Puricom®

Reverse Osmosis

CE-2 PUMP USER MANUAL

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■ INTRODUCTION

We sincerely thank you for purchasing Puricom CE-2 system. To ensure your safety and satisfaction, please read through this manual before using your CE-2 system.

As the environment continues to deteriorate, it is more and more difficult to obtain a reliable source of clean, pure, healthy drinking water. That is why Puricom Water Industrial Corporation, with many years of experience in RO water technology, chooses to use RO membranes with the highest quality and other relevant technologies to develop series of versatile and economical RO water purifiers, and thus able to provide pure and healthy water.

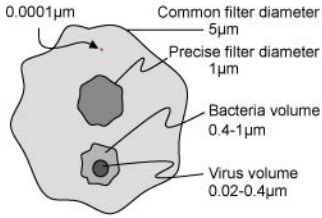
You will find Puricom CE-2 system very easy to maintain. The good-tasting water which flows directly out of a special faucet installed on your sink is perfect for beverages such as coffee, tea and lemonade.

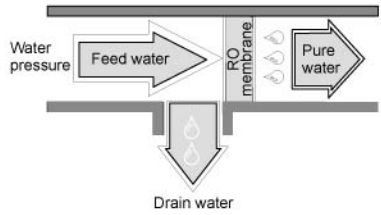
Please read this manual carefully, paying attention especially to maintenance procedures and safety information. With all gratitude, we assure you a constant, sustainable supply of pure, healthy, and tasty water.

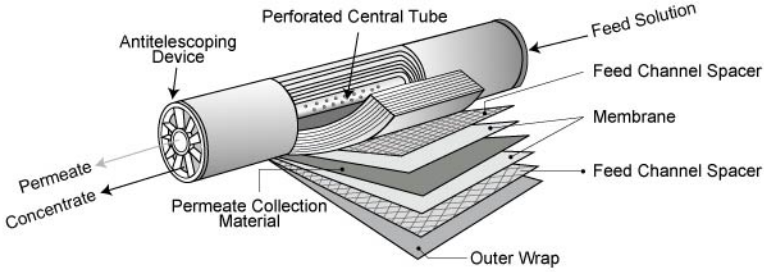
■ WHAT IS REVERSE OSMOSIS (RO)

To fully understand the technology of Reverse Osmosis, it is a must to understand normal osmosis. Osmosis is a natural process that occurs in all living things. For instance, osmosis permits water and nutrients absorption through the root system of plants; similarly, nutrition is assimilated from blood to cells in human bodies. The drawings shall help to proceed in further explanation on the principle of reverse osmosis as possibly clear and simple.

As the water exerts pressure on a semi-permeable membrane, the purified (or filtered) part enters through the pores of the membrane, while the rejected (or concentrated) is diverted to the drain. When the diameter of the pores is shorter than 0.0001 microns, only pure water and a balanced quantity of minerals (sodium, potassium, calcium, and magnesium, etc) can pass through; while other substances (such as bacteria, viruses, metals, pesticides, chemical products, etc) are eliminated during the process.







■ SAFETY INFORMATION

Please read this information to prevent property loss and to ensure your safety.

⚠ ELECTRICITY SAFETY

1. Be sure the local voltage accords with the system voltage. Electrical shock or fire may occur as a result.
2. Do not use a damaged power cord or plug, or loose outlet.
3. Do not pull the cord to unplug or handle the plug with wet hands.
4. Do not bundle the power cord tightly, it may cause damage.
5. If the cord or plug is wet, unplug the unit and let it dry completely before subsequent use.
6. Unplug the unit before repair, inspection, or replacement.
7. Do not plug into an outlet or power strip that is being used by several other appliances. Use a separate outlet for the unit. Fire may occur as a result.
8. Shut the main water supply valve and unplug the power cord when not using for a long time.
9. Do not attempt to repair the power cord.
10. Do not repeatedly plug and unplug the unit from the electrical outlet. .
11. Do not move the product by pulling the electrical cord.

INSTALLATION SAFETY

1. Keep the product away from inflammable gas or burnable materials.
2. Do not install the unit near heaters.
3. Do not spray water or wipe product with benzene when cleaning.
4. The length of the water inlet hose must be shorter than 5 m. If longer; product performance may be degraded.
5. Do not use with hot water. Optimal inlet water temperature is 5℃- 45℃.
6. Inlet water pressure is 15-45 PSI.
7. Max. working pressure is 100 PSI.
8. Water analysis TDS should not exceed 800 PPM . Hardness should not exceed 250 PPM.
9. Ensure the inlet, outlet and drain connections are correct and that the drain point is not blocked.
10. The filtration system installation shall comply with state and local laws and regulations. Do not use with water that is microbiologically unsafe, of unknown quality, or without adequate disinfection before or after the system.

