PENTAIR T600RO OMNIfilter Reverse Osmosis System Instruction Manual

Contents

PENTAIR T600RO OMNIfilter Reverse Osmosis System

IMPORTANT: Before installing this tankless reverse osmosis system, make certain your water supply complies with the following operating specifications. Failure to do so may reduce the effectiveness of the system and will void the warranty.

- Please read all instructions and precautions before installing and using your Tankless Reverse Osmosis system.
- For standard, under-sink installation on 3/8″ (9.52 mm) steel, brass, or copper cold water line.
- When selecting a location of the system, take into consideration the length of tubing required for connections between existing plumbing and system components. Some installation sites may require more tubing than provided in the kit.
- Ensure that the system's installation location is within 5 feet (1.52 meters) of a 110-volt grounded outlet.
- Numbered diagrams correspond with numbered steps.

SPECIFICATIONS

Recommended Feed Pressure Range:	10 to 60 psi (0.69–4.14 bar)
Production Rate (GPD):	396.4 gpd (1500 Lpd)
Pressure Range:	15 to 100 psi (2.75–6.89 bar)
Temperature Range:	40–100°F (4.4–37.8°C)
Operating Voltage:	Input Voltage: 100-240V AC
	Output Voltage: 24V DC
TDS:	<2000 ppm
Maximum Hardness[†]:	<10 gpg (170 mg/L)
Sulfide, Iron and Manganese[‡]:	<0.01 ppm
Chlorine in Water Supply:	<2 ppm
pH Limits:	3–11
Overall Dimensions:	5.51" W x 17.60" D x 17.10" H (140mm x 447mm x 434mm)
Weight:	25.35 lbs (11.5 kg)

If the hardness of your water is above 10 gpg (171 mg/L), lime scale will build up rapidly on the membrane. Scale

buildup will plug the membrane and make the system ineffective. We do not recommend these tankless reverse osmosis systems be used with water in excess of 10 gpg (171 mg/L) hardness. ‡A maximum total level of approximately 0.01 ppm sulfide, iron or manganese is permissible. See your local dealer to reduce these substances in your water.

PARTS INCLUDED

- Main Body Assembly
- Power Adapter
- Composite Filter (CF) & Carbon Filter (CB) Cartridges
- RO Membrane Cartridge (RO)
- Inlet Water Adapter
- Smart Faucet
- 1/4″ Tubing – White
- 1/4″ Tubing – Red
- 3/8″ Tubing – White
- 1/4″ Quick Connect Locking Clip
- 3/8″ Quick Connect Locking Clip
- 1/4″ Quick Connect Fitting
- Drain Line Clamp
- Front Cover
- Owner's Manual
- Quick Reference Guide

Tools and Materials Required

- Hand or electric drill (cordless preferred)
- (2) Adjustable wrenches
- Slotted and Phillips screwdrivers
- File
- Safety glasses
- Drill bits: 1/8″, 3/16″, 1/4″, 3/8″
- Tube cutter or utility knife
- Pencil
- Towel
- Bucket

If sink does not have hole for separate faucet:

- Center punch
- 3⁄4″ hole saw or drill bit
- Safety mask

NOTE: All tools may not be necessary for installation. Read installation procedures before starting to determine what tools are necessary.

CALIFORNIA PROPOSITION 65 WARNING

WARNING: This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

PRECAUTIONS

GENERAL

- **WARNING:** Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
- **CAUTION** RO System must be protected against freezing, which can cause cracking of the RO components and water leakage.

NOTE

- Your water must be within required limits for satisfactory operation. If not, your membrane life may be shortened and your warranty will be voided (see Specifications on page 2).
- This tankless reverse osmosis system will not protect against disease-causing bacteria or remove naturally-occurring harmless bacteria.
- Install on cold water line only.
- Make certain that installation complies with all state and local laws and regulations.
- The replacement cartridges and tankless reverse osmosis element included with this system have limited service lives. Changes in taste, odor, and color of the water being filtered indicate that the cartridge should be replaced.
- After prolonged periods of non-use (such as during a vacation) it is recommended that the system be flushed for 5 minutes before it is used.
- A drinking water cartridge may contain carbon fines (very fine black powder). After installation, flush the system for 5 minutes to remove the carbon fines before using the water.
- It is recommended that you run the tap at least 20 seconds prior to using water for drinking or cooking purposes.
- The contaminants or other substances removed or reduced by this water treatment device are not necessarily present in your water.

