

SCOUT Projects: *Re-imagined Shower Sump*

m/v SCOUT (Great Harbour N37)

Ray Henry

Description

Modify shower sump arrangement to eliminate back flow, wet electrical connections, and sump pan penetrations.

Parts Ordered

1. Whale Gully IC and Gulper pump



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Whale Gully IC Shower Waste Pump Kit

- Flow Rate: 5 GPM, Port Size: 3/4" and 1"
- Select Voltage, Current Draw: 7.5 Amps @ 12 Volt DC
- Includes Gulper IC Pump and Small Gully IC for Shower Waste Management

Item #: 501709
Brand: Whale
Model #: Multiple Models Available
Shipping Weight: 4.75 Lbs.
Reg. Price: From: \$249.99 To: \$274.99
Sale Price: From: \$219.99 To: \$241.99

Please enter quantity below.

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2. Hoses, fittings, clamps, mounting supports
3. Miscellaneous epoxy and fiberglass, bilge paint

Design

I had what I think was the 'standard-practice' shower sump arrangement consisting of a rule bilge pump and a float switch mounted in the sump.

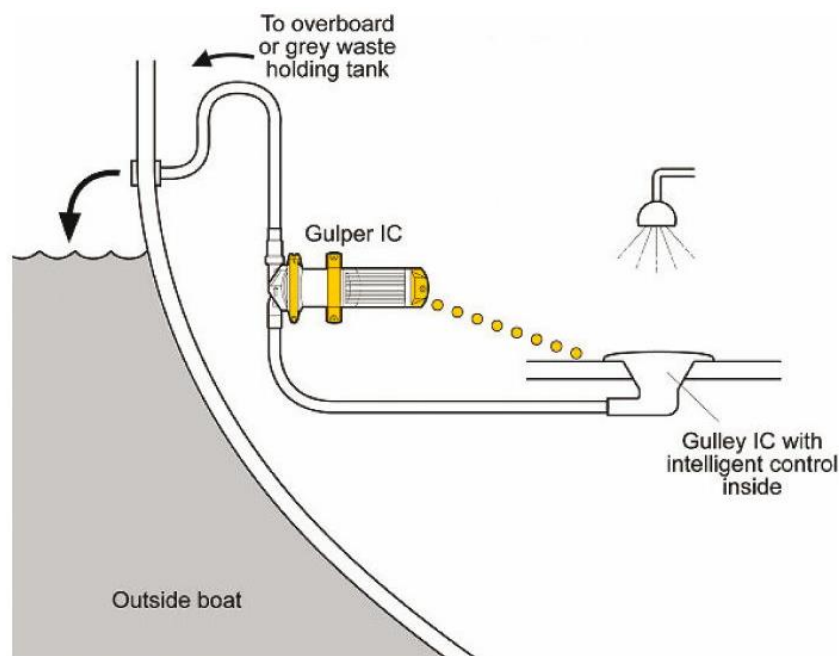


We had several problems with this arrangement. The first was that no matter how “sealed” the wiring and connections were, they were failing intermittently due to being constantly submerged in soapy water. Also, the pump and float switch were screwed to the bottom of the pan using penetrating screws – again, no matter how well sealed, they leaked. Finally, the pump exhaust hose naturally back-fed into the sump after the pump stopped, insuring that there was always water in there.

The leaking sump (as well as a previous overflow event) caused a foul smell in the alleyway that we mistook for a holding tank issue. We spent weeks trying to chase down the “problem” with the holding tank, when, in fact, it was the shower sump.

One of the problems with the N37 is that there is no way to easily access the shower sump alleyway. Several boats, including ours have a small hatch added to the bottom of the mast closet, but that is several feet from the low-point and is difficult to reach. The small hose opening in the stringer isn’t much help either. In order to clean adequately to eliminate the smell, and to add a better sump pump system, I needed to cut a hatch in the sole of the head next to the shower.

I intended to use the Whale Gulley IC drain and remote Gulper pump to make a better system. The Gulper is well known for pumping just about anything through it -- hair, small debris, etc. So the regular cleanings would also be reduced.



One of the benefits to this system is that the wiring never comes in contact with water. An isolated, non-contact water sensor in the drain component detects water and an EXTERNAL wire communicates to the pump to activate it.



