



## All About Water Quality Facts

Water Quality Facts

Reverse Osmosis Facts

Pump Facts

Softener Facts

Watts Premier wants to make sure that you have all the information you need to make an informed decision regarding your drinking water. A Healthy living, whether it is clean drinking water or what we eat is important. Making sure you are informed is just

as important. Below you will find different facts regarding Reverse Osmosis and Filtration Systems. If you can't find the information you are looking for here, please call us at 1-800-752-5582 or email us at [WeCare@WattsWater.com](mailto:WeCare@WattsWater.com).

## **How Does Reverse Osmosis Work?**

**What's The Difference Between A CTA And TFM Membrane?**

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**Will A Water Softener Harm My Reverse Osmosis System?**

**Will A Reverse Osmosis System Soften My Water?**

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**How Far Can A Line Be Ran From The Reverse Osmosis System?**

**How Do I Know If It Is Time For A New Membrane?**

**Why Is A Whole House Filter Important And Who Should Have One?**

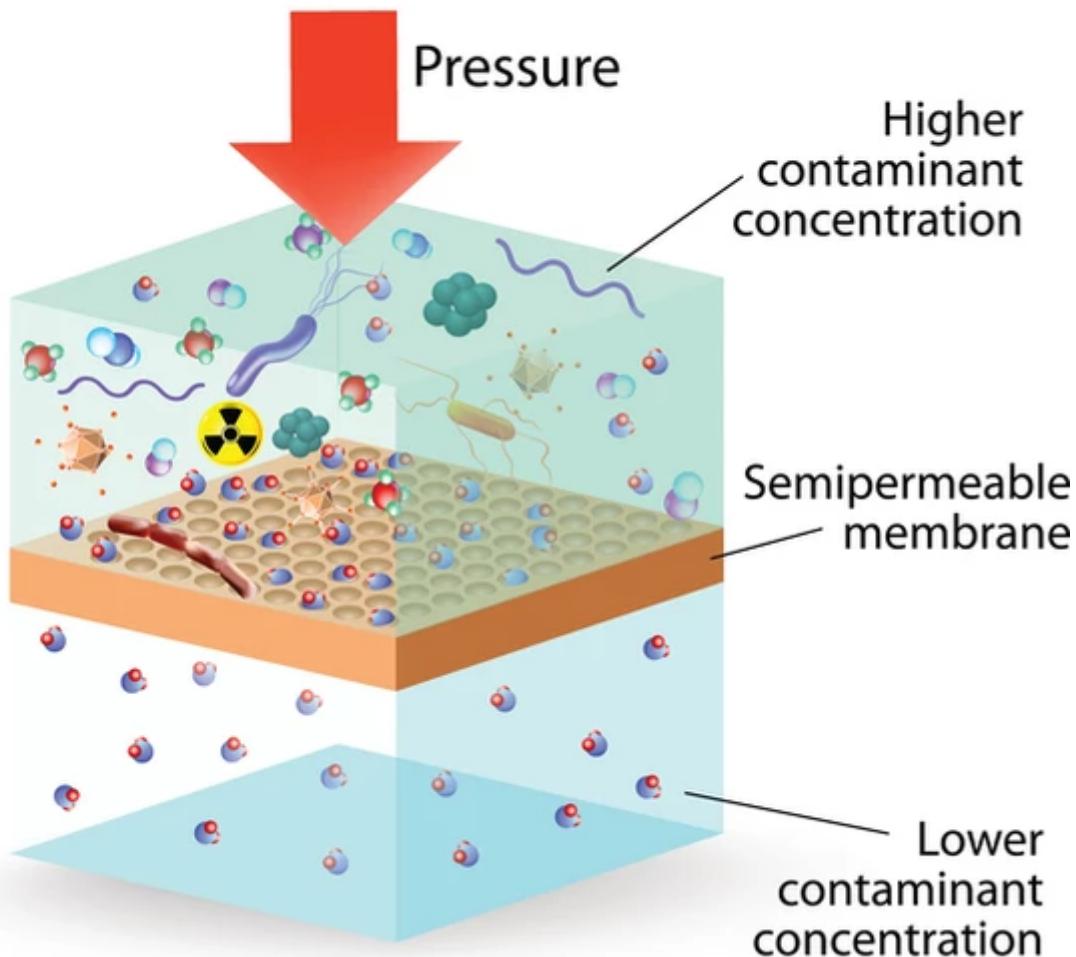
**Why Would I Use A pH Balancing Final Filter?**

**If I Already Have A Reverse Osmosis System Why Would I Install An Ice Maker Kit?**

## **HOW DOES REVERSE OSMOSIS WORK?**

A semi permeable membrane, like the membrane of a cell wall or a bladder, is selective about what it allows to pass through, and what it prevents from passing. These membranes in general pass water very easily because of its small molecular size; but also prevent many other contaminants from passing by trapping them. Water will typically be present on both sides of the membrane, with each side having a different concentration of dissolved minerals. Since the water is the less concentrated solution seeks to dilute the more concentrated solution, water will pass through the membrane from the lower concentration side to the greater concentration side. Eventually, osmotic pressure (seen in the diagram below as the pressure created by the difference in water levels) will counter the diffusion process exactly, and an equilibrium will form.

