

Kick Board Boat Construction Guide

The following instructions provide basic information necessary to build a Kick Board boat. This will require a few skills. Cutting, sanding, and gluing foam, and some minor wood working. You are responsible for the quality and performance of your boat. Read all instructions and be sure you understand before proceeding. Don't hurry. The most important thing is to make sure epoxy is completely set before using boat. What you need and what to do...

A Place to Work – Building a boat can be a bit messy. It is important to work somewhere where messes can be cleaned up easily and if glue or other materials get away from you, they do not ruin anything important. Outdoors or a shop is a good idea. It is best to cover work surfaces with newspaper, plastic or some other type of non porous sheeting. Some paper towels for wiping excess epoxy is important.

Cutting Tools - You will need to cut a small block of Styrofoam and a wooden transom. Styrofoam can be cut with a serrated knife or a hacksaw blade. Transom requires at least a hand saw, but a table saw and a chop saw are best. As an alternative [you may buy a Transom from RadioControlOutboards.com](http://RadioControlOutboards.com). Mark your cuts in foam with a dull pencil or a permanent marker. Always be careful with sharp tools and power tools. Wear safety glasses and keep your fingers (and other body parts) away from the cutting tools. Cutting Styrofoam is a bit messy as it creates foam saw dust. It is important to do this work in a place where the mess is not a problem or cleans up easily.

Epoxy – Regular epoxy works well. Watch out when using the dual syringe dispensers. Sometimes they get stuck and when you push hard on them they break loose and a whole bunch of epoxy squirts out. Most other types of epoxy will also work. You will also need something to mix epoxy with and something to mix it on. Popsicle sticks and round tooth picks work well. Often you can mix epoxy on the parts to be glued. Otherwise a piece of a cardboard box works great as a mixing surface. It is always a good idea to use items which can be discarded after use. Once the glue is used, it is very handy to just throw them into a trash bag.

Do not use other types of glue on your foam. Most solvent types of glues will dissolve foam. Other glues may not form a strong enough bond. **If your transom falls off you may lose your motor. We are not responsible for lost motors.** Be careful with epoxy. Once it gets on anything it is impossible to get off. Before gluing boat pieces together, it is a good idea to glue some scrap together to test the bond and to get a feel for the amount of epoxy required.

Sand Paper and Sanding Block –It is nice to smooth the foam once cut. Course 60 or 80 grit sandpaper and a wooden block is more than enough.

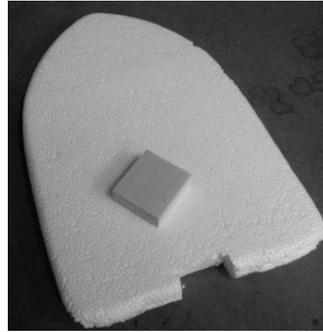
A Kick Board – Many types will work. The best is a stiff bare Styrofoam board. If you can find one with an upturned nose, those are the very best. Fabric covered Styrofoam boards will also work, but you will need to remove the fabric. When you do this, some of the edges of the board may break up. Often this may be smoothed by sanding. Soft, flexible, foam boards can work, but you will need to take steps to stiffen them. See end of instructions. If you cannot get a Kick Board, a foam plank 12" x 18" (give or take a few inches) by 1" thick will work just as well. Just make sure the board you pick is not flimsy. In all cases you need to make a 2" wide by 1/2" to 1" deep notch at the back of the board. In addition, an area about 2" x 2" in front of the notch needs to be flat enough to add the Transom Support Block.

Note: If your kick board is very short and/or light, your boat may experience a bouncing behavior under full throttle. If so, screw the motor tilt adjustment in all of the way. If the bouncing still occurs, you will need to add some weight to the front of the boat. A couple of rocks on either side of the battery will work well.



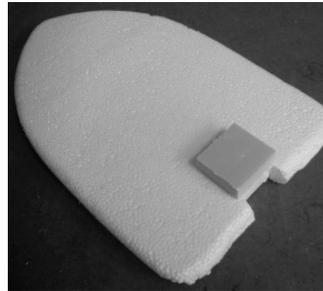
Kick Board With Fabric Cover Removed and a Notch Added to the Back.

