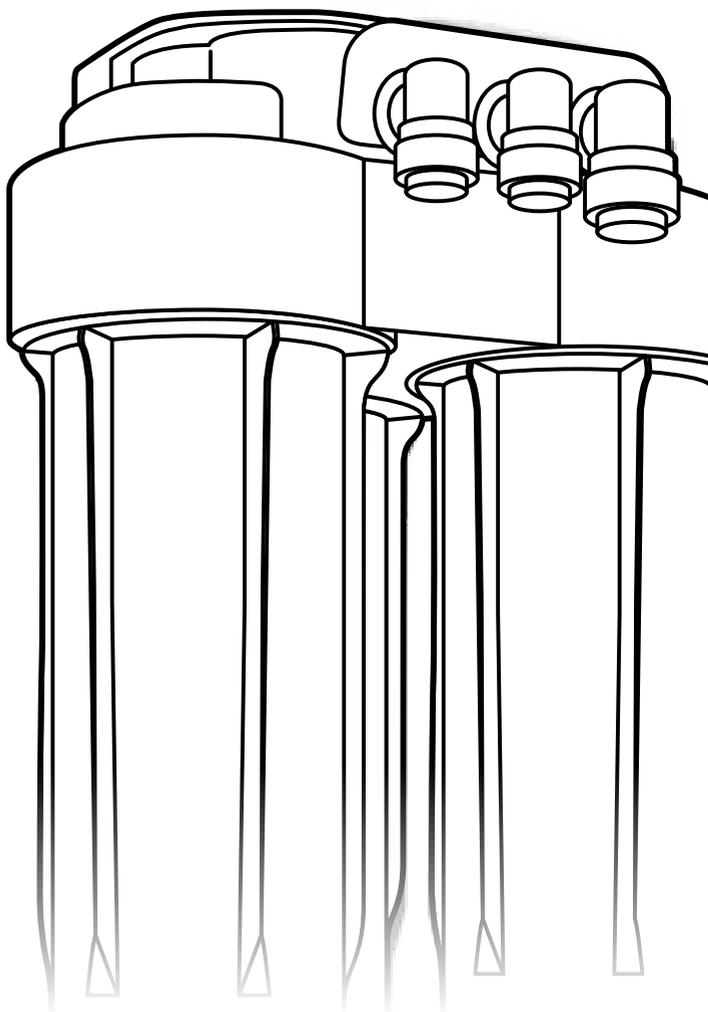




ROS2700

Reverse Osmosis Water Treatment System User Guide



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Safety Guides

Read and follow all steps and guides carefully before installing and using your reverse osmosis system. Do not use this product to make safe drinking water from non-potable water sources. Do not use the system on microbiologically unsafe water, or water of unknown quality without adequate disinfection before or after the system.

This reverse osmosis system contains replaceable components (membrane elements). These components are critical for the effective reduction of total dissolved solids and specific contaminants that are listed in the Product Data Sheet.

The Reverse Osmosis System does not have a monitoring device for contaminants. To verify that the system is performing satisfactorily the product water should be tested periodically by the system's installing dealer or a certified laboratory, every six months. The laboratory should be certified for testing the specific contaminants of concern. For a listing of certified laboratories, contact local regulatory agencies.

Consult your local public works department for plumbing and sanitation codes. Follow your local codes if they differ from this manual.

The reverse osmosis system works on water pressures of 275 kPa minimum to 520 kPa maximum. Water pressure can be reduced by installing a pressure reducing valve in the water supply pipe to the RO system. Where line pressure exceeds 500 kPa, an approved pressure limiting device must be installed to comply with Australian & New Zealand Plumbing Standards. (Ref. AS/NZS 3500.1:2021, Clause 3.3.4). A booster pump should be used for low pressure applications.

Do not install the reverse osmosis system in extreme hot or cold temperatures. Temperature of the water supply to the reverse osmosis system must be between 4°C (40°F) and 38°C (100°F). Do not install on hot water lines. Protect from freezing.

The reverse osmosis membranes contain a food grade preservative for storage and shipment. All new membranes require a minimum 2 hour rinse to properly rinse out the preservative. The preservative is not harmful but makes the product water taste objectionable. Rinsing the membrane also acts a performance conditioner. All new membranes will reach their stable maximum performance after 8 hours of rinsing.

The Basic Reverse Osmosis System

Your Reverse Osmosis System is a water treatment unit. It uses water pressure to reverse a natural physical process called osmosis. Water, under pressure, is forced through a semi-permeable membrane to filter out minerals and impurities. Treated drinking water goes to the faucet. Minerals and impurities are sent to the drain with RO waste water.

The system includes replaceable filters and membrane elements. The prefilter reduces sand, silt, dirt, rust particles, other sediments, and chlorine from the water supply before they enter the RO membrane elements.

