

FOR PURSANOVA REVERSE
OSMOSIS WATER
PURIFICATION SYSTEM



PURSANOVA™
LIQUID CONVERSION TECHNOLOGIES

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BRIEF TECHNICAL ASPECT OF THE WATER TREATMENT SYSTEM

The water treatment system utilizes a process called reverse osmosis (RO). As the heart of the purification system, the RO process uses semi permeable spiral-wound membranes to separate and remove dissolved solids, organic, pyrogens, sub-micron colloidal particles and bacteria from water. Feed water is delivered under pressure at about 60 PSI through the permeator where water permeates the minute pores of the membrane and is delivered as purified water. Impurities in the water are concentrated in the reject stream and flushed to drain. Your newly purchased Reverse Osmosis System is capable of removing between 90% to 96% of the total dissolved solids (TDS), organic, and bacteria.

The water purification system consists of six stages:

1. 10 micron pre-filter.
2. Carbon block filter.
3. RO Membrane.
4. Final post filter.
5. 3-gallon storage tank.
Standard faucet.

We suggest you read and become familiar with all instructions, processes, and parts prior to proceeding with the installation.

BEFORE YOU START:

Prior to installing the feed water assembly, please make sure that the following water conditions are met:

- Feed water condition

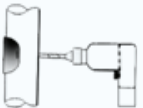
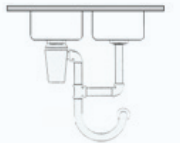
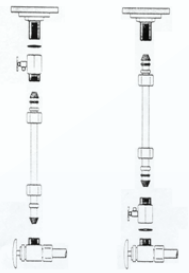
	Min.	Max.
Inlet Pressure	40 PSI	80 PSI
Temperature	40 deg. F	100 deg. F
pH Level	2	11
TDS Level	0 ppm	2000 ppm
- All local plumbing codes must be followed.
- Locate cold water supply, drain, and faucet placement
- Locate water system and storage tank placement. (Allow yourself room for easy access for future filter changes.)
- Install a pressure regulator (not included) to control the inlet pressure (Inlet Pressure must not exceed 80psi)

FEED WATER INSTALLATION:

1. The feed water assembly consists of a 1/2" brass slip joint adapter, cone washer, flat washer, and angle valve shut-off. Locate these parts in the installation kit. The angle valve should be installed into the slip joint adapter before assembly is connected to the feed water line (Note: Teflon tape must be used on angle valve to prevent leaks).
2. Locate cold-water angle shut off valve underneath the sink, usually on the right side, and turn it off. Open cold water faucet to release the pressure. On single handle faucets, the hot water may need to be turned off to prevent any hot water from crossing over. If water continues to come out of the faucet with angle valve turned off the main water supply will have to be turned off.
3. Disconnect the cold water rise tube and install the slip joint connector. (Flex line) Loosen nut and separate cold riser tube from faucet shank. Gently bend riser tube so that slips joint adapter fits onto faucet shank. Replace the existing cone washer with new washer provided in installation kit onto cold riser tube. Re-install riser-tube onto slip joint adapter and tighten. (Solid cooper riser tube) Same procedure as flex tubing except you must cut a piece of the riser tube about 3/4" to 1" so the slip joint adapter can fit between faucet and riser tube. (See figure 2)

DRAIN CLAMP INSTALLATION:

1. The drain clamp should be drilled, installed above the trap and on the vertical or horizontal tailpiece (see figure 3)
2. The hole position on the pipe should be marked and drilled with a 1/4" bit through only one side of the pipe (see figure 4)
3. Align the drain clamp over the drilled hole and attach it to the drainpipe and tighten the two screws evenly (see figure 5)



TFC MEMBRANES

ominal Rejection
Characteristics of

Reverse Osmosis Membrane

ION	% Rejection
Calcium	95 - 98
Sodium	94 - 98
Magnesium	95 - 98
Iron	97 - 98
Potassium	94 - 97
Manganese	97 - 98
Aluminum	97 - 98
Copper	97 - 98
Nickel	97 - 98
Cadmium	95 - 98
Silver	95 - 97
Zinc	97 - 99
Mercury	95 - 97
Hardness Ca&Mg	95 - 98
Radioactivity	95 - 98
Chloride	90 - 95
Ammonium	85 - 95
Bromide	93 - 96
Phosphate	97 - 98
Cyanide	90 - 95
Sulfate	97 - 98
Thiosulfate	97 - 98
Silicate	94 - 96
Silica	85 - 90
Nitrate	92 - 95
Boron	60 - 70
Borate	40 - 70
Fluoride	93 - 95
Polyphosphate orthophosphate	98 - 99
Chromate	90 - 97
Bacteria	99+
Lead	96 - 98