Styrofoam for the Transom Support Block – You can get this in a number of ways. All that is required is a piece 2" x 2" of appropriate thickness. When added to the kick board, the total thickness needs to be approximately 2". Packaging foam from other products you have bought or will buy will often work. Alternatively you can buy foam plank at most home improvement stores. Planks of 1" thickness are readily available. In most cases you will have to cut it thinner to achieve the 2" thickness total when added to the kick board. The blue or pink planks are the best because they are strong.



Kick Board With Transom Support Block.

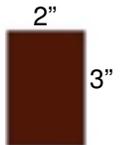
Mix and spread epoxy to one side of the Transom Support Block. Apply the epoxy coated side of the block to the top of the kick board so that one edge is even with the edge of the notch. Put some weight on it. A rock will work. Wipe off excess epoxy at back. Let epoxy set.



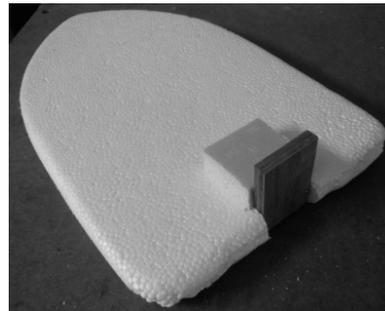
Transom Support Block Glued in Place With Epoxy.

Let Epoxy Set Before Adding Transom.

Transom – A piece of wood 2" x 3" x 3/8" to 5/8" thick. 3/8" plywood is best. For long term durability it is best if this is sealed with a sealer, stain, varnish, urethane, etc. As an alternative [you may buy a Transom from RadioControlOutboards.com](http://RadioControlOutboards.com).



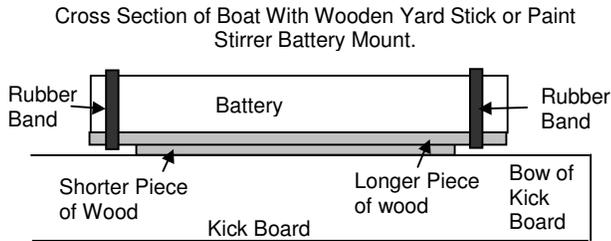
Mix and spread epoxy on bottom 2" of one side of Transom. Press Transom against end of notch and back of Transom Support Block. It is important for bottom end of Transom to be even or slightly above bottom of kick board. If it extends down below bottom of kick board it will cause unwanted drag. Make sure Transom stays in place while epoxy cures. Tape it, or stand kick board up on it's nose by leaning it against something and put weight on the back of the Transom. Watch out for epoxy squeezing out and dripping. Wipe off excess. Let epoxy set.



Transom Glued in Place With Epoxy.

Finally, you will also need **A Way to Hold the Battery** – There are many ways to hold the battery to the board. It only takes a little creativity to come up with a method. In any case it is best if the battery is near the front of the board. A light solution is best. Here are just a few ideas...

1. Cut two pieces of a wooden yard stick or paint stirrer. Make one shorter and one as long as your battery. Epoxy them together lengthwise with longer one hanging out past short one at both ends. Epoxy that assembly to the kick board with short one under long one near front of board along the centerline of the board. Then you can lay the battery over them and wrap rubber bands around battery and the long piece at both ends.

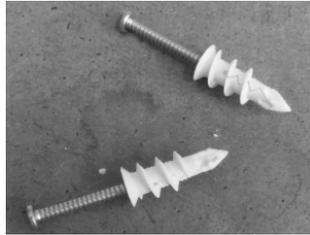


2. Epoxy a cheap plastic storage container to front of kick board. There are some long skinny ones which are perfect, but almost any one big enough for the battery will work. Cut a hole in end which will be towards motor. Make this hole big enough to pass motor or battery connector through. Scratch up bottom with sand paper before attaching to help ensure a good bond. Then you can put battery inside and pop on the top.

3. Another very effective way is to use two plastic screw-in dry wall anchors. These are available at hardware or home improvement stores. Sharpen the ends with sand paper. Add screws. Make sure they are in the anchors far enough so that they will be low enough to hold the battery. Add a little epoxy. Screw them in near the front of the board with enough space between them for the battery to fit.



