

Reynolds PureStream QT

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1.0 INTRODUCTION

The Reynolds PureStream QT system is a 5-stage water cleansing system. The principle cleansing of the water of its dissolved solids is performed by the Reverse Osmosis membrane filter (Stage 4).

Stage One is a sediment filter that removes particles 5-microns in size or larger including rust, sand and other debris in the water line.

Stage Two and Three are granular activated carbon (GAC) filters that remove odors, chlorine and foreign tastes.

Stage Four is an advanced Reverse Osmosis membrane for removal of dissolved solids. This is the heart of the system. Reverse osmosis technology removes 95% of the dissolved solids on average. Dissolved solids are not removed by municipal water treatment, That is why the Reynolds PureStream QT is an important safety factor for the water you drink and use in your cooking. Chemical contaminants such as mercury, lead, nitrates, pesticides, and others not yet identified that seep into municipal water systems are removed.

The water pressure forces the water molecules through the Reverse Osmosis membrane, but the larger contaminant molecules do not pass through the membrane and are flushed to the drain. The clean water goes to the storage tank and is held there ready to use.

Stage Five (post-filter) is a Carbon polishing filter that removes any foreign tastes or odors that may occur from storing the water. The storage tank is pre-pressurized with a bladder that pushes the water through Stage Five to the faucet. When the faucet is opened, clean water from the storage tank flows through this final polishing filter of activated carbon and into the faucet for your use.

A special faucet is installed on your sink which dispenses safe, great tasting drinking water, which is especially good for making coffee, tea and drinks. By extending a line to your refrigerator, this water can also be used to make ice cubes.

The filter life is specified by the number of gallons of water flowing through the system. Normal households will use two to three gallons of purified water daily. The filters are good for 1500 to 3000 gallons total usage depending on water quality. Therefore the pre-filters and post filter should be changed at least once a year. The Reverse Osmosis membrane has a longer effective life-span (typically 5-7 years).

2.0 INSTALLATION

2.1 Location of RO unit

The RO unit may be installed under the kitchen sink or in the basement. A cold water supply line must be close by. When locating the system under a sink, make sure there is adequate room for the filter module assembly as well as the storage tank. For best performance, the tank should be located as close to the clean water faucet as possible (within 20 feet).

2.2 Mounting the RO filter unit under a sink (Fig. 1)

Mount the unit to the wall of the sink cabinet. Pre-fit the unit by positioning the bottom of the pre-filter cartridges 2 inches off the floor of the cabinet. This clearance is necessary to make room to move the housing when replacing the filter cartridges. Create 2 mounting holes in the mounting bracket. Install 2 mounting screws leaving 1/8 inch clearance under the screw head. Check the fit by mounting the RO filter unit, but do not install yet.

