

The TOC Aviation: 40% 129" Yak 54!



Figure 1



1. Main Landing Gear Installation:
Use the four 1/4x20 bolts provided to mount the gear to the gear plate. Back the bolt from the inside with the four lock nuts provided as well. Once the bolts and lock nuts are tight you can move to the next step.

Figure 2



2. Wheel Pant Installation:

Install the wheel pant to the landing gear using two 8/23x3/4" allen bolts per pant.

Make sure you have a small 1/16" thick block glued to the inside of the pant. Now you can take two of the supplied 8/32 blind nuts and back the bolt. Once the blind nuts are pulled tight into the wood, place a small drop of CA or Epoxy to the blind nuts to keep it from falling out.

Figure 3



3. Glue a block of wood to the opposite side of the pant to catch the end of your axle. This will support the pant and keep it from moving around.

Figure 4



4. Tail Wheel Installation:

Install your preferred tail wheel to the hard wood at the rear section of the fuselage. Here is an example of our installation.

Figure 5



5. Here is another example of the tail wheel installation.

Figure 6



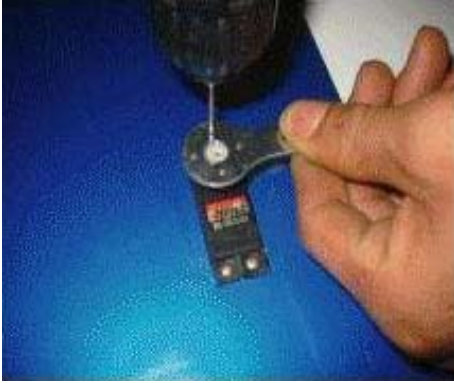
6. Hinge Installation:
Mix the proper amount of epoxy and coat the hinge hole. (This is a very important step so make sure you have plenty of epoxy in the hole).

Figure 7



7. Install the supplied hinges one part at a time. Make sure that the hinge is perfectly straight so there will be no hinge load on the control surface. Once this side of the hinge is dry follow these exact steps for the opposite side. "Important note!" When hinging make sure the hinge gap is as small as possible. If the gap is too big you may run into flutter problems. The gap should be no bigger than 1/16th of an inch. We recommend sealing the hinge line with clear covering to improve flying and reduce the chance of flutter.

Figure 8



8. Servo arm Installation:

After installing your servo into the servo bays, apply power to the servo and make sure they are centered. Install the aluminum servo arm so it is at a 90-degree angle to the servo case.

Figure 9



9. Using a 2mm drill bit, drill four holes through the servo wheel. (You may also want to purchase some metal after market servo wheels for added strength). Once the four holes are drilled, install the metal arm to the wheel using four 2x10mm bolts.

Figure 10



10. Next step is to back the bolt up using one nut for each bolt. Once the nuts are tightened, cut the remaining bolt off.

Figure 11



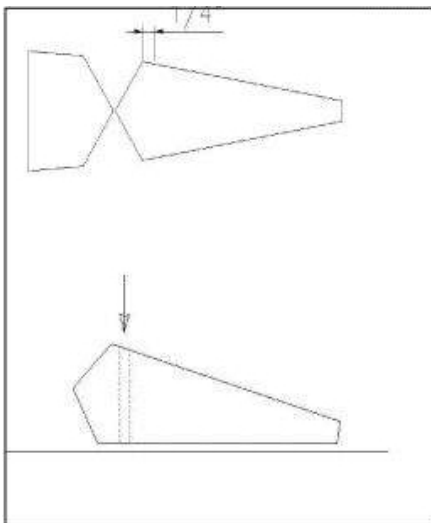
11. For security we suggest adding a small drop of CA to the nut to prevent it from backing off.

Figure 12



12. Mount the servo into the servo bay and install the arm onto the servo. You can now start to measure the length of your pushrods.

Figure 13



13. Lay the wing onto a flat surface and measure $\frac{1}{4}$ " away from the leading edge of the aileron. Drill through the aileron with the correct size hole for your control bolt.

Figure 14



14. Once the control bolt is threaded through the control surface, make sure to secure the bolt with a nut.

Figure 15



15. Installing pushrods:
Use a clamp to help hold the control surface in a center position.

Figure 16



16. Measure the length of the pushrod and mark.
Make sure you have plenty of threads left that will be able to screw into the ball link and control horn.