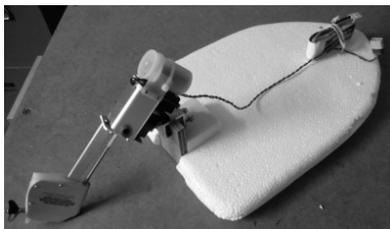
Raw Anchors



Sharpened to a Point



Screw and Anchors Installed Near Front of Board Spaced For Battery



Boat Complete With Battery Held in Place With Rubber Band

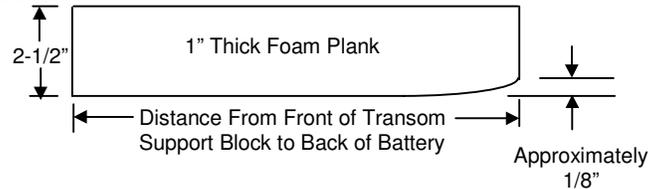
4. If plastic screw in anchors are not available, use one by using two 1/4" or 3/8" diameter by 1-1/2" long lag screws. As with the plastic anchors, be sure to epoxy the lag screws in place. Otherwise they will not hold strong. Screw them in far enough to hold the battery. Once in place you may then hold the battery with a rubber band stretched between them.

Flexible Foam Kick Board

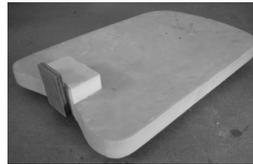
If you are going to use a soft flexible foam kick board, you must add something to stiffen it. Otherwise when it flexes under power, the bow will likely dig in under the water. When this happens the boat will not rise up and "plane out". This will render the boat unusable.

Using a piece of 1" thick foam plank as a "spine" to stiffen the boat works well. Cut a piece about 2-1/2" wide with a length equal to the distance

from the front of the Transom Support Block to the back of the battery. On what will be the bottom, make that edge curve up just a little. See the following drawing. This will help the board flex up at the nose to prevent digging in.



Put something under the bow to flex it up slightly. Mix some epoxy on bottom of piece (curved side). Don't skimp on the epoxy here. Some squeeze out is good. Especially at the front of the piece where it curves up. Add a little epoxy to back end of piece where it will be against Transom Support Block. Place piece along centerline of board with back end of piece against Transom Support Block. Add weight to top of piece to drive it into board. Use plenty of weight to ensure the board is flexed up against the piece. Adjust whatever you have under the bow so that curve in the board matches curve in the piece.



Flexible Foam Kick Board Prepared per the Previous Instructions



Adding Spine to Flexible Foam Kick Board Boat.



Completed Flexible Foam Kick Board Boat

Making Your Boat Turn Better

Because the boat has a flat bottom and is very light, there is not much grabbing the water up front. Under full throttle the boat may tend to push sideways and not turn as well as you might want. Releasing the throttle and turning at slower speeds will help.

As an extra measure you can add a small fin to front of boat. However, this will add drag and slow the boat. It also make the boat harder to put down on a flat surface. Cut a piece of a thin plastic about 1" x 2" from the lid of some sort of food container such as a margarine or butter tub. At a point near the front of the boat, but where hull rides in the water at full throttle, mark a line about 1" or 2" long which runs from front to back. Be sure it parallel to the boat's centerline. Otherwise the fin will tend to turn the boat in an undesired fashion. Using a knife, cut a slot about 1" long at the bottom of the hull. When doing so, make sure the knife is perpendicular to the bottom of the hull. It is OK if the slot goes through the hull. **Be careful, keep your hands clear of the knife on the far side.** Typically you can simply insert the piece of plastic into the slot. This allows removal for storage. But for a more permanent fin, you may epoxy the fin in place. If you do, it is a good idea to scratch up the part of the fin which will go into the hull with sand paper.

Avoiding Pitfalls – Important Stuff to Know

While the transom clamp on the Syncro30 is very effective, one may go one step further to prevent loss of the motor. Tie a piece of string to a snap swivel from a fishing tackle store, tie string around a small piece of foam and epoxy foam to top surface of board near motor. The snap swivel may then be attached to the hole on the top of the motor transom clamp

Do not use any solvent based products on the foam. Spray paint will dissolve the foam.

Be sure to read Boating Guide at RadioControlOutboards.com before setting out. It has good tips to keep your boating safe & to avoid issues.