

# R4 Outrigger



**Competition Electric Outrigger Hydroplane  
For Racing in P Limited classes**

Manufactured exclusively by Zippkits in the United States

***Zippkits.com***

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The R4 is the latest design of our very popular 21FE Outrigger.

The JAE outrigger series was conceived by IMPBA Hall of Fame members Rod Geraghty and David Hall.

It was developed by Hall of fame member Ron Zaker, Jr. and Martin Truex, Jr.

Rod is no longer with us, but his spirit lives on with the entire "R" series.

This boat was designed around a 4S pack and 3656 motor. More of either may not fit without modifications.

Aimed squarely at P Limited racing, this is the most competitive hull out there.

The new sponson design by Tom David has tested very well.

So well, that we are converting all of our new and existing outriggers to this state of the art design!

We have made great strides in functional design and manufacturing. Sanding has been reduced by about 90% over our previous kits.

We made this kit as easy to build as we can, and added features to help insure a straight and square boat.

The recommended build and setup was determined after building and testing several models.

Build it the way we show, and set it up like we say, and you will have a great running boat "right off the board" as they say.

The R4 has no bad habits, and as long as you don't ask it to do something it was not designed to do (sharp left turns, etc.), it absolutely will not do anything stupid. Ever.

This is a boat that you can trust, enjoy and win with.

Thanks you very much for buying this kit, and remember that this is a HOBBY.

Have fun. If we can help you to that end, please contact us.

## **TOOLS AND MATERIALS NEEDED TO BUILD**

- ✓ Sanding blocks with 80 and 150 grit paper
- ✓ 220 and 400 grit wet or dry sandpaper
- ✓ Drill with bits
- ✓ Square
- ✓ Flat file
- ✓ FLAT Workbench
- ✓ Titebond III wood glue or Medium CA
- ✓ Good quality 30 minute epoxy
- ✓ Epoxy finishing resin or automotive clear coat
- ✓ Spring clamps, paper clamps, c clamps, etc.
- ✓ Razor blade or X-Acto knife
- ✓ Masking tape
- ✓ Waxed paper
- ✓ Wood filler
- ✓ Primer
- ✓ Paint

## **REQUIRED TO COMPLETE**

- 36mm Motor (water cooled) (Zipp 635)
- .187 Collet for motor (Zipp 3512)
- 150+ Amp Speed Control (Zipp 705)
- .187 18 inch cable w/welded 3/16 stub shaft (Zipp 3486 or 3502)
- 2 channel surface radio with 1 standard digital servo (Zipp 5002 servo)
- Rudder pushrod (.055) with “Z” bend
- 1 pushrod seal (Zipp 3702)
- .187 strut (Zipp 3495)
- .187 drive dog (Zipp 3485)
- Z545 prop (Zipp 4008)
- Prop nuts (Zipp 3489)
- Cable grease (Zipp 3532)
- Rudder (Zipp 3483)
- 18 inch length of 1/4 brass tubing (pre-bent shaft tube available)

**Note that we have an Ultimate Hardware set available for the R4.  
It includes everything you need to complete your boat, less electronics.**

This kit is not hard to assemble, as all of the hard stuff has been done for you. That is no excuse to do a poor job with assembly. The better you build this boat, the better it will run. Often the difference between an excellent building job and a poor one is a simple sanding block.

Take the time to read this entire manual, so that you are familiar with all the building steps and their proper order. Take your time; make sure you understand everything before you do it and you will be rewarded with an impressive running hull...

This kit is not a toy. Although R/C boating is a fun and rewarding hobby, it can be dangerous if not done with common sense and safety in mind. Just about anyone should be able to build this kit, but it should not be operated by children without close adult supervision.

A few words about glue:

When we build factory boats, we use the following:

We use and recommend Titebond III for general wood to wood construction. You can buy it almost anywhere.

Titebond will only work on raw wood. It will not work on wood that has been sealed.

We use 30 minute epoxy for all other applications, especially non-wood joints (wood to foam, etc.).

You can use 30 minute epoxy for 100% of the build if you wish.

A note about overhangs:

Our boats are designed to make the best use of available power. They are efficient.

One way we accomplish this is with overhangs. These allow the water to shed cleanly.

Anytime you have water touching the boat, you have drag. Sharp edges help minimize this, thus decreasing drag and increasing speed.

Don't round off anything that will touch the water. This includes the back of all surfaces, as well as the sponson, tub and ski bottoms.

You can round off the top of the tub and sponsons, but that is all.

***The manufacturer assumes no liability for damages or other loss in the use of this product, as we have no control over the construction or end use of this product.***

Let's get started.

# Cowling

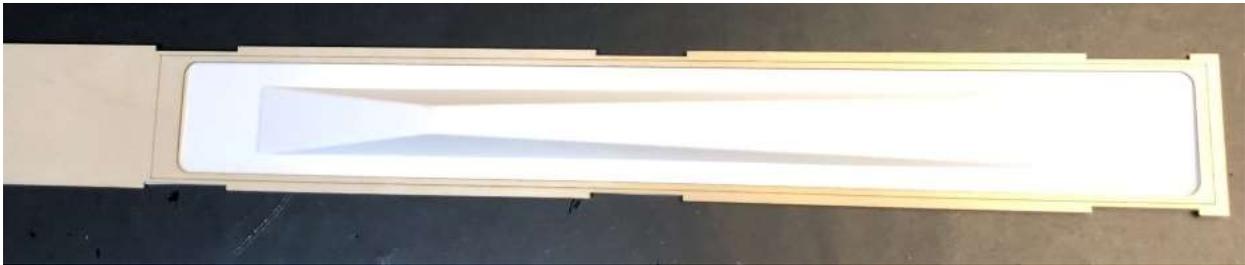
The plastic cowling needs to be trimmed before we get too far into the build.

Pop out the internal part of the 1/16 ply top deck. Sand the little bumps where the part was held in place.

Center the opening over the cowl, and trace around the inside with a pencil.

Score the lines with a utility knife. Bend and break the plastic on your lines.

Sand the corners to shape.



# Tub

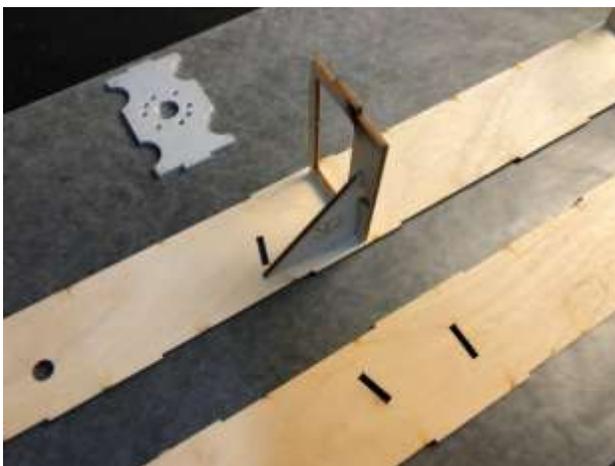
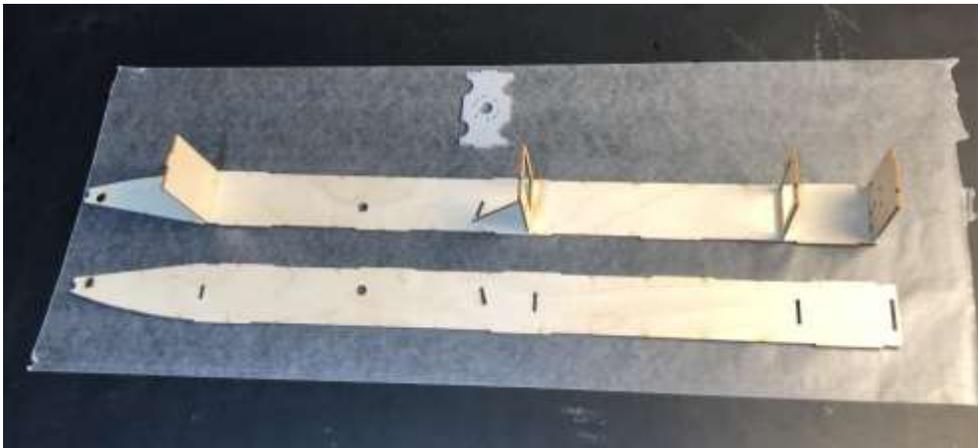
We will need the following parts:

Tub sides  
Bulkhead 1 (1)  
Bulkhead 3 (3)  
Aluminum motor Plate  
Transom (T1)  
Transom Doubler (T2)

Nose (N)  
Tub Bottom  
FWD bottom (FWD)

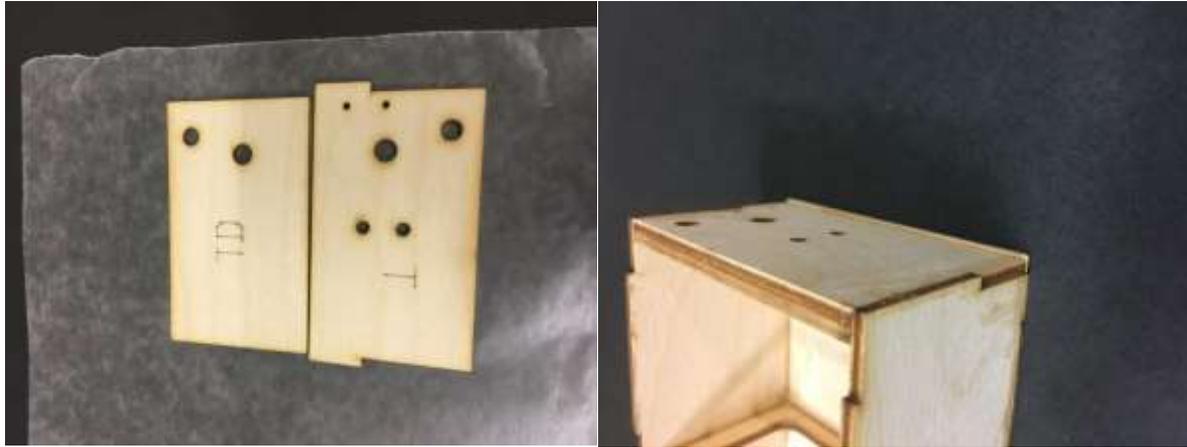
We like to use Titebond for the wood to wood joints. You can also use medium CA.

Glue bulkheads 1 thru 3 in place on one tub side.  
Glue the aluminum motor plate with 30 minute epoxy. Work quickly.



Glue the other tub side to the bulkheads. Use epoxy on the motor plate.  
Make sure that the tub sides are glued correctly, and that no bulkheads overhang the sides.

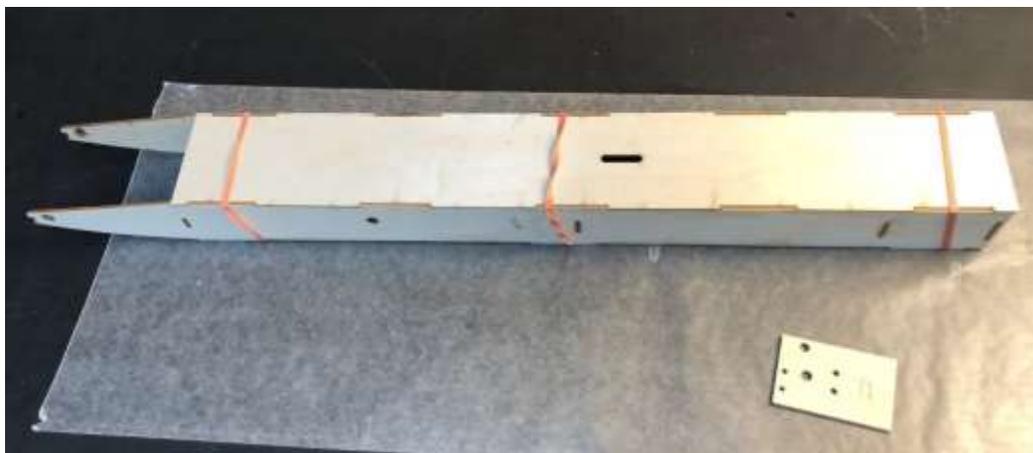
Glue in the transom, and transom doubler. Make sure that the holes line up in the two parts, and the tiny holes should be on the RIGHT side. Clamp T1 and T2 together.  
Note that the transom assembly should be all the way up, flush with the TOP, not the bottom.



Note that the transom (and doubler) should be flush with the **TOP** of the tub, not the bottom.



Put rubber bands around the tub at each bulkhead.



Slip the aft bottom in place. It only fits one way.  
If the fit checks out, glue it in place. Use tape to hold the tub tightly together.  
It should fit in all slots, and not have any gaps.

There is an overhang on the rear. Do not sand this off! This is the finished length of the bottom.  
Remove the rubber bands.

Flip the tub upright on waxed paper.  
Be sure it is sitting on a flat surface, and use weights to hold it that way.



Allow to cure.

Glue the nose and tape in place. Allow to cure.

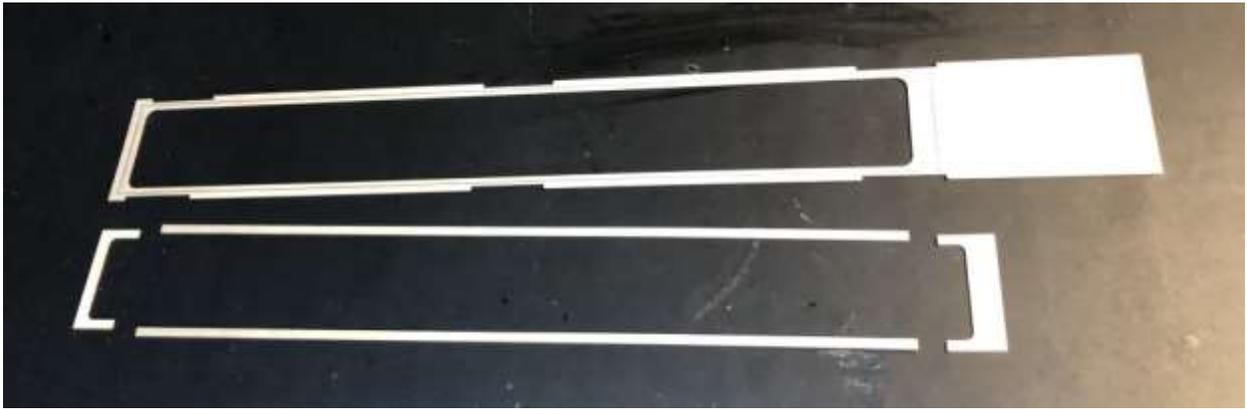


## Deck Lips

Glue the deck lips to the bottom of the deck, along the marked lines. Be very careful not to use too much glue here.

