

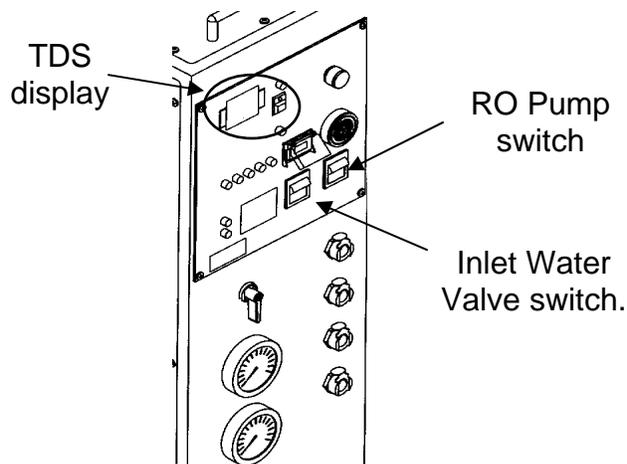
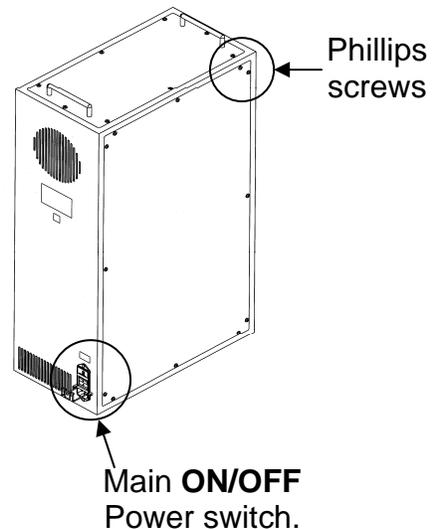
MILLENNIUM START-UP PROCEDURE AFTER SERVICE HAS BEEN PERFORMED.

NOTE: It is not necessary to re-install the Millennium RO into the portable cart for this testing. If possible, it is desirable to test for leaks prior to placement on the cart. In the event that further repairs are needed, the machine will be easier to access while off the cart.

1. Restore water and power connections to prepare for leak and operation testing.
 - a. Connect the product extension hose to the end of the product hose and route to drain.
 - b. Connect the feed water hose.
 - c. Connect the waste water hose.

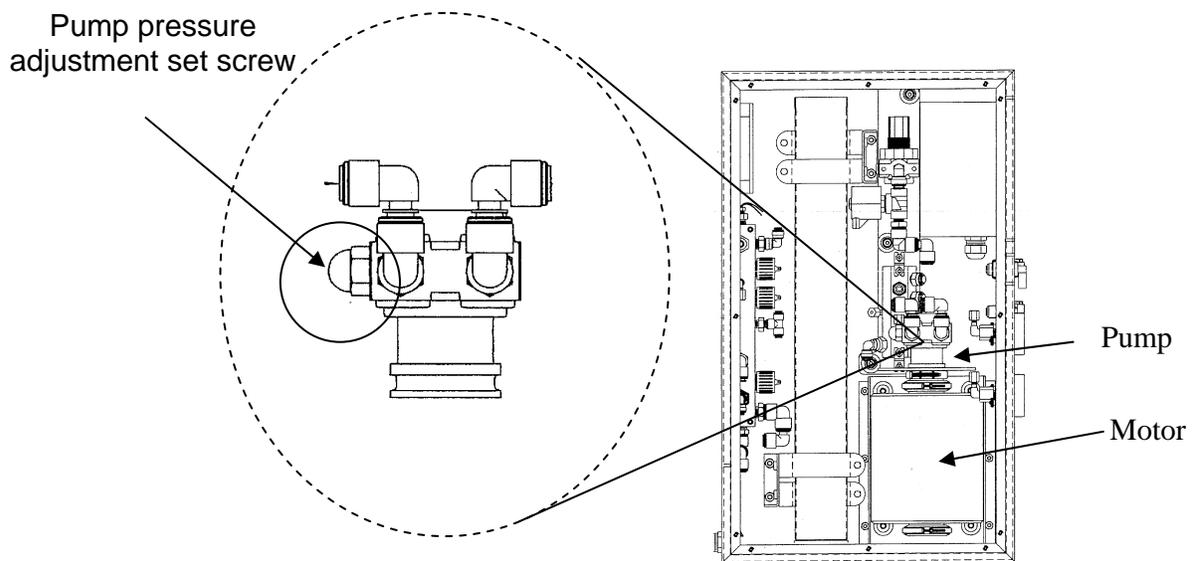
WARNING: The product water hose must not be connected to the Hemodialysis controller.

