BILGE PUMP INSTALLATION

in an Impex sea kayak by *Damiano Visocnik*

This style of install will also work on most other kayaks that have enough room behind the seat.
This project is not intended for the futzer or gumby. Some previous experience in tinkering is necessary.
Then again, if you really mess up you can always patch up a fibreglass boat… ☺

Parts needed for a sea kayak electric bilge pump:

- **Rule 500 12V. electric pump** (seems to be the most reliable one out there)

- **outlet spigot** for through deck fitting

- ¾ " **hose** (enough to go from pump to outlet and a tight loop)
- **waterproof switch** (Dick Smith Electronic has a toggle style one that is waterproof)

mod# **P7664**

- **electrical wire** (quality figure of eight, enough to go from your bilge pump to the switch and battery)
- 12V. battery: 1.3 Ah Sealed Lead Acid
- **fuse holder** (optional)
- **2.5 amp fuse** (optional)

- waterproof box to house the battery (Pelican mod. #1020)

Tools/materials needed for the job:

- power drill
- drill bits (various sizes)
- soldering iron and solder
- round file (rat's tail)
- polyurethane sealant (Sikaflex)
- epoxy resin (optional)
- heat shrink (for wire sealing)

Your kayak should be washed and dried from salty water before you start.
Take some time to work out where exactly you would like to have your outlet spigot to be. Make sure it is not going to spray water back into the kayak or yourself when activated.

If the right location is not perfectly flat you will need to modify your spigot surface to suit the curved surface of the kayak. Correct location should be well above waterline or you might have water entering from the outlet into your kayak when paddling.

- Make sure your bilge pump is going to fit in the centre of the floor of your kayak behind the seat.
The outlet hose should run close to the bulkhead making a tight loop before attaching to the spigot. The loop will prevent water running back in when the outlet is submerged. Alternatively you can install, on the hose, an inline non-return valve.

Drill the deck of your kayak with a very large sharp drill bit (size 13mmØ if you have one)

You will need to enlarge, with a round file, the hole to fit the spigot.
Take care to make the hole round and just big enough. No need to be sloppy.

- Attach the hose to the spigot, make a loop, and attach to the bilge pump. The hose should not be hanging loose but attached, if possible, to the seat or other part of the kayak.

pump not wired up yet

- Consider carefully where you will position the switch to operate the pump.
It should be easily reached when sitting in the kayak and should be out of the way for rescue re-entries. Consider also possible abrasions problems. I like to have my switch in front of me on the deck.
Don't be tempted to put the switch behind you just because you might run shorter wires and presume that it will be in a "drier" spot.
The switch will get wet from above and below. It is just a matter of time. All parts of the bilge pump will have to be imperatively waterproof. Poor workmanship on the wiring is the most common cause of bilge pump failures. Any splicing of wires and connections should be soldered. "Twist and electrical tape" style of connection will only last a short time. All connections should be sealed with polyurethane first and then heat shrinked.

- If installing a through-hole switch, drill a hole in the deck with a drill bit smaller in diameter then needed. Enlarge it later with the rat's tail file. For a magnetic switch, no holes are necessary.

-The battery must be placed in a waterproof container. The Pelican case #1020 accommodates the 1.3 Ah battery with enough room for a fuse.

this image shows a relay for a magnetic style switch

You will need to cut out a section of the rubber in the Pelican case the size of your battery.