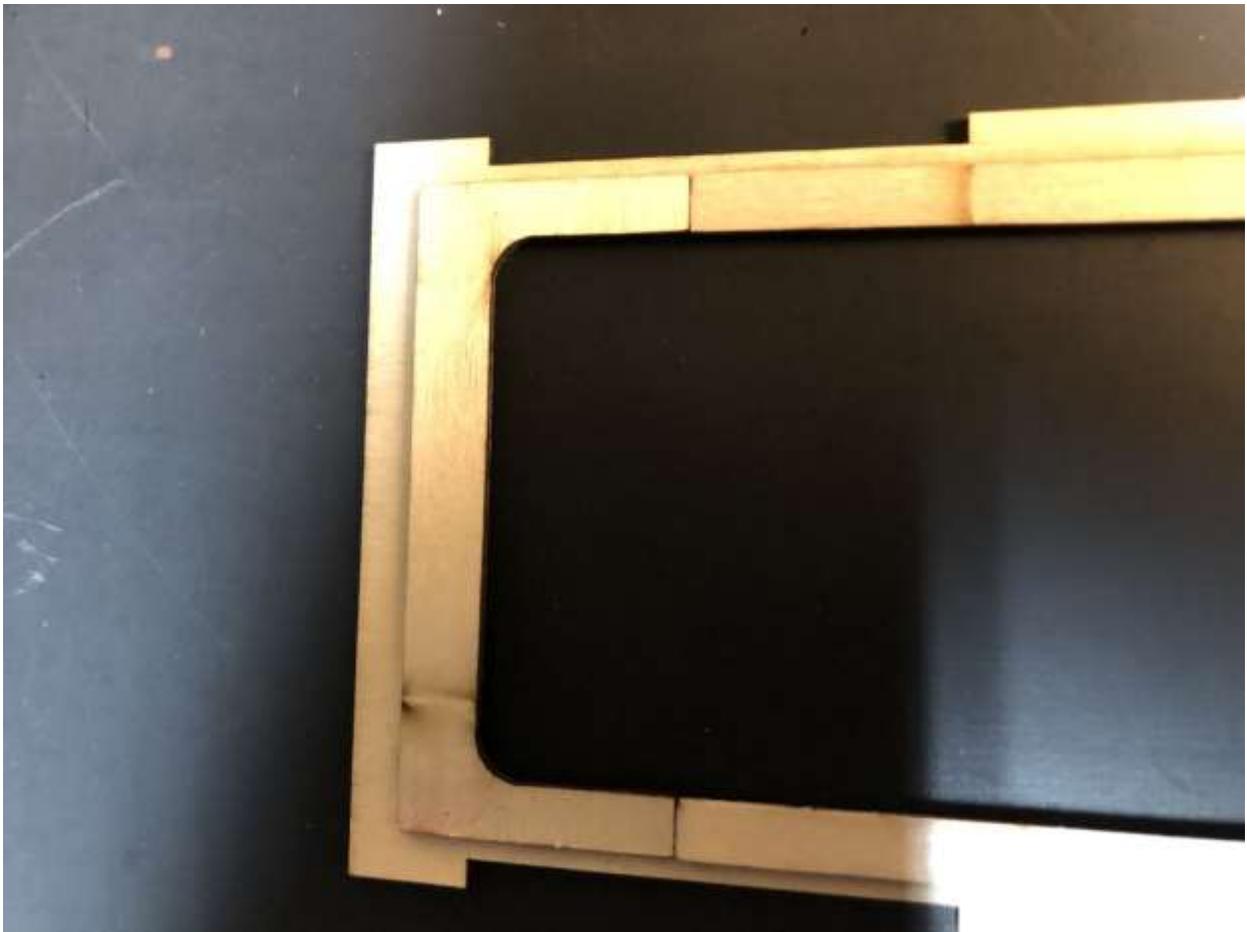
We like to use medium CA glue as follows:

Sand the little bumps off of the lips that were holding them together.



Using a tiny little bead of medium CA on the lips only, glue the lips in place, lining them up to the lines marked on the deck.

Start at one end. Glue the end, the two long pieces, then the other end.



Make sure everything lines up, and hold until cured.

The deck is now ready for test fitting and installation.

# Ski



Glue the rear sheet (SKI) to the rear part of the ski sides.  
Glue into the "notch", and allow excess to hang off the back.



Make sure that the side is all the way to the edge, and that the side and bottom are 90 degrees.

Tightly tape in place.

Glue the forward sheet (SKI) so that it covers the beginning of the rear sheet. Allow excess to overhang the front.



When cured, sand the rear to match the rear angle. Sand the front overhang so that the ski will sit flat, and the front of the sheeting should be sanded paper thin, to avoid a bump where the ski begins.



# Back to the tub

*Pictures show the FWD bottom in place. It should not be installed yet.*

Test fit the boom tube doublers, along with the brass sleeves. Forward doublers (BD) and aft doublers. DO NOT GLUE YET.



Sand the last  $\frac{1}{4}$  inch of both tubes with 80 grit paper. This helps the glue bite.

Fit the doublers and tubes as shown.

Glue from earlier may prevent them from fitting flat against the sides.

If this happens, you may have to sand a small bevel on the forward doublers so that they fit flat.

With both tubes and doublers in place, **weight the tub** to the bench so that it stays flat.

Slip the carbon boom rods in place and center them.

Measure from the bench to the boom rod, at the tips.

What we want is both tips to be the same height from the bench (level, side to side).

Note that the front and rear are different heights, so you will get different numbers from front to rear. We are only concerned with the right and left sides being level.

If they are not the same, and you are sure that the tub is flat and level, make a pencil mark on the tub side below the brass tube to mark the high side.

Remove the brass tube and file the bottom of the hole slightly. It doesn't take much!

Just open the hole a hair on the bottom and re-measure.

Once you get both sides the same, move to the other brass tube and rod.

Once both are level, use 30 minute epoxy to glue the brass tube and doublers in place.

Make sure the tub is flat and weighted down.

If you filed too much, you can just shim the low side of the rod until they are level.

The doublers will lock the brass in place in the tub.

Be sure not to get any epoxy on the carbon rod... Allow to cure.



## FWD Bottom

Glue the forward bottom (FWD) sheet in place, covering the aft bottom and extending any overhang to the front. Leave the rear overhang square. Do not sand flush.



Use 30 minute epoxy to glue the foam nose block in place. This provides additional floatation should the deck get damaged. We will also make this compartment waterproof.

# Floatation



Test fit the foam block at the very nose. Spread epoxy all around the forward nose. Put some on the back of the foam. Work quickly.

Glue the foam in place, and be sure all areas of the forward nose compartment are sealed with epoxy.

Allow to cure.

Sand the top and bottom of the foam to match the top of the tub sides.

Glue the forward bottom in place (FWD). It should just cover the aft bottom by about 1/16 inch, and the excess should go forward. Allow to cure.



## Deck

Sand the tops of the bulkheads and slots in the tub.

If all is okay, get some tape, weights and a piece of waxed paper ready.

Use the provided sub-bulkheads (SP) to brace the tub if needed. These prevent the tub from bowing during deck installation. DO NOT glue these in!

