Prio® Expert

MO580
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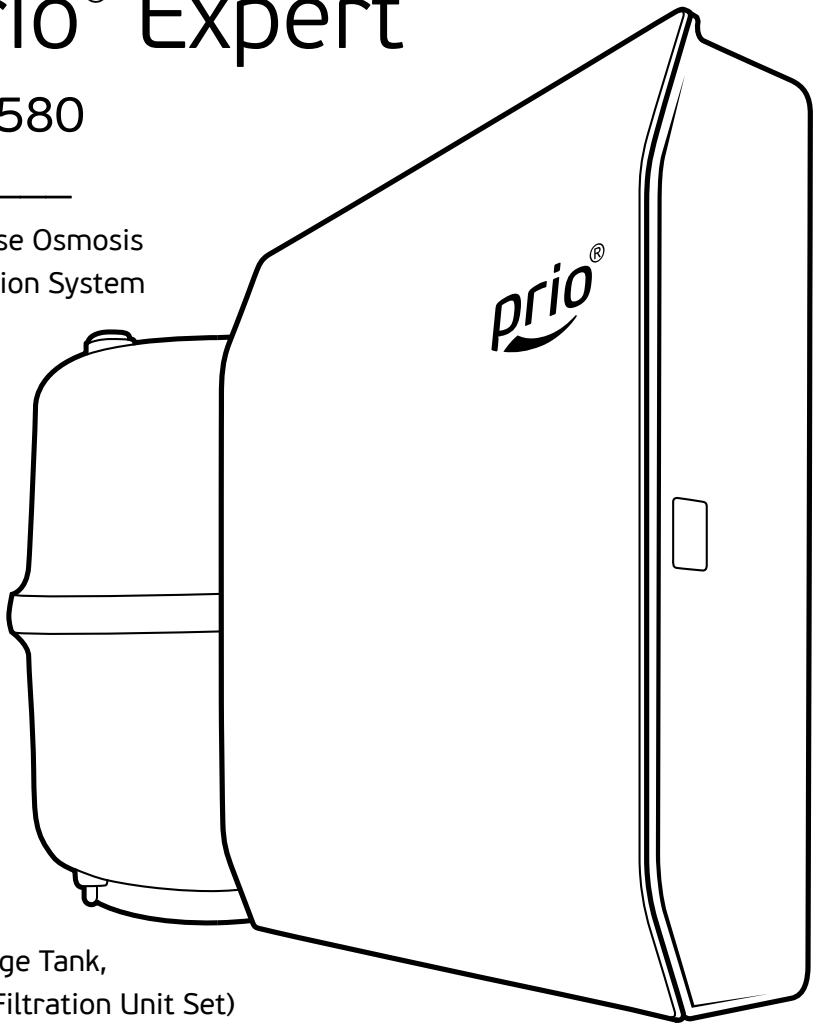
Reverse Osmosis
Filtration System



(Storage Tank,
Main Filtration Unit Set)

User's Guide

Before operating this appliance, please read the instructions carefully. You may want to save this guide for your future reference. Failure to follow the instructions or meet the operating requirements may lead to the product's failure, malfunction, property damage or personal injury.

Safety Warning

- Plug the filtration unit into an electrical outlet only after you finish the installation.
- Check if the voltage indicated on the filtration unit or power adapter corresponds to the local mains voltage before you connect the appliance.
- Do not use the filtration unit if it is damaged in any way. Take it to an authorized service center for repair.
- Do not open the power adapter, low-pressure switch, high-pressure switch and pump. There are no serviceable parts inside.
- When unplugging the filtration unit from the mains, do not pull on the power cord. Avoid touching the plug with wet hands.
- Do not place filtration unit near the sources of heat, radiators, etc. Do not place it in a tightly closed space where it may overheat.
- Keep the appliance out of reach of pets or other animals.
- In case of leakage malfunction or water presence around the appliance shut off the electrical power to the circuit first, then pull the plug out of the electrical outlet.
- Remove the plug from the electrical outlet and close the inlet valve during your vacations or other extended periods of time when the appliance is not in use.
- Unplug the pump unit from the electrical outlet while servicing the filtration unit, and changing the membrane or filters.
- Do not use the appliance if operating requirements such as water temperature/water pressure/electrical supply, etc. are not met. There may be other local regulations to comply with.
- Do not use the appliance with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
- The filtration unit was not designed to be used with power cord extenders, power filters, outlet splitters, etc.
- Do not use the waste water produced by the appliance for drinking or cooking.
- Never store or operate the appliance in direct sunlight.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.
- At the end of its life, the appliance should be disposed off in an appropriate manner.