HOW REVERSE OSMOSIS WORKS
The Tankless Reverse Osmosis (RO) System uses a semi-permeable membrane to reduce dissolved salts and minerals, improving the taste and odor of your water. The RO membrane is made of layers of micron-thin film wound around a
hollow center core. Water molecules can pass through the membrane, but dissolved salts and minerals are rejected. The Tankless Reverse Osmosis System features 3-stage filter action. Your water supply is pre-filtered to reduce dirt and chlorine that may foul the membrane. The RO membrane separates this pre-filtered water into PRODUCT WATER and DRAIN or REJECT WATER. Incoming water pressure forces the product water through the membrane. Dissolved solids and other contaminants cannot pass through the membrane and are sent to the drain as reject water. For each gallon of water produced, less than 1 gallon of water goes to the drain. When used under the Specifications on page 2 of the manual, your Tankless Reverse Osmosis membranes should last 12-24 months.

INSTALLATION

GROUNDING INSTRUCTIONS: This appliance must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. This appliance is equipped with a cord having an appliance-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is installed and grounded following all local codes and ordinances.

WARNING: Improper connection of the appliance grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service representative if you are in doubt whether the appliance is properly grounded. Do not modify the plug provided with the appliance; if it will not fit the outlet, have a proper outlet installed by a qualified technician.

- The power supply receptacle for the appliance shall be installed in a cabinet or on a wall adjacent to the under-counter space in which the appliance is to be installed;
- There shall be an opening through the partition between the compartments specified in (A) that is large enough for the attachment plug to pass through. The longest dimension of the opening shall not be more than 1-1/2 in (38 mm);
- The edges of the opening specified in (B) shall, if the partition is wood, be smooth and rounded, or, if the partition is metal, be covered with an edge protector provided for this purpose by the manufacturer; and
- Care shall be exercised, when the appliance is installed or removed, to reduce the likelihood of damage to the supply cord.

Installing the Water Supply Adapter
The supply adapter fits 1/2″-14 NPS supply threads or 3/8″ x 3/8″ compression. If local codes permit, it may be used to connect the system to the cold water supply line. If local codes do not permit the use of the supply adapter, alternate connectors can be obtained from your local supplier.

Directions

- Turn off the cold water supply line. If the cold water line does not have a shut-off valve under the sink, you should install one.
- Turn on the cold water faucet and allow all water to drain from the line.
- Disconnect the riser cold water supply valve.
- Ensure the sealing gasket is fully seated into the feed adapter valve female thread.
- Install the feed adapter valve onto the supply valve as desired. The feed adapter valve may be installed at the bottom of the supply hose or the top of the cold water line. Hand tighten only.
- Connect the riser to the feed adapter valve.

NOTE: Be careful not to cross-thread.
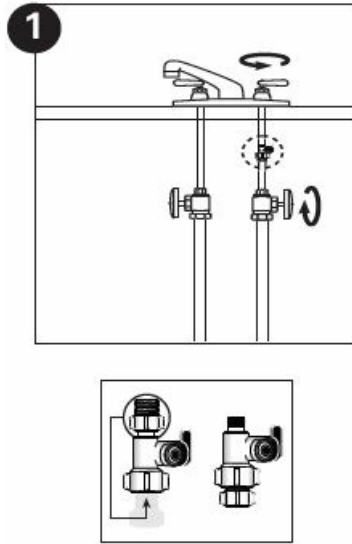
Selecting the Faucet Location

The drinking water faucet should be positioned with function, convenience, and appearance in mind. An adequate flat area is required to allow the faucet base to rest securely. The faucet fits through a 3/4″ hole. Most sinks have pre-drilled 1-3⁄8″ or 1-1⁄2″ diameter holes that may be used for faucet installation. If these pre-drilled holes cannot be used or are in an inconvenient location, it will be necessary to drill a 3/4″ hole in the sink to accommodate the faucet.