Before Installing the RO System

- Best performance of the system will be achieved when the incoming water meets the operating conditions specified in this user guide.
- The water coming into the system must be within certain limit for sediments, pressure, etc. Refer to the specifications to determine if your installation is within the limits.
- A water quality analysis can be performed to determine if incoming water requires any treatment. Contact your dealer/installer.
- The filter and membrane elements in the RO system need to be replaced on a regular basis. Follow the replacement instructions in this manual.

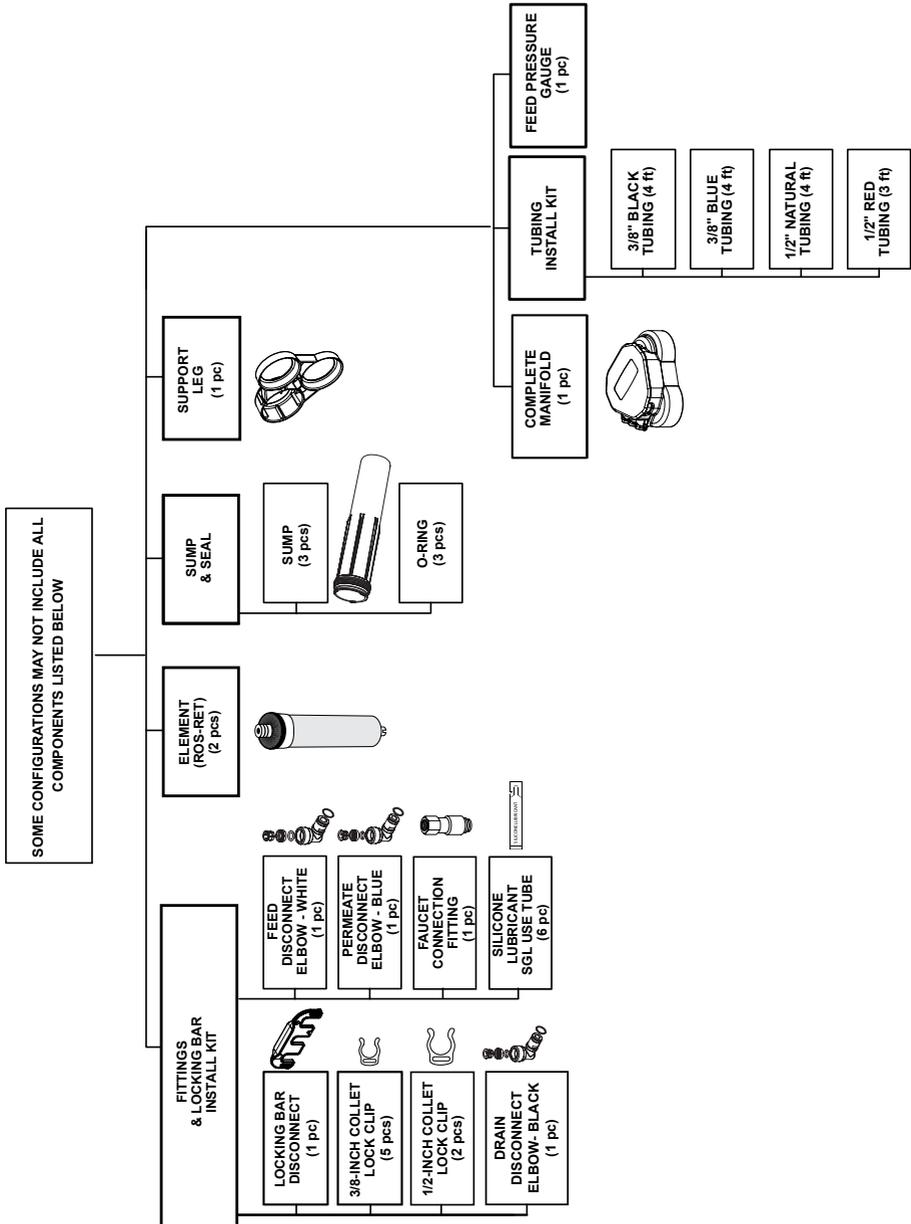
Note: For optimal system performance, use the system for at least 2 minutes continuously each day.

Warning: The RO system is designed to work without the aid of a pressurized storage tank. Installation of a pressurized storage tank will negatively affect system performance.

Installation Note: A water filter system/tap, like any product, has a limited life and may eventually fail. Also sometimes failure happens early due to unforeseen circumstances. To avoid possible property damage, this product should be regularly examined for leakage and/or deterioration and replaced when necessary. A drain pan, plumbed to an appropriate drain or outfitted with a leak detector, should be used in those applications where any leakage could cause property damage, and/or the water supply should be turned off if no one is home/present.

