to poor servo performance. Make sure you ailerons, and any surfaces you seal, move freely after sealing.



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7. Attach a 6” servo extension wire to the aileron servo, and make sure it is secured with tape or heat shrink or a lock. Use the manufacturer supplied mounting hardware to install the servo as shown. Electronically center the servo and install the EF 1.25" lightweight servo arm as shown.

Locate 2 of the short threaded metal pushrods and 4 ball links along with 4 x 2mm screws, nuts and washers. Thread the ball links onto each end of the pushrods and secure to the servo arm (notice we are using the 2nd hole in from the end of the arm) and to the control horn as shown in the picture below. Repeat this process for the other wing half. Clean the wing panels with a soft cloth and put them away.



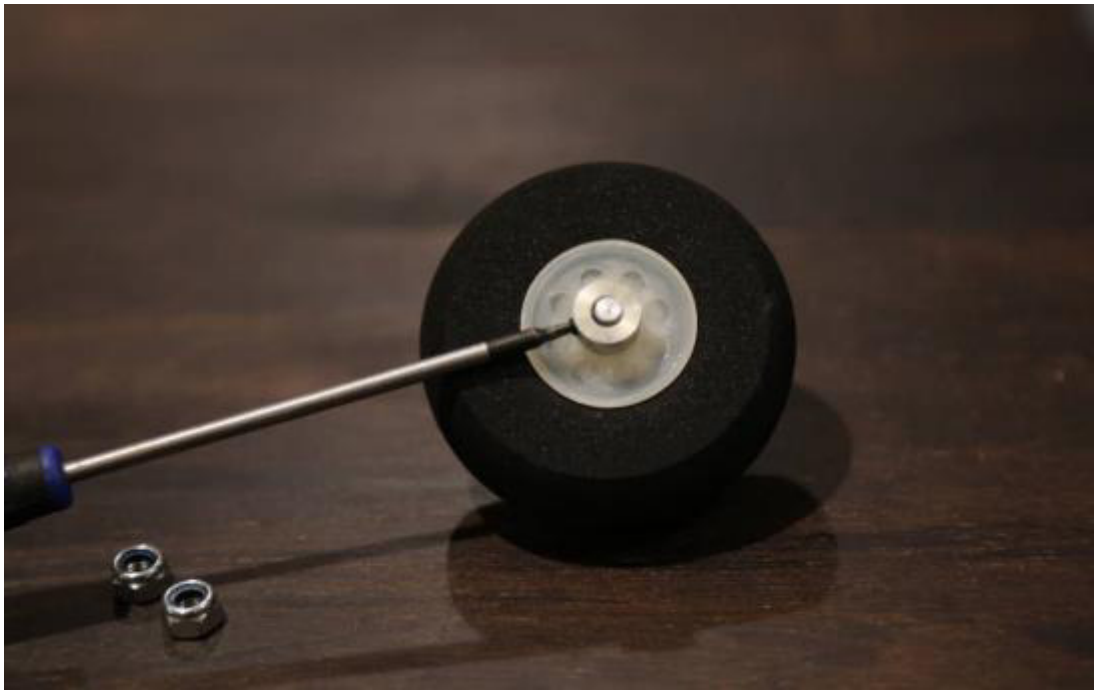
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Fuselage Assembly

8. Locate the 2 axles, 2 locking nuts, 2 wheels, 2 wheel collars and 2 wheel pants.



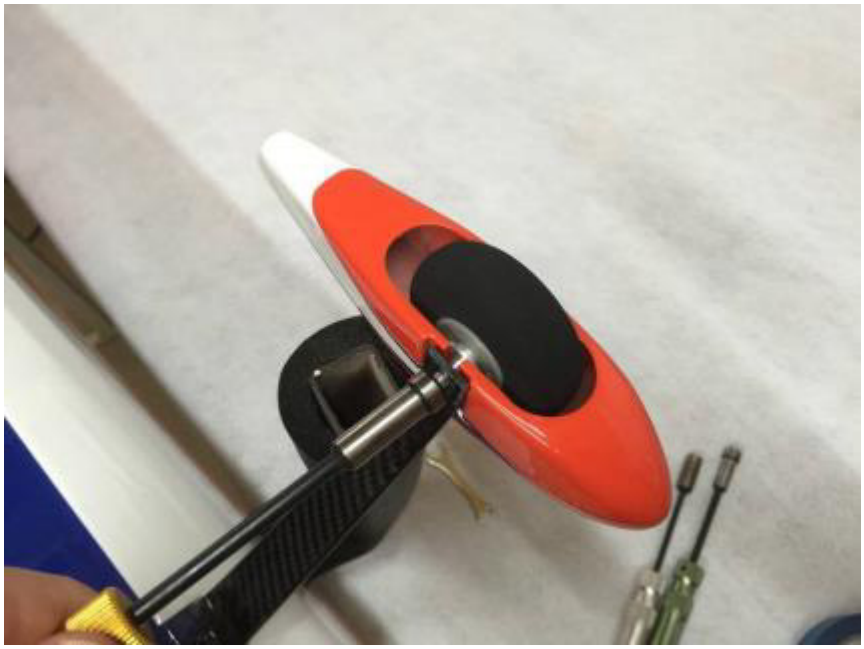
Place the wheel on the axle and secure with the wheel collar.



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9. Place the threaded portion of the axle through the hole in the landing gear and attach the lock nut and washer onto the axle. NOTE: Note the LG has a tapered edge and a straight edge; make sure the straight edge faces the front. Slide the wheel pant into position over the axle and tighten the nut, making sure the wheel pant is positioned properly. Use the included metal wrench to hold the axle as shown, and tighten the nut securely.