- **CAUTION** This procedure may generate dust which can cause severe irritation if inhaled or comes in contact with the eyes. The use of safety glasses and a safety mask for this procedure is recommended.

CAUTION DO NOT ATTEMPT TO DRILL THROUGH AN ALL-PORCELAIN SINK. If you have an all-porcelain sink, mount the faucet in a pre-drilled sprayer hole or drill through the countertop next to the sink.

- **CAUTION** When drilling through a countertop, make sure the area below the drilled area is free of wiring and piping. Make certain that you have ample room to make the proper connections to the bottom of the faucet.
- **CAUTION** Do not drill through a countertop that is more than 1″ thick.
- **CAUTION** Do not attempt to drill through a tiled, marble, granite or similar countertop. Consult a plumber or the countertop manufacturer for advice or assistance.

The following instructions apply to stainless steel sinks ONLY.

- Line the bottom of the sink with newspaper to prevent shavings, parts or tools from falling down the drain.
- Place masking tape over the area to be drilled to help prevent scratches if drill bit slips.
- Mark the point with a center punch. Use a 1/4″ drill bit to drill a pilot hole through the sink.
- Use a 1-1⁄4″ hole saw to enlarge the hole. Smooth rough edges with a file.
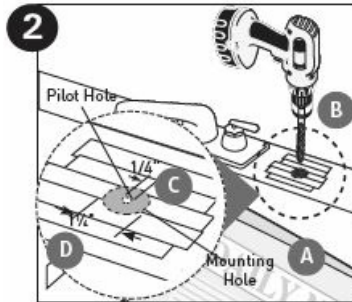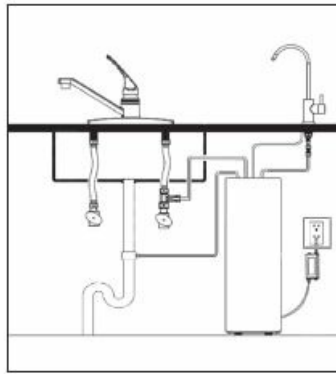
Mounting the Faucet
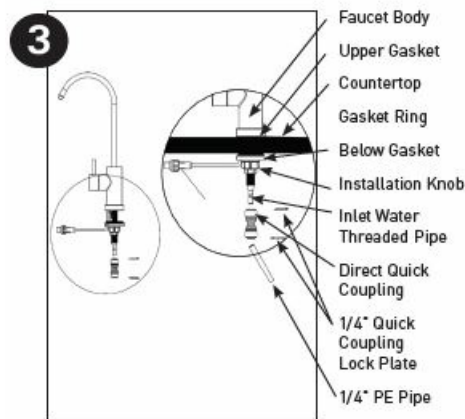
**NOTE:** Not all parts provided with the faucet may be needed for installation.

- Slide the chrome plate and black rubber washer onto the faucet by threading both drain tubes through the holes on the plate and washer.
- Attach a large diameter white 1/4″ drain tube to the barb fitting at the faucet base.
- Slide the white extension spacer onto the long threaded section of the faucet. The open end of the extension should come in contact with the base of the faucet.
- Screw the washer, and locking nut onto the end of faucet threads.
- Screw quick connector onto the end of faucet threads.
- The wet end of 1/4″ white tube. Push into the bottom of the quick connector. Tug gently to be sure the connection is complete. Insert 1/4″ quick coupling lock plate between the quick connect port and claw of tubing.
  NOTE: To remove the tube, push on the fittings' collar and pull the tube out.
- Holding the faucet, feed the tube through the hole in the sink. Position the faucet handle at the desired location.
- Center the faucet. Tighten the locking nut with a wrench until it is tight.