**INSTALLATION SHOULD BE COMPLETED BY QUALIFIED TRADESPEOPLE.
FAULTY OPERATION DUE TO UNQUALIFIED PERSONS WILL RESULT IN VOIDED
WARRANTY COVERAGE.**

Fig. 1



Location of System

The reverse osmosis system is designed for installation under a sink, usually in the kitchen or bathroom. The RO assembly can be placed on the cabinet floor in any position that does not apply pressure on the disconnect elbows.

Note: Keep the lengths of tubing short. Longer lengths of tubing will decrease system performance. A booster pump can be used on the supply line to the unit.

Note: All plumbing should be done in accordance with state and local plumbing codes. Check with the local plumbing authority prior to installation for any local plumbing code requirements.

Warning: All components and tubing should be located in an area which is not exposed to freezing temperatures. Do not expose unit or tubing to direct sunlight.

Water Supply: To provide supply water to the RO system inlet, a feed supply fitting is required or install pipe fittings as needed. The feed water valve should be located as close to the manifold assembly as possible. USE A POTABLE COLD WATER SUPPLY ONLY. Softened water is preferred as it will extend the life of the RO membrane element.

Drain Point: A suitable drain point is needed for reject water from the RO system. A floor drain, laundry tub, standpipe, sump, etc. are all acceptable. If discharging into the utility sink or standpipe, an air gap of greater than 1/2 inch above the flood rim must be provided. A sink p-trap drain adapter is included to install as an optional drain point where codes permit.

Do not connect the system drain line to the dishwasher drain or near the garbage disposal. Back pressure from these units may cause the air gap to overflow.

RO Manifold Assembly: The manifold can be installed on either the right or left side of the under-sink area or cabinet. Installation in the basement is also an option. One possible location is near the laundry/utility sink where cold potable water and drain access are close. The location chosen should allow adequate clearance and accessibility for membrane element changes.

In restricted under-sink areas, it may be easier to install the faucet first. Allow adequate tubing lengths for final system placement.

Fig. 2 - Basement Installation Example

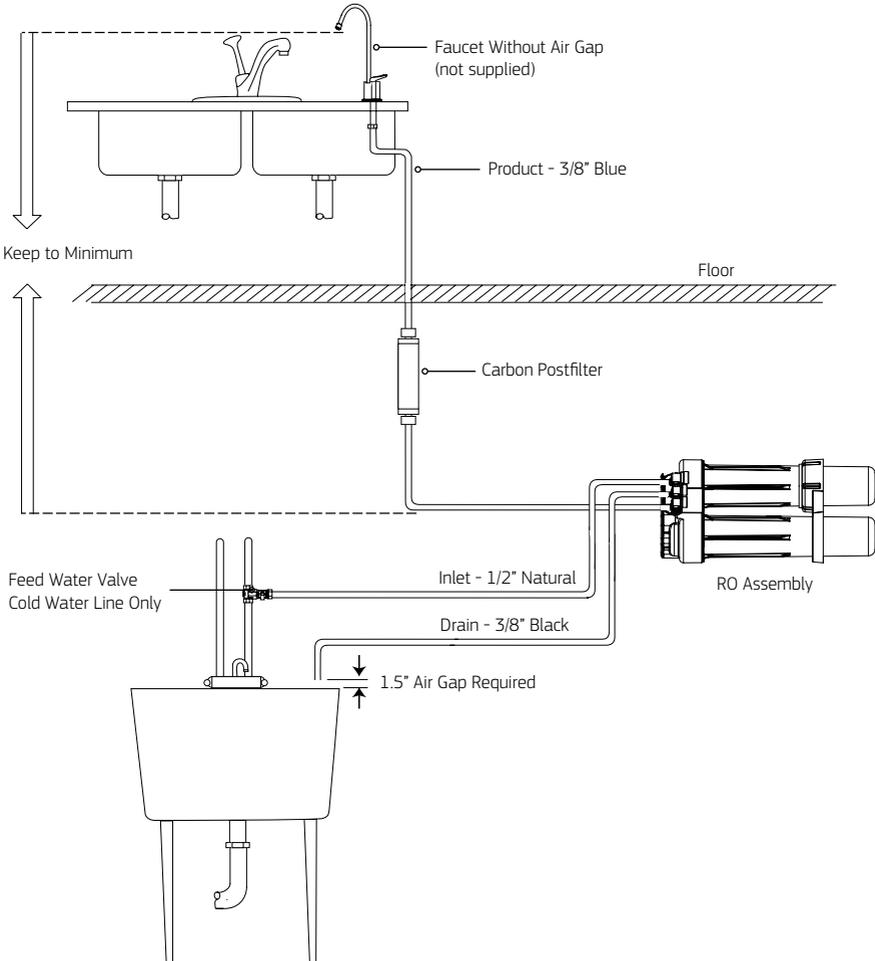
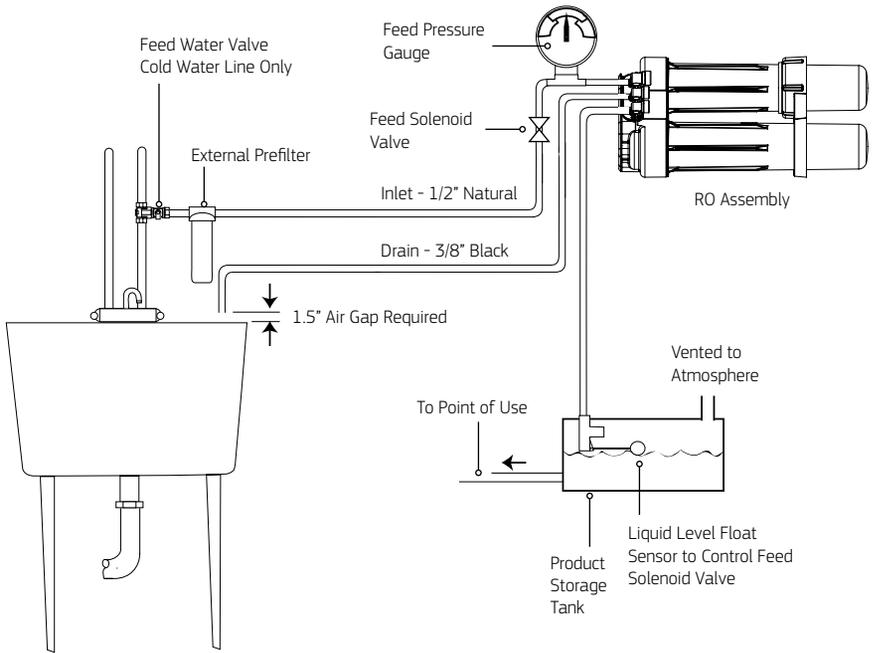