2. Turn the source water valve (or faucet) ON and check all connections for leaks and repair if/as needed.
3. Plug the GFI power cord into the back of the RO, then plug the other end of the GFI cord into a wall socket.
4. Locate the main ON/OFF switch on the back of the machine and turn ON.



5. Turn the Inlet Water Valve switch ON. Observe waste hose and confirm that water is flowing.
6. Verify the TDS display lights up.
7. Inspect pump head, gauges and all fittings for leaks.
8. Turn the RO Pump switch ON.

9. Verify the pump pressure is 190 PSI +/- 10 psi with the product water running freely to drain. The pressure should not to exceed 200 PSI. If the pump pressure needs to be adjusted –
 - a. Locate the large nut on side of pump head just below the inlet port.
 - b. Turn slotted adjustment screw (center of large nut) to adjust pump pressure to 190 psi, +/- 10 psi (range 180-200 psi) per pump pressure gauge.

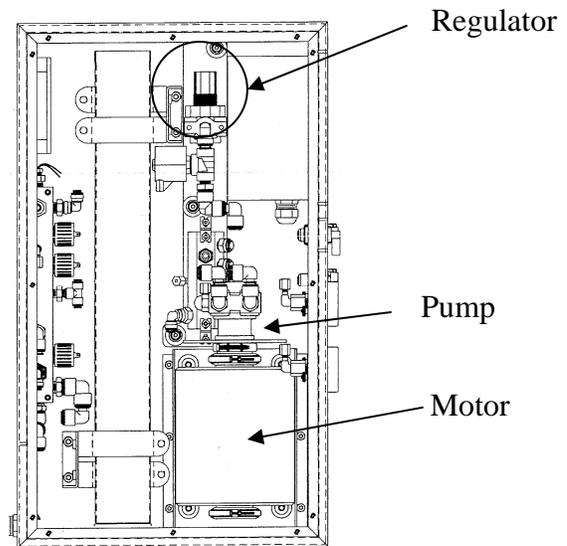


10. Inspect for leaks at all fittings, both high and low pressure. If leaks are detected, turn RO off. Turn the water off and refer to Tech Note 200 - MILLENNIUM LEAK REPAIR PROCEDURE.
11. The percent rejection should indicate 95% or higher within 2 minutes and the TDS display should stabilize. If membranes are new, the rinse-out time will be 3 hours as discussed in the Millenium Operations and Maintenance Manual. Verify that the TDS is near "normal" when compared to the daily operating logs that are maintained for the machine prior to repairs.
12. Verify product pressure when the unit is not supplying water to the dialysis machine. While the RO machine is running, disconnect the product water line at the fitting on the front of the machine. The machine will automatically go into a water recycling mode, as soon as the product water pressure increases beyond the inlet water pressure. The product water pressure can be adjusted to any

pressure up to and equal to the inlet water pressure. The factory setting is 30 psi.

If the Product pressure is not 30 PSI and the pump pressure is within the specification above, adjust the product pressure by pulling up the large knob on the pressure regulator.

- a. Turn the knob until 30 PSI is reached.
- b. Push the knob back into place.
- c. Re-verify that the pump pressure is 190 PSI (± 10 PSI); if needed, re-adjust as described above.
- d. Once the pump pressure has been re-adjusted, if needed, re-tighten large acorn nut on the Pump and insert the Product water hose in to the front panel quick disconnect.



- e. Rinse the RO thoroughly; if the membranes are new, refer to the new membrane rinse and disinfect procedure, below.

13. Re-check the interior of the machine for any other leaks. Repair as necessary.

14. Replace the side cover; place Millenium RO in portable cart; restore all normal operational hose connections and power cord connections.

15. If the membranes have been replaced, allow RO unit to run at normal pressures and flows for three hours (product flow to drain).

16. Disinfect the RO machine as discussed in Section 4.4 of the Millenium Operation and Maintenance Manual.

NOTE: There may be a considerable time lag (days to weeks) between drawing the AAMI sample and receiving the results. The Millenium RO unit must be operated daily for a minimum of 60 minutes per 24 hour period to minimize stagnation and resultant bacterial growth.

17. Draw samples of product water and submit for AAMI testing.
18. Draw sample of the product water for bacteria and LAL testing (colony count and endotoxin level) and submit to lab. Reference the Millenium Operation and Maintenance Manual Section 4.5 for details.
19. Once satisfactory colony count and endotoxin test results are confirmed, the Millenium RO unit may be returned to normal service.
20. Refer to Tech Note 208 - **REPAIR / CHECK TEST DATA** sheet.