104" EXTRA 300 ARF

Assembly Manual



EXTREME FLIGHT RADIO CONTROL™

STATE-OF-THE-ART R/C AEROBATIC AIRCRAFT AND ACCESSORIES

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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 to the AMA safety code. It is highly recommended that you join the Academy of Model Aeronautics in order to be properly insured, and to 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 set-up 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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A few tips to ensure success

1. **We are very pleased with the level of craftsmanship displayed by the builders in our factory. Through hundreds of grueling test flights containing maneuvers that no aircraft should be subjected to, our prototypes have remained rigid and completely airworthy. Having said that, it is impossible for us to inspect every glue joint in the aircraft. Take a few minutes and apply some medium CA to high stress areas such as the aileron servo mounting trays , landing gear mount, anti rotation pins, wing and stab root ribs, etc.**
2. **Having survived the journey half way around the world while experiencing several climate changes, it is not uncommon for a few wrinkles to develop in the covering. Fear not! These are not manufacturing defects, and are easily removed with a little bit of heat. Use a sealing iron to go over all seams, stripes and sharp points in the covering scheme. You may want to apply a drop of clear fingernail polish at the tip of all sharp points to prevent them from lifting. To remove wrinkles use a 100% cotton tee-shirt or microfiber cloth and your heat gun and heat the covering while gently rubbing the covering onto the wood with the t-shirt or cloth. 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 a beautiful, paint like finish is attainable.**
3. **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 to 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.**
4. **DO NOT SKIMP ON SERVOS! Your aircraft is equipped with very large control surfaces that deflect well over 45 degrees. A lot of servo power is required to prevent flutter and to maintain the required deflection for maneuvers. We absolutely recommend the use of METAL GEARED servos with a minimum of 350 oz. inches of torque for the ailerons and elevator and at least 450 oz. inches of torque for the rudder.**
5. **Use a high quality epoxy for installing the composite control horns and hinges. We highly recommend the use of Pacer Z-Poxy 30 minute formula. We have used this glue for many years with zero failures.**
6. **You may want to add a bead of silicone glue (Pacer Zap-A-DAP-A-GOO, etc.) or RC-56 Canopy glue to the intersection of the canopy/hatch and its wood frame for additional strength and resistance to vibration. DO NOT USE CA here as it will fog the canopy.**
7. **Your aircraft is built using very modern construction techniques and is very light weight for its size. As with any high performance machine, regular inspection and maintenance is a must. While disassembling your aircraft after a flying session, pay close attention and inspect glue joints, linkages and loose covering to be sure the airframe is sound. A few minutes spent doing this will help maintain airframe longevity.**
8. **Be sure to put a drop of blue Loctite thread locker on every bolt on this aircraft! Failure to do so may cost you your aircraft! This includes servo screws!**
9. **The basic assembly process of the Extra is very similar to that of our previously released 50cc and 100cc aircraft. Some of the photos in this manual may be taken from a previous aircraft release if we determined that the assembly step was illustrated more clearly in these photos.**

If repairs become necessary the Ultracote colors used are as follows:

Red/White/Black color scheme: True Red- # HANU866, White- # HANU870, Black- # HANU874

Blue/White/Red color scheme: Midnight Blue- # HANU885, White- # HANU870, True Red- #HANU866

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Congratulations on your purchase of the Extreme Flight RC 104" Extra 300 ARF! Designed specifically to handle the high G loads of Xtreme Aerobatics (XA), Freestyle routines, aggressive 3D maneuvers and precision aerobatics, the Extra was born of the desire to meet the demands of today's top ultra-aggressive pilots. Thoroughly flight tested by the likes of Donatas Pauzuolis, RJ Gritter, Daniel Holman, Jase Dussia, Devin McGrath and Michael Holman, the Extra has proven itself up to the challenge of satisfying the most demanding of pilots.

Featuring 4 carbon fiber square tube wing spars and full span shear webs, the Extra's wing remains rigid and true during high G pushes and pulls and makes accurate roll and snap stops a breeze. The fuselage is also constructed with carbon fiber square tube longerons and hardwood diagonal bracing which makes it torsionally strong and resistant to twisting loads. Large control surfaces provide the ultimate in pitch, yaw and roll authority, while G10 control horns coupled with ball links and titanium turnbuckle pushrods provide accurate slop-free control surface actuation. The 104" Extra 300 is truly a state-of-the-art aerobatic machine!



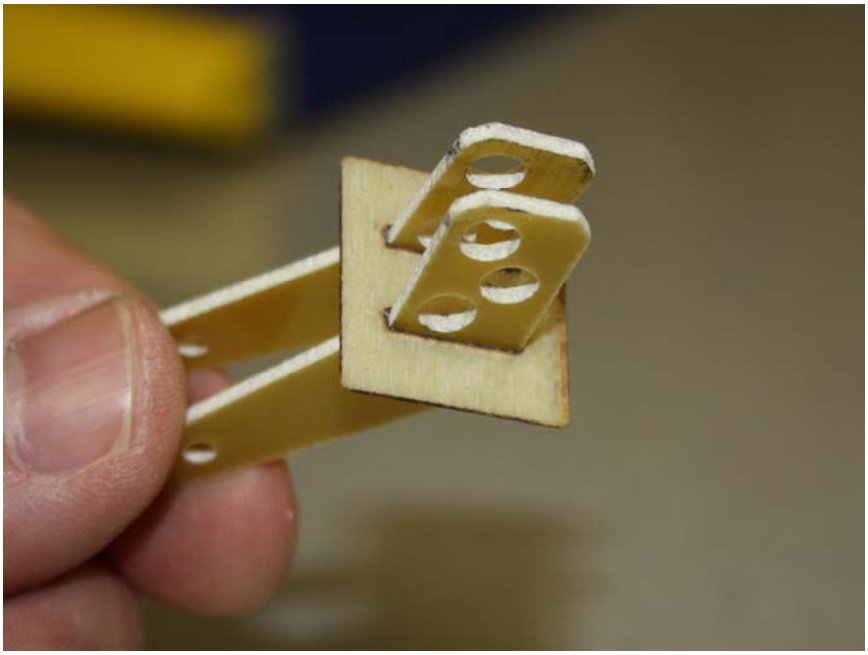
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Elevator assembly

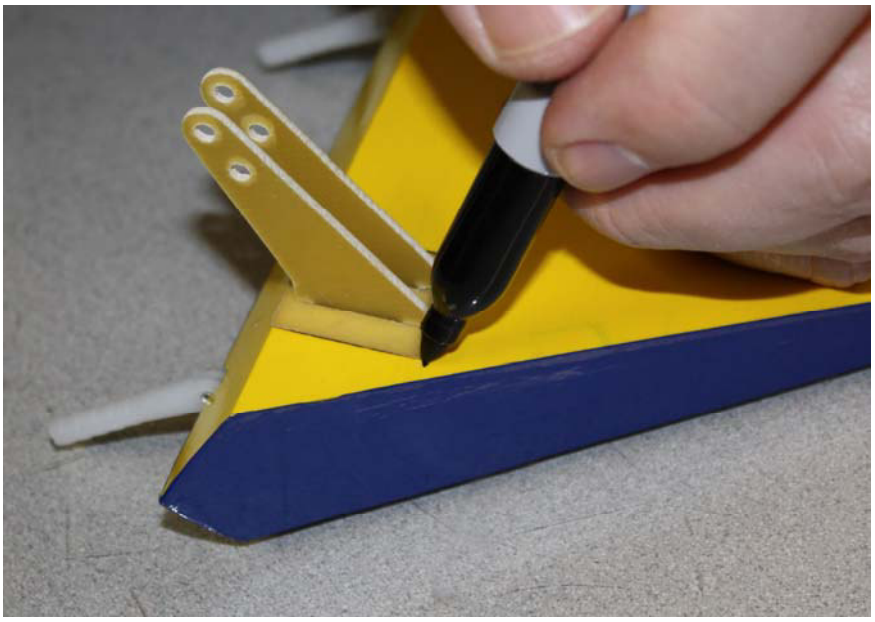
1. Locate the horizontal stabilizer/elevator assemblies as well as the composite control horns and base plates from the elevator hardware package. Use a sharp #11 blade to make a cut in the covering over the 2 slots for the elevator control horns on the bottom of the elevator surface. Double check to make sure you are cutting into the bottom of the elevator.