Fig. 3 - Light Commercial Installation Example



Installation

Step 1: Install cold water supply valve

Step 2: Install drain adapter

Step 3: Install faucet (if required & not already installed) (not supplied)

Step 4: Make tubing connections

Step 5: Install RO assembly

Step 6: Put system into operation

Note: All installation and service work should be completed by qualified tradespeople. Faulty operation due to unqualified persons will result in voided warranty coverage.

Step 1: Install Cold Water Supply Valve

Comply with local plumbing codes. A typical connection using a water supply valve is shown in Figure 4.

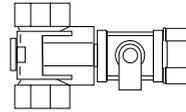


Fig. 4

Water Supply Valve

Note: Be sure to turn off the water supply and open a low faucet to drain the pipe

Cold water pipes vary in size and style. The installer will determine type of valve that will be used. Install a valve on the cold water supply pipe to adapt 1/2 inch OD tubing. If threaded fittings are used, be sure to use pipe joint compound or Teflon tape on outside threads.

Turn the valve off.

Step 2: Install Drain Adapter

Follow the instructions in the Appendix for installation of the Drain Boa™, if used.

The drain adapter is designed to fit 1-1/2 inch (3.8 cm) sink drain pipe.

The adapter installs directly to the sink tailpiece.

Step 3: Install Faucet (if required & not already installed) (Not included).

Install a dedicated filter faucet as per the instructions included with your model tap. A regular filter faucet without an air gap is required.

Step 4: Make Tubing Connections

The tubing connections are:

- Feed connection—clear tubing from feed valve to white elbow connector

- Drain connection—either red tubing from the air gap or black tubing from grey elbow connector will attach to the drain adapter
- Permeate connection—blue tubing from faucet to blue elbow connection
- Attach the fittings to the manifold

A typical connection is shown in Figure 5 Side View and Cutaway of Tubing Fitting.

Note: For optimal system performance, we recommend using tubing lengths that are as short as possible.

Post filter

Install the post filter in line with the blue permeate tubing. Make sure flow direction aligns with water path. Secure tubing with collet lock clips.

Drain Adapter (Optional)

The drain adapter has a rubber inlet that accepts the 3/8 inch black drain tube or the 1/2 inch red tube. The 3/8 inch black tubing will connect here if the faucet is not using the air gap module.

When the tubing is in position, use the supplied hose clamps to secure the connection.