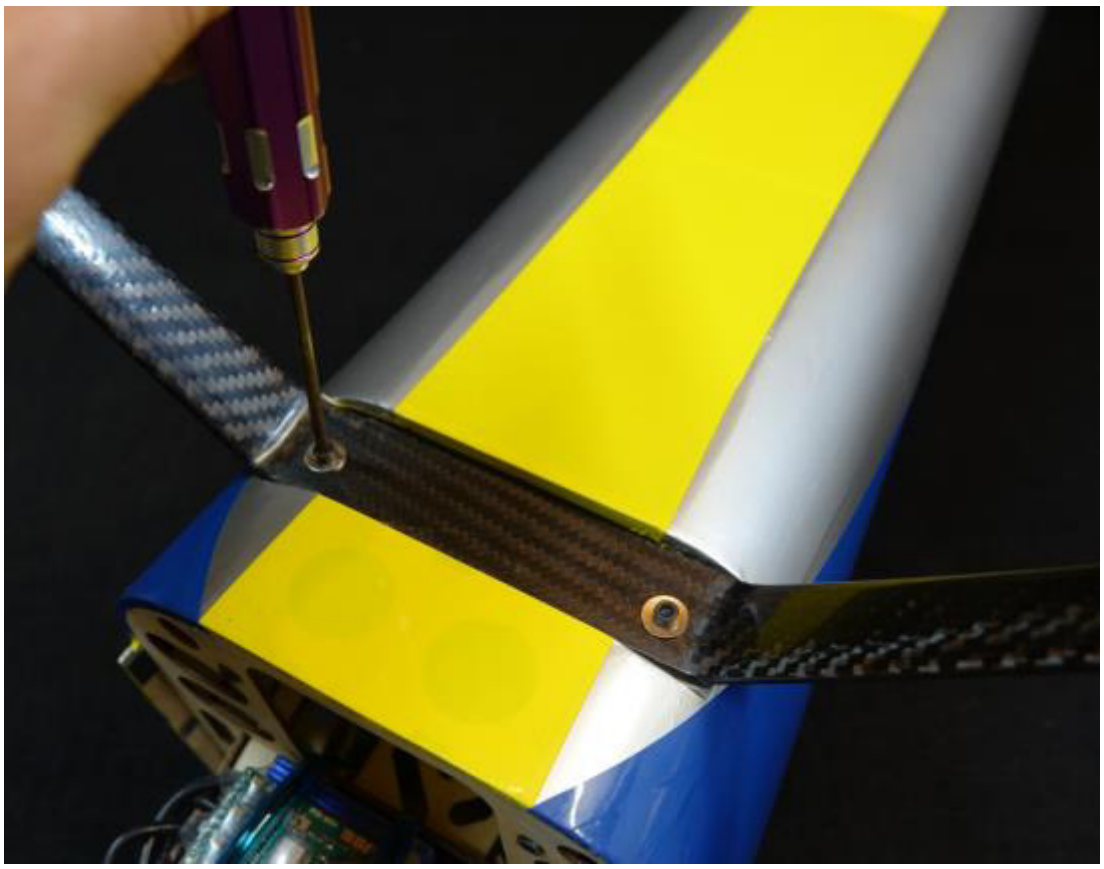




10. Secure the landing gear to the fuselage by inserting the 3mm bolt into a washer, through the carbon fiber gear and into the pre-installed blind nuts in the fuselage.

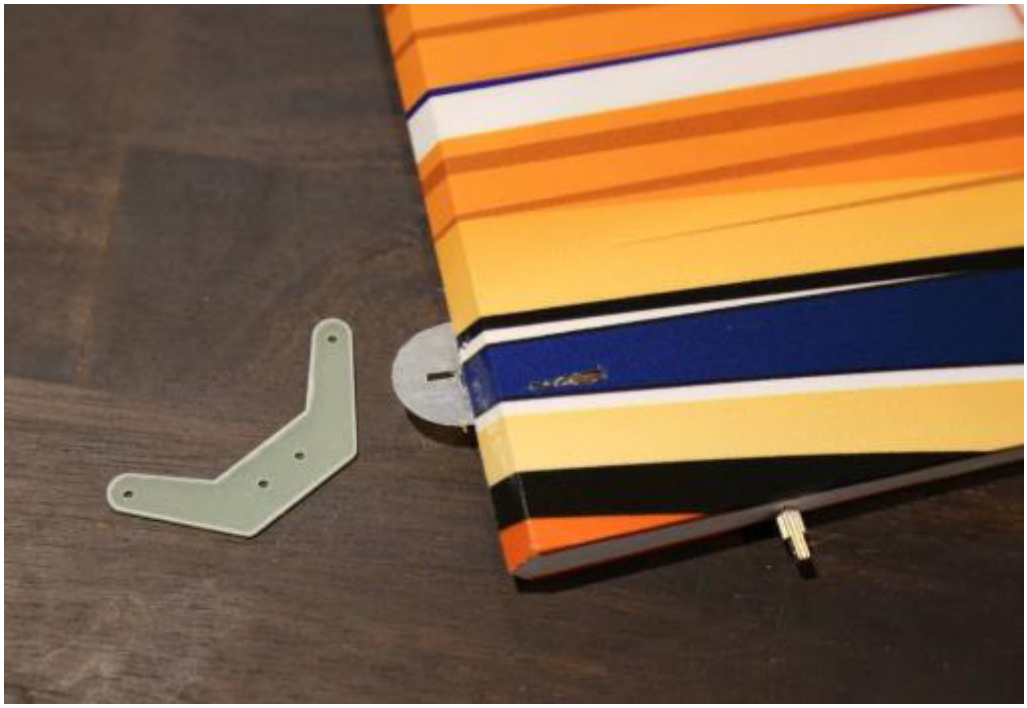
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Make sure to use a drop of blue Loctite on each bolt to prevent them from backing out. Note the LG has a tapered edge and a straight edge; make sure the straight edge faces the front of the fuse.



11. Locate rudder and rudder pull-pull control horn as shown. Remove covering over slot in rudder for horn as shown.

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12. Scuff center of rudder control horn with sandpaper and glue into rudder with epoxy as shown. Allow to cure.



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13. Check alignment of rudder hinges and slide rudder onto fuselage. Check for free swinging motion 45 degrees each way, and glue with thin CA glue as you did the aileron hinges.



14. Locate the hardware for the rudder pull-pull system as shown. Thread the ball links onto the brass ends as shown.

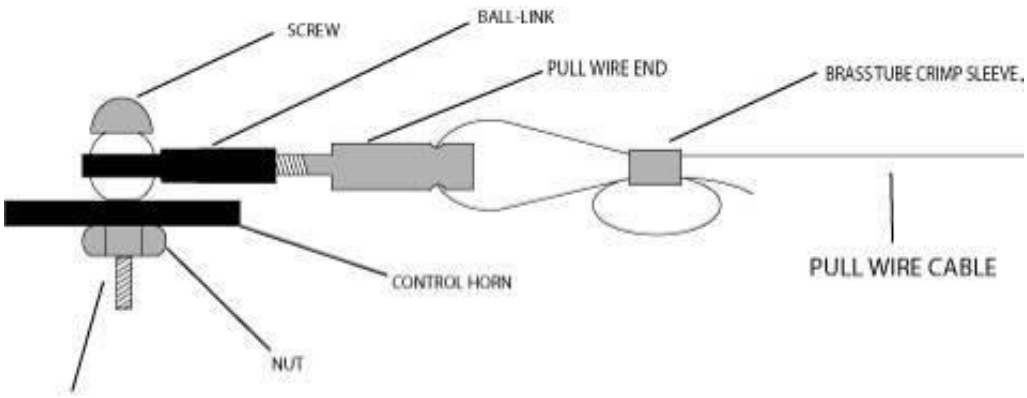


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15. Using a piece of masking tape, tape the rudder so that it remains centered while you build the pull-pull cables. Screw the ball links and ends onto the rudder horn as shown, placing a washer on the ball-link side of the screw. Thread one of the brass tubes onto the pull-pull cable and loop the cable as shown. Pinch the tube with pliers to lock the cable. Add a drop of thin CA to the pinch. Repeat on other side.