Disposal

Old appliances still contain many recyclable materials. Therefore, please take used unit to your retailer or recycling center so that it can be recycled.

Description

Congratulations on your purchase of the Prio® Expert R.O. filtration system! With proper installation and maintenance, it will provide you with high quality drinking water for many years.

This R.O. system removes odor and most harmful substances such as heavy metal ions and total dissolved solids from tap water making it tasty, fresh and vital.

Please familiarize yourself with the general concept behind the product and main modes of operation.

Key Features:

- Clean and safe drinking water right in your home. No need to transport and dispose of bottled water any more.
- Factory-preinstalled filters and membrane for faster and easier setup.
- Filters and membrane quick-change housings for easy regular maintenance.
- Compact and beautiful design.
- Quick fittings for easy tube connections and change of filters.
- The booster pump increases pressure to radically improve the performance and effectiveness of the R.O. unit in all three key areas: increases filtered water flow (production rate), increases rejection rate (improves water purification quality), increases recovery rate (decreases amount of waste water).
- Prolongs the membrane and pre-filter(s) service life due to increased recovery rate.

How It Works:

This Prio® Expert reverse osmosis system is a multi-stage automatic filtration machine.

Reverse Osmosis (R.O.) is a water purification technology that uses a semipermeable membrane to remove ions, molecules and larger particles from drinking water. R.O. can remove many types of dissolved and suspended species from water, including bacteria, and is used in both industrial processes and the production of potable water.

Water supply is done through the inlet valve, filtered water is first stored in the water tank and then delivered through the faucet, and waste water is drained through the drain saddle. Detailed connection scheme is shown on the following charts.

Pump:

The filtration unit is equipped with a built-in low voltage booster pump powered by the included transformer for safe operation.

Pressure Switches:

The filtration unit is equipped with low and high pressure switches. The low pressure switch shuts off the pump when there is no inlet water or its pressure is too low. The high pressure switch shuts off the pump when the filtered water faucet is turned off and water storage tank is full.

Inlet Valve:

An adapter ball valve is included to be installed into the cold water supply line to feed water to the filtration unit inlet.

Faucet:

Designer faucet for filtered water is included and usually mounted on the sink deck or countertop for dispensing the clean, filtered water from the filtered water storage tank.

Water Storage Tank:

Air pressurized storage tank is used for filtered water storage.

Drain Saddle:

Fits a standard 1.5" diameter drain pipe to drain the waste water from the drain outlet of the filtration unit.

Pre-Filters:

The filtration unit has coconut carbon block pre-filter. It provides initial filtration of the water and protect the following thin film composite R.O. membrane from dirt and aggressive chemicals such as chlorine often found in tap water.

R.O. Membrane:

Main stage of the filtration is R.O. membrane. It is "semi-permeable", which means that it allows water to pass through but prevents dissolved particles from passing through. It splits the feed water into two streams: clean water goes to the post-filter and then onto the tank and faucet. Waste water with rejected particles goes down the drain.

Post-Filter:

Last stage of filtration is an activated carbon post-filter and/or remineralization for fine conditioning and keeping the extra freshness of your water.

Specification

Operating Requirements:

- Minimum supply water pressure: 7.25 psi (0.05 MPa)
- Maximum supply water pressure: 80 psi (0.55 MPa)
- Minimum water temperature: 41 °F (5 °C)
- Optimal water temperature: 59–77 °F (15–25 °C)
- Maximum water temperature: 95 °F (35 °C) / up to 105 °F (40.5 °C) short-term
- Ambient air temperature: 41–105 °F (5–40.5 °C)
- Water source: tap water supply, chlorinated or non-chlorinated, bacteriologically safe
- Supply water pH range: 4.0-11.0
- Supply water turbidity: < 1 NTU
- Supply water components: Hardness ($CaCO_3$) <180 mg/L (<10.5 gpg), Iron <0.1 mg/L, Manganese <0.05 mg/L, Hydrogen Sulfide 0.00 mg/L
- Maximum supply water TDS: 1000 ppm
- Indoor use only.
- Tubing: ¼"
- Electrical input: AC 100-240V 50/60 Hz

Performance:

Performance of the appliance such as filtered water delivery rate, rejection rate, etc. is highly dependent on local conditions (inlet water pressure, temperature, TDS and degree of contamination, tank air pressure, etc.) and R.O. system use pattern. Actual performance may vary.