2. Insert the 2 control horns into the base plate and trial fit the horns into their slots and make sure they seat properly against the base plate and elevator surface. Trace around the base plate with a fine tipped felt marker.



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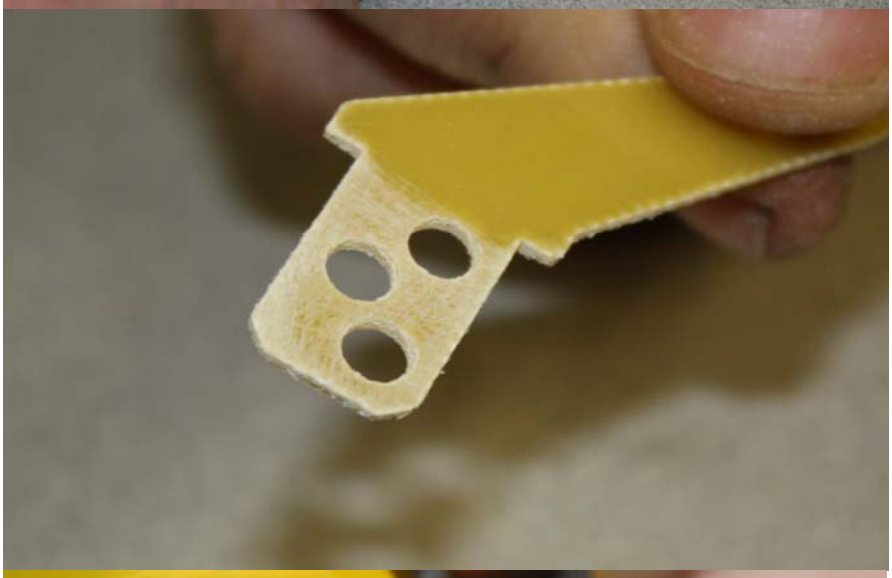


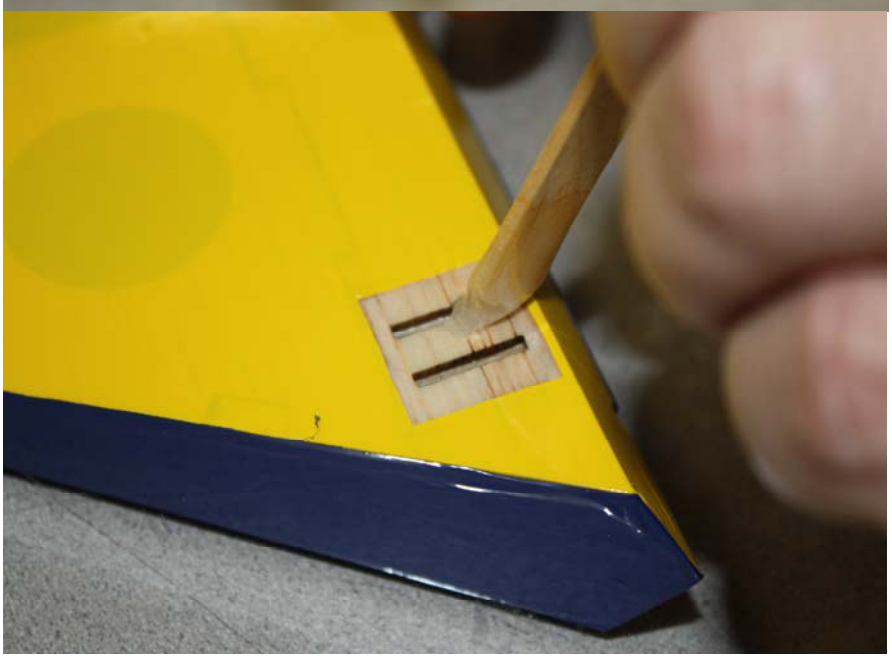
3. Remove the horn assembly and use your #11 blade to remove the covering from inside the ink line you traced around the control horn base. Wipe away the ink line with a paper towel soaked in denatured alcohol. Scuff the portion of the horns that will be inserted into the elevator with sandpaper. Apply 30 minute epoxy to the slots and thoroughly coat the horns and base plate bottom. Reinsert the assembly into the elevator and wipe away any excess epoxy with a paper towel and denatured alcohol. Place a 3mm bolt through the horns to help insure proper alignment and set aside to dry. Repeat for the other elevator half.



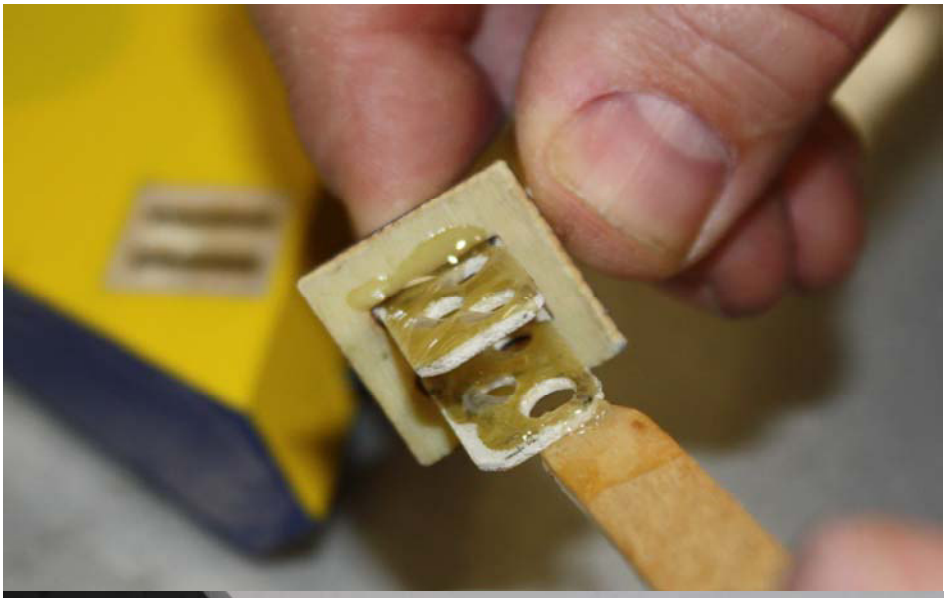
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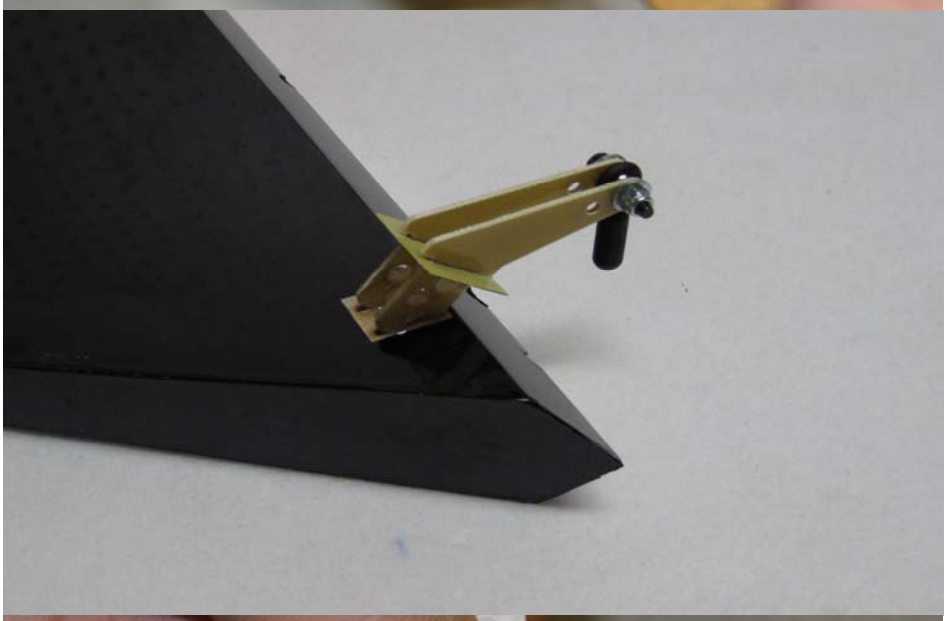