Figure 1

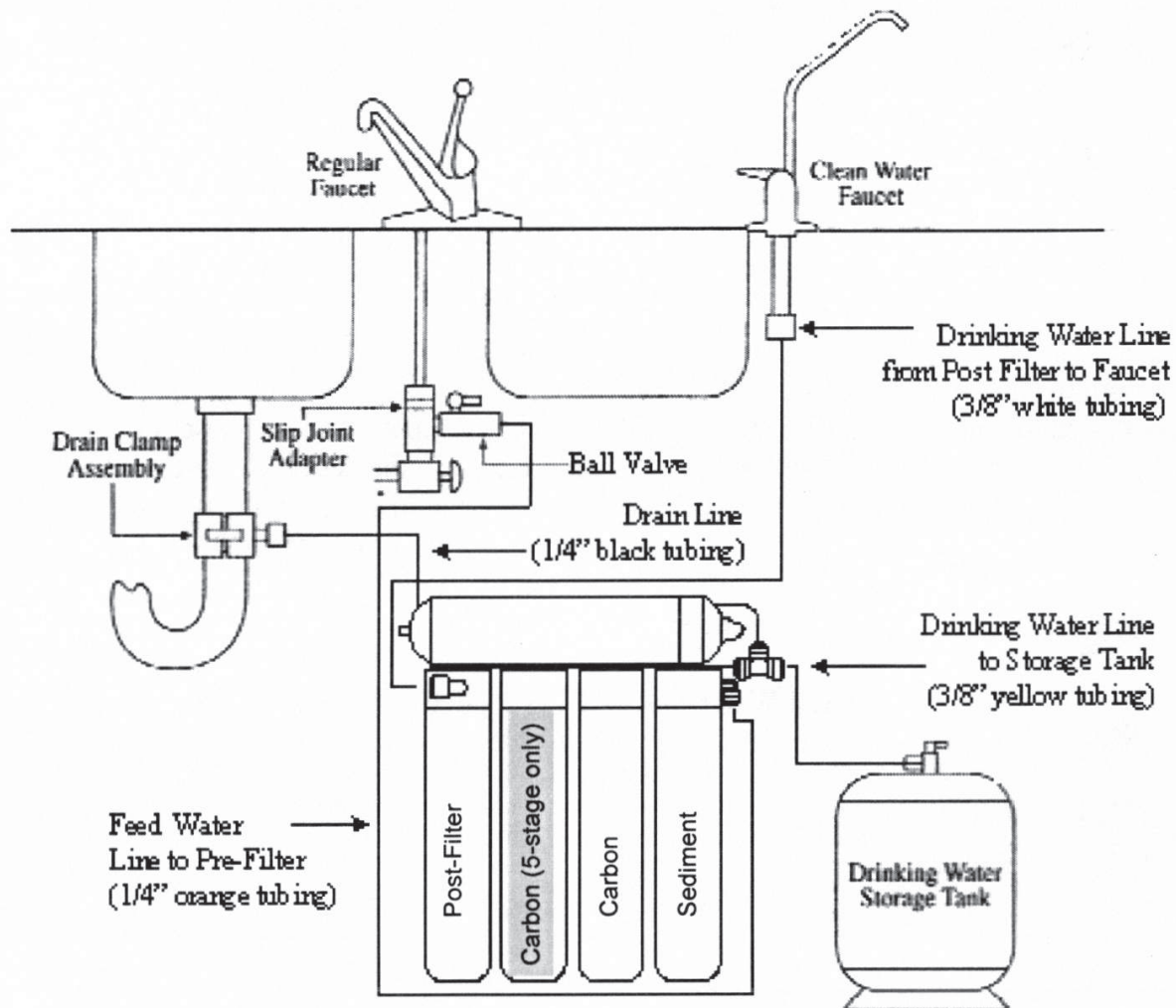
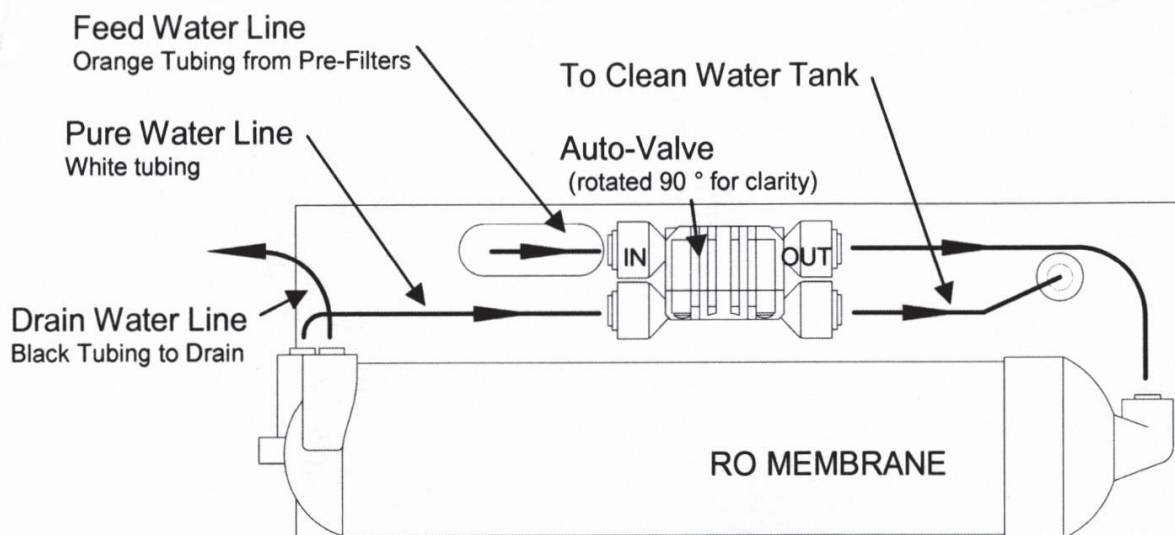


Figure 2



RO SYSTEM TOP VIEW

2.3 Connecting the feed water supply (Fig. 3, 4)

The feed water assembly consists of a 1/2" brass slip joint adapter, a black washer, and a 1/4" x 1/4" ball valve. Locate these parts in the installation kit.

