

System Features



Parts Kit



Please ensure all parts are included and undamaged.
If a part is found missing or damaged, please contact our customer service department.



System Operation

During operation, the 5 Stage Drinking Water RO system will produce up to 75 gallons of purified RO water per day or approximately three gallons per hour.

- **Hot water should never be used** with the RO system as it can damage the RO membrane and may also contain additional contaminants. For this reason, only water from the **cold** water supply should be used.
- For optimal results, water pressure should be at least 50 psi entering the membrane. If operating pressure is under 50 psi, a reduction in water production and a lower rejection rate may be experienced. If water pressure is approaching 35 psi, consider adding a booster pump to increase performance.
- A ratio of 4:1 waste water to purified RO water is normal. The waste water from the black line contains the dissolved solids from the source water and should not be used in your aquarium.

Set-up & Maintenance:

1 Turn the water supply to the connection point off.

2 Choose your connector/adaptor from the below options, and install.

Garden Hose/Utility Sink Adapter NON-PERMANENT

- Thread onto a hose, laundry sink faucet or fittings with similar threads.
- Provides a quick connect fitting for the RO/DI tubing.
- Great option for quick installation.



EZ Angle Stop Adapter SEMI-PERMANENT

- Under-sink, out of the way connection.
- Fitting only works on flexible water line.
- Installs inline between water shut off valve and flexible tubing to faucet.
- Compatible with 3/8" thread size (*other sizes sold separately*)
- Removeable.



3 *Optional* - Install Drain Saddle Clamp

Drain saddle clamps are installed on standard PVC 1½" OD drain pipe, above the trap and as close to the sink drain as possible. Do not install the clamp close to disposal outlets or clogging may occur.

For this installation you will need a magic marker, adjustable wrench and a drill with a 3/8" drill bit.

1. Separate the drain clamp and use the clamp half with the push connect fitting as a guide to find a suitable location for the clamp. The location should be at least a few inches above the trap and as close to the sink drain as possible. Place a mark where the hole will be drilled.
2. At this mark, drill a 3/8" hole through **one** side of the pipe and clear away burrs.
3. Peel the backing from the gasket in the parts bag. Position the gasket centered around the freshly drilled hole.
4. Position both halves of clamp on the pipe. Be sure to line up the drain clamp hole with the hole in the pipe. Secure with included bolts and nuts.



4 *Optional* - Install Inline Ball Valve

Installing the inline ball valve is optional. The ball valve is commonly used to turn the RO/DI system on and off. To install the ball valve:

1. Cut the **red** water supply line in an easily accessible location. Be sure that the cut ends are clean, even and smooth.
2. Firmly push the ends of the hose into the ball valve.



5 Install your Faucet.

The Air Gap Faucet requires a 7/8" hole in your counter top or sink bowl. If your sink has a sprayer it is possible that you may be able to remove it and mount the faucet in the same hole. If you need to drill a hole make sure to check for any obstructions underneath the sink and to use the proper tools for the material you are drilling. You will need enough room under the faucet to connect the waste water lines as well as the drinking water line. Consult the instructions for the Air Gap Faucet on the faucet box for specific instructions about installing the faucet and connecting the product water line (**blue** line).

- Connect the 1/4" waste water (**black** line) from the RO unit to the 1/4" barb fitting on the faucet.
- Use the included 3/8" black tubing to connect the 3/8" barb on the faucet to the drain saddle clamp.

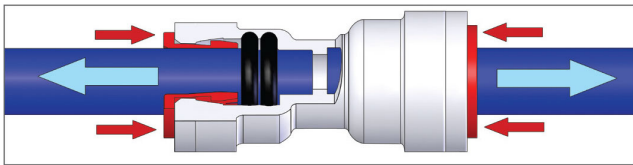
It is normal for the air gap faucet to make a hissing or gurgling sound when the RO unit is running. This is not a malfunction but rather an indication of the proper operation of the valve. The faucet is designed to break a siphon at the highest point in the event of a sewer backup; this prevents contamination of your drinking water system.

6 Install your Storage Tank

Decide where you would like to place the pressurized storage tank, preferably in close proximity to the faucet. This install has two steps:

Step 1:

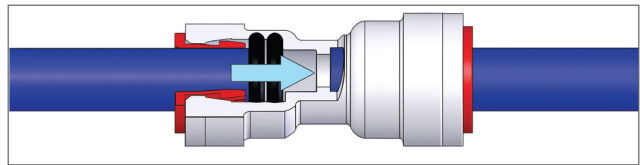
1. Locate the **BLUE** line coming from the main RO unit.
2. Cut tube and insert TEE union into the newly cut ends.



Remove tube by holding the round retention ring tightly against the fitting and pull the tube.

Step 2:

1. Screw the RO tank valve onto the top of the pressurized storage tank.
2. Using a small piece of tubing, connect the RO tank valve to a TEE.
3. Connect the **BLUE** tubing that goes from the faucet to the same TEE.