# REVERSE OSMOSIS



## WHAT'S THE DIFFERENCE BETWEEN A CTA AND TFM MEMBRANE?

A CTA (Cellulose Triacetate) membrane is a paper by-product membrane bonded to a synthetic layer. Due to its cellulose composition, a CTA membrane requires chlorine in the water source to keep bacteria from forming on it. A CTA membrane has a rejection rate of between 85-94%. CTA membranes have an average life expectancy of 18-24 months and are considered inferior to TFM membranes. Premier only uses TFM (Thin Film Membrane) membranes, which are made of a synthetic material. A TFM membrane requires the chlorine be removed prior to the water entering the membrane. A TFM membrane has a rejection percentage between 95-98%, which is much higher than the CTA membrane. A TFM membrane will last between 2-5 years. Many hospitals use TFM membranes in their hemodialysis (kidney) machines because of the higher purity water they produce.

## **WILL IRON HURT A REVERSE OSMOSIS SYSTEM?**

Yes. Iron will plug a R.O. membrane, as the membrane is not able to flush iron out. Trace amounts of iron (up to 2 PPM) can be removed by a water softener. If the water contains 1 PPM or less, there is no need for concern as the membrane will usually last 1-2 years. Note: This refers to clear water iron, not red iron. The difference is that clear water iron leaves no visible signs, whereas red iron leaves a reddish brown discoloration in toilet bowls, tanks, sinks and tubs. If red iron is present, steps to remove the iron will have to be taken, otherwise the warranty will be void.

## **WILL A WATER SOFTENER HARM MY REVERSE OSMOSIS SYSTEM?**

No, Calcium and Magnesium (Lime scale) are two of the hardest minerals for the Reverse Osmosis Membrane to remove. Sodium (added to the water by the softener) is much easier on the Membrane and it will reject 98% of all Sodium in the water. A Water Softener will help extend the life of the Membrane.

## **WILL A REVERSE OSMOSIS SYSTEM SOFTEN MY WATER?**

Yes a Reverse Osmosis System will Soften your Drinking Water through the Purification process; however hard water (above 7 grains of hardness) will shorten the life of the Membrane. The harder the water, the shorter the life of your Membrane. For example, if your incoming water is 15 grains of hardness, you may only get 2-3 years of life from your Membrane.

## **WHAT IS THE LIGHT ON THE REVERSE OSMOSIS FAUCET FOR?**

Faucets have a light to notify you when your Filters need to be changed. Faucets with a time calculation. When you change your Filters and remove the battery on the Faucet this resets the clock to 0 months. When you re-insert the battery the timer starts a new timed count to 6 months. When the count equals 6 months the light on the Faucet will change colors. Older faucets displayed a **Green** and **Red** light for notification. All 2011 and newer Faucets will display a **Blue** and **Red** light indicator for notification.

## IS THERE A WAY TO BY-PASS THE FAUCET'S AIR-GAP

Yes, you can By-Pass the Air-Gap on any of Watts Premiers Air-Gap Faucet. **Note - Before performing the Air-Gap By-Pass you will need to ensure the ASOV is functioning properly. As well as checking to make sure the air pressure in your tank is between 5 to 7 psi.**