Figure 17



17. You can now cut your pushrod to length and install.

Figure 18



18. Remove the servo arm from the servo and thread the ball link on the pushrod.

Figure 19



19. Place the servo arm back onto the servo and tighten the screw. Make sure the arm is at a 90-degree angle to the servo with the control surface at center.

Figure 20



20. Stab servo, servo arm, and elevator control Horn. The same steps apply to the elevator as with the ailerons. Make sure each servo is in center position with the control horn centered.

Figure 21



21. Stab Tube Installation:
The next step is to drill and tap the tail tube. Insert the tail tube into one side of the stab and then locate the predrilled hole in the stab. You will need to drill the tube to accept a 6/32 tap.

Figure 22



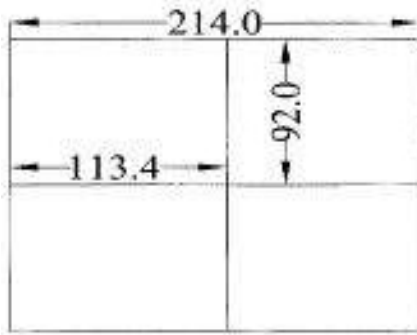
22. Now proceed with tapping the tail tube with a 6/32 tap.

Figure 23



23. Next step is to slide the stab and stab tube through the fuselage. Now slide the opposite stab onto the stab tube and make sure both sides are pressed tight against the fuse. Now follow the same drill and tapping steps as the first stab.

Figure 24



24. Engine Installation:

Next step is to mark the center of the box. You will need to offset then engine to center the crank. Here is an example of what the firewall should look like when mounting a 3W 150 engine.

Figure 25



25. Here is a picture of a 3w 150 bolted to the firewall.

Figure 26



26. Cowl Installation:

Once the engine is mounted its time to start cutting out the cowl to clear the mufflers and also allow for cooling. Make sure you have plenty of room around the pipes so vibration will not cause any cracks in the cowl. You will need to cut out a generous amount from the cowl to provide cooling for your engine.

Figure 27



27. Cowl Mounting:

Mount the cowl using 6/32x3/4" allen bolts. The cowl comes with a cowl ring mounted to the inside to provide a clean strong mount.

Figure 28



28. Wing attachment:

Slide the wings onto the tube and up against the fuselage. Now take the 1/4x20 nylon bolts provided and thread them into the wing root. Make sure you have two bolts per wing as well as making sure they are tight before each flight.

Figure 29



29. Rudder control horn:

Drill through the hard point in the rudder and mount your control horn. Make sure that the control horn is high enough to clear your full up elevator travel.

Figure 30



30. Rudder Cable:

Take a straight edge and mark where the rudder cable will touch the turtle deck. You are looking for a straight shot all the way up to your rudder servos. Make sure you have clearance between the cable and your elevator at full travel.

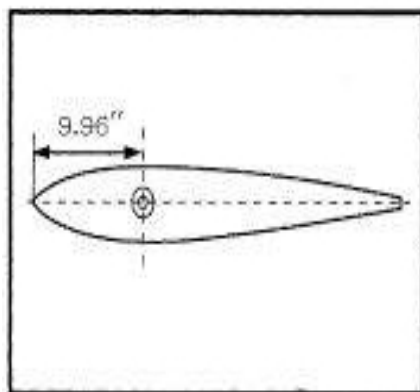
Figure 31



31. Rudder servo installation:

Depending on the torque of your servos will determine how many servos you will need to run. If you decide to run more than two, simply extend the mount and run them inline ganging them together. Make sure that the distance from each cable at the mounting point is the same distance as the rudder control horn. This will allow a slack free pull pull system.

Figure 32



32. Center of Gravity:

Set the balance point of your aircraft at 9.96" back from the leading edge of the wing. This point needs to be taken at the root of the wing where it meets the fuse. You may then adjust the CG further back or forward depending on your flying style. Be careful going to far back, the model can become unstable.

Figure 33



33. Canopy Installation:

Trim the canopy to fit the canopy hatch. Once you are happy with the fit, glue the canopy to the canopy hatch with your favorite canopy glue. You may also install eight small self-tapping screws for added strength.

Now you can mount the canopy hatch to the fuselage using four 8/32x3/4" allen bolts.