Catalina 350



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Washdown Pump Installation

My previous boat didn't have a windlass, so the one on our 350 has been great. I've been doing the bucket on a rope thing for the last two seasons to wash the chain and anchor. That was getting old. So, after I heard that several other C350 owners had installed washdown pumps, I bought one when I saw a good deal at West Marine this winter. Actually, I talked my wife into getting it for me for my birthday. Now, all I had to do was install it.

Parts List:

- West Marine Washdown Pump (3.5 gpm, 40 psi, 12v, 10 amp) $119.99
- Hose, vinyl, 3/4 inch, ("vacuum" hose), 18 ft $ 22.86
- Tee fitting, 3/4 inch nylon $ 1.94
- Hose clamps, quantity 14 $ 19.81
- Wash Down Fitting $ 19.95

Installation

While I had heard that several people had installed these pumps, I never had any real details. So here are some details on how I did my installation. I decided to put the pump in the locker under the forward v-berth. There was plenty of space, and it was close to the anchor locker.

I chose to supply the water from the through-hull that supplies the head. The first thing I wanted to make sure I could do was run a hose from the though-hull to the forward locker. Running this hose took some doing, but I was finally successful. I routed the hose from the compartment with the head through-hull along the hull and into the forward v-berth locker. First of all, I used a 1 and 1/2 inch hole saw to drill the fiberglass bulkhead just forward of the through-hull that supplies the head. There was already a gap here, but I needed to enlarge it to allow a 3/4 inch hose to fit through. Next I had to fish the hose through. I tied some strong cord to the end of some 3-wire, 16 gauge, insulated, housing wire. The housing wire was stiff enough to allow me to fish it through the gap near the seacock up past the forward water tank. In the v-berth locker there is a gap between the hull and the bulkhead just forward of the water tank. The only way I could get the housing wire through this last gap was to fish it out from the forward side of the gap with a bent coat hanger. The hanger caught the cord that was tied to the wire, and I pulled it through. Once I had pulled it through, I untied the cord from the wire and pulled the wire back out. The cord was about 30 ft long. So I left one end in the v-berth locker and tied 14 ft of 3/4 inch hose to the end back by the through-hull. I pulled the hose through, and since the cord was so long, there was still some left back by the through-hull even after I pulled the hose through. This way if I ever have to pull anything else through this passage, I still have the cord in place. You can see the hose coming into the v-berth locker in Figure 1.

Now that I had the supply hose in place, I connected it to the hose coming out of the through hull with a tee-fitting. I also installed the in-line strainer that came with the pump. I installed the strainer in the compartment with the through hull. This meant more hose clamps, but it also meant the strainer was readily accessible. You can see the tee-fitting installation in Figure 2.

Next I installed the pump itself. I used the pump as a template, to mark four holes. I drilled pilot holes and secured the pump with four 3/4 inch, #10 stainless steel, pan head screws.

To provide electrical power I used 14 gauge wire that I ran from the anchor windlass. I could have run a dedicated wire from the electrical panel, but another owner suggested I try it this way. I figured if it didn't work, I could always rewire it. I got access to the windlass by removing the access panel just forward of the v-berth. By the way, the only way to remove the lower screws is to use a short handled screwdriver. I connected the black wire to the center





(Figure 2) Washdown pump



(Figure 3) Install on windlass

terminal on the windlass. The red wire had to be connected to the terminal further up inside the compartment. The two red wires visible on the pump itself are only energized when the pump is engaged (either in the up or down). I tinned all the wire connections with solder, and used crimp connectors with shrink-wrap. See Figure 3 for a picture of the connector on the windlass.

The last step of the installation is to run the output hose to the anchor locker. On the port side there isn't much space between the aft bulkhead of the anchor locker and the access compartment. I drilled a 1 and 1/8 the inch hole close to the center line of the locker and used a Marelon wash down fitting to penetrate the bulkhead. There is good access to drill this hole in the windlass access compartment. The fitting has a flange with three holes. I used it as a template and drilled three holes through the anchor locker bulkhead. I sealed the flange with some 3M 4200 sealant, and installed it with three stainless steel screws. I found the wash down fitting at Boater's World. (West Marine has a metal fitting, but it cost close to $50.) I connected 6 feet of 3/4 inch hose to the output side of the pump and ran it up to the wash down fitting.

Results:

I put a big loop on the output hose on the pump in order to route it to the anchor locker without kinking the hose. West Marine sells a barb elbow that would turn the output on the pump 90 degrees, obviating the need for the loop. I ordered one of these fitting, and have installed it, so I could remove the loop, which shortened the output hose by about two feet.

The pump runs fine; in fact, it ran the very first time. Originally, the pressure would be nice and strong for the first second or so, but then it dropped to a trickle. I used a trigger nozzle and by pulsing it a little (turning it off and on quickly) it seemed to work pretty well. I quickly realized that I had used the wrong type of hose on the suction side of the pump (from the through-hull to the pump), and it was collapsing from the suction of the pump. I had to replace it with hose designed to withstand the suction. The correct hose is basically the same as the hose attached to the head. Once I replaced the hose, the pump works very well.

The pump I used is listed in the 2005 West Marine catalog as model number 4226015. I can't find it in the 2006 catalog. It certainly beats the bucket on the rope! *–Al Lohman,* Rhiannon, *Hull #221*

Here is a project that will simplify winterizing your engine and A/C unit

These modifications will simplify the winterization of your engine and a/c unit. They are relatively easy to install and will also give you an emergency backup for your bilge pump. More on that later. Following is the list of materials, all of which can be found at any home improvement store, most of it in the plumbing department.