OPERATION SAFETY

1. If water leaks from the product, cut off the supplying valve and unplug, then call the Customer Service.
2. Unplug immediately and call the Customer Service if the unit makes a strange noise or odd smell.
3. Use or place the unit on an even surface and do not apply force to the unit.
4. When water is stored or the product is not in use for a long time, drain all water from the storage tank before use.
5. Periodical filter replacement is prerequisite for clean water. If filters are overused, the performance of filters is degraded.
6. Use with Puricom filter products to maintain expected product lifespan and performance.
7. After activated carbon filter replacement, a certain amount of carbon fines may be introduced to the water. It is activated carbon particles and is harmless to human body.
8. Before using the filter for the first time or after replacement of the carbon filter run water for a few minutes, till the water runs clear, to rinse any carbon fines from the filter.
9. Do not expose the unit to direct sunlight and high humidity environment. The optimal room temperature for the unit is 4℃-40℃.

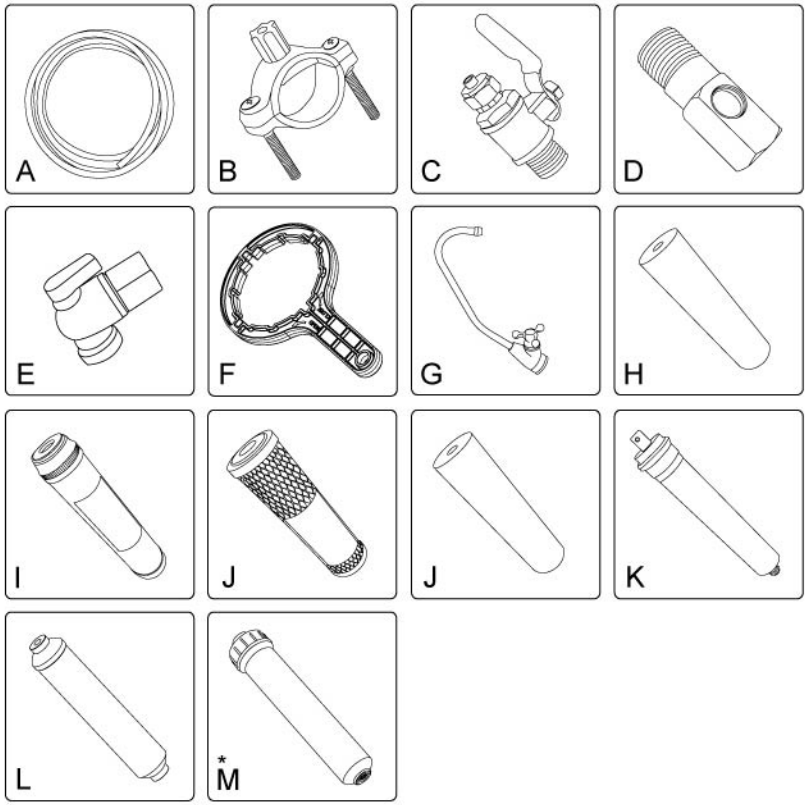
■ ACCESSORIES

- Accessories Pack

  A. PE tubing B. Drain clamp C. Inlet ball valve
  D. Feed water connector E. Ball valve F. Wrench
  G. Faucet

- Filters (* optional filter)

  H. 1st Stage- PP 5μ filter I. 2nd Stage- UDF filter
  J. 3rd Stage- CTO filter or PP 1μ filter K. 4th Stage- RO membrane
  L. 5th Stage- Post carbon * M. 6th Stage- Post Mineralized filter



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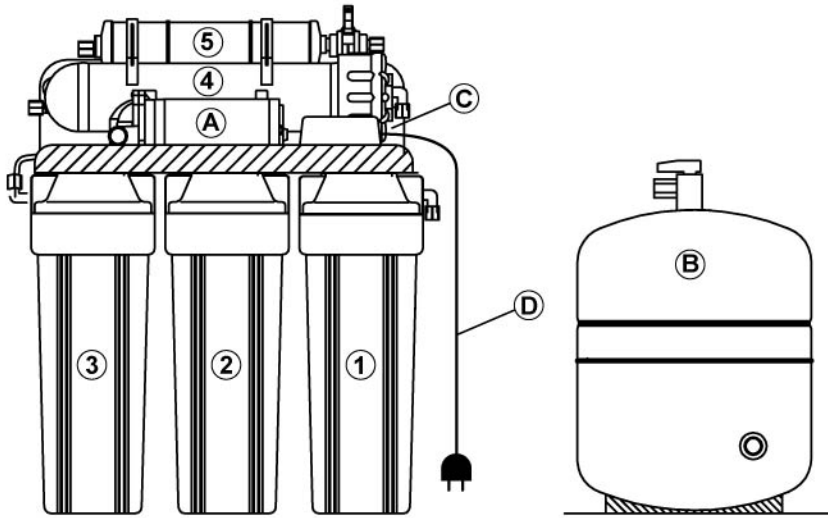
■ FILTER FUNCTION DESCRIPTION & RECOMMENDED FILTER REPLACEMENT (* optional filter)

① Prefilter-PP 5μ filter	3~6 months	Traps dirt, rust, and other impurities.
② Carbon-UDF filter	6~12 months	This filter removes chemicals and odors, such as chlorine and chemical fertilizer, thus protecting the RO membrane from being damaged.
③ Carbon-CTO filter **OR** Sediment-PP 1μ filter	6~12 months 3~6 months	This filter removes fine particles and harmful pollutants. It protects and extends lifespan, and increases RO membrane efficiency. Fine traps dirt, rust, and other impurities. Note: Water analysis by qualified dealer is required to determine optimal lifespan.
④ R.O. membrane (0.0001μ)	1~3 year	This high technology, semi permeable membrane effectively takes out TDS, viruses, bacteria, slime, heavy metal, pesticides, and chemicals etc. Harmful impurities separated by the RO membrane are diverted to the drain.
⑤ Post Carbon filter	1 year	Drinking water enters this filter after the storage tank. It is used as the final polishing filter before use.
⑥ Post Mineralized filter (optional filter)	1 year	This filter improves the qualities of clean water by adding necessary minerals for proper human development and health.

