

**Installation Instructions
Residential Reverse Osmosis
Drinking Water Systems
3,4, and 5 stage Systems**

Installation Instructions

Your Reverse Osmosis System has been tested to ensure that it will operate correctly. The following periodic maintenance is recommended so that your system will provide years of trouble-free service:

Replacement Parts	Replacement
Pre-filter(sediment)	Every 6 months
Carbon Block Filter	Every 6 months
Ceramic Filter	Every year
R/O Membrane	Every 2-3 years
Post Carbon filter	Every 6 months

Components:

The following components may make up your Reverse Osmosis Drinking Water System.

Pre-Filter (sediment) removes larger particles such as sand, silt, rust and scale.

Carbon Block Filter (based on unit, may come with 1 or 2) removes chlorine in the supply water to protect the reverse osmosis membrane.

Doulton Ceramic Filter (optional filter which includes carbon core) Designed to remove pathogenic bacteria, cysts, and fine sediment.

R/O Membrane reduces dissolved minerals, metals and salts. During the filter process, harmful compounds are separated by the membrane and the reject water goes to waste (drain).

Post Carbon (coconut shell polishing filter) provided for final removal of foul tastes, odors and to provide fresh great tasting water.

Doulton Ceramic Filter (Post Version) Available as a heterotrophic bacteria **BARRIER**. Also provides for final polishing filter to remove foul tastes, odors.

Filter Housings, R/O Module and Post Doulton Barrier Hold prefilters, carbon filters, Doulton ceramic (pre or post) and membrane. A **bracket** is utilized to contain the housings in one neat, tidy package.

Storage tank holds filtered water, ready for use.

Automatic shut-off valve senses when the storage tank is full and closes the water supply to conserve water.

Faucet included to dispense R/O water when needed.

Feed water connector is connected to the water supply line to feed the R/O system.

Waste water drain clamp is connected to the drain to remove the reject water from the R/O system.

Tubing supplies the feed water and reject water lines

Fittings are used for connection between housings, faucet and tank

Tools

The following tools may be necessary, depending on the particular installation:

- 3/8" electric drill; 1/8" and 1/2" bits
- Porcelain hole cutter
- Hammer
- Concrete drill bits
- Phillips head and slot screwdrivers
- Adjustable Wrench
- Crescent Wrench
- Teflon Tape
- Tube Cutter

System location:

Your R/O system may be installed under a sink, in a basement or other location of your choice, depending on space and preference. Do not install system where temperatures fall below 32 degrees Fahrenheit.

Faucet installation should be decided prior to drilling a hole. Whenever possible, use an existing hole on the kitchen sink. If mounting of faucet requires drilling through granite, marble, or corian counter surfaces, an additional faucet stem may be required for sufficient depth for faucet connector and mounting hardware.

The storage tank can be placed on the floor, or when applicable mounted to the ceiling (basement) and strapped in for safety. Tanks when full of water weigh in excess of 30 lbs.

R/O system should be installed where there is sufficient area to access the filter housings for cartridge replacement.

Feed water connection can be installed at the faucet connection of the cold water line or at a shut off valve location. This connector includes a ball valve for turning supply water on or off to the R/O system.

When possible, install this system after a water softener (conditioner). This will allow the membrane to last substantially longer in life.

Drain connection is accomplished using the included drain clamp and tube connector. This piece is designed to fit around a standard 1-1/2" drain pipe. The drain valve should always be installed above (before) the tap and on the vertical or horizontal tailpiece. Do not install drain valve near a garbage disposal; this can plug the waste water line.

If discharging into a utility sink or standpipe, an air gap must be installed.

Plumbing Codes may require the use of an air gap. Check with local ordinance and state requirements.

Before installation begins: Make sure that there is sufficient tubing to complete the installation.

Installation Procedures:

1. Faucet Installation

If the kitchen sink has a sprayer, it may be disconnected allowing for simplified faucet mounting.

If a hole needs to be drilled, check below the sink at the desired location to ensure that there are no obstacles in the way.

For Porcelain, Enamel, Ceramic, Metal or Cast Iron Sinks, Precautions must be taken to make sure that during the drilling process, chipping or scratching of the surface does not occur. (With sinks of these materials, it is highly recommended that a professional does the installation)

2. Mounting the Faucet

Disassemble the faucet hardware as shown in the illustration. You may wish to use a faucet connector with a 7/16" female thread which allows for simple "push fit" connection of the tubing connection. (Supplied)

3. Feed Water Connector and tubing installation

Included with this system is a water supply valve with a thread-on ball valve. This fitting connects at the kitchen faucet supply or at a shut off valve location. Optional saddle valve connection or EZ fit adapter is available. Saddle valve option shown. Saddle valve connectors not enclosed due to state and local plumbing codes. See your local municipality for compliance details.