- Filtered water production rating: 75 gpd (270 lpd) maximum
- Filtered water delivery rate (from the tank), typical: 0.27–0.74 gpm (1–2.8 l/min)
- Membrane rejection rate[1], typical: ≥90%
- Recovery rate (system efficiency[2]), typical: ≥15%
- Drain water flow restrictor: 300 cc (ml/min) nominal, up to 360 cc in working mode.
- Tank Storage Capacity (Total Volume): up to 2.5G (4.0G)[3]
- Tank full refill time[4], typical: 35-45 min

Weight and Size:

R.O. Filtration Unit:
Size (WDH), body only, excluding protrusions: 13.46 x 3.35 x 14.80" (342 x 85 x 376 mm)
Weight, without water and tubing: 8.8 lbs (4.0 kg)
Storage tank:

Tank model No.	X842G	X852G
Storage Capacity (Total Volume)	up to 2.0G (3.2G)	up to 2.5G (4.0G)
Size (WxDxH), body only, excluding protrusions	9.8 x 9.8 x 13.6" (250 x 250 x 347 mm)	10.55 x 10.55 x 14.90" (268 x 268 x 378 mm)
Weight, without water and tubing	4.7 lbs (2.1 kg)	6.0 lbs (2.7 kg)

Warranty:

1 year worldwide limited warranty (+ local regulations if applicable)

Package Contents:

(1) The R.O. filtration unit with built-in pump and installed filters
(1) Storage tank
(1) Universal worldwide adapter ball valve (G1/2" - G3/8" - UNEF 9/16"-24 - JG 1/4")
(1) Teflon tape roll
(1) Faucet
(1) Drain saddle
(1) Wrench
(1) ¼" tank valve
(26 ft / 8 m) Water tubing ¼"
(1) ¼" x ¼" union check valve
(2) ¼" x ¼" x ¼" union tee fitting
User's guide

[1] For all dissolved solids combined as measured by TDS or conductivity meter.

[2] Efficiency rating means the percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate typical daily usage.

[3] Depending on current SKU scope of supply.

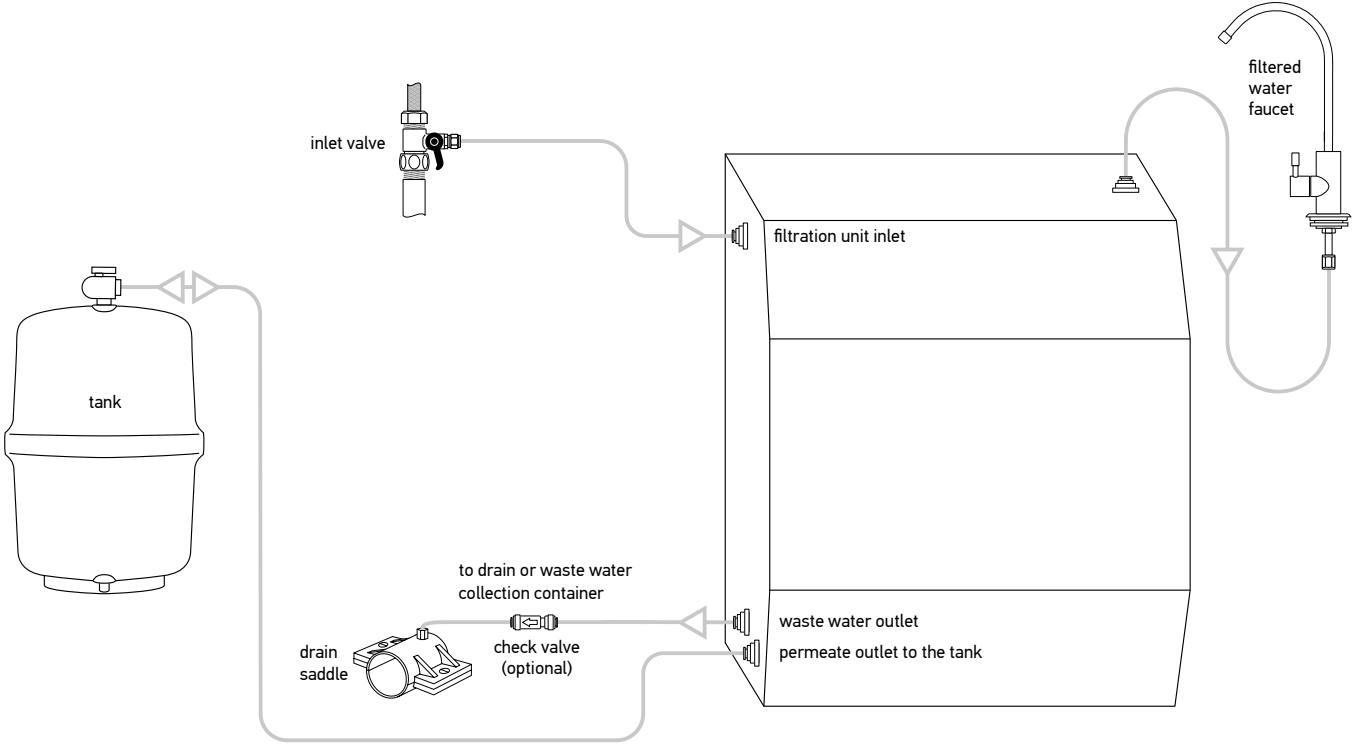
[4] Depending on supply water pressure.

