

# CHANGING FILTERS

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## Caution

Do not attempt to open a filter that is under pressure.  
Have a sponge and perhaps a small pail handy. You will spill some water.  
Turn off any close electrical systems.  
The floor might become wet and slippery.

## The Process

Turn off the water supply to the unit.  
Open the unit faucet/valve to relieve the unit of water pressure.

## When to change filters, DI and membrane:

1. At least once a year or if your water production slows down, you need to replace the pre-filters!
2. Sediment filters need replacement when volume output drops. Normal life is one year. If you are on well water, you will have more sediment in your water and will need to replace this filter more often. Every case is different, watch for production slow down.
3. Carbon filter life depends on the chlorine content of your water. Normal life is one year. If you have typical city water you can process about 3,000 gallons of water before needing to replace the pre-filters (with 3 to 1 waste water to pure water this means you can make 750 gallons of pure water per set of carbon filters). The in-line carbon filters will last about half as long as the vertical carbon block filters.
4. In units with a DI filter, when the DI resin is exhausted it will smell (fishy?). The best way to tell is to use a TDS meter.
5. Membranes need replacement if you observe poor taste or have high TDS. Membranes last 3 to 5 years. Chlorine exposure or inadequate carbon filter replacements are usually to blame. Low pressure can also cause a membrane to foul prematurely.

## Replacing the Filters

The standard drinking water system has three to six filter housings across the bottom; the first three filters are the pre-filters to clean the water before it goes into the membrane. These three filters are: a 10 micron sediment filter, a 5 micron carbon and a 1 micron carbon. These filters should be replaced annually. (The Extreme TPack has an upgraded granular activated catalytic carbon filter which replaces one of the carbon block filters.)

1. Unscrew the filter housing and remove the filter. (Use the housing wrench)
2. Clean the housing with soap and water, rinse thoroughly and then install the new filters.
3. Make sure the O-ring is in place and properly seated. (Re-attach the housing hand tighten only, do not use the wrench).
4. For drinking water systems there is a horizontal, inline carbon filter labeled GAC or "taste and odor." Please pay attention to the flow arrow.
5. The larger horizontal cartridge with the cap and also has three elbow fittings is the RO membrane housing. Membranes last 3-5 years.
6. The Compact ReefKeeper has the same 3 filters on the bottom, but the membrane and smaller DI are horizontal. Note the flow direction arrows.
7. The Dual Home Reef is a standard drinking water unit, plus it has a horizontal DI.
8. Horizontal filters all have quick-connect fittings, just remove & discard. Please note the directional water flow. The Mini Ro System, the Max 50 system and the Mighty Mite system all come with quick connect horizontal disposable filters.

## **DI Filter Change**

In units with in-line, horizontal DI, the DI is the second cartridge and has our blue label. In our typhoon units we use a color changing DI Resin that starts out as either green or blue and changes color to a dull orange/brown color as it exhausts. It is time to change the DI cartridge when you start getting readings of more than 3 PPM.

When exhausted, the water will have a strange (fishy?) odor. Please note flow direction. The in-line DI filter has about 50% of the amount of DI resin as is in the vertical refillable cartridge. Large RODI water users should buy the 5 pound bag of DI resin which makes over three DI cartridge refills.

ReefKeepers, like the Typhoon, have 4 filters on the bottom; the last is the DI cartridge housing (the membrane is horizontal on the top). The DI resin is color changing and if it is significantly discolored it is time for a change. Note that even though you may see good color on the outside of the cartridge the resin inside can be fully exhausted. Test the TDS with a TDS meter!

A rough mathematical equation to determine the number of ZERO TDS RODI water that a DI cartridge will process is as follows: Divide 1,200 by the PPM reading on your TDS meter of your RO water coming out of your membrane. For example: if your tap water is 200, the PPM of your RO water from a 75 GPD filmtec membrane will be about 5 PPM. So then divide 1,200 by 5 for a result of 240 gallons of pure RODI water that can be produced from each cartridge.

## **Membrane Replacement**

Open the housing and pull on the small, plastic tube that is the center of the membrane. You can use pliers or a small screwdriver to remove the membrane, after about an inch, the membrane will pull free. The new membrane will come to you with the O-rings already lubricated with silicone lubricant. After replacement, flush the system by allowing it to fill and empty completely. If you have a ReefKeeper, just waste the first 3-5 gallons.

## **Final Step ... Fast Flush Your System**

Now that you have replaced your filters and/or your membrane, please fast flush your system for 3 to 5 minutes. What this will do is to wash the preservative off of the membrane and wash any small dust particles off of the new filters. You are now good to go. Fast flushing your system is a great way to keep your membrane clean and preserve its life. Always fast flushing your system before you make any RODI water will also help preserve the life of your DI resin, because this will waste the stale water in your unit before you start making pure RO water.

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