Installing the Drain Clamp

- **NOTE:** If you have a single-basin sink with a disposal unit, call Technical Support for options.
- **NOTE:** Before installing the drain clamp, check the drainpipes under the sink for corrosion. Corroded pipes should be replaced before continuing with installation.
- Attach the drain clamp to a vertical section of the drainpipe, about 6″ above the trap. Make sure the opening on the drain clamp is facing towards the drinking water faucet.
- Using the fitting hole of the drain clamp as a guide, drill a 1/4″ hole through one side of the drainpipe.
- Remove the drain clamp from the drainpipe and enlarge the hole with a 3/8″ drill bit. Use a file to remove rough edges from the drilled hole.
- Make sure the black rubber gasket is adhered to the inside of the drain clamp and place the drain clamp assembly over the drilled hole. Look through the hole and position the clamp so that the center of the clamp hole is slightly higher (about 1/16″) than the center of the drilled hole. Tighten the clamp securely.
- Screw the plastic compression nut onto the drain clamp until hand-tight.
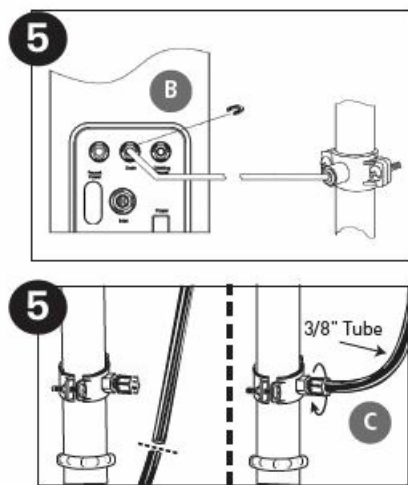
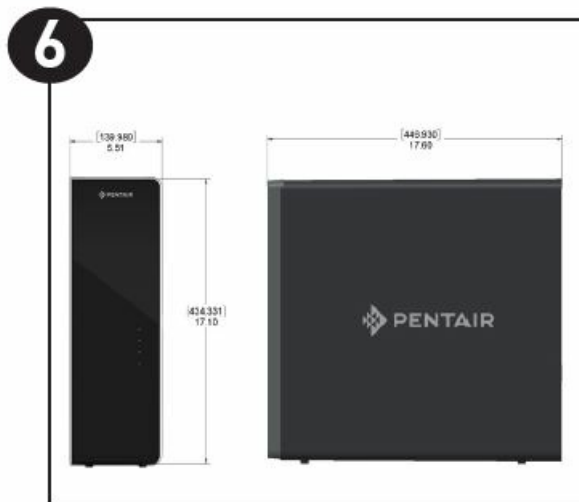**Connecting the System to the Drain**

CAUTION This is a gravity drain line. Any loops, kinks or sharp bends must be eliminated before proceeding.

- Locate the 1/4″ red tubing.
- Insert one end of the tubing into the "Drain" port on the back of the system. Insert 1/4″ quick coupling lock plate between the quick coupling and the jack catch of the tubing.
- Run the other end of the tubing to the desired drain location.

Installing the System

WARNING: When selecting a installation location of the system, take into consideration the length of tubing required for connection between components. Some installation sites may require more tubing than provided in the kit.

- Select a location under the sink, or other suitable area where the system will be installed.
  NOTE: The system carton can be used to determine the operational footprint required for installation of the system and replacement cartridges. (Figure 6) Carton is oversized 4-6″ in each direction for packing materials.
- The system should be set on a firm, solid surface that can support the weight of the system.