Locate the cold water shut off valve under the sink and turn it off. Open the cold water faucet to release the pressure. On single handled faucets, the hot water may have to be turned off to prevent any hot water cross-over. If water continues to come out of the faucet with the under-sink valves turned off, the house main valve will have to be turned off.

Now that the water has been turned off, disconnect the cold water riser tube (flex line) from the valve. Install the slip joint connector with the black washer. Loosen the nut and separate the cold riser tube from the faucet shank. Gently bend the riser tube so that the slip joint adapter fits onto the faucet shank. Reinstall the cold riser tube on the slip joint connector using the existing cone washer. For a solid copper tube, the procedure is the same except you must cut a piece of the riser tube about 3/4" to 1" so the slip joint adapter can fit between the valve and the riser tube. Wrap several turns of Teflon tape on the ball valve and install on the slip joint connector. (See figure 3).

In some cases the IsoTwist Water Machine is supplied with a saddle valve which can clamp over a copper pipe and make the hole and seal at once. (See figure 4).

Figure 3

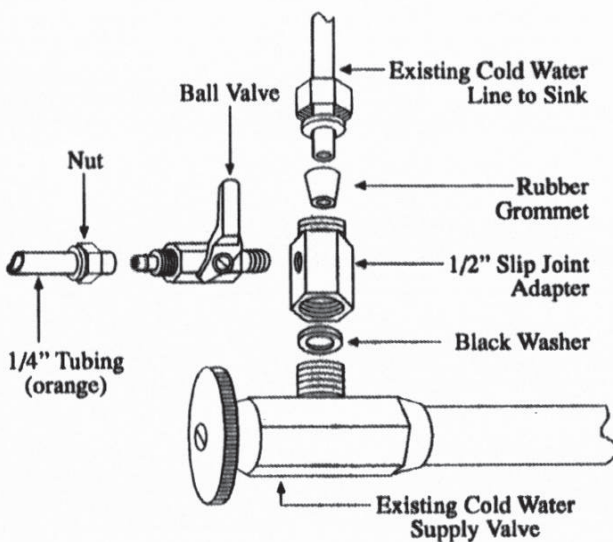
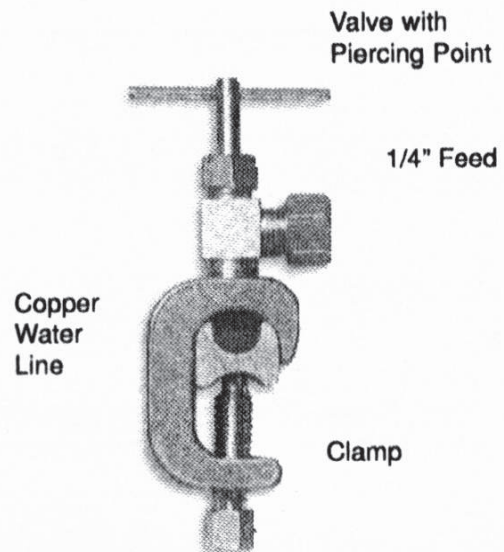


