

8 STAGE NEPTUNE RODI SYSTEM INSTRUCTIONS

- 1) Always use extra length tubing to make your connections, you may want to move the unit to replace the filters in the future.
- 2) Read the push-in fitting material on page 2, make sure you push the tube completely in.
- 3) If a fitting is not push-in, then use moderate pressure to snug up the fittings. Modern fittings do not rely on brute strength. They rely on teflon tape, o-rings or gaskets to make the seal (just snug the fitting to make it secure). Do not use glue. Plastic fittings that have been screwed on too tightly are subject to splitting. Stressed fittings may take days or even months to leak.
- 4) Please, Please, Please read this installation guide before installing the unit. This guide will answer a lot of your basic R.O. questions.
- 5) Ok! You installed it without reading the guide. Please read the guide before contacting us with questions or problems.
- 6) A 200 GPD system makes about 8 pure RO water gallons per hour, a slow stream. Yes, more water goes to drain than is made. All RO systems make drain water while operating.
- 7) This systems max water pressure is 75 psi. Never connect a RO system to a water supply that has more than 75 psi or it could leak and cause property damage.

An in-line pressure gauge measures line pressure. Identify pressure drops that indicate the need to change filters.



If you have over 75 psi, you will need a PRV (pressure reducing valve - less than \$25)



If you have under 50 psi OR have a well pump, get our plug & play booster pump to optimize system performance.



REPLACEMENT FILTERS:

Neptune Filter Pack



Replace this filter pack every 6-12 months or 3,00 total gallons (750 pure RO gallons)

2 x 100 gallon per day (GPD) RO membranes



Replace your RO membrane every 1.5-5 years, when rejection rate is <90% or when RO production slows.

Thanks,
Chris, The H2O Guru

By the way... these are blue dust caps. Please remove & discard!



How to use Push In Fittings & how to remove Tubing

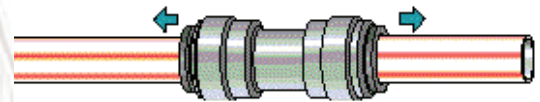
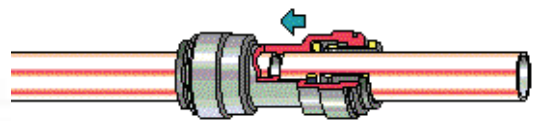
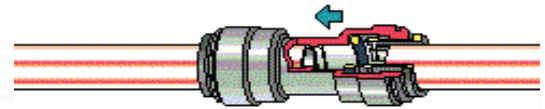
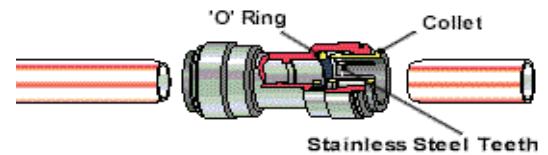
Connecting:

Cut the tube square. It is essential that the outside diameter be free of score marks and that burrs and sharp edges be removed before inserting into fitting. Make tubing cuts flush with a sharp pair of scissors or a tubing cutter.

Insert tube. Fittings grips before it seals. Make sure the tube is pushed in all the way.

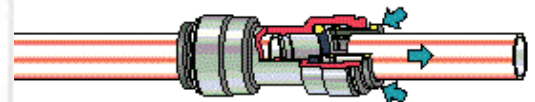
Push up to tube stop. Push the tube into the fitting, to the tube stop. The collet (gripper) has stainless steel teeth which hold the tube firmly in position while the 'O' ring provides a permanent leak proof seal.

Pull to check secure. Pull on the tube to check it is secure. It is a good practice to test the system prior to considering your handy work is done. The system doesn't full pressurize until the tank is full.



Disconnecting:

Push in Collet and remove tube. To disconnect, ensure the system is depressurized before removing the tubing from the quick connect fitting. Push in collets squarely against face of fitting. With the Collet held in this position, the tube can be removed. The fitting can then be re-used.