CTA MEMBRANES

*Nominal Rejection
Characteristics of

Reverse Osmosis Membrane

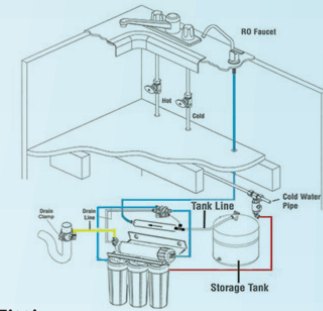
ION	% Rejection
Sodium	87 - 93
Calcium	94 - 97
Magnesium	96 - 98
Potassium	87 - 94
Iron	95 - 98
Manganese	95 - 98
Aluminum	96 - 99
Ammonium	86 - 92
Copper	98 - 99
Nickel	98 - 99
Zinc	98 - 99
Strontium	96 - 98
Cadmium	96 - 98
Silver	93 - 96
Mercury	96 - 98
Barium	96 - 98
Chromium	96 - 98
Lead	96 - 98
Chloride	87 - 93
Bicarbonate	90 - 95
Nitrate	60 - 75
Fluoride	87 - 93
Silicate	85 - 90
Phosphate	96 - 99
Chromate	86 - 92
Cyanide	86 - 92
Sulphite	96 - 98
Thiosulfate	96 - 99
Ferrocyanide	98 - 99
Bromide	87 - 93
Borate	30 - 50
Sulphate	98 - 99
Arsenic	94 - 96

Specifications	3 Stage	4 Stage	5 Stage
System Capacity	10 - 16 GPD	12 - 50 GPD	18 - 100 GPD
Tank Capacity	3.2 Gallons	3.2 Gallons	3.2 Gallons
Recovery	25 - 30 %	25 - 30 %	25 - 30 %
Rejection	93 % min.	98 % min.	98 % min.
pH Range	3 - 9	3 - 11	3 - 11
Min. Pressure Range	40 PSI min.	40 PSI min.	40 PSI min.
Max. Pressure Range	80 PSI max.	80 PSI max.	80 PSI max.
Temperature	95F max.	110F max.	110F max.
Chlorine Residual	2.0 ppm max.	0	0
Sediment Pre-Filter 10"	5 m	5 m	5 m
Carbon Block Pre-Filter 10"	N/A	10" CTO	10" CTO
Membrane	CTA	TFC	TFC
Post Filter	10" CTO	GAC	GAC

*The above percent of rejection is for reference only and not to be construed as any guarantee since the chemistry, temperature, and TDS are not constant in each water supply.

SYSTEM HOOKUP INSTALLATION:

5 Stage RO pictured.
4 Stage, less one filter housing.
3 Stage, less one filter housing
and less post filter.



- Red Line: Connect from RO System to Feed Adapter.
- Blue Line: Connect from RO System to Faucet Shank.
- Yellow Line: Connect from RO System to Drain Clamp Fitting.
- White Line: Connect from RO System to Storage Tank.

SYSTEM START UP:

1. Slowly open the feed adapter valve to allow water to enter the RO system.
2. Move ball valve lever on storage tank to open position.
3. Check all connection for any possible leaks.
4. Connect Power to Pump
5. Allow the system to run between 3 to 5 hours to fill the storage tank.
6. Turn on the faucet on top of the sink and let the water run for a few minutes clearing all new tube and filters.
7. The system will automatically start to fill the storage tank again.
8. The system is ready to provide you with fresh and purified water.

RECOMMENDED MAINTENANCE:

1. The Sediment pre-filter should be examined regularly and changed when the outside discolors to cardboard brown color and before the inner core discolors. The life of the pre-filters depends upon the condition of your feed water supply and should be checked at least at 3-month interval until a filter life is established. The average life of a pre-filter is about six (6) months.
2. The Carbon Block filter helps remove chlorine and protects the life of the reverse osmosis membrane and it should be changed at the same time with the pre-filter.
3. The Post-filter should be changed when you experience an unusual taste and/or odor in the water. It has a normal life between nine (9) to twelve (12) months.
4. The Reverse Osmosis Membrane can be tested annually by taking a sample of your filtered water to a nearby water store and requesting a conductivity test.
5. Drain your storage tank each month to have fresh water in the storage tank by lifting the faucet handle into the parallel position with the spigot until water flow stops front the tank. Return the handle to regular position to allow the storage tank to refill.

