HOMEBUILT ROVS

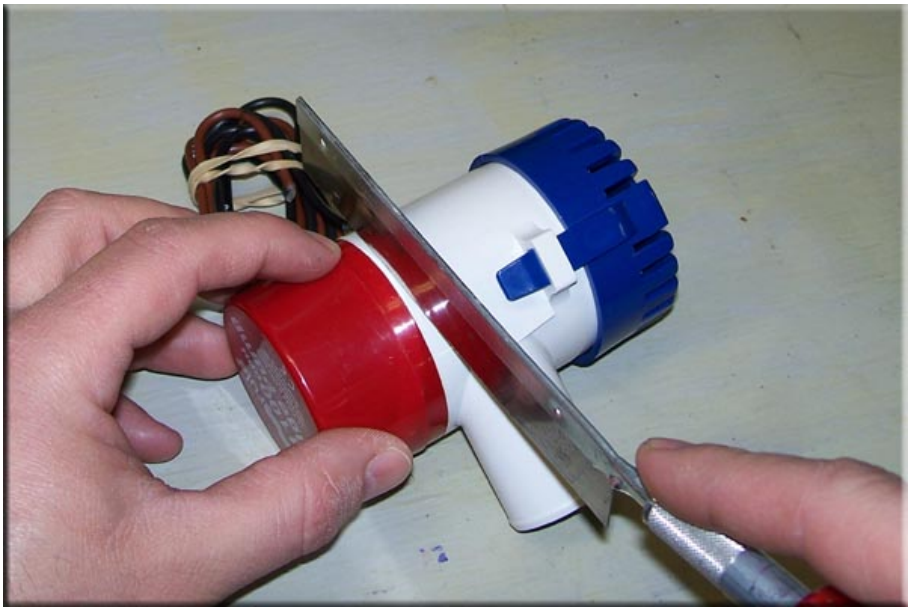
How To's

Converting a Bilge Pump to Run a Propeller

If you don't all ready have a Bilge pump I suggest getting just a Replacement Cartridge such as the one shown above. You will save a lot of money buying just the cartridge over buying an entire pump. These can usually be found for around $15.00 depending on the size, I've seen both 500 and 750 GPH ones. The only thing that has to be done to these is removal of the Impeller.

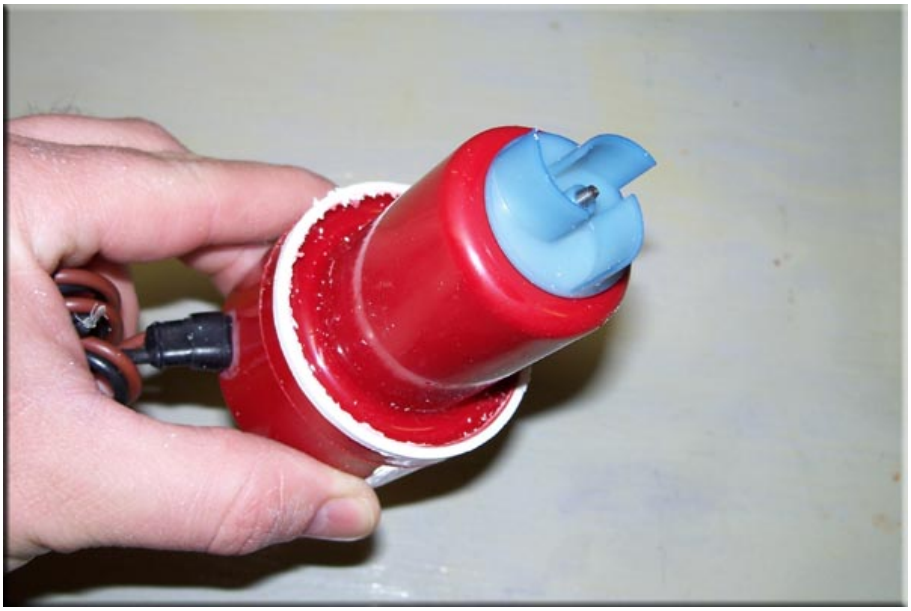
These are the Rule 1100GPH Bilge Pumps I used on my Seafox, I will be retro fitting the Seafox to run propellers to achieve more thrust.

Basically you will be cutting off the Impeller Housing and removing the Impeller. First start by marking the housing where it needs to be cut.



Using a hobby saw cut around the entire housing being careful not to cut to deep, you do not want to cut into the Motor Casing.

Here is the motor casing with the impeller housing removed.



The impeller housing is discarded and here you can see the impeller.

Next using a screwdriver just pry the impeller off of the motor shaft.

Now you should have the exposed motor shaft. The Rule Pumps have a shaft with a flat spot all ready so this makes it easier to attach the new Propeller.

Most people are using air plane propeller and the corresponding Prop Adaptor with good results. These can be found at most hobby shops or places such as Tower Hobbies.

I've decided to try the 50mm boat propellers I all ready bought so I machined up my own adaptor that fits the props, the nuts are there to lock the prop on. (Click Here for Adaptor Specs)

Here is the completed Conversion. These put out a good amount of thrust over the standard bilge pumps. The first time I tested this setup in the kitchen sink I wasn't prepared for how much thrust there would be and let's just say I got a little wet. The white ring left from the impeller housing can be cleaned up with files or sandpaper.

Using 55' of 18 Gauge Speaker Wire the standard Bilge Pump drew about 2.35 amps at 12 volts, and now with the Prop it draws about 4 amps, but the increased thrust will be worth it.