Note: Frequent use or bad quality feed water shortens filter lifespan. If water pressure and water quality are not within limits, please contact your distributor to make proper modifications.

■ PARTS LIST



(1) 1st Stage- PP 5μ filter	(A) Pump
(2) 2nd Stage- UDF Carbon filter	(B) Storage Tank
(3) 3rd Stage- CTO or PP 1μ filter	(C) Wall Mount Panel
(4) 4th Stage- RO membrane	(D) Power cord
(5) 5th Stage- Post Carbon filter	

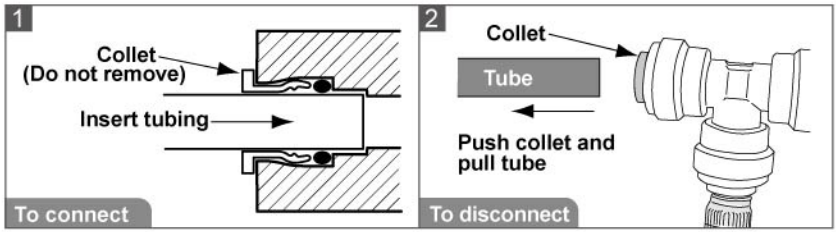
■ SPECIFICATION

Model	CE-2 with Pump
Input Voltage	AC100V~240V / 50.60Hz
Output Voltage	DC 24V
Storage Tank	19 L or 3.2G (two options)
RO Membrane	50G × 1pcs or 75G × 1pcs (two options)
Size	D21cm × W37cm × H45cm

■ INLET WATER REQUIREMENT

Inlet water TDS	< 1000 ppm
Inlet water pressure	15-45 psi
Total hardness	< 250 ppm
Temperature	5℃- 45℃

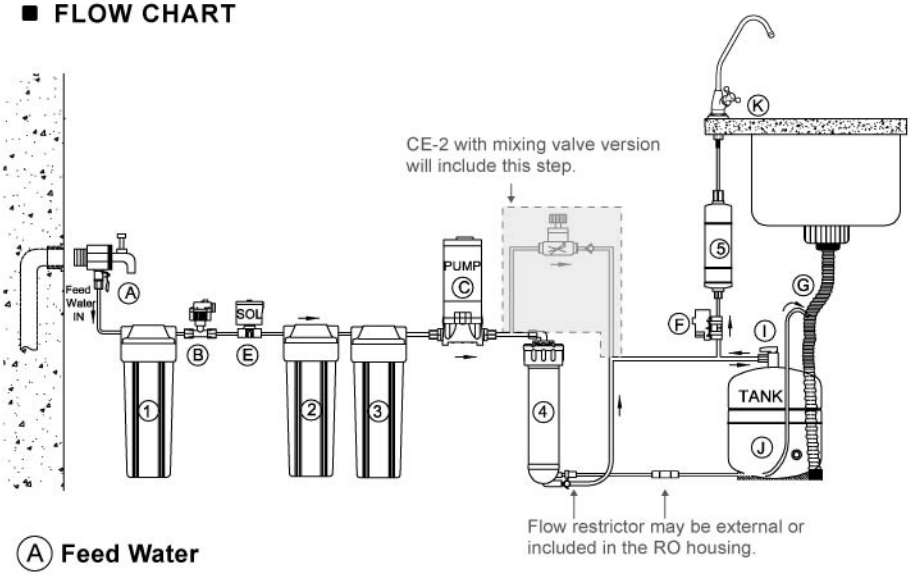
■ HOW QUICK CONNECTORS WORK



1. Ensure the tube edge is clean and free of burrs.
   Push the tube into the connector until it stops. Pull back gently to set the inside seal.

2. Push down the collet and while holding down, pull the tube out to remove from the connector.

■ FLOW CHART



Ⓐ **Feed Water**

Ⓑ **Low Pressure Switch**: Prevents dry running of the pump if the inlet pressure drops too low.

Ⓒ **Booster Pump**: Raises the water pressure from 15-45 PSI to 65-80 PSI to increase RO membrane efficiency.

Ⓔ **Solenoid Valve**: Shuts off inlet water when low pressure switch detects low inlet pressure, or high pressure switch detects that the storage tank is full.

Ⓕ **High pressure switch**: Normally set between 30-35 PSI to control tank water level.

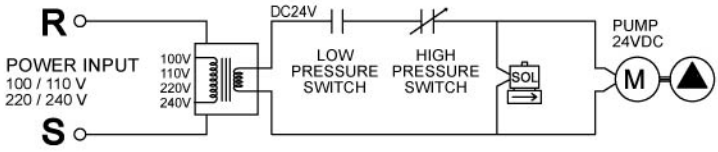
Ⓖ **Drain**: Inpurities separated from the inlet water are flushed to the drain.

