AmeriWater®
The Water Purification Specialists

Operation & Maintenance Manual

00SRO150

3345 Stop 8 Rd, Dayton, OH 45414 | 800 535 5585 | www.ameriwater.com
Manufactured With Pride in the USA

98-2045 Rev A

TABLE OF CONTENTS

1 GENERAL INFORMATION

1.1 Preface

This Operation & Maintenance Manual provides information required to use the device and perform the basic service and maintenance required on the SRO150 device.

Please read and understand all the instructions carefully prior to using the device or carrying out any service or repairs.

CAUTION: No person should attempt to operate or service the unit without prior authorization, instruction, and training from AmeriWater, the medical facility director, or an authorized dealer.

WARNING: Before operating the unit always check to see that the water and electrical connections are secure and not likely to cause a trip hazard.

WARNING: This Reverse Osmosis System (RO) contains a preservative solution to prevent microbiological growth and freezing. Discard all permeate water for at least two hours of operation before placing RO in service.

1.2 Intended Use

This equipment is intended for indoor use only in a non-hazardous environment to provide purified water for the purposes of water treatment equipment or other equipment.

Any references in this manual to installation requirements/procedures are provided. Installation of the unit should only be carried out by a trained and approved installation technician.

If the unit is used in a manner not specified by AmeriWater or procedures not followed as detailed in this manual, the protection provided by this equipment may be impaired.

WARNING: DO NOT USE THIS EQUIPMENT IN ANY OTHER MANNER THAN THOSE SPECIFIED UNDER THIS SECTION.

CAUTION: Some parts of the system could be under pressure. Always make sure the pressure has dispersed from the unit before repairs and maintenance tasks are carried out.

1.3 Contact Information

Please read the Operation Manual before using the system. Contact AmeriWater Customer Service with any questions at 1-800-535-5585 Monday through Friday 8:00 a.m. to 5:00 p.m. Eastern Time. For after-hours emergencies call 1-800-535-5585 and follow the instructions on the recorded message. Our on-call technician will return your call as soon as possible. This entire Operation Manual should be read before operating or servicing the system. This Operation Manual should then be kept near the system and used as a reference and troubleshooting guide.

2 HEALTH & SAFETY

These instructions provide information on safe working practices. These should be adopted to ensure safe and continuing operation of the equipment. The manual should be read and understood before the equipment is used.

AmeriWater reserves the right to make engineering refinements to the equipment that may not be described herein. Any questions that cannot be answered specifically by these instructions should be addressed to AmeriWater or their agents for a response.

AmeriWater will not accept any responsibility for any equipment supplied or the actions of such equipment or associated system if un-authorized modifications are carried out that are considered by AmeriWater to compromise the integrity of the original design philosophy.

If the unit's performance becomes impaired and any remedial work appears to be outside the scope of this manual, then seek advice from AmeriWater, quoting the unit's serial number.

The unit must not be disassembled in any way unless carried out by an AmeriWater technician or authorized trained personnel.

During normal operation, the unit must not be operated with the control panel door open.

2.1 Manual Definitions

NOTE: This symbol points out important information for working with the system in a proper manner.

WARNING: This symbol refers to a possible danger that threatens the safety and life of persons.

CAUTION: This symbol refers to a possibly hazardous situation. Failure to observe these references may result in minor injuries and/or damage to property.

2.2 Additional Safety Requirements

National or provincial specific requirements/standards and regulations must be observed.

2.3 Safety Features

Safety Features: The RO is equipped with several safety features for the benefit of the user.

- INCOMING TAP WATER, PRODUCT WATER, and REJECT WATER TO DRAIN hoses are labeled to prevent incorrect connections.
- Labeled inlets and outlets are on the membrane assemblies to avoid mix-ups.
- A light on the control panel changes from green to red whenever the water quality drops to an unacceptable level.

2.4 Electrical Leakage Standards

The AmeriWater SRO150 water treatment systems comply with the IEC 61010-1 Standards for Product Safety and Construction.

The SRB is compliant with IEC 61010-1 Safe Current Limits. All major components of the RO (controller, pump, solenoid valve, anti-scalant pump, etc.) are UL listed.

2.5 Unauthorized Conversion and Manufacturing Replacement Parts

Conversion or modification of the system is only permitted with the approval of AmeriWater. Original replacement parts authorized / supplied by the manufacturer enhance safety and ensure design performance. The use of unauthorized parts may void the warranty on the unit, impair its performance or compromise the safety of those operating it.

2.6 Cautionary Symbols

VOLTAGE LE HASARDEUX. LES SOURCES DE POUVOIR MULTIPLES PEUVENT ÊTRE PRÉSENTES. LE RISQUE DE CHOC ÉLECTRIQUE OU BRÛLE. DÉBRANCHEZ TOUTES LES SOURCES DE RÉSERVES AVANT L'ENTRETIEN.

DANGER: HAZARDOUS VOLTAGE
Contact may cause electric shock or burn. Turn off and lock out power before servicing.

HAZARDOUS VOLTAGE
CAUTION: To reduce the risk of electrical shock, do not remove cover. Refer servicing to qualified service personnel.

ATTENTION: Refer to accompanying documents for further information

Protective earth ground.

2.7 Warranty Policy

The buyer has a one-year warranty on all equipment and parts, excluding non-durable components (e.g., filter cartridges, reverse osmosis membranes, filter media, consumable chemicals, etc.); provided that the system is not subject to abuse, misuse, alteration, neglect, freezing, accident or negligence; and provided further that the system is not damaged as the result of any unusual force of nature such as, but not limited to, flood, hurricane, tornado, or earthquake.

The warranty covers the replacement of equipment and/or parts only. The warranty does not cover labor charges or travel expenses resulting from the service of equipment. The manufacturer is excused if failure to perform its warranty obligations is the result of strikes, government regulation, materials shortages, or other circumstances beyond its control.

To obtain warranty service, notice must be given to the manufacturer within thirty days of the discovery of the defect.

There are no warranties on the AmeriWater system beyond those specifically described above. All implied warranties, including any implied warranty of merchantability or of fitness for a particular purpose are disclaimed to the extent they might extend beyond the above periods. The sole obligation of the manufacturer under these warranties is to replace or repair the component or part which proves to be defective within the specified time period, and the manufacturer is not liable for consequential or incidental damages. No dealer, agent, representative, or other person is authorized to extend or expand the warranties expressly described above.

Some states do not allow limitations on how long an implied warranty lasts or exclusions or limitations of incidental or consequential damage, so the limitations and exclusions in the warranty may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

3 SPECIFICATIONS

3.1 About Your System

This system is designed to purify water for use in Sterile Processing, Dental, and Life Science applications. Your RO water system was thoroughly tested and in excellent condition when it was shipped to you. However, because damage during shipment is possible, please unpack and carefully inspect your system as soon as it is received by you.

WARNING: **This Reverse Osmosis System (RO) contains a preservative solution to prevent microbiological growth and freezing. Discard all product water for at least two hours of operation before placing the RO in service.**

Materials that Contact Product Water			
ABS	Acrylic	Carbon	EPDM
Nylon	Polyester	Polyethylene	Polypropylene
PVC	Stainless Steel	TFCM* (Polyimide)	Tygon

*Thin Film Composite Membrane

All the above listed materials meet FDA and/or NSF standards.

3.2 Models

Specification	Model Number		
	00SRO150-4	00SRO150-9	00SRO150-14
Bladder Tank Volume	4 gallons	9 gallons	14 gallons
Electrical Supply	115 V, 50/60 Hz, Single Phase		
Weight (Shipping/Operating)	65 lbs / 50 lbs		
Dimensions	11.5” W x 19” H x 16” D		

All electrical connections shall be in accordance with the National Electrical Code and all applicable local codes.

A dedicated electrical supply with conveniently accessible disconnect switch (supplied by customer) is required. Where single phase supply is required, disconnect system should be properly labeled and located as close as possible to each other and the machine.

3.3 Water Connections

Connection	Connection Type and Size	Hose Provided
Feed Water	¼” Quick Connect	6’ ¼” hose by ¼” Q-CON
Reject Water	¼” Quick Connect	6’ ¼” Q-CON by ¼” hose
Product Water	¼” Quick Connect	6’ ¼” Q-CON by ¼” push fit
Bladder Tank	¼” Push fit	6’ ¼” push fit by ¼” push fit

3.4 Feed Water Specifications

Feed Water Specification	Value
Feedwater Pressure	30 PSI to 80 PSI dynamic
Minimum Feedwater Flow Rate	1 gpm
Maximum Water Temperature Adjust blend valve to 75°F to 80°F (24°C to 27°C)	90°F (32°C)
Design Temperature	77°F (25°C)
Hardness as CaCO3	12 grains per gallon (gpg)
Silica	40 ppm
Silt Density Index	< 5
Turbidity	< 1 NTU
pH Range	6.0 to 8.5
Iron	0.1 ppm

3.5 Performance Specifications

RO Specification	Value		
	SRB400-115	SRB800-115	SRB800-115-FT
Operating Temperature	50 to 90 °F (10 to 32 °C)		
Recovery Percentage	50% (non-adjustable)		
Nominal Rejection	95 to 98%		
Rated Production Capacity (Gallons per Day)	150 GPD		
Number of membranes	1		

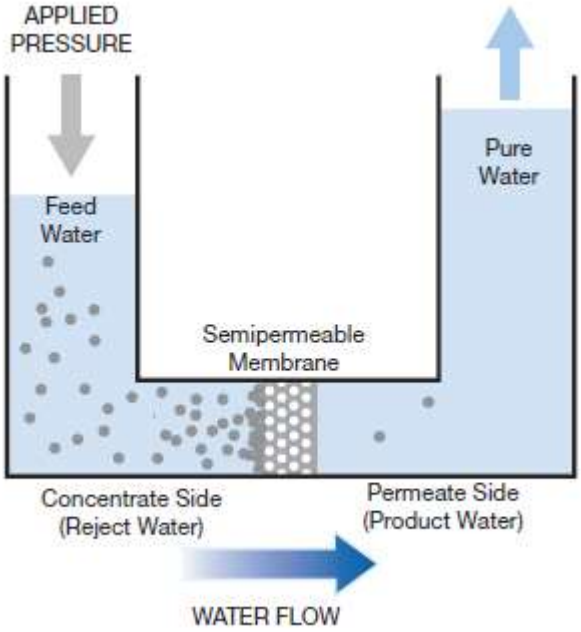
3.6 Environmental Conditions Anticipated

Environmental Specification	Value
Ambient Temperature	41 to 104 °F (5 to 40 °C)
Ambient Pressure	Atmospheric from 0 to 6500 ft (2000 m)
Relative Humidity	10 to 80% for temperatures up to 31°C, decreasing linearly to 50% relative humidity at 40 °C
Voltage Fluctuations – Main Supply	Not to exceed ±10% of nominal voltage
Overvoltage Category	II
Pollution Degree	2

4 OPERATION AND MONITORING

4.1 Theory of Operation

The process of osmosis can be reversed by placing adequately high pressure upon the feed water side (concentrated solution side) of the membrane. Water will be forced through the membrane barrier to yield water that is purer on the lower pressure side of the membrane than on the more concentrated solution side (higher pressure side) of the membrane. The feed water will become more “concentrated” and will be discharged through the reject port known as reject water (concentrate). Hence, the liberation of purer water (permeate) from its solutions is caused by the reversal of the osmotic pressure; the operation is referred to as “RO”.



The RO pre-filter section has two stages:

- 1 micron sediment filter removes sediment and rust.
- 10 micron carbon block removes suspended particles and volatile organic compounds by adsorption.

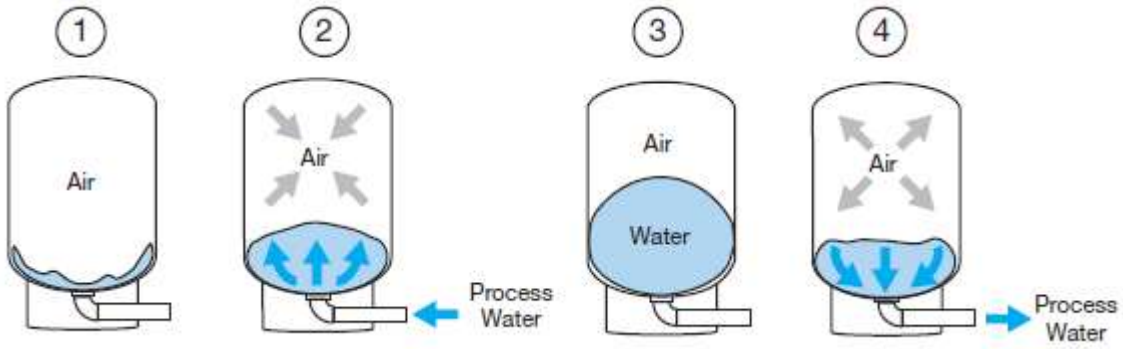
The SRO150 operates with a bladder tank to deliver water. The bladder tank operates as follows:

1. The pump is OFF and the tank is nearly empty. Air expands to fill the tank volume up to pre-charged pressure (psi).

2. The pump starts. Water begins to enter the tank compressing the air.

3. The pump stops. The system reaches maximum pressure. Air is compressed to the cut-off setting of the pressure switch.

4. The pump is OFF. When water is demanded, air pressure forces it into the system, and a new cycle begins.



4.2 Overview

The unit has two modes of operation: a standby mode and an operating mode. In the standby mode, the unit is effectively turned off. All outputs are off, and the display shows OFF. In the operating mode, the unit operates automatically. All inputs are monitored, and the outputs are controlled accordingly. Pressing the POWER key will toggle the unit from standby to operate or from operate to standby. If power is removed from the unit, when power is reapplied, the unit will restart in the mode it was in when power was removed.

To start the system:

1. Press the POWER key.
   - "– – –" is displayed for about 5 seconds.
   - Once the system is operating, the water quality (ppm) is displayed and the STATUS light is steady green.
   - The WATER QUALITY light is green if the water quality is below the limit
2. The unit operates automatically.

Once the system has been started, it will continue to make water until the differential pressure switch is tripped at 30 psi (the bladder tank is full). At this point, the system will be placed into standby (FUL is displayed).

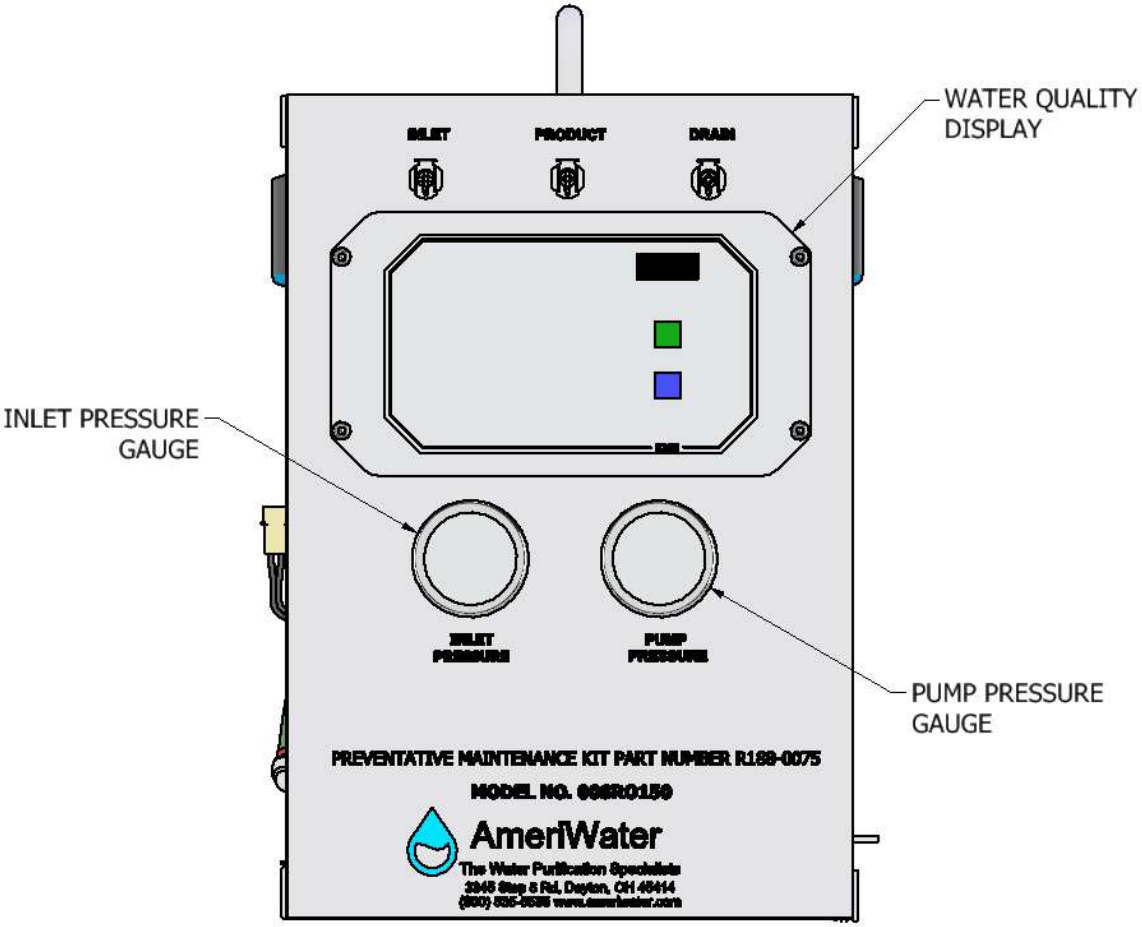
When the tank pressure is below the differential pressure setpoint, the RO re-initializes after a 2 second delay to provide water.

If the system conductivity is above the set-point, the WATER QUALITY light will change from green to red. The bladder tank will still operate as normal; however, no water will be flowing from the RO processor.

4.3 System Monitoring

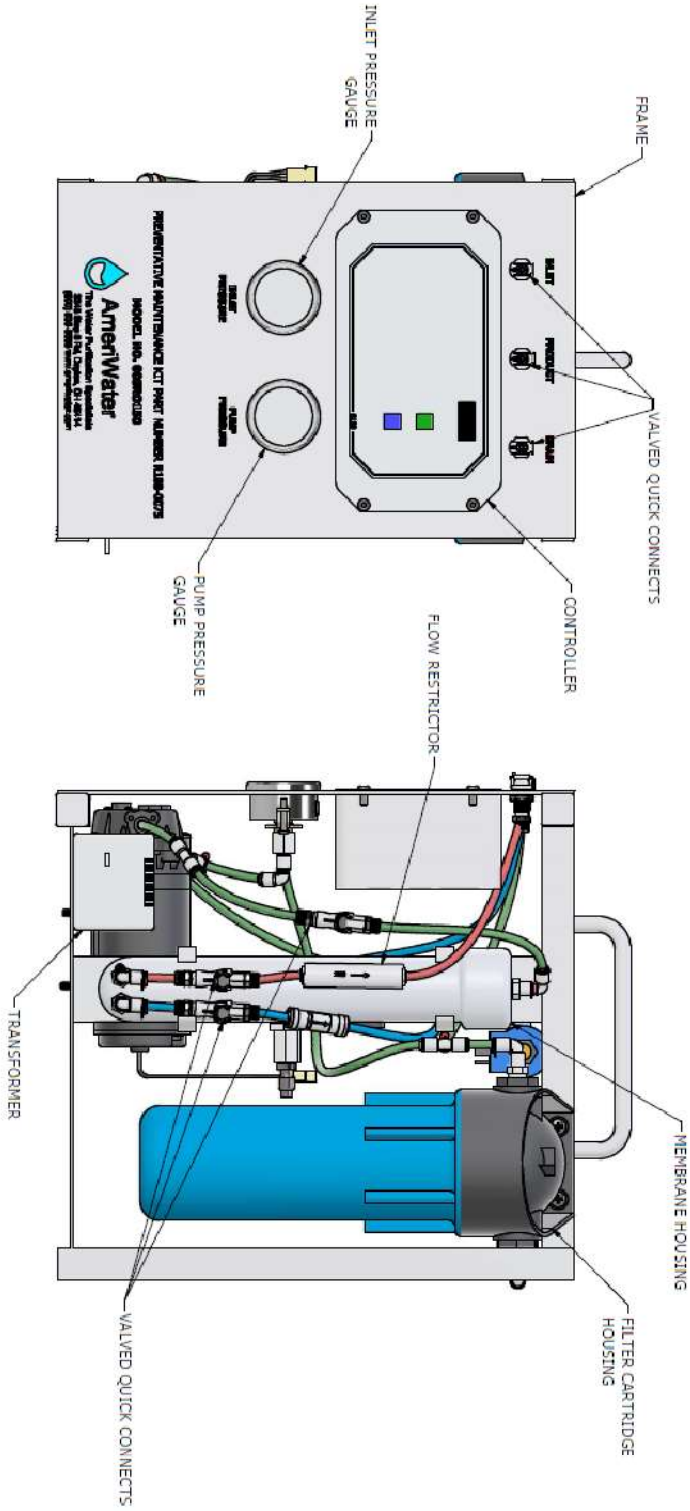
Fill out the monitoring log periodically (daily recommended). Having this information available will help to quickly diagnose issues related to performance. Failure to carry out the daily monitoring and maintenance at the indicated intervals will result in reduced performance of the RO water system and may void the warranty. A sample log is shown below.

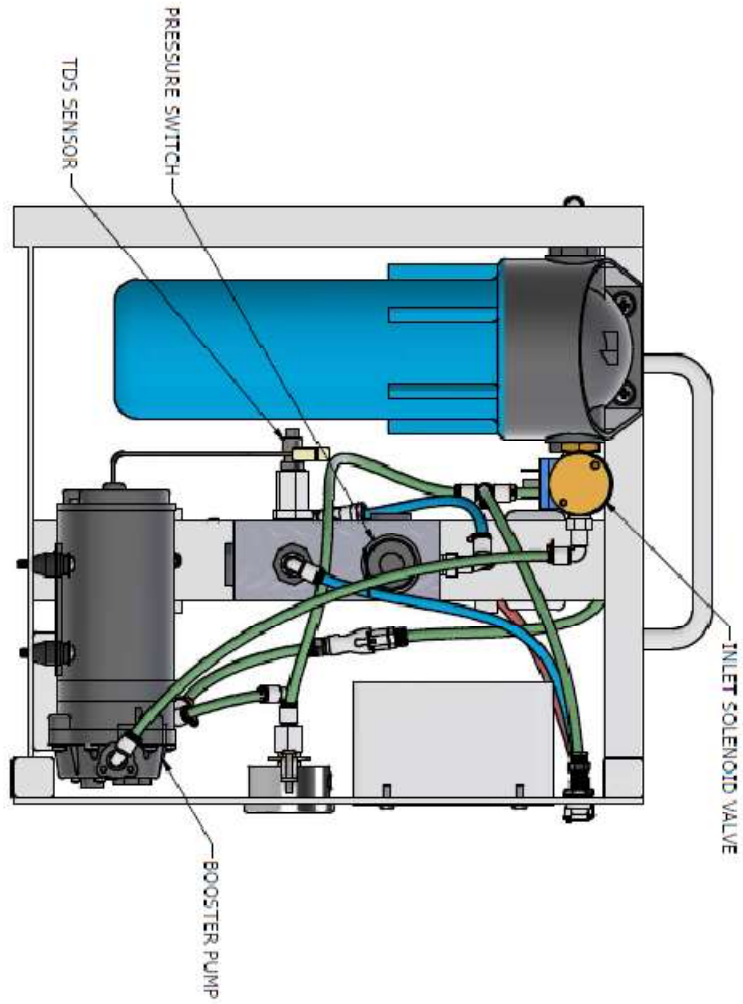
PERFORMANCE	Parameters	Results	Date	Initials
Incoming Temperature	75 to 80 °F			
Feed Pressure Gauge	30 – 80 psi			
Pump Pressure Gauge	120 – 160 psi			
Water Quality Display	≤25 PPM			
EXCHANGE	**Frequency**	**Date**		**Initials**
Carbon Block Filters	Quarterly or as needed			
Membranes	As needed			



5 COMPONENT IDENTIFICATION AND SCHEMATICS

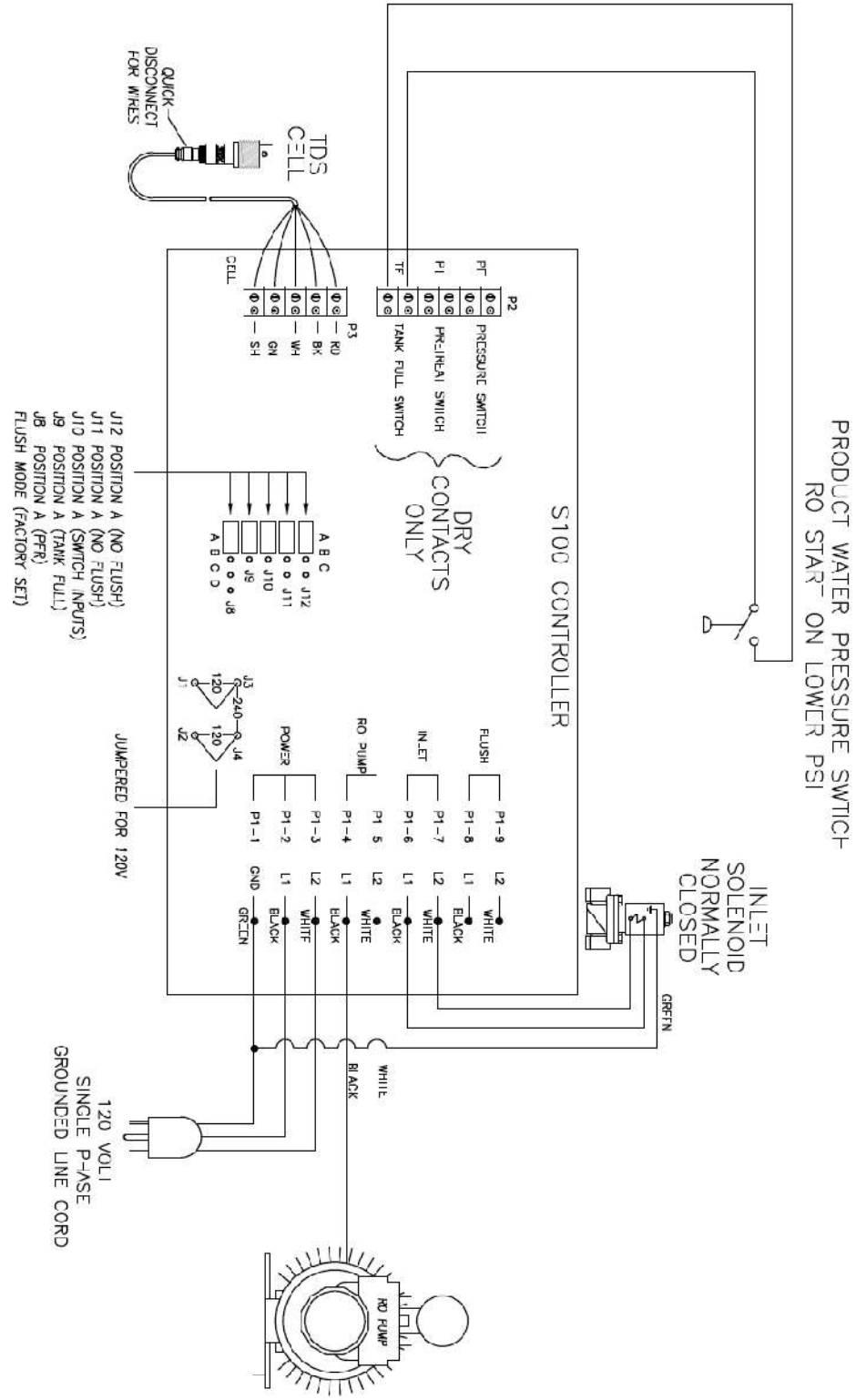
5.1 System Components



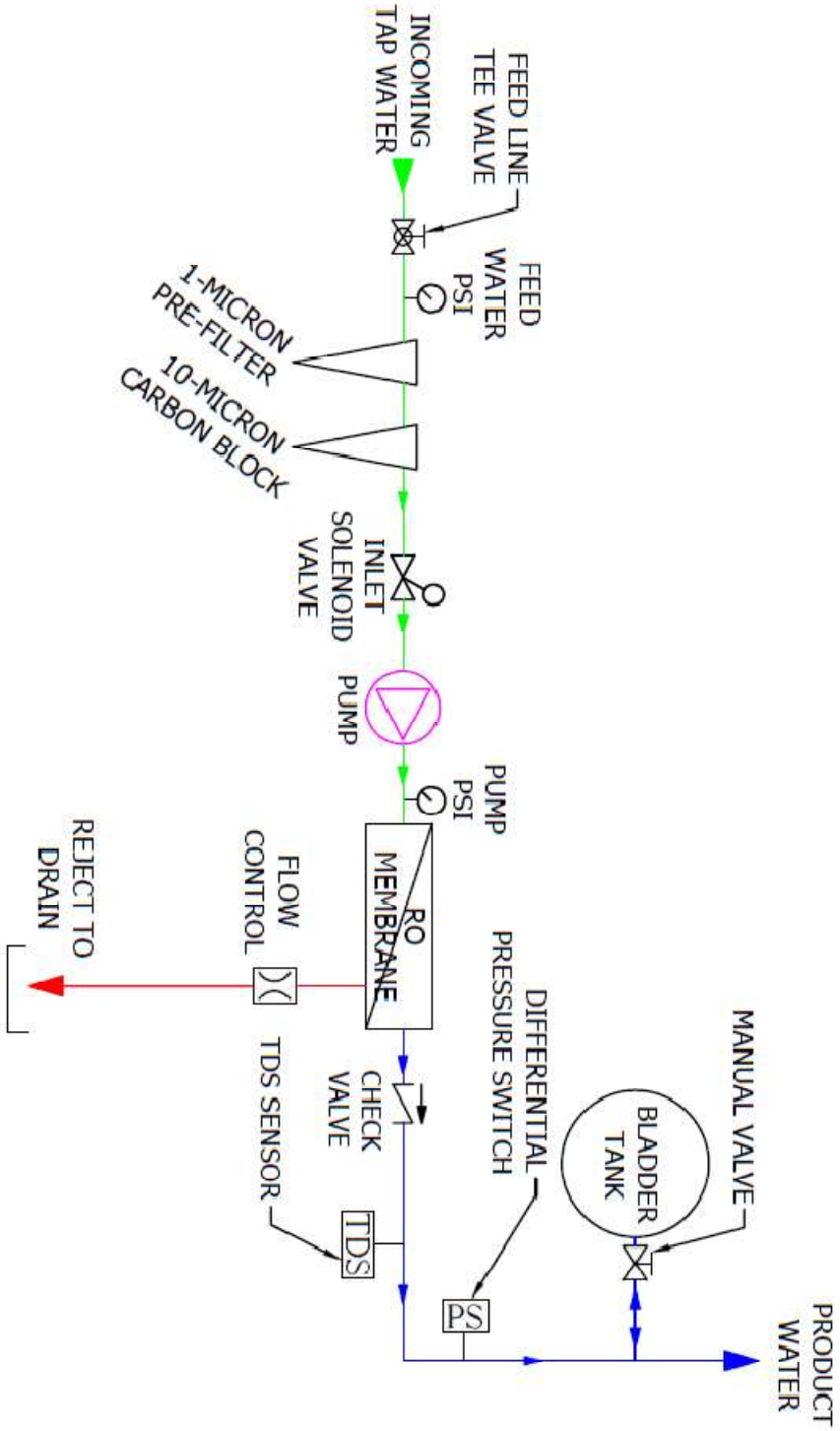

PRESSURE SWITCH
TDS SENSOR
INLET SOLENOID VALVE
BOOSTER PUMP


BALL VALVE
BLADDER TANK

5.2 Electrical Schematic



5.3 Flow Schematic



6 SYSTEM INSTALLATION

Your RO water system was thoroughly tested and in excellent condition when it was shipped to you. However, because damage during shipment is possible, please unpack and carefully inspect your system as soon as it is received by you. Please notify representative if you have any questions, or if any problems are encountered.

6.1 Pre-Installation

Before installing the RO, a few modifications will need to be made under the sink that the unit is connecting to.

Feed Line Tee Valve

Drain Saddle Valve

1. Install a feed line tee valve to allow the unit to connect to a water source:
    a. Disconnect the garden hose connection to the cold water line under the sink.
    b. Install the feed line tee valve to the cold water connection.
    c. Re-connect the garden hose connection to the bottom of the feed line tee valve.
2. Install a drain saddle to allow the unit to discharge the reject water:
    a. Turn off the water supply to the sink or fixture and disconnect the P-trap from the drain line.
    b. Measure and mark the location where you want to install the drain saddle on the P-trap. Attach drain saddle pad over marked hole location.
    c. Place the drain saddle over the mark and tighten the saddle's screws to secure it in place.
    d. Use a power drill, drill a hole through the P-trap at the marked location. Make sure to drill straight through the P-trap.
    e. Clean up any debris or shavings from the drilling process.
    f. Reattach the P-trap to the drain line, making sure that it is properly aligned and tightened.

g. Turn on the water supply and check for any leaks.

6.2 Locating the RO

1. Use the handle on the top of the unit to place the RO in a cabinet under the sink.
2. **If mounting:** Locate the studs or supporting structure on the wall.

CAUTION: Do not mount the RO processor on or above any equipment.

NOTE: Use anchors that are appropriate for the stud material.

a. Hang the unit on the two bolts.

b. Thread two bolts through the holes in the frame into the spring nuts on the lower mounting channel.

c. Tighten all four bolts.

3. Position the bladder tank base within 6 feet of the RO processor.
4. Place the bladder tank on the base.
5. Using an air compressor or hand pump, charge the bladder tank to 25 psi.

CAUTION: Make sure the pre-filter cartridges are installed in the correct order.

6. Install the pre-filter cartridges and secure the blue housings to the RO processor:

    - Carbon block cartridge on the left & right side when in front of the unit.

6.3 Plumbing Connections

1. Connect the feed hose from the push connect on the feed line tee valve to the INLET connection on the RO.
2. Connect the reject hose from the DRAIN connection on the drain to the tee port on the drain saddle valve.
3. Connect the product hose from the PRODUCT connection on the RO to the tee on the bladder tank.
4. Connect the supply hose from the tee on the bladder tank to the push to connect fitting for the point of use equipment.

6.4 Electrical Connections

Plug in the S100 controller to a grounded outlet. See section 3.2 for supply specifications.

7 SYSTEM START-UP PROCEDURES

STARTING THE RO SYSTEM

1. Disconnect the product hose from the bladder tank and run it to drain.

NOTE: Running the product water to drain removes the preservative from the membrane.

2. Press the POWER button on the controller if the water is not flowing to the drain.
3. Check that the pre-filter inlet gauge is 30 to 80 psi.
4. Allow the RO water system to run the product water to drain for 2 hours (the WATER QUALITY light will be red).
5. Once the water is clear and the WATER QUALITY light changes color, press the POWER button to turn OFF the system.
6. Reconnect the product water to the bladder tank.
7. Press the POWER button to turn ON the system and allow the bladder tank to fill until the differential pressure switch turns OFF the RO water system (displays FUL).
8. Drain the bladder tank and ensure the unit starts up again and makes water.
9. Verify the product water quality at your intended point of use.

WARNING: Do not use the RO water system until all specifications are met.

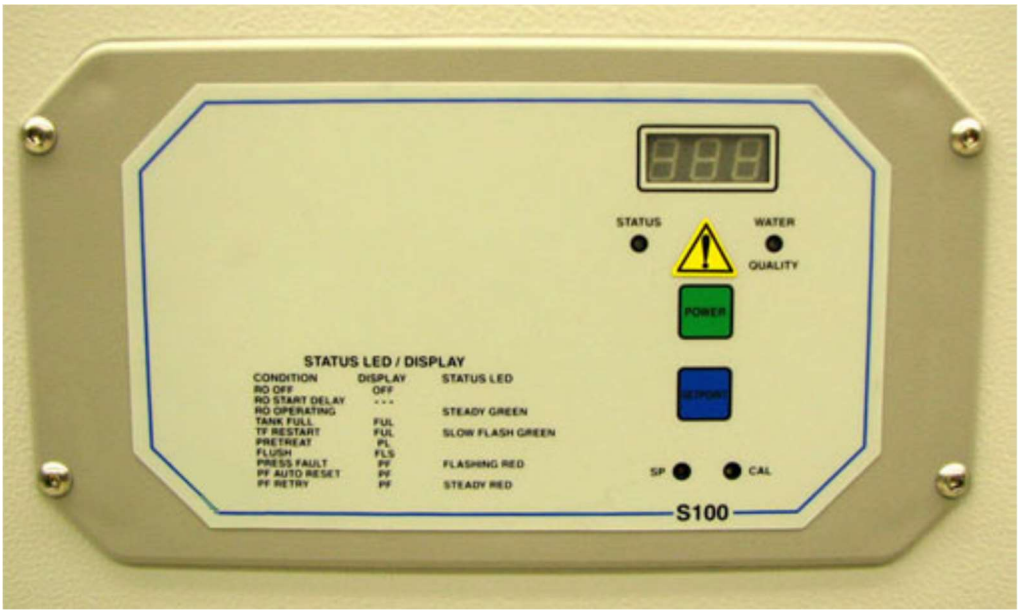
10. Refer to the Operation Log (section 4.3). Complete the log, making sure that the system is operating within all the required ranges.

7.1 System Shutdown

To place the unit in standby, press the POWER key. OFF is displayed. To remove all power from the unit, unplug the power cord from the receptacle.

8 CONTROLLER

8.1 RO Front Panel Controls and Indicators



Control Indicator	Function
LED Display	Shows status of system and water quality.
Status LED	Shows operating status of unit.
Water Quality LED	Green if within parameters, red if above limit.
Power Key	Places controller in operating or standby mode.
Setpoint Key	Places display in mode to display current setpoint.
SP	Setpoint adjustment screw
CAL	Calibration adjustment screw.

The operating status of the unit is shown on the 3-digit LED display, as well as the STATUS LED and WATER QUALITY LED. The following list describes the items shown for the operating conditions:

Condition	Display	Status LED
RO Off	OFF	
RO Start Delay	- - -	
RO Operating		Steady Green
Tank Full	FUL	
Tank Full Restart	FUL	Slow Flash Green
Pressure Fault	PF	Flashing Red
PF Auto Reset	PF	
PF Auto Retry	PF	Steady Red

To clear a pressure fault (flashing red STATUS indicator), press the POWER key twice.

8.2 Controller Operation

RO START DELAY

When the controller is placed in the operating mode or restarts from a shut down condition, the inlet valve will open and a 5 second time delay will start. During the delay, - - - will show on the water quality display. After this delay, the RO pump will start. Once the pump has started, the display shows the current water quality and STATUS lamp is steady green.

WATER QUALITY DISPLAY

The water quality display shows the current water quality (TDS in PPM) when the controller is operating normally and status messages when the controller is shut down.

- If the water quality is below the setpoint, the WATER QUALITY lamp is green.
- If the water quality is above the setpoint, the WATER QUALITY lamp is red.

NOTE: The range of the water quality display is 0 to 999 parts per million (PPM). If the water quality is above 999, the display will show ^^^.

PRESSURE FAULT

If the pressure switch input is closed for 2 seconds, a pressure fault condition will occur. The controller shut down, PF is displayed, and the STATUS lamp flashes red.

To clear the pressure fault, press the POWER key twice.

If the pressure fault is not cleared, the controller will attempt to retry after 10 seconds (first retry), 5 minutes (seconds retry), and 30 minutes (third retry).

If the controller is able to start and remains on for 10 seconds after a retry, the retry function is reset.

TANK FULL

If the tank full switch is closed for 5 seconds, the controller will shut down for a tank full condition. The water quality display will show FUL. When the tank full condition clears, the unit will restart after a 2 second delay.

WATER QUALITY SETPOINT

The water quality setpoint can be adjusted by the SP adjustment on the front panel. The factory setting is 25 PPM.

To set the water quality setpoint, see section 8.5.

CALIBRATION

The TDS sensing circuit can be calibrated using the CAL adjustment on the front panel.

8.3 Controller Alarms

Message	STATUS Indicator	Condition	Description
FUL	(off)	Tank Full	The tank high level switch was actuated, and the RO has stopped.
	Slow Flash Green	Tank Full Restart	The water level is below the level switch setpoint, and the RO will start after a 2 second delay.
PF	Flashing Red	Pressure Fault	The controller is shut down for a pressure fault. To clear the pressure fault, press the POWER key twice.
	(off)	PF Auto Reset	This unit is not configured for Auto Reset.
	Steady Red	PF Auto Retry	When a pressure fault occurs: 1. The controller will shut down for 30 seconds and then attempt to restart (first retry). 2. If the pressure fault is still active, the controller will shut down for 5 minutes and then attempt to restart (second retry). 3. If the pressure fault is still active, the controller will shut down for 30 minutes and then attempt to restart (third retry).

8.4 Standard Setpoints

Jumper	Position	Function
J8	C	Pressure Fault Retry
J9	A	Tank Full delay set to 2 seconds
J10	A	All inputs are normally open
J11	A	No membrane flush
J12	A	

8.5 To Display or Change Setpoints

The water quality setpoint can be adjusted from 0-999. If set to 999, the WATER QUALITY lamp will always remain green. The factory setting is 25 PPM.

To adjust the water quality setpoint:

1. Press the SETPOINT key. The display will alternate between the setpoint and SP.
2. Use a small screwdriver to adjust the SP adjustment to the desired setpoint value.
3. Press the SETPOINT key to return the display to the water quality display.

9 MAINTENANCE

9.1 Planned Routine Checks

It is recommended that regular checks are carried out on the device and its performance to ensure safe and uninterrupted operation. Refer to the table below for details.

NOTE: The frequency of performing the checks indicated should be considered as a guide only and will depend on how often the device is used.

Frequency	Item	Notes
Daily	Start-up Log	It is recommended that each facility create a system log that is filled out daily to have a timeline of operating parameters.
Quarterly or when required	Pre-filter Cartridges: • Carbon Block	Change the pre-filter cartridges quarterly or whenever Conductivity has increased by 25%.
Quarterly or when required	Membrane	The membrane should be replaced when loss in flow rate productions or if product TDS or Conductivity has increased by 25%
Quarterly	TDS Display Accuracy	Measure a sample of the product water with a calibrated TDS meter and compare with water quality display on the unit.

9.1.1 Replacing a Pre-filter Cartridge

1. Turn OFF the RO water system.
2. Turn OFF the incoming tap water supply to the pre-filter.
3. Relieve the pressure from the pre-filters:
    a. Verify the Feed Water Pressure gauge reads zero.
4. Use the filter wrench to unscrew the filter housing and discard the used filter.
5. Unwrap the plastic from the new filter and place the new filter in the housing. discard the plastic after installation.

CAUTION: Make sure the O-ring is in groove and not pinched. Hand-tighten only.

6. Screw the pre-filter housing back on.

9.2 Unplanned Maintenance and Repairs

9.2.1 Membrane Replacement Procedure

1. Turn OFF the RO water system.
2. Turn OFF the incoming tap water supply to the pre-filter.

3. Relieve the pressure from the pre-filters:
    a. Verify the PREFILTER INLET pressure gauge reads zero.
4. Disconnect the 3 quick connect fittings originating from the membrane.
5. Lift the membrane assembly from the frame.
6. The entire removed portion will be discarded.
7. Secure the new membrane assembly into the frame.
8. Connect the 3 quick connects to the previous locations. Make sure the hoses connected are of the same color (green to green, blue to blue, and red to red).
9. Perform Rinse Out Cycle.

9.2.2 Rinse Out Cycle

1. After the exchange is complete, it is important to run the system to flush the preservative out of the new membrane(s).
2. Disconnect the product water hose from the end connection point. Place the hose over a drain.
3. Turn the power to the system ON.
4. Allow water to run through the system for a minimum of 10 minutes or until the water is clear. This will rinse the preservative out of the new membrane.

CAUTION: The membrane is not rinsed thoroughly until the water is clear!

5. Allow the RO water system to run until the total dissolved solids (TDS) is below the setpoint. Turn the RO water system OFF.
6. Reconnect the PRODUCT WATER hose.
7. Turn the RO water system ON. The rinse out is now complete, and the system is ready for use.

9.2.3 Replacing Pressure Switch

NOTE: The differential pressure switch is factory set to close at 30 psi.

1. Unplug the power cord from the AC outlet.
2. Disconnect the cable from the switch.
3. Remove the switch from the piping.
4. Install the replacement switch.

5. Reconnect the switch cable.

9.2.4 Replacing the Inlet Valve

WARNING: SHOCK HAZARD: Unplug the power cord before replacing the inlet valve. Line voltage (120 Vac) is present on the solenoid coil.

1. Unplug the power cord from the AC outlet.
2. Disconnect the cable from the solenoid coil.
3. Remove the valve from the piping.
4. Install the replacement valve.
5. Reconnect the solenoid cable.

9.2.5 Replacing TDS Cell

1. Unplug the power cord from the AC outlet.
2. Disconnect the cable from the TDS cell.
3. Remove the sensor from the piping.
4. Install the replacement sensor.
5. Reconnect the cable to the TDS cell.

9.2.6 Replacing Pump

WARNING: SHOCK HAZARD: Unplug the power cord before replacing the pump. Line voltage (120 Vac) is present on the motor wiring.

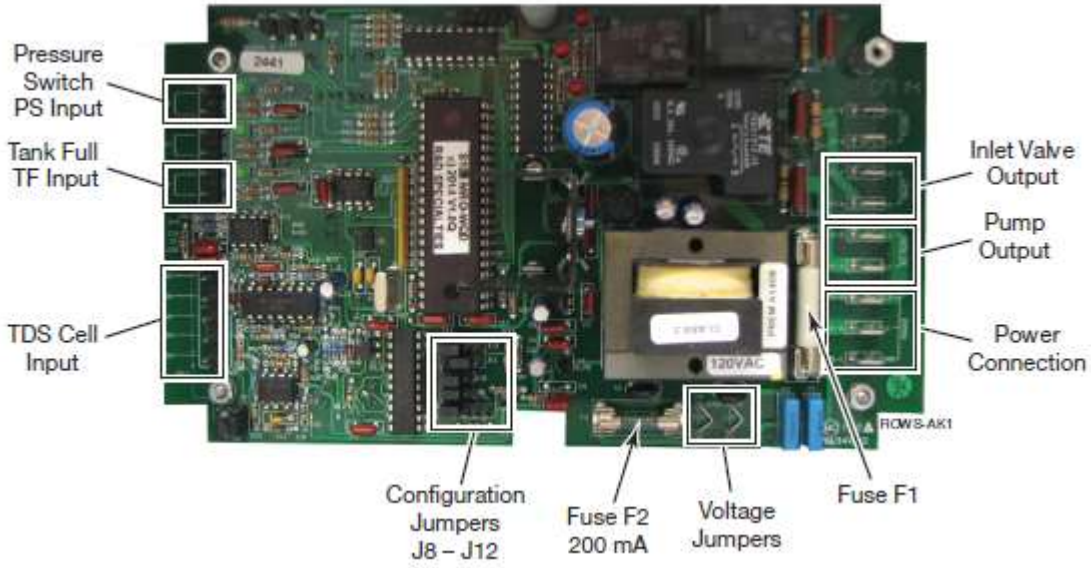
WARNING: HOT SURFACES: The RO pump may be HOT. To avoid burns, allow the pump to cool before removing it.

1. Unplug the power cord from the AC outlet.
2. Disconnect the power cable to the pump.
3. Remove the pump from thetubing.
4. Install the replacement pump:
    a. Connect the hose from the inlet valve to the suction port.
    b. Connect the hose from the membrane to the discharge port.
5. Reconnect the pump power cable.

9.2.7 Replacing S100 Controller

WARNING: SHOCK HAZARD: Unplug the power cord before replacing the controller. Line voltage (120 Vac) is present on the controller PC board.

1. Unplug the power cord.
2. Remove the screws that secure the controller to the front of the unit (4 places).
3. Disconnect the tank full switch cable from the back of the controller.
4. Pull out the controller and remove the screws that secure the back panel of the controller (6 places).
5. Disconnect the wiring from the controller.



6. Install the replacement controller board.

CAUTION: Before applying power to the unit, verify that the voltage jumpers are configured correctly for the voltage that will power the unit.

7. Refer to the wiring diagram (see section 5.2). Verify the voltage jumpers (located below the transformer) are in the correct positions:
    - 120 Vac: J1 to J3, J2 to J4

NOTE: For AC power with two hot wires, either wire can connect to L1 and L2.

CAUTION: The jumper positions affect the operation of the RO processor. Be sure that the jumpers match the positions on the wiring diagram.

8. Verify that jumpers J8 through J12 are all in the positions shown on the wiring diagram (see

section 5.2).

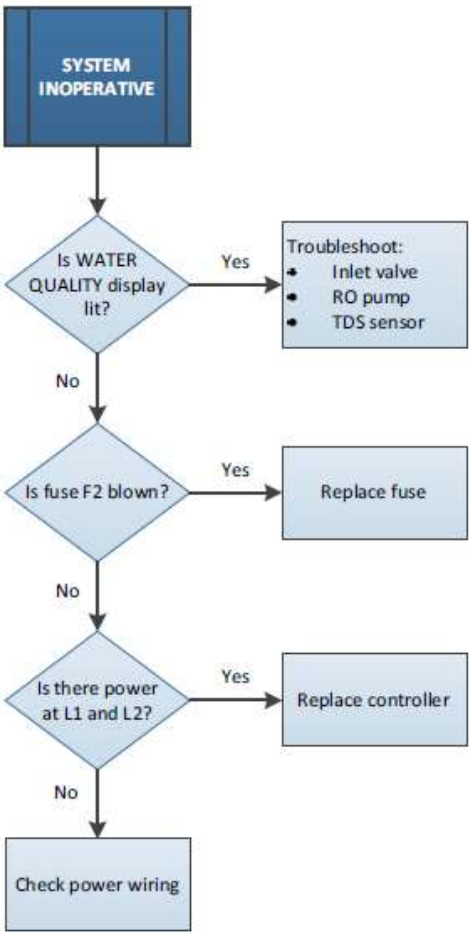
9. Attach the AC power cable:
    - Ground to P1-1 (GND)
    - Hot to P1-2 (L1)
    - Neutral to P1-3 (L2)
10. Connect the pump to relay output P1-4 (L1) and P1-5 (L2).
11. Connect the inlet valve to relay output P1-6 (L1) and P1-7 (L2).
12. Connect the pressure switch to the PF dry contact input of P2.
13. Connect the tank full switch to the TF dry contact input of P2.
14. Connect the TDS cell to P3. Connect each colored wire to the terminal labeled with the same color. Connect the shield to SH.
15. Turn ON the power and verify system operation.

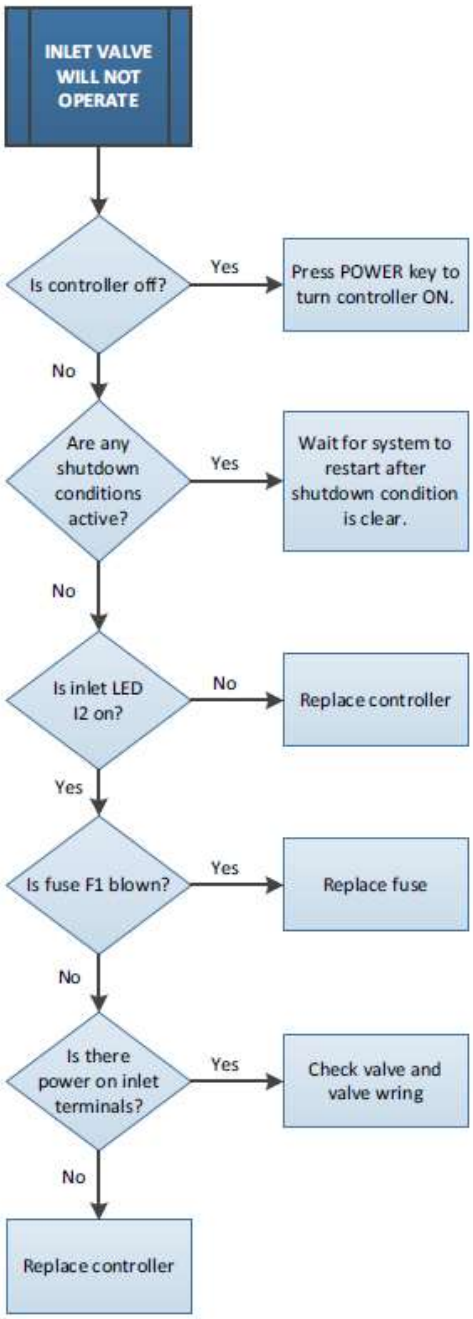
10 TROUBLESHOOTING AND REPAIR

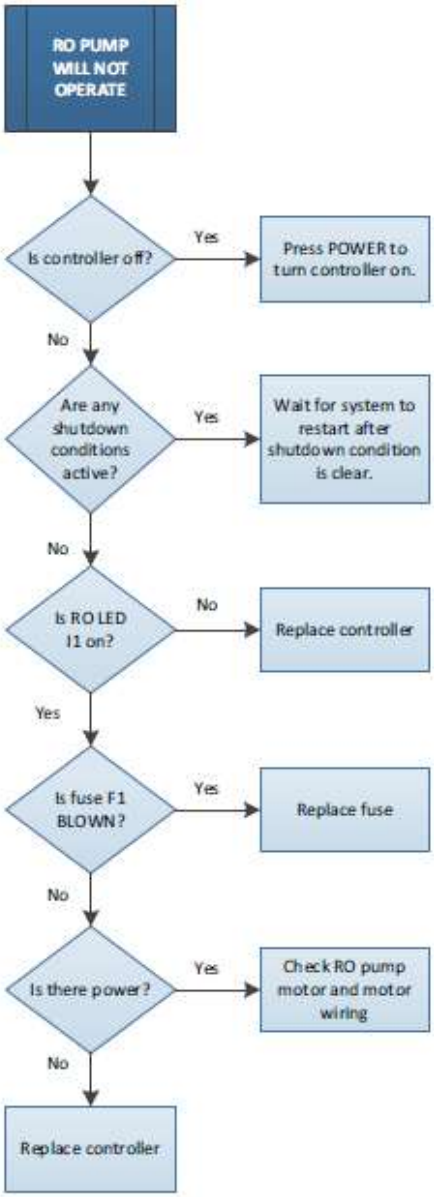
Problem	Possible Cause	Corrective Action
System will not start	System not plugged in	Plug into electrical outlet.
	Circuit breaker tripped	Reset the breaker.
	System in a FAULT Condition	Check the controller display for FAULT condition and correct the FAULT.
	Differential pressure switch	Check/Repair/Replace
System has power but no water flow	Feed source not open	Open incoming tap water valve.
	Feed pressure less than 30 PSI	Increase feed pressure to greater than or equal to 30 PSI.
	Pre-filter clogged	Check pre-filter gauge for pressure drop; replace filter if the pressure drop is 15 PSI or greater.
	Inlet solenoid not operating	Test the solenoid. Replace the valve if defective.
Low product flow rate	Low pressure feeding membrane	Verify that the incoming tap water supply is fully open. The pressure on the pre-filter inlet gauge should be greater than or equal to 30 PSI when the RO water system is operating.
	Low pump PSI	Check inlet water flow and pressure. Check pump for proper operation.
	Excessive PRODUCT line back pressure	Check for restrictions in the PRODUCT WATER hose.
	Low temperature incoming tap water	Adjust blend valve as close a possible to 77 °F (25 °C).
	Pre-filter clogged	Check pre-filter gauge for pressure drop; replace filter if the pressure drop is 15 PSI or greater.
	Membrane needs replaced	Replace the membrane.
RO pump making excessive noise	Low pressure or flow rate feeding the system.	Check the pre-filter gauge PSI (must be greater than or equal to 30 PSI).
	Inlet solenoid is not operating	Test the solenoid. Replace the valve if it is defective.
	Pump motor or impeller failing	Check PUMP PSI gauge to verify that it is within operating parameters. Replace the pump assembly if necessary.
Poor quality product water	High chlorine levels	Check and/or replace any carbon filtration used before the system.
	Fouled membrane	Replace membrane and pre-filters.
	Incoming water hardness above allowable limit.	Condition the incoming water.

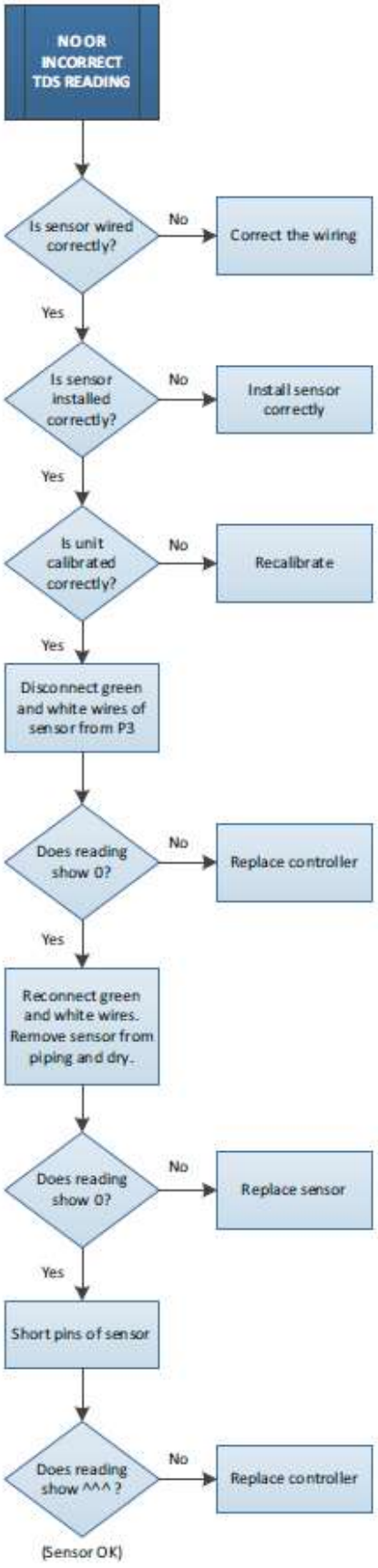
	Incoming pH (High/Low)	Condition the incoming water.
	TDS cell bad	Verify the TDS cell accuracy with a known good meter. Follow the calibration procedure or replace cell if necessary.

10.1 Troubleshooting Charts






RO PUMP WILL NOT OPERATE
Is controller off?
Yes
Press POWER to turn controller on.
No
Are any shutdown conditions active?
Yes
Wait for system to restart after shutdown condition is clear.
No
Is RO LED I1 on?
No
Replace controller
Yes
Is fuse F1 BLOWN?
Yes
Replace fuse
No
Is there power?
Yes
Check RO pump motor and motor wiring
No
Replace controller


NO OR INCORRECT TDS READING
Is sensor wired correctly?
No
Correct the wiring
Yes
Is sensor installed correctly?
No
Install sensor correctly
Yes
Is unit calibrated correctly?
No
Recalibrate
Yes
Disconnect green and white wires of sensor from P3
Does reading show 0?
No
Replace controller
Yes
Reconnect green and white wires. Remove sensor from piping and dry.
Does reading show 0?
No
Replace sensor
Yes
Short pins of sensor
Does reading show ^^^?
No
Replace controller
(Sensor OK)

11 SPARE PARTS LISTING

A 6-month preventative maintenance kit is available with necessary components to meet maintenance recommendations. This kit part number is R188-0075 comes assembled and can be ordered from AmeriWater. Included in kit:

- Carbon block cartridge filter (Qty 2) and replacement o-ring (Qty 2)
- Membrane Housing with Membrane & Quick connects (Qty 1)

Consumables:

Part Number	Description
22-1812	Membrane
20-5101	Carbon Filter, 10 MICRON, 2.5” X 10”, DOE
21-0040	O-ring for 2.5” X 10” Filer Housings
21675187	Filter Wrench, 2.5” X 10-20”, 6 nubs

Spare Parts:

Part Number	Description
80-0311	Booster Pump + 115 TRANSFORMER
059-0007	Inlet Solenoid Valve
65-0021	Pressure Switch
42-0079	Flow Restrictor
14-0054	Feed Line Tee Valve
54-0057	Drain Saddle Valve
430002	Pressure Gauge
55-0015	Check Valve
041004	Ball Valve on Bladder Tank
85-0078	Bladder Tank, 4 GAL, 1/4" MNPT
85-0077	Bladder Tank, 9.2 GAL, 1/4" MNPT
85-0064	Bladder Tank, 14 GAL, 1/4" MNPT

CALIFORNIA PROPOSITION 65

⚠ WARNING

This product can expose you to chemicals such as vinyl chloride (used in the production of PVC) or Nickel (used in the production of stainless steel), that are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Dear Valued Customer,

California Proposition 65 (Prop 65) is the Safe Water and Toxic Enforcement Act of 1986. The State of California began enforcing amendments to California Prop 65 at the end of August 2018. Prop 65 requires manufacturers to provide a clear and reasonable warning to residents of California about chemicals used in products that they purchase that are included on the Prop 65 Chemical List. The chemicals included on the list are chemicals that are known to the State of California to cause cancer, birth defects, or other reproductive harm. One such chemical is Vinyl Chloride, a compound used to produce Polyvinyl Chloride (PVC). The AmeriWater system you have purchased may contain PVC or stainless steel parts.

While warnings are only required in the State of California, AmeriWater has initiated the use of Prop 65 labeling for all products to ensure compliance with California regulations. Please note that the above warning does not necessarily mean that the product that you have purchased is unsafe. Products that have been cleared for market by FDA have been determined to be safe and effective by the United States Food and Drug Administration. The warning is simply a requirement by the State of California. If you wish to obtain additional information, please visit: p65warnings.ca.gov. You may also contact your AmeriWater representative if you have any questions.

Thank you for your understanding and we look forward to continuing to serve you.