



# **FLOATS Assembly Guide**

# Please read the following paragraphs 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 (or alternate appropriate to your region) 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 (or the appropriate model aviation sanctioning body in your geographical region). 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 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.

If you need assistance with your aircraft, please contact the selling dealer. In the United States, please contact us at [info@extremeflightrc.com](mailto:info@extremeflightrc.com) or 770-887-1794. It is your responsibility to ensure the airworthiness of your model.

## Required tools and Materials

Hobby knife with #11 blades.

Blue Loctite.

Silicone lubricant

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.

1 x METAL GEARED servos for water rudder, Mini size for 84", full size for larger.

(Note: For 84" Floats, Hitec 5245MG drops in. Savox SV-1250MG is a performance upgrade but requires enlarging the slot)

2 servo extensions, 12" for 84" size, 24" for larger sizes. Also note that if you wish to change back-and-forth between wheel and floats, you will want to arrange a plug, such as an MPX single, on the fuselage for easy attachment of the water servo connection.

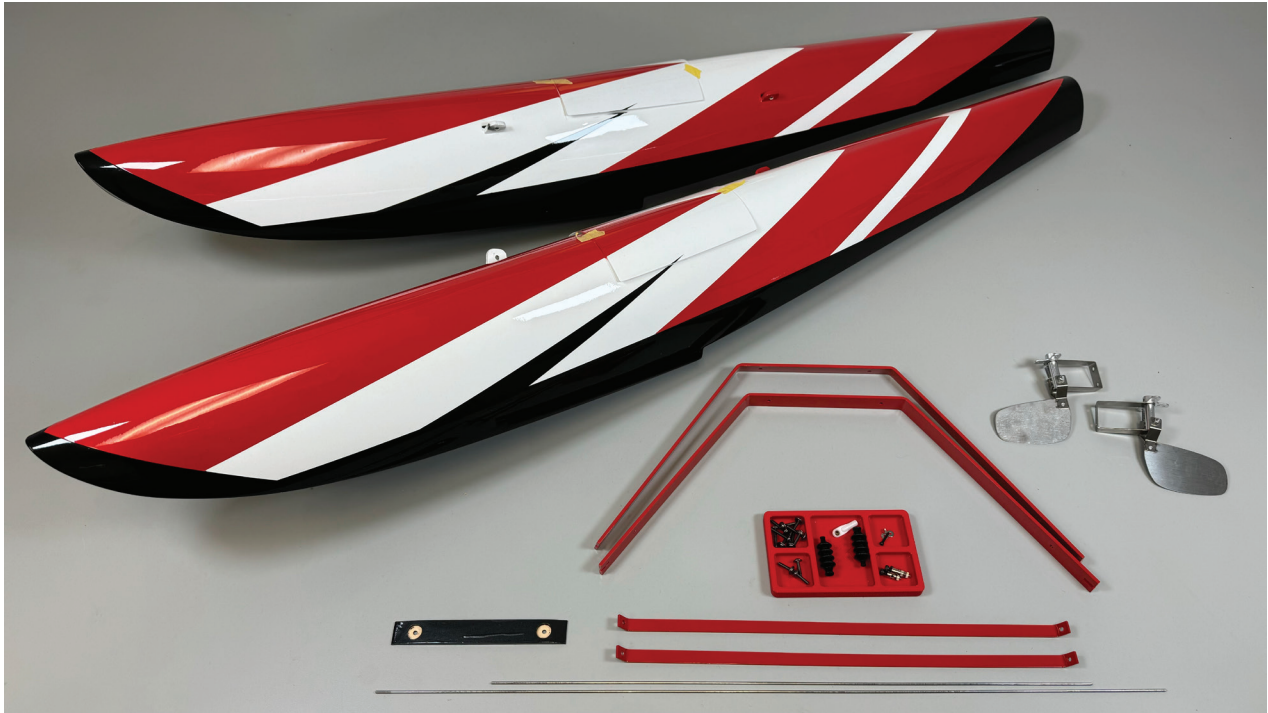
Clear packing tape.

Small ZIP ties

Clear latex or silicone caulk or Gorilla CLEAR BOND glue.

# 1

Unbox and unwrap all parts, check for any damage. If you need assistance, contact your dealer. In the United States, contact Extreme Flight RC at the phone number or email address posted on our website, [www.ExtremeFlightRc.com](http://www.ExtremeFlightRc.com). Carefully inspect the inside of the shipping box for ALL included parts and give it a close look for any screws. Do not dispose of the box until your build is finished, this may save you from a crisis if something was accidentally left inside.