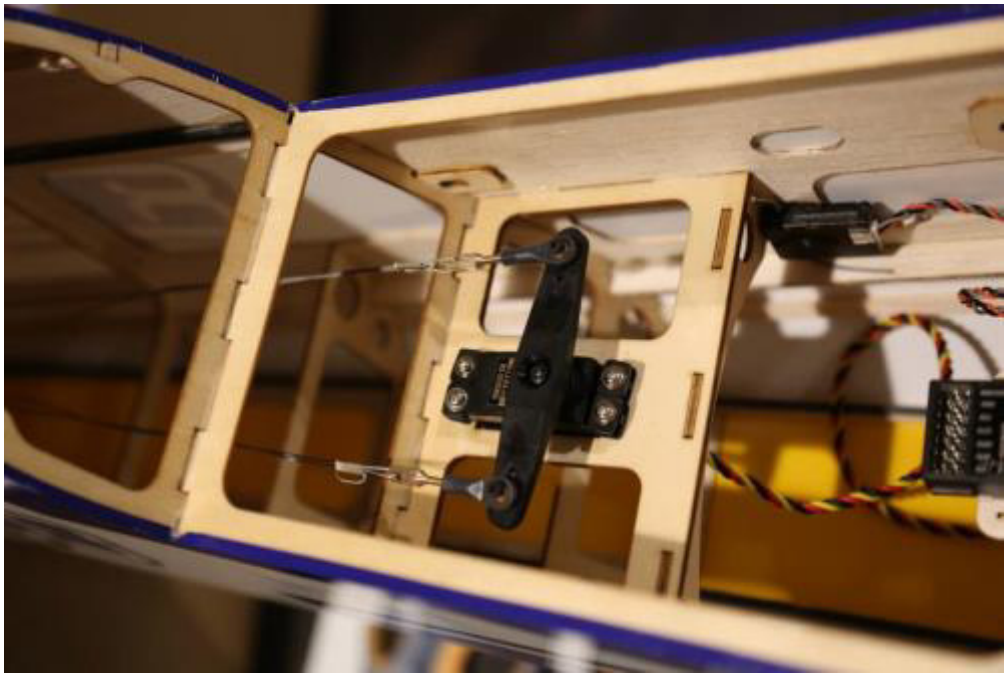


The cable connection is made as shown:



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16. Mount the rudder servo as shown. Assemble the pull-pull cable ends as you did on the rudder end as shown. The cables should be taught, but not so tight as to cause drag on the servo.



17. Remove covering over the horizontal stabilizer slot in the fuselage as shown.



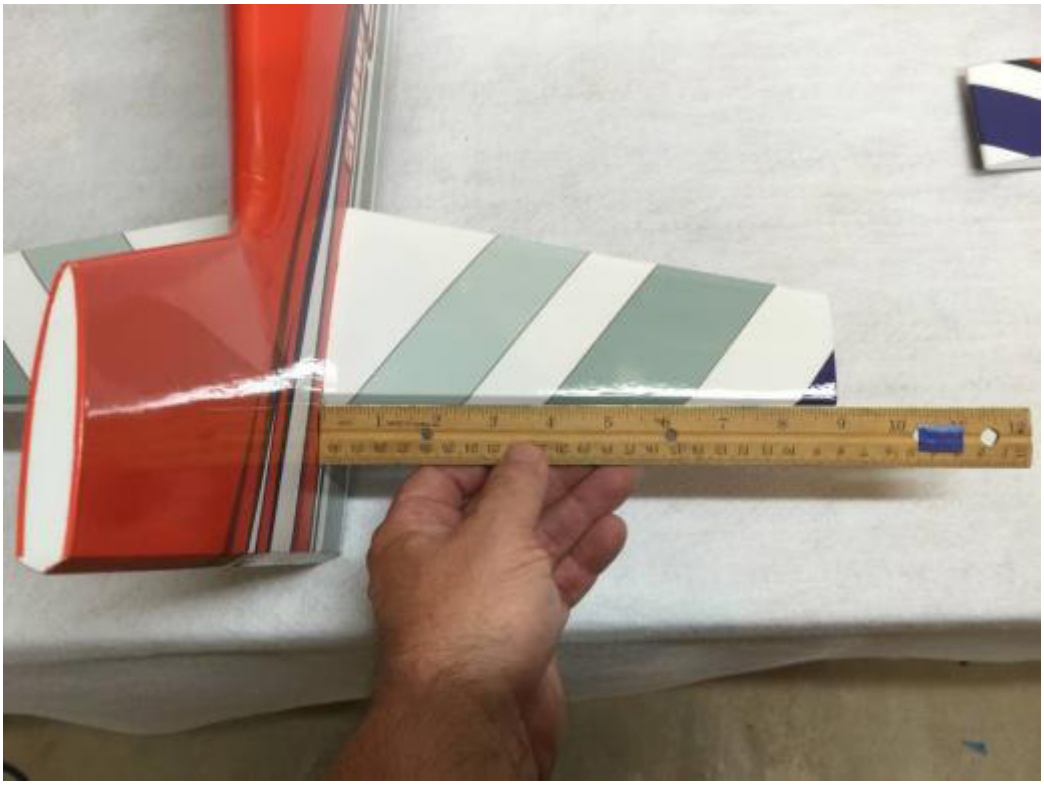
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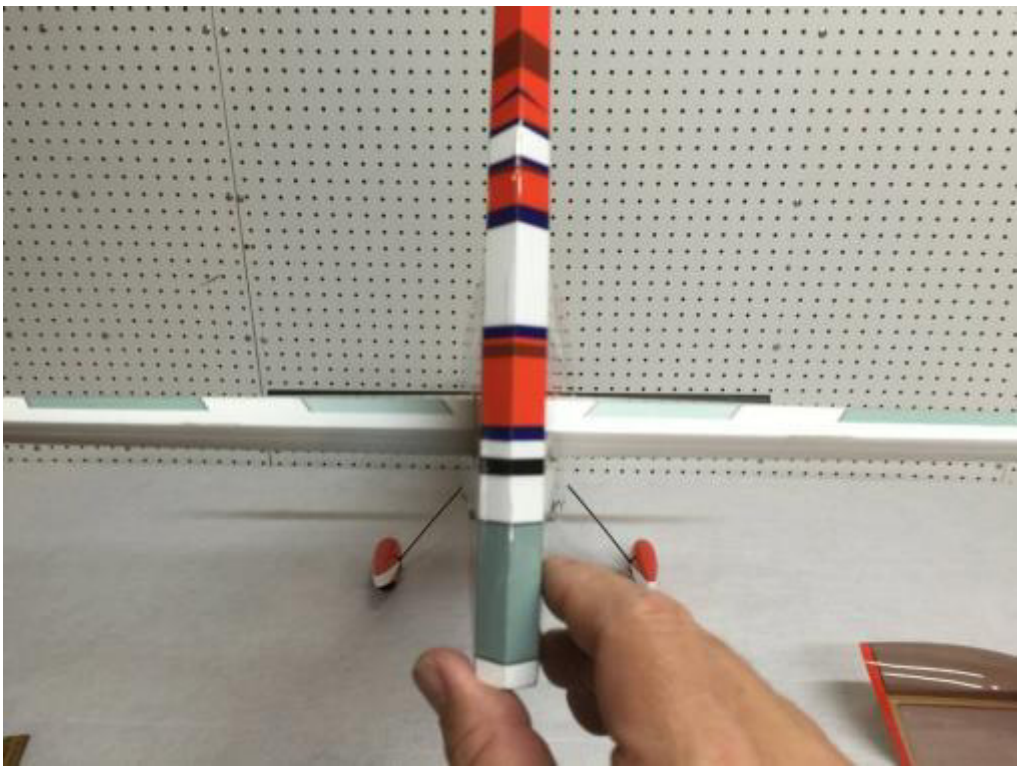
18. Remove the covering over these openings in the fuselage, for the wing tube, wing pins, and aileron servo wires.



