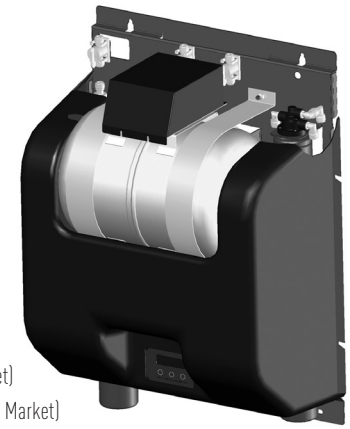
EVERPURE® MRS-600HE HIGH EFFICIENCY REVERSE OSMOSIS (RO) SYSTEM

MINERAL REDUCTION SYSTEM FOR FOODSERVICE APPLICATIONS

INTRODUCTION

The Everpure MRS-600HE High Efficiency RO System is a pre-engineered, preassembled Reverse Osmosis (RO) solution designed to provide high purity water for multiple applications such as premium espresso, coffee, blended beverages and steam. It combines a number of water treatment technologies into one easy-to-install package, providing superior reduction in total dissolved solids (TDS) which can foul or scale water using equipment.



MRS-600HE EV9970-38 (US Market)
MRS-600HE EV9970-47 (European Market)
MRS-600HE EV9970-50 (Australian Market)
MRS-600HE EV9970-85 (Special Applications - US Market)

Initial System Production

Water production depends on supply water pressure and temperature. See **Performance section** (page 13) for normalized production.

Influent Water Characteristics

Allowable operating range of various water properties within which the MRS-600HE System will function properly.

Total Dissolved Solids (TDS)	pH	Free Chlorine	Turbidity	Iron	Bacterial Quality
0 – 1,000 ppm (0 – 1,000 mg/l)	5 – 10	0 – 0.1 ppm (0-0.1 mg/L)	0 – 1 NTU	0 – 1.0 ppm (0-1.0 mg/L)	Potable

NOTE: The MRS-600HE System does NOT include on-board particulate or organic reduction filtration. Incoming water supplies that do not meet the influent water characteristics requirements will require the addition of pretreatment equipment prior to the MRS-600HE System. Do not connect the MRS-600HE System after any other water filtration system, unless specifically provided or specified. System performance may be affected if requirements are not met, including system output and cartridge changeout frequency.

The system consists of five major components:

1. Everpure 2SR-BW Water Conditioning Cartridge*
2. Dual-head booster pump
3. Everpure MR-600, MR-600-1 or MR-600F Reverse Osmosis (RO) Membrane Cartridge
4. 6-Gallon (22.7 l) RO water storage tank
5. Control system with power supply

The Everpure 2SR-BW Water Conditioning Cartridge contains media that reduces the scaling tendency of hard water minerals found in many water supplies, extending RO membrane life.*

The dual-head booster pump increases the inlet pressure to maintain consistent permeate production, plus eliminates back-pressure on the permeate output. This innovative approach to both boosting and eliminating back-pressure maximizes system efficiency.

The Everpure MR-600, MR-600-1 or MR-600F RO Membrane Cartridge contains a semi-permeable reverse osmosis membrane. It's here that most of the dissolved impurities are separated from the water and flushed down the drain. The water that is able to pass through the membrane, which is very low in dissolved impurities, is referred to as permeate, RO water, or product water.

Once the RO water is produced, it is stored in the 6-gallon (22.7 l) RO water storage tank. This tank serves two (2) key functions; 1) it acts as a buffer between the system and the connected equipment, providing ample volumes of water instantaneously, 2) it reduces the on-off cycling of the RO system which produces better quality water and prolongs the system's life.

*Everpure 2SR-BW Water Conditioning Cartridge not performance tested or certified by NSF.

SAFETY INSTRUCTIONS

The appliance is only to be installed in locations where its use, maintenance and cleaning is restricted to trained adult personnel. No one should play with the appliance.

The appliance is intended to be permanently connected to the water mains and not connected by a hose-set.

