KATADYN GROUP
SWITZERLAND

Technical Bulletin

Ref: **FRESHWATER FLUSH PURPOSE & FINE TUNING**

From: Spectra Watermakers **Date:** 12/11/2020

Freshwater Flush Purpose & Fine Tuning:

We often get the following questions regarding freshwater flushing our systems:

- *Why do I need to flush my system with freshwater?*
- *Do I really need to flush **every** time I make water?*
- *Can't I shorten my flush duration to save some freshwater?*

FWF Purpose:

The main purpose of the freshwater flush is to keep biological growth at bay. The water in your system, and mainly your RO (Reverse Osmosis) membrane will start to grow bacteria within a couple of days if seawater is left in the system. Therefore, the factory suggests doing a freshwater flush after every use. With freshwater in your system, you will typically be growth free for 5 to 7 days. If you purchase the Z-Ion accessory, where metal ions are added to your flush water, you will typically be growth free for a full month.

If you chose not to freshwater flush, but run your system every day or so, you will most likely keep growth out of your system, but you will be increasing the rate of corrosion within your system. Corrosion tends to manifest first at the high-pressure fittings and stainless-steel tubes. Fittings will corrode faster, and stainless-steel tubes can get pin-hole leaks that result in small high-pressure water-jet leaks. We have seen this pop up on systems that are as young as just a few years old. Premature corrosion can be avoided with routine and sufficient freshwater flush cycles.

Optimize the Flush Cycle:

Optimizing the Fresh Water Flush Duration Overview:

5 minutes or so is usually the right flush duration to ensure that sea water is thoroughly flushed out of the watermaker, using the least amount of fresh water. However, due to different lengths of hose runs, different rates of flow, and different pressures in shipboard freshwater systems, the flush duration can be optimized for your boat: Your system may require more than 5 minutes to adequately flush the system, or you might need less time, allowing you to save more fresh water. However, you must ensure the system is adequately flushed. Do not try to save a gallon of water at the expense of your system longevity – run your watermaker for a few more minutes to make up the difference.

Optimize the time:

Ideally the salinity of the brine discharge will be completely fresh just as the flush cycle is completed. Using the brine discharge service hose, direct the brine discharge into a bucket. While the system is freshwater flushing, take repeated samples from the brine discharge and test it with a handheld salinity meter. When the PPM drops below 1000 you can consider the system to have been fresh water flushed, and note the elapsed time. This will be your optimal flush duration going forward.

Note: If your brine discharge never falls below 1000PPM, even with a longer flush duration, it most likely means that your feed pump is running too fast for your house pump to keep up, and drawing in seawater to compensate. On a Shurflo pump system, a solution is closing the seacock or similar valve during a flush. On a Vane pump system, you can slow down your pump speed during the flush cycle using your speed controller. Refer to your owner's manual or https://katadyngroup.ladesk.com/989400-Slowing-down-pump-during-a-Fresh-Water-Flush- for further help with that specific issue.