

DESIGNER AND MANUFACTURER OF REVERSE OSMOSIS SYSTEMS

6351 ORANGETHORPE AVE, BUENA PARK, CA 90620 U.S.A (714) 736-9990

R.O. MEMBRANE CLEANING PROCEDURE

BEFORE STARTING THE R.O. MEMBRANE CLEANING PROCEDURE, THE "FLOW CONTROL" VALVE AND THE R.O. PUMP "RECIRCULATION" VALVE MUST BE LUBRICATED TO PREVENT THE VALVE SHAFTS FROM SEIZING TO THE VALVE BODIES. THE "FLOW CONTROL" VALVE IS LOCATED UNDER THE "MODULE IN - MODULE OUT" VALVE. THE RECIRCULATION VALVE IS LOCATED ON THE DISCHARGE TUBING ON THE R.O. PUMP.

VALVE LUBRICATION:

- 1) REMOVE THE VALVE PACKING NUT.
- 2) UNTHREAD THE SHAFT FROM THE VALVE BODY.
- 3) APPLY A THIN FILM OF HIGH VACUUM GREASE TO THE THREADS ON THE VALVE SHAFT ONLY.
- 4) RE-ASSEMBLE THE VALVE.
- 5) BE SURE THE PACKING NUT IS TIGHT.

AFTER THE VALVES HAVE BEEN LUBRICATED, START THE R.O. SYSTEM AND ALLOW IT TO RUN FOR 2 TO 3 MINUTES TO FLUSH ANY AIR POCKETS FROM THE PUMP. AIR THAT IS TRAPPED IN THE PUMP WILL PREVENT IT FROM PRIMING WHEN YOU START THE CLEANING PROCESS.



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MEMBRANE CLEANING

MATERIALS:

1 EACH, 1" BRAIDED NYLON HOSE 8 FEET LONG.
2 EACH, 3/4" BRAIDED NYLON HOSES 8 FEET LONG.
1 EACH, 15 GALLON CONTAINER.
1 KIT, R.O. MEMBRANE CLEANING DETERGENT.
1 EACH, LOW PRESSURE SWITCH JUMPER WIRE.

- 1) TURN OFF THE R.O. SYSTEM.
- 2) TURN OFF THE WATER SUPPLY TO THE R.O. BY TURNING OFF VALVES POST 1-MICRON FILTERS.
- 3) IF THE R.O. PIPING LOOP RETURNS TO THE R.O. SYSTEM, CLOSE THE RETURN LOOP VALVE. THIS WILL PREVENT THE R.O. PUMP FROM PULLING AIR FROM THE R.O. LOOP AND LOOSING THE PRIME.
- 4) RELIEVE THE PRESSURE IN THE R.O. SYSTEM BY OPENING THE BLEEDER VALVE ON THE INLET SOLENOID. BE SURE THIS VALVE IS CLOSED AS SOON AS THE PRESSURE IS RELIEVED.
- 5) TURN OFF THE POWER TO THE BOOSTER PUMP. THE three PHASE SWITCH IS MOUNTED ON TOP OF THE BOOSTER PUMP STARTER ASSEMBLY.
- 6) CONNECT A JUMPER WIRE FROM THE NORMALLY OPEN (NO) CONTACT ON THE LOW PRESSURE SWITCH TO ITS COMMON (C). THIS WILL PREVENT A LOW PRESSURE SHUT-OFF DURING THE CLEANING PROCESS. <u>**BE SURE THIS**</u> <u>JUMPER IS REMOVED AFTER THE CLEANING PROCEDURE IS</u> <u>COMPLETED.</u>
- 7) REMOVE THE "PRODUCT HOSE", "REJECT HOSE" AND "FEED HOSE" FROM THE R.O. SYSTEM. <u>BE CAREFUL NOT TO ALLOW WATER TO DRAIN FROM THE SYSTEM</u>. THIS CAN PREVENT THE PUMP FROM PRIMING.
- 8) INSTALL THE EXTENSION HOSES FROM THESE PORTS TO THE CLEANING CONTAINER. <u>SECURE THE HOSES TO INSURE THEY DO NOT SLIP OUT OF THE</u> <u>CONTAINER WHILE THE SYSTEM IS RUNNING</u>.
- 9) FILL A 30 GALLON PLASTIC CONTAINER WITH 15 GALLONS OF SOFT WATER.
- 10) ADD THE CLEANING DETERGENT AND STIR UNTIL DISSOLVED. **REFER TO THE DETERGENT INSTRUCTIONS FOR PROPER CONCENTRATION.**



⁷ G.E.M. Water Systems, Int'l. LLC

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- 11) START THE R.O. SYSTEM AND REDUCE THE PUMP PRESSURE TO 100 150 PSI OR LOWER IF POSSIBLE. THIS CAN BE ACCOMPLISHED BY TURNING THE "FLOW CONTROL VALVE" IN A COUNTER CLOCKWISE DIRECTION.
- 12) ALLOW THE CLEANING SOLUTION TO RECIRCULATE UNTIL THE TEMPERATURE REACHES 105 DEGREES F. THE TEMPERATURE WILL INCREASE DUE TO THE FRICTION WITHIN THE PUMP.
- 13) WHEN THE TEMPERATURE REACHES 105 DEGREES F., TURN OFF THE R.O. AND ALLOW THE MEMBRANE(S) TO SOAK FOR APPROXIMATELY 30 MINUTES.
- 14) AFTER THE 30-MINUTE SOAK, RESTART THE R.O. AND AGAIN ALLOW THE SOLUTION TO RECIRCULATE. IF THE SOLUTION IS DIRTY, REPEAT THE PROCESS UNTIL CLEAR.
- 15) IF ACID AND ALKALINE CLEANERS ARE TO BE USED, BE SURE TO RINSE THE SYSTEM BEFORE USING THE OTHER.

RINSING PROCEDURE

- 1) TURN THE R.O. SYSTEM OFF.
- 2) RECONNECT THE FEED HOSE TO THE SOFT WATER LINE.
- 3) PLACE THE PRODUCT AND REJECT LINE INTO A DRAIN.
- 4) REMOVE THE JUMPER WIRE FROM THE LOW PRESSURE SWITCH.
- 5) TURN ON THE POWER TO THE BOOSTER PUMP.
- 6) TURN ON THE WATER SUPPLY
- 7) TURN ON THE R.O. SYSTEM AND ALLOW THE MEMBRANE(S) TO RINSE FOR AT LEAST ONE HOUR.
- 8) TURN OFF THE R.O. AND RECONNECT THE PRODUCT AND REJECT LINES.
- 9) OPEN THE RETURN LOOP VALVE.
- 10) TEST THE PRODUCT FOR CLEANING SOLUTION RESIDUAL. REFER TO THE DETERGENT INSTRUCTIONS.