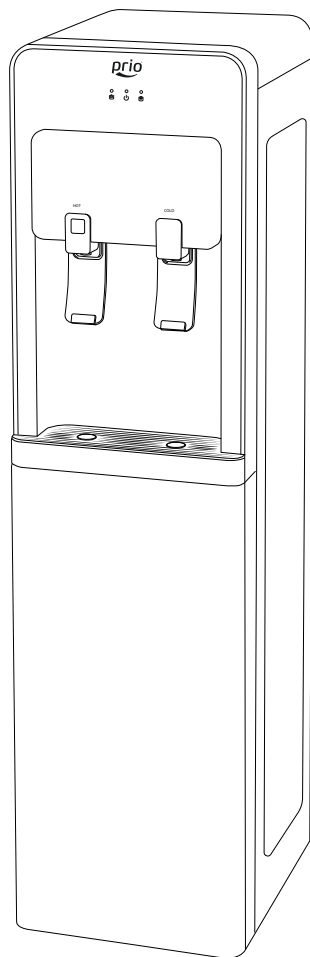




Prio[®] Expert

P500

Point-of-Use Direct Flow
Reverse Osmosis Bottleless
Hot and Cold Drinking
Water Dispenser



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 dispenser into an electrical outlet only after you finish the installation.
- Check if the voltage indicated on the dispenser corresponds to the local mains voltage before you connect the appliance.
- Do not use the dispenser if it is damaged in any way. Contact an authorized service center for repair.
- When unplugging the dispenser from the mains, do not pull on the power cord. Avoid touching the plug with wet hands.
- Do not block air vents of the dispenser or place any items on it. Do not place it 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 shut off the inlet valve during your vacations or other extended periods of time when the appliance is not in use.
- Unplug the dispenser from the electrical outlet while servicing the hot & cold water 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 dispenser was not designed to be used with power cord extenders, power filters, external transformers, 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.
- Caution! Hot water up to 200 °F (95 °C)!
- 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 point-of-use direct flow R.O. bottle-less hot and cold drinking water dispenser! With proper installation and maintenance, it will provide you with high quality drinking water for many years.

The 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.

The Reverse Osmosis filtration system consists of two parts: the sophisticated pump unit with auto-flush control valve and powerful booster pump and the R.O. filtration unit with high-production R.O. membrane. Together, they provide direct flow capability of water filtration in real time, eliminating the need of a room temperature water tank usually found on conventional systems.

The dispenser has two water taps: for cold water (sustained temperature below 50 °F (10 °C)) and for hot water (sustained temperature up to 200 °F (95 °C)). Hot water tap provided with a child safety lock.

The hot and cold water functions can also be turned off together or independently to conserve electricity: the R.O. filtration system will continue to operate as a high production water filter.

Your water dispenser could be equipped with optional filtered water outlet for connecting refrigerator, ice maker, extra faucet, etc.

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.
- Automatic flush valve: for peak performance and healthier membrane. Regular 18-seconds powerful flush prevents the scale and debris build-up on the membrane outer surface.
- Powerful 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).
- No room-temperature storage tank – no stale or flowered water.
- Prolongs the membrane and pre-filter(s) service life due to increased recovery rate.
- Fully automatic operation: just push the tap and get clean hot or cold water instantly; automatic shut off and flush.
- LED indicators: easily understand what the state of your dispenser is.
- Food grade stainless steel hot and cold water tanks.
- Heavy duty, commercial use ready.
- Thanks to R134a coolant compressor system and direct flow R.O. clean water production, the system is able to produce virtually unlimited amount of perfect temperature cold water.
- Quick fittings for easy tube connections and change of filters.

Direct Flow R.O. Systems Benefits:

Powerful booster pump and high-production R.O. membrane make it possible to build a high-end direct flow R.O. machine that offers high performance and water quality.

