

Chapter 9 Sanitation

Note: Do NOT read this section if you have just had - or are about to have - dinner! Marine sanitation is one of those subjects we all need to know about and pay attention to – but to say it’s the least glamorous of all systems on a boat is an understatement. Somehow you don’t see pictures in all of those glossy boating magazines of someone sitting on the dock rebuilding their head....

VacuFlush Head

Manufacturer

We all have VacuFlush heads on our boats. These are great heads, but – like all marine heads – they deserve your respect and attention. Otherwise, things could get very ugly... I have a model 1008 head, but the model number and serial are on a label buried under the trim cowling around the base.

Dometic Corporation

Telephone: 800-321-9886 (in Ohio).

<http://www.dometicsanitation.com/prodvw.asp>

They have a line of marine sanitation products specifically designed to be used with their heads – called SeaLand. We only use the SeaLand products, since they are the only products that Dometic guarantees will not be a problem when used with their heads.

Two contacts we have for help with the VacuFlush toilets are:

West Coast

Marine Sanitation, Inc.
1900 N. Northlake Way
Seattle, WA 98103
1-800-624-9111

They work with the factory on the installation of these toilets (or at least they said that they did when we got our boat.) The guys there were very knowledgeable and helpful.

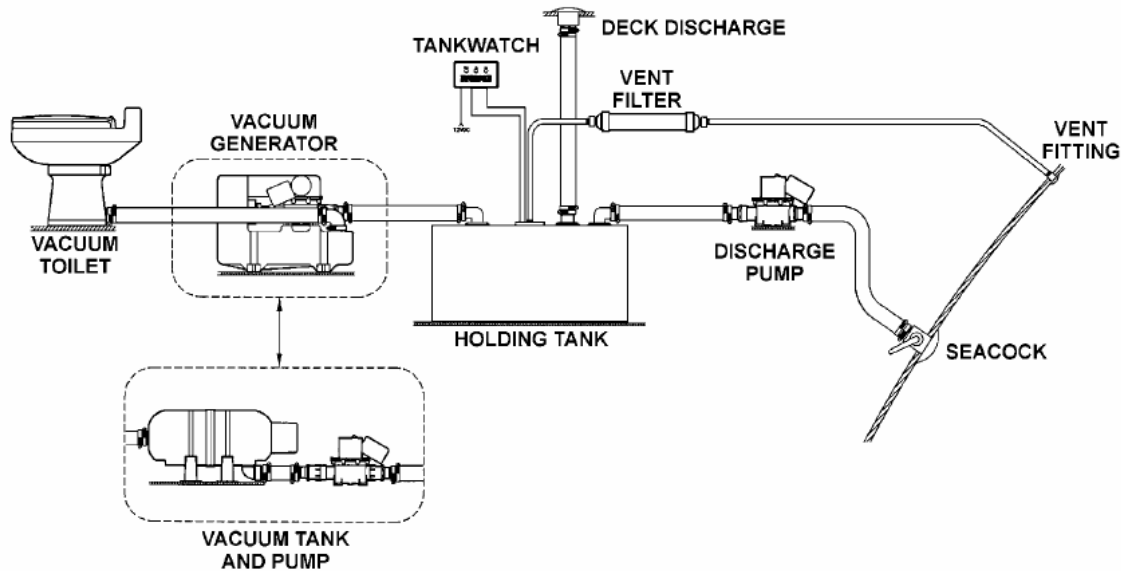
East Coast

Jill Hopkins
Environmental Marine Services, Inc.
111A Southwest 23 St
Ft. Lauderdale, FL 33315
1-800-522-2656

We met Jill at the 2008 Miami Boat Show. She also seemed quite knowledgeable and very helpful.

VacuFlush Schematic

I got this schematic drawing from the VacuFlush Owner’s manual that came with our boat. If you don’t have one, you can download it from the above website. Click on the Owner’s Manual / Parts List link and scroll down to model 706. (At least, that’s the model we have on our boat.)