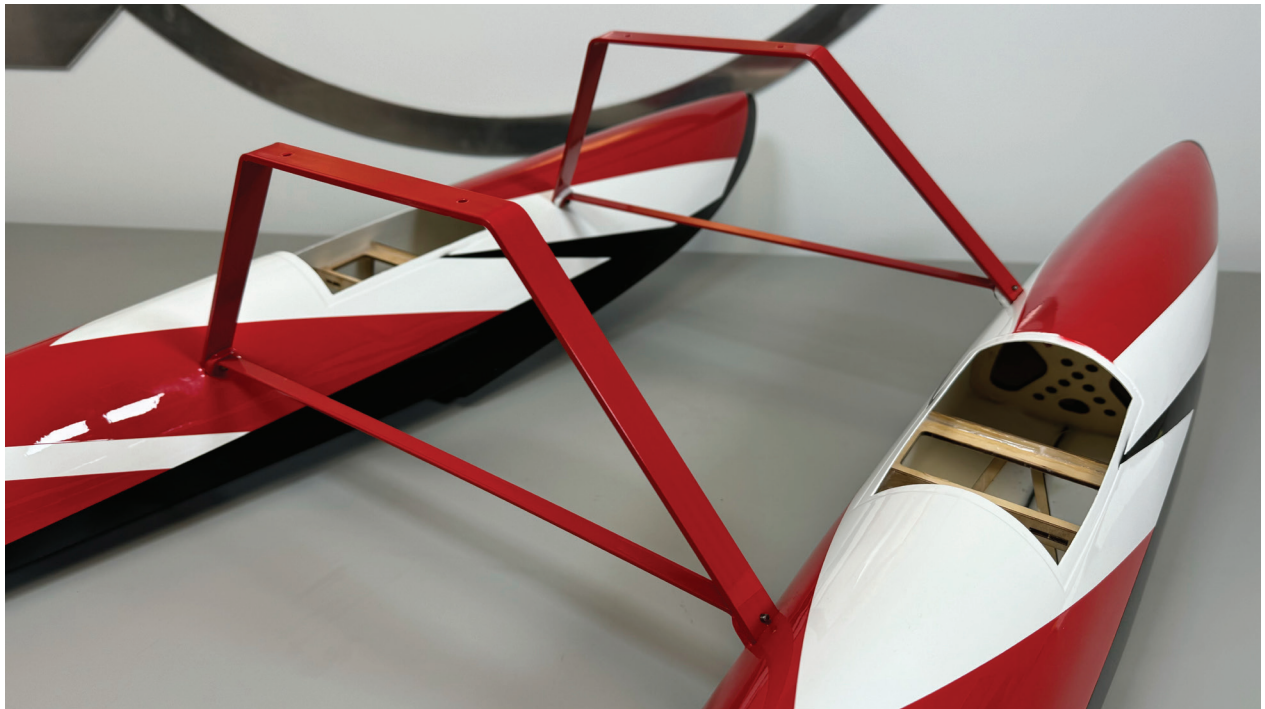
# 2

In this manual, we are using the 84" Bushmaster floats for the build sequence, but all of our floats assemble in fundamentally the same way. The primary differences you will notice in the larger float kits are more aluminum struts to form X-braces, necessary with the larger floats, and the water rudder servo is full size, versus the mini size used in the 84".



# 3

The struts assemble with 3MM bolts. Look carefully to find which struts have female threads for the bolts to screw into. Use a drop of blue Loctite thread locker on each of these bolts. NOTE: Now is a convenient time to run your servo extension wire into the float, if you use the nearest slot which the strut inserts into, you can insert the servo plug through the slot and only make a small clearance of the slot to accommodate the servo wire.