- Freshness of water filtered in real time. No more stale water from a room temperature tank.
- Virtually unlimited filtered water production. While conventional systems with tanks are limited by the tank capacity, and require prolonged timeouts to refill the tank, a direct flow system is limited by the membrane filtration rate only.
- Better water purification quality due to improved contaminant rejection rate.
- Typically, up to three times less water is wasted per gallon of filtered water, compared to the conventional tank and water storage systems, this is due to the much higher efficiency (recovery) rate. Saves you money and Planet Earth's water resources!
- Lower cost of ownership due to prolonged service life of pre-filters and membrane, which is in turn a result of higher efficiency rate: less water is treated overall by pre-filters and the membrane for each gallon of permeate produced. This saves the capacity of pre-filters and ensures either less frequent change necessity or better purification.
- Less number of components leads to better reliability.

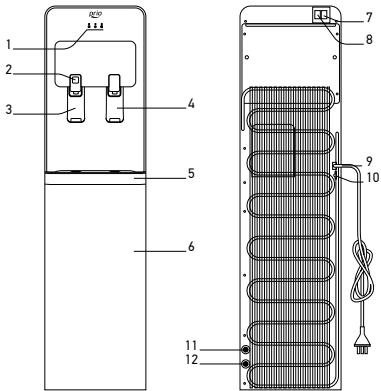
How It Works:



The heart of P500 water dispenser is a direct flow reverse osmosis multi-stage water filtration unit. Water supply is done through the inlet valve, waste water is drained through the drain saddle, and filtered water delivered to water taps through heater and cooler. Detailed connection scheme is shown on the following charts.

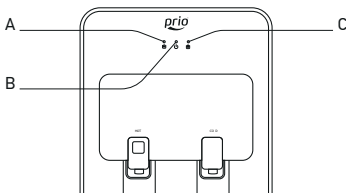
After installation, you will get clean hot or cold water by simply pushing the taps. The pump will turn on automatically and will produce filtered water in real time until the heater and cooler are full, and then the system will shut off automatically. Regular 18-seconds auto-flush protects membrane from scale and debris build-up.

Dispenser Overview



- 1 - LED indicators
- 2 - safety lock
- 3 - hot water tap
- 4 - cold water tap
- 5 - drip tray
- 6 - front cover
- 7 - heater power switch
- 8 - cooler power switch
- 9 - power cord
- 10 - drain spout
- 11 - inlet fitting (3/8" tube)
- 12 - drain fitting (1/4" tube)

LED indicators



- A – The heater is on. Indicator will turn off when hot water temperature reaches 200 °F (95 °C) or heater is turned off manually.
- B – The dispenser is plugged into the mains.
- C – The cooler is on. Indicator will turn off when cold water temperature drops below 50 °F (10 °C) or cooler is turned off manually.

Pressure and Level Switches:

The dispenser is equipped with low pressure switch and water level switch. The low pressure switch shuts off the pump when there is no inlet water or its pressure is too low. The water level switch shuts off the pump when heater and cooler are full.

Pump:

The dispenser is equipped with a low voltage booster pump powered by the included transformer for safe operation.

Inlet valve:

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

Drain saddle:

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

Pre-Filters:

The dispenser has two pre-filters: sediment pre-filter on the first stage and activated carbon pre-filter on the second stage. They provide 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:

The third and main stage of the filtration is high-production 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 heater and cooler. 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 (CaCO₃) <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.
- Electrical input: AC 220–240V 4.0A 50/60 Hz
- Maximum length of the line between the inlet valve and the dispenser¹: 23 ft (7 m) - 1/4” tubing; 160 ft (50 m) - 3/8” tubing. Purchase of extra tubing may be required.

Performance:

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

- Filtered water production rating: 400 gpd (1500 lpd) maximum
- Filtered water delivery rate, typical: 0.159–0.330 gpm (0.6–1.7 l/min)
- Membrane rejection rate², typical: ≥90%
- Recovery rate (system efficiency³), typical: ≥50%
- Drain water flow restrictor: 300 cc (ml/min) nominal, up to 450 cc in working mode, open flow in flush mode.
- Auto-flush duration: 18±5% s

¹ Average maximum length is given. Actual maximum supported length depends on supply water pressure.

