Air, Water & Ice

CHANGING FILTERS GUIDE:

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/unplug any close electrical systems.**
- **The floor might become wet and slippery.**

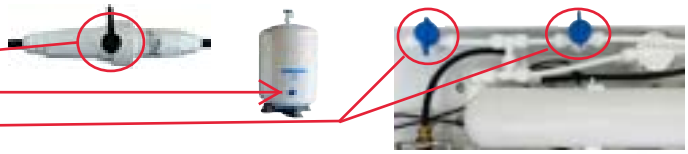
Note! Have the instruction manual for your system handy. The illustrations in the manual will answer most of your questions such as how to fast flush your specific system & more helpful bits of info to save you time.

The Basic Process:

step 1: Turn off the water supply going into the RO / RODI system
step 2: Open a pure RO water outlet (ro faucet / ball valve / di bypass) to relieve the water pressure
step 3: Change filters and/or membrane
step 4: Fast flush your system for 15 minutes
step 5: If the membrane is replaced, discard the first hour of pure RO water production

Note! *IF you have dramatically reduced pure RO water, little or no drain water, or constant drain water* ***after*** *installing new filters and/or membrane, the following 3 items are the most common reasons why. IF these 3 items don't solve your problem perform a system purge (below).*

Is your ***fast flush in the closed position*** *?*
Is your ***pressure tank pressurized*** *?*
IF you have a ***DI bypass, is it closed****?*

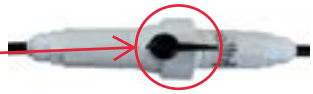


How to PURGE: Step 1: Remove all of your filters & remove the membrane. Step 2: Screw the filter housings & membrane housings  *back on the system without the filters or membrane. Step 3: Open a pure RO water outlet with the fast flush in the closed (see pic above) for 30 minutes without any filters or membrane. During this step, turn the fast flush's black handle back & forth multiple times & tap the automatic shut off valve (ASOV)*  *and/ or the permeate pump*  *with your hand. Purging clears potential clogs 99% of the time. If this does not work, remove the fast flush flow restrictor. Hold the fast flush up to a light. You should see a large hole when the fast flush is open AND a small hole when the fast flush is closed. If you do not see light through the fast flush in both positions, your fast flush is clogged. Blow through, use a air compressor or tap water supply line to clear the clog... this method also works for permeate pumps. To recharge your pressure tank, inflate schrader valve to 7-9 psi with the tank empty and ball valve open.*

Changing the Filters (at least every 6-12 months)

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, NEVER use the wrench to tighten the housings!).
4. Horizontal inline filters all have blue dust caps just remove & discard.
5. To remove tubing press in the collet and pull tubing in opposite direction--------> 
6. Please note the directional water flow on inline filters.

Fast Flush Your System (turn black handle parallel to the tubing)



Turn black handle parallel to the tubing, open a pure RO water line (RO faucet, inline ball valve, etc) and Fast flush your system for 15 minutes. This sends almost all of the carbon dust/"fines" out of the system directly into the drain as opposed to potentially clogging your system. Fast flushing your system is also great way to keep your membrane clean and preserve its life. Fast flushing before making any RODI water will always help extend the life of your DI resin because this will remove the higher tds / stale water in your unit before you start making pure RO water, preserving the life of your di resin.

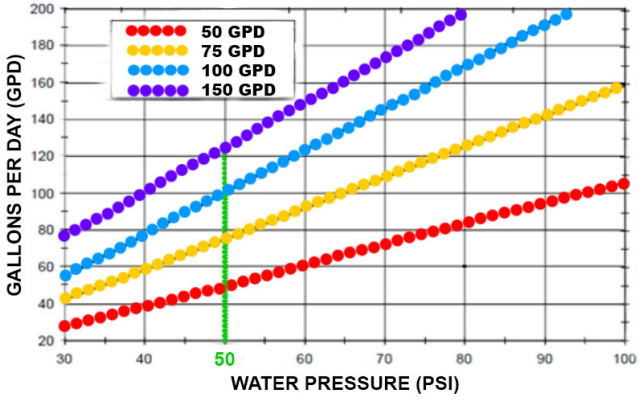
When to change the filters?