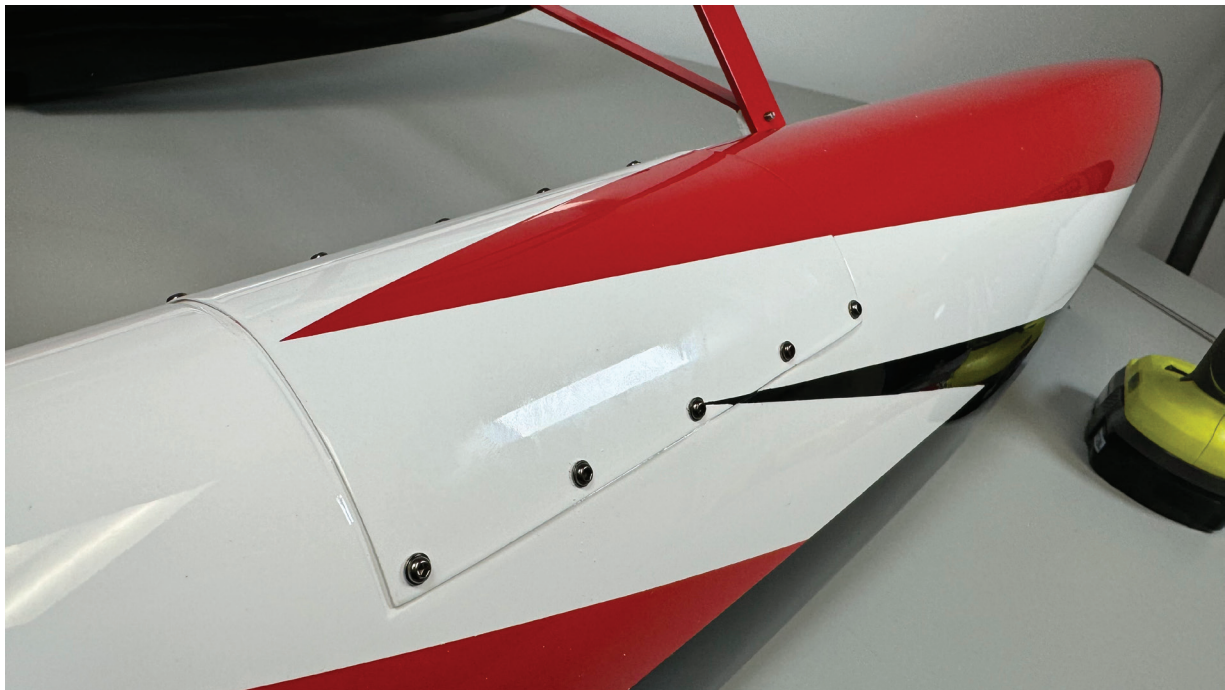
# 4

We intend for the floats to use ONE rudder servo and either ONE or TWO water rudders. For our personal aircraft, we prefer ONE water rudder. We find that in all but the highest wind conditions, one water rudder gives us plenty of directional control and results in a lighter, less complicated setup. If you want to use two water rudders, a cross-pushrod which connects the LEFT and RIGHT water rudders is provided. If you are using one water rudder, make sure you install the servo and water rudder into the same float.

The other float, without the servo, may be permanently sealed by installation of its top hatch. The simplest method to install and seal the hatch is by covering the hatch with clear packing tape and this works fine. A better looking installation using optional Extreme Flight Socket Head Accessory Screws, is shown here. We place the hatch on the float and apply tape to hold it in place, and drill pilot holes just a bit smaller than the 2.6mm diameter of the screws, to prevent any cracking when the screws are installed.



Then we remove the hatch, and apply a waterproofing bead of caulk or Gorilla CLEAR BOND glue as shown. Then install the hatch with screws.

