PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLING AND USING THIS SYSTEM

Canature™
NORTH AMERICA

475 PRO SERIES
Reverse Osmosis System
Installation & Operation Manual

Model	STAGE 1	STAGE 2	STAGE 3	STAGE 4	OUTPUT
475	SEDIMENT	CARBON	TFC RO MEMBRANE	CARBON	75 GPD
475-BP	SEDIMENT	CARBON	TFC RO MEMBRANE	CARBON	75 GPD

These drinking water systems are not intended to be used for the treatment of water that is microbiologically unsafe or of unknown quality.

REV. #1 9.18.11

Installation Instructions
Reverse Osmosis Drinking Water System

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

Disposable Filters	**Change Schedule**
Sediment (SED-10)	Every 3-6 months
Carbon (CB-10)	Every 6-12 months
R/O membrane	Every 24-36 months

Components

The following components make up your Reverse Osmosis Drinking Water System:

1. **Pre-filter** (Sediment SED-10) removes larger particles such as sand, silt, and rust.
2. **Pre-filter** (Carbon COC-10) removes chlorine in the feed water to protect the reverse osmosis membrane.
3. **Reverse Osmosis Membrane** reduces *dissolved* minerals, metals and salts. During the process, harmful compounds are separated by the membrane and the reject water goes to waste (drain).
4. **Post-filter** (Carbon COC-10) is provided for a final "polish" to provide great tasting drinking water.
5. **Storage tank** holds filtered water, ready for use.
6. **Automatic shut-off valve** senses when the storage tank is full and closes the water supply to conserve water.
7. **Faucet** used to dispense RO water when needed.
8. **Feed water valve** is connected to the cold water line to supply water to the RO system.
9. **Waste water saddle valve** is connected to the drain to remove reject water from the RO system.

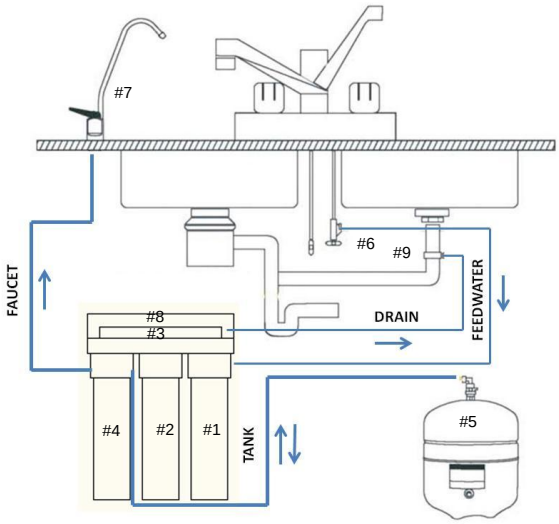


Figure 1. Installation Example

Tools

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

- 3/8`` variable speed electric drill; 1/8", ¼", ½" bits
- Center punch and hammer
- Phillips head and flat blade screwdrivers
- Adjustable wrench
- Teflon tape
- Plastic tube cutter

System Location

Your R/O system may be installed under a sink, in a basement or other location, depending on available space. Do not install unit where temperatures fall below freezing; otherwise, damage will result. Connection to an icemaker should also be considered for optimum performance.

Guidelines for component placement are as follows:

Faucet should be placed near the sink where drinking/cooking water is normally required. A 2`` flat surface is required to mount the faucet if an existing hole for a second faucet is not available. The thickness of the mounting surface should not exceed 1-1/4``.

Storage tank may be placed where it is convenient, within ten feet of the faucet. Under the sink or in a nearby cabinet are excellent choices. If tank is located further than ten feet from the faucet, use 1/2`` tubing to reduce pressure drop. Full tanks may weigh more than thirty pounds, so a sturdy shelf is required.

RO unit may be mounted on either side of the sink, in a cabinet or heated basement, with nearby access to a potable, cold line.