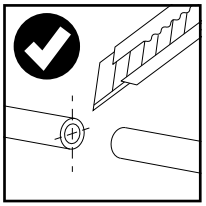
Installation

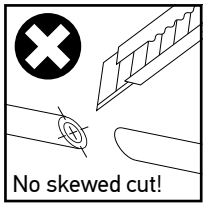
Notes:

1. Shut off the cold water supply under the sink or the location where the system will be installed. If the existing valve is inoperable, the water supply to the house must be shut off. Then, relieve the water pressure by opening the cold water tap. Do not connect the system to hot water source.
2. Depending on your plumbing system and sink/countertop type you may need to use tools like variable speed drill, drill bits, screw driver, wrench, etc. You may want to ask a professional service provider such as certified plumber to install the inlet valve adapter, faucet, and drain saddle to assure a trouble-free setup.
3. During installation you will need to cut the supplied ¼" tubing into segments as needed. Use your utility knife for that or similar tool. See the following charts to determine the connection scheme and length of hoses necessary. You may need to purchase extra tubing for far-reaching or other corner case installations.
4. Do not connect the filtration unit to the electrical supply until the setup is completed.
5. With initial operation, check for leaks. If a leak is observed, verify that the tubing is pushed into the quick fitting far enough to seal the tubing against the O-ring and that the tubing was cut at 90°.

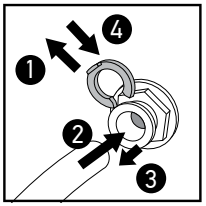
General Connection Chart





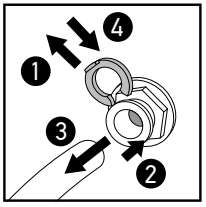


IMPORTANT: Cut tubing at 90° to ensure a watertight seal:



To connect the tubing to a fitting:

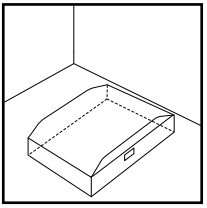
1. Remove the lock if present (not present in self-locking fittings).
2. Push. Insert the tube firmly until full stop.
3. Pull the collet back slightly.
4. Replace the lock (if present).

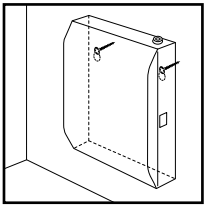


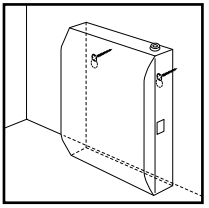
To disconnect the tubing:

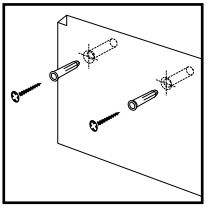
1. Remove the lock if present (not present in self-locking fittings).
2. Push the collet **and hold**.
3. Pull the tubing out.
4. Replace the lock (if present).