- 2 –1/2 inch bronze threaded "T's"
- 4 –1/2 inch x 2 inch threaded bronze nipples (I was unable to find 1/2" thread to 3/4" hose adapters. These will fit inside the 3/4" hot water hose.)
- 3 –1/2 inch hose bibs (the ball valve lever-action type is preferred)
- 2 – Bronze caps that fit on the hose bib (this provides an extra margin if safety)
- 1 – 12 inch section of 3/4 inch (inside diameter) hot water hose
- 1 – 4-foot washing machine hookup hose (with female connections on both ends)
- 1 – 5 gallon plastic bucket (preferably square with flat sides)
- 1 – Tube of Plumber's Goop sealant
- 1 – 1/2 inch electric pipe nut (you will have to wander over to the electric section for this)
- 8 – Stainless steel hose clamps
- Teflon tape pipe thread seal

Step One: Assemble inline "T" units

From the materials above, use the following to build two "T" units:

- 2 –1/2 inch bronze threaded T's
- 4 –1/2 inch x 2" threaded bronze nipples
- 2 –1/2 inch hose bibs
- 2 – Bronze caps that fit on the hose bibs
- Teflon tape pipe thread seal

To assemble each of the inline "T" units, first wrap the threads on one end of each 2 –1/2" x 2" nipple and one of the hose bibs with Teflon tape. Screw the nipples and the hose bib into the threaded "T" unit. Screw the cap onto the other end of the hose bib. (See attached photos for details).

Step Two: Install the "T" unit for the A/C

For the a/c unit you will also need the section of hot water hose to create a loop where you can insert the "T" unit. (see photo for detail) If your boat is in the water, first close the thru hull. Then disconnect the raw water hose at the filter. Insert one end of the T unit



Winterizing your engine looped hose

into this hose and insert the other into the new piece of hose. You will need to loop this hose around in order to attach it to the filter. Secure all connections with two hose clamps. Now open the thru hull, run the a/c unit and check for leaks.

Step Three: Install the "T" unit for the engine

For the engine you follow pretty much the same process as above. Close the thru hull and cut the raw water hose about 1/3 the distance between the thru hull and the filter. Insert the "T" unit and secure with clamps. Then open thru hull, start engine and check for leaks.

Step Four: Assemble the bucket used to hold antifreeze

Following are the materials from the list above that you will need:

- 1 –1/2 inch hose bib
- 1 – 4' Washing Machine hookup hose
- 1 – 5 Gallon plastic bucket
- 1 – Tube of Plumber's Goop Sealant
- 1 –1/2" electric pipe nut

To assemble the 1/2" hose bib into bucket drill a 1/2" hole as close to the bottom of the bucket as possible. Insert the hose bib through the hole and use the electric pipe nut to secure it. Seal with Plumber's Goop. (see photo for details)

Follow theses simple steps to winterize:

- Attach the washing machine hose to the hose bib on the bucket and the other end to the "T" unit on the a/c unit.
- Pour 2 gallons of antifreeze into the bucket
- Close the thru hull
- Open the hose bib on the bucket and the "T" unit.
- Run the a/c unit until the antifreeze comes out of the discharge
- Close the valves on the bucket and on the "T" unit
- Repeat the above for the engine

Emergency Bilge Pump Backup

Here is the extra backup benefit I mentioned at the beginning. I have permanently installed a length of hose between the engine T unit and the bilge. If necessary, I can easily close the raw water through hull for the engine, open the valve on the "T" unit and pump out the bilge *–John D. Amann,* Just Add Wind, *Hull #347*

Are you tired of a smelly head? Here is a solution.

After many years of dealing with the odor caused by raw water in our head I decided to finally fix the problem. Based on the type of sailing we do I felt we had plenty of fresh water on board and we could use some for flushing the head. Below are the materials and instructions needed to provide a fresh water source for the head. I also allowed for easy switch back to raw water if needed. Here are the materials you need, all can be found at your favorite home improvement store in the plumbing department.

- 1 – 1/2" PVC in-line ball valve
- 2 – 1/2" pipe / 1/2" tube adaptors
- 2 – 1/2" Nylon T
- 12 Feet of 1/2" fresh water hose
- 8 – Stainless Steel hose clamps
- Teflon Tape
- A pot of very hot water.

Procedure:

- Close the thru hull for the raw water feed to the head.
- In the cabinet behind the head, find the raw water line. Pick a spot on the hose where you can insert one of the Nylon T's. Cut the hose at that point.
- Dip one of the hose ends in the hot water for a minute.
- Insert the T
- Repeat with other hose end
- Install hose clamps.
- Wrap the two 1/2" pipe adaptors (threaded side) with Teflon tape.
- Screw each into 1/2" PVC ball valve
- Cut a 6" piece of the new fresh water hose.
- Insert one end on the T installed above and clamp
- Insert the ball valve on the other end and clamp.
- Take the remaining piece of the new 12' fresh water hose and insert one end on the other side of the ball valve and clamp.
- Snake the other end of this hose through the cabinet following the original raw water line back toward the thru hull.
- Feed from the thru hull under the floor to where the speed and depth sending units are located.
- In this same area will be the fresh water line from the forward tank.
- The next step is to cut that line and insert the remaining nylon T. You can drain the forward tank first or, if you work quickly, you can cut the line, insert the T and make the connection to the new feed for the head in less than one minute. You will loose about a gallon of water in the process.
- Once these connections are made, secure with hose clamps
- With the raw water thru hull still closed you can now open the new ball valve.
- Run the head pump until fresh water flows.
- No more smelly head



This modification has really improved the conditions aboard our boat. Some have cautioned about possible back flow of raw water that could contaminate our fresh water. I found by accident that if I left the thru hull open, water from the tank would drain down. That tells me there is positive pressure from the fresh water tank which should prevent any unintended back flow and contamination. For an extra margin of safety you could install a check valve on the new fresh water feed for the head. *–John Amann*

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