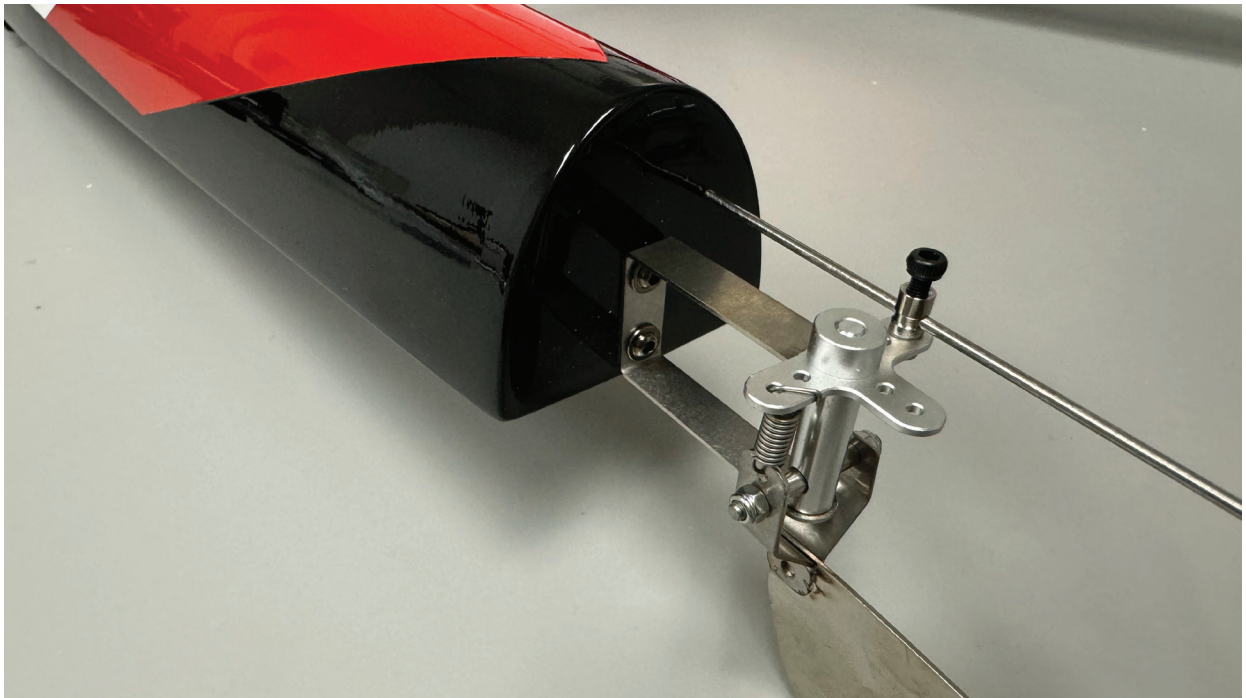
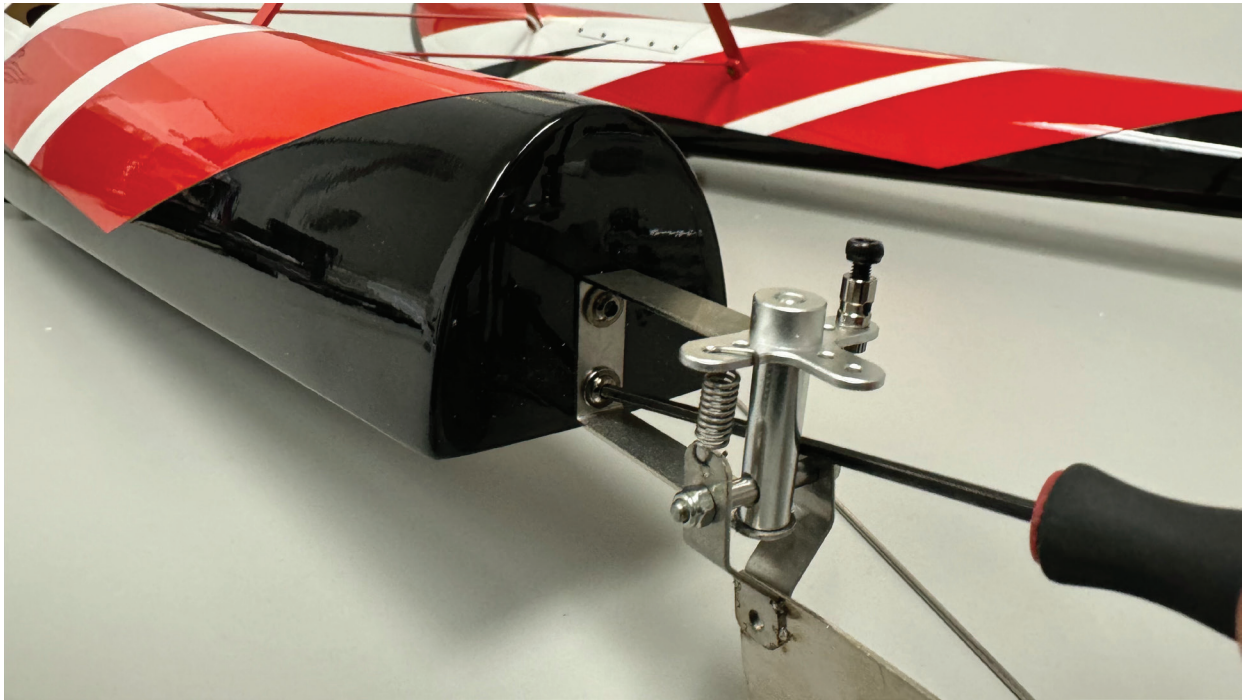




# 5

The water rudders install onto the back of the floats with 3mm bolts. Place a drop of Blue Loctite threadlocker onto each screw, and use a little caulk/clear bond between the water rudder bracket and the float to seal against any possible leaks. If you use only one water rudder, seal these holes on the other float as well.