Feed water connection is accomplished with a feed water adaptor or self-piercing feed water saddle valve. Locate this assembly as close to the R/O unit as possible. Connect to a potable, cold water supply line only.

NOTE: Softened water is preferred since it will extend the life of your R/O membrane.

Drain connection is accomplished using a waste water saddle valve which is designed to fit around a standard 1-1/2`` OD drain pipe. The drain saddle valve should always be installed above (before) the trap and on the vertical or horizontal tailpiece. **Refer to Figure 1**

NOTE: Some local plumbing codes may require an air gap drain connection.

Site Preparation

Installers may want to speak with customers in advance and ask them to clean under the sink to save time. If a basement installation is advisable, check area to determine if extra fittings or hosing are required. Upon arrival it is a good idea to check the condition of all plumbing for potential leaks and advise customer so there will be no misunderstandings in the event leaks occur.

Unit Preparation

Open shipping carton, remove components and check that all parts are present.

Installation Steps

All plumbing must be completed in accordance with provincial/state and local plumbing codes. Some municipalities may require installation by a licensed plumber. Check local authority prior to installation.

1. Faucet Installation

If the sink has a sprayer it may be disconnected for faucet installation. (Installers should discuss this with customers). A pipe cap or plug will be necessary to seal the sprayer connection.

The faucet should be positioned so it empties into the sink and the spout swivels freely for convenience. If sink has a hole that can accommodate the RO faucet, no drilling Is required. Proceed with mounting the faucet.

Porcelain, Enamel, Ceramic on Metal or Cast Iron Sinks

For porcelain/enamel sinks marble or granite counter tops refer to Manufacturer/Supplier for proper drilling instructions.

Installation procedures for stainless steel sinks

Recommended tools:
- Center punch
- Variable speed drill
- High speed drill bits
- Protective gloves & eye protectors

Continued next section top of page.

Installation procedures for stainless steel sinks Con't

To make the faucet mounting hole (if sprayer or second hole is not used), check below to make sure the drill does not interfere with anything below the sink. Center punch a small indent at the desired faucet location. (2`` flat surface is required, not exceeding 1-1/4`` in thickness). Drill the 1/8" pilot hole. Drill the ½" hole for the faucet shank to fit through. Clean up sharp edges.

Mounting the Faucet

Disassemble hardware from the threaded nipple, except for chrome base plates and rubber washers.

Feed the threaded nipple through sink or counter mounting hole and orient the faucet. From below sink or counter, assemble the flat washer and hex nut on threaded nipple and tighten by hand. After checking faucet orientation, tighten with a wrench until secure.

2. Feed Water Adaptor Valve and Tubing Installation

The self piercing saddle tapping valve which is also supplied is designed for use with 3/8`` to 1/2`` OD soft copper supply tubing.

1. Turn off cold water valve from under sink or main water line valve for whole house.
2. Before installing saddle tapping valve, make sure piercing lance does not protrude beyond rubber gasket.
3. Assemble saddle valve on copper tubing.
4. Tighten screw to fasten saddle valve to copper tubing.
5. Connect 1/4`` feed water tubing from the R/O inlet to the quick connect fitting on feed water adaptor valve.
6. Turn handle clockwise to pierce soft copper tube until valve is firmly seated. (Valve is closed in this position).
7. Turn on water supply to pressure cold water line and check for leaks.

Figure 2. Feed Water Saddle Valve

3. Drain Saddle Valve Installation

Prior to proceeding it is important to inspect the condition of drain pipes to make sure they are not thin and frail. 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 . Refer to Figure 1.

1. Position half of drain saddle valve with quick connect fitting at selected location and mark for the opening.
2. Drill ¼`` hole at mark through one side of pipe. Position both halves of drain saddle on drain pipe so quick connect opening lines with hole.
3. Secure drain saddle clamp on valve with bolts and nuts provided. (Do not over tighten and make sure there is equal space between saddle halves on each side).