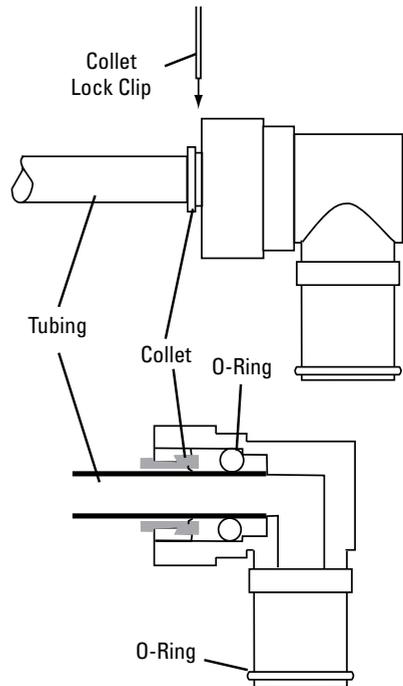
Note: When sliding tubing into the drain adapter inlet, wet the tubing. Water will help the tubing slide into the rubber inlet.

Feed Pressure Gauge

The supplied pressure gauge can be connected to the feed line to monitor system feed pressure. For proper system performance, the dynamic feed pressure must be between 275 kPa and 520 kPa when the system is in operation.

Caution: The feed pressure gauge is intended for use only during installation and troubleshooting of the RO system. The pressure gauge should be removed during normal system operation because some regulatory agencies did not evaluate the RO system with the feed pressure gauge in place.

Fig. 5



Note: Make sure the tubing is pushed past the O-rings for a secure fit. Also, when replacing any tubing, cut tubing back 1/4 inch prior to re-inserting to prevent leaks.

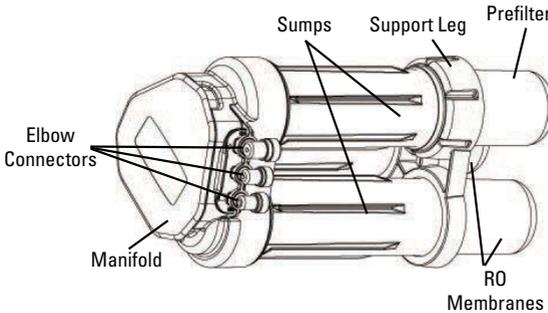
Side View and Cutaway
of Tubing Fitting

Step 5: Install RO Assembly

The RO Assembly includes the following components: sumps (3), support leg, prefilter, RO membrane elements (2), and post filter. The tubing is attached to the manifold by the elbow connectors. When choosing a location for the system, allow enough tubing for it to be moved for periodic servicing of the filters and membrane elements (see Fig. 6).

Warning: Do not attempt to mount/hang the system. Do not try to drill mounting holes anywhere on the system. If putting above ground/cabinet level, a sturdy, permanent shelf is recommended.

Fig. 6



Recommended Placement Positions

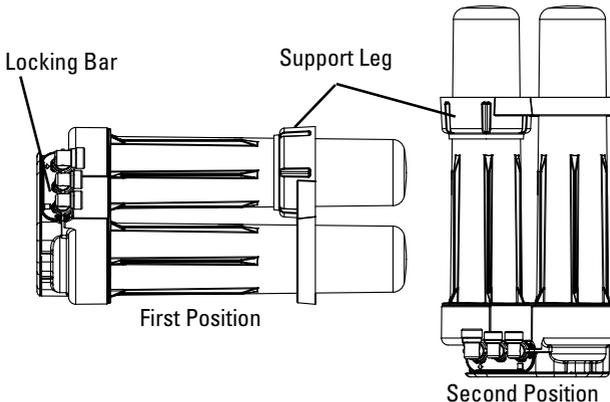
The RO assembly should be positioned in one of two ways.

The first position is with the unit standing upright using the support leg with the sumps horizontal. The tubing is directed to provide the best fit.

The second position, sets the unit on end so the sumps are pointing up. The tubing is directed upward and the locking bar is down to lock the tubing connections (see Fig. 7).

Note: Ensure that the support leg is installed on the sumps.

Fig. 7



Connection Lubrication

Connections with O-rings must be properly lubricated. The following instructions describe the method and locations for lubrication.

Six packets of silicone lube are supplied. One packet should be completely used to lubricate the O-ring contact surfaces in the 3 manifold ports and 2 RO membrane locations (Fig. 8). Follow Figure 9 and lubricate the filter seat and the flat surface below the threads for the 3 sump locations. Use a complete packet of silicone for each sump location.

Note: To properly lubricate the O-ring contact area, a film of clean silicone grease is applied. The film should cover all of the surface area that the O-ring will slide over and seal with. Do not use grease containing petroleum products.