Units Placement Guide:







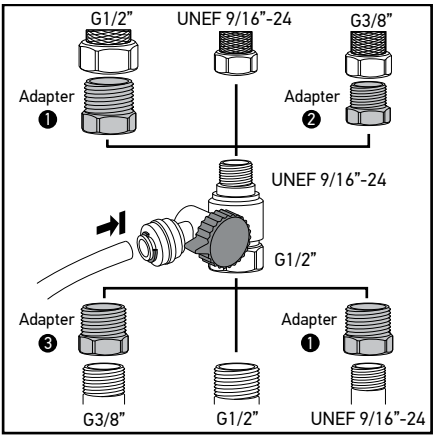


Remember this unit must be serviced at regular intervals. Therefore it should be reasonably accessible (for changing filters or membrane, etc.).

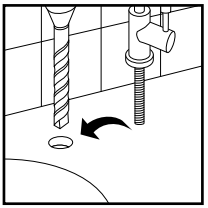
Installation Steps:

1. Install adapter ball valve (included) to the cold water supply.

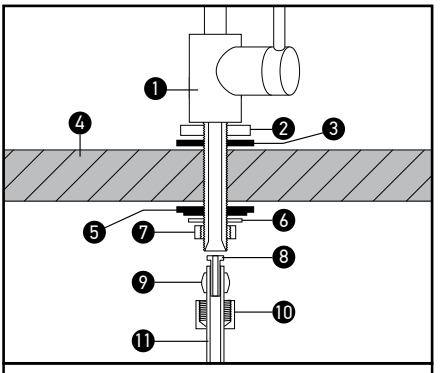
Use some Teflon or plumbers sealing tape to prevent leaks. Use three included threaded adapters to make different connection configurations (see chart for details).



2. Create ½" hole for the filtered water faucet and install it.

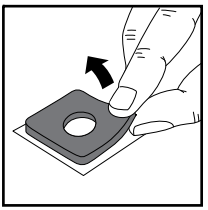


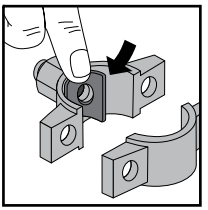
Tip: If you have a soap dispenser or a water sprayer in an existing hole you may remove it and use its hole for the filtered water faucet.



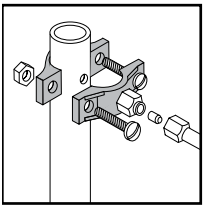
1. Faucet
2. Chrome washer
3. Black rubber washer
4. Countertop or sink deck
5. Black washer
6. Lock washer
7. Lock nut
8. Insert
9. Sleeve
10. Compression nut
11. Tubing

3. Install drain saddle.

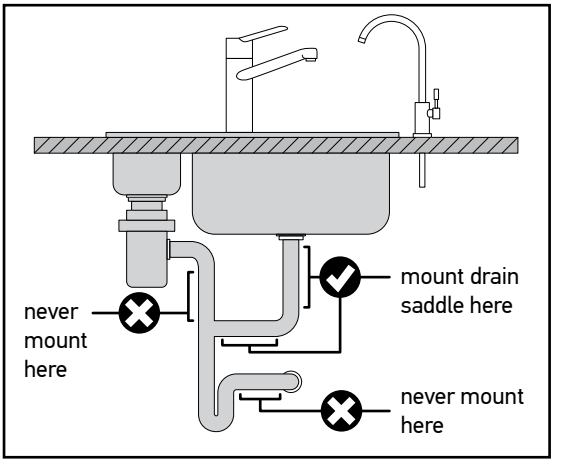




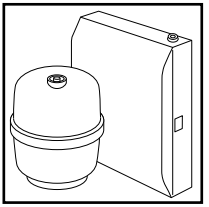
The square foam gasket with a circle cut out must be applied to the inside of the drain saddle. Remove sticky tape backing and stick to the drain saddle as shown.

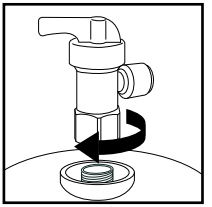


Drill a ¼" hole in the drain pipe **above the trap** and on the vertical or horizontal tail piece. Lo cate the drain connection away from the garbage disposal to prevent potential contamination and system fouling.



4. Install water storage tank and mount tank valve.

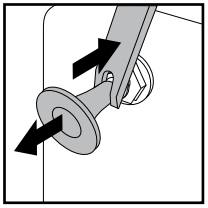




Tank is a clean water storage container. Never place the tank in direct sunlight or near the sources of heat. It's recommended to have the tank been installed near the R.O. filtration unit and the faucet.