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19. Insert the stabilizer into its slot and the carbon fiber wing tube into the fiberglass sleeve. Use a ruler to insure that the stabilizer is centered in its slot and compare the stabilizer to the wing tube to make sure it is properly aligned. Sand or shim the slot if necessary to ensure proper alignment.





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20. Once satisfied with the alignment, glue the horizontal stab in place by applying CA along the joint between the stab and fuse. Make sure to apply CA to the top and bottom of the stab, being careful not to get CA on the covering. Allow to dry.

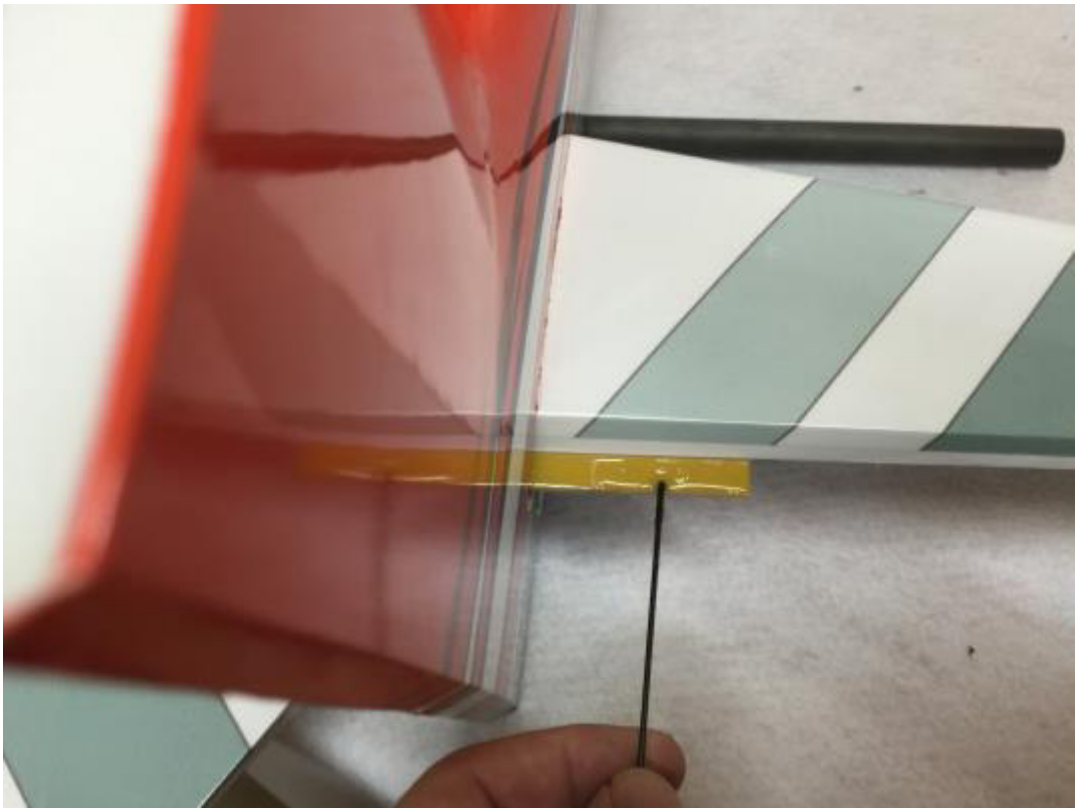


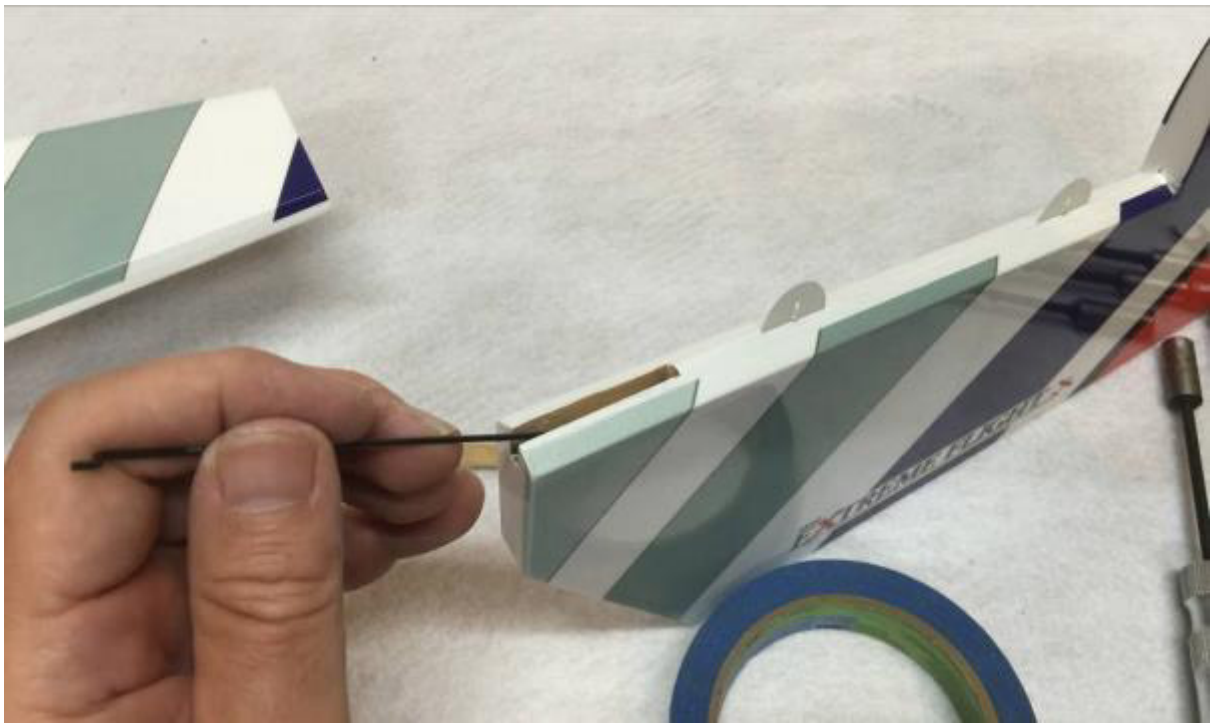
21. Install the left side elevator (with elevator joiner) as shown. Do not glue hinges yet.



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22. Test fit the right side elevator, and make sure the elevators are perfectly aligned. Sand the slot in the right side elevator as necessary to make the elevators align perfectly. Once the alignment is perfect, remove the right elevator apply epoxy to the joiner and slot as shown.





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23. Re-install the right elevator, check alignment again, check for free movement 50 degrees up and down, glue elevator hinges with thin CA. Tape the elevators to the stab as shown to ensure perfect alignment while the epoxy cures.