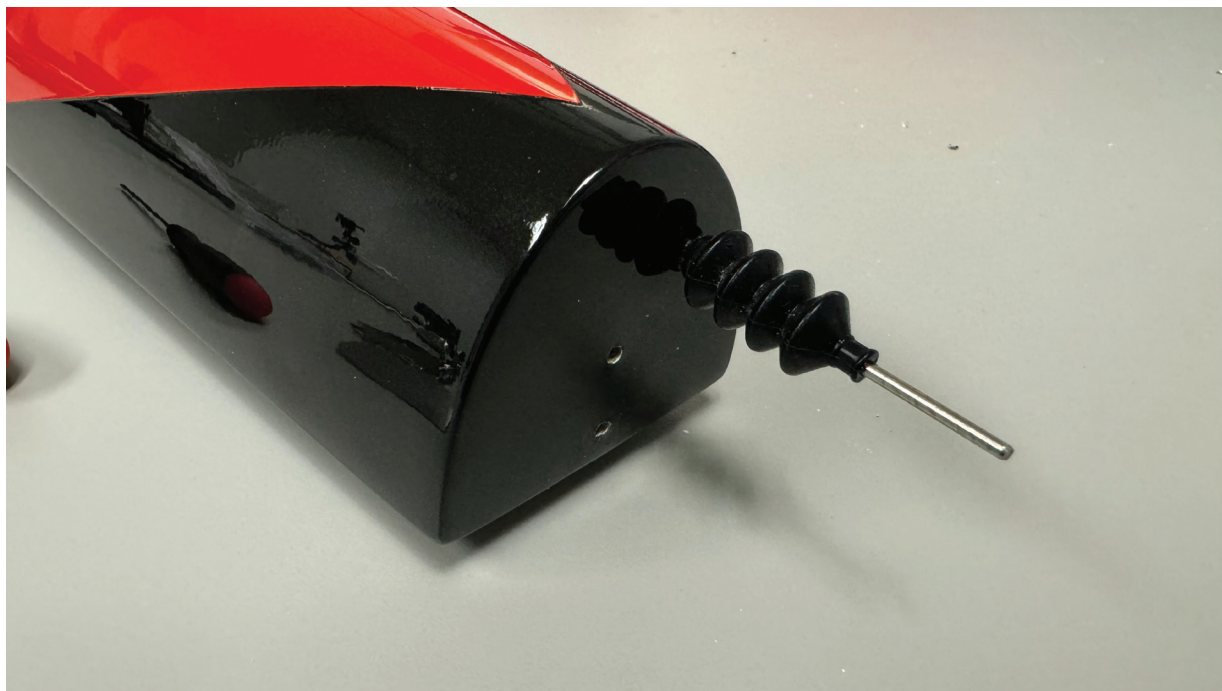
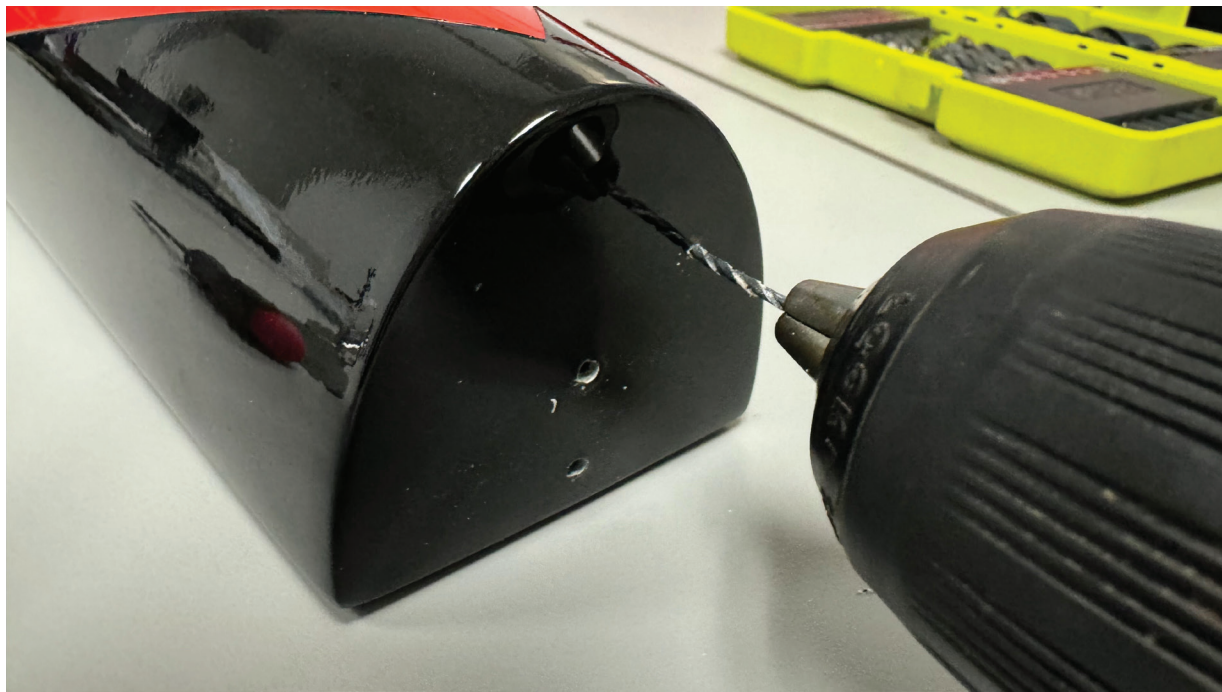
On the float with the servo, use the pushrod as shown to find the spot to drill for the pushrod to pass through.



# 6

Drill the hole for the pushrod, expanding it to fit the rubber “bellows” pushrod seal as shown. Use caulk or CLEAR BOND to seal the joint to the float body. Install the pushrod.