The appliance is not suitable for installation in an area where a water jet could be used and must not be cleaned by a water jet.

⚠ WARNING Prior to performing any service on a pressurized vessel/tank, eye protection, ear protection and other suitable personal protection equipment should be worn. Isolate the water system and de-pressurize it. Drain the water that is inside the tank by opening the drain valve or by other means. Once the water has been drained , relieve the air pressure by depressing the pin on the Schrader valve.

Grounding Instructions: This appliance must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. This appliance is equipped with a cord having an appliance-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

⚠ WARNING Improper connection of the appliance-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service representative if you are in doubt whether the appliance is properly grounded. Do not modify the plug provided with the appliance; if it will not fit in the outlet, have a proper outlet installed by a qualified technician.

INSPECTION

The MRS-600HE System includes all the necessary fittings for installation. Lengths of 3/8" (9.5 mm) tubing have been provided for connecting to the wastewater/drain connection. Supply lines and distribution piping/tubing are not included.

The MRS-600HE System is packaged as a complete unit in one carton. At a minimum, you should have the following:

Parts	Quantity
1. Plate mounted processor assembly Dual-head pump Cartridge heads Controller & power supply Storage tank	1
2. Wall mount bracket	1
3. MR-600, MR-600-1 or MR-600F RO cartridge	1
4. 2SR-BW cartridge	1
5. Parts Kit	1

Inspect the carton for damage. Carefully unpack and inspect each item. Report any damage to freight carrier immediately and retain all packaging materials.

SELECTING A LOCATION

Locate the system in an area that is convenient to the inlet water supply and drain facilities, with access for routing the product water tubing/piping to the equipment. Install in a dry location, away from all forms of corrosive and/or flammable materials. Consider ease of access for servicing when selecting a location. Evaluate the mounting surface for its ability to properly support the weight of the processor when in operation [Approximately 90 lbs. (40.8 kg.)].

OPERATING SPECIFICATIONS

- Dynamic Operating Pressure: 25 – 80 psi (1.7 – 5.5 bar, 0.17 – 0.55 MPa)
  [Pressure below 50 psi (3.4 bar, 0.34 MPa) may affect blend system performance]*
- Maximum Static Pressure: 100 psi (6.9 bar, 0.69 MPa)
- Operating Temperature: 40 – 100°F (4.4 – 37.8°C)
- Plumbing Connections:
  Inlet/Outlet: 3/8" (9.5 mm) OD tube ("push-in" quick-connect), 3/8" (9.5 mm) barb or 1/2" (12.7 mm) barb
  Reject: 3/8" (9.5 mm) OD tube ("push-in" quick-connect)
  Tank Drain: 3/8" (9.5 mm) OD tube ("push-in" quick-connect)

* Blend system not performance tested or certified by NSF®.

- Electrical - Rated Voltage & Power Cord Plug Type:
  System Part No. EV9970-38, EV9970-85:
  100 – 120VAC/50 – 60Hz - NEMA 5 – 15P
  System Part No. EV9970-47:
  220 – 240VAC/50 – 60Hz - CEE 7/7
  System Part No. EV9970-50:
  220 – 240VAC/50 – 60Hz - AS 3112
- Power Input:
  Standby: 25 Watts (25W)
  Flush: 60 watts (60W)
  Run/Fill: 210 Watts (210W)
- Branch Circuit Protection:
  10 AMP (10A) Minimum. To minimize personnel shock hazards, install on a GFI, RCD, or equivalent protected circuit.

TOOLS, MATERIALS & SPECIAL EQUIPMENT REQUIRED

In most cases, common hand tools and plumbing materials suitable for use with RO water are all that is needed for installing the system. The system setup and calibration requires special equipment:

- Compressed air supply 60 psi (4.1 bar, 0.41 MPa) minimum with Schrader® style air chuck and pressure gauge
- Two (2) - 32 ounce or 1,000 ml graduated containers
- Stopwatch
- TDS meter
- Utility knife
- Eyedropper
- 5.25% household bleach or equivalent disinfectant

NOTE: Please read this entire manual prior to installing and operating the system.