Ⓘ **Ball Valve**: For storage tank

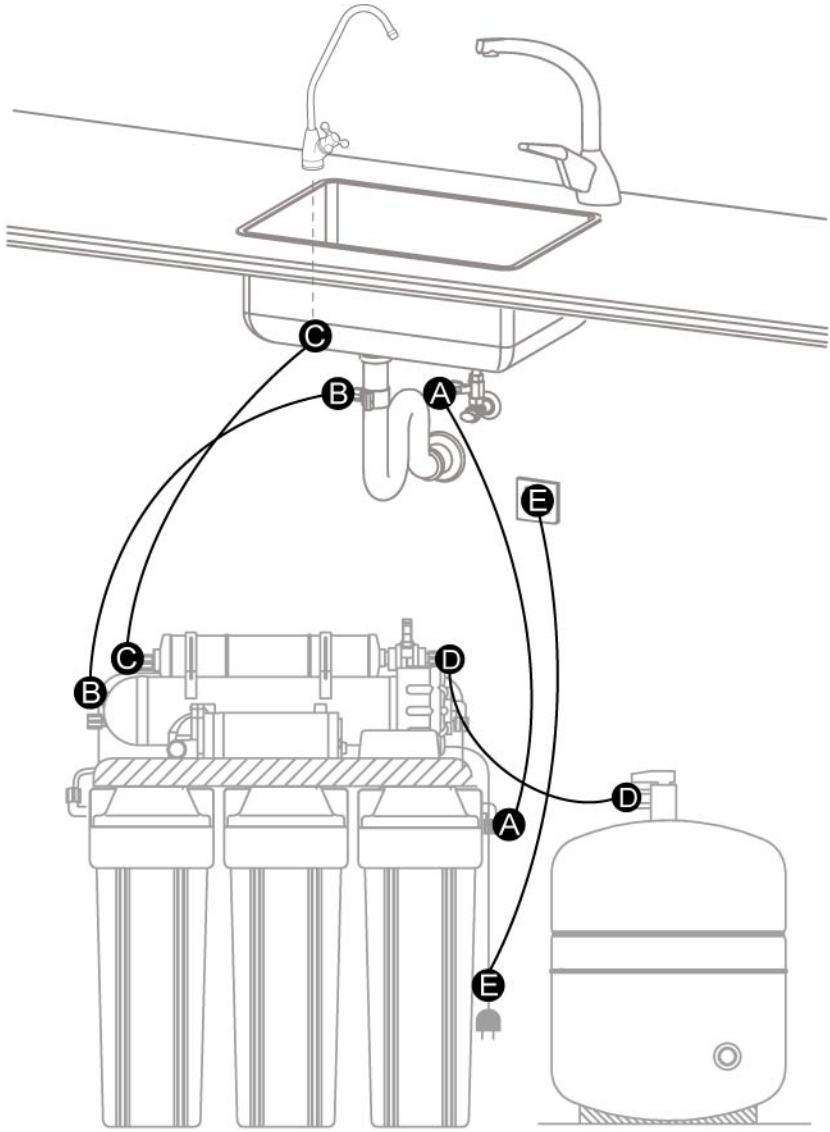
Ⓙ **Pure Water Storage Tank**

Ⓚ **Faucet**

■ ELECTRIC DIAGRAM

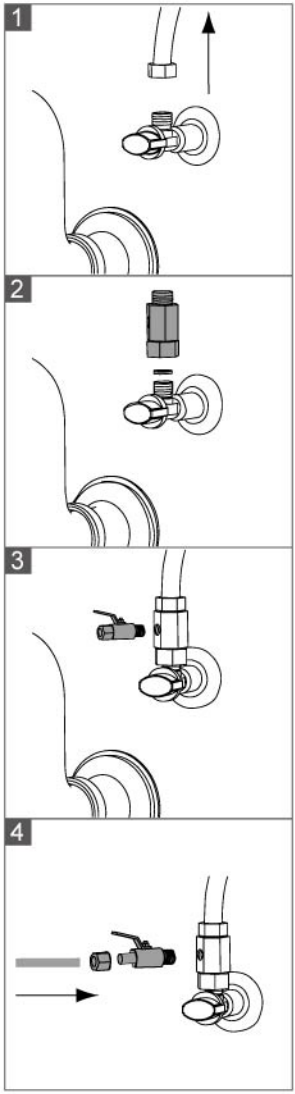


■ INSTALLATION DIAGRAM



■ INSTALLATION

A. Feed Water Assembly



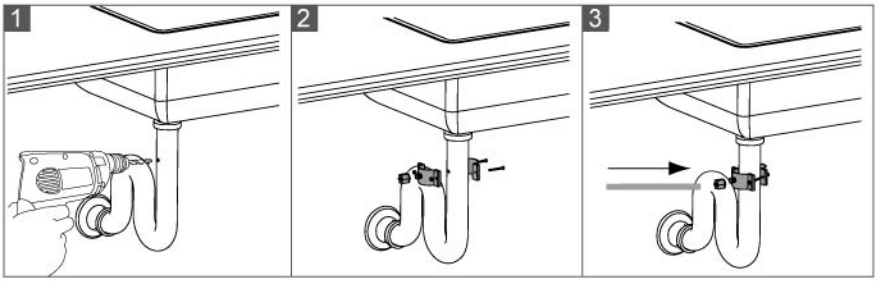
1. Turn off the feed water supply, and disconnect the existing cold water line from the existing cold water supply valve.

