

INSTALLATION AND MAINTENANCE MANUAL FOR CWW REVERSE OSMOSIS SYSTEMS



Models*:

CWW-316

CWW-324

CWW-436

CWW-450/3H

CWW-550

CWW-650UV



**Not all models shown on the cover*

TABLE OF CONTENTS

Introduction	01
Check List	01
How It Works	02
How It Works - CWW-316 and 324 Filtration Process	03
How It Works - CWW-436 Filtration Process.	04
How It Works - CWW-450/3H Filtration Process.	05
How It Works - CWW-550 Filtration Process.	06
How It Works - CWW-650UV Filtration Process	07
Installation Requirements	03 - 07
Installation Quick Look	08
Required Tools.	09
Mounting Faucet	09
Storage Tank Preparation	10
Drain Connector Installation.	10
Inlet Water Supply	11
System Start-Up.	11
Clearing Procedures	12
Preventive Maintenance	13
Troubleshooting.	14

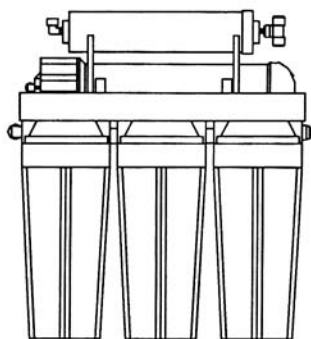
INTRODUCTION

Thank you for choosing a CWW Reverse Osmosis Drinking Water System. With proper care it will produce high quality drinking water for many years. You have purchased the most economical system for reducing many contaminants that can cause unwanted tastes and odours from your water.

SAFETY PRECAUTIONS NOTICE: READ CAREFULLY AND FOLLOW THE INSTRUCTION IN THIS MANUAL BEFORE PROCEEDING WITH THE ACTUAL INSTALLATION. PAY PARTICULAR ATTENTION TO ALL WARNINGS, CAUTIONS AND NOTES. FAILURE TO DO SO COULD RESULT IN PERSONAL INJURY OR DAMAGE TO THE EQUIPMENT OR OTHER PROPERTY. CHECK WITH YOUR LOCAL PUBLIC WORKS DEPARTMENT FOR THE PLUMBING AND SANITATION CODES. THIS SYSTEM MUST BE INSTALLED ACCORDING TO THE GUIDELINES.

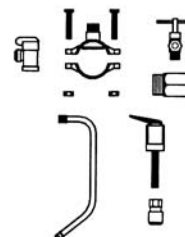
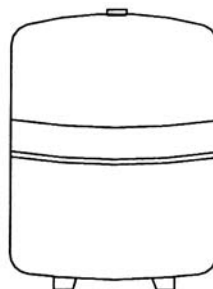
IF INSTALLATION SEEMS DIFFICULT, PLEASE CONTACT YOUR LOCAL PLUMBER TO ASSIST WITH INSTALLATION OR TO COMPLETELY INSTALL. SAVE THIS MANUAL FOR FUTURE REFERENCE.

Check List



1. Reverse Osmosis unit
(CWW550 shown)

2. Water storage tank
4.4 gallons



3. Installation kits



4. Four coloured tubing
attached to RO unit

1. Reverse Osmosis unit.
2. Water storage tank, 4.4 gallons volume (2.8 gallons @ 40 psi).
3. Four colour tubing, 4 feet each colour (black, red, white and blue - 1/4" or 3/8" depends on the model or requirements).
4. Installation kit: tank ball valve, drain saddle valve, feed water valve, faucet assembly.

WARNING: DO NOT USE WHERE WATER IS MICROBIOLOGICALLY UNSAFE OR WITH WATER OF UNKNOWN QUALITY. ASK YOUR LOCAL WATER DEPARTMENT ABOUT THE QUALITY OF YOUR WATER SUPPLY BEFORE USING THIS PRODUCT. THIS PRODUCT IS ONLY INTENDED FOR USE WITH SAFE WATER SUPPLIES. PROTECT THE CARTRIDGE FILTERS, LINES, AND PIPE FROM FREEZING TEMPERATURES. INSTALLATION WHERE FREEZING COULD OCCUR CAN SEVERELY DAMAGE THE SYSTEM.

NOTE: THIS REVERSE OSMOSIS SYSTEM CONTAINS A REPLACEABLE COMPONENT CRITICAL TO THE EFFICIENCY OF THE SYSTEM. REPLACEMENT OF THE REVERSE OSMOSIS COMPONENT SHOULD BE WITH ONE OF IDENTICAL SPECIFICATIONS, AS DEFINED BY THE MANUFACTURER, TO ASSURE THE SAME EFFICIENCY AND CONTAMINANT REDUCTION PERFORMANCE.

HOW IT WORKS

Feed Water Valve:

This is the mechanism that connects the system to your cold water line under your sink. This device will self pierce copper and plastic plumbing.

Sediment Filter:

As water passes through this filter, rust, sand, scale, and other large particles are reduced.

Carbon Filter:

After the sediment Filter, the water passes through a carbon filter where chlorine, taste, and odor are reduced.

Shut-Off Valve:

When the storage tank is full and no product water is being drawn from the faucet, this valve closes and stops all flow of water through the system.

Reverse Osmosis Membrane:

After the water has been pre-filtered, it flows through the semipermeable spiral. Here, dissolved solids are flushed to the drain, while the water that is able to pass through the membrane flows to the storage tank. A CTA (Cellulose Triacetate) membrane is a paper byproduct membrane bonded to a synthetic layer. Due to its cellulose composition, a CTA membrane requires chlorine in the water source to keep bacteria from forming on it. A CTA membrane has a rejection rate between 85-94 percent. TFM (Thin Film Membrane) membrane is made of a synthetic material. A TFM membrane does not require chlorine to be in the water to protect it from bacteria. A TFM membrane has a rejection rate between 95-98 percent, which is much higher than the CTA membrane.