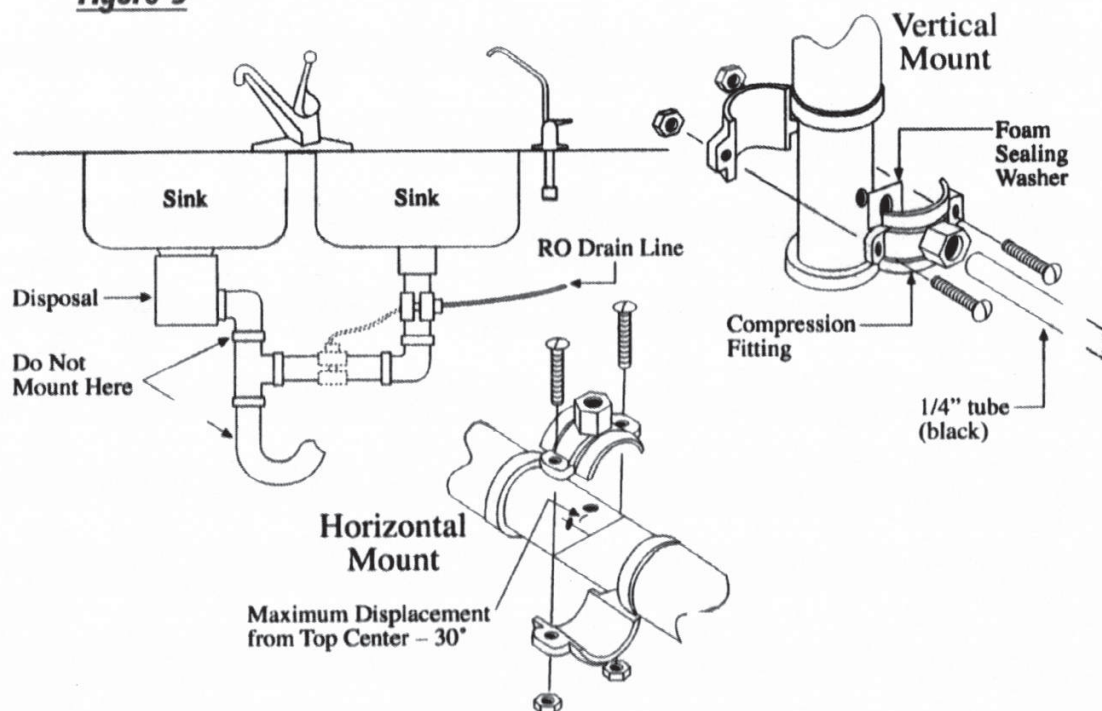
Figure 4



2.4 Installation of drain connection (Fig. 5)

Place the drain outlet saddle on the drain pipe. Allow proper space for the drilling operation. Tighten the saddle bolts evenly on both sides. Using the opening in the drain outlet saddle as a guide, drill a 1/4" hole in the drain pipe. Clean any debris out of the drain saddle connection.

Figure 5



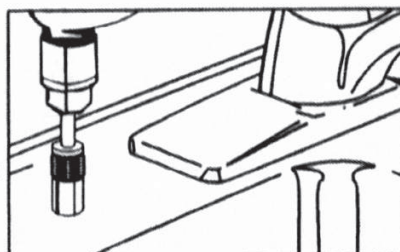
2.5 Installation of clean water faucet (fig. 6)

Step 1. Pilot Drill



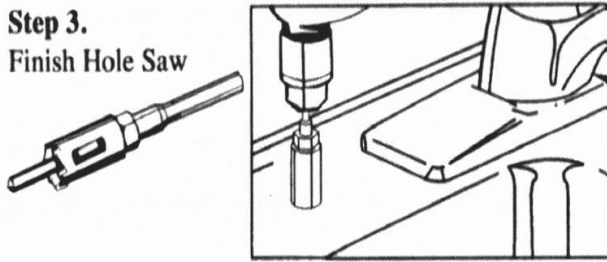
The faucet should be positioned with aesthetics, function, and convenience in mind. An ample flat area is required for the faucet base so that it can be drawn down tight. The space under the sink below where the faucet will be mounted must be clear of any obstructions.

Step 2. Spring Loaded Porcelain Saw (Relton Cutter)



Some conditions may eliminate the need to drill a hole in the sink such as a faucet previously installed in the sink, a hole covered by a chrome hole cover, or an unused spray handle. If any of these situations are present, you may mount the faucet in one of these holes.

Step 3.
Finish Hole Saw



[NOTE: This procedure is for the non air gap faucet provided.]