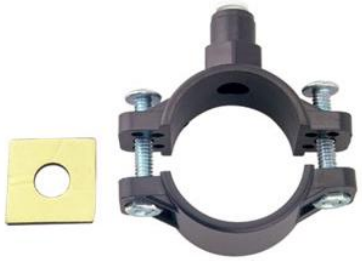


Figure 3. Drain Saddle Valve

4. Filter Cartridge Installation

Install cartridge filters into RO unit. (Also refer to figure 1.)

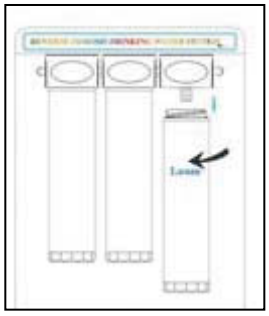


Figure 4. Filter Installation

5. RO Unit Installation

The unit is normally mounted to the right or left sink cabinet sidewall. To mount the unit, elevate it at least 3`` off the floor, level it and mark the location of mounting holes needed.

Drill holes for mounting screws and install screws, allowing the mounting bracket slots to slip over them.

NOTE: If the cabinet sidewalls are not solid, unit may sit on the floor with screws to keep it against the cabinet in a vertical position.

6. Tubing Connections

With all components in place, complete final tubing connections using these guidelines:

- Tubing should follow contour of the cabinets
- Cut tubing to desired length using square cuts and proper cutting device
- Make no sharp bends
- Keep tubing from the unit to the faucet as short as practical for good flow

Procedure

1. Connect 3/8” tubing from faucet to RO unit.
2. Connect 3/8” tubing from tank to RO unit.
3. Connect ¼” tubing from supply valve to RO unit.
4. Connect ¼” tubing from drain valve to RO unit.

7. System Start-Up

1. Check all connections to be sure they are secure.
2. Turn on feed water valve and check for leaks. (Turn off and correct leaks if leaks occur).
3. Close faucet and wait a reasonable amount of time to see if leaks result.

8. Flush System and Check Operation

1. Open faucet handle and allow tank to completely drain of sanitizing solution. Do not use this water. **NOTE:** When tank is empty, faucet will steadily drip. This is the rate the RO system processes water.
2. Close faucet and re-inspect system for leaks.
3. Allow system to process water for approximately four hours, at which point tank will be practically full.
4. Open faucet again and allow tank to empty for a second time. Do not use this water.
5. Wait another four hours to allow tank to re-fill. **NOTE:** If no objectionable tastes are noticed after second tank draining, RO processed water is ready for use. Otherwise, drain tank and re-fill for a third time.

Maintenance

Change Filters

Your system contains filters which must be replaced periodically for proper operation. (Please see Page 2 for general filter change schedule)
NOTE: Filter cartridges may require changing more frequently depending on the source water conditions.

In each filter head there is an automatic shut-off device which allows the filters to be changed without having to turn off the inlet water supply.

To change filters follow the procedures in figure 5 below.
NOTE: Expect a few drops of water when removing the filter cartridge.

Figure 5. Filter Installation

Change Membrane

Your system contains a reverse osmosis membrane which should be replaced periodically for proper operation. (Please see Page 2 for general filter change schedule)
NOTE: RO Membrane may require changing more frequently depending on the source water conditions.

To change filters follow the procedures below:

1. Turn off water supply by turning feed water saddle valve clockwise until valve is fully closed.
2. Turn storage tank valve clockwise to close.
3. Open faucet to relieve pressure.
4. Remove quick connect fittings from RO Membrane.
5. Re-connect RO Membrane.
6. Turn water supply back on.
7. Turn storage tank valve to open position.
8. Empty storage tank. Produce an additional full tank of water and discard it. Normal operation can resume.

Figure 6. RO Membrane

Water Pressure and Temperature

Product water quality and production of RO systems is dependent on pressure and temperature. Typically, RO membranes are rated at standard conditions of 77F (25 C) and 60 psi (4 bar) discharging to atmosphere. In general, the higher the pressure differential and temperature, increased quality and quantity of water is produced. These factors should be considered when sizing RO systems for a particular application.