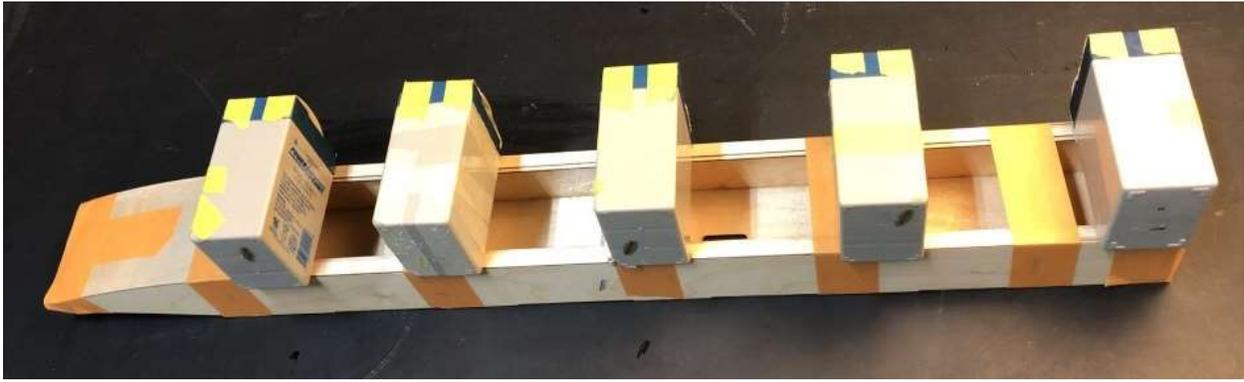
Test fit the deck to the tub, and make sure that it fits fully into all slots.

Mix up some 30 minute epoxy, and apply a coat to the deck, bulkheads and top of the tub sides. Work quickly.

Put the deck in place, and tape tightly to the tub. Be sure that the deck is fully seated in all slots, and that the sides are not bowing in or out.

Lay waxed paper over it. Use heavy weight (tool box, cinder block, etc.) to hold the deck in place.

Tape the front end down tightly.



Wipe away any excess epoxy and look all around to make sure that the deck is in complete contact all the way around. Double check this before you walk away. Allow to cure.

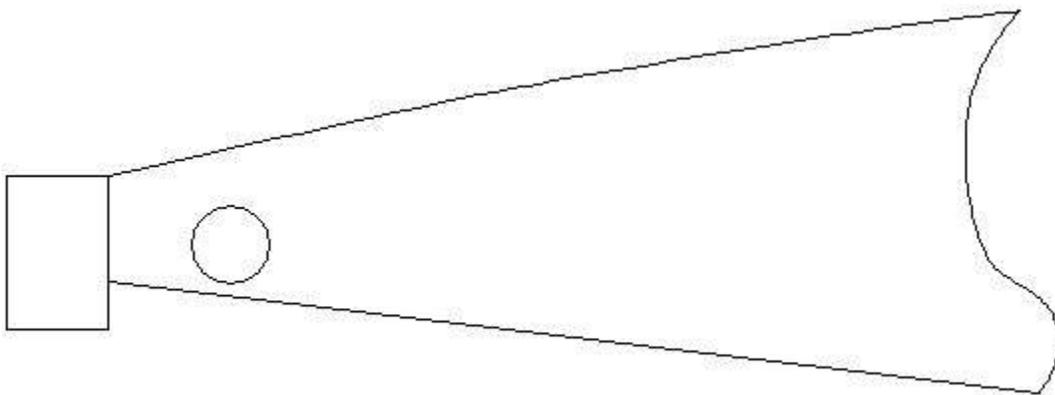
When cured, flip the tub over and look at the deck to tub joint. It should be perfectly flush and sealed all the way around.

Mix up some more 30 minute epoxy and use a small brush to paint a heavy coat into the corners where the deck meets the sides. Do the bulkheads too. Use a lot.

Work quickly and flip the tub upside down so that the epoxy forms a nice fillet as it settles. Allow to cure.

Once cured, sand the front of the tub flush, and glue the pine nose block in place. Use tape to secure.

When gluing the nose block, align the top and leave the excess on the bottom.



Once cured, carve and sand to the shape shown.



## Sealing

Once the deck has cured, seal the inside of the tub. You can use epoxy finishing resin, or any epoxy compatible sealer. Don't use polyester fiberglass resin. It is not compatible with epoxy glue.

Be sure to get inside all areas and don't forget the underside of the deck. Use a bent metal brush (acid brush) for this.

When done, wipe off as much as you can, This will leave a smooth surface for the next coat (tomorrow).

If you have any sealer left over, use it to seal the inside of the ski.



Once the sealer is completely cured (overnight), apply another coat, but don't wipe any off.

Make sure that everything has **two coats of sealer**. This is important, as one coat is not enough to be 100% water proof.

## Motor

Mount the collet to your motor shaft with the two set screws. Be sure that both are tightened on the flat part of the shaft.

Install the motor to the motor plate with two screws.



## Shaft tube

Bend the shaft tube to the shape as shown, or purchase a pre-bent tube (included in the Ultimate Hardware set).

Bolt the strut bracket in place using the two 6-32 flat head Phillips screws and blind nuts. Sand the motor end (bent end) of the shaft tube about 3 inches back with 80 grit paper.

Slip the shaft tube into the slot in the floor, and thru the hole in bulkhead 3. Slip the strut onto the shaft tube and loosely bolt the strut to the bracket.

Tape the ski in place. Note that the top rear of the ski aligns with the transom, not the bottom sheet. See pic below.

Adjust the strut so that it is sitting on the very back of the ski, and level (zero angle). Tighten the strut.

Adjust the shaft tube until it is about 1/16 inch inside of the strut. That is, 1/16 inch short of the back of the strut.



The ski should fit without hitting the shaft tube, if not; adjust the tube until it does.

You should have about zero to 1/8 inch extending past the bulkhead by the motor (not much). Once you are happy with the fit, remove the ski.



Tape the brass tube in. Tape all around the bottom with clear packing tape. We don't want any epoxy running out.



Once you are happy with the shaft tube, glue it in place.

Glue the shaft tube in place with 30 minute epoxy. Glue the tube at the bulkhead, as well as the bottom.



Allow to cure.  
Remove motor.

Check to see that the shaft tube is fully encapsulated by epoxy. There must be no gaps here, or it will leak. Add more epoxy on the bottom if there is any doubt.

## Sponsons

Let's move on to the sponsons while the sealer is curing.

Lay out all of the sponson parts, and make sure that you understand the assembly order before you start. Epoxy is impossible to remove from foam...

The foam sponsons are sandwiched between ply plates, and sheeted with thin ply.

**\*IMPORTANT\*** The sponson plates are different thickness.

The 1/8 ply plates go **INSIDE** and the 1/16 ply plates go **OUTSIDE**.

Note that all part ID's that are etched into the wood should be inside (glue side). You should never see any writing on any parts once glued.

Be sure to make a right and left sponson as shown.



Stuff pieces of paper towel into all 4 aluminum sponson sleeves. This keeps glue out.

Using 30 minute epoxy, laminate the left sponson plates to the foam. Lay the 1/16 ply plate on the bench, glue the LH foam sponson core to it, then glue the 1/8 ply plate to the core. Work quickly.



Do not glue in the aluminum sponson sleeves at this time. Only use them to align the wood plates on the foam. Remove before the epoxy cures.

Note that the left sponson has only 2 holes.

The order (from the bench, up) is, 1/16 ply sponson plate, foam, 1/8 ply sponson plate (top).

Slip the aluminum sleeves in place and wrap a couple of pieces of tape around the sponson.

Put on the flat bench with weights, and slip out the sleeves. Wipe them with lacquer thinner if they have any epoxy on them.



Repeat for the RH sponson, and add the 3 wood dowels as well.

Allow to cure.

Sand the foam flush with the ply plates. Be sure that you sand a sharp inside corner at the back of the ride surface. This is needed so that the 1/16 sheeting fits at a 90 degree angle.

You can also use the Zippcut foam cutting bow for this.



There are 6 parts to the sponson sheeting. Sand any bumps off the edges and epoxy in place in the order shown. These numbers are etched into the parts.