Flow Restrictor:

This device allows the correct amount of reject water to flow over the membrane to help prolong its life and to aid in high quality water production.

Drain Saddle Valve:

This connects to your drain plumbing and allows reject water flow to enter the drain system.

Storage Tank:

The storage tank holds 2.8 gallons of product water at 40 psi. A diaphragm inside the tank keeps the water under pressure. The tank has an air pre-charge of 5-7 psi from the factory.

Polishing Filter:

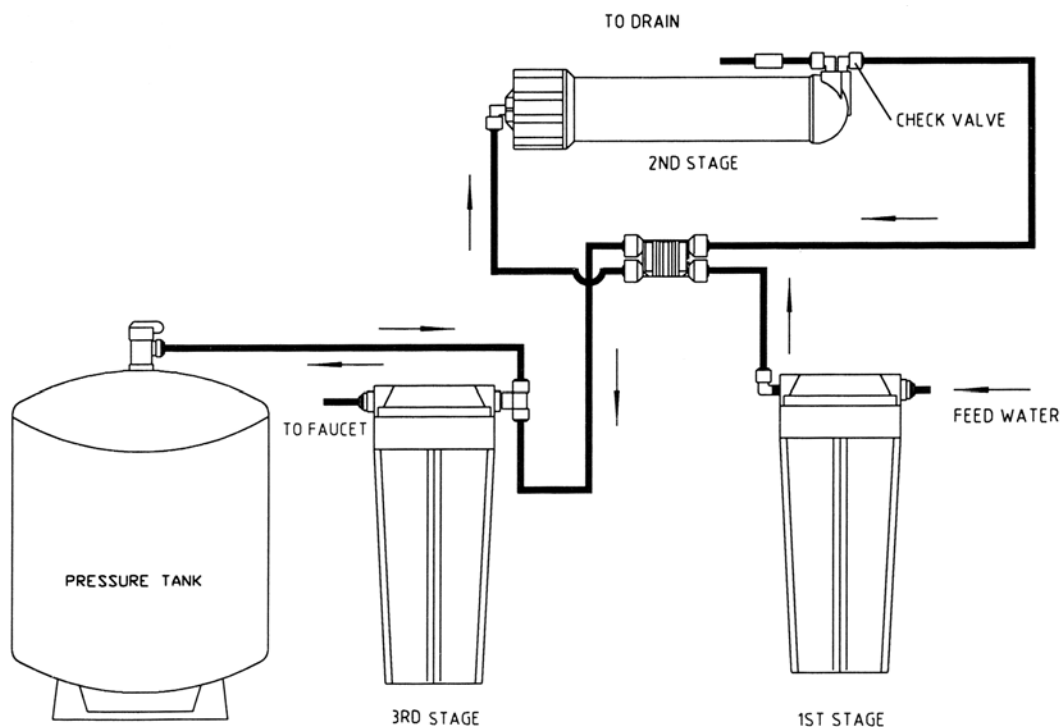
Granular activated carbon or carbon block is the final treatment step of your product water. This process enhances and clarifies water prior to delivery.

Faucet:

This sink-top or counter-top faucet dispenses the product water. It is hand operated and has two positions. Pushing down delivers flow as needed, and lifting the lever delivers constant flow.

NOTE: YOU MAY HEAR A GURGLING NOISE FROM THE FAUCET OR FROM THE SINK. THIS IS NORMAL, IT IS THE WATER GOING TO THE DRAIN. THE NOISE WILL STOP ONCE YOUR STORAGE TANK IS FULL. FURTHER, IF YOUR UNIT IS EQUIPPED WITH ULTRA VIOLET DISINFECTION IT IS NORMAL FOR THE FIRST FEW SECONDS OF WATER FLOW TO FEEL WARM. THIS IS DUE TO THE ENERGY EMITTED BY THE UV LIGHT BEING ABSORBED BY THE WATER.

CWW-316 AND 324 FILTRATION PROCESS



SPECIFICATIONS

STAGE	DESCRIPTIONS	SERVICE LIFE
1ST STAGE	Sediment filter, 5 micron (CWW 316)	6-12 months
	Sediment/carbon filter - PLEX 10 micron (CWW 324)	6-12 months
2ND STAGE	CTA membrane, 16 GDP (CWW 316)	24-36 months
	TFC membrane, 24 GDP (CWW 324)	24-36 months
3RD STAGE	High performance carbon filter	6-12 months