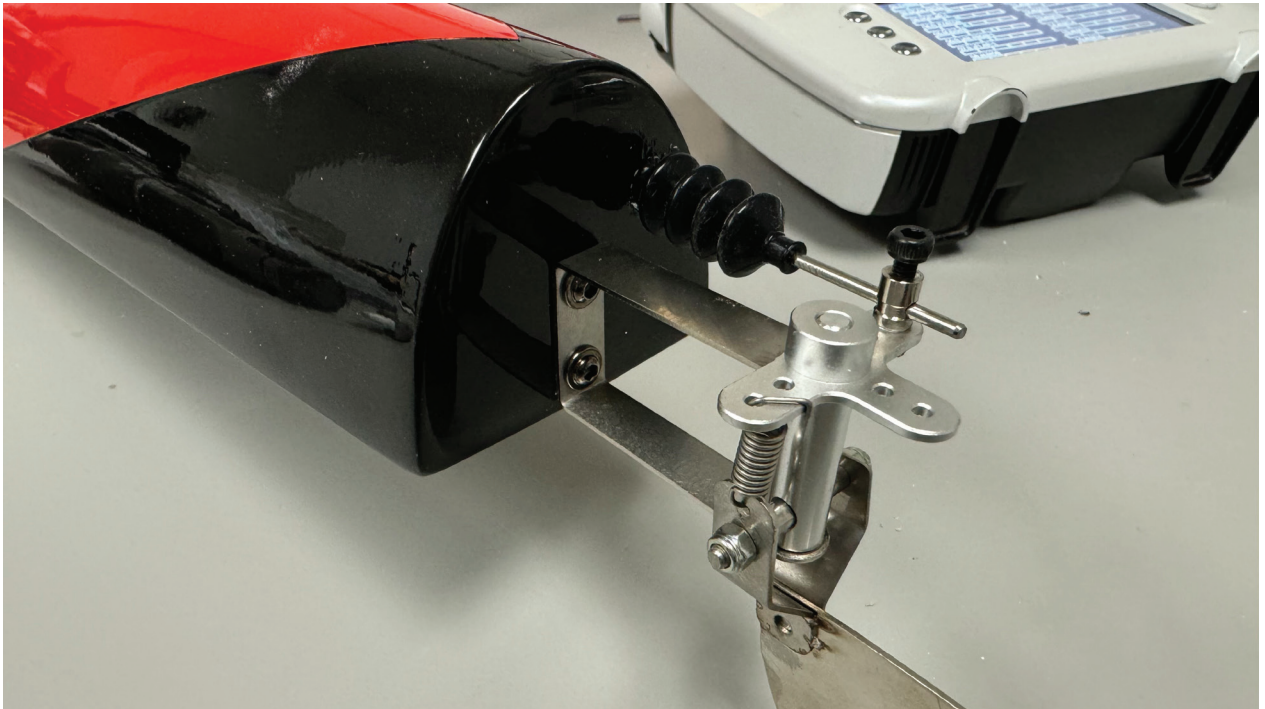
Here we have removed the water rudder for photo clarity.