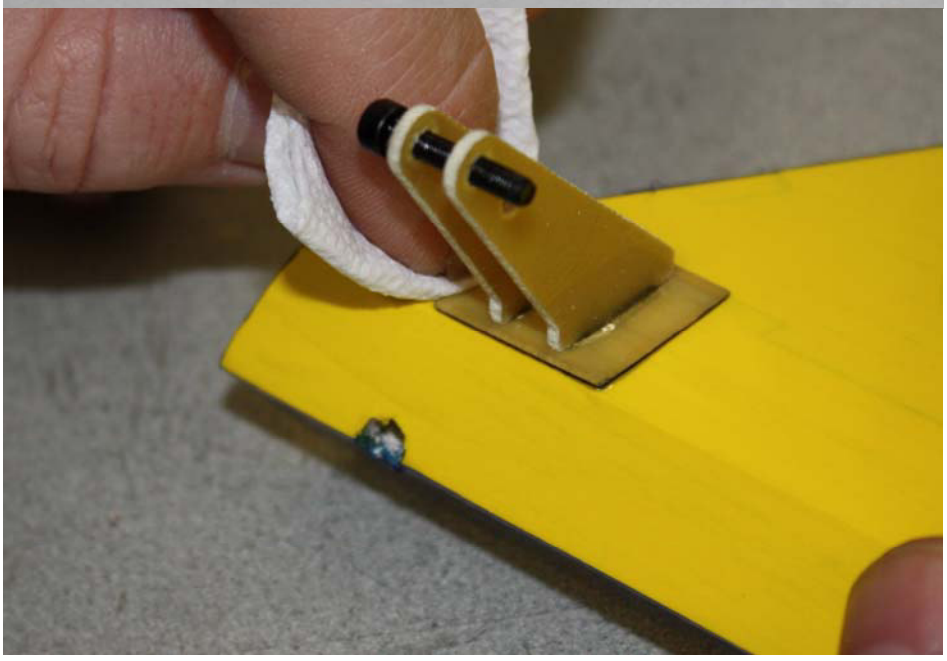




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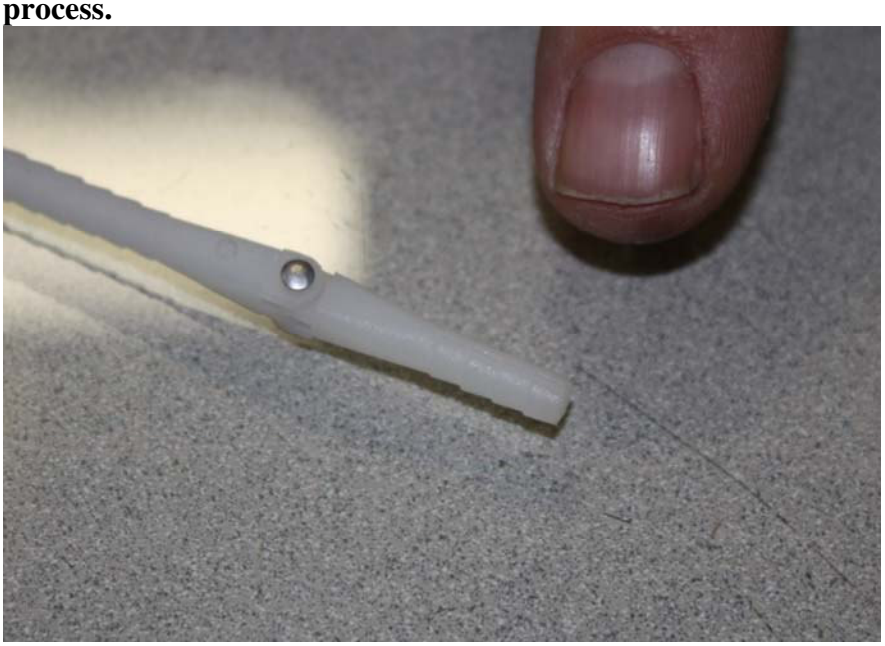




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4. In this step I will outline the procedure we use to install the hinges. There are several ways to do this and several adhesives you can use. We will describe the way we do it, as this method has proven itself over many years of model building. If you are new to this type of hinging process then I recommend that you install a single hinge first just to acquaint yourself with this method.

Before starting the process get a few items together that will aid you as you proceed. You will need the following items: 30 minute epoxy (we recommend Pacer Z-Poxy), a scrap piece of pushrod or 1/8" dowel, paper towels and denatured alcohol. Locate 4 hinges per elevator half. You will need to cut 2 hinges just beyond the second knuckle to clear the fiberglass tube socket in the stabilizer. Insert the carbon fiber wing tube into the socket while testing for proper hinge length to avoid damaging the fiberglass sleeve. Mix a generous batch of 30 minute epoxy. Use the pushrod or dowel to thoroughly coat and fill the hinge hole with epoxy, then coat the hinge with epoxy. Push the hinge into its hole until the joint is about a ¼" from its final position and use a paper towel to remove the excess epoxy that has been forced from the hole. Push the hinge the rest of the way in and make sure the hinge pin is centered in the hinge line. Use some denatured alcohol and a paper towel to remove all excess epoxy, especially on the hinge pin. When you are satisfied with the result set the surface aside to dry. Position the drying piece so that any excess epoxy will pool around the rear of the hinge. When you are comfortable with this process you should be able to do one side of a surface per batch of epoxy. Glue all hinges into the stabilizer first. After the glue has set trial fit the elevator to the stab and adjust if necessary. There should be as little gap as possible between the stab and elevator. When satisfied with the fit remove the elevator and repeat the gluing process outlined above. Be sure to wipe away all excess epoxy! Set aside to dry. Repeat this process for the other stab/elevator half. Please see the following series of pictures that will aid in visualizing this process.



