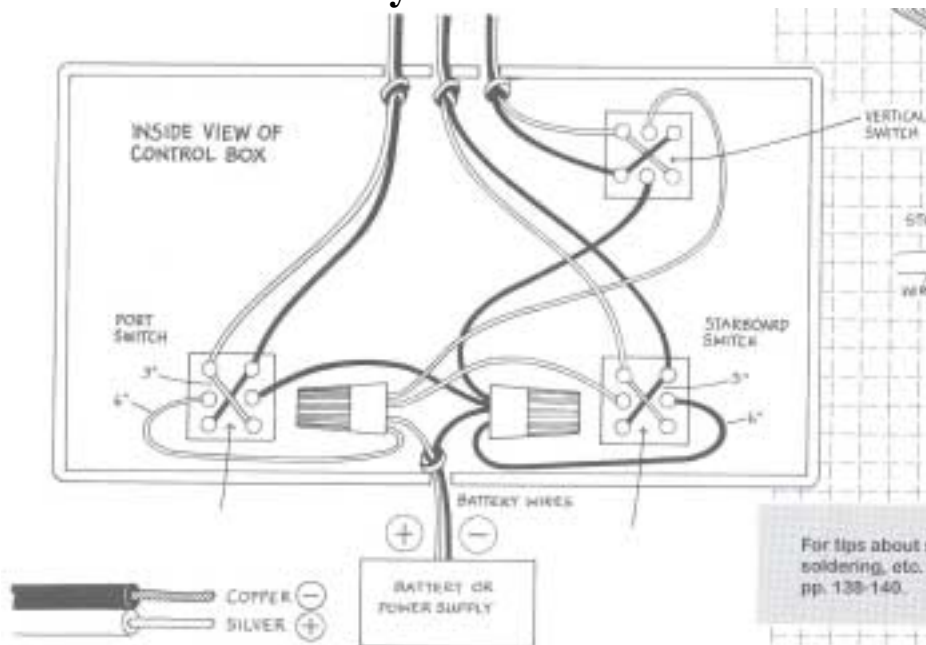


Model ROV Construction

Safety Precautions-You are required to wear goggles when working with solder and wire clippers.

Control Box Assembly:



Drawing from Build Your Own Underwater Robot by Harry Bohm & Vickie Jensen

The tether wire is 22 gauge with 6 stranded wires (we are going to experiment with a thicker gauge soon, do not use solid sprinkler wire). One end will go to the control box and the other end will go to the motors. The power wire is 16 gage "speaker wire" fed in through the control box on the side.

1. Solder power wires to switches as per diagram.
2. Cross wire switch.
3. Solder motor wires to switches as per diagram.
4. Install switch.
5. Connect and solder power wires together. Wrap with tape to prevent short-circuiting.

Motor / Propeller Assembly

- **Before soldering motors, you may choose to waterproof each motor!**

1. Solder appropriate pairs of wires to motors. Be sure switches and motors correspond as to direction and rotation.
2. Place colored dots and colored tape on the control box and the motors.
3. Plug into a small battery to check your connections *before* closing your box.
4. Place a roller pin into the propeller and push it into the shaft.
3. Fill the shaft with “JB Weld”. Place propeller against motor shaft and push!

Frame Design and Construction-(on your own)

Materials-

½ inch schedule 40 PVC

Connectors

½ inch PVC foam insulation

pipe cutters

1. Design a frame for your ROV. Draw it out, measure and determine what pieces you will need to purchase *before* your trip to the hardware store!
2. The pipe or fitting requires adequate holes to let air out. Drill holes into the pipe.
3. With design considerations of balance and directional movement, attach motors and wires to frame with black tape.
4. Submerge your ROV, add floatation to achieve a balanced and slightly positive buoyancy.

Testing

1. Test drive your ROV
2. Adjust and manipulate components to achieve desired results.
3. Test amperage in the circuit with all motors running in water with the 7 amp fuse inline.

ROV Materials per group

3 propellers	Switch box
3 motors	Switch box lid
20' 6 conduit tether	Colored tape
10' 16g power cord	Colored dots
Black tape	solder
3 switches	Instructions and spec sheet
3 roll pins (in prop shaft)	