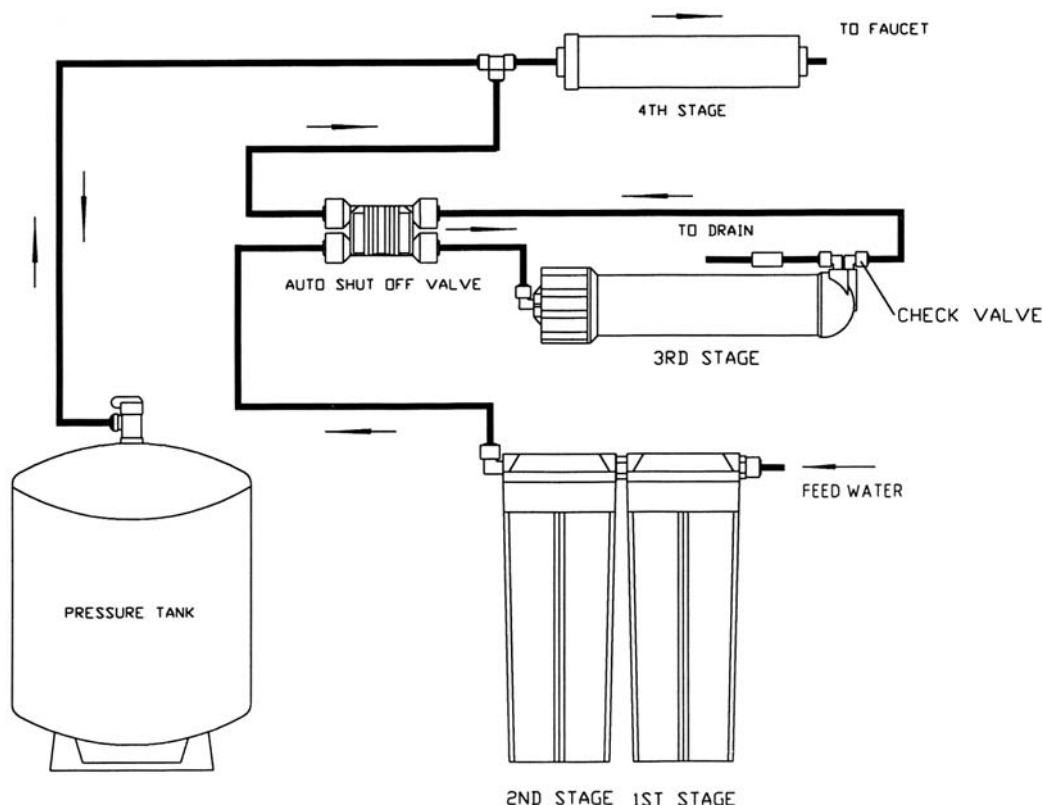
INSTALLATION REQUIREMENTS

The requirements below are necessary for correct installation, proper operation and to validate the warranty:

- A pressure of 40 psi* (276 Kpa**) minimum and 100 psi (689 Kpa) maximum.
- A temperature of 40-100 °F (5-35 °C).
- Maximum total dissolved solids (TDS) 1500 ppm.***
- Installation must comply with existing provincial and local plumbing codes.
- PH level 3-11.

*pounds per square inch **Kilo-Pascal ***parts per million

CWW-436 FILTRATION PROCESS



SPECIFICATIONS

STAGE	DESCRIPTIONS	SERVICE LIFE
1ST STAGE	Sediment filter, 5 micron	6-12 months
2ND STAGE	Carbon filter	6-12 months
3RD STAGE	TFC membrane, 36 GPD	24-36 months
4TH STAGE	Inline polishing filter	12 months

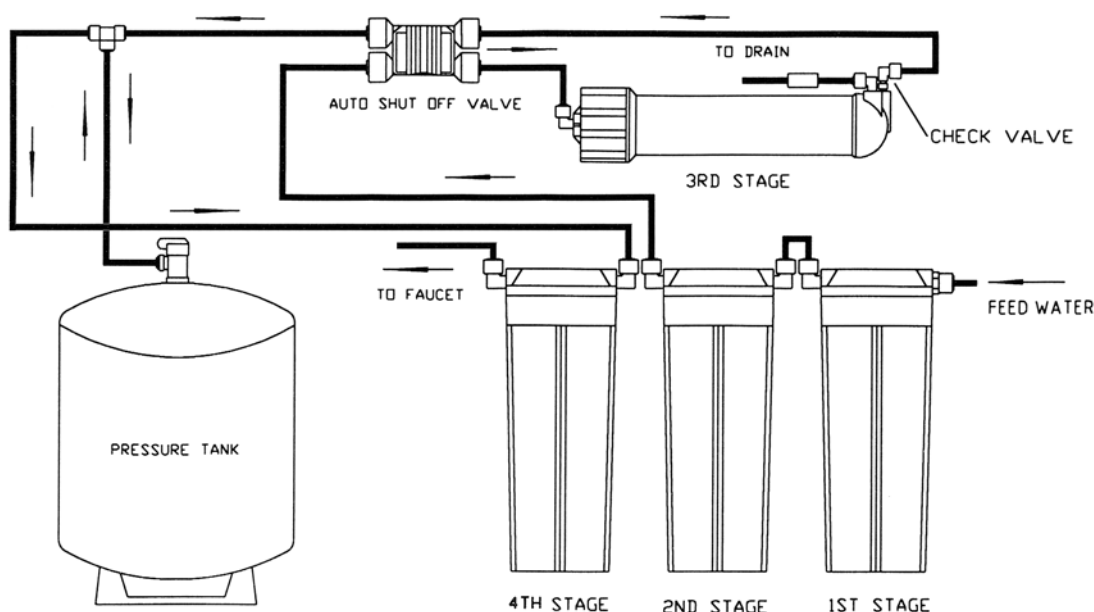
INSTALLATION REQUIREMENTS

The requirements below are necessary for correct installation, proper operation and to validate the warranty:

- A pressure of 40 psi* (276 Kpa**) minimum and 100 psi (689 Kpa) maximum.
- A temperature of 40-100 °F (5-35 °C).
- Maximum total dissolved solids (TDS) 1500 ppm.***
- Installation must comply with existing provincial and local plumbing codes.
- PH level 3-11.