Fig. 8

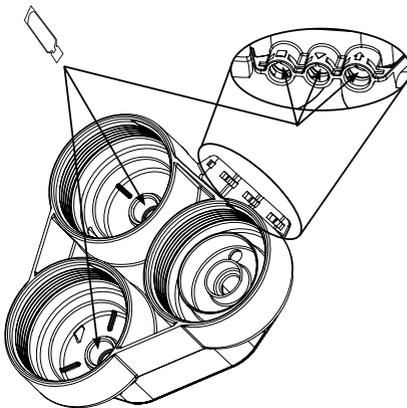
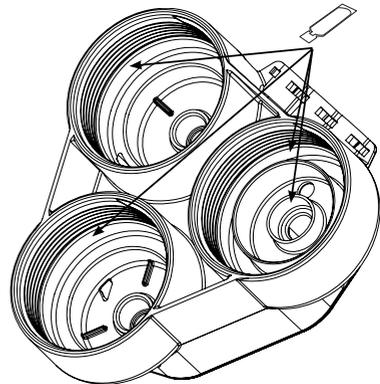


Fig. 9



The table below shows the coding system for the fitting connections. Each fitting has a unique “keyed” socket on the manifold. Each fitting also has a graphic symbol moulded into the elbow with a corresponding symbol on the manifold.

Connector Symbol	Connection	Tube Colour
←	Feed-Inlet	Natural
—	Concentrate	Black
□	Product	Blue

Warning: Be sure to lubricate the manifold ports with silicone lubricant, prior to inserting the fittings into manifold.

Warning: Do not turn the incoming water valve on until the locking bar is in place.

When all of the connections have been made, use the locking bar to hold the fittings in position. Match the symbols on the locking bar to the corresponding symbols on the manifold (Fig. 10).

Step 6: System Startup

1. Inspect all connections.
2. Position manifold horizontal with openings facing up.
3. Remove new membrane elements from plastic packaging.

The black and yellow tapes surrounding the membrane are an important part of the membrane element and should not be removed.

Caution: Elements contain a food grade preservative. The use of sterile/latex gloves is recommended.

4. Lubricate all O-ring seats in the manifold that come in contact with the sump and element O-rings. Refer to “Connection Lubrication” on page 8.

Note: To properly lubricate the O-ring contact area, a film of clean silicone grease is applied. The film should cover all of the surface area that the O-ring will slide over and seal with. Do not use grease containing petroleum products.

5. Securely insert O-ring end of membrane elements into manifold.
6. Remove prefilter from packaging. Check that gaskets are in place.
7. Place prefilter in manifold.
8. Replace sumps and tighten until it bottoms out.

Pressure Test System

To check for leaks, the system must be filled with water and brought up to operating pressure.

1. Open cold water feed valve slowly. Run at 1/2 open for a minute, then open fully.
2. Open faucet until water runs.
3. Check for leaks.

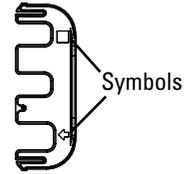
Note: When the faucet/outlet is initially turned on, water may temporarily sputter from the air gap until the air is purged. Allow 1 to 3 hours for any trapped air noise in the system to subside.

4. Purge the system. Open the faucet/outlet and run the water through the RO system for two to eight hours.

Note: A minimum of 2 hour flush is required to remove the food grade preservative. After 8 hours performance will reach its stable maximum performance.

The RO system is now ready for use.

Fig. 10



To Care for the RO System

The components of the RO system are designed to function with minimal maintenance. However, the membrane elements and filters will need to be replaced on a regular schedule.

For optimal performance the system should be flushed for 2 minutes if periods of inactivity extend past six hours.

Replacement of Prefilter and Post Filter

The carbon/sediment prefilter reduces sediment and certain chemicals, such as chlorine, from the water. Depending on water use and the amount of impurities, this filter should be replaced every six to twelve months for point-of-use applications.

Whenever the prefilter is replaced, the post filter should also be replaced.

Installations using more than 20 gallons product water per day should install external filters (not supplied) to reduce chlorine and sediment larger than 10 microns.

Replacement of RO Membrane Elements

The functional life of the RO membrane elements will vary based on feed water quality. Product water should be tested periodically to verify the membrane elements are performing properly. For most point-of-use applications, the RO membrane elements should be replaced every two to four years.

Note: Softened water is recommended for optimal system performance and RO membrane element life.

Replacement of the Prefilter, Post filter, and RO Membrane Elements

1. Turn off the water supply to the RO System.
2. Reduce system water pressure by opening the faucet.

Caution: Even with the water supply turned off the membrane and prefilter sumps will contain a considerable amount of water. By positioning the RO assembly in a sink or tub, most of the water will be contained.

3. Disconnect locking bar and place the fittings (with tubing still connected) into a tub or bucket.
4. Move system into a contained area, such as a sink or tub.
5. Remove the support leg from the three sumps and unscrew the top sump as shown to access the prefilter element. The support leg functions as a wrench to loosen the sump (Fig. 11).

