

# INSTALLATION INSTRUCTIONS: REVERSE OSMOSIS SYSTEM

Your PureEarth reverse osmosis system is designed to fit under your kitchen sink. It can also be install remotely, such as in the basement, provided the length of tubing from the storage tank to the faucet does not exceed 20 feet. It can be greater than that, but would require a booster pump. The filter's fittings are a special high-pressure quick-connect type. To connect, simply push the tubing into the fitting until it is completely bottomed. To disconnect, push down (towards filter) on the outer ring while pulling out on the tubing. There are five basic steps to installing your new system:

**STEP 1 – FAUCET:** The faucet should be secured through an existing hole in the sink ledge (such as an old sprayer) or a ½” hole can be drilled in the desired location. If you have a porcelain sink, you might consider having a professional do the drilling, or install the faucet into the countertop, back from the sink ledge. Place the small rubber gasket on first. For larger holes, also use the chrome beveled washer and then the large rubber gasket. Under the sink, slide on the metal washer, lock ring, and brass nut. Position the handle where it is convenient for you and then tighten the nut. Next screw on the gray quick-connect fitting onto the faucet stud - tighten securely. After installation of the faucet, attach the tubing marked “faucet” to the quick-connect fitting on the faucet.

**STEP 2 - DRAIN:** Choose either the drain set up for use with disposals or the saddle clamp type. Instructions are included with the disposal drain kit. For the saddle clamp, position the drain clamp on the sink drainpipe above the drain trap. Allow room for drilling. Tighten securely. Drill a 7/32” hole through the wall of the drainpipe (do not penetrate the opposite side). Attach the tubing marked “drain” to the clamp. Connect the tubing into the quick-connect port.

**STEP 3 - STORAGE TANK:** Screw on the tank shut-off valve onto the tank. Be sure it's in the “open” position. Place the tank into position under the sink - in can be laid on its side if needed. Attach the tubing marked “tank” to the fitting on the shut-off valve.  
**IMPORTANT:** The tank should be precharged with 5 psi pressure. It is recommended that you check the pressure with a tire gauge (valve stem is on the bottom – be sure tank shut-off valve is open). A tire pump can be used to add air, if needed, or depress the center pin to release pressure. The tank was filled at sea level - higher elevations can increase this pressure, thereby lowering output.

**STEP 4 - EZ CONNECTOR WATER SUPPLY VALVE:** Next, install the EZ Connector valve on the cold water line - see separate instruction sheet. Connect one end of the other tube to the quick-connect end of the EZ Connector Valve, and the other end to the side of the filter marked "IN". The R/O bracket can now be fastened to the cabinet wall, if desired.

**STEP 5 - START UP:** Your R/O is now making water. It will take two to three hours to initially fill the storage tank. After allowing it to fill, open the faucet and drain the tank. Do this one more time. After it refills the third time, it is ready to drink. It is also ready to place a tee in the faucet line to supply your refrigerator/ice maker, if desired. Close the valve on the storage tank and the saddle valve before doing so. Pushing the faucet handle down gives you a controlled flow; flipping the handle up will lock it for filling pitchers, etc.

## **IMPORTANT OPERATING NOTES**

1. After an extended period of inactivity, empty the storage tank and allow the system to produce fresh water before drinking.
2. Installations in high elevations may require a pressure adjustment on the storage tank - see above.
3. Maximum water pressure is 125 PSI. Maximum operating temperature is 85° F. Protect from freezing.
4. Actual capacity of any pressurized storage tank is less than the industry-standard rated volume, and is dependent on pressure. At 60 psi, our 4 gallon tank holds about 3.0 gallons, at 40 psi it holds about 2.6 gallons.

## **FILTER CARTRIDGE REPLACEMENT**

For most applications, the sediment prefilter (in housing on right), the carbon block prefilter (in housing on the left), and the carbon post filter (mounted on top) need to be replaced annually. If you are in an area that has a high level of sediment and/or chlorine, more frequent replacement may be required. Order part number RO-FRS for the complete set of three cartridges.

The membrane (in vessel mounted onto top of bracket, under carbon post filter) has a life span of 2 to 5 years - depending on the level of dissolved minerals (hardness) in your water. Installing a water softener (available from PureEarth) ahead of the R/O system on water that is 10 grains per gallon or harder will prolong its life. A TDS (total dissolved solids) monitor (available from PureEarth) may be used to check the effectiveness of the membrane.

## **WARRANTY POLICY**

Housings, hardware: Five years full replacement. Membrane: 2 years prorated at \$4.00 per month of usage. This warranty does not cover damage due to abuse, neglect, freezing, fire or other fortuitous event. No allowance is made for the consequential damage, labor or expense incurred as a result of a proven defect.

**PureEarth Technologies, Inc.**  
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RETURN PROCEDURE - Items returned under warranty must be shipped POSTPAID to PureEarth at the address below. A photo copy of your sales receipt MUST be enclosed with the unit. A replacement will then be sent.

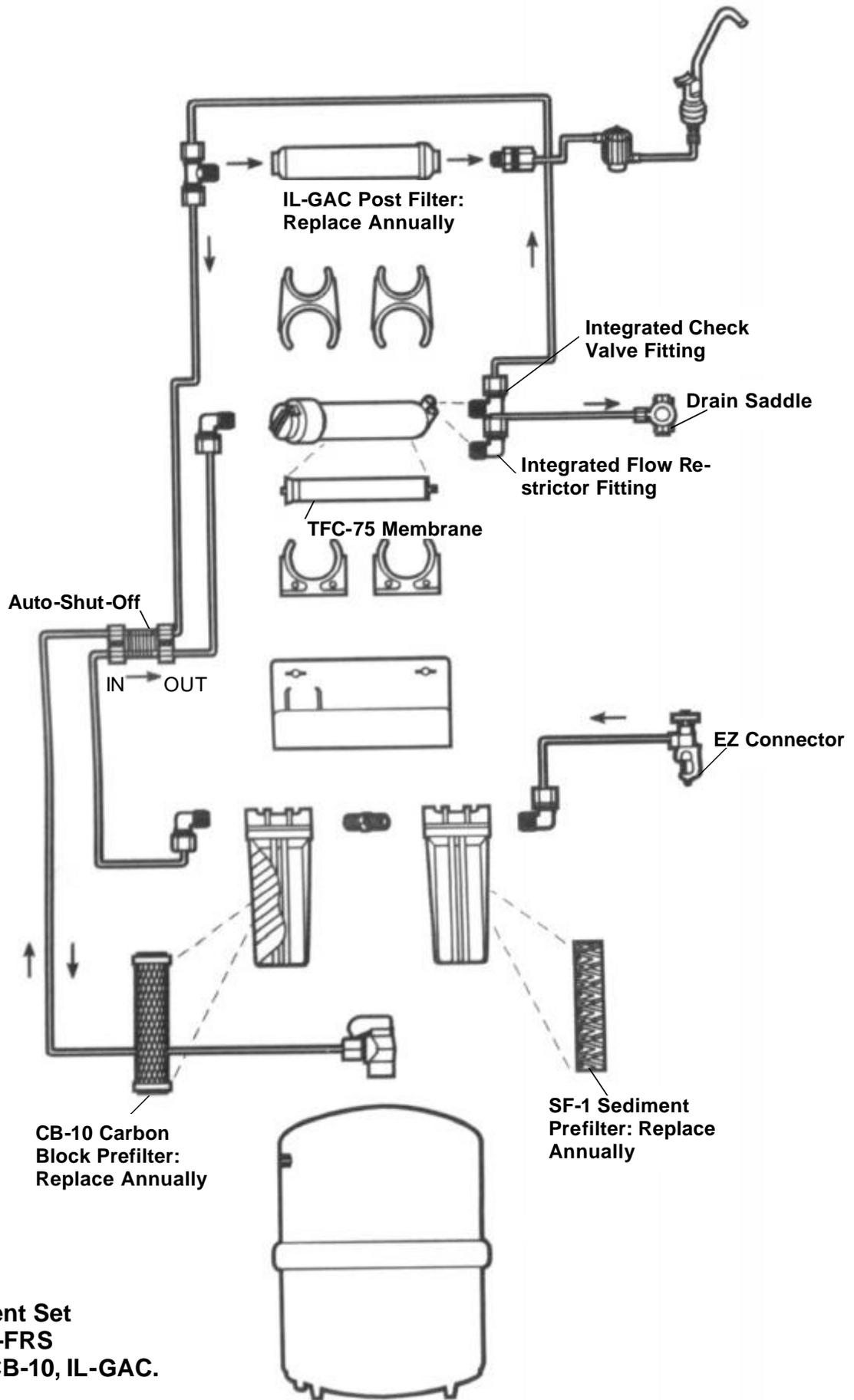
## EZ Faucet Connector Valve



The EZ Faucet Connector Valve gives you a quick, easy and reliable water supply for your water filter. It provides full flow – great for homes with low water pressure. It's easy to install:

1. Look under your sink where the cold side faucet stub meets the supply line. It may either be a threaded stub, as pictured above left, or a short copper line with a nut at the bottom as pictured above right.
2. Unscrew the supply line from the stub.
3. Thread the EZ adapter tee onto the stub – be sure rubber gasket is in place.
4. Install the supply line to the male end of the EZ Connector.
5. Insert stem the ball valve shut-off into the quick-connect port on the tee until it is fully bottomed.
6. Now insert your inlet-side ¼" blue tubing into the quick-connect port on the ball valve shut-off. The handle provides easy on-off, and controlled flow.

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**Filter Replacement Set**  
**Part Number RO-FRS**  
**Contains SF-1, CB-10, IL-GAC.**

## Reverse Osmosis Trouble-Shooting Guide

PROBLEM	POSSIBLE CAUSE	SOLUTION
<b>Low pressure at the faucet</b>	In-line carbon post filter is plugged.	Replace post filter.
	Air pre-charge in tank is too low.	Empty water from tank and with the faucet open, adjust air pressure to 5 PSI.
	Holding tank valve is closed.	Open Valve.
	Heavy water use - tank is depleted.	Allow holding tank to refill. May need to upgrade to larger tank.
	Low water production.	See "Low quantity of product water" section.
<b>High Total Dissolved Solids (TDS) in product water</b>	Clogged sediment prefilter(s) or carbon prefilter.	Replace cartridges.
	Low water pressure - 60 to 70 psi provides best quality.	Add booster pump and/or Permeate Pump.
	Membrane O-ring is crimped.	Check O-ring
	Membrane brine seal is crimped.	Check brine seal - do not touch membrane.
	Membrane is expended.	Replace membrane.
	No drain flow.	Clear or replace drain flow restrictor.
	The Automatic Shut-Off (ASO) is not closing.	Replace ASO.
	New carbon pre/post filter(s) are not completely rinsed.	Flush with 2 full tanks of product water.
	The feed water TDS has increased.	An increase in feed water TDS will give a corresponding increase in product water TDS.
<b>Low quantity of product water from tank</b>  <b>Note:</b> Actual capacity of any pressurized storage tank is less than the industry-standard rated volume, and is dependent on pressure. At 60 psi, our 4 gallon tank holds about 3.0 gallons, at 40 psi it holds about 2.6 gallons	EZ Faucet connector is not open fully.	Check position of valve handle.
	Clogged sediment prefilter(s).	Change filters.
	Low water pressure - 60 to 70 psi provides best quantity.	Add booster pump and/or Permeate Pump
	Membrane fouled.	Replace membrane.
	Plugged carbon post filter.	Replace filter.
	Tank air pressure pre-charge is too high (can be caused by high elevations), or too low.	Empty water from tank and with faucet open, adjust to 5 PSI.
	Air bladder in tank is ruptured.	Replace tank.
	Tank shut-off valve is closed.	Open valve.
	No drain flow.	Clear or replace drain flow restrictor.
	The check valve is stuck.	Clean check valve.
The Automatic Shut-Off (ASO) is not closing.	Replace ASO.	

## Instructions for TDS Meter:

Your TDS meter is used to monitor membrane performance to determine when it's time for replacement. It is measuring the Total Dissolved Solids, which is dissolved mineral content, in the water. When your membrane is new, it removes about 95 to 98% of TDS from the water. Most people will change their membrane when it drops to about 85% reduction. This is a personal choice - you can decide at which point you would like to replace it. Note: it does not measure performance of the other filters in your unit - you should change those every year (order part number RO-FRS).

To test your membrane performance:

Collect a glass of untreated tap water and get a reading. Then collect a glass of RO water and get a reading. Subtract the RO number from the untreated number, and then divide the result by the untreated number to get the percent of reduction.

Example:

Untreated water reading: 300

RO water reading: 30

$$300 - 30 = 270$$

$$270 / 300 = 0.9 \text{ or } 90\%$$

# Membrane Pressure & Temperature Correction Tables

Pressure Correction Factors for Thin Film Composite (T.F.C.) Membrane Production Rate

Pressure		Correction Factor	Percent Rejection*	Pressure		Correction Factor	Percent Rejection*
Δpsi	ΔkPa			Δpsi	ΔkPa		
10	69	.17	84	60	414	1.00	94
15	103	.25	88	65	448	1.08	94
20	138	.33	90	70	483	1.17	95
25	172	.42	92	75	517	1.25	95
30	207	.50	93	80	552	1.33	95
35	241	.58	93	85	586	1.42	95
40	276	.67	94	90	621	1.50	96
45	310	.75	94	95	655	1.58	96
50	345	.83	94	100	689	1.67	96
55	379	.92	94				

To adjust from 60 psi (414kPa) to another pressure multiply the production rate by the correction factor. To adjust from given pressure to standard conditions divide by the factor.

\* Percent rejection of Total Dissolved Solids

Temperature Correction Factors for Thin Film Composite (T.F.C.) Membrane Production Rate

Temperature		Correction Factor	Temperature		Correction Factor
° F	° C		° F	° C	
40	4	.34	77	25	1.00
42	6	.38	78	26	1.02
44	7	.41	80	27	1.05
46	8	.45	82	28	1.09
48	9	.48	84	29	1.12
50	10	.52	86	30	1.16
52	11	.56	88	31	1.20
54	12	.59	90	32	1.23
56	13	.63	92	33	1.27
58	14	.66	94	34	1.30
60	16	.70	96	36	1.34
62	17	.73	98	37	1.37
64	18	.77	100	38	1.41
66	19	.80	102	39	1.44
68	20	.84	104	40	1.48
70	21	.88	106	41	1.52
72	22	.91	108	42	1.55
74	23	.95	110	43	1.59
76	24	.98			

To adjust from 77° F (25° C) to another temperature, multiply the production rate by the correction factor. To adjust from a temperature to standard conditions divide by the factor.

Engineering