Mount tank valve on the inlet-outlet port of the tank. Use some Teflon or plumbers sealing tape to prevent leak.

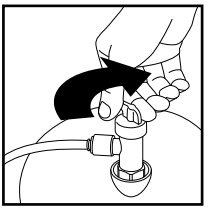
5. Remove gags and connect tubes as follows. See the connection chart for details.



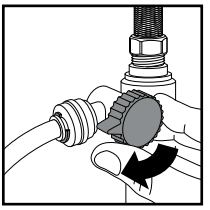
- Insert water supply tubing from inlet valve adapter into the "inlet" fitting of the R.O. filtration unit.
- Connect with the tubing the "tank" outlet fitting of the R.O. filtration unit with the tank valve fitting.
- Insert the waste tubing from the "waste water" outlet fitting of the R.O. filtration unit into the drain saddle (through the optional union check valve on the way) or to a waste water collection container. Install the check valve with the arrow in the direction of flow.
- Insert filtered water tubing from the "faucet" outlet fitting of the R.O. filtration unit into the faucet using insert, sleeve and compression nut. See faucet installation chart for details.

Initial Washing:

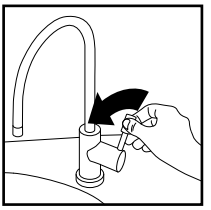
After installation it is recommended to perform the initial washing of the system. For this:



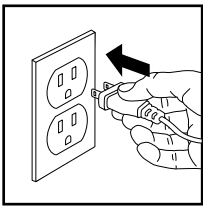
- shut off the tank valve



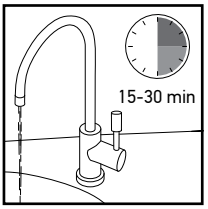
- open cold water supply valve
- open the inlet valve



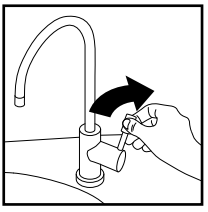
- open the filtered water faucet

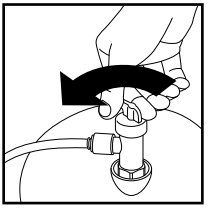


- plug the filtration unit's power cord into the electrical outlet

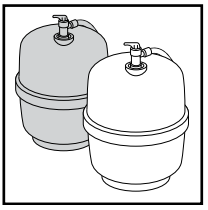


- wait for water to arrive at the faucet (it may take a while, especially first time, water foam and air may be going out of the system); wait for 15-30 minutes for more or less steady weak flow from the faucet.





- shut off the faucet, and open the tank valve.
- wait for tank full refill then drain the tank by opening the faucet.



- repeat tank refill and drain once again by shutting off and opening the faucet, then shut off the faucet and wait for tank refill with clean water.
- your system is ready for use.

Regular Use

To get clean water just open the filtered water faucet. The filtered water stored in the tank will be delivered. R.O. water filtration system will refill the tank gradually even after you shut off the faucet. The system will shut off automatically when the tank will become full again.

Please note that R.O. membrane needs up to 50 hours of active operation before reaching peak performance in terms of water flow, recovery and rejection rates. The delivery rate and available amount of filtered water depend on how full the tank is. You may need to shut off the faucet and wait for the tank refill to get more water.

For your safety and peace of mind please unplug the filtration unit from the electrical outlet and close the inlet valve before servicing your R.O. system such as changing filters or membrane, or during vacations.

Tips:

- You may install the optional union tee fitting to the tubing line prior to the filtered water faucet to get another line of clean water going to the other point-of-use (such as a sink in a bathroom or ice maker in your fridge).
- Operating the system using softened feed water greatly reduces the chances of membrane failure and prolongs filters and membrane service life.

Changing Filters and Membrane

This R.O. system contains the replaceable components critical to the efficiency of the system. Replacement of a component should be with one of identical specifications, as defined by the manufacturer, to assure the same efficiency and contaminant reduction performance.

To reduce the risk of water leakage or flooding, and to ensure optimal R.O. system performance:

- Change the disposable pre-filter every 6 months or sooner if you observe a noticeable reduction in water production rate.
- Change the disposable post-filter every 12 months or sooner if you observe a noticeable reduction in water flow or production rate.
- Change the disposable R.O. membrane every 24 months or sooner if you observe a noticeable reduction in water production rate.

