BULK REEF SUPPLY®

BRS **4 STAGE PLUS** RO/DI SYSTEM INSTRUCTIONS

System Features

75 GPD Dow Filmtec RO Membrane

Double O-Ring Mur-Lok Fittings

Red Intake, Black Waste Water, Blue Output Tubing

5 Micron Purtrex Sediment Filter

Glycerin Filled Pressure Gauge

TDS Meter

BRS 5 Micron VOC Carbon Block

Color Changing DI Resin

Auto Shut Off Valve

Flush Kit

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

BRS LIMITED LIFETIME WARRANTY

Parts Kit

Filter Wrench

Drain Saddle Clamp

Insta-Test Free Total Chlorine Test Strips

Garden Hose/Utility Sink Adapter

Faucet Diverter Valve

Inline Ball Valve

EZ Angle Stop Adapter

Faucet Diverter Adapter Kit

Self-Piercing Saddle Valve

Faucet Diverter Valve NON-PERMANENT

- Easy installation, attaches to the majority of kitchen faucets. Adapter ring included for faucets the valve does not fit.
- Built in valve switches water flow between faucet use and RO system.
- Connect RO unit by sliding red tubing over the barbed connection on the faucet adapter.

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.

Video Set-up and Install Instructions: http://brs.li/howtoro

System Operation

During operation, the 4 Stage Plus systems can 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 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 lower than 35 psi, consider adding a booster pump kit 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 the connection adapter you want to use from the parts kit.

3 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 your homes water source to the **RED** line of the RO system using any of the included source water adapters.
2. Direct the **BLUE** line to a suitable collection/storage container. This is the output line for the purified/filtered water.
3. Guide the **BLACK** line down a drain. Water from the black line is referred to waste water and should be discarded.

4 Prime Your RO System

The RO/DI 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.*

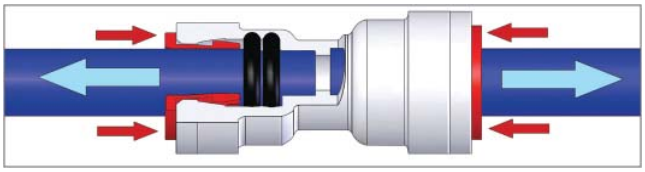
1. Turn on the household water supply.
2. Allow the system to run for one hour and discard all water produced. Fine particles from the carbon block(s) and preservatives from the RO membrane may be released during this time. This is a good time to check all fittings and connections for leaks.
3. Your system is now ready for use. During the first 24 hours TDS may be higher than normal as fine particles and other manufacturing preservitives are released from the filters.

5 Maintain Your RO/DI System

Replacement Filter Kit: 4 Stage (SKU 210142)

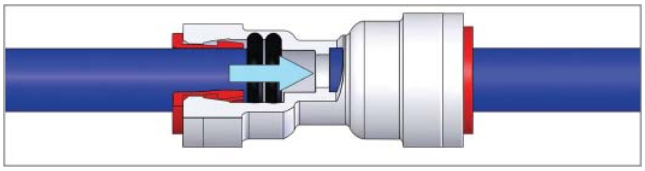
Filter life depends on many different factors including total water production and the quality of the source water. A general rule of thumb is to replace sediment filters and carbon blocks every six months to ensure proper system performance and ease of use. However, replacement requirements vary based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

Removing Push-Connect Tubing



Remove the tube by holding the round retention ring tightly against the fitting then pull the tubing away from the fitting while twisting and the tubing should slowly release from the fitting.

Connecting Push-Connect Tubing



Push connect fittings are connected by firmly pushing one end of the tube into the fitting. It is important to push the tubing all the way into the fitting for a complete seal.

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Purtrex 5 Micron Depth Sediment Filter (SKU 200053)

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 which 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 VOC Carbon Block (SKU 208658)

BRS VOC and Chlorine Carbon Blocks were developed to maximize adsorptive capacity of the blocks internal pore network and as a result has the highest rated reduction for both chlorine and VOC's of any 5 micron carbon block in our industry.

BRS Chlorine and VOC Carbon Blocks are manufactured using high performance carbon combined with a new binder system technology which maximizes the volume of microspores and surface area to improve performance. The combination of advanced carbon technology, increased volume of carbon contained in each filter and proprietary manufacturing processes delivers exceptionally high chlorine, VOC and general chemical performance.

Chlorine 15,000 @ 1 GPM**
High chemical adsorption*
30% more carbon than standard blocks***
VOC Reduction
Exceptionally low pressure drop

*Nominal Micron rating for all above - 1 micron
**2ppm free chlorine >90% reduction
***Manufacturer's internal test data

GE 75 GPD RO Membrane (SKU 200054)

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.

Color Changing DI Resin (SKU 200123)

Color Changing DI Resin is designed to be the final polish on the water and will remove vast majority of elements that passed through the RO membrane. The DI resin is color indicating and will turn from a blue/black color to a golden brown color from the bottom up as it depletes. When the entire container changes color it is an indication that the cartridge needs to be replaced with new resin. By the time all resin is brown, you will have produced a large amount of potentially worse water than if you didn't use D.I. at all.

If your system came with a TDS meter installed you can use it to confirm the DI resin cartridge has been exhausted. The "out" monitors DI resin performance. If the TDS measures anything higher than zero, it is time to replace the resin. Remove the cartridge from the RO canister and discard the exhausted resin. Reload the cartridge with fresh DI resin.

Please note that the color change is an ***indicator*** of the depletion of your DI resin and certain water parameters could interfere with the color changing process. The TDS meter is the actual measurement of the DI resin performance and should be used to identify when the resin needs to be replaced.

Included and Optional Upgrades:

Dual Inline TDS Meter DM-1(SKU 200031)

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. the aquarium, along with your filters and DI resin performance.

550mL Membrane Flush Kit (SKU 208852)

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, extending your membrane life.

Oil Filled Pressure Gauge (SKU 200215)

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. They are also handy for knowing when to change your filters too.

150 GPD Water Saver Upgrade (SKU 200432)

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

Video Set-up and Install Instructions: http://brs.li/howtoro

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?

Video Set-up and Install Instructions: http://brs.li/howtoro

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