Connecting the Faucet to the System
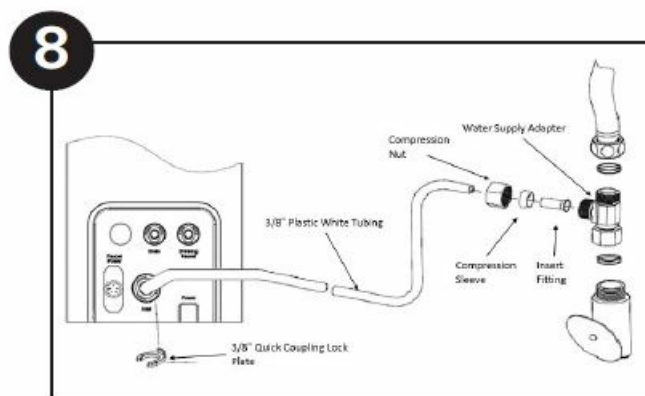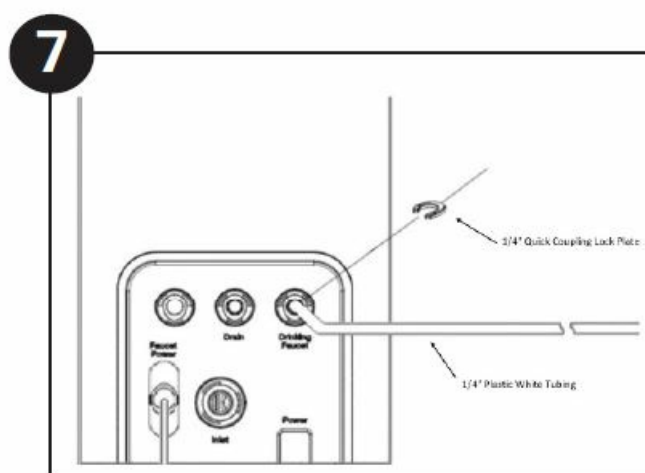
- Determine the length of plastic white tubing needed to connect the system to the faucet. Be sure to allow enough tubing to prevent kinking and cut the tubing squarely. Use a marker to mark one end of the tubing 5/8″ from the end. Wet the end of the 1/4″ tube and push it into the port on the back of the system labeled "Drinking Faucet". Insert 1/4″ quick coupling lock plate between quick connect port and claw of tubing. CAUTION Do not bend or crimp the tube while inserting.
- Gently pull back on the tube to ensure it is connected properly.

**Connecting the System to the Water Supply Adapter**

- Locate the remaining length of 3/8″ plastic white tubing.

- Place a mark on the tubing 5/8″ from the end. Moisten the end of the tubing with water and insert with a twisting motion push into inlet quick connect fitting on the back of the system labeled "Inlet". Insert the 3/8″ quick coupling lock plate between the quick connect port and the claw of the water inlet tubing.
- Cut the tube to a length that will allow connection to the Water Supply Adapter that was installed in Step 1. Ensure the tubing does not kink. Place the Compression Nut and Compression Sleeve over the Plastic tubing and then place the Insert Fitting into the end of the Tubing. Tighten the Compression Nut onto the Water Supply Adapter.

Connecting the Power Adapter

- Locate the electrical adapter, and plug the smaller end into the power receptacle on the back of the system.
- Locate the Faucet power cord and plug into the port titled "Faucet Power" on the back of the system. Screw the movable nut on the aviation connector clockwise until tightened.

Filter Installation
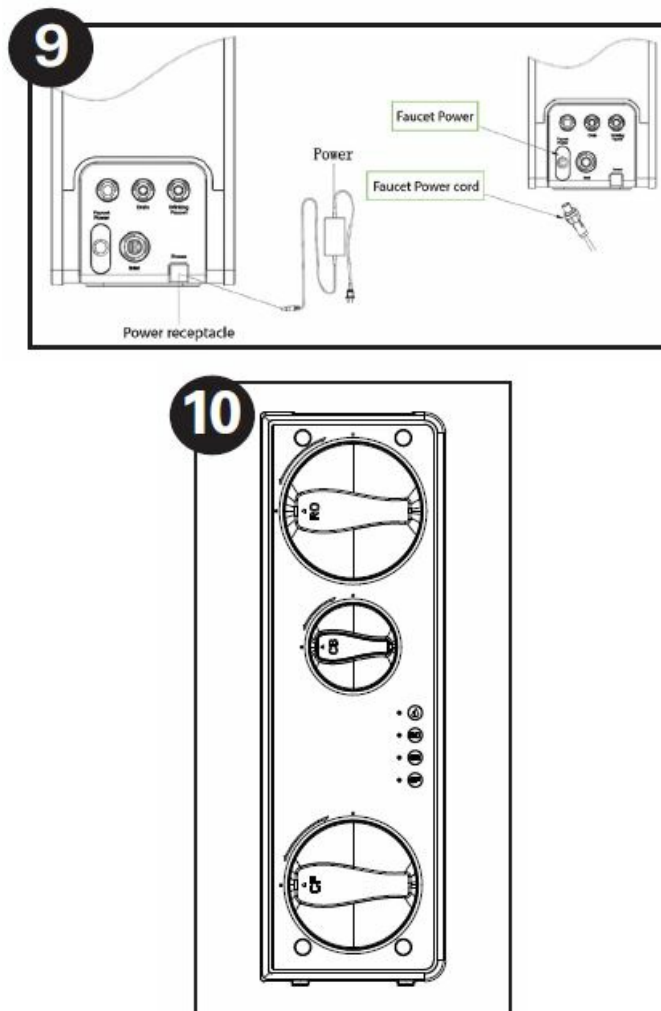
- Remove filter cartridges from their packaging and remove the rubber stoppers at the top of each cartridge.
- The order sequence of the cartridges is as follows:
  - **Top:** RO Membrane Cartridge
  - **Middle:** CB Filter Cartridge
  - **Bottom:** CF Filter Cartridge