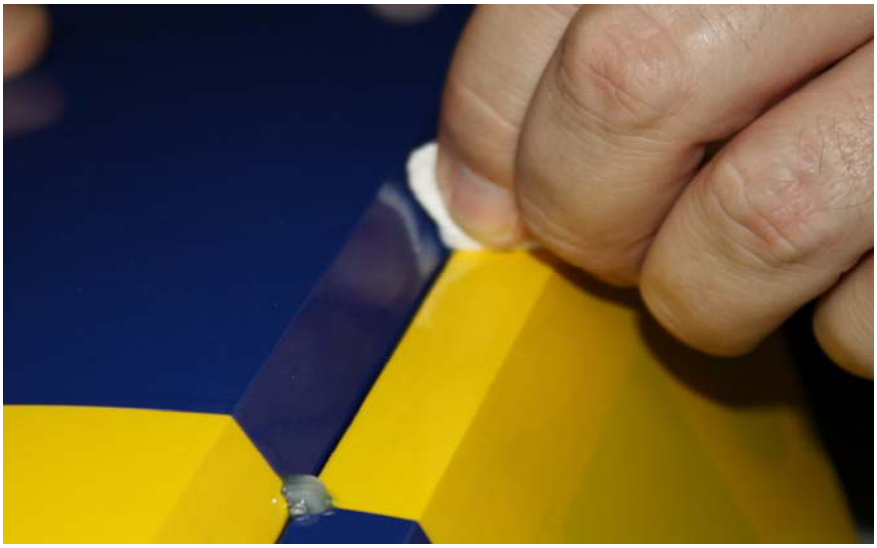
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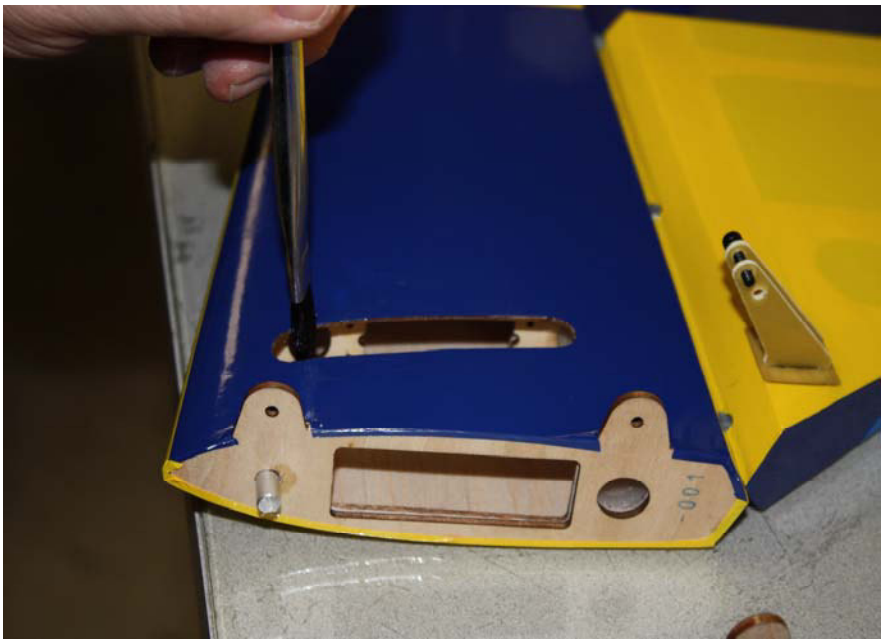


5. After the hinges have dried thoroughly, pull on them to make sure they are properly installed. The hinges will probably feel a little stiff as it is almost impossible to get all of the glue out of the knuckle joint. Spray each hinge knuckle with DuPont Teflon Silicone Lubricant or a similar plastic-safe lubricant. Move the surface back and forth a few times and you will feel it loosen up. Wipe away any remaining lubricant from the surface with an alcohol soaked paper towel and seal the bottom of the hinge gap with a strip of Ultracote or Blenderm tape. Be sure to fully deflect the control surface when applying the tape or Ultracote to allow full deflection once the gap is sealed. Repeat this process for the other stab/elevator assembly.

6. Use your hobby knife to remove the covering from the slot in the bottom of the stab for the elevator servo horn. You may want to brush a coat of alcohol thinned epoxy along the edges of the opening to prevent gas/oil from seeping under the covering.



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7. Install the elevator servo inside the stab using the manufacturer supplied mounting hardware with the output shaft toward the rear of the stab. It will be easier to electronically center the servo and confirm proper servo arm installation before screwing the servo into position, although you will still need to remove the arm to install the servo. We recommend the SWB 2 inch servo arm.

8. Locate 2 ball links and a titanium turnbuckle pushrod. Thread the ball links onto the pushrod and install using the supplied 3mm bolts, nuts and washers as shown in the picture. You may find it necessary to enlarge the slot in the bottom of the stab to allow for maximum travel.



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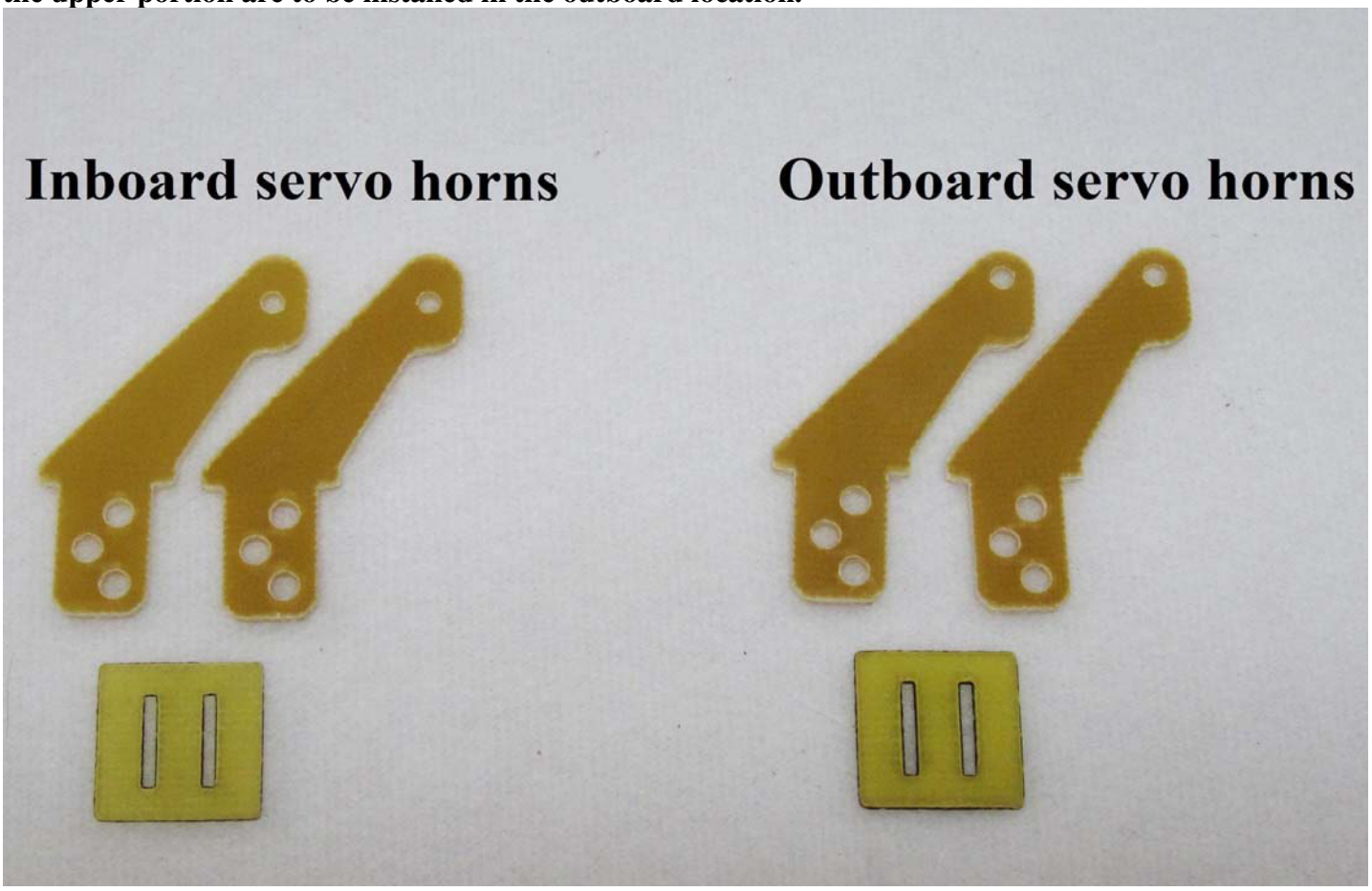