This is pretty much the set-up we have on our boat with three exceptions:

- Tomco didn't install a vent filter between the tank and the outside vent fitting. Dometic do make several models, and we plan to install one. The vent hose is 3/4", so we need that size.
- We have the integrated Vacuum Generator (i.e. pump and vacuum tank together) shown in the upper dotted box in the diagram.
- Tomco install the Snake River tank level gauges instead of the Dometic 'Tankwatch'. These are somewhat unreliable, and are covered here: [Tank Level Gauges](#)

The owner's manual also has lots of good information on how to clean and maintain your system. However, they have an interesting approach to repair: there's no information in the manual at all! If you get spare parts from them, each one comes with instructions to disassemble the head and install that part only. It's a 'need to know' basis, but it makes it difficult to disassemble the head and diagnose a problem if you don't have parts on hand already

Rules for using the toilet

We, as I'm sure most of you, have MANY rules regarding the use of the head on our boat:

- When you are using the head on our boat, nothing is allowed to go in unless it comes out of your body first. The only exception to this rule is that you are allowed to use a small amount of SeaLand single ply TP. Small means small. My limit is about 4 sheets for number 1 and 6 for number 2. The alternative is to use regular TP with no limit and then dispose of it elsewhere rather putting it down the head.

Marine heads are not the same as the toilet that you have at home. At home, everything goes away down a sewage line for someone else to deal with. On a

boat, when the system gets clogged up due to something going in there that it can't handle, you're the one who has to unclog it – and trust me, it isn't a pretty job!

- We only use SeaLand chemicals to clean the head. We use:
 - Toilet bowl cleaner to clean the bowl and around the round rubber seal that the ball valve seats to. I use an old toothbrush –(no not Jeremy's) - it's one that we have set aside just for this purpose – to brush around the seal periodically with the water running through to keep it clean.
 - Clean and Green holding tank deodorizer and bowl cleaner. We flush one of these through about once a week or so, depending on need.

SeaLand also makes a liquid holding tank deodorizer which, as we found out, is NOT meant to go in through the head. It is meant to be added through the holding tank pump-out fitting on the deck. It contains formaldehyde which can damage the rubber seals and duck valves in the toilet.

Regarding the amount of water to add when flushing a VacuFlush head, Peggie Hall (aka “The Head Mistress” and the acknowledged expert on this esoteric subject) recommends:

“SeaLand's claim that the VacuFlush can use ‘as little as’ 1 pint of flush water is VERY carefully worded. If only urine is flushed...no water added to the bowl first, no TP either...then yes, you CAN get away with that little, at least for a few flushes. But if you do much of that, unless you want odor, at least once a day you need to run at least half a bowl of clean water through it to rinse out the system.

At least half a bowl of water should be added to the bowl ahead of solids or any TP (in other words, every time a female uses the toilet)...and it's essential to leave the pedal down for at least 7-10 seconds after the bowl is empty to rinse out the pump and duckbills--to prevent a buildup in the pump or bits of waste or TP from becoming stuck in a duckbill, creating one of those pesky air leaks that causes the pump to cycle for no reason...which means at least another quart of water.

And if you don't want permeated hoses, it's a very good idea--last thing before the boat will sit (or at least once a week if you're living aboard)--to fill the bowl to the rim with clean water and flush it through to thoroughly rinse out the vacuum tank, hoses and pump...’cuz suction splatters waste all over ’em and the flush water flow isn't sufficient to completely fill the hoses.”

Peggy has a forum devoted to this subject at:

<http://www.sailboatowners.com/forums/menunew.tpl?fno=31&uid=F>

I (the admiral) confess, as the Head Mistress on our boat, I don't exactly follow Peggie's advice. It's not that I don't think it's great advice, but as it is we are looking for pump outs every week and I hate to think how often we'd be looking for them if I flushed that much water through each time!

I do, however, tend to do an extra ‘cleansing’ flush every day or so with vinegar. I fill the bowl about half full with water and then add about a cup or so of vinegar. The vinegar

helps to dissolve minerals and other (dare I say it) crap – that can build up in the hoses and in the system in general. Don't put straight vinegar down the toilet, however – as it is a mild acid and can damage the rubber seals and valves over time if you use it straight. I was given this tip right after we bought the boat by the company in Seattle that sells and installs VacuFlush heads.