² For all dissolved solids combined as measured by TDS or conductivity meter.

³ 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.

- Cold water capacity: up to 1500 lpd
- Cold water tank volume: 0.35 gal (1.3 l)
- Cooler power: 85W
- Hot water capacity: up to 144 lpd
- Hot water tank volume: 0.18 gal (0.7 l)
- Heater power: 420W

Weight and size:

Size (WDH): 10.2 x 13 x 40" (26 x 33 x 101 cm)

Weight, without water: 37.5 lbs (17.0 kg)

Warranty:

1 year limited warranty

Package contents:

- (1) Point-of-use water dispenser
- (1) Universal worldwide adapter ball valve (G1/2" - G3/8" - UNEF 9/16"-24 - JG 1/4")
- (1) Teflon tape roll
- (1) Drain saddle
- (1) Wrench
- 33 ft (10 m) Water tubing 1/4"
- (1) 1/4" x 1/4" Union check valve
- (1) 1/4" x 3/8" Union elbow fitting
- User's guide

Installation

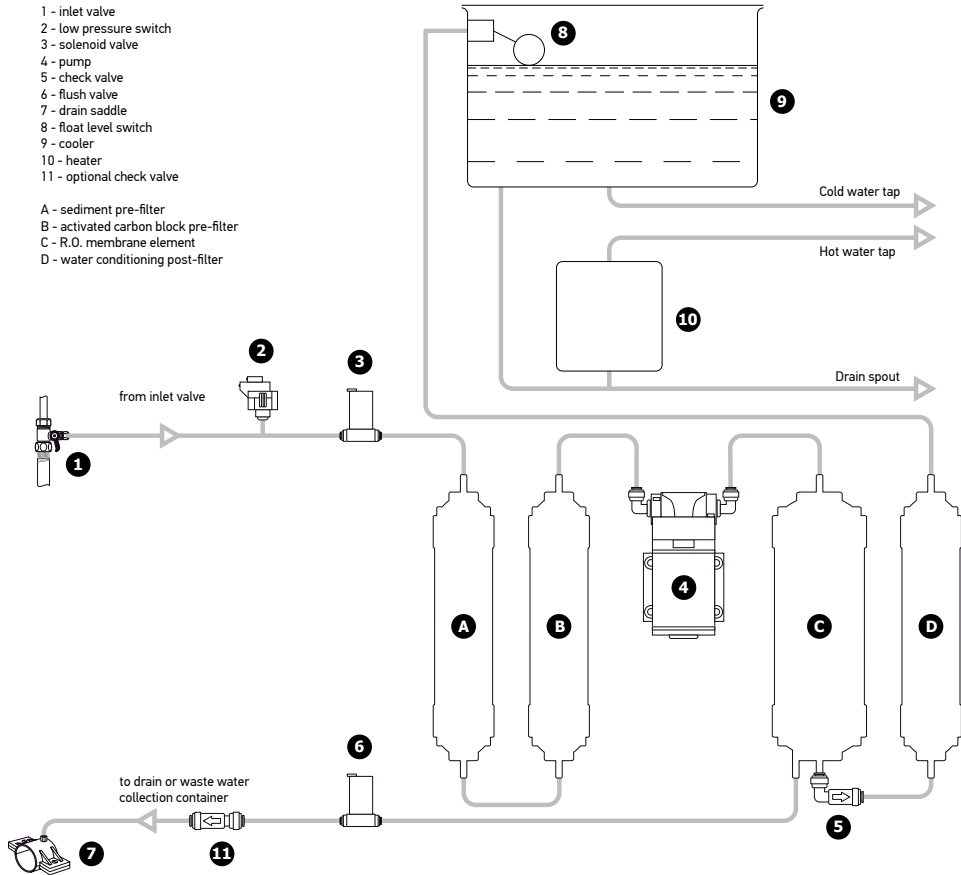
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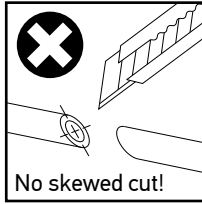
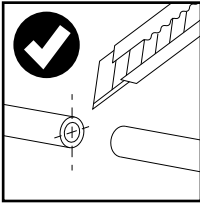
1. Shut off the cold water supply under the sink or the location where the system will be installed. If the existing valve is inoperable, the water supply to the house must be shut off. Then, relieve the water pressure by opening the cold water tap. Do not connect the system to hot water source.
2. Depending on your plumbing system and tubing path 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, the drain saddle and the tubing conduits to assure a trouble-free setup.
3. During installation you will need to cut the supplied 1/4" or extra purchased 3/8" 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 dispenser 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 scheme:

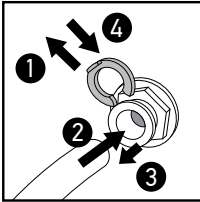
- 1 - inlet valve
- 2 - low pressure switch
- 3 - solenoid valve
- 4 - pump
- 5 - check valve
- 6 - flush valve
- 7 - drain saddle
- 8 - float level switch
- 9 - cooler
- 10 - heater
- 11 - optional check valve

- A - sediment pre-filter
- B - activated carbon block pre-filter
- C - R.O. membrane element
- D - water conditioning post-filter



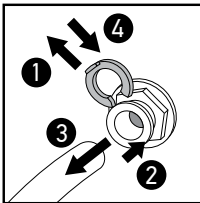


IMPORTANT: Cut tubing at 90° to ensure a watertight seal:



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:

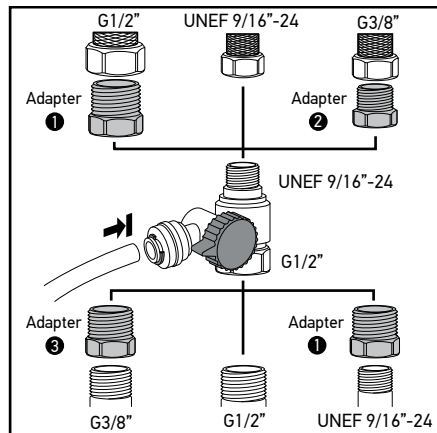
1. Remove the lock if present (not present in self-locking fittings).
2. Push the collet **and hold**.
3. Pull the tubing out.
4. Replace the lock (if present).

The maximum length of hose connections between the inlet valve and the dispenser¹ is 23 ft (7 m) using 1/4" tubing and 160 ft (50 m) using 3/8" tubing. If you use 1/4" tubing then connect included 1/4" x 3/8" elbow fitting to the dispenser inlet fitting. If you use 3/8" tubing then connect included 1/4" x 3/8" elbow fitting to the inlet valve.

Installation Steps:

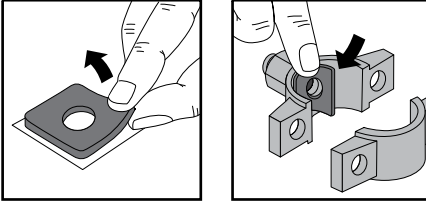
1. Install adapter ball valve (included) to the cold water supply.

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

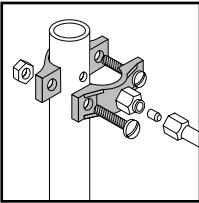


¹ Average maximum length is given. Actual maximum supported length depends on supply water pressure.

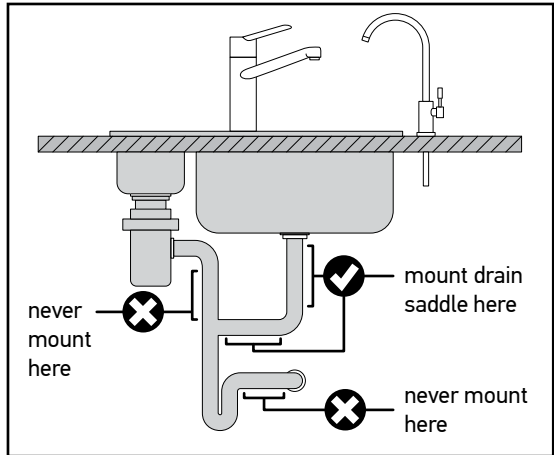
2. Install drain saddle.



