

## 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.

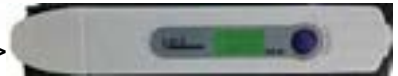
RECORD time to fill ONE gallon of pure RO water: \_\_\_\_\_

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](http://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 (h<sub>2</sub>o). 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.