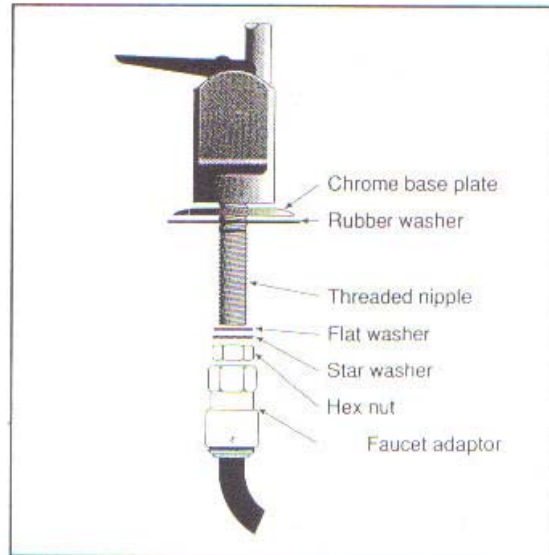
4. Drain saddle valve installation

Prior to installing the drain connector, please inspect drain pipes for damage, frailty, or wear.

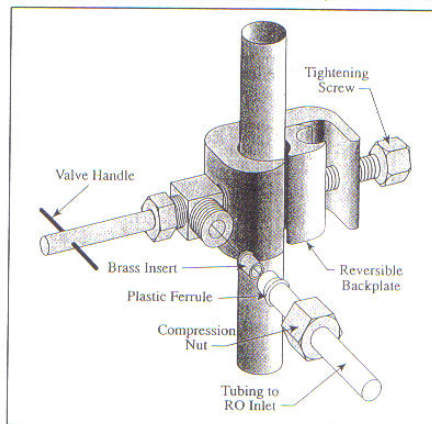
Drain saddle valves are designed to be installed on standard 1-1/2" OD drain pipe. Install drain saddle valve above (and before) the trap and on the vertical or horizontal tailpiece. Never install a drain saddle valve close to the outlet of a garbage disposal or plugging of the RO drain line may result.

Procedure:

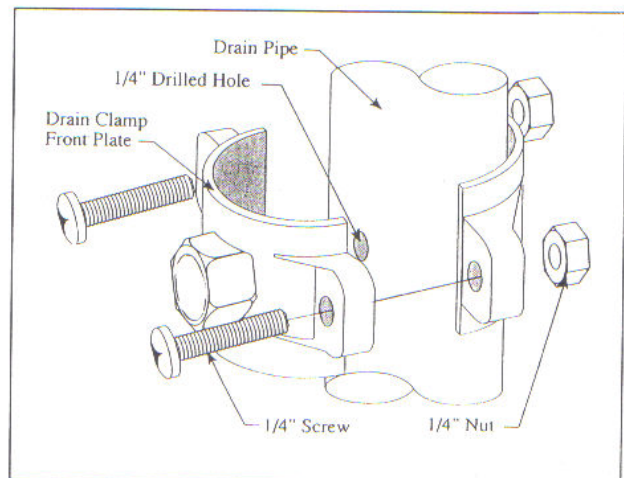
1. Position the threaded half of the drain saddle valve at the selected location and mark for the opening.
2. Drill 1/4" hole at the mark through one side of the pipe.
3. Position both halves of the drain saddle on the drain pipe so threaded opening lines with the hole.
4. Secure the drain saddle clamp on the valve with bolts and nuts provided.



Faucet installation without air gap



Self-taping feed water saddle valve installation



Drain saddle valve installation

5. Initial tubing connections

For convenience on under counter installations it may be advisable to complete under counter hose connections at this time.

6. RO component installation

Install the RO membrane, carbon block filter(s), sediment pre-filter, and (if included) Doulton ceramic filter into the housings supplied. [See Diagram for Details].

7. RO unit installation

Mount the bracketed system in the desired location, allowing room for removal of the housings for filter replacement purposes.

8. Sanitization and supply

Prefilling the storage tank is always recommended to ensure that there is sufficient pressure and no leaks.

Sanitization of the tubing, fittings, tank and faucet is important. Chlorox or equivalent bleach.

To pre-fill the storage tank:

1. Connect storage tank to feed water supply
2. Open supply valve and valve on tank
3. Allow 3-5 minutes to fill the tank.
4. Turn off supply valve and tank valve.
5. Let water and bleach sit for 15 minutes and then flush the system by opening up the storage tank valve.

Tanks come pre-pressurized at 7 psi. Please check to confirm this pressure.

9. Final tubing check

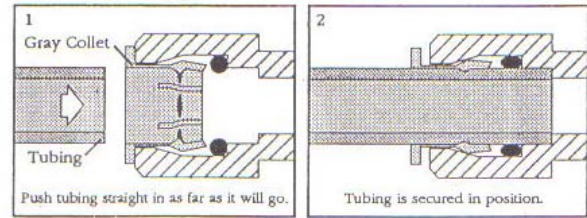
Cut tubing to correct lengths and always cut tubing squarely to ensure no leakage. Verify that no tubing has any sharp bends or kinks.

The shorter the tubing lengths, the more efficient the flow of the RO system.