Begin sheeting with epoxy in the following order:

1 and 2. Tape and glue in place and allow to cure. You can use 5 minute epoxy here.

Do both right and left.

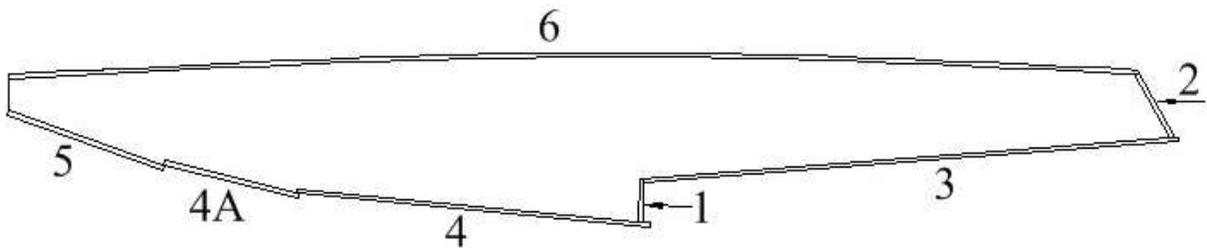


When cured, sand 1 and 2 flush. Be careful not to tear them from the foam.



Glue 3, 4, 4A and 5 in place.

Note that 3 is precut and has an overhang at the rear. Leave this.



5 should just cover the beginning of 4A, with any excess left forward.

Glue 6 to the top, aligning the rear end with 2, Excess to the front.

Do both right and left.

Sand the front of the sponson until all sheeting is flush. Using epoxy, glue on the pine nose block and tape until cured. Align with the top just like the tub.





If you have not done so, do the other sponson.

When cured, sand both sponsons so that the sheeting is flush on both sides, but maintain the rear overhangs.

Sand everything sharp and flush. Sand the pine noses to a pleasing shape. Be sure to leave a “step” at the bottom of the nose block as shown. The tub gets sanded the same way.

Don't glue in the aluminum sleeves until the boat is painted and or clear coated.

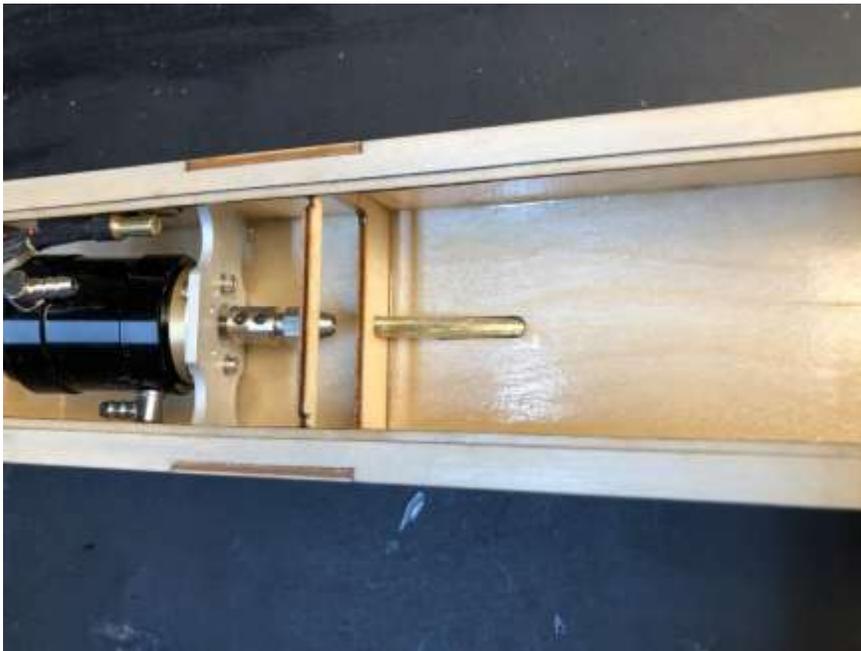
## **Rudder Servo**

Assemble the aluminum servo mount and adjust for your servo. When happy, use thread locker on each of the 4 bottom screws. Do this one at a time.

Sand the bottom of the aluminum servo mount with coarse (80) grit sand paper so that the epoxy will grip.



Bolt the motor into the aluminum motor plate as shown.



## Assembly

Finish drilling the holes for the strut and rudder in the transom. The rudder screw holes should be drilled with a 1/8 bit, and the strut bolt holes should use a 3/16 bit.

Bolt the rudder in place, using the supplied 4-40 screws and blind nuts. Don't use the metric screws and nuts that come with the rudder. Assemble the pushrod connector into the rudder arm, and secure the arm in the rudder with the tiny set screw.

Make sure that the rudder is 90 degrees to the bottom of the tub.

Bolt the strut bracket to the transom using the 6-32 screws and blind nuts supplied with the strut.

Do not glue the pushrod seal aluminum ring in place yet, but you can test fit it.

Put the "Z" bend onto the servo arm. Use the hole closest to the center of the servo. You may need to open up the hole in the servo arm. Be careful not to create any slop.

Place the servo into the servo mount (without the top strap) and put it in the tub, guiding the pushrod through the hole in the transom.

Slip the pushrod into the swivel connector (on the rudder). The servo should end up as far back as you can get it, but still be able to get to the strap screws on top.

Try to center the pushrod in the transom hole.



Mark the location of the servo mount. Remove the servo mount and scrape or sand the tub floor.

Remove the servo from the mount.

Use 30 minute epoxy to glue the servo mount in place. Align the mount to your marks.

Allow to cure, but keep checking to be sure that nothing has moved.



# Water Outlet

Decide where you want your water outlet to be.

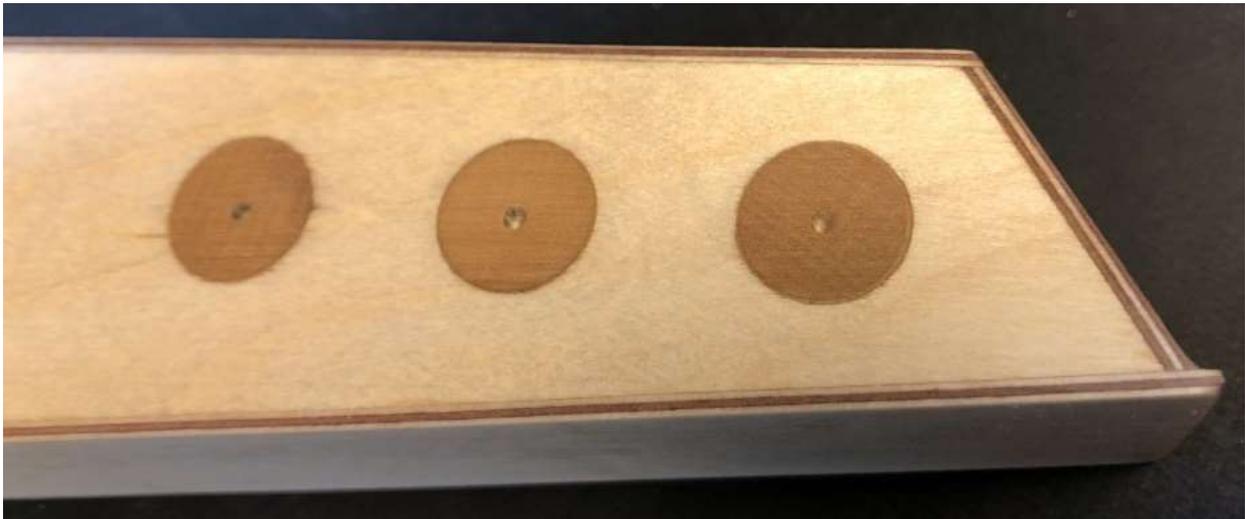
We like to put it up high on the left side of the tub. That way, we can see the water exit when the boat goes by.