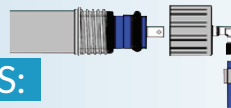


REPLACING THE RO MEMBRANE:

1. Follow "Change Filters Procedures" above steps 1 to 3
2. Free the membrane from the clips.
3. Use a 5/8" wrench to remove the tubing from the membrane vessel (the inlet side of the membrane vessel, or the side with the membrane vessel cap).
4. Unscrew the membrane vessel cap off (counter-clockwise).
5. Use pliers to pull the membrane out of the membrane vessel, and discard the used membrane.
6. Insert the new membrane into the membrane vessel (THE SIDE WITH DOUBLE BLACK O-RING SHOULD GO IN FIRST).
7. Push the membrane all the way in.
8. Put some Vaseline or silicon based lubricant to the side of the vessel threads.
9. Screw the membrane vessel cap back (clockwise).
10. Connect the tubing to its elbow fitting.
11. Turn on the water supply and tank valve to restart the system.
12. Observe for leaks, if there is leak, tighten the cap. Wait 2 to 3 hours for the tank to be filled then you must drain the first tank of water by opening up the faucet to flush the system.

REPLACING THE PRE & POST FILTERS:

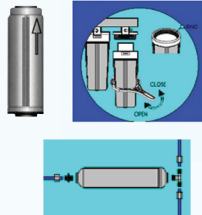
1. Shut off the system by turning off the water supply.
2. Turn off the holding tank valve.
3. Open the spigot to release the pressure from the system.
4. Place towel under the unit for water spills.
5. Use a filter wrench or by hand to open the filter housing unscrew it from right to left.
6. If you are changing a GAC Filter, make sure that the arrow on the cartridge is pointing towards the cap of the housing.
7. Throw away the used filter, and clean the inside of the housing by rinsing or scrubbing.
8. Watch for the black "O" ring inside the filter housing (DON'T LOSE IT!).
9. Place the new filter inside the filter housing.



10. Place the "O" ring in the housing groove (MAKE SURE IT IS IN PLACE)
11. Put some Vaseline or silicon-based lubricant on the side of the housing threads.
12. Use a filter wrench or by hand to screw the housing back into place by turning it from left to right (Don't lay down the unit while screw it in, the unit should be stand upright to prevent the O-ring from slipping).
13. Repeat the above steps for other filters.
14. After all housings are tight, turn on the water supply and storage tank valve.
15. Observe for any leaks, if there is leak, tighten the housing or re-aligning the O-ring.
16. If you are changing a carbon filter or membrane, you must drain the first tank of water after restart the system.

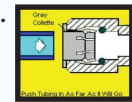
REPLACING THE INLINE POLISHING FILTER:

Replacing inline-carbon filter, the flow direction indicated on the filter should be the same as the old filter. The Inline Replacement Filters Use John Guest "Quick-Connect" Fittings.

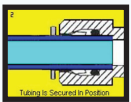


STORAGE TANK ASSEMBLY:

1. Use Teflon tape and wrap the nipple on the top of the storage tank and the 90 degrees elbow supplied.
2. Install the elbow on the 1/4" ball valve.



STEP 1
To Disconnect push in collet squarely against the face of fitting. With the collet held in this position, the tube can be removed.



STEP 2
Push the tube into the fitting, to the tube stop, the collet (grasper) hold the tube in position. Pull the tube lightly to check it is secure in position.

DRILLING FAUCET HOLE IN SINK:

Stainless Steel Sinks & Porcelain Sinks:

1. Drilling through a stainless steel sink can be achieved by marking a center punch and drilling a 3/8" guide hole.
2. Use a 1/2" carbide drill to enlarge the hole.
3. Make sure when starting to drill, begin slowly through the porcelain portion of the sink so that chipping is reduced to a minimum.

MOUNTING THE FAUCET:

1. Disassemble the bottom portion of the faucet.
2. Place into hole of sink and reassemble faucet from under neath sink (see figure 1).