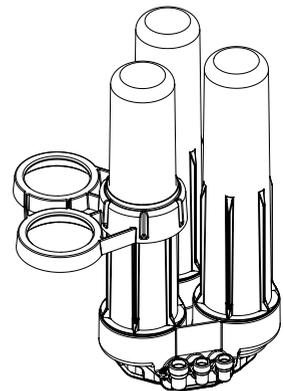


Fig. 11

Note: There is no need to disconnect tubing from fittings on the manifold. Remove locking bar and pull fittings out. Lubricate O-rings with silicone prior to re-assembly.

Note: If changing only the prefilter and post filter, the other sumps do not need to be removed.

If changing the membrane elements, the prefilter and post filter should also be changed.

6. Remove exhausted prefilter and discard.

Caution: The person handling the filters and membrane elements must have clean hands to keep the system sanitized. The use of sterile/latex gloves is recommended.

7. If changing membrane elements:
 - a. Remove membrane sumps. Remove and discard used elements.
 - b. Remove new elements from packaging.

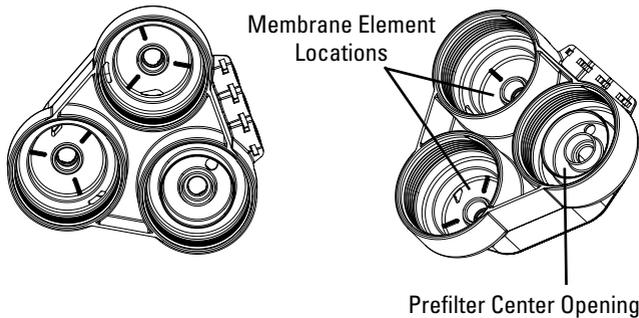
Caution: Elements contain a food grade preservative. The use of sterile/latex gloves is highly recommended.

- c. Lubricate element O-rings, brine seals, and sump O-rings with silicone lubricant. Refer to “Connection Lubrication” on page 8 for correct lubrication procedure of elements cartridge.
- d. Securely insert O-ring end of elements into manifold (see Fig. 12).
- e. Replace sumps and tighten until it bottoms out.

Note: The system should be sanitized whenever a membrane element or filter is replaced.

8. Sanitize the system.
 - a. The manifold should be positioned flat with the sump connections facing up.
 - b. Pour a tablespoon (15 millilitres) of chlorine bleach into the centre opening of the prefilter sump connection (see Fig. 12).

Fig. 12



9. Install prefilter.
 - a. Remove new prefilter from packaging. Ensure gaskets are secure. Insert prefilter into proper opening on manifold.
 - b. Lubricate sump O-ring with silicone lubricant.
 - c. With the prefilter element in place, screw the sump into the connection. Tighten until it bottoms out.
10. Replace the post filter.
 - a. To unlock the fittings from the tubing, push down on the collet sleeves and pull the tubing out.
 - b. Discard the exhausted post filter.
 - c. To prevent leaks, cut the tubing back approximately 1/4 inch prior to connecting the new post filter. Make sure flow direction arrow aligns with water path. Reinsert tubing and collect locks.
11. Re-connect the fittings to the manifold and lock in position with locking bar.
12. Re-position the assembly and turn the water supply on. Check the system for any leaks.

Caution: When the faucet/outlet is opened, water may sputter from the air gap until the trapped air is purged.

13. Open the faucet/outlet and run water for two minutes.

Note: Carbon fines may be present until the post filter element is flushed out.

14. Shut off the faucet/outlet and allow the system to stand idle for 20 to 30 minutes.
15. Open the faucet/outlet and run water for five minutes.
16. Check for any system leaks.

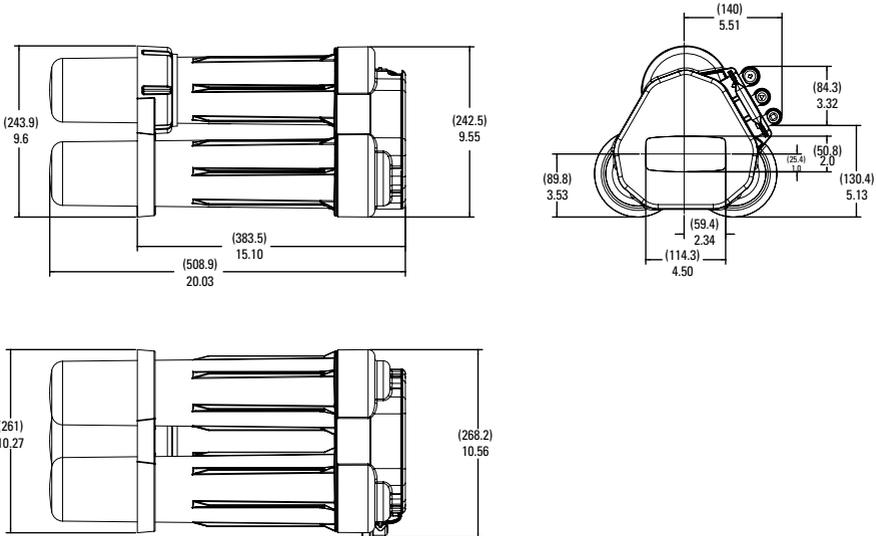
Note: If the two RO membrane elements were replaced the system must be flushed according to Step 6 the system startup procedure as stated above.