Drill the hole for the water outlet with a ¼ inch drill.

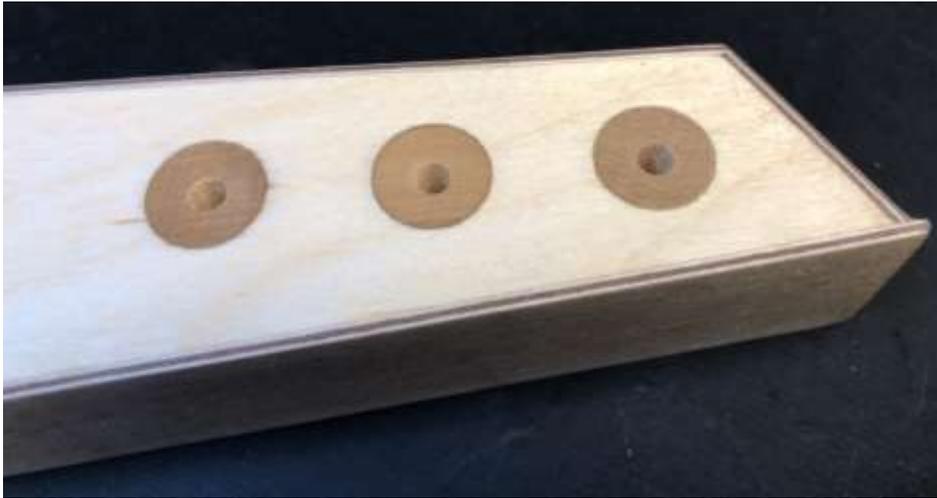
# Turn Fin

The turn fin for the R4 comes pre-sharpened and ready to use!

Mark the center of the dowels on the inside of the RH sponson. Try to keep them close to the center of the dowels.



Use a drill press if possible with a 5/32 bit, and drill halfway from one side, flip the sponson over, and finish drilling from the other side.



## Sealing

Remove everything and sand the entire boat, including the tub, ski and sponsons.

Finish sanding with 220 grit and use wood filler to fix any gaps or imperfections. Use the lightest color filler you can find.

The outside needs at least two coats of epoxy finishing resin or catalyzed clear coat.

Brush on a coat of epoxy finishing resin or catalyzed clear coat. As soon as you are done brushing, wipe it off. Use a disposable shop towel and wipe off as much as you can.

Get in the corners and overlaps. This will make it 100% easier to sand.

Once cured, scrape with a utility knife blade until smooth. It doesn't take much. Sand the corners and curved areas with 220 paper.

Wipe everything down with a soft cloth and apply a second coat. We prefer to spray this coat, but you can brush it on. Just try to minimize brush strokes.

At this point, the boat can be run without any more finish, if you like.

Sand the bottom of all running surfaces with 320 wet sandpaper **WITH A BLOCK**. This will add a few mph. Only sand until the surface is smooth. It doesn't take much.

If you desire to paint any part of your boat, now is the time to start primer and paint. You must seal the paint with a catalyzed clear or epoxy clear, as tape will pull up almost any other finish.

# Final assembly

Measure and mark the tub bottom so that the ski can be mounted in the center. The rear of the ski should be even with the transom. It will be 1/16 inch forward of the rear bottom.

Using epoxy, glue the rear ski in place. Tape until cured.

Bolt the strut bracket in place on the transom. Be sure it is straight. Install the strut by slipping it onto the brass tube. Use the included strut gauge (ST) to set the strut. The strut should be sitting on the ski and parallel with the gauge.



Bolt the rudder in place using the 4-40 screws.

## Radio

Glue in the aluminum pushrod seal ring.

Center your transmitter steering trim and install rudder servo arm.

Be sure to install servo arm screw.

Install servo.

Push the rubber pushrod seal onto the aluminum ring and install pushrod.

Slip the pushrod into the swivel connector, center the rudder and tighten the set screw.

Use double sided tape to attach the receiver to the left side of the tub, in the servo bay.

Install the bulkhead fitting on the transom, as well as the water outlet.

Install the motor onto the motor plate, and plug in your speed control. The speed control should be in front of the motor.

Route your servo and ESC wires, and hook them up to the receiver.

# Water Cooling

Attach the silicone water line from the rudder to the bulkhead fitting, then to the ESC. From the ESC to the motor, then out via the water outlet.

# Sponsons

Glue in the aluminum sponson sleeves. Be sure to make a right and left sponson as shown.



Pick out the paper towels from the sleeves before the epoxy cures



Check both carbon boom tubes. You want one to be about 1/8 inch shorter than the other. **The short boom tube will be the front.**

Slide the carbon boom tubes into the brass tubes in the tub. Slip an aluminum boom tube collar onto each one, and place against the tub.

Slide both sponsons onto the boom tubes.

Drill a 1/8 hole through each aluminum sponson sleeve, through the carbon, and out the bottom. Use a fast RPM and light pressure.



Secure with a 4-40 screw and nut. Repeat for other sponson sleeves.  
Be sure that the tubes are bottomed in the sponson sleeves.

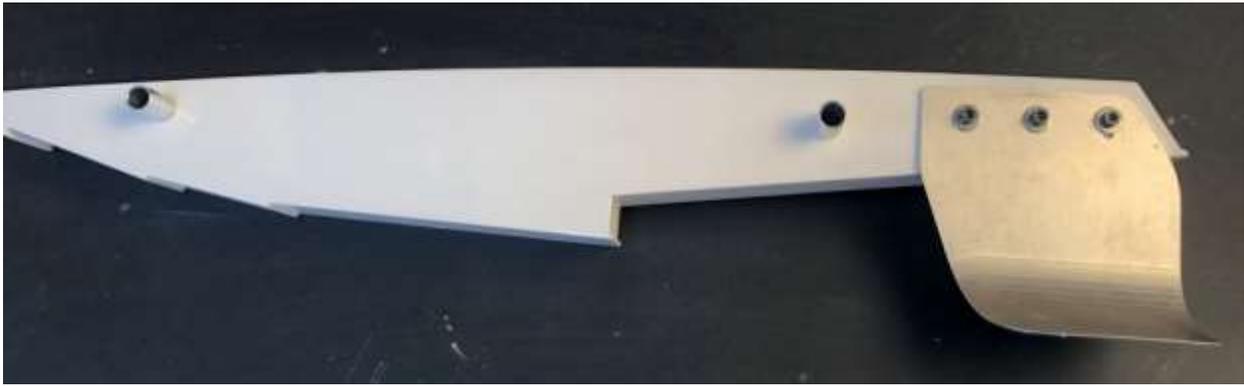
Center the sponsons on the tub, and toe in the RH sponson.  
The LH sponson should be the same distance, front and rear, from the tub.  
The RH sponson should be 1/8 to 3/16 inch closer at the front, for toe in.

Tighten the boom tube collars against the tub.

## Turn Fin

Bolt the fin in place with the (3) 6/32x1-3/4 socket head screws, washers and nuts. The nuts should be inside.

The fin should be fully adjustable for angle. Set it parallel with the sponson top and tighten the screws.