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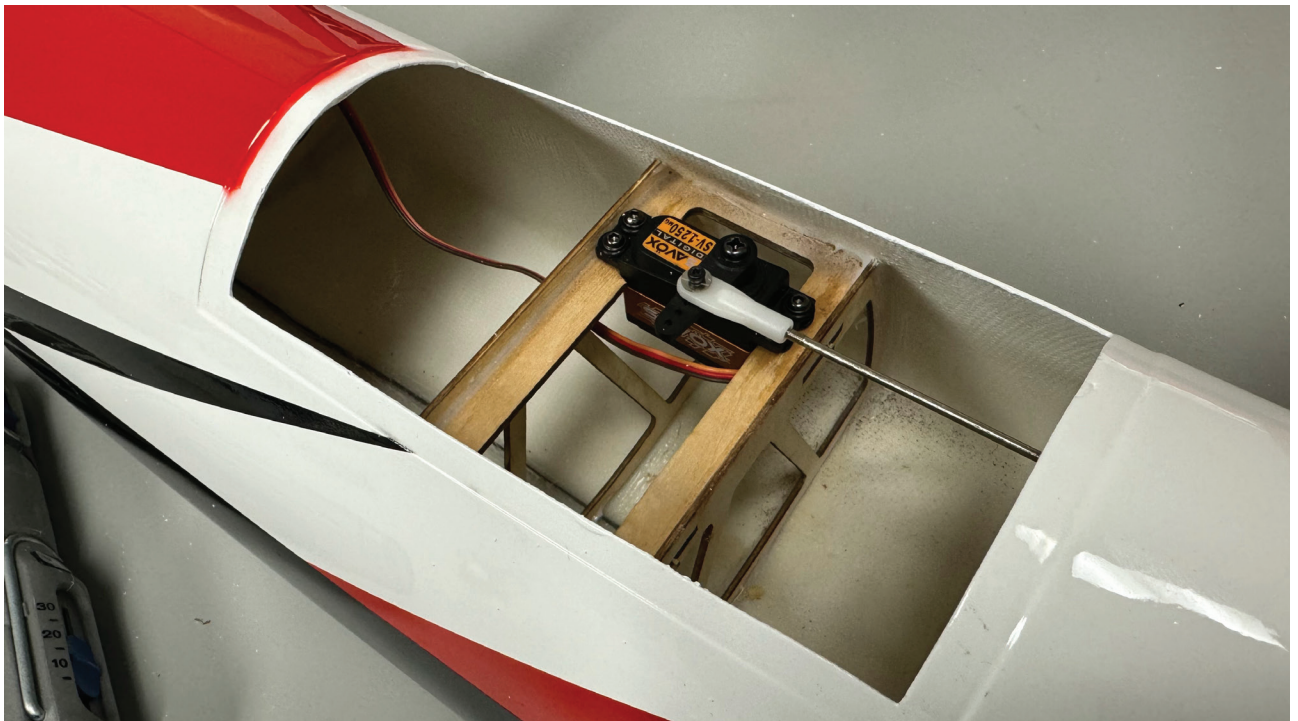
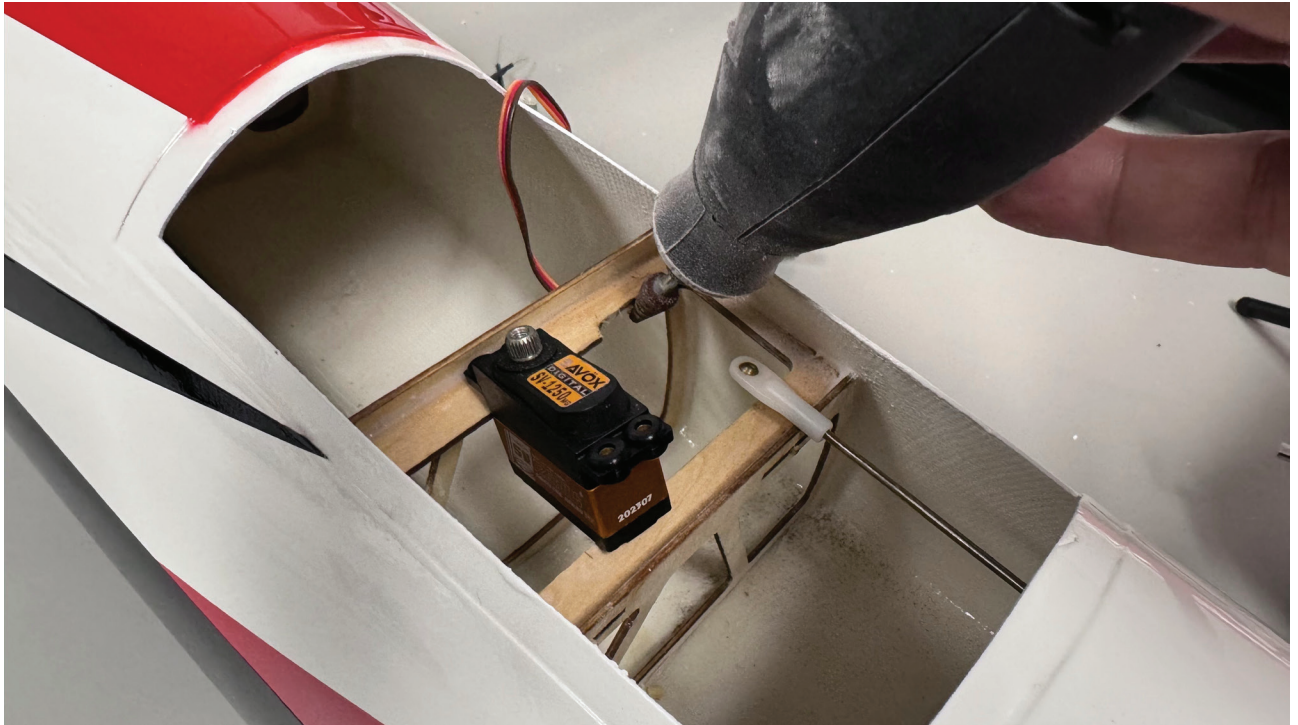
This photo shows the proper installation of the water rudder, pushrod, and seal. On the interior end of the pushrod, install the ball link.



# 8

For the 84" size floats, the servo mount is sized for classic "mini" servos such as the Hitec HS-5245MG. New "super mini" servos are much more powerful and able to handle the higher voltages more often used today. Mounting a more modern servo, such as the Savox SV1250MG, requires clearancing the mount as shown.

For larger floats in the 100-140" sizes, a full-size metal gear servo is required.





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Run your servo extension wire along the strut up to the fuselage. You can use zip ties to hold the wire, we prefer this better-looking solution. Colored electrical tape is available in all the colors we use on our struts, and blends in very nicely.