- Insert filter cartridges with handles parallel to the floor, and turn 90° so that the handle is now perpendicular to the floor.

System Start-up

- Connect the machine to the power supply and plug into an electrical outlet. When the machine is first powered on, a small beep will occur and four indicator lights will flash.
- The machine will automatically flush for 5 minutes. During this time the water quality indicator light will flash red.
- Open the faucet and allow to run for 30 minutes. During this time the water quality indicator light will flash with the actual water quality color.
- While flushing occurs, check the tightness of all parts and fittings carefully to ensure no leaks at the connection points.
- Once flushing is complete, the faucet can now be closed. The machine will enter a normal water production state and the water indicator light will remain on with the actual water quality color.
- **CAUTION** Visually check the entire system for leaks. If a leak is present, see Troubleshooting on page 8.
- **NOTE:** To complete 24-hour flushing, reference page 9. Flush 24 hours upon start or before first use. For the first 24 hours use water for cooking and/or cleaning.

Filter Cartridge Replacement

Inserting Cartridges into System

Cartridges Fully Engaged in System
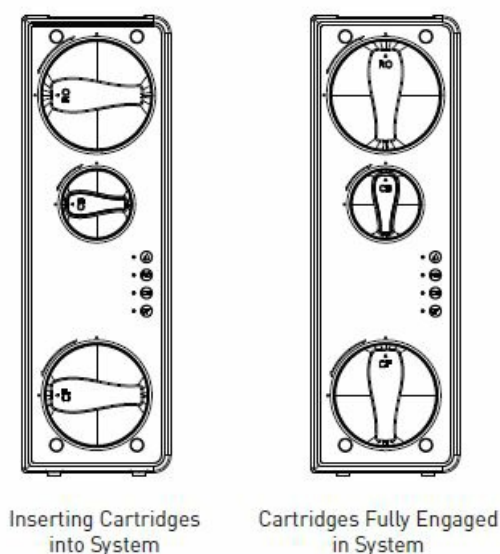
NOTE: The life of the filter cartridges depends on water volume used and the quality of the feed water. It is recommended that the filter cartridges be replaced every 12 months, or when there is a noticeable change in taste, odor, or flow of filtered water. Ensure the correct cartridge is purchased for the system. Pentair Tankless RO System #4006877 uses the following replacements:

- 4006882 / ROM-24M / Replacement RO Membrane
- 4006943 / CF-12M / CB-12M / Replacement Filter 2-Pack

Cartridge Replacement

- Twist cartridge 90 degrees counter-clockwise and remove from system.
- Install new cartridge in the proper location, push firmly and twist clockwise.