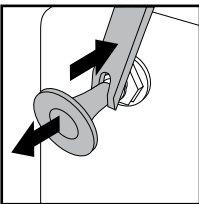
The square foam gasket with a circle cut out must be applied to the inside of the drain saddle. Remove sticky tape backing and stick to the drain saddle as shown.



Drill a 1/4" hole in the drain pipe **above the trap** and on the vertical or horizontal tail piece. Locate the drain connection away from the garbage disposal to prevent potential contamination and system fouling. It's recommended to install optional check valve on the drainage line. It works as a sewer backup valve in this case.



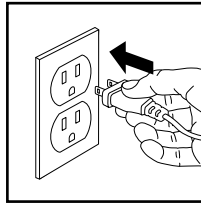
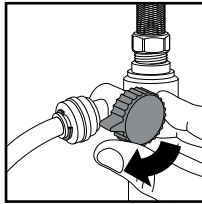
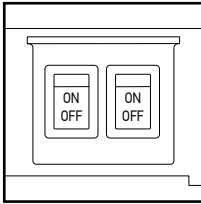
3. Remove gags and connect tubes as follows. See the connection chart for details.



- Insert water supply tubing from inlet valve adapter into the "inlet" fitting of the dispenser.
- Insert the waste tubing from the "drain" fitting of the dispenser into the drain saddle (through the 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.

Initial washing:

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



- switch off heater and cooler
- open cold water supply valve
- plug the dispenser's power cord into the electrical outlet
- wait for heater and cooler become full (pump shuts off)
- shut off the inlet valve
- unplug the dispenser from the electrical outlet
- drain water through the hot and cold water taps
- repeat the cycle "fill up heater and cooler - drain water" 2-3 times
- open inlet valve
- plug the dispenser into the electrical outlet
- wait for heater and cooler become full (pump shuts off)
- turn on heater and cooler
- your dispenser is ready for use.

Please note that after initial installation or changing the filters or membrane, air contained in the new dry system or filter may go out sometimes producing foamy, white filtered water. Water may look white due to tiny air bubbles in it. If you leave the water to stand for few minutes all bubbles will surface and eliminate. Such aerated water is clean and safe. Gradually over the coming days all air inside your system will find its way out. To make this process faster you may repeat the initial washing procedure until you're pleased with the result. Also note that if for some reason the water supply contains a lot of dispersed air, your R.O. system may start producing aerated water again.

Regular Use

To get cold water just push cold water tap with a cup. You can turn water cooler off with a blue/green switch on the back of the dispenser. It is recommended to keep collar always on to prevent secondary water pollution.

To get hot water push safety button first, then push hot water tap with a cup. You can turn water heater off with a red switch on the back of the dispenser.

Caution! Hot water up to 200 °F (95 °C)!

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.

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

Tips:

- If your dispenser is provided with optional filtered water outlet you may connect refrigerator, ice maker or extra faucet.
- 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-filters every 6 months or sooner if you observe a noticeable reduction in water flow rate.
- Change the disposable post-filter every 12 months or sooner if you observe a noticeable reduction in water flow rate.
- Change the disposable R.O. membrane every 36 months or sooner if you observe a noticeable reduction in water flow 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 life 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:

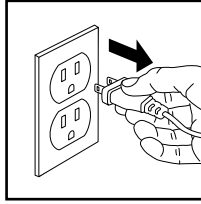
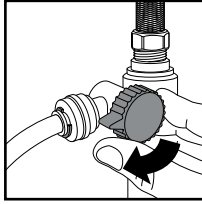
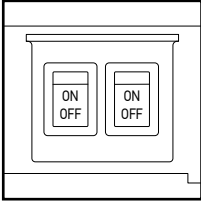
- K871 (sediment pre-filter)
- K870 (activated carbon pre-filter)
- K858 or K856 (high-production R.O. membrane)
- K880 (activated carbon post-filter and conditioner)