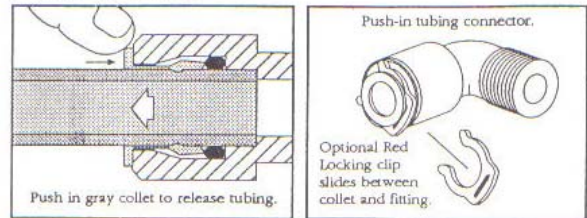
Additional installation suggestions– Icemaker, In-line Chiller, and Instant system.

This system can be connected to additional items before final connection to the faucet. Simply add a union tee after the final filter on the bracketed system and run that line to the back of the refrigerator.

To Attach Tubing



To Release Tubing



System Start Up Procedure:

1. Check all connections to be sure they are secure
2. Turn on feed water valve and check for leaks (Make sure to turn off immediately if any leaks are present).
3. Open valve on storage tank and open faucet until a steady stream of water flows.
4. Close faucet and allow 5 minutes to verify if any leaks occur.

When the system is first installed, water will spurt or trickle out of the faucet. This is common and will diminish as water fills the storage tank.

Flushing the system and final check

To verify that the system is operating correctly, follow these steps:

- A. Open faucet and allow tank to completely drain of sanitizing solution. **DO NOT USE THIS WATER**

WHEN TANK IS EMPTY, FAUCET WILL STEADILY DRIP. THIS IS THE PROCESS WATER DIRECT FROM THE FILTERS.

Allow system to process water for 4-6 hours, at which time the tank will be full. Empty the tank by opening up the faucet. **DO NOT USE THIS WATER.**

Allow system to process water to the tank. This should take a few hours depending on whether or not the system includes a pump. This water is ready to be consumed.

Maintenance:

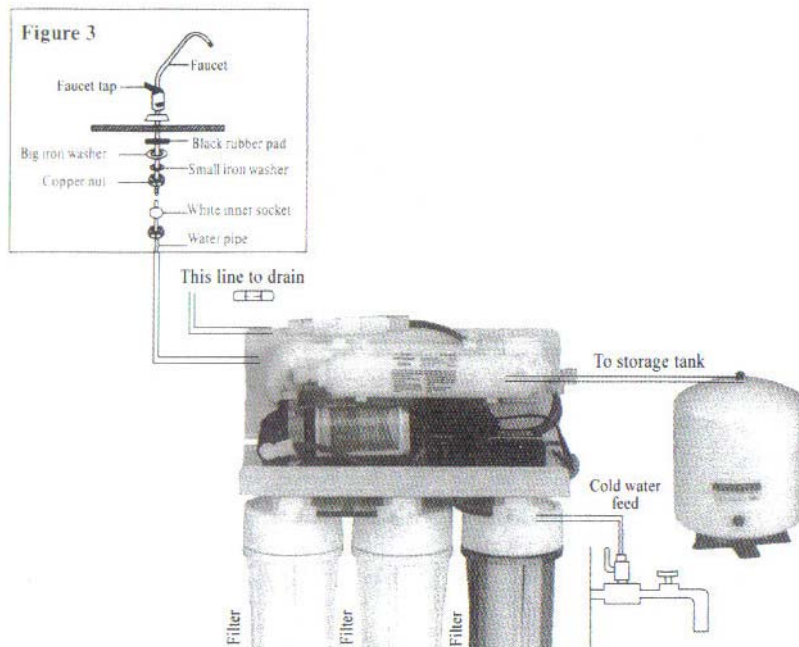
Your RO system contains filters that need to be changed periodically. See page 2 for details. The following provides the procedure for replacing the filter cartridges.

1. Close the ball valve at the supply line connection.
2. Open faucet to allow holding tank to drain.
3. Loosen and remove filter housings using the provided wrench, discard the used filter(s) and replace with new units.
4. (Optional) Wash the inside of the housings using a mild detergent and cloth. Thoroughly rinse and reinstall new cartridges.

Sanitization Procedure:

- A. Close feed water valve
- B. Open faucet to drain storage tank to sink.
- C. Remove all filters and membrane
- D. Use 5 1/4% bleach
- E. Add one cap (2 teaspoons or 10 ml) of bleach to each pre-filter housing and membrane housing.
- F. Slowly open feed water valve to allow water to mix with the bleach and refill the housings and tank.
- G. Open faucet to allow water to fill the lines. Close the faucet when water begins to come out.
- H. Let solution stand for 15 minutes.
- I. Then: Close feed water valve, close holding tank whilst faucet is open,
- J. Remove housings and empty
- K. Install new filters, making sure to remove protective wraps
- L. Tighten housings and turn on supply valve.
- M. Allow tank to fill (2-4 hours) and discard produced water
- N. Water will be available within 1-2 hours

Diagram of 5 stage system with booster pump



Please Note that the 3 stage system does not include the post carbon filter. Doulton Barrier Filter (Optional) may be installed in place of the post carbon filter. In the 4 and 5 stage systems, the optional Doulton ceramic filter should be installed in the carbon block filter housing.