2. Wrap several turns of seal tape on the new feed water connector and install it with the black washer on the existing cold water supply valve.

3. Reinstall the existing cold water line on the new feed water connector. Wrap several turns of seal tape on the ball valve and install it on the new feed water connector.

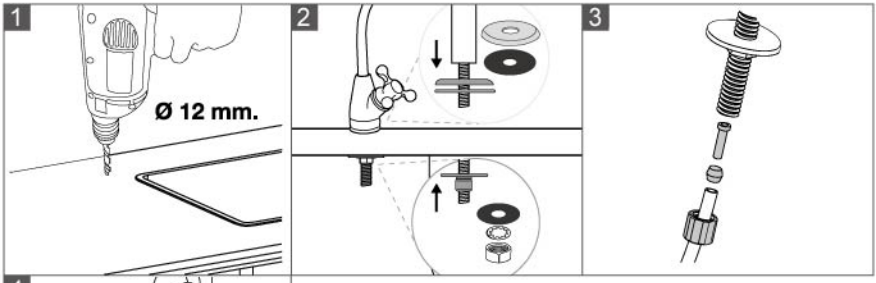
4. Refer to p.11Ⓐ. Connect the PE tube and complete the feed water assembly.

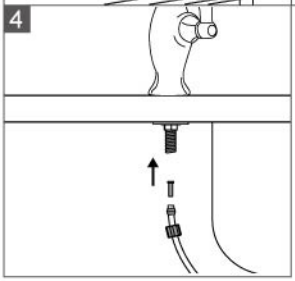
B. Drain Clamp Assembly



1. Drill a 6mm hole on the existing drain pipe.
2. Tighten the drain clamp evenly on both sides.
3. Refer to p.11Ⓑ . Connect the PE tube and complete the drain clamp assembly.

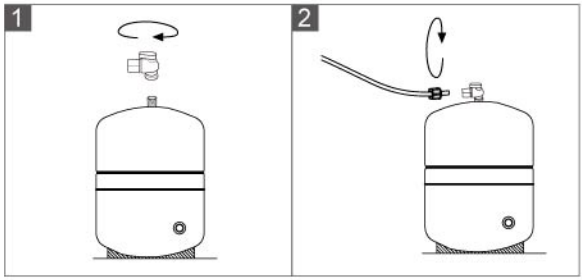
C. Faucet Assembly





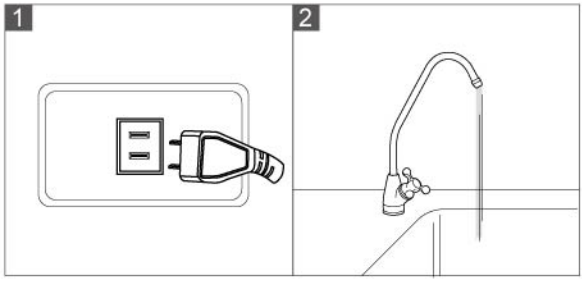
1. Drill a 12mm hole on the right or left hand side of the sink.
2. Install the new faucet in the sink hole, and from below the sink, assemble the mounting hardware.
3. Slide the nut from the bottom of the faucet onto the end of the tube. Then place the seal on the end of the tube and slide down to about 2 centimeters from the end of the tube. Place the spacer into the end of the tube.
4. Put the end of the tube into the bottom of the faucet and tighten the nut to complete the faucet assembly. Refer to page 11Ⓒ .

D. Storage Tank Assembly



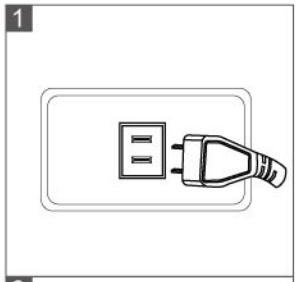
1. Wrap the storage tank screw head with six turns of sealing tape and screw on the ball valve.
2. Refer to p.11Ⓓ. Connect the PE tube and complete the storage tank assembly.

E. Power

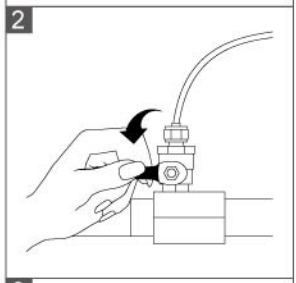


1. Make sure all connections and filters are properly installed. Plug in power. See p.11 Ⓔ.
2. Allow a tank of water to rinse through system before first time use.

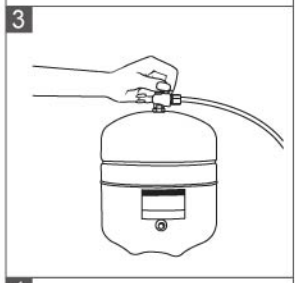
■ EASY FILTER REPLACEMENT (FOR 1st ~3rd STAGE FILTERS)



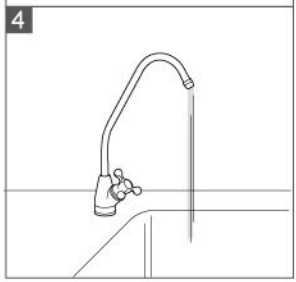
1. Unplug.



