

## Purasan Installation on SAY GOODBYE

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After we bought our 1982 Defever 41 in 2007, we discovered on the delivery trip that the holding tank was way too small. We filled it on the third day of our delivery trip ! After getting to the home dock on the Chesapeake Bay, I measured it and calculated it to be only 12 gallon capacity, losing another 3-4 gallons because the macerator pump was higher than the tank and wouldn't completely empty it.

After consultation with Peggie Hall, author of the book "Get Rid of Boat Odors", Peggie suggested I install a Purasan system by Raritan. The system would treat each toilet flush and not require the use of a holding tank, thus bypassing the small tank problem.

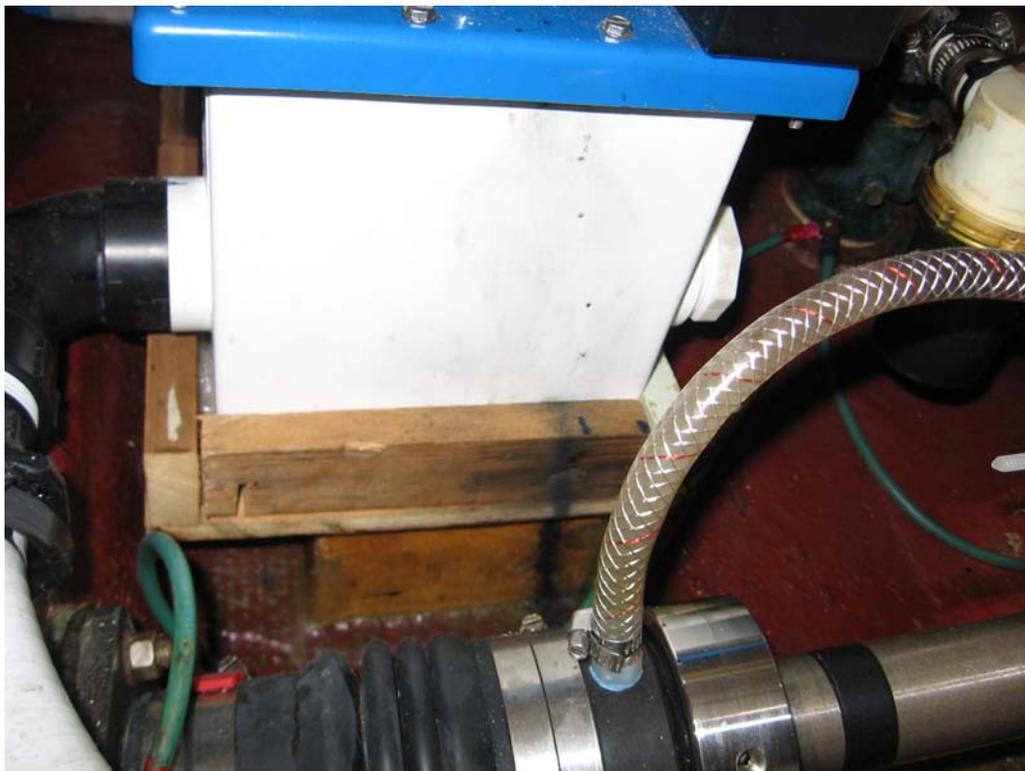
I purchased a Purasan system and proceeded with the installation, which I later learned was not trivial on our Defever 41. The installation instructions were not good and required multiple calls to manufacturer Raritan for clarification. Each time that stopped the job until I could get them by phone, which prolonged the installation. Added to this was that location of the boat was not in reliable cell phone coverage. Therefore many times my Friday installation was halted until I could get clarification on Monday when back home.

The Purasan has two major components: the tablet dispenser and the treatment tank. Meeting the physical requirements of the Purasan installation was the challenge for a Defever 41. Why? The bottom of the tablet dispenser has to be mounted a minimum of 15 inches above the treatment tank. The tablet dispenser also needs a minimum of 8" of clearance at the top in order to be able to open the top and replace the tablet.

I spent literally at least one whole day just planning this installation, examining location possibilities for both the tablet dispenser and the treatment tank. It was mentally exhausting. I finally came to the conclusion that the only place these two components could be mounted to comply with the 15" height requirement between them was to mount the tablet dispenser in the engine room along the wall to the starboard fuel tank. The treatment tank had to be mounted in the hull bilge in the aft cabin, almost directly under the port floor hatch. Because the hull curves downward towards the centerline of the boat, I made a mounting shelf for it that would level it and keep it stationary if the boat rolled. See picture #1 and #2..



Picture #1 Purasan Treatment Tank installation on SAY GOODBYE



Picture #2 - Side view of Purasan Treatment Tank installation on SAY GOODBYE

There is a trade-off with mounting the treatment tank here. It is not high enough from the discharge through hull valve to completely prevent sea water back flow pressure into the second chamber of the tank. Normally one would use a vented loop on the discharge line.

If I would have used a vented loop on the discharge line to the through hull, then the 15” tablet height would be referenced from the top of the vented loop, virtually creating an impossible physical installation requirement in this boat. Because I was so limited on physical choices for mounting, I decided to try it, and it works sufficiently without creating a siphon. I fiberglassed the wooden mounting tray I made to the hull. It is mounted adjacent to the PYI dripless stuffing box. It is a less than desirable mounting location but the only one I could conclude would work. The installation manual warns against mounting the treatment tank in environments that exceed 120 degrees F, so that eliminated the engine room.

The tablet dispenser was mounted along the starboard wall that separates the fuel tank from the engine room. I mounted the tablet dispenser with wig nuts on the engine room side so I could easily take it down, lower it to get the lid off and change the tablet. This was a work around for the 8” top clearance required. The solenoid that controls fresh water to the tablet dispenser was mounted on the tank side of the same wall. I have a cut out at the aft end of the fuel tank and the solenoid was mounted just below that, where it was easy to tap into the cold water line feeding my hot water heater (on the same side of the boat). See picture #3 and #4.



Picture #3 Purasan Tablet Dispenser installation on SAY GOODBYE



Picture #4 Purasan Tablet Dispenser installation on SAY GOODBYE

I had to run an 12v electric line from the electrical panel to the treatment tank. I ran #8 AWG tinned wire from a 20amp circuit breaker. The manual states a 20amp fuse should be used for 12v system with an expected nominal current draw of 10 amps. Remember that because this treatment tank has a macerator motor, motor start up currents far exceed the nominal current draw of operation once started. From there I took another 12v wire to the water solenoid and used an in line 3amp fuse.

Finally, I installed the system to use the option of activating with the electric switch for the heard. I installed the Purasan “push to cycle switch” under the sink in the aft head. See picture #5.



Picture #5 Purasan “push to cycle switch” under the sink in the aft head.

The job took far more labor hours than expected. Once installed, it works well (so far!). We will eventually have to revisit the small holding tank issue when we do The Loop in Spring 2012 and have to pass through no-discharge zones such as Lake Champlain.

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1982 Defever 41  
SAY GOODBYE  
Currently berthed in Rock Hall MD.