Nothing is required to be in the sump except the drain on the bottom. If there is water in the little drain cavity, the pump runs. When there is no more water in the drain, the pump keeps running for 10 seconds to evacuate the hose and then stops automatically.

I planned to seal up the unused screw and wire holes and hose bulkhead connector with epoxy and fiberglass

Assembly

I removed all of the old components and cleaned the sump. Removed the exit hose bulkhead and wire connectors.

I used small fiberglass disks to epoxy the holes closed and then sanded them (roughly) smooth. Luckily, perfection was not required for this.

Finally I painted the sump with BilgeKote.

I needed access to the alleyway underneath the sump to both clean up the previous smelly stuff, and to install the Gulley IC drain fitting.

I wanted to cut the smallest opening possible so as not to mess up the look of the sole, but have enough room to get an arm down in there to work. I ended up with an opening about 6"x9". I cut right up next to the shower pan.

After cutting the opening, I epoxied and screwed (from underneath) support ledges around the edge for the hatch to rest on. I cut back the piece removed a bit to allow for some thin teak trim pieces to be put on both the hatch and the opening surround. I also located a hatch lifting ring to match the others in the boat.



Next, I drilled a large hole in the bottom of the sump for the Gulley IC fitting and installed the drain. It was quite a difference visually from before! The only holes in the sump now, besides the new drain, were the air conditioner condensate and the head sink inlet hoses.



I ran the drain hose and the signal wire to the master closet and mounted the Gulper pump on the wall behind the shower. I re-used the $\frac{3}{4}$ " hose from the overboard thru-hull as the output from the pump, but used 1" hose from the drain to the pump inlet. For power, I extended the same leads that fed the previous Rule bilge pump to the closet and included a local fuse.



The pump had a feature that a local pushbutton switch could be tied into the system as an auxiliary pump activation method. I hooked that up at the closet, along with the existing macerator overboard pump switch that was already there.

While I was in the closet, to cover up the mess that is all along the back wall of the shower, I built some removable panels (allowing access to pumps, etc.) to cover it all up. This used up about 5 inches along the left wall of the closet. I covered it all with that fuzzy marine headliner material.



On the face of the covering panel, I mounted the existing macerator switch as well as the new manual pump activation switch for easy access.



Do-Overs and Comments

Well, the system operates exactly as advertised. The water is evacuated, the pump runs for an extra 10 seconds, and then stops. The manual switch also works. After pumping, the sump remained completely empty.

It didn't occur to my pea-brain when thinking through the system, but several problems became quite obvious once everything was set up and being used.

- 1) Since the drain component is very small, ANY water in there will make the pump run. If showering, the pump runs continuously. Just the air conditioning unit condensation would cause the pump to run 3-4 times over night.
- 2) The pump running continuously during showering is a HUGE waste of power, as it is just spitting tiny amounts of water out at that point.
- 3) The pump, at least where I mounted it, is quite loud when pumping mostly air and the noise echoes in the sump which acts like a speaker.

To fix these problems, I begrudgingly added a conventional float switch to the sump and used the external trigger option of the Gulper pump.

Instead of drilling holes through the sump pan, I glued down a piece of Starboard to the bottom and then screwed the switch to that – eliminating any penetrations to the sump bottom.

I used two single-wire compression fittings, high up on the wall of the sump, and made the connections to the pump OUTSIDE the box, using a terminal block / crimp rings so that the switch could be replaced easily and not have connections constantly under water.



Care4U Cable Glands, 45 Pack Waterproof Nylon Adjustable 3-16mm Cable Glands Joints Connector, PG7, PG9, PG11, PG13.5, PG16, PG19

Sold by: mowish

Return window closed on Oct 6, 2018

\$14.99

Buy it again



Rule 35A Rule-A-Matic Bilge Pump Float Switch, Mercury Free

Rule

Sold by: Amazon.com Services, Inc

Return window closed on Oct 6, 2018

\$30.08

Buy it again

OK, maybe not as sexy-clean as the first picture, but the system now works really well. The sump fills about halfway before the pump comes on and is evacuated quickly. The extra 10-second pump running at the end of the cycle is just enough to clear the sump completely after the float switch goes back down. There are now very few short cycles during a shower.



Even with the minor re-do, I am very happy to have made the change and it was well worth the trouble.