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Economy Reverse Osmosis Unit Service Instructions

This is a step-by-step process. You don't have to follow this exact order, but it will be easier if you do.

1. First, check the TDS (Total Dissolved Solids) level of the unit if you have a tester. This is a test of the reverse osmosis membrane, not of the carbon filters. It measures dissolved solids in parts per million (which is the same as milligrams per liter). The unit's product water should be about 1/10 the TDS of the tap water. For example, if your tap water has 500 ppm total dissolve solids, your RO water should be at 50 or lower.

   If you don't have a tester, take a guess. If the water tastes good, the membrane is probably OK. Membrane life depends on lots of variables, but a good RO membrane should last from three to five years.

2. Turn off the inlet water at the inlet valve to the unit. Turn off the tank valve at the top of the storage tank. Open the ledge faucet and leave it open during the entire service procedure. If no water comes from the faucet, the unit is turned off and it's safe to replace the cartridges.

3. Get the unit in a comfortable position (comfortable for you—don't worry about the unit) over a large pan if possible. A plastic dishpan works well. It's often easiest to disconnect a fitting or two to get the unit into a comfortable workspace. Just remember how to put them back. Open the two vertical filter vessels (not the horizontal membrane vessel) using a filter wrench. The vessels screw apart in a counterclockwise direction. Remove the cartridges, discard them, and rinse out the vessels.

4. Replace the cartridges. Most units use radial flow cartridges with no “up” or “down”.

   Now lubricate the O-rings in the vessels lightly—silicone grease is the ideal lubricant. Be sure that the O-rings are properly seated in their grooves, then screw the vessel sumps back onto their caps. Tighten snugly, but don't overdo it. (Over-tightening can damage O-rings.)

5. Next, replace the horizontal post filter that is clipped to the membrane housing. Observe the direction of flow on the old filter before removing the tubes. Now remove the tubes and fittings from the old filter, retape the threads with teflon tape, and reinstall them into the new filter. Reinstall the new filter on the unit.

6. **Go on to step 7 if you're not replacing the membrane.**

   To replace the membrane:

   1. Remove the tube that enters the cap end of the membrane housing. Unscrew the cap, then remove and discard the old membrane.

   2. Open the replacement membrane's sealed bag at the end opposite the stem with two black o-rings. Then, avoiding touching the membrane with your hands, grasp the membrane with pliers and pull it from the bag.

   3. Holding the membrane with pliers, put it under a water tap. This isn't to rinse the membrane but to wet the o-rings and the rear skirt for lubrication so it will slide easily into the housing. Now, slide it into the membrane housing, still holding it with pliers. It needs to slip into a slot at the end of the housing. The best way is to push it to an easy stopping place, then twist and push with the pliers. You'll feel it slide into its slot.

   4. Replace the cap and tube.

7. Reconnect any tubing you have removed. Slowly open the inlet valve and let water into the unit. Check for leaks. It is normal to hear lots of gurgling and air escaping down the drain.

   Next, with the ledge faucet open, open the valve on top of the tank. Let the tank drain completely—this may take some time. It will finally become a fast drip or a small stream. This is the rate of water production through the membrane.

8. Now, with the ledge faucet still open, service the storage tank:

   Start by attaching a small hand pump like a bicycle pump to the air valve on the tank. (On our standard tank, the air valve is on the side and covered by a blue cap. For other tanks, placement will vary. You'll have look for it.) With the faucet still open, pump air slowly into the tank. A larger stream of water will start to leave the tank through the open ledge faucet.

   Continue to pump air into the tank slowly and steadily until all water is out of it and the stream returns to the small stream you saw before you started putting air in the tank. Try to leave about 7 pounds of pressure in the empty tank. If you don't have a low-pressure gauge, guess. The exact amount isn't that critical. Don't over-air the tank, however, because you won't be gaining more pressure; you'll just be leaving less room in the tank for water.

   > **Tip:** You don't have to service the tank every time you change the cartridges, but it's a good idea to do it. If you never replenish the air in the tank, you'll eventually reach a point where you don't have enough water. (There will be water in the tank, but it won't come out.) The best practice is to service the tank each time you change cartridges.

When the tank is aired, close the faucet and let the unit refill. You're through. You'll have enough water to use in a few minutes, but it may take a few hours for the tank to fill completely.