Step 1: remove clip



Step 2: push in collet

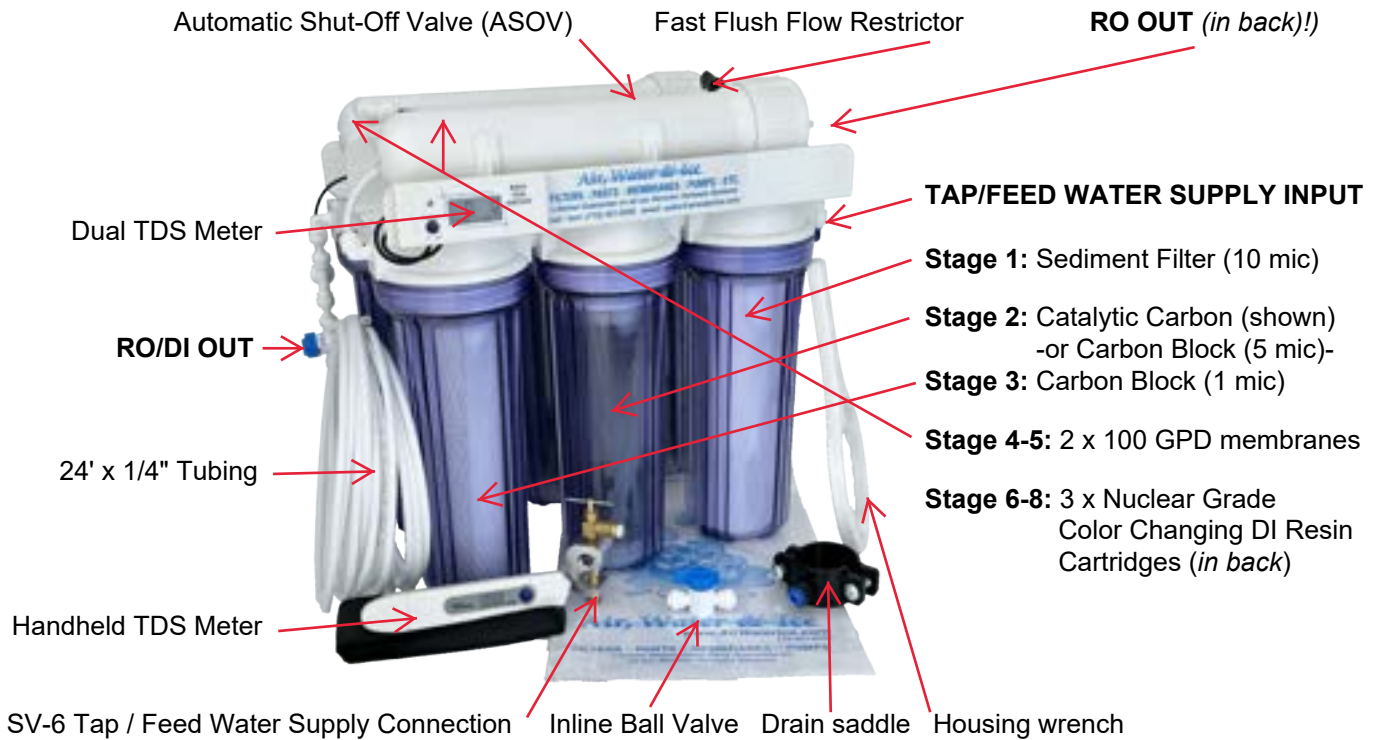


Step 3: Remove & discard blue dust caps.



NEPTUNE ILLUSTRATION & QUICK REFERENCE GUIDE

*** Please familiarize yourself with the layout below. Please also ensure you have all the parts below before you begin ***



Quick Assembly : (this step may require a basic wrench)

Open bag → Bag Contents :

- 3 x Male Elbows →
- 1 x Male Run Tee w/ Ball Valve →

STEP A : Please find FOUR pre-tapped fittings in the bag. Remove the protective tape covering the 4 housing cap holes. Using your hand, clockwise turn the 4 fittings into the housing cap holes (see pic's on right). You may use a wrench to snug up these fittings for the final 3/4 of a revolution. No brute force required! BARELY snug is perfect!