9. Before you set aside the stabs take a moment with your covering iron and go over all of the seams with a medium heat setting, paying special attention to the ends of thin trim stripes. Clean the 2 elevator/stab assemblies with Windex and set them aside.

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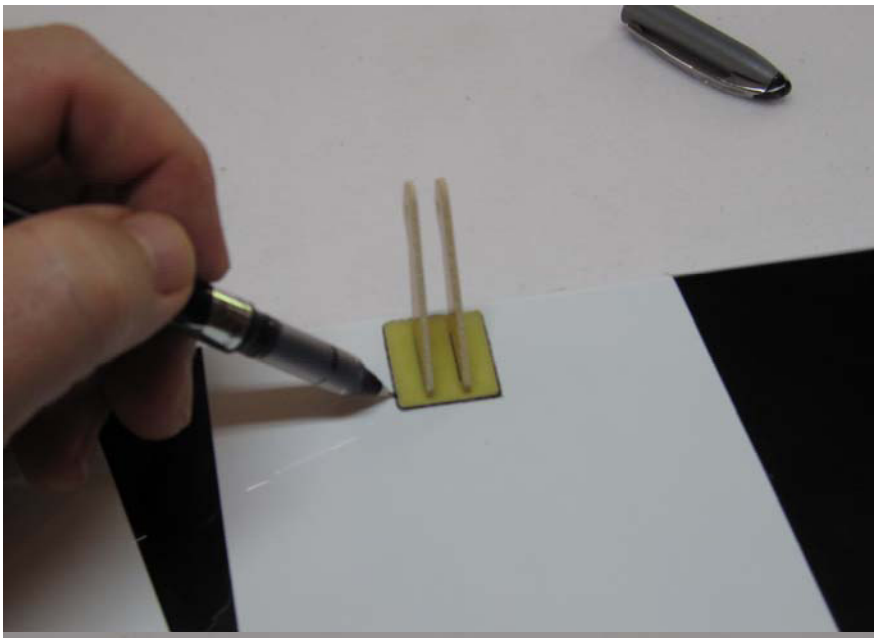
Wing Assembly

10. The assembly process for the wing is almost identical to that of the stab/elevator. For this reason we will not go into quite as much detail as in the previous procedure. Having said that, there is a very important detail that must not be overlooked! There are 2 sets of control horns for each aileron that differ from each other to compensate for the varying thickness of the aileron. It is imperative that these horns are glued into the proper location to ensure proper linkage geometry. Please see the following photo that details the correct control horn installation. The horns with the hole drilled in the middle of the upper portion are to be installed in the inboard location. The horns with the hole drilled in the top of the upper portion are to be installed in the outboard location.



11. Remove the aileron from the wing panel. Locate the 4 slots for the control horns and remove the covering from the slots with a sharp #11 blade. Follow the same procedure as outlined previously to install the control horns into the control surface and hinge the wing. Repeat this procedure for the other wing.

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12. Locate the aileron servo mounts and remove the covering from this area. Use a sealing iron to seal the edges of the covering to the sides of the servo opening. Take a few minutes to apply some CA to the joints of the servo mount and the ribs. This is very important as this area is under constant stress during flight.

13. Attach a 24" servo extension to the outboard servo and a 12 inch servo extension to the inboard servo and secure with thread or heat shrink tubing. Use the manufacturer supplied mounting hardware and install the servos with the output shaft toward the trailing edge of the wing. Electronically center your servos. Aileron servo arm length should be 1.50". We use and recommend the SWB double lock aluminum arms. Thread 2 ball links onto each titanium turnbuckle pushrod. Secure the pushrod to the control horns and servo arm as shown in the picture using the supplied 3mm bolts and nylon insert locknuts. As always, use blue Loctite on ALL bolts!





14. It is highly recommended that you use a servo programmer, Matchbox, Powerbox or power distribution unit to make sure both servos work in unison. We use the Hitec 7955s and 7950s in our aircraft in conjunction with the Hitec programmer and have been able to get the servos matched perfectly with very little current draw.

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15. Before beginning the next assembly process, take a few minutes with your sealing iron on a medium heat setting and go over all seams, paying special attention to thin trim stripes and the seam at the leading edge of the wing. If there are wrinkles in the covering on the leading edge sheeting use a heat gun with a 100% cotton t-shirt to remove them and prevent digging into the wood with an iron. Use caution and avoid excessive heat as you may cause the Ultracote to shrink too much and lift at the seams. Also take the time to seal the hinge gaps with Ultracote or Blenderm tape. Clean the wings with Windex and put them away.

Rudder horn installation

16. Now is the time to decide if you are going to mount the rudder servo in the tail of the aircraft and use a direct drive pushrod for rudder actuation or a servo mounted in the radio compartment with pull-pull cables. If using tuned pipes it is recommended that you mount the servo in the forward position and use a pull-pull system so that the correct center of gravity can be achieved. You will also be able to attain more rudder throw using the pull-pull system. Hardware for both methods is included.

Locate the rudder, the rudder control horns and the 2 slotted base plates. If using a rear mounted servo and direct drive you will only need to install one set of horns. If using the pull-pull system you will need to install both sets of horns. Use a sharp #11 blade to remove the covering from the pre-cut slot in the rudder. Trial fit the 2 rudder horns through the slots in the base plate and into the slots in the rudder. Trace around the base plate with a fine tip felt marker. Remove the control horns and cut away the covering from the area where the base plate will mount as done previously with the aileron and elevator. Mix up some 30 minute epoxy and use a small blade to fill the 2 slots with epoxy. Use plenty of epoxy and be sure to completely fill the two slots. Use an epoxy brush to completely cover the areas on the rudder horns and base plate that will glue into the rudder. Slide the rudder horns back into their proper position and immediately wipe the excess epoxy from the horns. Repeat this process on the other side of the rudder if using the pull-pull system.