24. Remove the covering over the elevator control horn slot and elevator servo mount as shown.

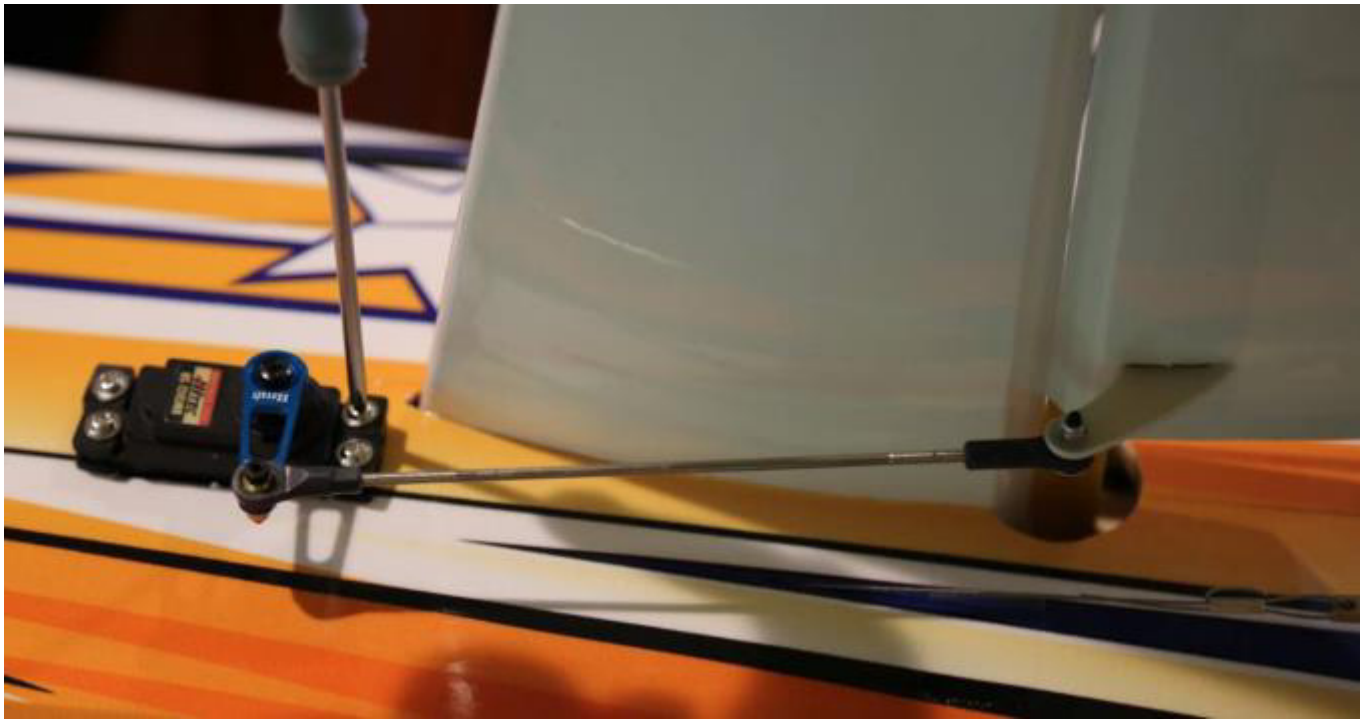


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25. Scuff the elevator horn and install with epoxy as on the ailerons and rudder. Build and install pushrod as shown.

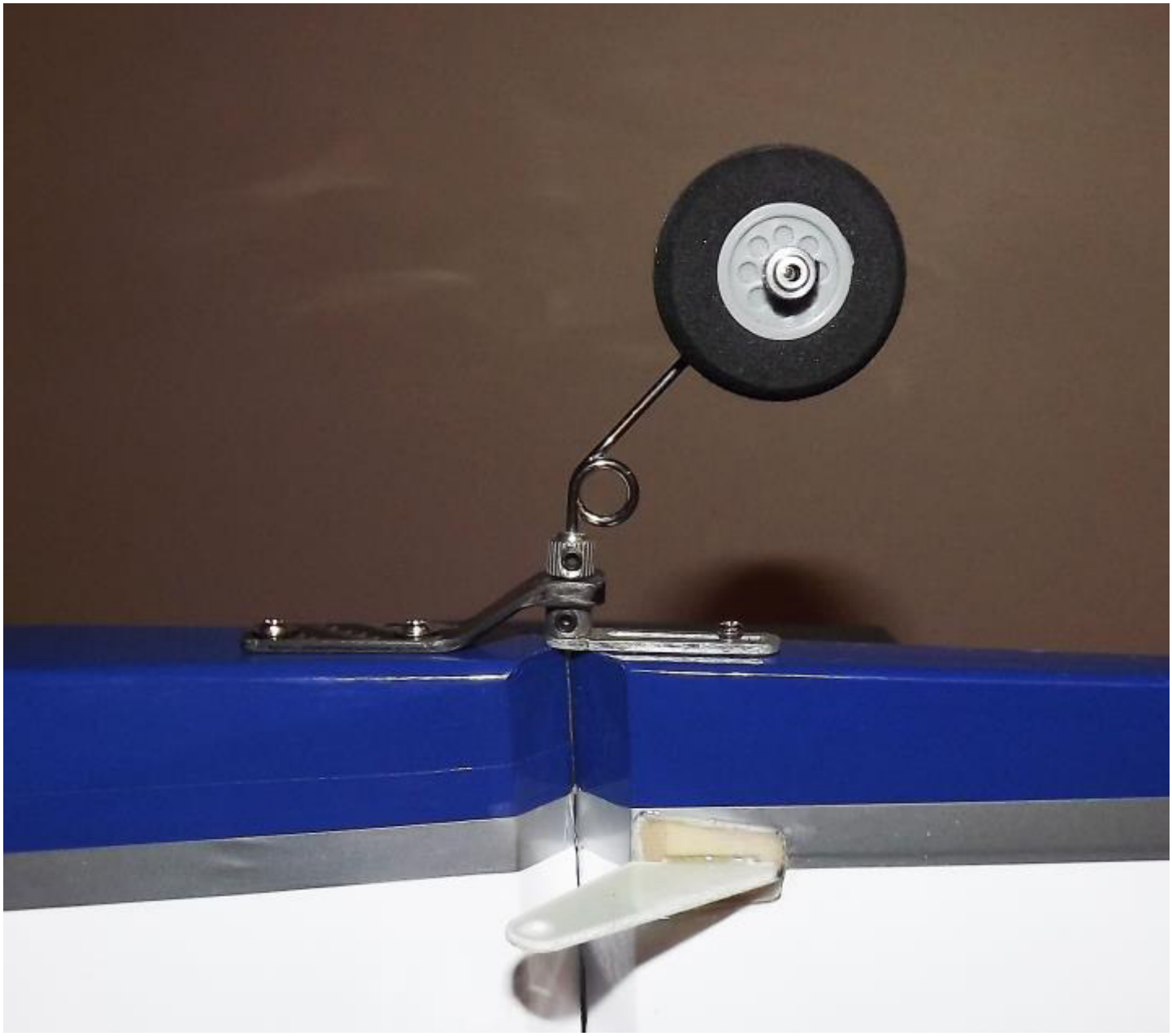


26. Install a 24" servo extension wire on the elevator servo, install into the fuselage as shown.



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27. Locate the carbon fiber tailwheel assembly in the hardware package. Secure the tailwheel bracket to the bottom rear of the fuselage with the provided wood screws, making sure the pivot point of the assembly is over the hinge line of the rudder. It is a good idea to remove the set screws from the tailwheel assembly and apply blue Loctite to them, then re-install. Attach the tiller arm to the bottom of the rudder with the provided course pitch screw.