The RO system is now ready for use.

Minimum and Maximum Operating Conditions

Condition	Minimum	Maximum
Inlet Pressure	275 kPa (40 psi / 2.76 bar)	520 kPa (80 psi / 5.51 bar)
Inlet Temperature	4°C (40°F)	38°C (100°F)
Inlet TDS	50 mg/L	2,000 mg/L
Inlet Hardness	0 mg/L (0 grain)	171 mg/L (10 grain)
Inlet Chlorine	0 mg/L	1.0 mg/L
Inlet Silt Density Index	0	5 NTU
Inlet Manganese	0 mg/L	0.05 mg/L
Inlet pH	4	10
Inlet Turbidity	0	1 NTU

Dimensions



Troubleshooting

Issue	Possible Cause	Corrective Action
Low product flow rate	Low driving pressure.	Increase feed pressure. Consider pump for low pressure locations. Use short tubing runs to decrease flow restriction. Increase tubing diameter for longer distances.
	Low water temperature or high total dissolved solids (TDS).	Increase feed water temperature or feed pressure to compensate.
	Plugged prefilter.	Replace plugged prefilter. Consider sediment prefilter for non-chlorinated applications.
	Scaled or fouled RO membrane.	Replace membranes.
	Faucets not adjusted properly.	Adjust faucet t-bar setting as tight as possible without causing leaks from the faucet.
	Plugged post filter.	If flow into the post filter is acceptable, replace post filter.
	Leak or kink in product line.	Find and repair leak or kink.
Concentrate water runs to drain after faucet shut off	Plugged prefilter	Plugged prefilter Replace plugged prefilter. Consider sediment prefilter for non-chlorinated applications.
	Leak in product line.	Find and repair leak. Install pressure gauge in product line to help identify a product pressure leak.
Poor product water quality	Water sample taken during system flush.	Take sample after three minutes of continuous operation.
	Low driving pressure.	Increase feed pressure. Consider pump for low pressure locations. Use short tubing runs to decrease flow restriction. Increase tubing diameter for longer distances.
	Plugged prefilter.	Replace plugged prefilter. Consider sediment prefilter for non-chlorinated applications.
	Scaled, fouled, or damaged RO membrane.	Replace RO membranes.

Warranty

Warranty: Any claim under this warranty must be made within 3 years of the date of purchase of the product. This product is warranted to be free of defect of material and workmanship for 3 years from date of purchase. 3 year warranty is 1 year parts and labour plus 2 years parts only. Excludes consumables.

Puretec is renowned for its quality and after-sales support so if you have any issues please call 1300 140 140 (AU) or 0800 130 140 (NZ). To make a warranty claim, contact us directly or the place of original purchase. All costs relating to a warranty claim must be approved by Puretec prior to any work being carried out.

Puretec will pay your reasonable, direct expenses of claiming under this warranty. You may submit details and proof of your expense claim to place of purchase for consideration.

Warranty/Australia

This warranty is given by Puretec Pty Ltd, ABN 44 164 806 688, 37-43 Brodie Road, Lonsdale SA 5160, telephone no. 1300 140 140 and email at sales@puretec.com.au.

This warranty is provided in addition to other rights and remedies you have under law: Our goods come with guarantees which cannot be excluded under the Australian Consumer Law. You are entitled to replacement or refund for a major failure and to compensation for other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Warranty/New Zealand

This warranty is given by Puretec NZ LP, Reg. No 50081773, PO Box 13116, Hillcrest, Hamilton 3251 NZ, telephone no. 0800 130 140 and email at sales@puretec.co.nz.

This warranty is provided in addition to other rights and remedies you have under law: Our goods come with guarantees which cannot be excluded under the Australian Consumer Law. You are entitled to replacement or refund for a major failure and to compensation for other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

The warranty only applies if the product was used and/or installed in accordance with the user guide and/or installation instructions. This warranty is given in lieu of all other express or implied warranties and manufacturer shall in no circumstance be held liable for damages consequential or otherwise or delays caused or faulty manufacturing except as excluded by law.

Applicable to all above, is that the Warranties need to be approved by Puretec to ensure product was not incorrectly used, installed or claimed. False and incorrect claims will be pursued at Puretec's discretion, including chargeable inspection and labour costs incurred.



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