NOTE: Consult with your local building inspector for approval and required permits to install this system. Additional equipment such as backflow prevention devices, seismic restraint equipment, air gaps, etc., may be required. Installation must meet all local and national codes.

PRE-INSTALLATION CHECKLIST

1. Can the unit be mounted within a reasonable distance of the water supply and drain facilities?
2. Is there an un-switched receptacle available for powering the system?
3. Is there adequate clearance and support to install the unit and permit access for maintenance? The total system weight will vary based on model and storage tank selected. See **Dimensions and Operating Weights** (page 13) for approximate operating weights.
4. Does the inlet water supply meet the requirements listed in the table under **Influent Water Characteristics** (page 1)?
5. Is there a minimum of 25 psi (1.7 bar, 0.17 MPa) pressure on a consistent basis?

SYSTEM ASSEMBLY

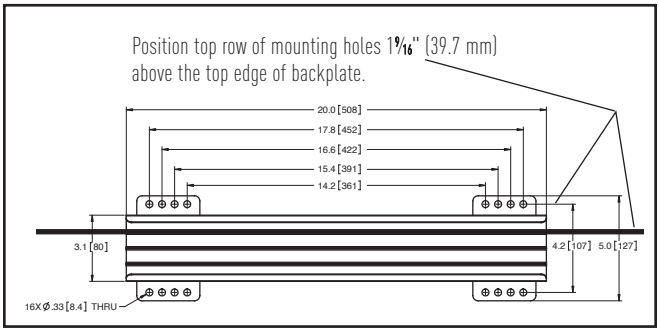
⚠ WARNING Do not use screws smaller than #12 (5.5 mm) for mounting the processor.

⚠ WARNING Mounting surface may require reinforcement to support processor safely. Hollow walls, drywall and other non-structural surfaces are not suitable unless reinforced.

Processor Assembly Mounting

1. The MRS-600HE System has been provided with a wall mount bracket to allow greater installation flexibility and ease of processor placement. If the wall mount bracket is not suitable for this specific application, the processor backplate has four (4) mounting holes [two (2) keyhole slots, two (2) standard] on 16" (406.4 mm) centers for securing it directly to a vertical surface.
2. Refer to **Figure 9** (page 18) for dimensional information. Use this as your guide to determine the wall mount bracket and/or processor location. If NOT installing the wall mount bracket, go to step 5.
3. Refer to **Figure 1** (next page) for mounting bracket details. Position the top row of holes 1 9/16" (39.7 mm) above the top of the processor when installed. Install the wall mount bracket to a suitable vertical surface. Use no less than four (4)- #12 (5.5 mm) fasteners to secure the bracket to the surface.

Figure 1. Wall Mount Bracket.