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28. Next prepare the Torque outrunner motor for mounting. First, slide the provided collar over the motor shaft and secure in place with the set screw. Place a drop of blue Loctite on the threads of the set screw so that it will not back out.



29. Next, secure the radial mount to the motor using the provided short Phillip's head machine screws. Again be sure to use a drop of blue Loctite on each screw.

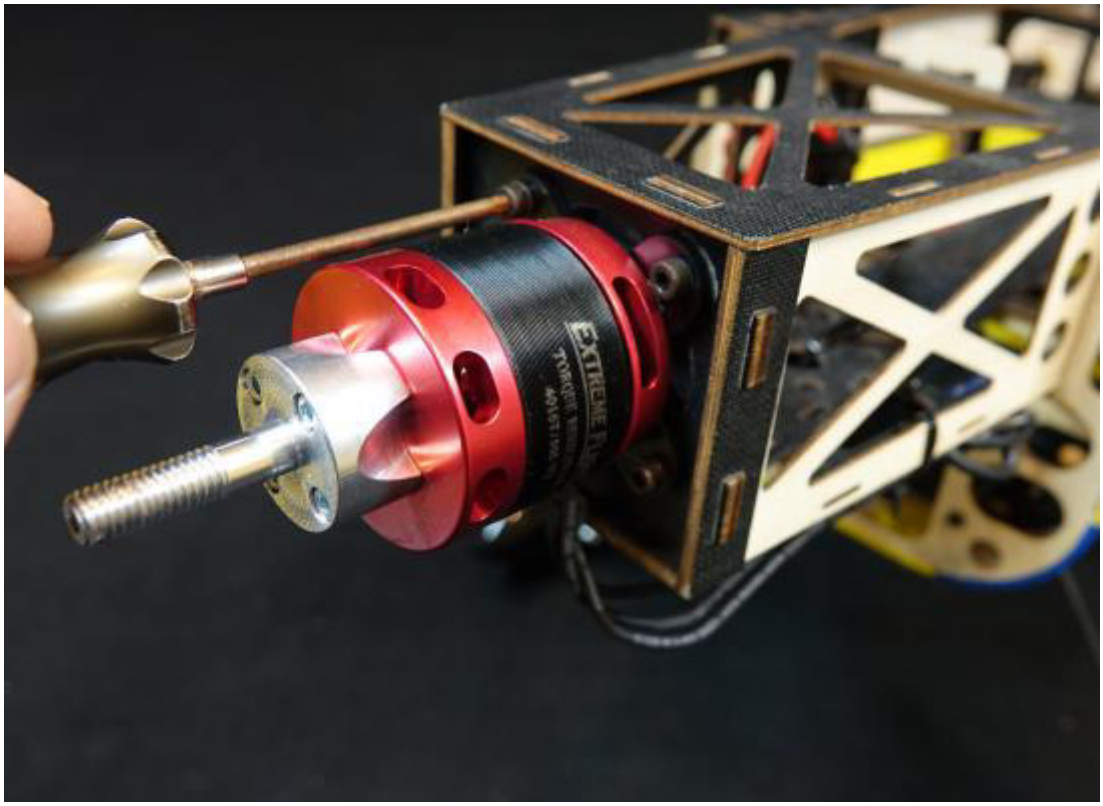


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30. Secure the prop adapter using the 4 socket head cap bolts. Blue Loctite should be applied to each bolt.

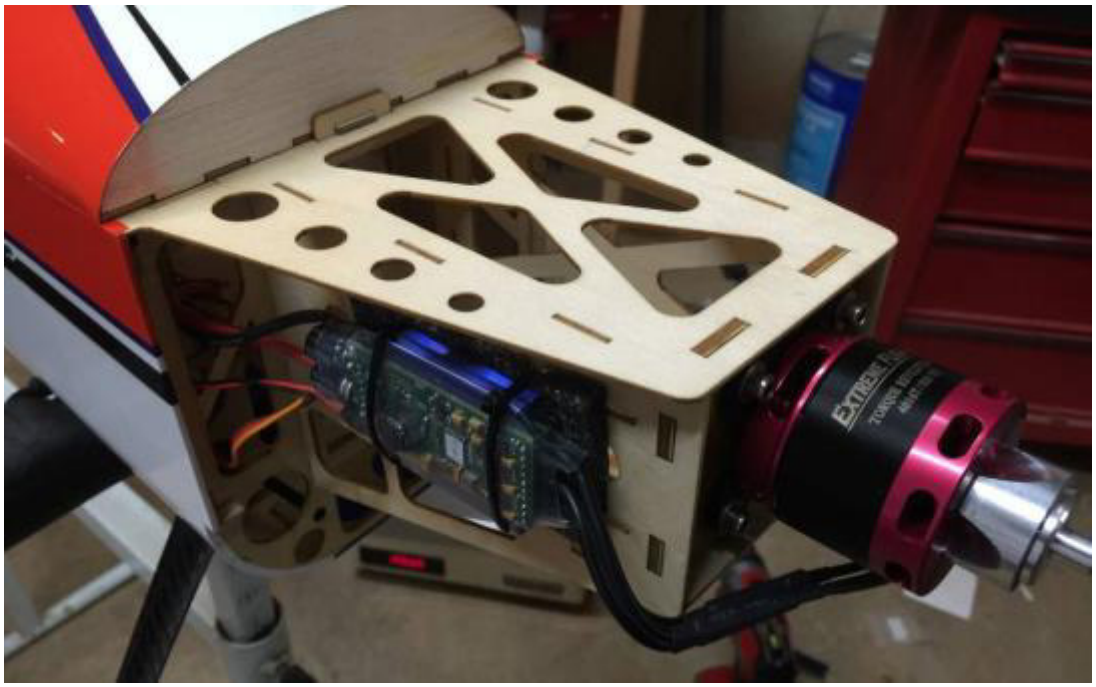


31. Install the motor with included 4mm screws into the pre-installed blind nuts.



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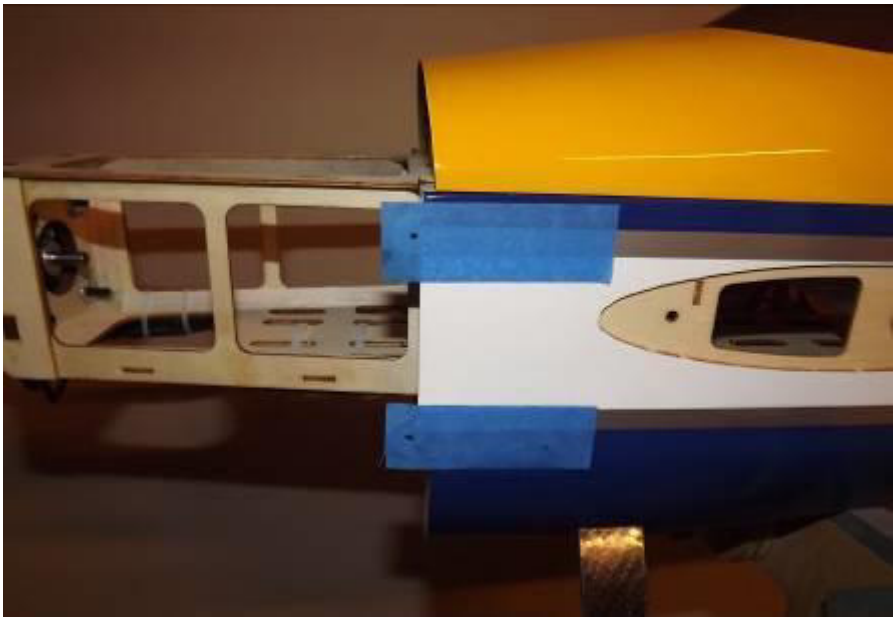
32. Install the ESC to the side or bottom of the motor box using zip ties or Velcro to secure the ESC. Connect the wires of the ESC and motor together.