Failure to replace the disposable filters & membrane at recommended intervals may lead to reduced system performance and cracks in the filter housings, causing water leakage or flooding.

Please note the capacity of the filters and membrane is limited. Their service l fe depends on the degree of contamination of the water supply and system usage. All terms apply to normal household use. Actual performance may vary. You may need to change filters or the membrane sooner than indicated if you notice chlorine or other tastes or smells, etc. Manufacturer recommends a TDS test every six months.

Replacement Filters:

- K870 (activated carbon pre-filter)
- K866 (R.O. membrane)
- K880 (activated carbon post-filter and conditioner)

Optional post-filters which can also be used instead of K880:

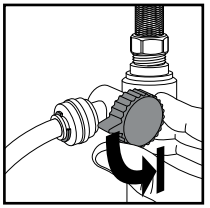
- K873 (granular activated carbon with schungite natural mineral post-filter)
- K875 (granular activated carbon post-filter)
- K870 carbon block pre-filter may also be used as a post-filter.

Optional pre-filter which can also be used instead of K870:

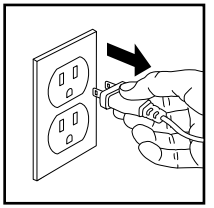
- K874 sediment and granular activated carbon combo pre-filter

To prevent leakage or cracks and ensure the safety of operation and top performance do not disassemble the filters or try to regenerate them.

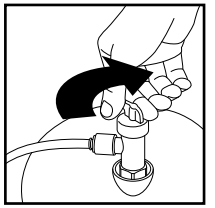
To change filter(s) or membrane:



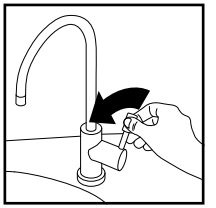
- shut-off the inlet valve



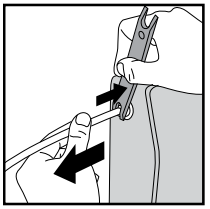
- unplug the filtration unit from the electrical outlet

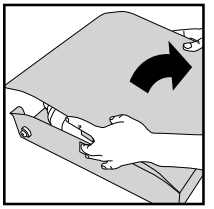


- shut off the tank valve

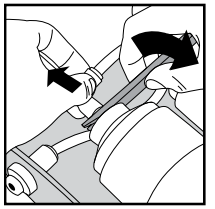


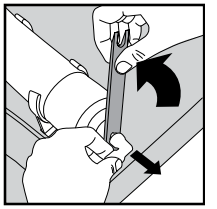
- relieve the water pressure by opening the filtered water faucet



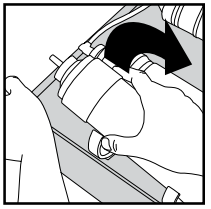


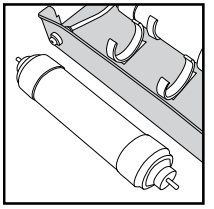
- remove the R.O. filtration unit from its place for easier access (disconnect external tubes if necessary) and open the unit's cover





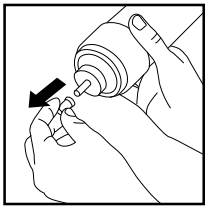
- locate the filter (membrane) to be changed, disconnect its inlet and outlet fittings and remove it

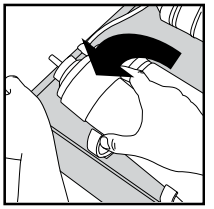


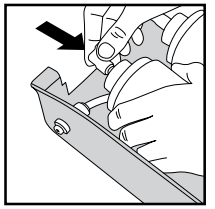


Note: Remove and change back one filter at a time, one after another. Do not remove all filters at once to avoid mixing up the tubes.