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

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

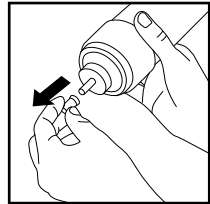
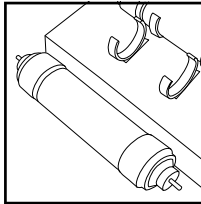
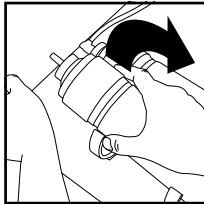
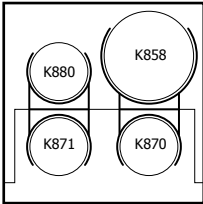
To prevent leakage or cracks and ensure the safety of operation and top performance do not disassemble the filters or try to regenerate them.

To change filter(s) or membrane:



- switch off heater and cooler
- shut off the inlet valve
- unplug the dispenser from the electrical outlet

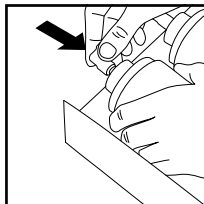
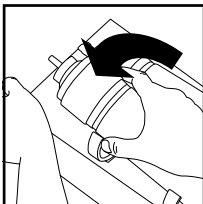
- open the dispenser's front cover pulling it down
- locate the filter (membrane) to be changed, disconnect its inlet and outlet fittings and remove it



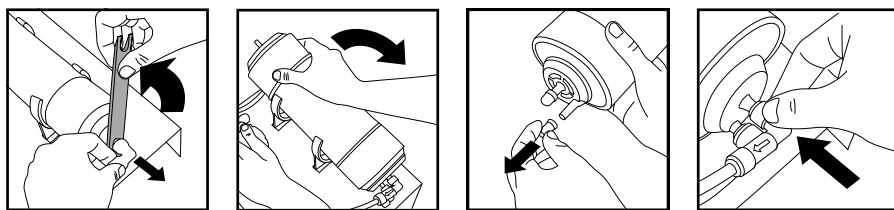
Note: Remove and change back one filter at a time, one after another. Do not remove all filters at once to avoid mixing up the tubes.

To change membrane and post-filter it is necessary to remove supporting bracket. For this disconnect inlet and outlet fittings first.

Pre-filters could be changed without bracket removing.



- 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)



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.

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°.

Cleaning & Disinfection

R.O. filtration system removes almost all bacteria and viruses from the water. However, secondary water pollution is possible at room temperature. It is recommended to perform the cleaning & disinfection procedure every 3-6 months.

Note: It may be needed to perform the cleaning more often if cooler and/or heater are turned off for a sufficient periods of time.

Cleaning & Disinfection Steps:

1. Prepare disinfection agent (bleach solution, vinegar, citric acid or other suitable disinfection agent).

Use personal protection equipment like goggles and gloves when working with disinfection agent.

2. Dispenser inner cleaning:

You may need tools like screwdriver or others.

- switch off heater and cooler
- shut off the inlet valve
- unplug the dispenser from the electrical outlet
- wait for about 30 minutes until heater and cooler come to room temperature
- take off the dispenser’s top cover unscrewing two screws on the back; pay attention to wires connected to switches
- take off cooler tank lid; pay attention to tube and wires connected to the lid
- pour disinfectant into the cooler tank
- put back cooler lid and top cover; wait for 15-30 minutes
- drain water from hot and cold water taps until disinfectant smell appears
- wait for 2-4 hours.

3. Dispenser washing:

- drain water from hot and cold water taps, then drain residual water from the drain spout on the back of the dispenser
- perform the “initial washing” several times until there will be no disinfectant smell from the water; drain water both from the taps and from the drain spout.

4. Dispenser outer cleaning:

- take off the dip tray
- wash both the tray and the screen (if present) and rinse both in clean tap water before returning them to the dispenser
- clean all outer surfaces of the dispenser with wet cloth
- be sure to dry thoroughly so as not to leave moisture in any tight spaces.

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