Head Overhaul

After 4 years, my Vacuflush finally broke. A somewhat ham-footed guest broke the ball valve/shaft connection between the pedal and the internal semi-circular valve.

I called Dometic, and they transferred me to the nearest distributor. I described the problem, he was able to quickly diagnose it over the phone and ship me the parts required to fix it.

I'm a little embarrassed to say that I got caught without adequate spare parts on hand to fix my problem. After 4 years I was taking the head for granted – a very bad idea. It's second only to the engine in importance sometimes!! As it was, we were traveling on the Erie Canal when we had the problem – so we had access to shore-side facilities while we were waiting for the parts to arrive.

I purchased a Dometic 'Maintenance Kit' for \$178 that has a vacuum gauge, 4 duckbills, base gaskets, and a water valve in a little plastic box. It's actually a pretty good price for the package of commonly needed parts....

Holding Tank

There is a 46 gallon polyurethane holding tank under the berth. If you open the floor hatch in the head and peer towards the bow, you can see the holding tank.

One of us usually goes down and keeps an eye on the tank whenever we pump out. We've been doing this since we had an issue with a pump-out not working due to a clogged vent. When we looked, we were surprised (and a bit horrified) to notice that the tank was collapsing, but nothing was coming out. We cleared the vent, which fixed the problem – but ever since then we've wanted to check to make sure it doesn't happen again!

Waste Tank Pump-out

This Deck Fill has no lanyard, so the pump-out hose can seal properly. Don't drop it over the side. Spare fills can be obtained from the manufacturer, Orcas Marine. Contact info is in the next paragraph.



Kurt suggests: Use small Tupperware container to hold rubber gloves for waste pump-out. Put the fill cap in here while pumping-out, to avoid losing it.

Vents

Orcas Marine (now taken-over by Southco Marine):

Southco Marine
Customer Support Center & Show Room
510 Haverty Ct.
Suite J
Rockledge, FL 32955
USA
Ph# (1) 321 638 4990
Fax# (1) 321 638 4979

<http://www.southcomarine.com/orcasmarine/>
<http://www.southcomarine.com/orcasmarine/Deck-Fills-and-Tank-Vents.pdf>

The tank is vented to one or two small chrome flush-mounted external vents, thru 5/8in ID hose. Older boats (before about hull#50) had one vent on the stbd side of the bow. Later boats have two vents, one on each side of the bow.

There is a looped hose in the anchor locker that goes to this vent or vents.

The vents have 3 small holes that are covered in a fine mesh. We were having trouble pumping out a few years ago. The tank was collapsing badly whenever we pumped, but very little would come out. This is a sign that something in the vent hose is clogged.

When we checked, we found out that the screen mesh over the vent holes had completely corroded and clogged the openings. We used the end of a screwdriver to ream them out, and voila – we were able to pump out again without any problems.

Eventually it corroded, and we replaced the vent with a Stalon plastic/Stainless combo (M7-20-9105450) from the same manufacturer. They were very helpful, and happy to sell direct to me.

Deck Pumpout

Manufacturer

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Customer Support Center & Show Room
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USA
Ph# (1) 321 638 4990
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<http://www.southcomarine.com/orcasmarine/>
<http://www.southcomarine.com/orcasmarine/Deck-Fills-and-Tank-Vents.pdf>

They will sell directly to the end-user, and can supply vents or spare fill-caps.

The 'O' rings on the filler cap should be replaced every 2 or 3 years.

McMaster sells packs of 100 for about \$8:

Part# 9452K138 BUNA-N O-RING, AS568A DASH NUMBER 133

Lake Champlain

This body has unique and stringent requirements: all vessels must have the overboard discharge system physically disabled. Normally we keep the pump-out thru-hull in the engine room closed and tied with a wire-tie. We attach the macerator pump key to the thru-hull with the wire-tie as well.

This has been sufficient to satisfy the Coasties in the few cases where we have been boarded outside of Lake Champlain. It IS NOT sufficient for Lake Champlain. They require that the hose to the overboard discharge be *disconnected*.

I disconnected and removed the black plastic vented loop from the overboard discharge hose in the engine room. I used a hairdryer to heat the hoses to make removal easier, but it was still like wrestling with a gorilla....