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Fuselage Assembly

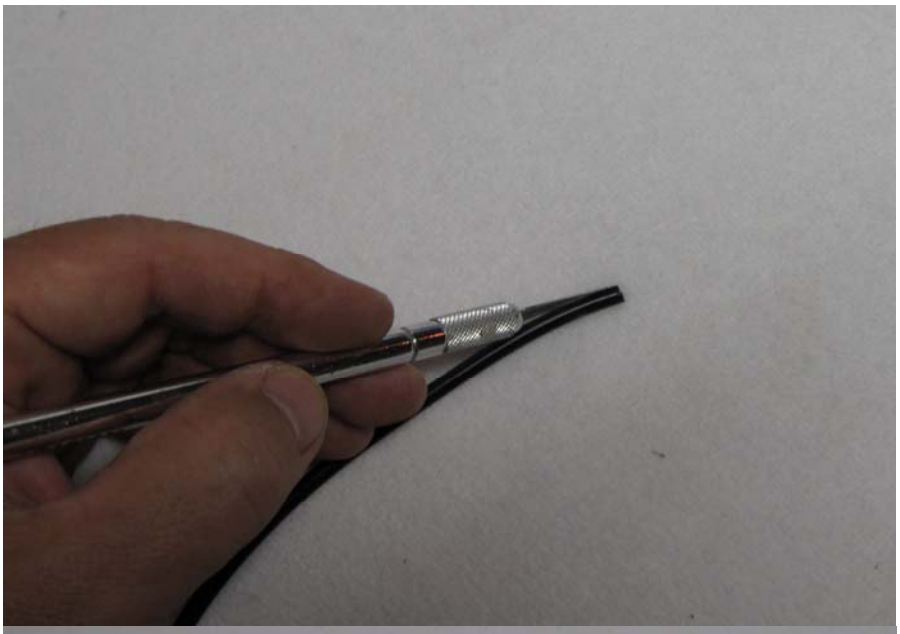
17. We'll begin by installing the landing gear. Locate the carbon fiber main landing gear, 4 6mm bolts, lock nuts and washers. Insert the gear into the slot on the bottom of the fuselage and center it in the slot. Secure the landing gear with 4 6mm bolts, washers and nylon insert lock nuts by inserting the bolts and washers into the pre-drilled holes in the aluminum gear mounts inside the fuselage with a long T-handle wrench. Secure with the 6mm nylon insert lock nuts.





18. The landing gear fairings add a nice scale touch to the aircraft. If you wish to use them, slit the supplied black neoprene tubing length wise with a sharp hobby knife. Push the tubing onto the rim of the fairing and secure with CA. Slide the fairing onto the gear and up against the fuselage. Secure the fairing to the gear with "Goop" silicon glue.

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19. Locate the 2 axles, 2 locking nuts, 2 wheels, 4 wheel collars and 2 wheel pants from the hardware package. Place the wheel onto the axle and secure with 2 wheel collars. Place the threaded portion of the axle through the hole in the landing gear, place a washer onto the axle and secure the axle with a locking nut.



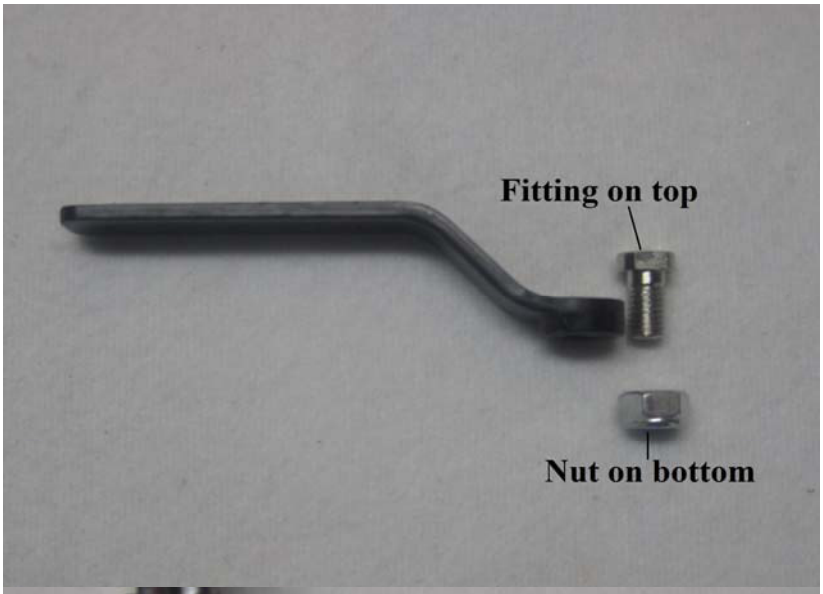
20. There is a pre-cut slot in the wheel pant to allow it to fit over the axle. You may need to open this slot with a rotary tool to allow it to slide into position over the axle. When satisfied with the position of the wheel pants, drill 2 holes through the plywood plate that is glued inside the pant at the location of the holes in the landing gear. Secure the pant in position with the provided 3mm bolts and blind nuts. Repeat this process for the remaining wheel pant.



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21. Next let's install the rudder onto the fuselage. As you did with the ailerons and elevators, glue the hinges into the rudder first with epoxy and allow to cure. Use a pushrod to apply epoxy to the holes in the rudder post and push the rudder into position and wipe away any excess epoxy with a paper towel and denatured alcohol.

22. Assemble the tailwheel assembly as shown. For best results file a flat spot at the location that each set screw will seat and use a drop of blue Loctite on each set screw. Be sure to mount the threaded steel fitting on the top of the carbon fiber chassis and secure with the nylon insert lock nut on the bottom to allow proper clearance between the gear and the rudder bottom.





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23. Drill a hole in the bottom of the rudder to fit the shank of the included white 2mm ball link 4 inches from the rudder hinge line.

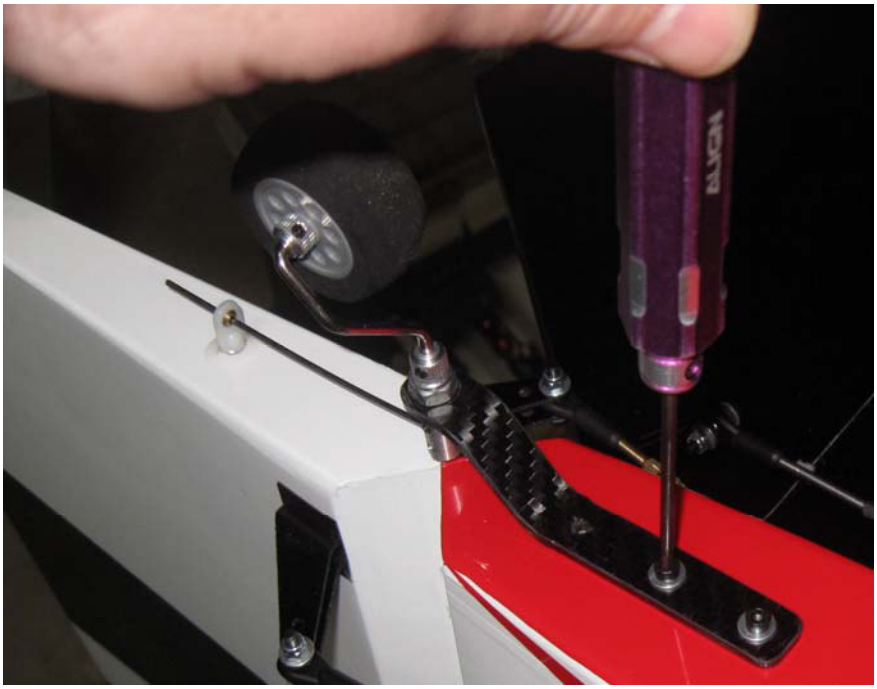


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24. Glue the ball link into the bottom of the rudder using epoxy. Allow a small amount of epoxy to pool around the ball link shank for best results.