STEP B : Connect the only piece of loose tubing on right side of system to the male run tee w/ ball valve fitting you just installed in step A (see right side pic above). Also connect the RO/DI OUT tds meter probe to the male elbow fitting you just installed on the left back side. (NOTE: By design, one tube remains unconnected on the left side of your system. This is the prefilter line that will eventually have the red clip to serve as a reminder to rinse the prefilters immediately after filter changes. We will revisit this in STEP 7.)

Preparing for Installation :

Check out the area you will be working in. Is it safe? Any electrical around that should be turned off? Unplug all electrical cords in your area (garbage disposal etc). Do you have enough room? How about the lighting, will you be able to see what you are doing? Different areas have different requirements to meet local codes. Our systems are sold all over the globe. We are presenting a generic method of installation. You will need to check out the local building codes to assure that your unit is installed in compliance with code. **Tools:** towel, gallon jug, phillips head screwdriver, basic wrench, sharp scissors to cut tubing and a battery operated drill with 1/4" drill bit.

Questions? Call or text : 772-461-0256 / email : sales@airwaterice.com or visit us online at www.airwaterice.com

NEPTUNE ILLUSTRATIONS & INSTALLATION STEPS

STEP 1) Install the Drain Saddle. I like to start with the drain saddle. It is made up of two

Pic #1 plastic parts and a foam washer. (*Pic #1*) The foam washer mounts onto the drain saddle. Remove the backing paper. Position the foam over the fitting hole in the one half of the drain saddle. This foam makes a water tight seal. The drain saddle has to mount on the drain pipe coming from the bottom of the sink. If you look at any drain pipe, they all have a bend in them

that is called a (P-Trap.) What is important is that you mount the saddle valve on the way down to the P-Trap, not after it. You also want to mount the drain saddle at least one inch higher than the start of the bend, but not more than 4 inches higher. Note you do not want to mount the drain saddle on the garbage disposal line. Once you have positioned the drain saddle on the pipe (*Pic #2*), leave enough room to attach the tube & for you to work. Just snug the screws. Do not crank down on them, Just snug enough so that the drain saddle

is secure and will not wiggle around. Now you need to drill a hole. Get your 1/4" drill bit out and drill right through the opening in the drain saddle (*Pic #3*). Just use light pressure. Now just drill through the one side of the pipe - don t drill through the other side. Ok, that's done for now. Attach tubing into the blue quick connect fitting in the drain saddle. The waste water is the life blood of the system. If the system cannot drain correctly, it will not function for long. The drain line should never be blocked or restricted (*i.e. restricted beyond the flow restrictor*).

STEP 2) Install the Tap/Feed Water Supply Valve Connection. Now over to the supply valve. It's the aluminum & brass thing (*Pic #4*). This valve is self piercing. It can be used on copper, plastic piping and the grey flexible pipe found in newer homes. It is NOT designed to work on braided hose; if your home has a braided hose, you will need a braided hose adaptor. Either from us or the hardware store. The adaptor is a

watts fitting #BPAV-664. Never install the SV-6 before the stop valve under your sink. This valve is to be installed on the supply tube between the stop valve & the sink faucet. The stop valve is the shut off valve under your sink that allows you to turn off the water, please turn off the cold water supply at this time. IF you are not sure which one is hot or cold... turn on the hot water and touch the water line... the one that is not hot is the cold water line. We will be attaching the SV-6 to the cold water line.

If your pipe is too fat for it to fit, use the other side. Please leave at least (3) inches between this valve and any other valve on the same pipe or tube. Once you have the valve in position over the cold water pipe, tighten the brass screw. (*Pic #5*) You must tighten the screw enough to give the valve a firm grip on the pipe. Do not over tighten it. Since you have turned off your water, go ahead and pierce the line by turning the brass handle clockwise. The valve is ready to use. We will get back to it once the system is installed.