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Mounting the Cowl

33. Tear 4 short pieces of blue painters tape from a roll. Place each piece of tape on the side of the fuselage so that each piece corresponds with one of the 4 cowl mounting tabs. Use a fine tipped marker to mark the location of the center of each mounting tab.



34. Install the canopy, roll the tape back and slide the cowl into position. Install the spinner backplate onto the motor shaft for reference and once satisfied with the cowl position roll the tape back into place and secure the cowl.

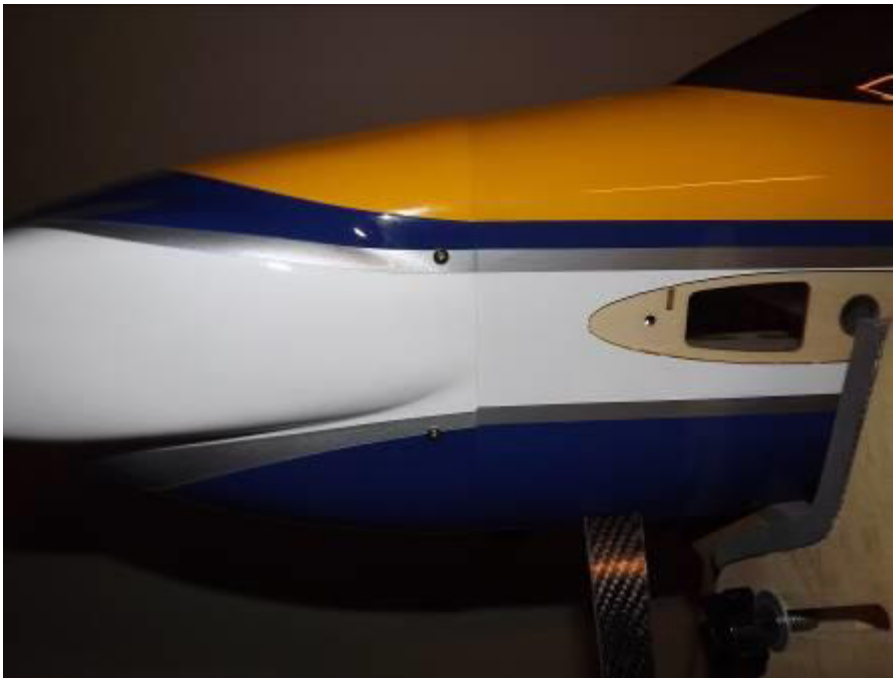


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35. Use a 1/16" drill bit to drill a hole at the location of the dot on each piece of tape.



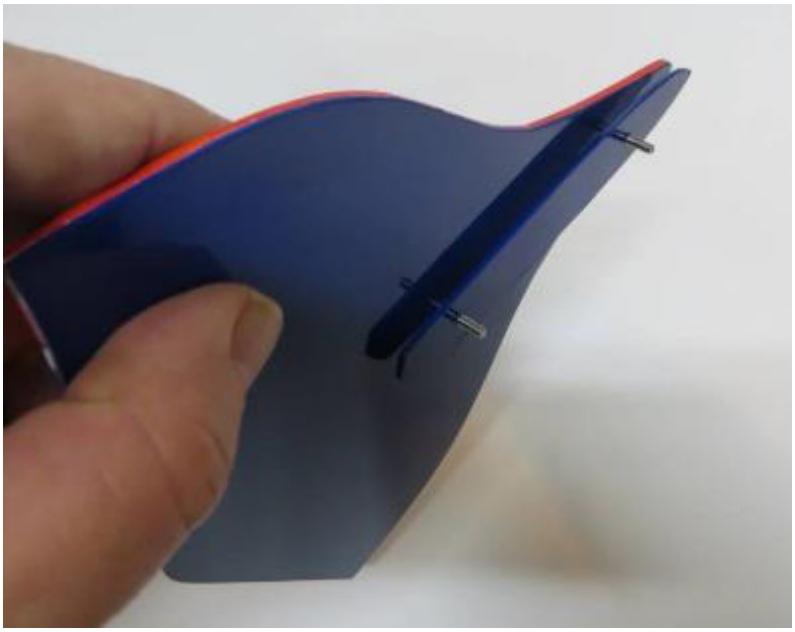
36. Remove the tape and secure the cowl with 4 of the included small wood screws that have the large heads.