Indicator Lights

- **CF:** CF Filter Cartridge Lifetime Indicator
- **RO:** RO Membrane Cartridge Lifetime Indicator
- **CB:** CB Filter Cartridge Lifetime Indicator
- **Water Drop:** Water Quality Indicator (TDS indicator)

Smart Faucet Indicator Lights

- To quickly and easily get filter life indication, the Smart Faucet includes an LED ring around the base of the faucet which indicates filter life.
- Blue – Normal, filter life is good
- Purple – Needs attention, filter life will expire soon. The indicator will change when there are 15 days of filter life remaining.
- Red – Expired, filter should be changed

Troubleshooting

Normal Blue | About to expire Purple | Expired Red
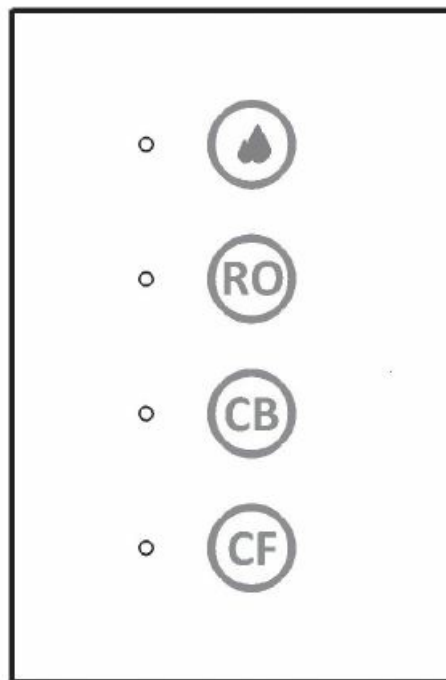
Indicator Status

System Error Indications

Error Type	Indicator Lights	Fault Indicator	Recover Method
Timeout fault	3 red indicators flash	Go out	Power off and then power back on the system
Frequent start-stop	3 purple indicators flash	Go out	Power off and then power back on the system
Water leakage	4 red indicators flash	Red indicators flash	Locate and repair a water leak
Low temperature	3 indicators flash	Red indicators flash	Power off and then power back on the system

Filter Cartridge Lifetime Display

Lifetime status	Life Time Left (Days)	Treatment Capacity Remaining	Warning Type	
			Filter cartridge indicator	Buzzer
Normal	Greater than 15 days	Greater than 150 liters	Continuous Blue light on	No warning reminder
Early Warning	Greater than 0 and less than 15 days	Greater than 0 and less than 15 liters	Continuous Purple light on	Beeps twice during water production (beep 0.3 seconds, stop 1 second)
Alarming	Zero days	Zero	Continuous Red light on	Beeps during production (beep 0.3 seconds, stop 1 second)

Water Quality Indicator Display

TDS LED Color		
Blue < 100 ppm	Purple > 100 < 150 ppm	Red > 150 ppm

Machine Functions

Function	Action logic	Filter Cartridge Indicator	Fault Indicator
Initial system power on	Beeps 0.1 second, indicator display 3 seconds	Blue-Purple-Red indicator light	Blue-Purple-Red indicator light
First time use washing	Automatic flushing 5 mins	Blue light always on	Red flashing
	User turns on the faucet, allows water to flush for 24 hours **NOTE**: View To Complete 24-hour Flushing section on the bottom of page 9.		Flashing according to current water quality status
Replacement filter flushing	1. CF filter cartridge: turn on the faucet and flush for 5 minutes. 2. RO filter cartridge: turn on the faucet and flush for 30 minutes. 3. CB filter cartridge: turn on the faucet and flush for 15 minutes. 4. Reset the RO filter cartridge together with other filter cartridge: turn on the faucet and flush for 5 minutes, then re-flush for 30 minutes. 5. Reset the CF filter cartridge and CB filter cartridge: turn on the faucet and flush for 15 minutes.	Blue light always on	Water quality indicator light red flashing during flushing
Water production	Water making action	Light always on (base on filter lifetime display)	Light always on according to current water quality
Standby	The machine stops making water and goes into standby mode	Light always on (base on filter lifetime display)	Go out

To reset the filter cartridge: Press and hold the corresponding filter cartridge reset key for 5 seconds. A small beep will sound, the corresponding filter cartridge life indicator will flash purple twice and then turn blue.

To Complete 24-Hour Flushing

- Within 10 seconds of plugging the system in, press the CF filter button 5 times. You will hear 2 beeps.
  NOTE: If the system is already plugged in, unplug the system first and plug it back in to complete this step.
- Open the faucet and allow water to run for 24 hours.