Pic #5

NEPTUNE ILLUSTRATIONS & INSTALLATION STEPS (contd)

STEP 3) Install the Drain Line. Cut a piece of tubing long enough to go from the installed drain saddle (installed in **STEP 1**) into the Fast Flush Flow Restrictor (or the "Brine OUT" fitting if you have a permeate pump installed). **At this step, cut two items**

STEP 4) Install the FEED / Tap Water Supply Line. Cut a piece of tubing long enough to go from the installed supply valve (in **STEP 2**) into the **STAGE 1** male elbow fitting you just installed in **STEP A**. Finish this step. **Important!** Next, find the inline ball valve in your installation kit. Cut your freshly installed water supply line tubing (6) inches before it enters the cap of the **STAGE 1** sediment filter housing. **Install the inline ball valve on the two pieces of this newly cut tube.** Please note the water direction flow arrow on the inline ball valve. **Close this inline ball valve.** (blue handle perpendicular to the tubing). Remember! The supply line's inline ball valve can easily be closed if a leak is detected. Next, slowly open your supply connection - if you installed the SV-6 as mentioned in **STEP 2** above, **turn the brass handle on the SV-6 counter-clockwise until you feel some significantly stronger resistance.**

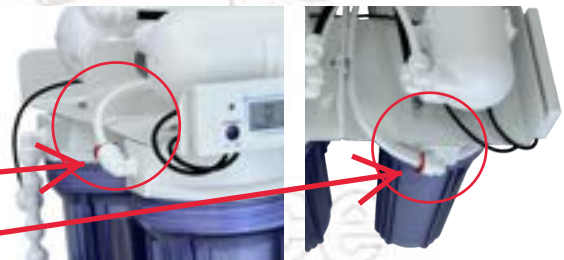
STEP 5) RINSE THE PREFILTERS We should rinse the prefilters to remove the carbon dust so your system will have zero chance of clogging. Disconnect the drain line from the fast flush flow restrictor (or the brine out fitting if you have a permeate pump installed on your system) and insert the drain line directly into the fitting in STAGE 3

Next, let's turn on the supply water line. **Open your cold water stop valve & open the supply line's inline ball valve** (turn the blue handle so the handle is parallel with the tubing). You should immediately notice water filling up the 3 housings fairly quickly. Grey water will begin to come out of the third prefilter. Allow the system to rinse these prefilters until the water is **completely clear** (about 15 min). When water runs clear, **close the inline ball valve on the water supply line** and **return / reconnect the drain line back into the flow restrictor (or permeate pump brine out port if applicable).**



Pic #6

STEP 6) Connect the prefilter line to the male elbow fitting coming out of **STAGE 3** and **clip** the red clip underneath the collet.



FYI: FAST FLUSH FLOW RESTRICTOR POSITIONS :

" NORMAL OPERATIONS MODE"



"Normal operations mode" is where we want to be all times, except when fast flushing new filters, etc.

VS.

"FAST FLUSH MODE" :



"FAST FLUSH MODE", by design, sends most of the water down the drain. Fast flush new filters, before & after any water making & every 2-4 weeks to extend the life of your membrane. Leaving this valve open will, among other things, reduce RO output.

NEPTUNE ILLUSTRATIONS & INSTALLATION STEPS

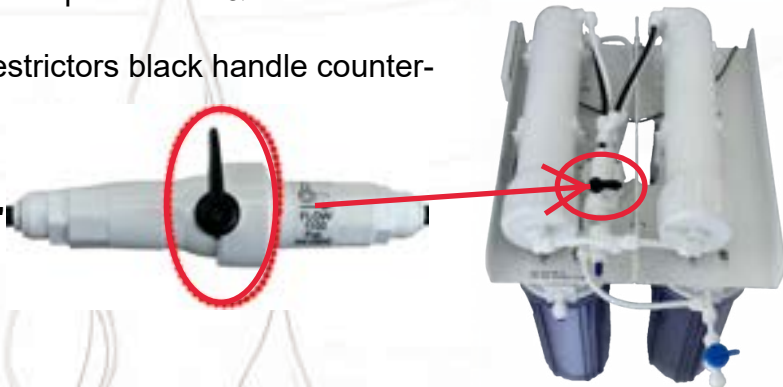
STEP 7) FAST FLUSH YOUR SYSTEM. First, ensure your fast flush flow restrictor is in