Quick Connect Fittings

The 475 PRO Series system utilizes quick-connect fittings. Proper use of these push-in fittings is shown below. Along with these fittings, all tubing selected must be of high quality and must be cut with a plastic tube cutter or sharp razor with a clean, square cut.

Should a leak occur at a fitting, the cause is generally defective tubing. To fix a leak, relieve pressure, release tubing, cut off at least ¼`` from the end (square cut), reattach the tubing and confirm the connection is leak-free. Each time a new connection is made, it is advisable to cut of ¼`` from the end of the tubing using these fittings.

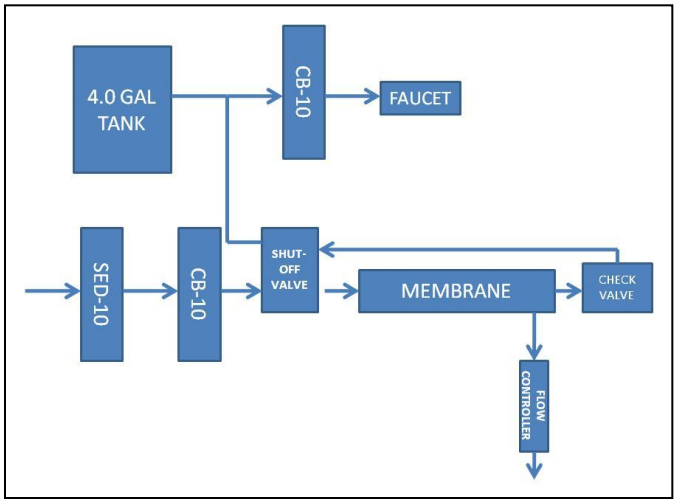
Cut the tube square and remove burrs and sharp edges. Ensure that the outside diameter is free from score marks. For soft or thin walled plastic tubing we recommend the use of a tube insert.

Push the tube into the fitting and up to the tube stop.

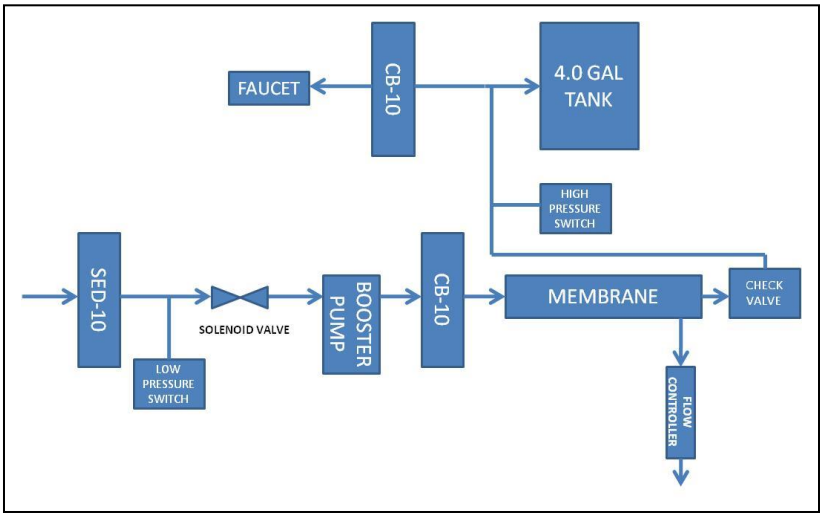
Pull on the tube to check that it is secure. Test the system before use.

To disconnect, ensure that the system is depressurized, push the collet square against the fitting. With the collet held in this position the tube can be removed.