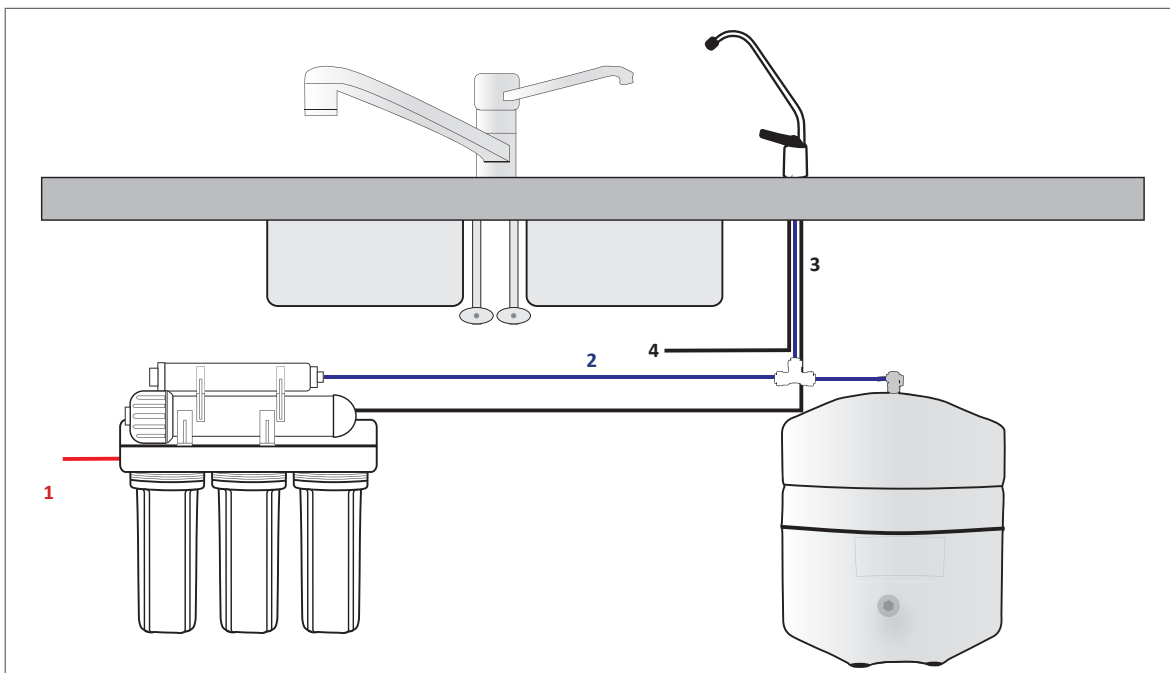


Push connect fittings are connected by firmly pushing one end of the tube into the fitting.

7 Install your RO System.

RED Tubing - intake from home water line **BLACK** Tubing - waste water **BLUE** Tubing - output of purified water suitable for use in your reef tank.

1. Attach the water source to the **RED** line of the RO system using the installed connector/adaptor.
2. Direct the **BLUE** line from the Omnipure Inline Carbon Block to Mur-lok Tee and then to the Storage Tank and Air Gap Faucet.
3. Guide the **BLACK** line from the RO unit to the Waste Water (**BLACK**) Input of the Air Gap Faucet.
4. Guide the Waste Water (**BLACK**) line from the Air Gap Faucet to a drain.



8 Prime your RO system.

The RO unit must be run for one hour before using product water. Ensure that all fittings and hoses are correctly hooked up. *This process should be repeated when carbon blocks or membranes are replaced.*

1. Turn on the household water supply.
2. Allow the system to run for one hour to flush fine particles from the carbon block(s) and preservatives from the RO membrane. *(This is a good time to check all fittings and connections for leaks).*
3. Discard any water produced during the initial period (first hour).
4. Your system is now ready for use.

9 Maintain your RO system.

Replacement Filter Kit: 5 Stage Drinking (SKU 208831)

Filter life depends on many different factors including total water production and the quality of the source water. A general rule of thumb is to replace sediment filters and carbon blocks every six months to insure proper system performance and ease of use. However, replacement requirements vary based on the source water.

Purtrex 5 Micron Depth Sediment Filter

Sediment filters should be changed when they become clogged with dirt and sediment.

The best way to identify when a sediment filter has been exhausted is by monitoring the water pressure feeding the membrane. As the filter gets clogged it will reduce the pressure feeding the membrane and thus reduce system performance.

For systems that do not include a pressure gauge, we recommend monitoring the sediment filter visually and changing as it becomes visually dirty or every six months.



BRS 5 Micron Chlorine & VOC Carbon Block

This is a five micron filter to treat for chlorine and volatile organic compounds (VOC). The filter is also designed to have a very low pressure drop to increase system performance.



BRS 1 Micron Universal Carbon Block

This filter has been specifically designed to treat well water and both of the most popular water treatments including chlorine and chloramines.

Chlorine - The carbon block set has a useful life of up to 35,000 gallons of water treated with chlorine. Please note this is the total volume of water that has passed through the filter which includes waste and product water. It is likely the filter set is good for approximately 8,000 gallons of product water.

Well water or other untreated sources – While it is typically not important to treat for disinfectants, the carbon block is an important component of the filtration because it treats for pesticides, herbicides, petroleum by-products, volatile organic compounds (VOC) and other pollutants in ground water. We suggest changing the carbon block every six months in this case.