*pounds per square inch **Kilo-Pascal ***parts per million

CWW-450/3H FILTRATION PROCESS



SPECIFICATIONS

STAGE	DESCRIPTIONS	SERVICE LIFE
1ST STAGE	Sediment filter, 5 micron	6-12 months
2ND STAGE	Carbon filter	6-12 months
3RD STAGE	TFC membrane, 50 GPD	24-36 months
4TH STAGE	High performance carbon filter	6-12 months

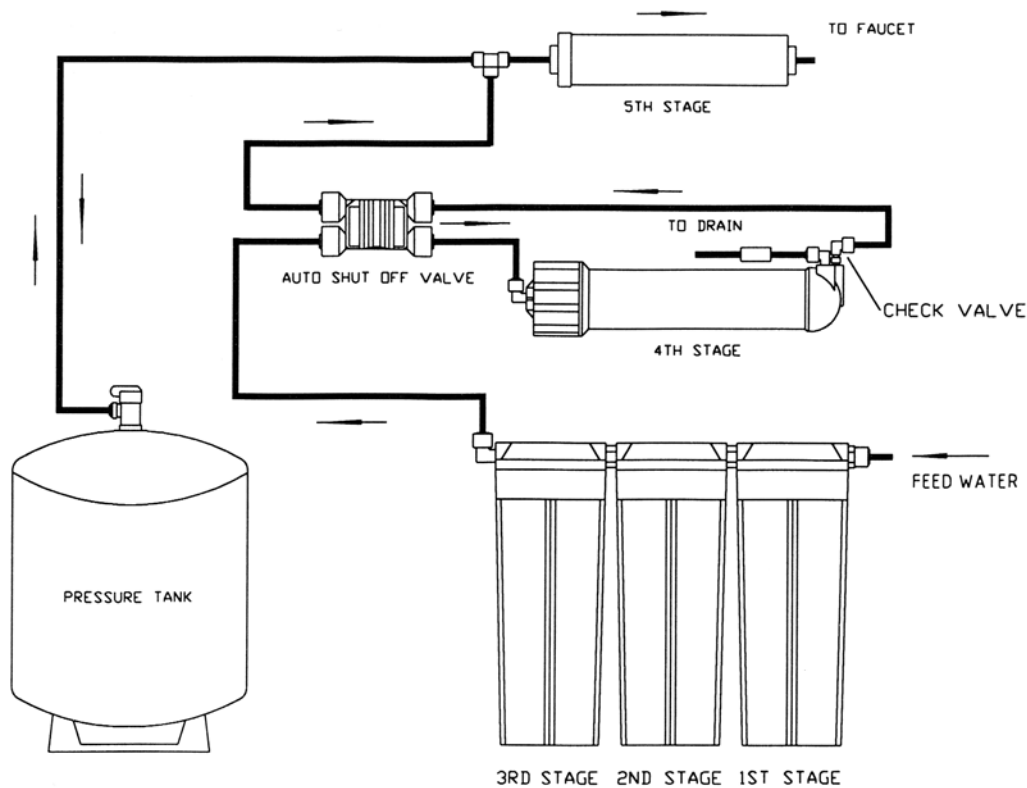
INSTALLATION REQUIREMENTS

The requirements below are necessary for correct installation, proper operation and to validate the warranty:

- A pressure of 40 psi* (276 Kpa**) minimum and 100 psi (689 Kpa) maximum.
- A temperature of 40-100 °F (5-35 °C).
- Maximum total dissolved solids (TDS) 1500 ppm.***
- Installation must comply with existing provincial and local plumbing codes.
- PH level 3-11.

*pounds per square inch **Kilo-Pascal ***parts per million

CWW-550 FILTRATION PROCESS



SPECIFICATIONS

STAGE	DESCRIPTIONS	SERVICE LIFE
1ST STAGE	Sediment filter, 5 micron	6-12 months
2ND STAGE	GAC carbon filter	6-12 months
3RD STAGE	Carbon block filter	6-12 months
4TH STAGE	TFC membrane, 50 GPD	24-36 months
5TH STAGE	Inline polishing filter	12 months