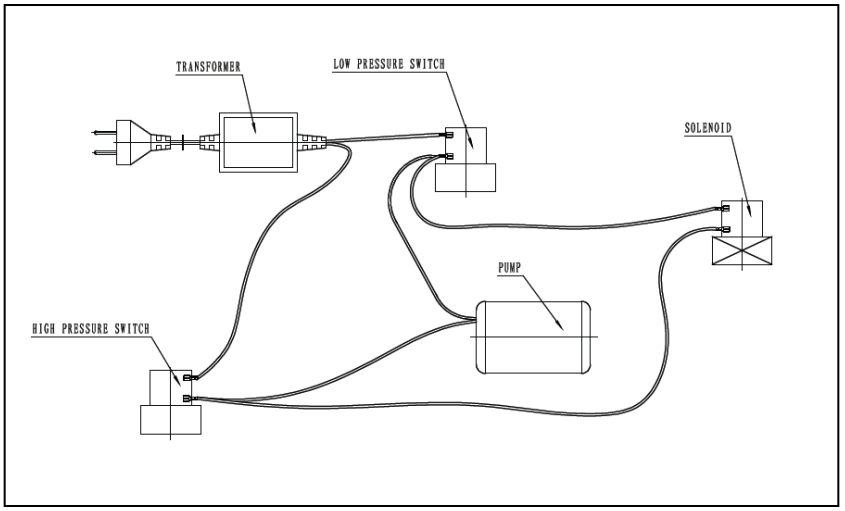
Flow Diagram (No Pump)



Flow Diagram (With Booster Pump



Wiring Diagram (With Booster Pump



Trouble Shooting

PROBLEM	CAUSE	SOLUTION
No product water.	1. Water supply is turned off.	1. Turn on feed water.
Not enough product water.	1. Water supply is blocked.	1. Clear restriction.
	2. Filters are plugged.	2. Replace pre-filter cartridge(s).
	3. Feedwater valve plugged or closed.	3. Open valve or unclog.
	4. No drain flow. Drain flow restrictor is plugged.	4. Clear or replace Drain Restrictor
Pump not running.	1. Low feed water pressure.	1. Check source water supply.
	2. No power supply or loose connection.	2. Turn on power supply.
	3. Transformer burnt out.	3. Repair or replace.
Pump running but system not producing water.	1. Carbon pre-filter CB-10 plugged.	1. Replace filter cartridge.
	2. Inlet solenoid valve not working.	2. Repair or replace solenoid valve.
System does not shut off.	1. High pressure switch not working.	1. Repair or replace high pressure switch.
Abnormal pump cycling noise.	1. Pre-filter plugged or low feed water pressure.	1. Replace filter or adjust or sufficient feed water.
No water to drain.	1. Plugged drain flow restrictor.	1. Replace drain flow restrictor.
Water has bad taste.	1. Post filter (CB-10) is exhausted.	1. Replace post filter (CB-10)
Leaks	1. Tubing connections not installed properly.	1. Re-install tubing into fitting.
	2. Defective tubing.	2. Cut damage section of tubing and re-install.

Conditions for Use

WATER SUPPLY	CHLORINATED / NON-CHLORINATED
FEED WATER PRESSURE	35 - 100 PSI
TEMPERATE	40 - 100F
PH	3.0 -11.0
MAX. TDS	2000 MG/L
TURBIDITY	< 1.0 NTU
MAX SILT DENSITY INDEX	<4.0
HARDNESS	< 5 GPG
IRON	<0.1
MANGANSESE	<0.05
HYDROGREN SULFIDE	0.00

Guarantee

475 PRO systems (excluding cartridge pre-filter, post-filter, and membrane) are warranted to be free from defects in materials and workmanship under normal use within the operation specifications for a period of two (2) years from the date of manufacture or date of purchase when verified by a bill of sale.

Canature North America Inc. will replace any part which fails two (2) years from date of manufacture as indicated by the serial number, provided the failure is due to a defect in material or workmanship. The only exception shall be when proof of purchase or installation is provided and then the warranty period shall be from the date thereof.

Canature North America Inc. assumes no responsibility for consequential damage, labour or expense incurred as a result of a defect or for failure to meet the terms of these guarantees because of circumstances beyond its control.