Regardless of the amount of water filtered or amount of chlorine breakthrough, carbon blocks should be changed at minimum once every 12 months to prevent biological fouling or bacterial growth.



Omnipure Inline Carbon Block

Inline carbon blocks are used as a post RO taste filter for the drinking water system.



RO Membrane

The RO membrane is located in the white cylinder on top of your filter/RO system and only needs to be replaced approximately every three years or when the TDS emitted from the membrane begins to rise.



Optional Features

Dual Inline TDS Meter DM-1

Measures the total dissolved solids (TDS) in your water supply. TDS meters are a common tool used to estimate the purity or quality of water.



A dual TDS meter is most commonly installed on the "in" and "out" of the deionization resin stage. The "in" connection monitors the RO system performance and the water feeding the DI resin.

The "out" connection monitors DI resin performance and the quality of your product water for the aquarium. The "out" reading should always read zero TDS.

Please note: The RO system needs to operate for 10 minutes before an accurate reading can be achieved.

Membrane Flush Kit

The membrane flush kit is a ball valve installed on the black waste water line that bypasses the flow restrictor. Opening this valve increases the flow through the waste line and flushes deposits off of the RO membrane. Flushing the membrane increases membrane life and system performance.



On a RO system that is only used a few times a month flush the membrane for 1-2 minutes before and after each use. If you use the system frequently flush the system for 3-5 minutes a few times each month.

Please note: In normal operation this valve should be closed. If you are unsure if the valve is closed, check the flow rate out of the black waste water line. When the valve is closed for normal operation, the flow out of this line will be slower.

Oil-Filled Pressure Gauge

Displays the water pressure entering the RO membrane. The gauge is installed in-line between the last carbon block and the RO membrane.



Proper RO membrane performance is very dependent on maintaining proper pressure feeding the membrane. Greater than 50 psi is ideal, less than 35 and you will likely need to install a booster pump.

A significant decrease in the operating pressure would indicate that the pre-filters (and in particular the sediment filter) need to be changed.

150 GPD Water Saver Upgrade Kit

This kit is designed to double product water output while maintaining the same volume of waste water which essentially cuts the waste to product water ratio in half.



By running two 75 gallon per day membranes in series you are doubling the volume of product water without significantly increasing overall flow rates through the pre-filters. This will almost double the amount of product water you can produce with a single set of pre-filters.

This effect can be particularly noticeable if your water supply has chloramines where filters are quickly consumed.

Frequently Asked Questions

Q: Is it normal for the DI stage to not fill completely with water?

A: Yes, air gets caught in the top of the canister and has no way to escape. This does not interfere with system performance, but if desired open the canister slightly while the unit is running to allow the air to escape. Retighten the canister when the water reaches the top.

Q: Is it normal for TDS to be higher when the system is first turned on?

A: Yes, this is called "TDS creep" and normal on all RO systems. Please allow the RO system to run for 10 minutes before testing TDS.

Q: Is it okay to leave water in the canisters between uses?

A: Yes, it is advised to keep them wet between uses and to store in a cool, dark location.

Q: How often should I use the flush kit?

A: We suggest flushing the membrane for a few minutes before and after use. There is an auto flush kit available if you would like something more automated. (SKU: 200209)

Q: My pressure gauge reads less than 50 psi, do I need a booster pump?

A: The membrane will not perform "optimally" below 50 psi but the reduced performance may not be substantial enough to warrant a booster pump. As you approach 35 psi the performance drop will become significant and you will likely want to purchase a booster pump. (Kit: 200216)

Q: What is a normal TDS reading?

A: TDS from most tap water will be in the 100-300 range but many sources can be well over 500. Normal product water from RO membrane will be around 98% of your tap water's TDS under optimal conditions. Tap water with a TDS of 300 should be around six coming out of the membrane. Product water emitted from the DI resin canister should be zero. Please operate the system for ten minutes prior to testing for TDS, readings will always be higher when the system is turned on initially.

Q: My DI resin seems to be depleting quickly, what's wrong?

A: Useable lifespan of the DI resin cartridge will vary widely. Someone feeding the resin from their RO membrane with one TDS will have approximately five times the useable life as someone feeding it with five TDS. Outside of that, carbon dioxide in your water supply or a poorly performing RO membrane are the biggest causes.

Q: My system doesn't seem to be making a lot of water, what's wrong?

A: Please keep in mind that 75 gallons a day is approximately three gallons an hour. The flow will be slow and close to a constant trickle. If it is slower than that, it's almost always because your flush kit is open or your home's water pressure is low and there is less than 50 psi feeding the membrane.

Q: Can I reduce the amount of waste water my system produces?

A: The waste water is a critical component of a properly functioning RO system. The best way to reduce the volume of waste water to product water ratio is to install a second membrane* in series which will effectively cut this ratio in half. (*Water Saver Upgrade Kit, SKU: 200432)

NEED HELP? Customer Service Hours: M-TH 7am - 7pm | F 10am - 4pm CST



Phone: 763-432-9691



Email: support@bulkreefsupply.com



Live Chat: bulkreefsupply.com