25. Slide the tiller arm into the ball link and secure the tailwheel assembly to the rear bottom of the fuselage with the supplied 3mm bolts inserted through the carbon tailwheel assembly and into the pre-installed blind nuts in the bottom of the fuselage.



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26. Next let's install the engine. We have made this process very easy. The center marks have been scribed into the front of the firewall with a laser. If using the DA-100 or 120 simply drill the firewall at the locations laser scribed on the firewall. If using another engine make download the template for the engine and tape it onto the front of the firewall making sure to align the horizontal and vertical lines on the template with the laser scribed lines on the firewall.



27. The distance from the front face of the motor box to the motor drive washer is <u>7.25 inches</u> (this is the length of the DA-120 with 1 inch standoffs, the DA-100 requires 3/4 inch standoffs). Drill holes at the marked locations and install the engine using the recommended mounting bolts.

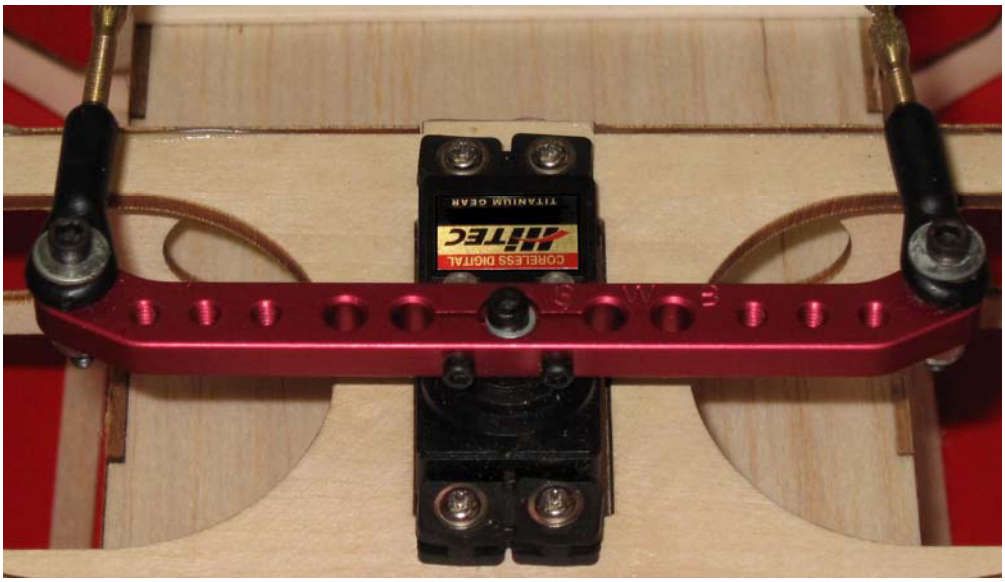


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28. If using a direct drive pushrod for rudder actuation install your rudder servo using the supplied hardware in the opening at the rear of the fuselage with the output shaft toward the rear of the plane. You will need to attach a 36" servo lead to reach the radio compartment. You will want to use the most powerful standard size metal gear servo available like the Hitec 7950, JR 8711 HV, Futaba BLS157 or similar and a 2 inch servo arm. Thread a ball link onto each end of the provided titanium turnbuckle pushrod and install it as you have for the elevators and ailerons. Be sure to mount your pushrod on the inboard side of the servo arm as shown to allow for adequate clearance with the elevator.



29. If using the pull-pull system you will want to mount the servo in the servo try under the canopy. There are locations for 2 servos here so it is possible to use servos ganged of a lesser torque value. No hardware is included for a tandem servo set-up. For proper geometry use the SWB 4.5" offset rudder arm or a similar unit.



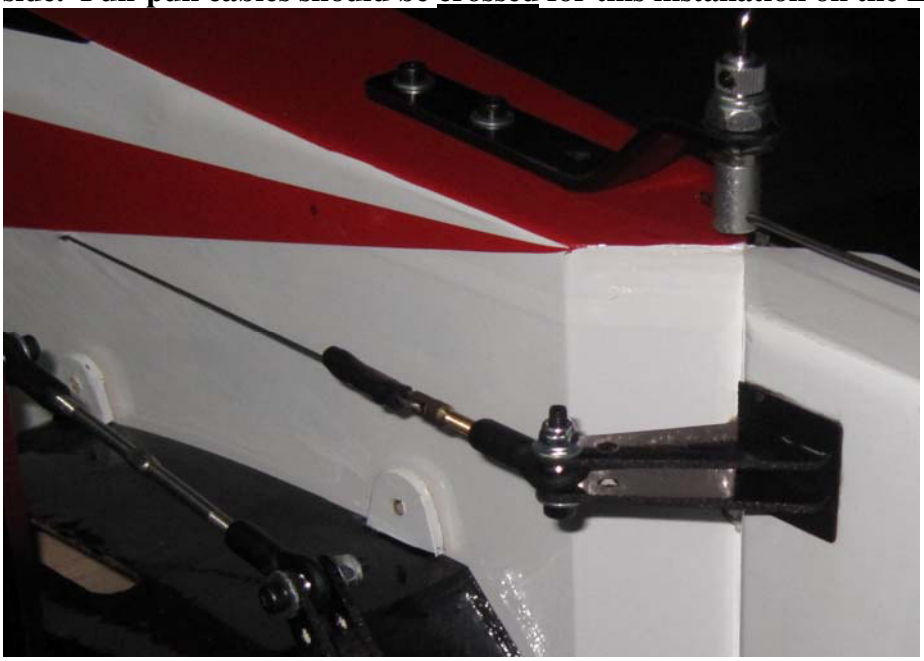
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30. If using a pull-pull set-up now is the time to install the pull-pull rudder cables. Look at the rear of the fuselage just below the horizontal stabilizer location and you will find the location of the pull-pull cable exit slots. Use a sharp hobby knife to remove the covering from this slot on each side of the fuselage.

31. Assemble one end of the linkage by inserting the pull-pull cable into one of the aluminum tubes, through the hole in the brass pull-pull fitting and back through the aluminum crimp tube. Loop the cable back through the crimp tube a second time and crimp with side cutters.



32. Insert the bare end of the cable into the slot in the rear of the fuselage and feed it forward into the canopy area and make up the same type of linkage as you did previously. Electronically center your servo. Secure the linkage at both ends with a 3mm bolt and nylon insert lock nut. Repeat for the other side. Pull-pull cables should be crossed for this installation on the Extra.



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33. Slide both stab/elevator assemblies onto the carbon fiber mounting tube and secure with 2 3mm bolts inserted through a washer and the mounting tabs and into the corresponding blind nuts already installed in the fuselage. Be sure to use a drop of blue Loctite on all bolts!!!