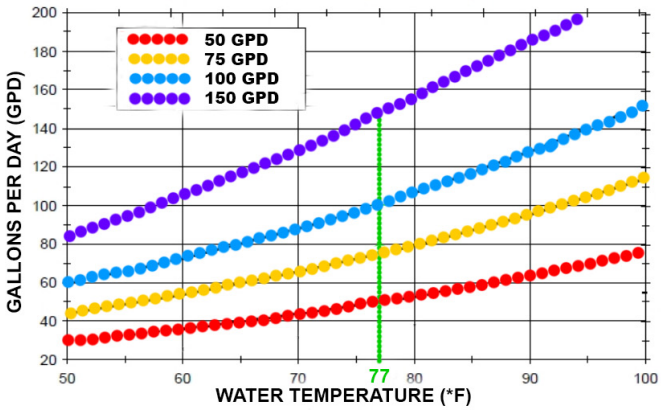
The drain water made should be included in your calculation of when to change your filters. Drain water is the lifeblood of your system & essential for pure RO water. We plumb most of our RO systems to get a 3:1 waste to pure water ratio. This means for a filter rated for a 3,000 gallon life, it will be exhausted after we make 750 pure RO gallons as we have sent 2,250 gallons down the drain. Change filters when pure RO water production slows, if a filter look visually dirty, if the filter has reached the end of its filter life rating OR at least every year, whichever comes FIRST. If you have well water or otherwise hard water to begin with, you will need to change filters more often. Please note the membrane is always sold seperately from our filter packs.

Sediment Filters: (Stage 1) (*pre-filter*) [life= 3,000 total gallons or 1 year for full 10" sediment filters or 1,500 gallons or 1 year for inline sediment filters ].*The sediment filter traps dirt & will become clogged. Sediment filters protect carbon filters from getting clogged.*

Carbon Filters: (Stage 2-3) (*pre-filter*) [life= 3,000 total gallons or 1 year for full 10" carbon filters or 1,500 gallons or 1 year for inline carbon filters ]. Carbon filters remove chlorine, chemicals, taste & odor. *The carbon block is vital & required to be changed on time to protect your membrane from exposure to chlorine. Changing carbon filters on time extends the life of your membrane. Among other things, carbon filters protect your membrane from chlorine & chloramines.*

Reverse Osmosis (RO) Membrane: (Stage 3-4) (*the filter*) [life= 6,000 - 15,000 total gallons, 1.5 - 5 years, or when rejection rate drops below 90%. Membranes are normally changed because of slow or no production. The other reason to replace the membrane is production of excessive amounts of poor quality water. Chlorine exposure, inadequate carbon filter replacements or low pressure are usually to blame for a membranes reduced life. Many water chemistry matters go into membrane life expectancy & we cannot accurately predict how your membrane will do. *What you must know is when your carbon blocks are exhausted, they allow chlorine to pass through to the membrane. A process called oxidation begins. This initially causes a reduction in pure RO water. Next, your membrane sheets break, putting holes in your membrane & you will have a large amount of poor quality water. When new, RO membranes reject 95-99% of TDS. Over the next 2-5 years, this rejection rate will decrease. You will need a TDS meter to easily perform a TDS test to find your membranes rejection rate. Temperature and water pressure play a role in your membranes production. Please see 2 charts below!*





Deionization (DI) Resin Filters: (Stage 4-8) (*post-filter*) [life= minimum 3,000 ppm TDS capacity for our full 10" DI cartridges or [1500 ppm TDS capacity] for our inline di filters. Resin may smell "fishy" when exhausted. The color changing feature of our di resin is a INDICATOR that the resin is exhausted, we recommend performing a TDS test when color changes. A rough mathematical equation is if your RO tds is 10 ppm, take 3,000/10 = about 300 gallons of zero tds before DI exhaust.

Ultra Violet (UV): (*post-filter*) [life= 1 year] UV lights will make a humming noise when in need of replacement. Another way to check is temperature, a working light produces a warm housing.

Mineral Filters (calcium and magnesium) (post-filter) [life= 1,000 gallons or 1 year]

How to perform a tds test? ALWAYS make one gallon of pure RO water before a TDS test to avoid testing the stale "tds creep" water in your system. Get a clean glass. Pour about 6 oz of pure RO water in the glass. Put your TDS meter in the glass & press the only button on the TDS meter. Record the number. Pour out the glass and then test your TAP water, & then test your DRAIN water. Don't use the cap of the TDS meter - again, you want to sample about 6 oz of water! As always, we are committed to your success. Please contact us with any questions!