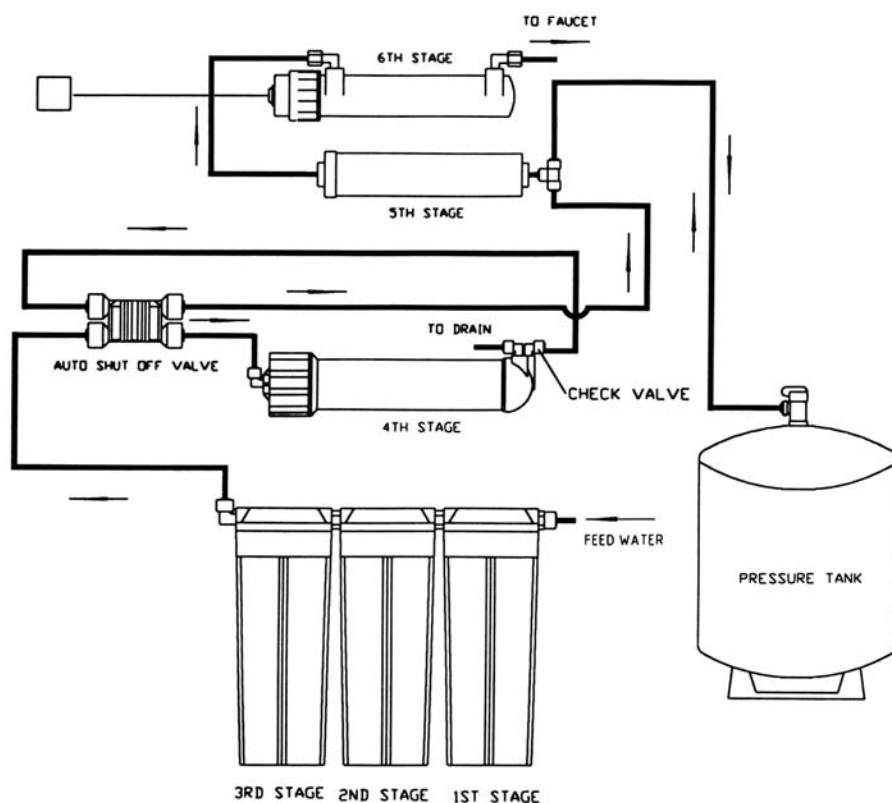
INSTALLATION REQUIREMENTS

The requirements below are necessary for correct installation, proper operation and to validate the warranty:

- A pressure of 40 psi* (276 Kpa**) minimum and 100 psi (689 Kpa) maximum.
- A temperature of 40-100 °F (5-35 °C).
- Maximum total dissolved solids (TDS) 1500 ppm.***
- Installation must comply with existing provincial and local plumbing codes.
- PH level 3-11.

*pounds per square inch **Kilo-Pascal ***parts per million

CWW-650UV FILTRATION PROCESS



UV LAMP SPECIFICATIONS;

UV output:

30,000 micro-watts at maximum flow.

Inlet water temperature:

40-105° F

Maximum static temperature rise:

16.1° F above ambient

Operating voltages available:

120V/60Hz, 220V/50Hz, 12VDC

SPECIFICATIONS

STAGE	DESCRIPTIONS	SERVICE LIFE
1ST STAGE	Sediment filter, 5 micron	6-12 months
2ND STAGE	GAC carbon filter	6-12 months
3RD STAGE	Carbon block filter	6-12 months
4TH STAGE	TFC membrane, 50 GPD	24-36 months
5TH STAGE	Inline polishing filter	12 months
6TH STAGE	UV lamp	9-12 months

INSTALLATION REQUIREMENTS

The requirements below are necessary for correct installation, proper operation and to validate the warranty:

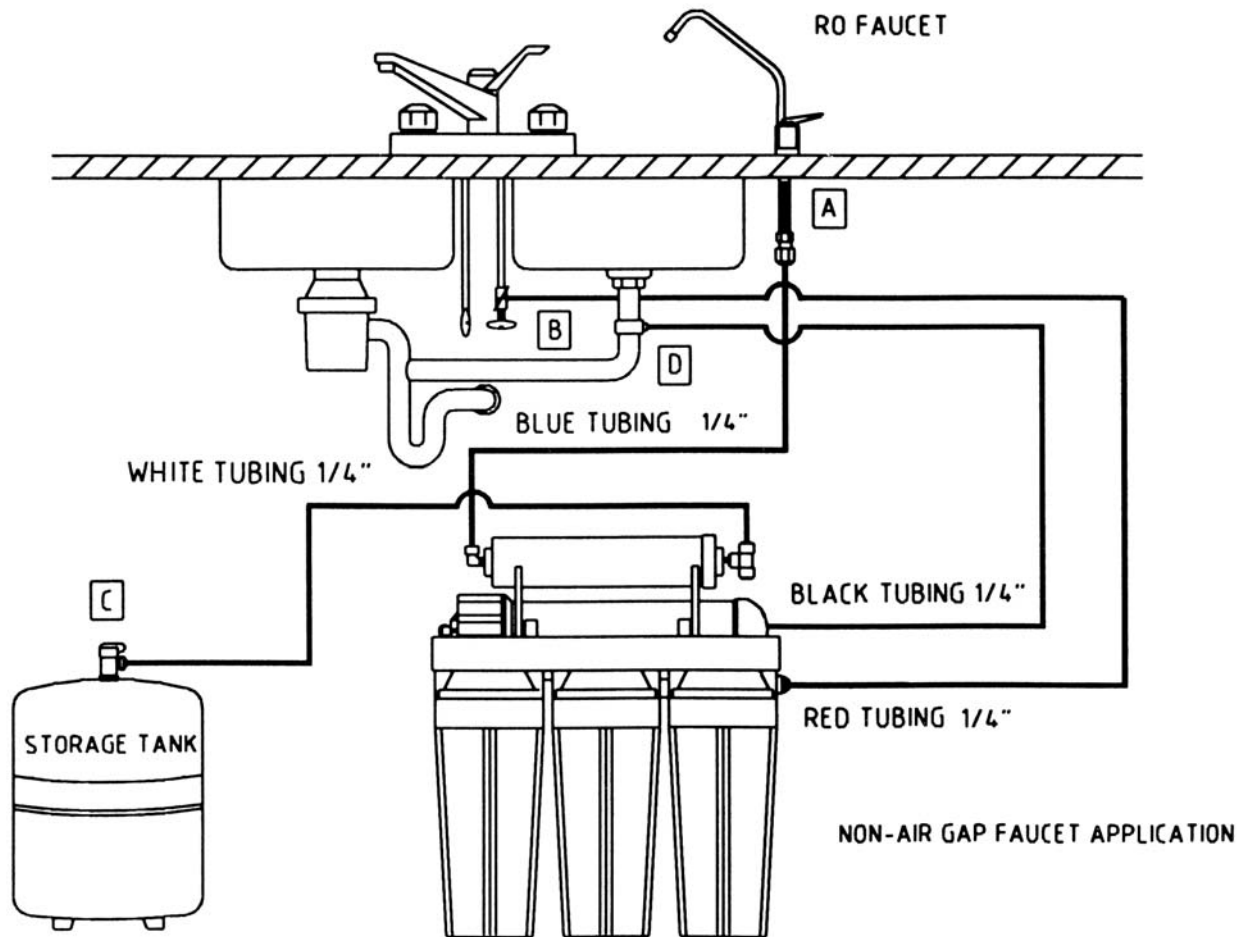
- A pressure of 40 psi* (276 Kpa**) minimum and 100 psi (689 Kpa) maximum.
- A temperature of 40-100 °F (5-35 °C).
- Maximum total dissolved solids (TDS) 1500 ppm.***
- Installation must comply with existing provincial and local plumbing codes.
- PH level 3-11.