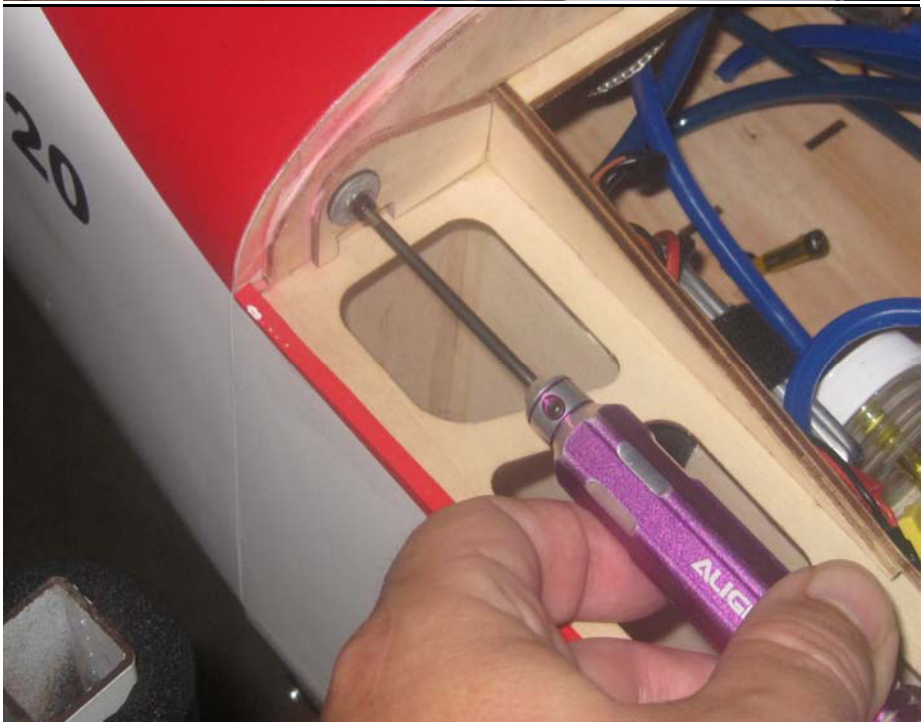
34. There is a location pre-cut for a throttle servo in the bottom of the motor box. This will work for some engines but others may require a different mounting location. You will need to fabricate your own linkage to accommodate your choice of engine. I used a short length of 2-56 threaded rod inside a piece of carbon fiber tube with 2-56 ball links on each end.

35. Assemble and install your choice of gas tank in front of the wing tube socket using nylon cable ties through the mounting tabs and around the tank. I suggest using a piece of foam under the tank. We have had great success using the pre-assembled 4Titude Tanks.

36. Once you are satisfied with your throttle linkage, tank and plumbing and ignition installation it is time to mount the cowl. First install the engine box cover with 4 screws (you may want to take the time to install some blind nuts and use bolts for this). Next cut the cowl to clear the mufflers and make an air exit. Take a minute to add some thick CA or Epoxy to the intersection of the cowl and plywood cowl ring. Slide the cowl into position and secure first with the 3mm bolt and washer inserted through the bottom of the cowl and into the blind nut on the mounting tab on the bottom of the fuselage. Insert the other 2 3mm bolts into washers, through the holes in the top of F1 and into the blind nuts installed in the cowl ring. Be sure to use blue Loctite on all bolts!!!

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37. Install your choice of prop and spinner (5" Ultimate style spinner recommended).

38. Install your switches (there are suggested switch mounting locations laser scribed in the fuselage sides visible from the interior of the fuselage), batteries and receiver. Choose the locations to mount your batteries to help achieve correct center of gravity.

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39. Included with your Extra are a set of Side Force Generators (SFGs) along with 2 clear spacers to be installed between the SFGs and wing tip to prevent them from interfering with aileron movement. They are to be installed using the supplied white thumb screws threaded through the holes in the SFG, through the clear spacer and into the pre-installed blind nuts in the wing tip.



40. The wings are mated to the fuselage using a dual attachment method. We use a nylon wing bolt inserted from inside the fuselage and threaded into the pre-installed blind nut in the wing root. There is also a tab glued into the forward portion of the wing root that is secured to the fuselage using a 4mm bolt and washer threaded through the tab and into pre-installed blind nut in the fuselage. Be sure to use blue Loctite and all metal bolts!!!

41. The canopy is attached to the fuselage using 3 bolts with knurled white nylon knobs per side. I highly recommend using a rubber washer under the head of each of the bolts to prevent them from backing out. DO NOT USE LOCTITE ON THESE BOLTS AS THEY WILL BE IMPOSSIBLE TO REMOVE!!! Check the bolts after each flight to make sure they are tight.

Pipe or canister installation hints

You may wish to install a tuned exhaust or canister muffler system in your aircraft. We have built a pipe tunnel into the bottom of your aircraft to make this a relatively easy task. Some of the advantages of using a tuned exhaust are an increase in power and a reduction in engine noise. There are many makes of tuned exhaust systems available for 100-120cc engines. For the DA-100 and 120 you will need to purchase a header with a 50mm drop. You will also need to purchase a Teflon coupler set and spring clamps along with mounts (these are available from KS, Dave Brown Products and several others). Check with the engine manufacturer for recommendations.

This completes the assembly of the 104" Extra 300. As a final step clean the entire aircraft with glass cleaner, apply your choice of graphics, then apply a coat of spray-on wax and buff the finish to a high gloss with a micro fiber 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 method.

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Set-up and trimming

Besides basic assembly, this is the most important part of preparing your airplane for flight. It can also be the most time consuming, but once your plane is properly dialed in you will agree it was time well spent.

One of the most practical ways to check the CG on an aircraft this size is to insert the carbon fiber wing tube into its sleeve in the fuselage and tie a length of rope around the tube on each side of the fuselage, forming a loop that you can pick the aircraft up with. Slide the wings into position, install the canopy and pick up the plane with the rope. The Extra should balance in a horizontal position. Move your batteries and radio equipment to achieve this condition. This will give you a safe starting place for the first flights.

One of the best ways to fine tune the CG for your aircraft is the 45 degree line test. Fly the aircraft in front of you from left to right (or right to left if you prefer) at full throttle. Pull the aircraft into a 45 degree up line and establish this line. Roll the aircraft inverted, neutralize the elevator and pay close attention to what the plane does. Ideally the plane will continue on this line for several hundred feet before it starts to slowly level off. If the airplane immediately drops the nose and dives toward the ground it is nose heavy. If it begins to climb inverted toward the gear it is tail heavy. There is no need to have the Extra excessively tail heavy to perform 3D maneuvers. At this time you will also want to balance your plane laterally. Add a small amount of weight to the light wingtip to achieve proper lateral balance.

Control surface throws

I highly recommend that you purchase a throw meter that measures in degrees. There are several units available commercially. These units are a great aid in set-up and definitely beat the "that looks about right" method. For any type of precision flying, surfaces that travel equal distances are a must. The following control surface travels are what I use on my own Extra. These are a good starting point, but are by no means the only way to set up
the Extra. Start here and then adjust to fit your own preferences and style of flying.

Elevator: 10-12 degrees low rate, 18-20% exponential
all you can get for high rate, 50-60% exponential

Aileron: 20 degrees low rate, 30-40% exponential
all you can get for high rate, 50-60% exponential

Rudder: 20 degrees low rate, 50% exponential
all you can get for high rate, 60-70% exponential.

Again, this is just a starting point. Adjust to your liking.

Thanks again for your purchase of the Extreme Flight RC 104" Extra 300 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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