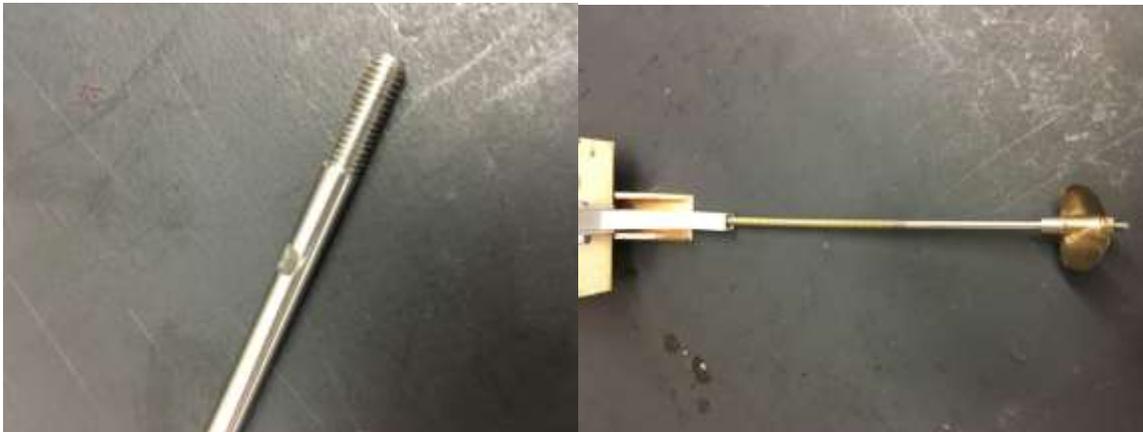


## Flex Shaft

Cut the 3/16 flex shaft as follows:

Slide the drive dog onto the shaft, then the prop. Leave about  $\frac{1}{2}$  inch of thread past the prop. Tighten the set screw so that it makes an impression in the stub shaft.

Remove everything and grind a flat spot on the mark made by the set screw. This slit should be at least  $\frac{1}{16}$  inch deep.



Reinstall the drive dog and use blue thread lock on it. Be sure that it is seated in the flat spot.

Dress the cut end of the cable if needed, so that you can slide it into the shaft tube and into the collet.

Be sure that it is fully seated in the collet.

Measure the distance between the back of the strut and the drive dog. Subtract  $\frac{1}{4}$  inch from your measurement. This is how much to cut off the end of the flex cable.

You want to end up with a  $\frac{1}{4}$  inch gap between the strut and drive dog when the shaft is fully seated in the engine collet.

We wrap a little masking tape around the shaft, then mark the exact amount to be cut. Measure twice, double check then cut. Use a cut off wheel. Dress the end of the cable when done. Install the 10-32 locking prop nut.



Check the fit of the brass shaft bushing in the strut (with shaft tube inside). The bushing slips inside of the ¼ inch OD brass shaft tube.

This should be a nice fit, and you should be able to spin it.

Grease the flex shaft fully, including the stub shaft and bushing.

Slip this back into the shaft tube, fully seat into the motor collet and securely tighten the collet.

## Cowl

If painting the cowling, sand with 600-800 paper and wash with soap and water before painting. Windshield decal is included.

## Setup

If you are using a 2200kv (or less) motor on 4S, use our Z545 prop. Otherwise, start with a small prop (440 2 blade) and check temps before going larger.

Make sure the prop is very sharp and well balanced.

**Important-** This boat must not have excessive rudder throw. Use no more than 1/4 inch of movement each way. You will likely reduce the throw substantially more, but run it first. All of the JAE hydros are hyper sensitive to rudder movement. It is no fun driving a boat that is too sensitive.

Too much rudder throw will flip this boat. You don't want to flip anything at 70+mph...

Make sure that the servo is not in a stalled condition, especially at the extremes of rudder throw. Best to turn down your end points, and turn them up just enough to get the desired throw.

Make sure that the strut is sitting on the ski, and is perfectly parallel with the tub bottom. Use the included strut gauge (ST) to set the angle only. The strut depth will be on the ski.

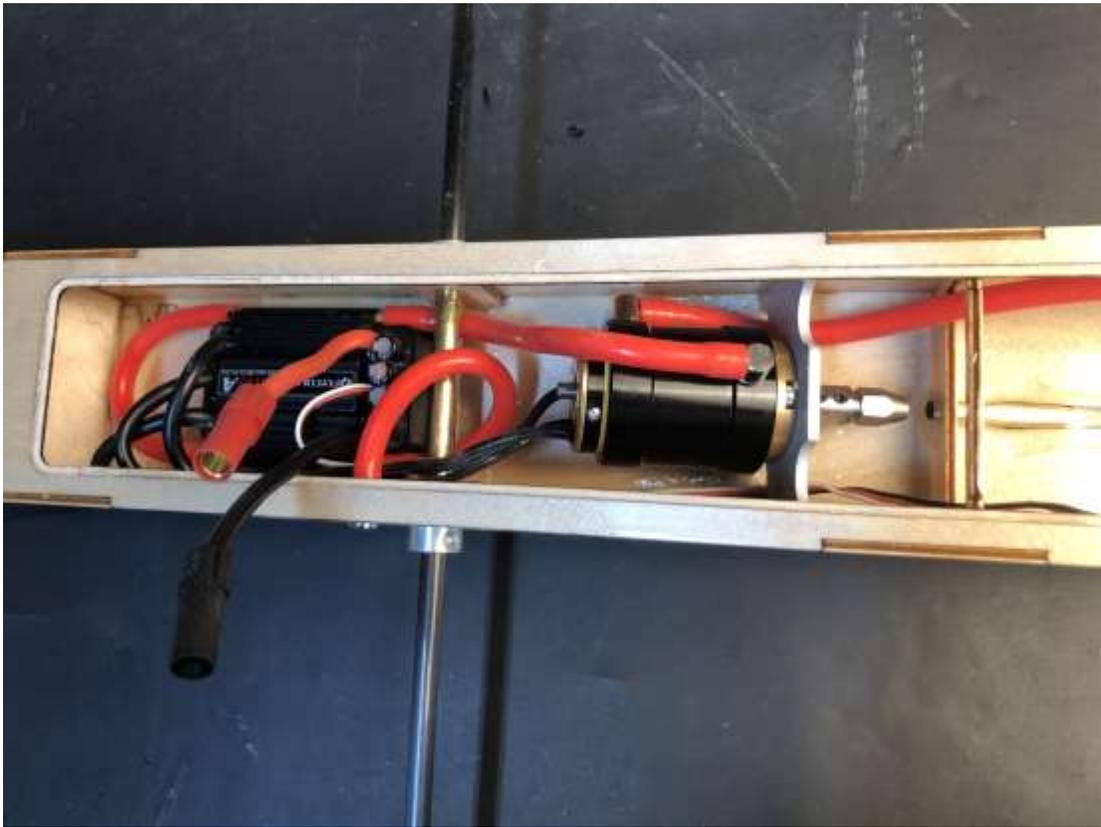
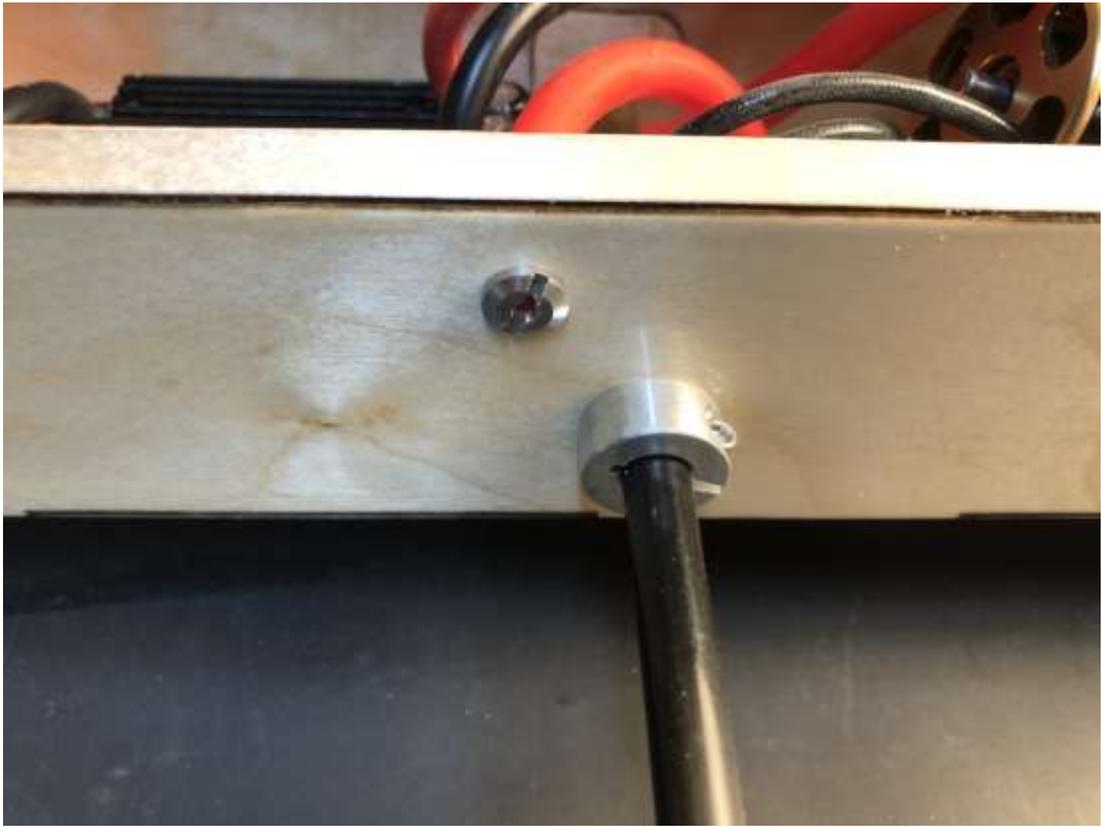