- Close the faucet.
- Unplug the system and plug it back in. Within 10 seconds of plugging the system in, press the CF filter button 5 time.   You will hear 1 long beep for 3 seconds.
- The system is ready for operation.

Leaks from tubing fittings

1. Relieve pressure by turning off the water supply to the system and opening faucet until water flow stops. Place a bucket or towel under the system to catch any water drips.
2. Depress collet on system or inlet supply adapter tubing fittings and pull tubing from fitting. Inspect surface of tubing for scratches or debris. Clean or cut back tubing to access clean surface.
3. Wet the end of the inlet tubing and press into the inlet fitting of the system. Ensure the tubing is fully pushed past the fitting O-rings. Place system into operation and check for leaks. If leaks persist, turn off the water supply and contact Technical Support at 1-800-279-9404.

Leaks on quick-connect fittings

1. Close the cold water supply.
2. Depress the plastic collar and pull out the tubing.
3. Cut off 1″ of tubing and place a mark 5/8″ from the end of the tubing. Tubing should be cut squarely. The internal and external burrs should be removed.
4. Push tubing 5/8″ into fitting.
5. Open the cold water supply. If leaks persist, call Technical Support.

High TDS in Product Water
If high levels of TDS (Total Dissolved Solids) are detected in your product water as determined by a TDS Monitor, the cartridge membrane may need to be replaced. See your dealer or plumber to check product water TDS.

Reduced production
Slow or no product water flow usually indicates a clogged cartridge. Replace the CF and CB filter cartridges.
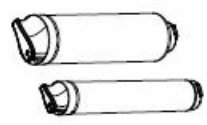
Gradual return of taste and odor
The gradual return of unpleasant taste and odor over some time may indicate that your cartridges need to be replaced.

Sudden return of taste and odor
If shortly after complete servicing noticeable taste and odors return, contact Technical Support.

TANKLESS RO REPLACEMENT PARTS

PART NUMBER	DESCRIPTION	Quantity	Image
4006967	SMART FAUCET	1	
4006889	POWER ADAPTER, 120V 60Hz US PLUG	1	
4006888	3/8" PE TUBING, WHITE	60 inches	
4006887	1/4" PE TUBING, WHITE	60 inches	
4006886	1/4" PE TUBING, RED	60 inches	
4006882	RO MEMBRANE CARTRIDGE	1	
4006943	COMPOSITE AND CARBON FILTERS	1 ea filter (2 total)	

PERFORMANCE DATA

IMPORTANT: Testing is performed under standard laboratory conditions, actual performance may vary. Read this performance data and compare the capabilities of this system with your actual water treatment needs. The Tankless RO system contains a replaceable treatment component, critical for the effective reduction of TDS and that product water shall be tested periodically to verify that the system is performing properly. It is recommended that before installing a water treatment system, you have your water supply tested to determine your actual water treatment needs. This system has been tested according to NSF/ANSI 58 for the reduction of substances listed below. The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system as specified in NSF/ANSI 58.

WARNING: Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

NOTE: Substances reduced are not necessarily in your water. Filter must be maintained according to manufacturer's instructions, including replacement of filter cartridges. The tested efficiency rating for these systems is 54.90%. 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. The

tested recovery rating is 57.50%. Recovery rating means the percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is bypassed.

- System tested and certified by NSF International against NSF/ANSI Standard 58 for the reduction of the claim specified on the Performance Data Sheet.

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 ensure the same efficiency and contaminant reduction performance.

Tankless RO Model

Substance	Influent Challenge Concentration	Reduction Requirements	Average Reduction
Standard 58			
Total Dissolved Solids	750 ± 40 mg/L	75%	96.8%

For Pentair Product Warranties visit:**pentair.com/assets/residential-filtration-warranty**

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Documents / Resources

PENTAIR T600RO OMNIfilter Reverse Osmosis System [pdf] Instruction Manual
T600RO OMNIfilter Reverse Osmosis System, T600RO, OMNIfilter Reverse Osmosis System, Reverse Osmosis System, Osmosis System

References

- **Pentair**
- **User Manual**