*pounds per square inch **Kilo-Pascal ***parts per million

Please follow the 4 colour coded tubing connection to complete installation:

RED - feed water to RO system (B)

BLACK - discharge water to drain (D)



CAUTION: WHEN CUTTING SUPPLIED TUBES, PREDETERMINE THE LENGTH BY MEASURING THE DISTANCE BETWEEN THE COMPONENTS TO BE CONNECTED. NO TOOLS ARE NEEDED TO CONNECT THE 4 COLOUR TUBES.

Secure connections are simple; cut the tube square and push past the O-ring to the tube stop. Tube is secured in position.

Disconnection is just as easy; push collet against body and slide tube out of fitting.

For installation, you will need:*

- Drill and drill bits
- Teflon tape
- Straight & Phillips screwdriver
- Adjustable wrench
- Work gloves
- Pliers
- Safety glasses
- Knife or scissors

* Additional tools will be required for installation on sinks without a predrilled alternate faucet location.

NOTE: DRILLING OF HOLES MAY BE NEEDED FOR THE FAUCET AND COLD WATER SADDLE VALVE.

CAUTION: DO NOT ATTEMPT TO INSTALL THIS SYSTEM USING DEFECTIVE OR DAMAGED COMPONENTS.

WARNING: IF DRILLING METAL PIPE, TO PROTECT YOURSELF FROM SERIOUS INJURY OR FATAL SHOCK, USE A HAND DRILL OR CORDLESS DRILL TO MAKE THE HOLE. IF YOU USE AN ELECTRIC DRILL, OUTLET MUST BE GROUNDED. ALWAYS USE SAFETY GLASSES OR OTHER EYE PROTECTION WHEN DRILLING TO PREVENT POSSIBLE EYE INJURY FROM FLYING PARTICLES.

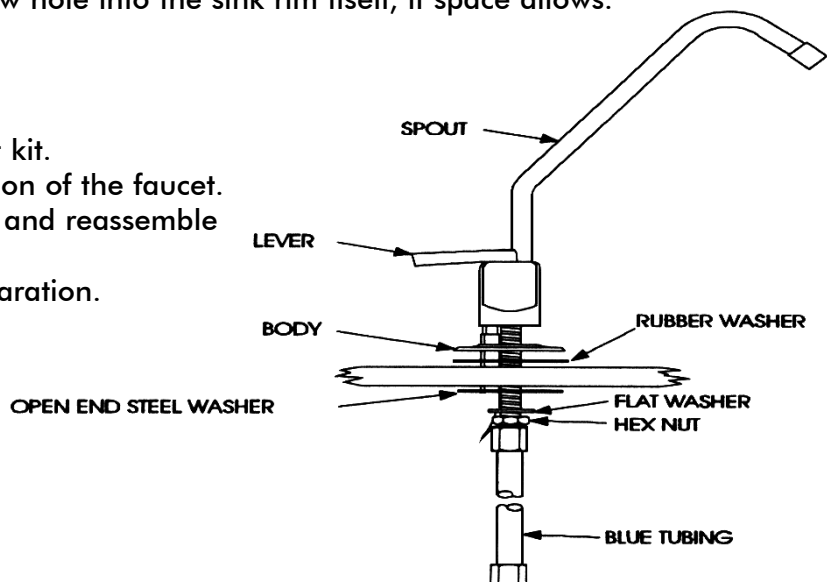
Faucet Installation

Select a location to mount the faucet. It is recommended that the faucet be placed in the extra hole provided on most sinks (many times used for a sprayer or a soap dispenser). If this is not possible, an alternative location will be required such as:

- On the counter top next to the sink, positioned to allow the faucet spout to drain into the sink. This requires a 2" clearance around the faucet - both above and under the counter top.
- Another option is to drill a new hole into the sink rim itself, if space allows.

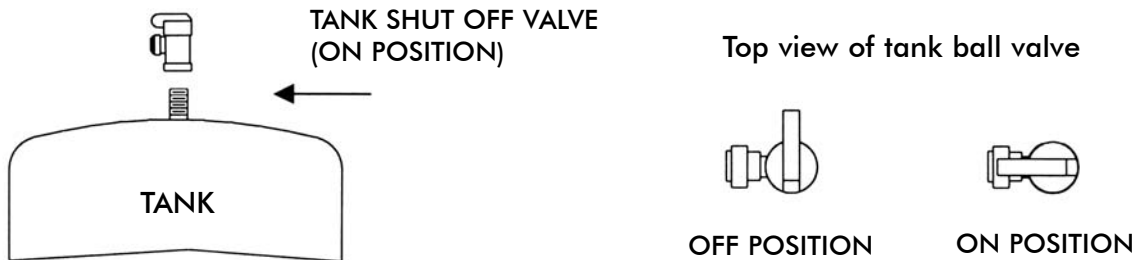
Mounting Faucet

1. From parts bag, locate faucet kit.
2. Disassemble the bottom portion of the faucet.
3. Place faucet into hole of sink and reassemble faucet underneath sink.
4. Proceed to storage tank preparation.