Pic #7 "FAST FLUSH MODE". To fast flush, the position of the black handle must be parallel to the tubing like **Pic #7**. The parallel position of the black handle will send almost ALL of the water down the drain. If you have a pressure tank, you can close the tank ball valve at this time. Open the RO OUT inline ball valve, your RO faucet, or DI Bypass (i.e. any pure water outlet). Turn on your water supply line's inline ball valve. Now you are fast flushing! Fast flush for 15 minutes. Please note that if you replaced your membrane this step is not good enough. You must waste the first hour of pure water the membrane produces. Flushing produces very little pure water & sends most of the water down the drain.

STEP 8) Turn the fast flush flow restrictors black handle counter-clockwise 90 degrees and enter into:

"NORMAL OPERATIONS MODE"



STEP 9) For New systems (or whenever you replace your membrane), DISCARD the first hour of pure RO water the system produces. Have your fast flush in normal operations mode and open a RO OUT port, di bypass, or RO faucet.

STEP 10) Check for leaks. Close all of the pure water valve(s) and allow the system to fully pressurize. This may take several hours. Check for leaks ! Check again in a few minutes, then check again in about half an hour and finally after one hour. One last check of your work after 3 days.

Enjoy your pure water!

Things you should be aware of:

If you have cold water below 77F degrees, low pressure water pressure below (60) p.s.i. or very poor quality water (over 350 ppm tds), your production will vary from the rated output. Each degree lower than 77 reduces the output by about 1.3%. Low water pressure or dirty filters will also reduce the production rate.

Once installed your system should not produce a vibration or noise after the first few days of usages. You may hear water running to drain. Air trapped in your system will confuse the auto shut off valve (see next page). Please wait 3-4 days before calling or attempting repair. The water in the system will absorb the air and the valve will begin to function normally.

THE AUTOMATIC SHUT OFF VALVE ASOV



Looks very complex, but is really very simple.

The water is simply traveling across the valve from left to right or right to left depends on how you look at it.

Pure water travels across the top of the unit.

Filtered water across the bottom.

The valve has a top and a bottom. The top is the side with the (4) screws visible. The bottom has no visible screws and is marked in and out.

The bottom of the valve is connected between the pre-filters and the membrane. Water from the pre-filters is directed to the (in). The filtered water continues from the out to the membrane end with only one connection. The membrane water inlet.

So the bottom of this valve goes in between the filters and the membrane.

The top is the side with the (4) screws connects across the pure water line. From the membrane pure water outlet. You connect to the (in). The pure water outlet of the membrane is on the end with two connections. One connection goes to drain, the other is the pure water. The drain connection is not the one you want.

Once you have located the pure water line, cut it and install the automatic shut off valve. From the membrane to (in) and to the rest of the system (out).

Install the ASOV in the position shown, i.e. with the bottom side down flat.

It can take a few days to get the air of a new system... In the interim the ASOV may hum or vibrate and let water drain thru to the drain constantly. Sometimes several days are needed to absorb the air. Turn unit on its left side, then right side while opening and closing the fast flush 10 times quickly.

RO SYSTEM EVALUATION - perform 3 days AFTER installation:

HOW LONG TO MAKE ONE GALLON TEST:

Step 1: Open a pure RO water outlet (either a RO faucet or a inline ball valve's blue handle). The picture on right shows a ball valve that is open----->



Note1! If you have a fast flush flow restrictor, ensure the black handle is in the closed / perpendicular // "normal operations position"---like this ----->



Note2! If you are using a pressure tank, ensure the tank ball valve is in the closed position (perpendicular to the tubing) like the picture on the right----->



Step 2: OK! Now we are all set up. Next, with a milk jug (or other one gallon container), time how long it takes to fill one gallon of pure RO water - remember - a 50 GPD (gallon per day) membrane should make ONE gallon in about 30 minutes. We are projecting our test here to the entire day - the more accurate you are with this test, the more accurate your result will be.