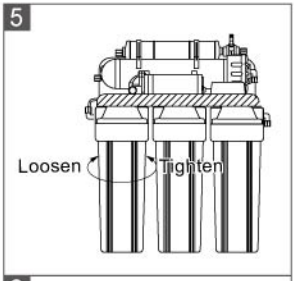
2. Turn off feed water at the feed water valve.



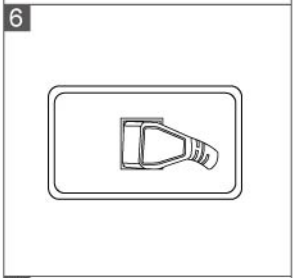
3. Turn off the storage tank ball valve.



4. Turn on the faucet to release pressure from the tubing.

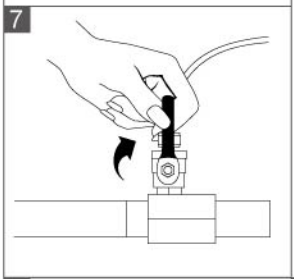


5. Unscrew the housing, remove the old filter, clean the housing, insert new filter and screw housing back on.



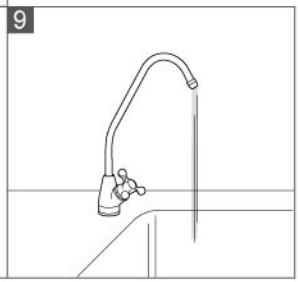
6. Plug in

7. Turn on feed water at the feed water valve.

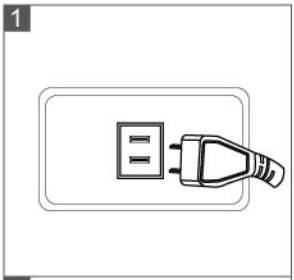


8. Open the valve at the top of the tank.

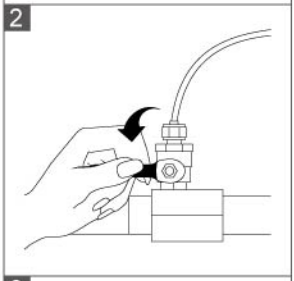
9. Close the faucet. When the tank is full,(about 15 minutes) drain the first tank of water to rinse the system.



■ RO MEMBRANE REPLACEMENT

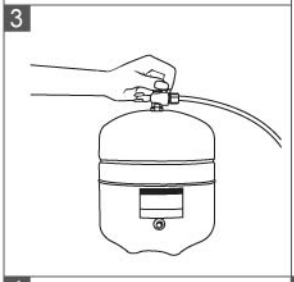


1. Unplug.



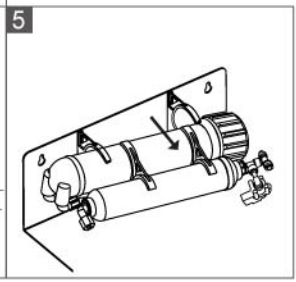
2. Turn off feed water at the feed water valve.

3. Turn off the storage tank ball valve.



4. Turn on the faucet to release pressure from the tubing.

5. Pull the RO membrane housing from the brackets.



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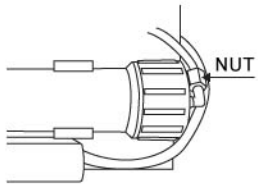
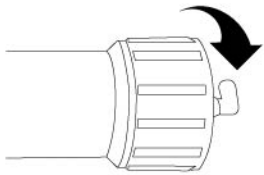


6. Unscrew the inlet fitting nut.

7. Remove the cap of the RO membrane housing.

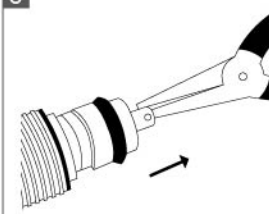
7



8. Use a pair of pliers to remove the used RO membrane.

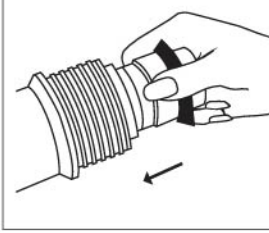
9. Wash the RO housing, insert new RO membrane and reconnect the fittings. Plug in power, open the storage tank and restart the system by opening the feed water ball valve.