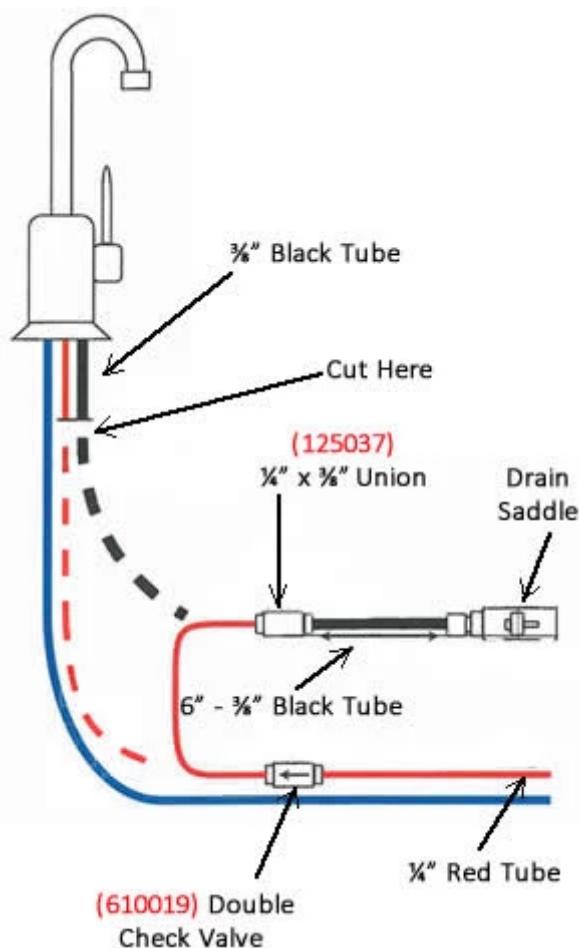
To determine whether the ASOV is damaged you will want to check the water production to the tank. On average the System produces up to 4 ounces of water per minute. Close the ball valve on the tank as well as the water supply. Remove the blue line from the tank and set it into a liquid measuring cup. As soon as water begins to flow from the blue line measure the water level for one minute. If the blue tank line produces the right amount of water (approximately 4 oz), reconnect the Blue Tube to the tank. Leaving the tank in the closed position, turn the incoming water back on. Water should begin flowing down the drain. In about 15 to 20 minutes the ASOV should close and you will hear no more noise from the drain. If the noise from the Drain doesn't stop, replace your ASOV.

In order to test to see if you have **High or Low Air Pressure in the Tank**, you will need to empty all the water from your storage tank. In order to do this shut off the main water supply and open the RO Faucet until the water stops running. Then check the pressure using a Digital Air Gauge ([https://www.premierh2o.com/collections/test-equipment/products/accutire\\_161000\\_digital\\_air\\_pressure\\_gauge?variant=1195234121](https://www.premierh2o.com/collections/test-equipment/products/accutire_161000_digital_air_pressure_gauge?variant=1195234121)) for the best results. The tanks pressure should be set between 5 to 7 psi.

You will need 2 parts in order to By-Pass the Air-Gap. A Double Check Valve (610019) as well as 1/4" x 3/8" union (125037). The instruction for the Air-Gap By-Pass are as follows:

- 1) Shut-off the cold water supply to the system.
- 2) Cut the **Red & Black** tubing approximately 4" from the bottom of the Reverse Osmosis Faucet.
- 3) Cut the  $\frac{3}{8}$ " Black Tube approximately 6" from the Drain Saddle.
- 4) Using a  $\frac{1}{4}$ " x  $\frac{3}{8}$ " Union connect the  $\frac{1}{4}$ " **Red** tubing from the Reverse Osmosis System to the  $\frac{3}{8}$ " **Black** tubing from the Drain Saddle.
- 5) Splice in the one way check valve inline of the  $\frac{1}{4}$ " **Red** tube with flow arrow pointing towards the Drain Saddle.
- 6) Start-Up your Reverse Osmosis System and check for any leaks.

**Caution - Please be aware that in the event you encounter an issue involving water constantly running (i.e. damaged ASOV, High or Low Pressure In The Tank, etc) in the future you will be less likely to hear it. Installation must comply with all state and local plumbing regulations.**



I HAVE A WATER SOFTENER, WON'T THAT TREAT MY DRINKING WATER?

No, a water softener and a Reverse Osmosis System do two different things. Water Softeners, soften your water but do not remove the impurities which may be in your water. These impurities are removed by a Reverse Osmosis System. The water you drink and cook with will be softened but not purified. A Reverse Osmosis System can even remove 98% of all sodium left in the water from the softening process.

A Water Softener and Reverse Osmosis System actually work well together. The softened water gives your membrane a longer life. You can run your Reverse Osmosis to your Refrigerator and/or freezer as well as using it for cooking and straight from the mounted Faucet giving you clean, clear and quality drinking water. There is a cost savings on both the Softener side wear on the appliances, less laundry detergent, soaps, etc. Families normally find they buy less bottle water and sodas as well.

## **HOW DO I KNOW MY REVERSE OSMOSIS SYSTEM IS REMOVING THE TOTAL DISSOLVED SOLIDS FROM THE TAP WATER?**

You will be able to tell by the taste and clarity of the water. For example, ice cubes made with the R.O. water are harder, clearer, and last much longer. If you take two clean glasses of the same size and put ice cubes made with R.O. water in one and the same number of ice cubes made from tap water in the other, you will notice that it takes longer for the R.O. ice cubes to melt. Not only do ice cubes made with R.O. water last longer but juices and mixed drinks made with R.O. water taste better. When ice cubes made from tap water are melted in a glass, you will most likely see unsightly sediments on the bottom. This is not so with R.O. water. Another way of determining the amount of dissolved solids removed from tap water is by the use of a conductivity meter. This meter measures the conductivity the dissolved solids impart to the water. This is converted on the meter scale into parts per million of Total Dissolved Solids (TDS). Premier offers a TDS Meter ([https://www.premierh2o.com/collections/test-equipment/products/hm\\_digital\\_tds-3\\_273001\\_handheld\\_pocket\\_tds\\_meter\\_with\\_case](https://www.premierh2o.com/collections/test-equipment/products/hm_digital_tds-3_273001_handheld_pocket_tds_meter_with_case)), which can be used to test your Reverse Osmosis water and tap water to determine how the Membrane is working and when to replace it.