mark the outline of the battery

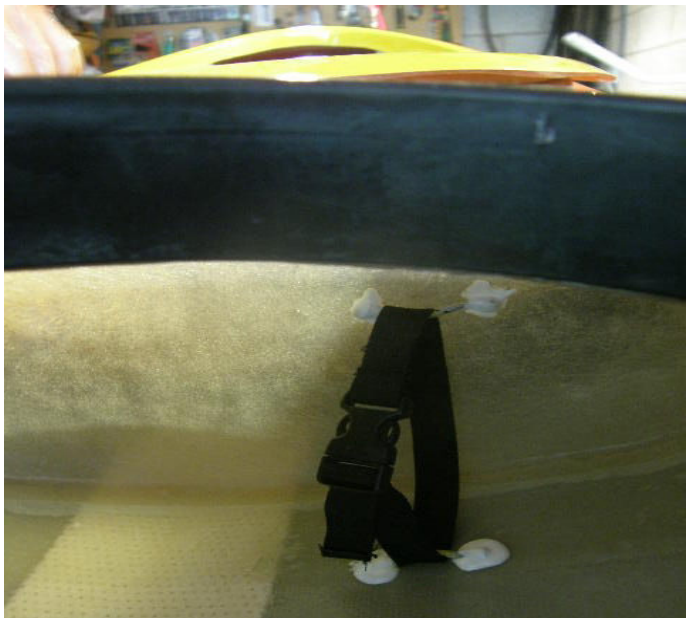

cut out the lining of the box with a hobby knife


position battery

Placing the battery in the case and forcing it shut without the cut-out will compromise the watertightness. Your battery will get wet and corrode.

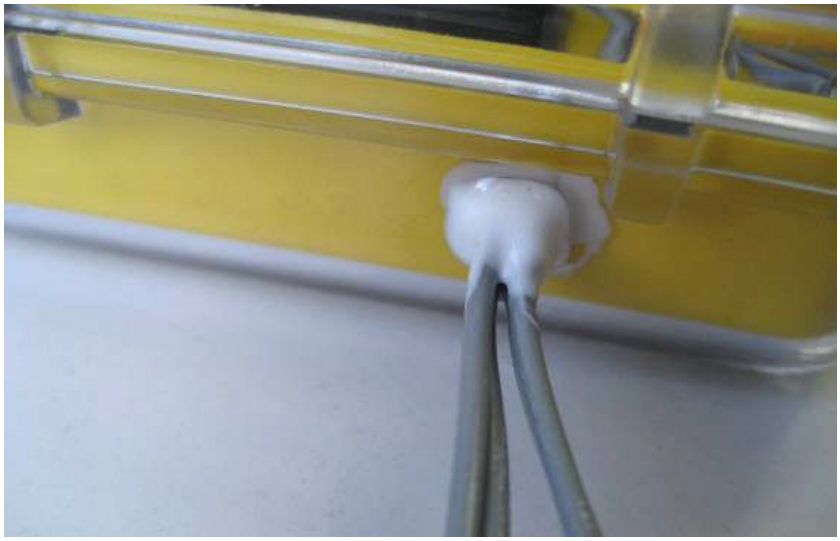
Battery box must be secured to the hull of the kayak.

You can glue some saddles or pieces of rope to the hull/bulkhead to have an anchor to secure the battery box to.


strap for battery box inside day hatch

The battery box will need to be opened from time to time to access the battery for charging.

-Drill a hole on the side of the Pelican case just big enough to run the wires through. Once wiring is complete, seal the hole with epoxy style glue. I found Bostik Titan two component resin to be an excellent sealant/glue for this job. Make sure the hole is sealed extremely well or your box will no longer be waterproof.



-If positioning your battery box away from the cockpit, drill a hole just large enough to pull through the wires in the bulkhead. The wires going from switch to battery, should be securely fastened to the hull of the kayak, especially in the cockpit area.
Loose wires will get snagged and ripped when re-entering in a rescue. Secure them with polyurethane sealant, the whole length of the wire.


magnetic style switch

Wiring of an electric bilge pump requires periodical checks to ensure that all contacts are in good order. The battery will need charging from time to time with a designated SLA battery charger.

I know that the above seems to be a daunting project but an electric bilge pump will allow you to paddle and stabilize your kayak while your cockpit is flooded with water.
It is in rough seas that you will get to appreciate an electric bilge pump most.

Damiano Visocnik