8



10. Close the faucet. When the tank is full,(about 15 minutes) drain the first tank of water to rinse the system.

9



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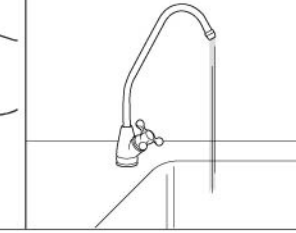
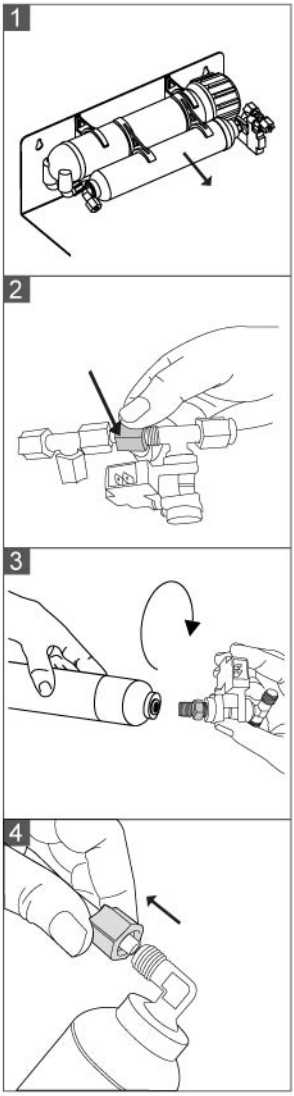


■ POST FILTER REPLACEMENT (For general High Pressure Switch)

Please follow the instructions of steps 1~4 of Prefilter Replacement on P.15, before proceeding with Post Filter Replacement.

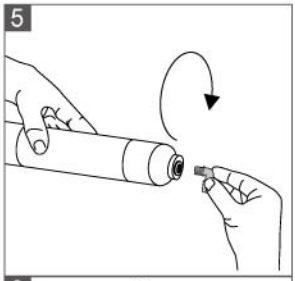


1. Pull the disposable post filter from the brackets.

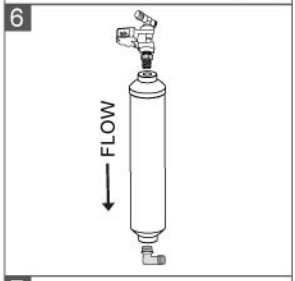
2. Unscrew fitting nut indicated by the arrow.

3. Unscrew the high pressure switch with tee fitting from the **IN** end of the post filter.

4. Remove the PE tubing from the elbow fitting at the **OUT** end of the post filter.

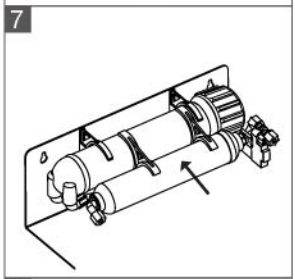


5. Unscrew the elow fitting from the **OUT** end of the post filter.

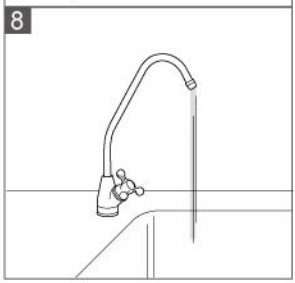


6. Screw the “tee” and “elbow” fittings onto the new post filter, being sure to note the correct **FLOW** direction.

※See diagram 6.



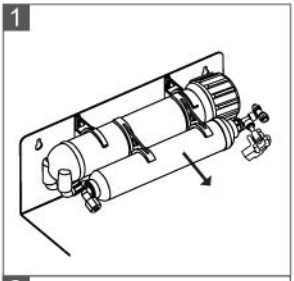
7. Reconnect the fittings. Plug in power, open the storage tank and restart the system by opening the feed water ball valve.



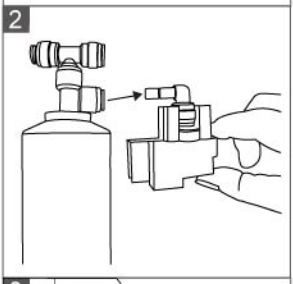
8. Close the faucet. When the tank is full,(about 15 minutes) drain the first tank of water to rinse the system.

■ POST FILTER REPLACEMENT (For quick connect High Pressure Switch)

Please follow the instructions of steps 1~4 of Prefilter Replacement on P.15, before proceeding with Post Filter Replacement.

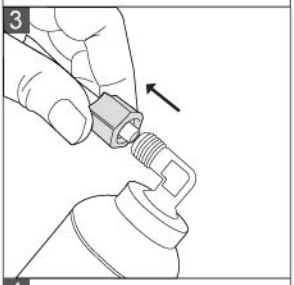


1. Pull the disposable post filter from the brackets.

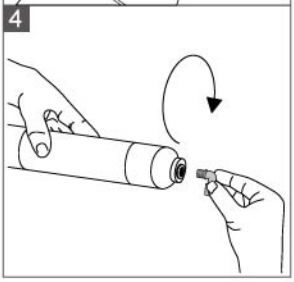


2. Disconnect the high pressure switch with tee fitting from the **IN** end of the post filter. And unscrew the tee fitting from the **IN** end of the post filter.

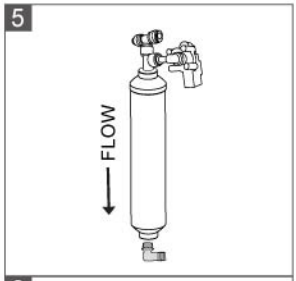
※Please see page 9 for how quick connectors work.