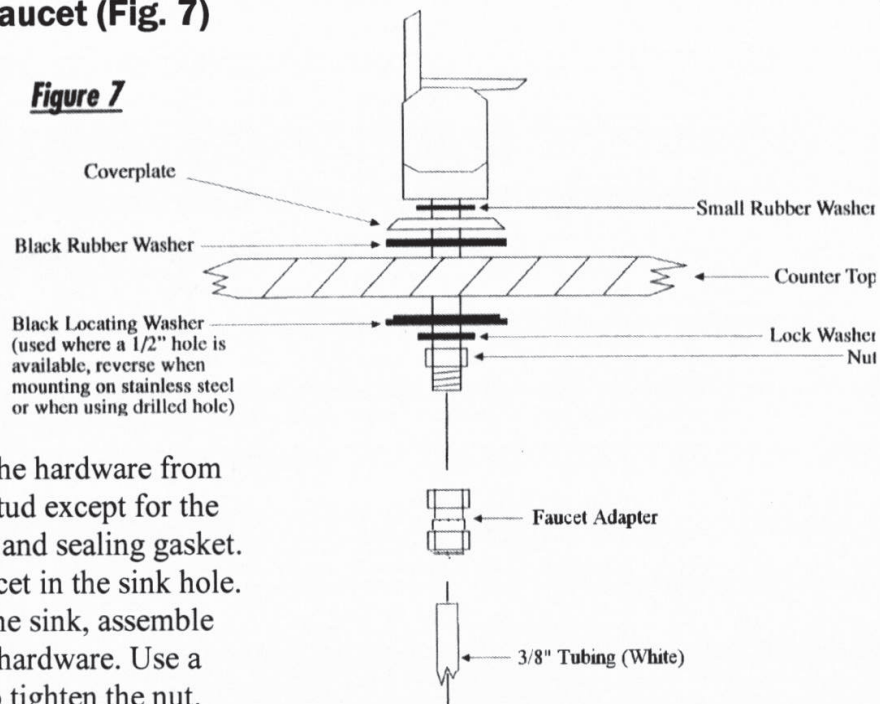
2.6 Porcelain/Enamel over Steel or Cast Iron Sinks

Using a small diameter carbide tipped drill, drill a pilot hole completely through the porcelain and the material underneath. Remove any metal chips that fall into the sink to prevent rust stains. Place the spring-loaded porcelain cutter bit in to the drill chuck. Make sure the pilot guide is inserted tightly. Insert the pilot guide onto the pilot hole. Push down gently on the drill motor to apply light pressure to the porcelain surface. Start the drill motor, turning as slowly as possible. After the initial cut has started, motor speed may be gradually increased. The cut may require three to four minutes to complete. Going faster could result in excessive chipping. Be sure a complete ring has been cut through the porcelain to the metal underneath.

Place the finish hole saw into the drill chuck. Make sure the pilot guide is inserted tightly. Insert the pilot guide into the pilot hole. Begin cutting. Use a slow speed and light pressure until the porcelain has been penetrated to the material underneath. Remove the saw from the hole and clean all debris from the porcelain surface. Reinsert the saw into the hole and cut through the remaining material.

2.7 Install Faucet (Fig. 7)

Figure 7



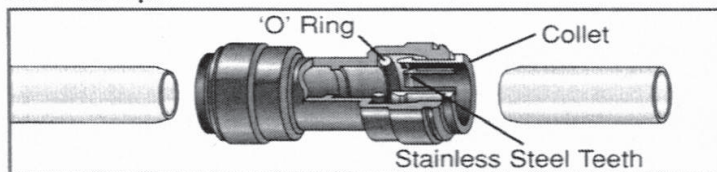
Disassemble the hardware from the threaded stud except for the top base plate and sealing gasket. Install the faucet in the sink hole. From below the sink, assemble the mounting hardware. Use a deep socket to tighten the nut.

2.8 Tubing Connections (Fig. 8)

- a. The standard tubing connections on the Reynolds PureStream QT are of Quick Connect O-ring seal design and manufacture. Use the tubing and follow the instructions in Figure 8 to make the connections. If you cut the tubing, make sure it is a square cut and that the tubing fits evenly in the fitting and seals properly.

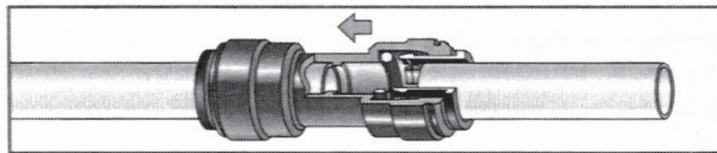
Figure 8

1 Cut tube square



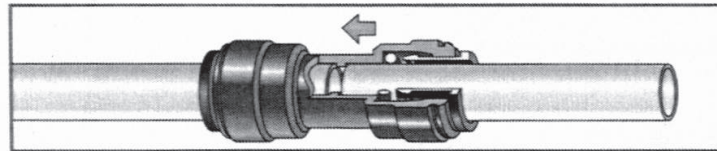
Cut the tube square. It is essential that the outside diameter be free of score marks and that burrs and sharp edges be removed before inserting into fitting.

2 Insert tube



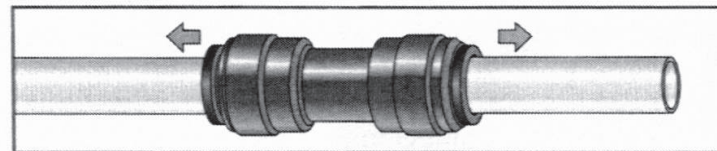
Fitting grips before it seals. Ensure tube is pushed in to the tube stop.

3 Push up to tube stop



Push the tube into the fitting, to the tube stop. The collet (gripper) has stainless steel teeth which hold the tube firmly in position while the 'O' ring provides a permanent leak proof seal.

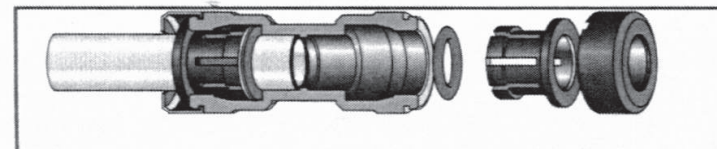
4 Pull to check secure



Pull on the tube to check it is secure. It is good practice to test the system prior to leaving site and/or before use.

Disconnecting

Push in collet and remove tube



To disconnect ensure the system is depressurized before removing fitting. Push in collet squarely against face of fitting. With the collet held in this position, the tube can be removed. The fitting can then be re-used.

b. Feed Water Line

Connect the orange colored 1/4" inlet tubing to the ball valve, or saddle valve installed in Step 2.3 above. To reduce the water hammer effect on this fitting, make a large loop in the tubing before the connection on the sediment filter. To connect, remove compression nut insert tube over the ball valve tube as shown in Fig. 3. Slide nut over threads and tighten. Connect the other end of the tube to the inlet fitting using the method as described in Section 2.8

c. Drain Line

Find the black colored 1/4" tubing. Connect the tube to the drain saddle clamp from Step 2.4. Push the tube into the fitting about 1/2 inch. Tighten plastic nut.

d. Faucet Line

Screw the faucet adapter on to the end of the faucet. Find the white colored 3/8" tubing and insert into the quick connect fitting as described in Section 2.8a. Connect the end of the tube to the quick connect fitting on the post filter (stage 5). Push the tube into the fitting until it stops.

e. Tank Line

Install the plastic ball valve on the storage tank. Find the yellow-colored 3/8" tubing and connect the tube to the plastic ball valve on the tank. Push tube into fitting until it stops. Connect the other end of the yellow tube to the "T" fitting on the Post filter (Stage 5). The tank comes pre-charged from the factory at 5-7 psi. Double check the pressure with a tire gage (the air fitting is on the opposite end of the tank from the ball valve). If it is less than 5 psi add 2 psi with a compressor or bicycle pump. Note: Putting more pressure than 7 psi does not help to increase water flow through the faucet.

2.9 Air-Gap Faucet Installation

Air-Gap Faucets are sometimes required by municipal code. The faucet is designed to take the waste water from the membrane to the top of the sink and then let it flow, by gravity, to the drain saddle. The objective is to prevent possible backup of drain water from the sink to the membrane in the event of a sink clog. A drain saddle with 3/8" instead of 1/4" is used. An extra section of 3/8" tubing (blue) is used from the faucet to the drain.

Sink Preparation

Drill the appropriate size hole in the kitchen sink to accommodate the air-gap faucet.

Drain Preparation

Follow instructions of Section 2.5 except drill a 3/8" hole in the drain pipe.

Tubing Connections

Find the black colored 1/4" drain line from the membrane. Remove from membrane housing. Connect this tube to the 1/4" barbed fitting on the air-gap faucet.

Find the 3/8" blue tubing in the parts kit. Connect this tube to the 3/8" barbed fitting on the air-gap faucet. Install the faucet assembly (with tubes attached) into the sink hole. Secure the faucet per instructions in Section 2.8. Re-attach the 1/4" black tubing to the drain side of the RO membrane housing. Be sure to tighten the fitting nut securely. Attach the 3/8" tube to the drain connector. Tighten the fitting nut securely. Attach the pure water line to the faucet per the instructions in Section 2.8-d.

Note: To help reduce drain noise gently curves the tubing from the air-gap faucet to the drain connection.

3.0 System Start Up

3.1 Air Purge

The filter elements of stage 1, 2, 3, and 5 filters as shipped are dry and contain air in the pores. The air will slowly be expelled but may collect in the system and will need to be purged for peak operating efficiency. Proceed with Section 3.2 for air purge and initial start-up procedure

3.2 Start-Up

Start the system by opening the feed water ball valve. Make sure the ball valve on the storage tank is in the closed position. Check for leaks for at least 10 minutes. Open the product water faucet and let the water flow until all the air has been expelled from the system. This will take about 30 minutes.

Close the product water faucet. Now open the tank valve. Let the system run for about 2-hours to fill the storage tank. Then open the clean water faucet on the sink and empty the tank. This is to flush the tank and remove the preservative from the RO membrane, as well as carbon "fines" from the post filter that may have collected in the tank.

If the waste continues to run after the tank is full, it may mean there is air binding the autovalve. Empty the tank again by opening the faucet. This will help to clear more air from the system.

4.0 Recommended Filter Changes

4.1 Filter Replacement

Filter element replacements of Stage 1, 2, 3, and 5 are mandatory once a year to maintain water purity

The recommended replacement frequency is listed below:

	<u>Replacement Frequency</u>
Sediment Filter Element, Stage 1	6-12 Months
Pre-Carbon Filter Element, Stage 2	6-12 Months
Pre-Carbon Filter Element, Stage 3	6-12 Months
RO Membrane Assembly, Stage 4	5-7 Years
Post Carbon Filter Element, Stage 5	6-12 Months

These filter replacement elements are available from Reynolds Water Conditioning Co. When you buy or install your Reynolds PureStream QT unit, we recommend that you buy genuine QT filters from Reynolds Water.

5.0 Filter Replacement Procedure

Turn off the feed water at the feed water ball valve. Turn the storage tank ball valve to the off position and open the faucet. This will depressurize the system. Put a shallow pan under the RO system to catch any water that may spill during the operation.

Unscrew filter body (1/4 turn counter clockwise), pull down, and carefully lift it to the sink to drain the remaining water. Discard spent filter body. To install new filter body remove red cap from cartridge, lubricate both o-rings on filter stem using silicone lubricant then insert it into the head and turn 1/4 turn clockwise. Repeat operation for all 3 pre-filters and one post-filter.

7.0 Conditions Of Use

Water must be microbiologically safe. System pressure, 40 to 100 PSIG. Temperature, 40 to 100°F. pH range, 3 to 10. Maximum TDS, 1500 PPM. Maximum Iron (FE) 0.3ppm, Maximum Manganese (Mn) .0.1ppm, Turbidity, less than 1.0 NTU.

6.0 Installation Troubleshooting

Problem	Possible Cause	Sol ution
• No or low water production	• Feed water shut off. • Tank valve closed or partially closed • Low feed pressure. Feed pressure must be at least 40 psi	• Turn on feed water. • Open tank valve. • Increase inlet water pressure or install booster pump if feed water pressure is less than 40 psi
• Leak at threaded connection	• Not properly installed	• Remove tube and reinstall into fitting
• Bad tasting water	• Post-filter cartridge not flushed completely	• Flush one or two tanks of pure water through system
• Water runs to drain all the time	• Auto-valve not closing properly • Checkvalve clogged or stuck open	• Purge system again • Clean check-valve
• RO production good at first but falls off in months or weeks	• High TDS and/or Iron or Manganese in water	• Consult your dealer or the factory and provide water analysis

Flow Schematic
(figure A-1)