## **WHY NOT USE COPPER TUBING FOR THE LINE TO THE ICE MAKER?**

Due to R.O. water being void from contaminants, it is what is known as "hungry water." R.O. water can leach the minerals out of the copper tubing and may cause a metallic taste in the ice cubes and over a period of time, the copper tubing can develop pinhole leaks.

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## DOES MY REVERSE OSMOSIS SYSTEM HAVE TO BE MOUNTED UNDER THE KITCHEN SINK

No, your Reverse Osmosis System can be mounted in a cabinet to either side of the kitchen sink or even mounted remotely in a garage or basement. Make sure the Reverse Osmosis System is within 20 to 25' of the Reverse Osmosis Faucet. See Below for additional information.

## HOW FAR CAN A LINE BE RAN FROM THE REVERSE OSMOSIS SYSTEM?

Approximately 20-25' with  $\frac{1}{4}$ " POLY tubing. For runs longer than that, use  $\frac{3}{8}$ " POLY tubing. Tubing that runs from the Reverse Osmosis System to the ice maker should always be POLY tubing. **Caution - Do not use copper.**

## HOW DO I KNOW IF IT IS TIME FOR A NEW MEMBRANE?

A TDS Meters ([https://www.premierh2o.com/products/hm\\_digital\\_tds-3\\_273001\\_handheld\\_pocket\\_tds\\_meter\\_with\\_case?variant=1195232789](https://www.premierh2o.com/products/hm_digital_tds-3_273001_handheld_pocket_tds_meter_with_case?variant=1195232789)) is used to test the effectiveness of the membrane filter and ensures you get the longest life out of your membrane by eliminating premature changes. Simply test both your RO

water and your Tap water for TDS levels and put them in the TDS Calculator (<https://www.premierh2o.com/pages/tds-calculator>) to see how effective your system is running. We do all the calculations for you. Just go to the TDS Calculator here (<https://www.premierh2o.com/pages/tds-calculator>) and follow the instructions on where to enter your TDS levels for RO and Tap water.

## WHY IS A WHOLE HOUSE FILTER IMPORTANT AND WHO SHOULD HAVE ONE?

If you have a lot of sediment in your water you will benefit from the Watts Premiers Full Flow Whole House System (<https://www.premierh2o.com/products/watts-500228-big-clear-whole-house-system-high-flow>). This filter is installed on the incoming water line into the home. It's clear canister lets you see the sand, silt, dirt and rust particles it is removing before your very eyes! The Whole House Filter helps to reduce unneeded stress on your home appliances and water heater. Those that do not have issues with sediment in the water can benefit by replacing the sediment filter with a Carbon block to reduce chlorine taste and odors. Having a Whole House Filter doesn't replace your Reverse Osmosis System (<https://www.premierh2o.com/collections/reverse-osmosis>), because it filters out the sediment but does not put the water through all the different stages necessary. You can check out our Watts Premiers Full Flow Whole House System (<https://www.premierh2o.com/products/watts-500228-big-clear-whole-house-system-high-flow>) for further information.

## WHY WOULD I USE A PH BALANCING FINAL FILTER?

Reverse Osmosis is one of the few water treatment technologies that filters virtually all contaminants from water, both organic and inorganic. If Reverse Osmosis did not filter out the inorganic it would miss many of the inorganic contaminants such as Nitrates, Arsenic and Chromium 6. However, the same high performance filtration that filters harmful contaminants also filters healthy minerals from water, including calcium. Because the minerals have been filtered from the water, Reverse Osmosis water is inherently more acidic than tap water because of all the impurities it removes. The pH Filter adds the healthy minerals such as Calcium and Magnesium back into the water and in the process bring the PH level closer to neutral.

## **IF I ALREADY HAVE A REVERSE OSMOSIS SYSTEM WHY WOULD I INSTALL AN ICE MAKER KIT?**

An ice maker kit makes the ice and the water in your fridge more pure! An ice maker kit simply connects to the Reverse Osmosis Faucet line of one of our systems to send pure Reverse Osmosis water to your ice maker and cold fridge water. See crystal clear ice cubes and rid your refrigerator water of impurities.

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