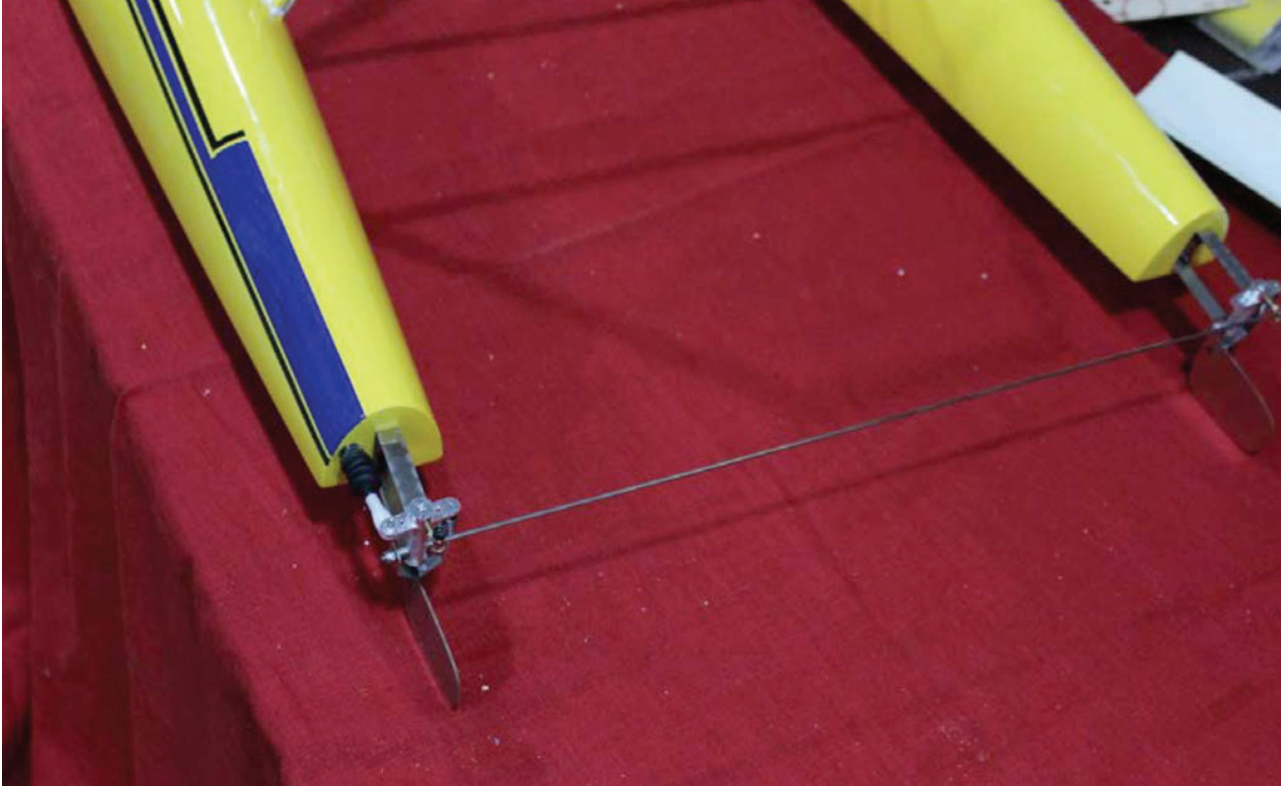
Seal the servo-side float hatch using your preferred method of tape or screws. Seal all of the points where the struts enter the float bodies with caulk or Clear Bond.

Remove the covering over the rear float mount on your airplane, install the floats with the included fasteners. If you are leaving the floats installed permanently, use loctite.



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If desired, your float kit includes a cross-pushrod to link two water rudders. However, we do not find that we need the second rudder on our demonstration aircraft and we prefer to save the weight and complexity. We recommend trying the setup with one rudder before deciding to add the second.





# Setup and Flight

**Balance:** If using a single water rudder, we are happy with the CG that changing from wheels to floats gives naturally, and we do not add any ballast when changing back-and-forth from land to water. If you use two water rudders, you may find the float setup makes the plane a bit tail-heavy, but it is not severe. In this case, consider adding a bit of clay for ballast to the nose of your floats.

**Mix:** We use a rudder-to-water rudder mix on our transmitter to control the water rudder servo. Set the travel so that the water rudder does not bind or run out of travel, and the amount of travel on the water rudder should be 30-40 degrees. This is not critical and should be set to your personal preference after a few water takeoffs and landings. We do use expo on our water rudder to make it easier to be smooth as the aircraft reaches takeoff speed.

Note that our aircraft are fully aerobatic with floats installed, and you will see our team pilots flying rolling harriers and flat spins and many other maneuvers with floats installed. Note, however, that with the extra weight and inertia of floats, the handling will be different and you will need to allow more space and altitude to recover from maneuvers.