Storage Tank Preparation

1. Remove storage tank from its box, discard packing material.
2. From parts bag locate: tank shut-off valve.
3. Using Teflon tape (not included), wrap 1/4" male threads on storage tank using clockwise motion.
4. Install tank shut-off valve on storage tank as seen in figure "B". Do this by hand tightening valve clockwise onto male threads of storage tank.
5. Slide tubing into tank shut-off valve.



6. Set aside until needed and proceed to drain connector installation.

Drain Connector Installation

1. From parts bag locate drain connector assembly.
2. The drain clamp should be drilled, installed above the trap and on the vertical or horizontal tail piece.
3. The hole position on the pipe should be marked and drilled with a 1/4" bit through only one side of the pipe.
4. Align the drain clamp over drilled hole and attach it to the drainpipe and tighten the two screws evenly.

NOTE: IF THE UNIT IS INSTALLED IN A PERMANENT HANGING POSITION, A MINIMUM CLEARANCE OF 2" WILL BE REQUIRED TO ALLOW FILTER REPLACEMENT.

Standard Installation

1. Mark pilot holes for mounting unit 16" from base and 7" apart.
2. Drill pilot holes using a 1/8" drill bit, approximately 1/2" deep.
3. Set mounting screws with screwdriver, leaving a 1/4 gap between screw head and mounting surface to allow bracket to slide on easily.

NOTE: ALTERNATIVE FASTENING METHODS MAY BE REQUIRED FOR PLASTERBOARD PARTICLE BOARD OR SIMILAR MATERIAL INSTALLATION.

Inlet Water Supply

CAUTION: ONLY USE COLD WATER LINE. IF YOU CANNOT TELL WHICH LINE IS THE COLD, TURN ON WARM WATER AND FEEL FOR WARMTH.

1. Locate the cold water line and shut-off valve for faucet. Shut off water supply. Turn cold water on at sink to relieve pressure.
2. From parts bag, locate: self-piercing saddle valve.
3. If space permits, locate self-piercing saddle valve between the supply shut-off valve, normally located under the sink, and the faucet. If not, proceed by locating saddle valve in the most convenient location on cold water line.
4. Turn needle valve counterclockwise until it stops.

NOTE: THE ABOVE INSTALLATION STEPS ARE FOR COPPER AND PLASTIC PLUMBING INSTALLATION ONLY. TO INSTALL IN IRON PIPE, YOU WILL NEED TO DRILL A HOLE FOR THE PIERCING POINT.

System Start-Up

1. Turn on cold water supply and the under sink feed water valve but close the tank ball valve.
2. Open RO faucet for continuous flow.
3. Check system for leaks, tighten as necessary.
4. After 10-30 minutes, the water will start to drip out of the RO faucet. Let it drip for about 10 minutes and then flip the handle to the closed position. **TURN ON THE TANK BALL VALVE NOW.** It will now take several hours (2-3) for the storage tank to fill, depending on the local water pressure.

CAUTION: DO NOT DRINK THE WATER FROM THE FIRST TANK PRODUCED BY YOUR NEWLY PURCHASED SYSTEM.

5. After the tank is full (you will hear the water stop), flush the system by placing the RO faucet in the open position until the water is completely discharged.
6. Upon complete discharge of the storage tank, flip handle to closed position on RO faucet and let the refilling process begin. This process could take 2-3 hours to complete.
7. After the second tank is filled, you may enjoy the pure water.
8. Check daily for leaks for the first week and periodically thereafter.
9. You may notice that the water may be milky colored during the first week. This results from air bubble in the water. It is normal and safe.

Clearing Procedures

1. Shut off the source water supply to the RO system.
2. Open the RO faucet and depressurize the RO system and storage tank.
3. Remove pre-filter cartridges, post-filter cartridges, and RO membrane. Discard or prepare for cleaning. If the RO membranes element is to be reused, disinfectant solution should be introduced into the permeate tube outlet. A sufficient amount of solution should be used to remove bio film in this vulnerable area before reinserting the membrane into the housing.
4. Wash the internal housing areas with warm soapy water using a clean brush (do not scratch the surface of the housings). Be sure to close O-ring grooves thoroughly. Remove the existing O-ring. Discard O-ring or prepare for cleaning.
5. Rinse off all housing pieces with clean water to remove soap.
6. Replace O-ring, and lubricate per manufacturer's instruction.
7. Pour recommended amount of disinfection solution into each of the clean housings and replace housing on the RO system.
8. Disconnect RO storage tank from the system.
9. RO storage tank cleaning procedure:

Recommended items:

- Tank sanitizer feeder or small filter housing with fittings and tubing
 - Disinfectant solution
 - Pressure gauge and air pump
- a) The tank should be empty. Check the air precharge pressure with an accurate gauge (low pressure type 0-12 lbs.). The average tank pressure should be 8-10psi (when the tank is empty).
 - b) Fill the tank sanitizer feeder with the recommended disinfectant dosage, and connect the feeder to the water supply and RO storage tank.
 - c) Turn on water supply and force water and disinfectant solution into the RO storage tank. The storage tank should feel heavy when filled.
 - d) The disinfectant solution should remain in the tank a minimum of 10 minutes. If the tank has not been sanitized in over a year, leave the solution in for 20 to 30 minutes. Turn off the water supply valve and the RO storage tank valve. Disconnect the sanitizer feeder, and connect the RO storage tank to the RO unit (the tank ball valve should remain closed).
10. Open the feed water valve and open the RO faucet until water flows freely from the spout. Close the RO faucet. Hold the disinfectant solution in the RO system, including the tubing and faucet, for a minimum of 10 minutes. Open the tank ball valve.
 11. Shut off the feed water valve and open the RO faucet. Let water run out until the flow stops at the RO faucet.
 12. Open the feed water valve. Let water flow freely from the faucet for three minutes. Shut off the water at the source water supply with RO faucet open.
 13. When the flow of water has stopped at the RO faucet, remove the filter housing sumps and membrane housing from the RO system. Replace the filters and membrane according to the service life.
 14. Replace the housings on the RO system. Open the source water valve and allow the water to flow from the faucet.
 - Because some of the disinfectant may still be in the system, the system should be flushed prior to using the water for human consumption.
 - A maintenance record should be kept for the RO system including information about the replacement parts, when service was performed, and by whom.

Preventive Maintenance

These recommendations are intended to maximize efficiency of RO water production by your system.

1. Filter Maintenance

- a) It is OK to store filters on the shelf for several years.
- b) To store the sealed, unopened filter, we recommend that it be kept in an air-tight container. This prolongs the shelf life of the carbon filter (particularly if the filter was ordered more than one year before its intended use) and avoid having the filter absorb any possible odour from the air.

2. Membrane Maintenance

- a) The dry packed membrane usually has a two-year shelf life. To prolong the shelf life, we recommend keeping unopened dry membrane in a refrigerator.
- b) Once the membrane is in use, we recommend running the RO system every day for at least 10-15 min. (about 1 gallon or 4 liters of drinking water). This helps to maintain the membrane performance.
- c) If the RO system is not used for over a week, drain the storage tank first. Then fill the tank and drain it twice. Your RO system is now ready to use again.

3. Filter and membrane change procedures:

- a) Shut off the water supply.
- b) Turn off the tank ball valve by turning it 90 degrees.
- c) Open RO faucet to the continuous flow position.
- d) Lift the filter housing up 1" and slide in the housing wrench (not supplied with system). Use one hand to hold the system and the other hand to turn the wrench clockwise to open the housing.

NOTE: IF IT IS TOO TIGHT TO OPEN THE HOUSING YOU MAY TRY UNPLUGGING THE FITTING BETWEEN THE RED TUBING AND THE SYSTEM IN ORDER TO REDUCE THE AIR AND WATER PRESSURE INSIDE THE HOUSING.

- e) After opening the housing, remove the used filter and put the new filter into the housing. Make sure the O-ring is back in place and turn the housing counterclockwise to close.
- f) Repeat previous step to change second filter.
- g) Turn on the water supply and make sure there are no leaks.
- h) Let the water drip from the faucet for about 10 minutes. If the water flow is less than 1 cup (8oz. or 240 ml) per minute, it may be a sign to change the membrane.
- i) Membrane change procedures:
 - Unscrew the membrane housing cap.
 - Slide out the used membrane and discard.
 - Insert the new membrane into the housing. The end with the two O-rings should go in first; to prevent leaks be sure it is fully seated in the bottom of the housing.
 - Screw the cap back onto the membrane housing, making sure O-ring is still in place.
 - It may take 10-20 minutes for the new membrane to run at normal flow.
 - If the water flow is OK, then turn on the tank ball valve. After 1 minute, turn off the RO faucet and complete the filter change procedures.

TROUBLE SHOOTING

NOTE: TURN OFF THE SYSTEM BEFORE SERVICING.

PROBLEM	CAUSE	SOLUTIONS
Milky coloured water	<ul style="list-style-type: none">• Air in system.	<ul style="list-style-type: none">• Air in the system is a normal occurrence with initial start-up of the RO system. This milky look will disappear during normal use within 1 to 2 weeks.
Noise from faucet	<ul style="list-style-type: none">• Air gap faucet.• Location of drain saddle.• Restriction in drain line.	<ul style="list-style-type: none">• Will disappear after system shut down.• Relocate the drain to above water trap.• Blockage sometimes caused by debris from garbage disposal or dishwasher.
Small amount of water in storage tank	<ul style="list-style-type: none">• System just starting up.• Air pressure in storage tank is low.	<ul style="list-style-type: none">• Normally it takes 2-3 hours to fill tank. Low water pressure and/or temperatures can reduce production rate.• Add pressure to storage tank. The pressure should be 8-10 psi when the tank is empty.
Slow production	<ul style="list-style-type: none">• Low water pressure.• Crimps in tubing.• Clogged pre-filters.• Fouled membrane.	<ul style="list-style-type: none">• Add a booster pump.• Make sure tubing is straight.• Replace pre-filters.• Replace membrane.
Water taste or smell Offensive	<ul style="list-style-type: none">• Post carbon is depleted.• Fouled membrane.• Sanitizer not flushed out.	<ul style="list-style-type: none">• Replace post carbon.• Replace membrane.• Drain storage tank and refill it overnight.
No drain water	<ul style="list-style-type: none">• Clogged flow restrictor.	<ul style="list-style-type: none">• Replace flow restrictor.
Leaks	<ul style="list-style-type: none">• Fittings are not tightened.• Twisted O-ring.• Misalignment of hole in drain saddle.	<ul style="list-style-type: none">• Tighten fittings as necessary.• Replace O-ring.• Realign drain saddle.

FILTER REPLACEMENT DATES

FILTER TYPE	MODEL #	DATE CHANGED

Sold exclusively in your area by: