HOBART

WATER TREATMENT SOLUTIONS

REVERSE OSMOSIS SYSTEM

8985

MODEL

RO-150

INSTRUCTION MANUAL

701 S. RIDGE AVENUE - TROY, OHIO 45374-0001
F25054 (January 2004)

TABLE OF CONTENTS

Installation, Operation and Care of RO-150 Reverse Osmosis System

SAVE THESE INSTRUCTIONS

GENERAL

The Hobart RO-150 filter system is designed for foodservice equipment where high quality water is essential. The Hobart RO150 meets low water usage demands for steamers, combi-ovens, proofers, deck & rack ovens, and misting systems. Ensure that the water demand of the equipment does not exceed six gallons per hour or a total draw down of 13.5 gallons.

NOTE: The standard storage tank size is 20 gallon. Other sizes of storage tanks are available (up to 80 gallon).

NOTE: The RO-150 is intended only for water feeding the cooking equipment boiler or generator. A separate condensate line not treated by the RO-150 must be installed on equipment if required.

Filter cartridge replacement is recommended at least every 4 - 6 months for moderate to low usage and 90 days for high usage. The RO membrane should be replaced annually or when the removal of Total Dissolved Solids - TDS becomes less than 80% efficient (determined by comparison testing of water supply and product water).

UNPACKING

This water filter system was inspected before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of the shipment. Immediately after unpacking, check for possible shipping damage. If the water filter system is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.

INCLUDED IN RO-150 FILTRATION SYSTEM

- Reverse osmosis filtration system assembly with supplied filters, cartridges and 24VAC transformer.
- 20 Gallon storage tank (13 gallon capacity)*****.
- 3/8" Push on ball valve
- 3/8" to 1/4" Push on tee
- 1/4" Ball valve
- 10' - 3/8" LLDPE John Guest tubing
- 10' - 1/4" LLDPE John Guest tubing
- 3/8" Plastic ferrules and stainless steel stiffening inserts
- Filter wrench

***** The RO-150 filtration system can be purchased without a storage tank.

REQUIRED TOOLS

- Spirit Level
- PVC pipe cutter, razor blade tubing cutter or sharp razor knife
- Electric drill
- Marker
- Air pressure gauge capable of measuring 10-60 psi.

REQUIRED HARDWARE

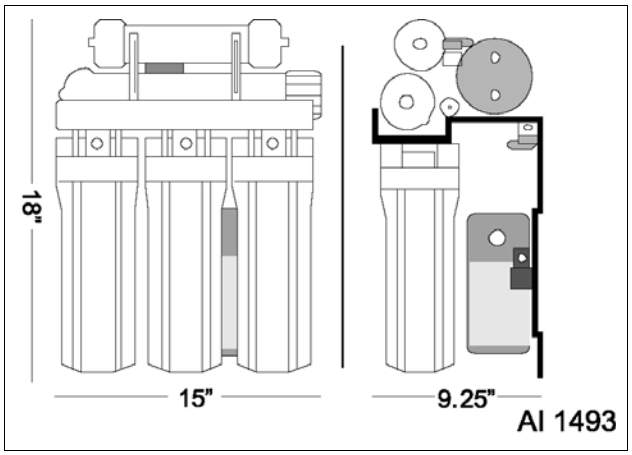
- Connection fitting to water supply with 3/8" compression fitting
- Connection fitting to equipment with 3/8" compression fitting
- Teflon tape
- Two 3/16" diameter mounting screws at least 1-1/4" in length.
- Appropriate wall anchor hardware for 3/16" screws

INSTALLATION

MOUNTING LOCATION REQUIREMENTS

CAUTION: Do not mount to equipment.

1. The filter system must be mounted on a sturdy support structure or wall and must be level.
2. Allow a minimum of ten inches clearance around the left and right sides and 14 inches clearance from the bottom of the system for routine maintenance and servicing.
3. Locate the RO filter system and storage tank near the equipment it services.



DIMENSIONS OF SYSTEM SHOWN

NOTE: The shorter the distance between the RO filter system and the equipment, the lower the water delivery line pressure drop.

4. Ensure there is an open drain nearby to drain waste water produced by the RO system. Most commonly this is the same drain used by the equipment the RO filter system is servicing.
5. Make sure 120V electrical service is within six feet of the RO mounting location.
6. Do not install the RO filter system where it will be exposed to hot air or steam exhaust.
7. The filter system must be protected against freezing. Failure to do so could result in breakage of the filter housing and water leakage.

MOUNTING THE RO-150

NOTE: The Hobart RO-150 can be mounted on a wall or other stable surface that will support its wet weight of 30 lbs. When mounted to a wall, the mounting hardware used must be able support its full weight and withstand the additional forces applied during pre-filter replacement.

Wall Mounting

1. Remove the pre-filters from the filtration system.
   A. Lift the pre-filter head assembly to the desired location.
   B. Level pre-filter head against mounting structure.
   C. Mark the two mounting hole locations.
2. Drill mounting holes to the required diameter (depends on wall anchors being used).
3. Install two 3/16" mounting screws at least 1-1/4" in length in the marked locations using the appropriate wall anchors. Screw in the mounting screws leaving a 1/8"-1/4" gap. Lift the pre-filter head assembly and install over mounting screws. Slide pre-filter head assembly into place then securely tighten the mounting screws.

CAUTION: Do not plug in the transformer at this time.

4. Place the transformer in the space provided to the right of the permeate pump.
5. Connect the transformer 24V output to the wiring harness.
   A. Route transformer output wiring under right side of bracket and connect to plug located on the left side of filter system near high pressure switch.
6. Insert filter cartridge into the pre-filter housings.
   A. Verify that the filter cartridge being installed matches the labeling on the bracket.
   B. For each pre-filter, ensure the O-ring is in place on pre-filter housing and hand tighten filter housing onto the pre-filter head.

WATER SUPPLY REQUIREMENTS

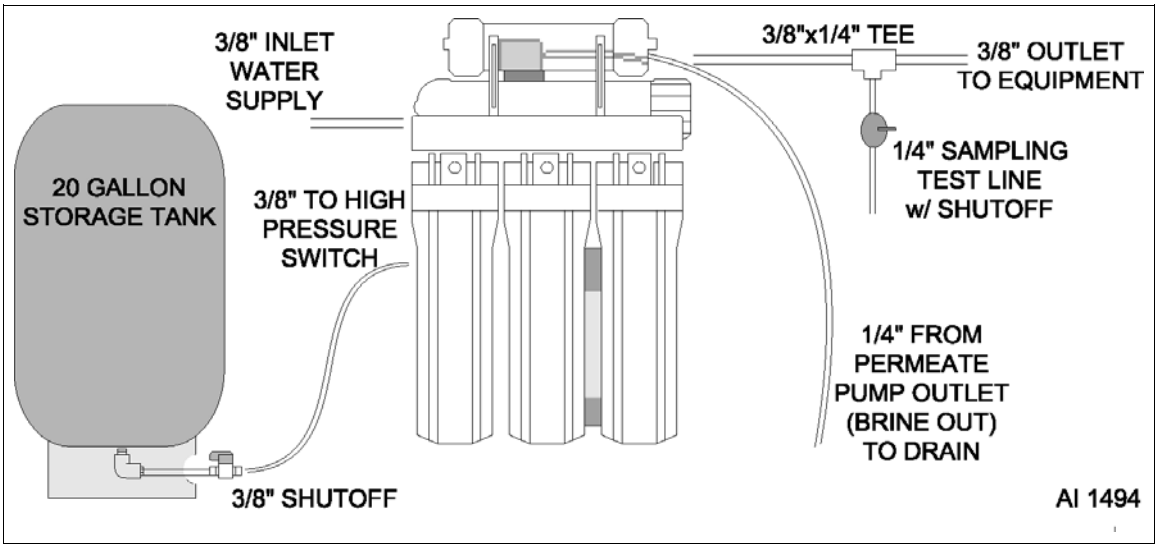
NOTE: Install the RO-150 in the cold water line only. Installation of the water filter system in a hot water line can damage the filter housing. System performance varies with the incoming water supply temperature. Optimum performance is achieved when water temperature is 70° F. For each 10° F drop in water temperature, a decrease in water production of 10% will be observed. A larger storage tank may be required when the water temperature is less than 55° F.

NOTE: The following are recommended inlet water supply parameters. Exceeding these parameters may decrease system performance or result in more frequent filter changes. Most municipal water supplies will meet these conditions with the exception of water hardness. In cases where water hardness exceeds the maximum recommended levels, life of the RO membrane may be shortened. Proper system performance checks will determine if the membrane needs replacement.

WATER PARAMETERS	
Inlet Water Supply TDS	< 2,000 ppm
Hardness	< 10 grains (171 ppm)
Iron	< 0.2 ppm
Manganese	< 0.05 ppm
Turbidity	< 5 NTU
pH	5 -10
Free Chlorine	< 2 ppm
Hydrogen Sulfide	None Allowable
Feed Water Temperature	40 - 100° F
Feed Water Pressure	20 - 125 psi

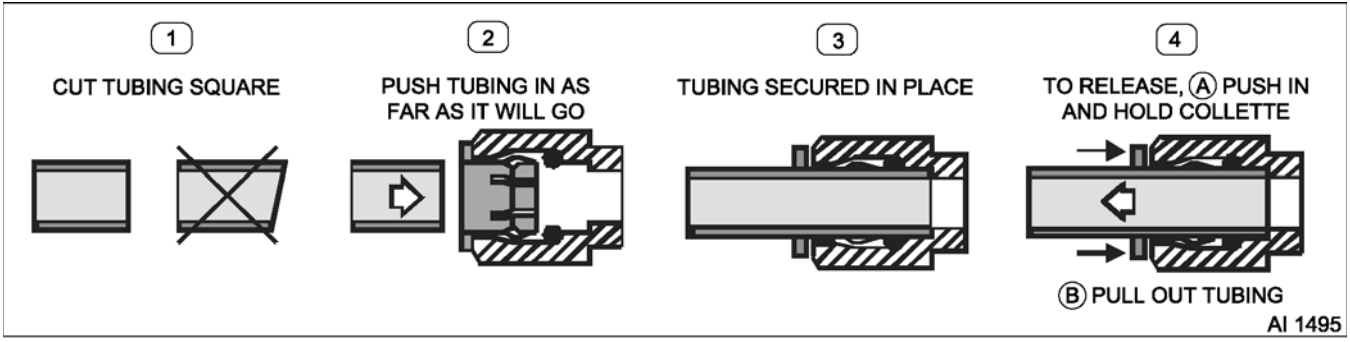
PLUMBING CONNECTIONS

WARNING: PLUMBING CONNECTIONS MUST COMPLY WITH APPLICABLE SANITARY, SAFETY AND PLUMBING CODES.



PUSH TYPE FITTING CONNECTIONS

The Hobart RO-150 utilizes quick disconnect push fittings for the majority of connections. Quick disconnect push fittings demand smooth, round, nick-free tubing and straight edges to form leak-free connections. Use either a PVC pipe cutter, razor blade tubing cutter or sharp razor knife to ensure straight, clean cuts. Leaks at connections are usually the result of deformed tubing. To correct a leak, release the water pressure, disconnect the tubing, cut 1/4" off the end of the tubing and reconnect.



Any tubing that is removed from the fitting frequently will eventually develop nicks or scratches that may lead to leaks. In such cases, periodically trim the tubing as described above.

NOTE: Always release the water pressure before attempting to disconnect the tubing from the fitting.

To connect tubing, push tubing squarely into the opening as far as it will go. To release the tubing, push in on the collette and pull out on the tubing.

WATER SUPPLY CONNECTION

TUBING / FITTING REQUIREMENTS
Due to the aggressive nature of high-purity RO product water, all tubing and fittings feeding the storage tank and equipment should be plastic. Although the Post Neutralizing Filter corrects pH and the aggressive tendencies of RO water, steps should be taken in avoiding the use of metallic connections and piping.

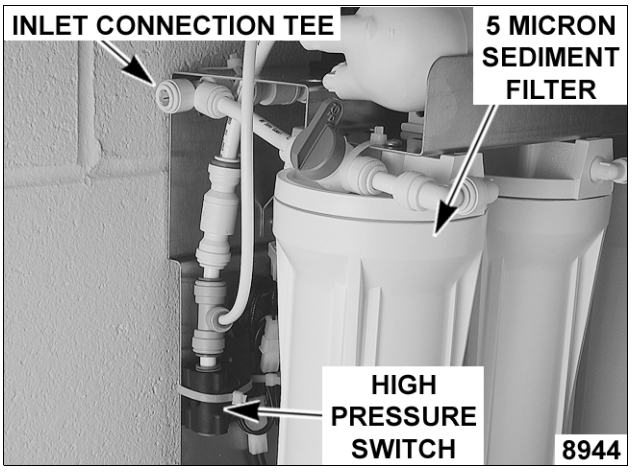
1. Ensure inlet water pressure is a minimum of 20 psi.

NOTE: Use the minimum amount of tubing to connect the water supply to the system to cut down on pressure drop.

NOTE: Inlet supply line should not exceed 20 feet in length. Do not use a self-piercing saddle valve to tap into the main feed water line.

NOTE: If using a brass compression fitting to connect the plastic tubing, discard the brass ferrule and use a plastic ferrule in its place. Use of a plastic insert (stiffener) will increase strength of connection.

2. Run 3/8" poly tubing from the water supply to the inlet connection tee on the left side of the RO filter system located under the system bracket and behind the sediment filter.



STORAGE TANK CONNECTION

NOTE: A 20 gallon storage tank pre-charged with air between 12-15 psi is supplied with the Hobart RO-150. This allows for a total draw down of approximately 13 gallons RO water for on demand use. If a larger draw down is required, larger storage tanks are available upon request.

NOTE: A small air pump, such as that used for balls or a bicycle tire, will work to charge the storage tank.

1. Verify the air pressure pre-charge of the empty tank is within 12-15 psi.
   A. Purge or add air as needed.

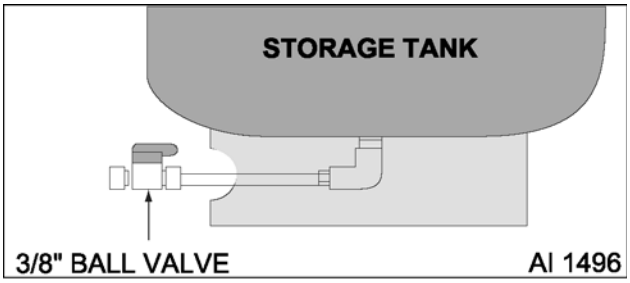
2. Determine a location that is easily accessible for storage tank shutoff valve placement.

   A. Measure the distance from storage tank connection point to desired shutoff valve location.

   B. Cut off appropriate length of 3/8" tubing.

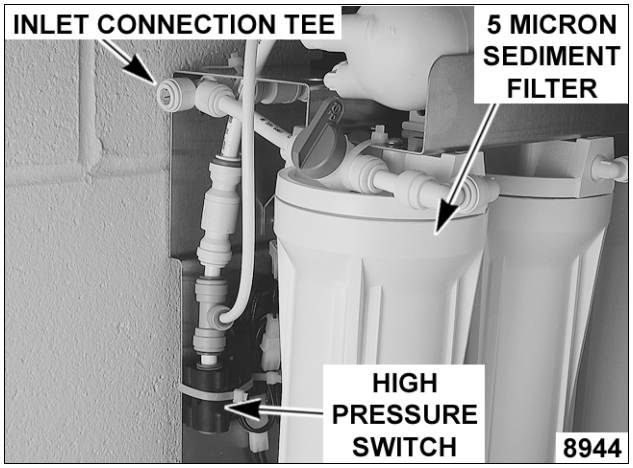
   C. Insert 3/8" tubing into the push fitting on the tank adapter so that the tubing extends through the hole at the base of the tank.

   D. Connect the supplied 3/8" ball valve (tank shut-off valve) to the other end of 3/8" tubing.



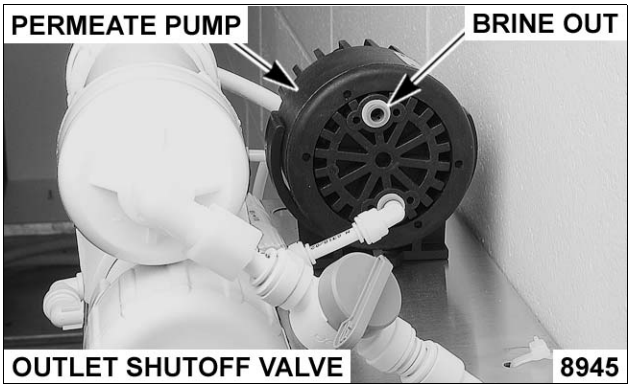
3. Place the tank in a location away from traffic. Ensure the selected area will support the weight of the tank when full (140lbs).

4. Run 3/8" poly tubing from the tank shut-off valve to the push connection at the bottom of the high pressure switch mounted on the left side of the RO filter system under the bracket and behind the sediment filter.



DRAIN CONNECTION

1. Insert supplied 1/4" tubing into the brine outlet port on the permeate pump.



NOTE: The drain line cannot be crimped or blocked.

2. Run tubing from brine outlet port to the drain using the least amount of tubing as possible.

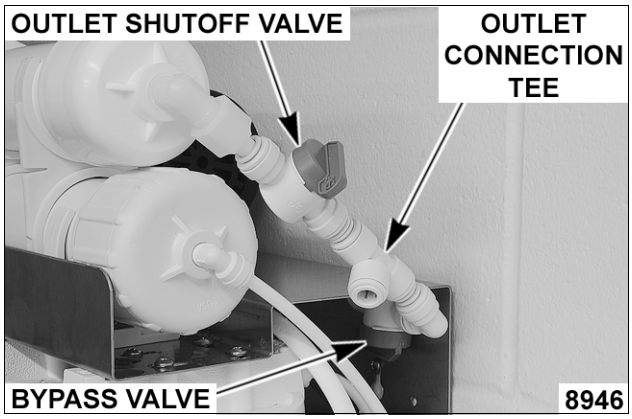
3. Provide an air gap between end of drain tubing and drain.

4. Secure drain line in place using plastic ties.

NOTE: All local plumbing codes must be met when installing drain line.

EQUIPMENT CONNECTION

1. Insert 3/8" tubing into the outlet connection tee on the right side of the system. Run the minimum amount of tubing required to the inlet port of the equipment being fed.



NOTE: RO product water is only intended for misting and the equipment boiler/generator. Do not connect product water to the condensate line.

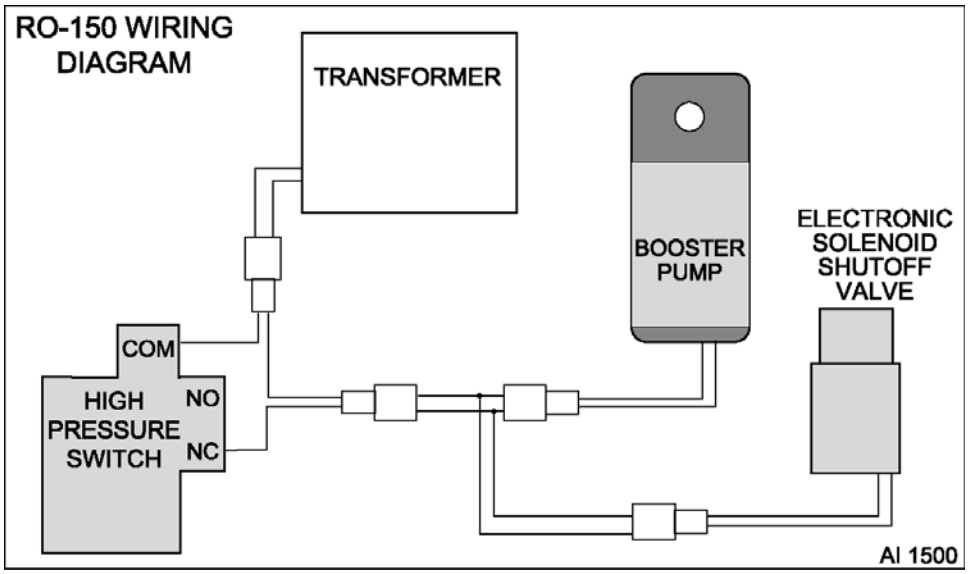
SAMPLING LINE CONNECTION

NOTE: A product water sampling line must be installed on the feed line between the outlet connection tee of the RO filtration system and the connected cooking equipment for water sampling purposes.

1. Determine a location in the feed line to install the Tee and sampling shut-off valve. The shut-off valve should be easily accessible.
   A. Install the 3/8" x 1/4" tee in the feed line after the outlet connection tee and before the connected cooking equipment.
2. Connect the required amount of 1/4" tubing between 3/8" x 1/4" Tee and 1/4" shut-off valve.
3. Connect an additional length of 1/4" tubing to the output side of the shut-off valve for sample water collection.
4. Turn shut-off valve to the off position.

ELECTRICAL REQUIREMENTS

The RO-150 comes with a 110V/60Hz, 24V two amp transformer.



OPERATION

SYSTEM START UP

Start-up conditions.

- Water supply is connected to system inlet Tee (inlet ball valve closed).
- Storage tank is connected to high pressure switch.
- Outlet is connected to equipment (outlet shutoff valve closed).
- Sampling line (shut-off valve closed).
- Transformer output connected to the high pressure switch (transformer not connected to power source).
- Equipment being fed is turned off during start up.
- Internal inlet valve on equipment is closed.
- Ensure that the bypass valve is closed.

1. Open the RO filter system inlet and storage tank ball valves.
2. Open the water supply main valve and allow water to enter the system.
3. Check the three pre-filter assemblies and related connections for leaks.
    A. If a leak is detected, release water pressure from the system before attempting repairs to the leaking connection. Refer to RELEASING WATER PRESSURE as outlined under MAINTENANCE.

WARNING: ELECTRICAL CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL CODES.

4. Connect transformer to the power source. This will open the electronic solenoid valve and start the booster pump.

NOTE: Allow system to operate for a couple of minutes allowing trapped air to be purged from the system.

5. Check operation of the permeate pump. Once air is purged from the system, water will pulse out of the drain line for 2-3 seconds, then stop for the same duration. During normal operation water will pulse on and off continuously until storage tank is filled.
6. Check high pressure switch and electronic solenoid shut-off valve operation.
    A. While the system is producing water, close the outlet ball valve and the storage tank ball valve.
    B. Verify that the booster pump turns off immediately and water stops flowing to the drain.

NOTE: The system is now under full pressure.

7. Check all fittings for leaks.

NOTE: If a leak is detected, release water pressure from the system before attempting repairs to the leaking connection. Refer to RELEASING WATER PRESSURE as outlined under MAINTENANCE.

8. After successful checks, open the storage tank and outlet ball valves.

NOTE: The booster pump should switch back on and the system should begin operating normally.

9. Allow system to run for approximately 15-20 minutes.
10. Open the outlet ball valve and sampling valve.
    A. Collect approximately 1 gallon of water in a container.

NOTE: This water will appear milky or cloudy as it flushes out media fines from the post neutralizing cartridge.

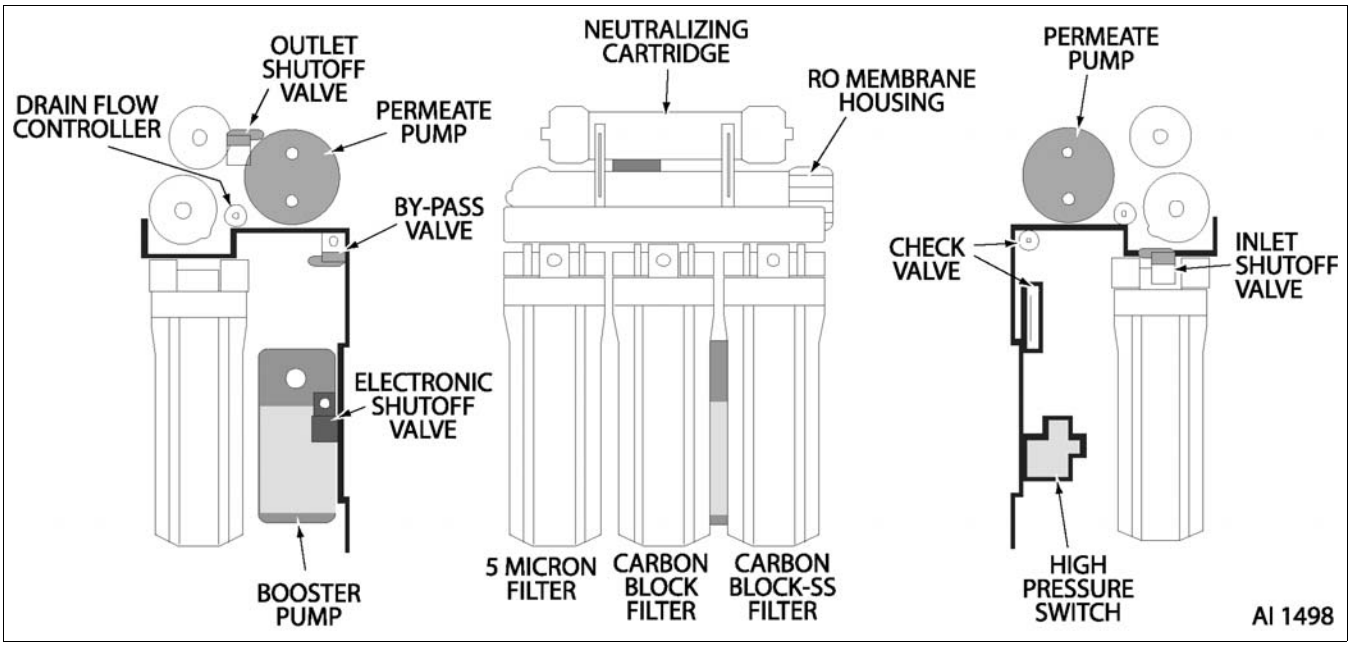
    B. Close the sampling valve and discard collected water.

NOTE: It will take approximately two hours for the system to fill the storage tank with product water. If water is needed for equipment operation prior to the storage tank filling, close the outlet ball valve and open the bypass ball valve. This will allow the flow of untreated water to the equipment while the RO system continues to fill the storage tank.

11. To use product water, ensure that the inlet, outlet and storage tank ball valves are open and the bypass and sampling valves are closed before turning on the cooking equipment.

MAINTENANCE

COMPONENT LOCATION



TESTING EFFICIENCY OF RO MEMBRANE

NOTE: The RO membrane should be replaced annually or when the removal of Total Dissolved Solids - TDS becomes less than 80% efficient. Contact your local Hobart Service office for TDS efficiency testing of your Reverse Osmosis system.

NOTE: To determine grains of hardness delivered to equipment, divide the measured RO TDS by 17.1.

1. Ensure bypass valve is closed.
2. Measure inlet TDS before water enters RO filtration system.
3. Measure RO TDS through sampling line.
4. Determine efficiency percentage using the equation:

$$\text{Efficiency Percentage} = \frac{\text{Inlet TDS} - \text{RO TDS}}{\text{Inlet TDS}} \times 100$$

Example: The inlet water to an RO filtration system is sampled and found to have TDS equal to 198 ppm. A water sample is then taken from the output of the RO system and it measures a TDS of 17 ppm. Find the efficiency percentage using the above equation and the gathered data.

Solution:

$$\text{Efficiency Percentage} = \frac{198 \text{ ppm} - 17 \text{ ppm}}{198 \text{ ppm}} \times 100 = \frac{181 \text{ ppm}}{198 \text{ ppm}} \times 100 = 0.914 \times 100 = 91.4\%$$

RELEASING WATER PRESSURE

Prior to replacing any of the RO-150 filters or repairing connections, water pressure must be relieved from the system.

1. Unplug transformer from the electrical outlet.
2. Close the inlet and storage tank shut off valves.
    A. Make sure the bypass valve is closed.
3. Place sampling line in container and open sampling shutoff valve to relieve pressure in the system.

NOTE: Failure to relieve system water pressure makes it very difficult to remove the pre-filter housings or make repairs to connections.

RESTARTING THE SYSTEM

1. Close the storage tank valve.
    A. Make sure bypass valve is closed.
2. Place sampling line into a container and open sampling valve.
3. Open the 3/8" inlet and outlet ball valves. Open water supply valve if necessary.
4. Connect transformer to power source.

NOTE: Inlet solenoid valve will not open unless power is applied to the RO filtration system.

5. Allow system to operate several minutes to purge trapped air from the system.
6. After air is purged from the system and while the system is producing water, close the outlet ball valve.
    A. Verify that the booster pump turns off immediately and water stops flowing to the drain.

NOTE: The system is now under full pressure.

7. Check all fittings for leaks.
    A. If a leak is detected, release water pressure from the system before attempting repairs. Refer to RELEASING WATER PRESSURE as outlined under MAINTENANCE.
8. After successful checks, close the sampling ball valve and open the storage tank and outlet ball valves.

PRE-FILTER REPLACEMENT

A filter wrench is provided to remove the pre-filter housings. In most cases, the filter wrench is not needed if the system pressure is relieved.

CAUTION: Do not apply excessive force on the filter mounting hardware when removing or replacing the pre-filter housings.

1. Follow procedure for RELEASING WATER PRESSURE.
2. Place a pan under pre-filter housing being removed to catch water overflow.
3. Remove pre-filter housing from pre-filter head.
4. Remove the old cartridge and wipe out inside of pre-filter housing.
5. Install a new cartridge into the pre-filter housing.

NOTE: Ensure new cartridges are positioned in the correct order; carbon block-SS filter on the right, carbon block filter in the middle and 5 micron sediment filter on the left side.

6. Inspect filter housing O-rings. Replace O-ring if damaged.
7. Reinstall pre-filter housing onto the pre-filter head. Hand tighten. Use the wrench only to remove pre-filter housings - DO NOT OVER TIGHTEN.
8. Perform RESTARTING THE SYSTEM.

RO MEMBRANE REPLACEMENT

1. Follow procedure for RELEASING WATER PRESSURE.
2. Disconnect the 1/4" line from the elbow fitting on the inlet side of the membrane housing.

NOTE: The housing can be lifted away from the mounting clips in order to get a firm grasp on the housing and cap.

3. Unscrew the membrane housing cap.
4. Remove the used RO membrane from the housing by threading a plastic tie through the hole on top of the membrane post and pulling it out.

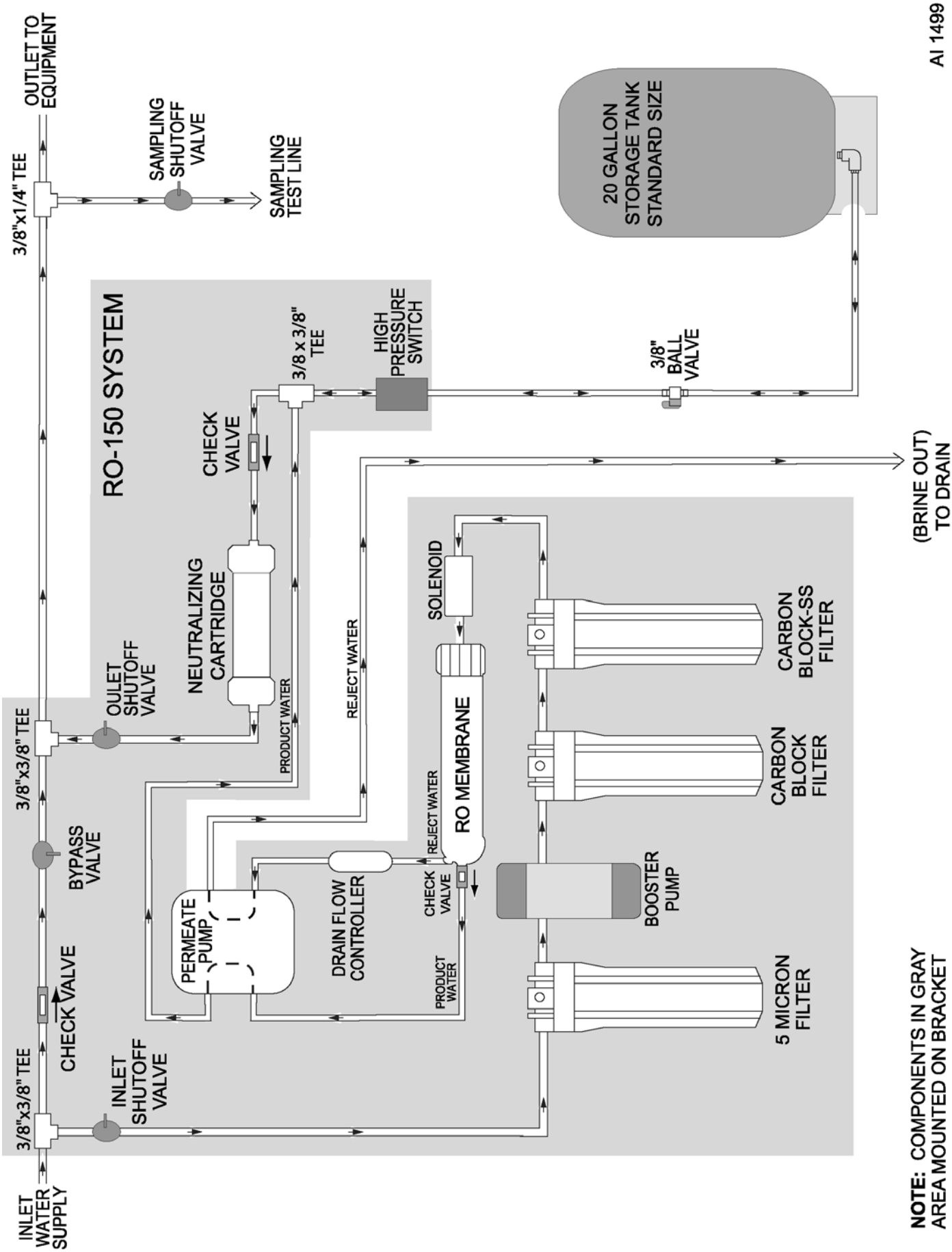
CAUTION: Do not touch the new RO membrane.

5. Cut the bottom of the plastic bag containing the RO membrane and insert membrane by pushing it into the housing until it stops. Handle the membrane only by the plastic bag.
6. Insert the new RO membrane into the housing.
7. Replace the membrane cap and reconnect the 1/4" tubing to the inlet fitting.
8. Perform RESTARTING THE SYSTEM.

POST NEUTRALIZING FILTER REPLACEMENT

1. Follow procedure for RELEASING WATER PRESSURE.
2. Loosen both Jaco nuts on the inlet and outlet of the post filter.
3. Pull away nuts and tubing from post filter.
4. Remove used post filter by pulling it out of the mounting clips.
5. Snap in new post filter and reconnect inlet and outlet tubing.
6. Perform RESTARTING THE SYSTEM.

RO-150 FLOW DIAGRAM

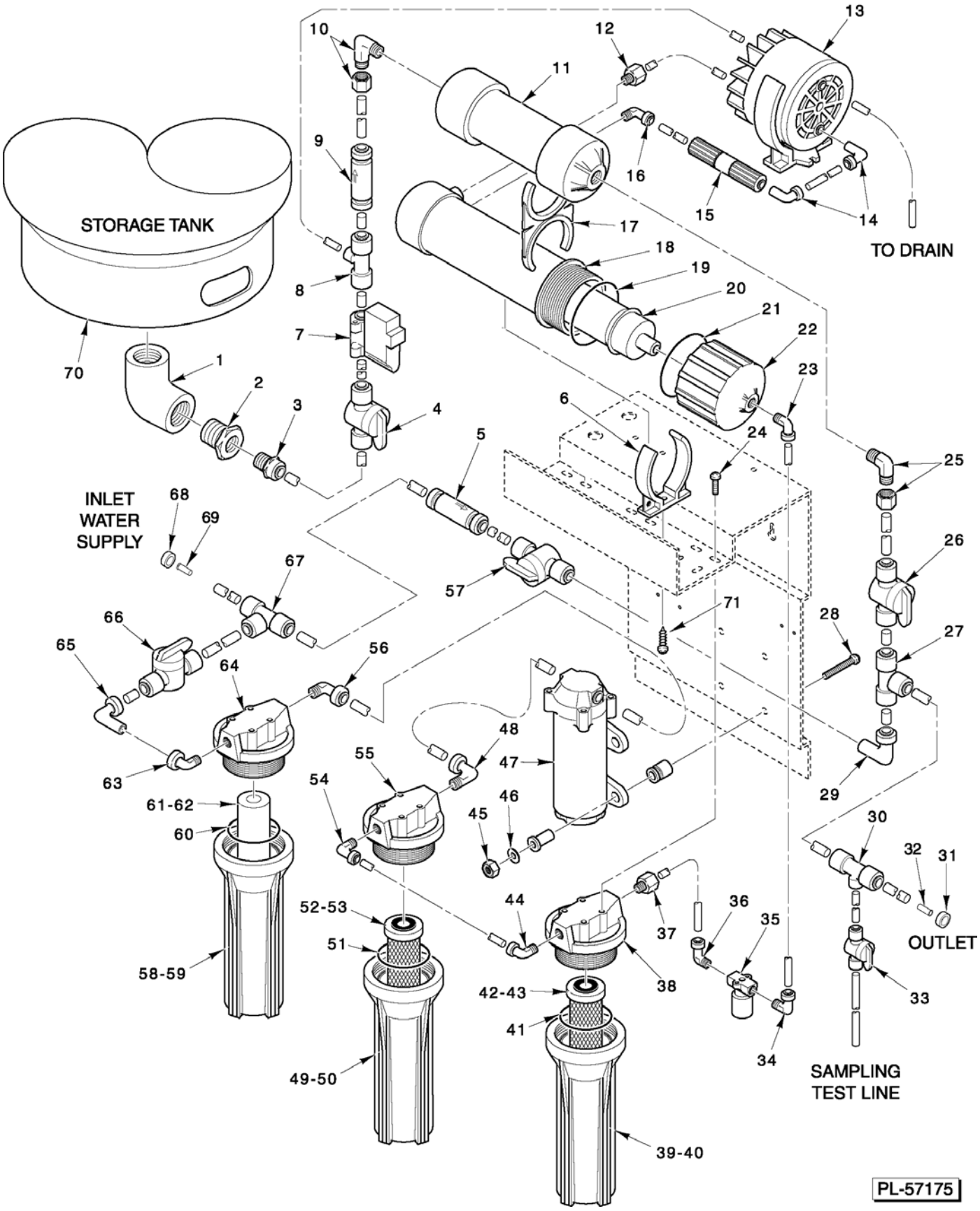


NOTE: COMPONENTS IN GRAY AREA MOUNTED ON BRACKET

COMPONENT FUNCTION

Inlet Connection Tee	Splits water supply into two paths. One path goes to the beginning of the RO system, the other goes to the bypass ball valve.
Inlet Ball Valve	Controls inlet water to the RO system. Valve is to be either fully open or closed. Valve is open during normal operation.
Outlet Ball Valve	Controls outlet RO product water feeding connected equipment. Valve is to be either fully open or closed. Valve is open during normal operation.
Sampling Ball Valve	1/4" valve that allows sampling water feeding equipment for testing purposes. Valve is closed during normal operation.
Bypass Ball Valve	This valve is placed in the untreated water supply line parallel with the filtration system and is used to bypass the filtration system when servicing or maintaining the RO system.
Storage Tank Ball Valve	Used to shut the product water off at the storage tank when servicing the system.
Check Valve	One-way check valve allows water to flow in one direction. Three check valves are incorporated into the system, one prevents untreated water from entering the product water storage tank, another prevents RO product water loss through the inlet water supply and the third is connected to the RO housing product water output.
Solenoid Valve	Controls water flow into the RO membrane. The solenoid closes when the storage tank is full and whenever power is removed from the system.
High Pressure Switch	Connected in the line that feeds product water to the storage tank, the high pressure switch shuts down the booster pump and solenoid once the storage tank is full.
Product Water Storage Tank	Twenty gallon storage tank charged with 12-15 psi air pressure when empty. Stores approximately 13 gallons of RO product water for on-demand use.
Drain Flow Controller	Controls (slows) the rate reject water flows to the drain causing pressure to build on inlet side of RO membrane. The pressure rise increases RO product water quality and quantity.
Permeate Pump	Pump that directs permeate (product) water to the storage tank or equipment. Also pumps reject water to an unrestricted drain.
Booster Pump	Boosts the water pressure after inlet water passes through the sediment filter. Increased pressure produces higher product water quantities.
5 Micron Filter	Sediment filter. Inlet water first enters this filter for fine particle filtration then enters into the booster pump.
Carbon Block Filter	Middle filter. Removes majority of chlorine from water supply. Chlorine will damage the RO membrane if it is not removed.
Carbon Block-SS Filter	Second carbon filter. Removes remaining chlorine and contains the ScaleStick product to reduce minerals and extend RO membrane life.
RO Membrane	The reverse osmosis membrane allows only water to pass thru the membrane and rejects 95-98% dissolved solids. As water flows thru the membrane, it splits into two streams, the permeate (product) water stream and the reject water stream.
Neutralizing Cartridge	Mounted in the filtration after the storage tank. The cartridge contains crushed limestone to add some mineral content (between 10-20mg/l) back into the RO product water stream and adjusts the pH of the water close to neutral (7.0 pH).

REPLACEMENT PARTS



INDEX #	PART NO.	NAME OF PART	AMT.
1	01-234506-17400	Elbow 1 NPT x 1 Slip	1
2	01-234506-16200	Reducer 1 Slip x 1/2 NPT	1
3	01-234501-58800	Adapter 1/2 NPT x 3/8 Push-In	1
4	01-234501-25000	Ball Valve (3/8)	1
5	01-234501-29800	Check Valve (3/8)	1
6	01-234506-00200	Clip - Membrane (2 In.)	2
7	01-234503-27000	Switch - High Pressure	1
8	01-234501-54600	Tee 3/8 x 3/8 x 1/4 (Push-In)	1
9	01-234501-29800	Check Valve (3/8)	1
10	01-234501-52200	Elbow 1/4 NPT x 3/8 Jaco	1
11	01-234301-98500	Cartridge - Neutralizing	1
12	01-234501-54900	Adapter 1/8 NPT x 1/4 Tube (W/Check Valve)	1
13	01-234503-21000	Pump - Permeate (W/Clip)	1
14	01-234501-53400	Elbow 1/4 Push-In x 1/4 Plug-In	2
15	01-234503-23400	Controller - Drain Flow	1
16	01-234501-55200	Elbow 1/8 NPT x 1/4 Push-In	1
17	01-234506-00500	Clip - Post Filter (2 x 2)	2
18	01-234219-01200	Housing - Membrane Cap (Incls. Item 18)	1
19	01-234502-01400	O-Ring (Membrane Housing Cap)	1
20	01-234301-98800	Membrane - Reverse Osmosis (100 GPD)	1
21	01-234502-01100	O-Ring (Membrane Housing)	1
22	01-234219-01200	Housing - Membrane (Incls. Item 22)	1
23	01-234501-55200	Elbow 1/8 NPT x 1/4 Push-In	1
24	01-234506-93100	Mach. Screw 10-24 x 3/4 Philips Pan Hd	12
25	01-234501-52200	Elbow 1/4 NPT x 3/8 Jaco	1
26	01-234501-25000	Ball Valve (3/8)	1
27	01-234501-53100	Tee 3/8 x 3/8 x 3/8 (Push-In)	1
28	-	Mach. Screw 10-24 x 1 1/4 Philips Pan Hd	4
29	01-234501-54300	Elbow 3/8 Push-In x 3/8 Plug-In	1
30	01-234501-54600	Tee 3/8 x 3/8 x 1/4 (Push-In)	1
31	01-234501-42000	Ferulle - Delrin	1
32	01-234501-42200	Stainless Insert	1
33	01-234501-25300	Ball Valve (1/4)	1
34	01-234501-55200	Elbow 1/8 NPT x 1/4 Push-In	1
35	01-234503-41600	Valve - Electronic Shutoff	1
36	01-234501-55200	Elbow 1/8 NPT x 1/4 Push-In	1
37	01-234501-50100	Adapter 1/4 NPT x 1/4 Tube	1
38	01-234401-02200	Head - Filter	1
39	01-234402-00400	Housing - Filter (10 In.)	1
40	01-234402-01900	Housing - Filter (20 In.)	1
41	01-234502-00100	O-Ring (Filter Head)	1
42	01-234301-97400	Filter - Carbon Block W/ScaleStick Insert (10 In.)	1
43	01-234301-98300	Filter - Carbon Block W/ScaleStick Insert (20 In.)	1
44	01-234501-51000	Elbow 1/4 NPT x 1/4 Push-In	1
45	-	Lock Nut 10-24 Hex (Plastic)	4
46	-	Washer	4
47	01-234503-20100	Pump - Booster	1
48	01-234501-51300	Elbow 1/4 NPT x 3/8 Push-In1	1
49	01-234402-00400	Housing - Filter (10 In.)	1
50	01-234402-01900	Housing - Filter (20 In.)	1
51	01-234502-00100	O-Ring (Filter Head)	1
52	01-234301-97200	Filter - Carbon Block (10 In.)	1
53	01-234301-98100	Filter - Carbon Block (20 In.)	1
54	01-234501-51000	Elbow 1/4 NPT x 1/4 Push-In	1
55	01-234401-02200	Head - Filter	1
56	01-234501-51300	Elbow 1/4 NPT x 3/8 Push-In	1
57	01-234501-25000	Ball Valve (3/8)	1
58	01-234402-00400	Housing - Filter (10 In.)	1
59	01-234402-01900	Housing - Filter (20 In.)	1
60	01-234502-00100	O-Ring (Filter Head)	1
61	01-234301-95100	Filter - Sediment (5 Micron)(10 In.)	1
62	01-234301-96300	Filter - Sediment (5 Micron)(20 In.)	1
63	01-234501-51300	Elbow 1/4 NPT x 3/8 Push-In	1
64	01-234401-02200	Head - Filter	1
65	01-234501-54300	Elbow 3/8 Push-In x 3/8 Plug-In	1
66	01-234501-25000	Ball Valve (3/8)	1
67	01-234501-53100	Tee 3/8 x 3/8 x 3/8 (Push-In)	1
68	01-234501-42000	Ferulle - Delrin	1
69	01-234501-42200	Stainless Insert	1
70	01-234504-92000	Tank (20 Gallon)	1
71	-	Screw #12 x 3/4 Philip Pan Hd	2
	01-234503-25200	Transformer	1
	00-913033-00002	Tubing 1/4 (50 Ft.)	AR
	00-913034-00002	Tubing 3/8 (50 Ft.)	AR
	01-234509-00600	Wrench - Filter	1
	01-234301-40000	RO150 W/20 Gallon Storage Tank	1
	01-234301-40500	RO150 W/O Storage Tank	1
	01-234507-08100	Bracket - Mounting	1

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	POSSIBLE REMEDY
Booster pump doesn't operate.	1. Storage tank ball valve closed. 2. No power at electrical outlet. 3. Transformer malfunction. 4. Booster pump malfunction. 5. High pressure switch malfunction.	1. Open ball valve. 2. Restore power at outlet. 3-5. Contact your local Hobart Service office.
Booster pump runs continuously.	1. Sampling shutoff valve or equipment valve malfunction. 2. Check Valve on product water outlet of RO membrane housing malfunction. 3. High pressure switch malfunction.	1. Close valve(s). 2-3. Contact your local Hobart Service office.
No RO product water output to equipment.	1. No power at electrical outlet. 2. Inlet shutoff or output valve(s) closed. 3. Clogged pre-filter(s). 4. Transformer malfunction. 5. Electronic shutoff valve malfunction.	1. Restore power at outlet. 2-5. Contact your local Hobart Service office.
Low RO product water output to equipment.	1. Clogged filter(s). 2. Low inlet water pressure. 3. Mineral scaling on RO membrane. 4. Permeate pump malfunction.	1. Replace filter(s). 2-4. Contact your local Hobart Service office.
Low RO product water yield. (Draw down less than 13 gallon when full)	1. Storage tank air pressure not correct. 2. Low inlet water pressure. 3. Clogged filter(s). 4. Mineral scaling on RO membrane. 5. Permeate pump malfunction.	1-5. Contact your local Hobart Service office.
Equipment water level probes not operating properly.	1. Product water mineral content too low. 2. Bypass valve set incorrectly. 3. Cooking equipment probe malfunction.	1. Contact your local Hobart Service office. 2. Ensure bypass valve is closed. 3. Check cooking equipment instruction manual for possible solution.
Metallic plumbing on equipment shows signs of corrosion.	1. Product water mineral content too low.	1. Contact your local Hobart Service office.
Brine water flows continuously through drain. (Booster pump is not operating.)	1. Check Valve on product water outlet of RO membrane housing malfunction. 2. Permeate pump malfunction.	1-2. Contact your local Hobart Service office.