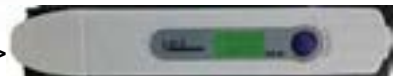
RECORD time to fill ONE gallon of pure RO water: _____

RECORD time to fill ONE gallon of drain water: _____

RECORD water temperature: _____ ;If your system is new or moved to a new location... you will want to RECORD time to fill ONE gallon from the tubing feeding your RO system tap water: _____

HOW TO PERFORM A TDS TEST (easy!):

Worldwide, water quality is measured by TDS (total dissolved solids). This may sound daunting; however, we are confident that if you know how to use a ball point pen, you can master this in a couple of minutes. To perform a TDS test, you need simply a TDS meter. We sell these for less than \$20!----->>



Step 3 : AFTER making one gallon of pure RO water, if you have a fast flush flow restrictor, perform a fast flush. To do this, leave your pure RO water outlet in the open position and turn the black handle to the right 90 degrees so it is parallel to the tubing. The picture on right shows a fast flush flow restrictor in "fast flush" mode----->>



During this time, we are removing tds creep, sending most of the water down the drain. After 5 minutes of fast flushing, return the fast flush's black handle to the "normal operations" position.

Step 4 : Next, let a few cups of water pour out of your pure RO water outlet.

Step 5 : While we are waiting for step 4, get a clean glass or container for your pure RO water sample (do not use the cap of the tds meter). Collect 6 oz. of pure RO water in this container.

Step 6 : To test your TDS, open the TDS meter's cap and place the tds meter in the center of your sample. Press the only button on the tds meter. Record the number that appears on the LCD screen below: (always test RO water, then tap water & then drain water)

RECORD RO water quality (A): _____

RECORD TAP water quality (B): _____

RECORD DRAIN water quality (C): _____

RECORD YOUR MEMBRANES REJECTION RATE: _____

(to find your membranes rejection rate, use a calculator and take: ["A" divided by "B" minus 1])

- Average TDS in US homes: = 250 ppm (parts per million) TDS (total dissolved solids)
- TDS level considered excellent for drinking water:= < 50 ppm TDS.
- Minimum acceptable rejection rate before it's time to replace your membrane: = 90%
- Average RO water quality for our customers who change filters on time = < 10 ppm TDS.

Water Terminology & FAQ

Pressure Reducing Valve (PRV) This valve is installed when your house pressure is above 70 psi. This valve reduces your line pressure to 70 psi. (Your RO membrane only needs 50-60 psi to operate as designed, so a PRV is an easy plug & play solution to high water pressure that causes continuous drain water & other issues.

Automatic Shut Off Valve ((ASOV) the ASOV is what shuts your system off & prevents your system from making continuous drain water. When the pure water line reaches 2/3 of your incoming water supply pressure, the ASOV will activate and close the prefilter line, preventing water from going into the membrane and the drain.

Fast Flushing Fast flushing is an important maintenance step for your system as it washes the stale water out of your system. For drinking water RO systems, we recommend fast flushing for 5-15 minutes at least once every 2 weeks. For systems with a DI stage, we additionally recommend fast flushing a couple of minutes before & after you make a batch of RODI water as this preserves the life of your membrane & deionization resin.

System Purge Not to be confused with fast flushing above - a system purge is when we run the system for 15 minutes without any filters OR membrane to clean and remove potential clogs. Be sure to flip the black fast flush handle several times during this step and tap the ASOV and/or permeate pump a few times with your hand. This method is the fastest way to resolve clogs on new systems & after filter changes. Although it is rare for a any system to need a purge, needing to perform this step on a new system or location may indicate that you have low house pressure (less than 50 psi) or low flow (less than 1.5 GPM) going into your RO system.