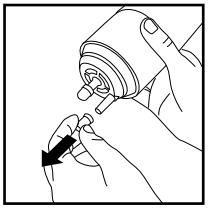
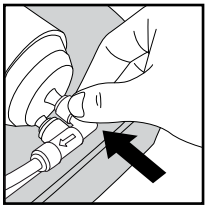
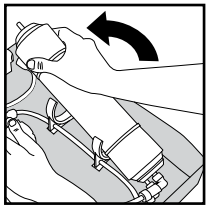
- take new filter (membrane) and install it in the place of the removed one observing the water flow direction arrow on its label and restoring the connections (see the internal connections chart for details)





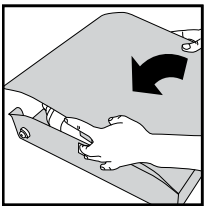
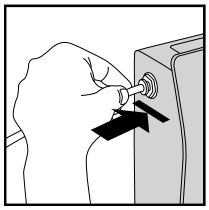


or

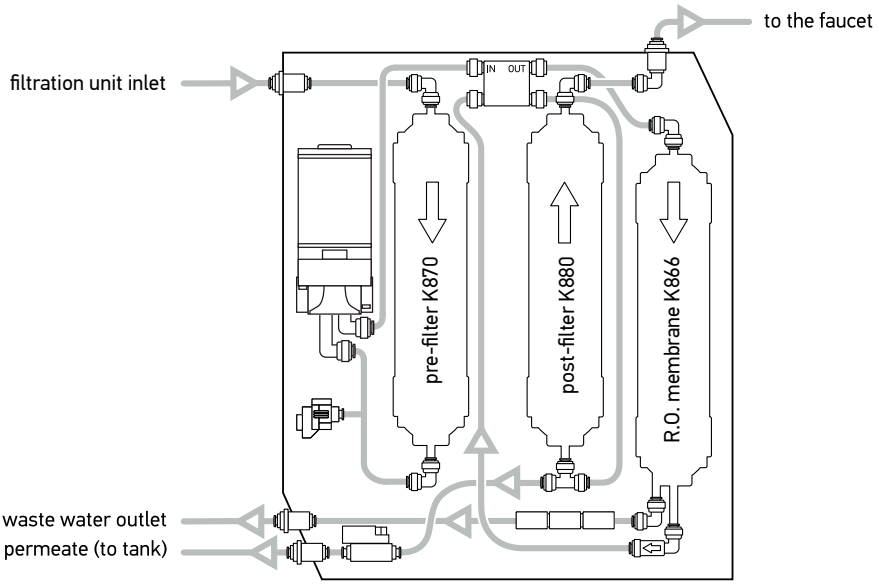




Note: For a pre- or post-filter you only need to connect its inlet and outlet. For the membrane you have to connect the third outlet – to the waste water line. This outlet is located off the center of the membrane housing. Elbow check valve fitting (with the arrow) has to be connected to the central (permeate) outlet of the membrane housing.

- close the cover, reconnect the external tubes and place the unit back in its place

After you finished changing filters or the membrane follow the “initial washing” procedure as described above. With initial operation, check for leaks. If a leak is observed, verify that the tube or branch pipe of the filter/membrane housing is pushed into the quick fitting far enough to seal the tube against the O-ring and that the tubing was cut at 90°.



Water Storage Tank Service

Water storage tank may require air repressurizing if you notice low water delivery rate even with full tank.

The storage tank has the bladder inside which separates air from water. On the lower side of the tank there is the air valve connected to the compressed air chamber. The top water inlet-outlet port (where the tank valve is mounted) is connected to the pure water chamber. When you open the faucet, the compressed air would compress the bladder to force the water out of the tank.

In an empty tank, air pressure in the air chamber should be 5-8 psi (0.35-0.55 bar). If pressure drops below this threshold you may notice low delivery rate of pure water from the tank.

To recharge the tank:

- Shut off the water supply valve.
- Drain the tank by opening the faucet to allow water to run until it stops.
- Check to see if there is still water in the storage tank. If the tank feels heavy, that means you need to recharge the air chamber and continue the following steps. If the tank feels light, that means it is not time yet to recharge the tank at this moment.
- Locate the air valve. Use bicycle tire air pump to pump air into the tank through this valve. Keep the faucet open while pumping air so that all water inside the tank can be purged.
- After all water has been drained from the tank, use an air pressure gauge to check the tank pressure. The tank should have 5-8 psi (0.35-0.55 bar) of pressure when it's empty. Add or purge air if necessary.
- Open the water supply valve and close the faucet to allow refilling of the tank.

Please note that storage tank service life is limited. Take into consideration that it stores water of room temperature and is not sterile, thus it may become the source of a secondary contamination over time. Unpleasant smell or taste may appear in the water. If changing the post-filter doesn't solve the problem your tank may require retirement and your system needs a new tank.