3. Remove the PE tubing from the elbow fitting at the **OUT** end of the post filter.

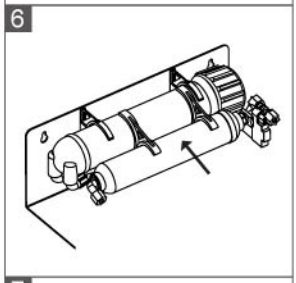


4. Unscrew the elbow fitting from the **OUT** end of the post filter.

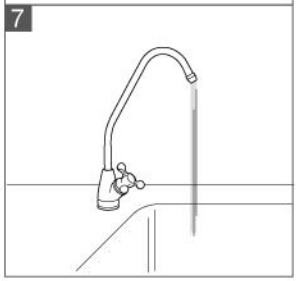


5. Screw the “tee” and “elbow” fittings onto the new post filter, being sure to note the correct **FLOW** direction.

※See diagram 5.



6. Reconnect the fittings. Plug in power, open the storage tank and restart the system by opening the feed water ball valve.



7. Close the faucet. When the tank is full,(about 15 minutes) drain the first tank of water to rinse the system.

■ TROUBLESHOOTING

Problem	Possible Cause	Troubleshooting
Pump not working.	1. No power supply.	1. Check the power supply.
	2. Transformer is burnt out.	2. Replace transformer. (A possible reason is a pump leak causing the bearing to jam, so the transformer burns out. The pump and the transformer should be checked at the same time.)
	3. Pump bearing jammed.	3. Replace pump.
	4. Bad wire connection.	4. Check wire connection.
	5. Bad electrical connection inside pump.	5. Replace pump.
	6. High / low pressure switch is damaged.	6. Replace high/ low pressure switch.
Pump switches on and off repeatedly.	1. Low pressure switch switches on and off repeatedly because of low feed water pressure.	1. Increase feed water pressure. (If you are sure of a consistent feed water pressure, a short circuit around the low pressure switch could be made.)
	2. Bad electrical connection inside pump.	2. Replace pump.
	3. Bad wire connection.	3. Check all wire connection.
Pump keeps running.	1. Air in the tubes causes the pump to not reach sufficient pressure to shut off the pump.	1. Disconnect the outlet tube of the pump to discharge air and reconnect to run with water in the tube.
	2. The torque of the pump has decreased, so sufficient pressure cannot be reached to turn off the high pressure switch.	2. Replace pump.
	3. High pressure switch is damaged.	3. Replace high pressure switch.
	4. The check valve cannot close properly, thus pressure cannot reach shut off point.	4. Replace check valve.

Problem	Possibility	Troubleshooting
Pump is leaking.	1. Diaphragm seal is worn or split.	1. Replace pump.
	2. Feed water pressure is too high (> 40psi).	2. Install a pressure regulator or shut off pump to allow the system to run at natural feed water pressure.
Pump is noisy.	1. RO membrane or post filter is clogged.	1. Replace RO membrane or post filter.
	2. Pump bearing is worn.	2. Replace pump.
TDS value of permeated water is rising (rejection rate is lower than 90%).	1. Working pressure is lower than 40 psi.	
	(A) Air in the tubes prevents pump from reaching sufficient pressure to permeate properly.	1. (A) Disconnect the outlet tube of the pump to discharge air and reconnect to run with water in the tube.
	(B) RO membrane or post filter is clogged.	1.(B) Replace RO membrane or post filter.
	2. The ratio of permeate water to drain water is less than 1:3.	2. Flow restrictor is clogged. Clean it, or replace it.
	3. RO membrane is worn.	3. Replace RO membrane.
Output of permeate water decreases.	1. RO membrane is clogged.	1. Replace RO membrane. (If clogging is frequent, increase the drainage ratio of the flow restric tor or install a softener to extend the lifespan of the RO membrane.)
	2. Pump is worn, decreasing the working pressure.	2. Replace pump.
No permeate or drain water is produced.	1. The solenoid valve coil is burnt out.	1. Replace solenoid valve.
	2. Bad electrical connection in solenoid valve.	2. Replace solenoid valve.
	3. Solenoid valve is clogged inside, thus unable to turn on.	3. Replace solenoid valve.
	4. Shut-off valve is worn.	4. Replace shut-off valve.

Problem	Possibility	Troubleshooting
System drains at full tank when pump is not running.	1. Feed water pressure is too high to turn off the shut-off valve.	1.Install a pressure regulator.
	2. The shut-off valve or solenoid valve is clogged.	2. Clean the valve or replace it.
	3. Check valve is worn and causes permeate water in the storage tank to reverse flow to drain.	3. Replace check valve.
Solenoid valve is noisy.	1. The solenoid valve coil is not in place.	1. Fix the coil in its place.
	2. Feed water pressure is too low, causing the low pressure switch and the solenoid valve to turn on and off repeatedly.	2. Increase feed water pressure. (If you are sure of a consistent, low feed water pressure, a short circuit around the low pressure switch could be made.)
System does not run.	1. High / low pressure switch is worn.	1. Replace high / low pressure switch.
	2. Feed water pressure is lower than 5 psi.	2. Increase feed water pressure. (If you are sure of a consistent feed water pressure, a short circuit around the low pressure switch could be made.)
	3. No power.	3. Check power source.
	4. Pump or transformer is worn.	4. See trouble shooting for pump.
System runs at full tank when faucet is turned off.	1. Check valve is worn and causes permeate water in the storage tank to reverse flow to the drain. The high pressure switch senses pressure decrea se and turns on.	1. Replace check valve.
	2. High pressure switch is worn.	2. Replace high pressure switch.

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