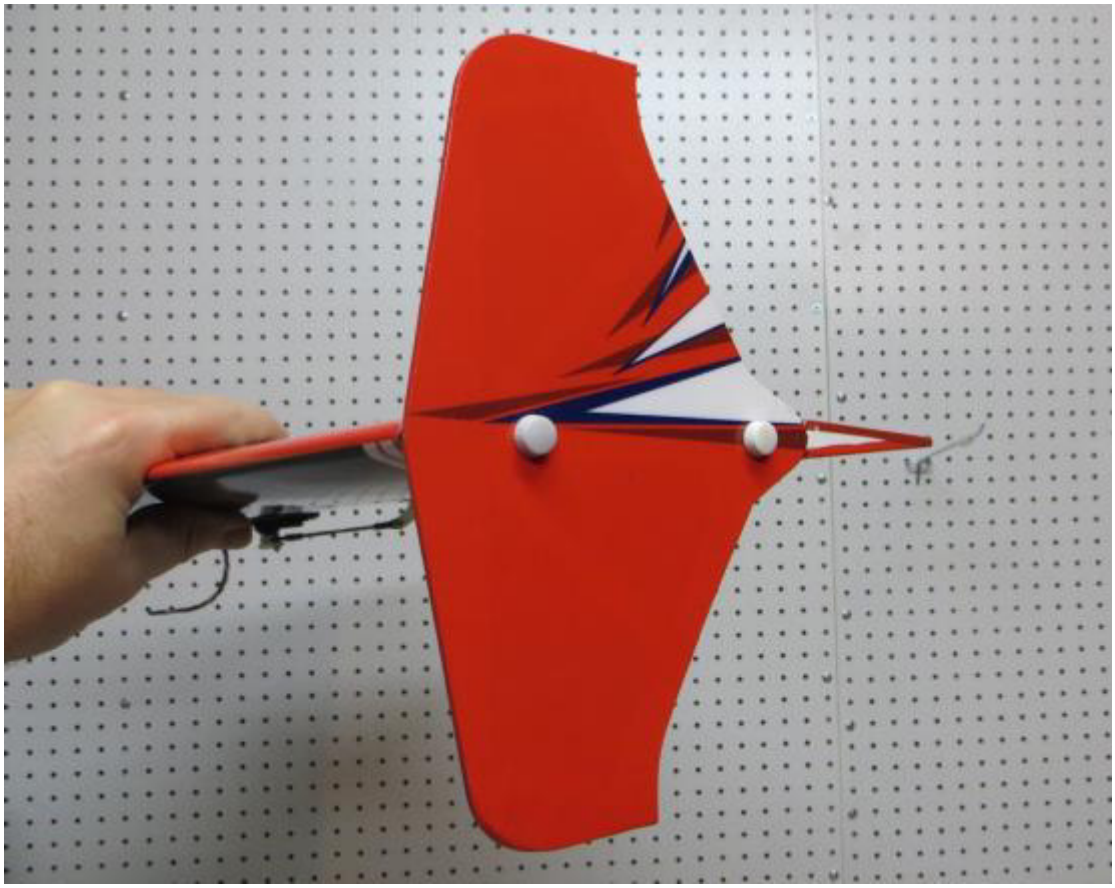
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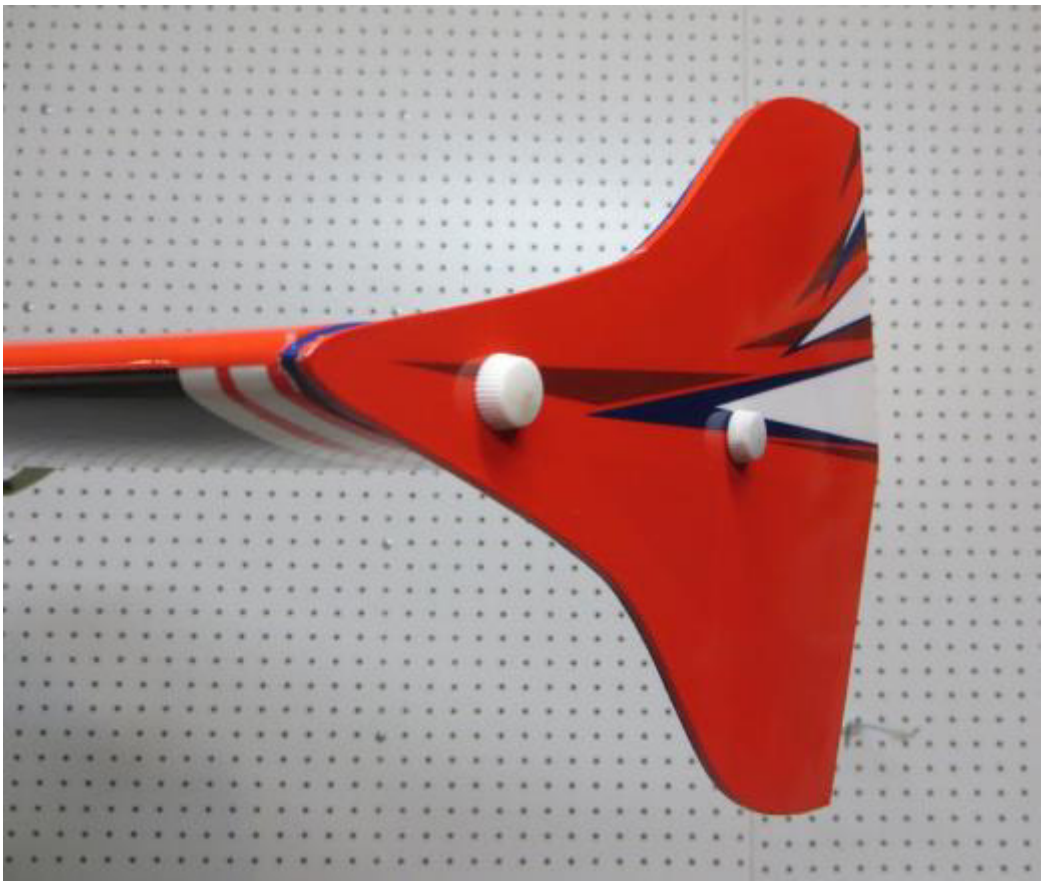
37. Mount your receiver in the fuselage. Use Velcro and a Velcro retention strap to secure your lipo battery. Slide your lipo as necessary to achieve a CG point 4.5 – 5" behind the leading edge of the wing where the wing meets the fuselage.

41. Your kit includes 2 different SFG's to try on your wingtips. One set is a radical forward-swept XA design. The 60" Slick does not require SFG's for excellent flight performance, but trying the SFG's can give you different performance in various maneuvers. Experiment and have fun! When mounting the SFG, place the spacer in-between the SFG and wing tip. Each SFG mounts using 2 X 3mm screws.



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42. Check your motor rotation direction, make sure your prop is tightened, verify that your battery is fully charged, and be certain your wing bolts are tight.



Trimming your 60" Slick

We highly recommend fine tuning your CG using the 45 degree line test. Fly the aircraft from left to right or right to left, whichever direction you are more comfortable with at 3/4 to full throttle. Pull the aircraft to a 45 degree up line and establish this line and immediately roll the aircraft inverted. Establish this line and let go of the elevator stick. Ideally the aircraft will continue to track on that 45 degree line for several hundred feet before slowly starting to level off. Adjust the position of your battery to achieve this flight condition. Once satisfied with the location of your CG scribe a mark on the battery tray so that you can position the battery in the same location each flight and achieve the same feel and flight characteristics each flight.

I also highly recommend taking the time to properly set up your rates and exponential settings. Setting up low rates for precision maneuvers and high rates for aggressive aerobatics and 3D flight will allow you to experience the best attributes of the Slick or any aircraft for that matter. Here are some suggested rates to get started with. These are the rates and exponential values I feel comfortable with. They may feel awkward to you and if so please adjust to your taste.

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Elevator: Low rate-8-10 degrees; 15-20% Exponential
3D rate-45-50 degrees; 40-50% Exponential
Insane tumble rate: As much as possible! 65-70% Exponential

Rudder: Low rate-20 degrees; 45-50% Exponential
3D rate- As much as possible; 60-70% Exponential

Aileron: Low rate-15-20%; 40-45% Exponential
3D rate- As much as possible; 50-60% Exponential

This completes the assembly of the 60 Slick. As a final step clean the entire aircraft with glass cleaner, then apply a coat of spray-on wax and buff the finish to a high gloss with a microfiber cloth. My favorite product for this is Eagle One Wet Wax AS-U-DRY, available in the automotive section of most Wal-Marts, K-marts, Sears, Targets, etc. People often ask me at trade shows how I get the planes to look so shiny, this is my secret.

Thanks again for your purchase of the 3DHobbyShop 60" Slick 580 EXP ARF. I hope you enjoy assembling and flying yours as much as I have mine.
See you at the flying field!
Chris Hinson
Extreme Flight RC

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