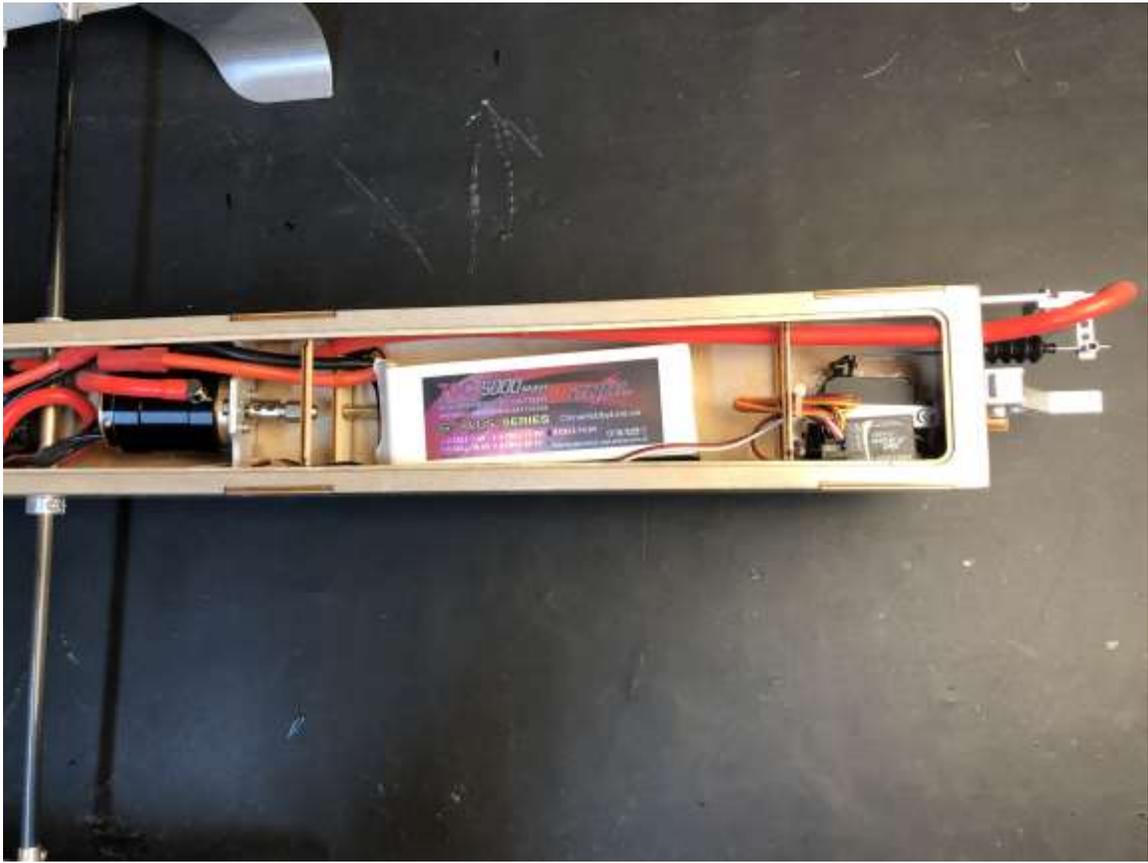
Check the right sponson for 1/8-3/16 inch toe in. Toe out on the LH sponson is not a bad thing.

## **ESC and Water Cooling**

Put the ESC in front of the motor. Use Velcro to attach it to the floor.

Run the water line from the rudder to the motor. Then from the motor to the ESC. Loop the water line at the front of the ESC and finish the water line by attaching it to the water outlet. You should use tiny zip ties on the rudder and outlet fittings.





# Running

Install your battery, and use Velcro to secure it.

The strut should never need adjustment.

## Tips:

Never run the motor at high speed unless it is in the water, and the prop is under load. If you do, the cable can whip and destroy the boat.

Fin adjustment:

Move the bottom of the fin forward to loosen the ride of the boat.

Move the bottom of the fin back to tighten the boats ride.

You will know when the fin is too far forward when one of the sponsons lifts in a turn. Angle the fin back until this stops. This is the preferred fin position.

Be sure the servo never binds and stalls.

Stalled digital servos will kill a battery in a few minutes, and may damage themselves and the receiver. Things are different than in the old days with analog servos. Stall currents can exceed 10 amps easily today.

One point of advice:

There is a lot of information out there. If you need help, contact us. We know whatever you need to know.

If you take advice from someone that does not own a great running JAE boat, consider the value of that advice.

Please send us pictures of your completed R4. We really like pics of the boat sitting in the water. Links to videos are welcome as well.

Note that replacement parts are always available from us. If you make a mistake while building, just contact us for free replacement kit parts.

Thanks again, and if we can help you enjoy RC boating in any way, please contact us!

## **Setups**

**Racing in the P “spec” or “limited” class or sport running:**

### **Motors**

**SSS 3656 2030kv (Zipp 635)**

**SSS 3660 V2 2200kv**

**TP Motor 3630-2200kv**

**4S 5000 battery at least 65C rating**

**We like the CNHL 70C (white packs)**

**ALWAYS check motor and ESC temps!**

**Flycolor 150A Speed Control (Zipp 705)**

**Props- Zipp 4519, 4616, Prather 225, ABC 1915-17-45**

**You can run the motors listed above on 6S.**

**Just stay with the smaller props like the ABC 1715 or Zipp 440/2 and watch your temps.**