Booster Pump IF you have lower than 50 psi on your water supply line feeding your RODI system water, we advise getting a booster pump. The pump we have sold for 35+ years is very reliable & above else the quietest plug & play pump we have tested. Although our powerstation booster pump is designed for well water applications with 40/60 cut in/out well pump switch's, this pump works great for city water & several other applications - please contact us for applicability if you are not certain at 772-461-0256.

Depressurizing the System To change filters, membranes, remove tubing or open housings we must relieve the pressure in the system. Turn off your water supply going into the system & open a pure RO valve. After a few minutes the system will be depressurized & the tubing & housings will be able to open.

System Life Expectancy We recommend replacing your entire system after 7 years of use. Contact us to receive our best deal. Typically our discount for a system repurchase is less than \$100 difference than if you were to purchase a new membrane and filter pack.

System Environment Your system cannot be exposed to freezing temperatures, hot water, fire or higher than 75 psi water pressure. IF your system was exposed to any of these, you must replace the entire system. IF your system is exposed to direct sunlight, bacteria growth should be expected, filter life & water quality will be less.

TDS Test: A TDS meter quickly & accurately lets you know when to change your DI resin & your membrane.

Troubleshooting FAQ's - (please see our online FAQ guide at www.airwaterice.com/pages/faq for more!)

FAQ#1: The vertical DI housing has air trapped inside. Is this normal? It's nothing to worry about. Water is part air (h₂o). Normally the cartridge will fill 1/4 of the way full with water when pure RODI water is being made.

FAQ#2: Slow or No pure RO water? RO systems make water at a rate of 2-6 gallons per hour, a slow trickle. If this happened all of the sudden or after changing filters, make sure your fast flush is closed, (black handle perpendicular to the tubing). New systems or new locations for old systems with low water production typically have something to do with either the house pressure being low or less than ideal supply connection. If this has happened over time, it's likely time to replace your filters and/or membrane or if you have a drinking water system with a FULL pressure tank, it is time to recharge the pressure tank.

FAQ#3: No drain water? All RO & RODI systems send water to the drain while operating. If you cannot hear water going down the drain, unplug the drain line & check. Your system will not last very long if no drain water is being made. Disconnect the fast flush flow restrictor from the system. Look through the fast flush into a light. Do you see a small pinhole from both positions (open/closed)? If you do not, it is clogged. Use your water supply line or a air compressor to blow out the debris. This method will also work for a clogged permeate pump. IF this still does not allow drain water to pass, perform a system purge, then a RO system evaluation and contact us.

FAQ#4: Continuous drain water. Please ensure your fast flush flow restrictor's black handle is pointed up, at a right angle, perpendicular to the tubing like this!----->



Note! For rodi systems with DI bypasses installed, please also ensure the blue ball valve's handles to the left of the flow restrictor are in the closed position like this!----->



***If you still have drain water after ensuring correct positions above: perform a Fast flush.

If your system still makes drain water, you will need to perform a System Purge & RO System Evaluation found in your systems instructions & contact us with the results. If you

don't change your filters or membrane on time, continuous drain water is likely. Having low (below 40 psi) or high (above 75 psi) house pressure will also cause your system to have continuous drain water.

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! This is a general guide. Have the instruction manual for your specific system handy. Your systems manual will go into detail about your systems specific features, valve positions and more!

The Basic Filter Changing Process: (at least every 6 - 12 months)

step 1: Turn off the water supply going into the RO / RODI system

step 2: Open a pure RO or RODI water outlet (ro faucet, ball valve OR di bypass) to relieve the water pressure

step 3: Change the filters

- 3.1 Unscrew the filter housings & remove the old filters and/or membrane (use the housing wrench).
- 3.2 Clean the housings with soap & water and rinse thoroughly.
- 3.3 Change the filters. **Note1)** When re-attaching the housings, NEVER use the housing wrench to tighten the housings. **Note 2)** Ensure the housing's O-rings are in place and properly seated before attempting to re-attach the housings. **Note 3)** For in-line filters, please note the arrow on the filters indicating the directional flow of water. **Note 4)** All In-line filters have blue dust caps, please remove & discard these in the same way tubing is removed... press in on the collet with your finger or wrench & pull tubing in the opposite direction (see pic)----->



step 4: Fast flush the system



- 4.1 Turn your fast flush flow restrictor's black handle parallel to the tubing- see picture above.
- 4.2 Next, open a pure RO water line (i.e. RO faucet, inline ball valve, etc). Now you are fast flushing!
- 4.3 Fast flush your system for 15 minutes.
- 4.4 After fast flushing, please ensure you return the flow restrictor's black handle back to the closed (normal operations) position (black handle pointed up - perpendicular to the tubing).

step 5: If you are replacing your membrane, discard the first hour of RO water the system makes.

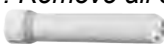


IMPORTANT! Fast flushing sends almost all of the carbon dust/"fines" out of the system & directly into the drain as opposed to potentially clogging your system. Fast flushing is great way to keep your membrane clean & extend the life of your di resin. **Note!** Always fast flush immediately after installing new filters. 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 (see 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 RO water line with the fast flush in the closed/normal operations mode 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. To clear the clog: blow through, use a air compressor or your water supply line... this method also works for permeate pumps that get clogged.

***To recharge your pressure tank, inflate schrader valve to 7-9 psi with the tank empty & ball valve open.


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 separately from our filter packs.



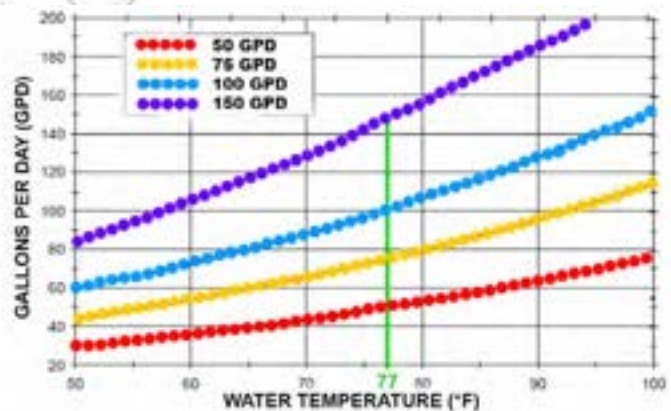
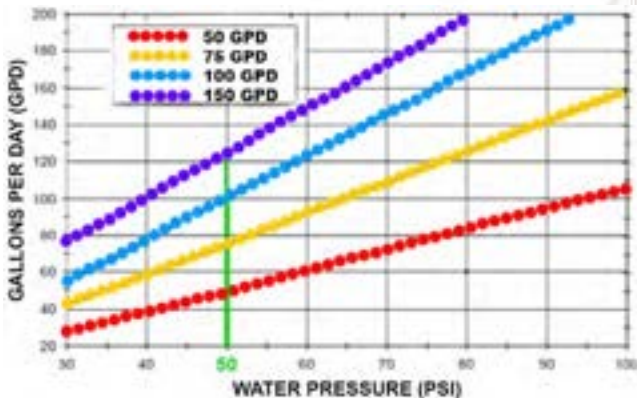
Sediment Filters: (Stage 1) (*pre-filter*) [life= 3,000 total gallons or 1 year for full 10" sediment filters or 1,500 gallons or 1 year for inline sediment filters ]. The sediment filter traps dirt & will become clogged. Sediment filters protect carbon filters from getting clogged.



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 goes from green or blue to a golden brown color and is a INDICATOR that the resin is exhausted. We recommend performing a TDS test when color changes. A rough mathematical equation of resin filter life: If your RO tds is 10 ppm, take $3,000/10 = 300$ gallons of zero tds water before the resin is exhausted & needs replacement.

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 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!

Questions? Call or text : 772-461-0256 / email : sales@airwaterice.com or visit us online at www.AirWaterIce.com

AIR WATER & ICE, LLC

Neptune