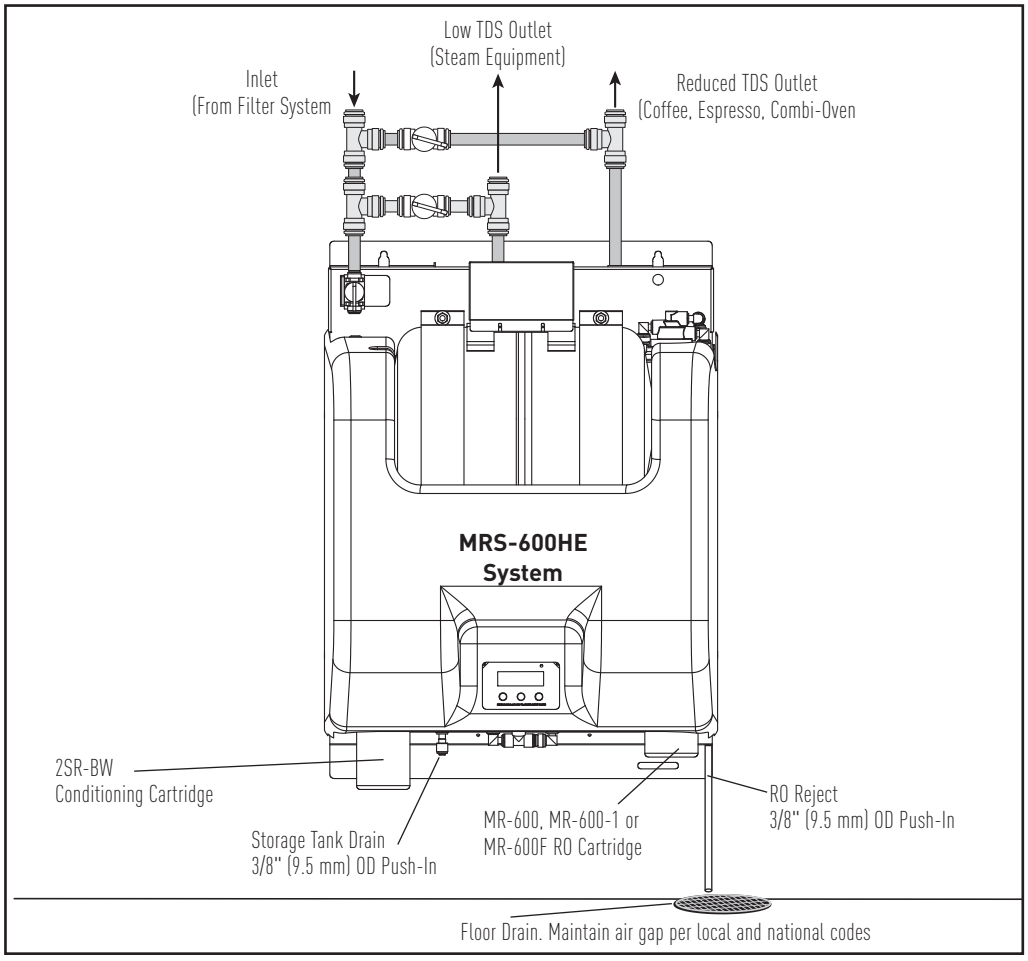


4. Prepare to attach the processor to the wall mount bracket. Lift the processor and "hook" the metal lip of the processor backplate over the lower lip of channel on the wall mount bracket. Go to step 6.
5. Measure and install two (2)- #12 (5.5 mm) minimum fasteners on 16". (406.4 mm) centers to engage the top edge of the processor backplate, leaving a 1/4" (6.4 mm) gap. Lift the processor and "hook" the keyhole slots on the processor backplate. Tighten the two (2) fasteners.
6. Install two (2)- #12 (5.5 mm) minimum fasteners in the 2" (50.8 mm) wide slots along the bottom edge of the processor backplate.

Piping / Tubing Connections

1. Refer to **Figures 2** (below) **and 10** (page 19) for general arrangement views of the piping, with a description of major components and connection points. These major components and connections will be referred to in the following steps.
2. A parts kit has been provided, which includes valves and tees to configure a system bypass. Assemble the parts to the system using the example shown in **Figure 2** (below).

Figure 2. MRS-600HE System Assembly



3. Prepare the plumbing to accept the RO system.

Note: The product water tubing/piping and associated fittings connecting the RO product outlet to the equipment being serviced should be food-grade material that meets NSF® Standard 51, 61, or similar, with a minimum pressure rating of 100 psi (6.9 bar, 0.69 MPa). The product water may react with metal piping, creating a corrosive condition in addition to imparting an objectionable taste. Plastic pipe or reinforced beverage tubing are generally very good material choices for RO water distribution piping. The size of the product water tubing/piping should be 3/8" (9.5 mm) ID minimum. Distances of 25 feet (7.6 m) or greater from the RO system to the equipment being serviced should be 1/2" (12.7 mm) ID minimum.

4. Shut off the supply of water to the new or existing filtration system and relieve pressure. Connect a line from the treated water outlet of the filtration system to the inlet of the MRS-600HE System.
5. Connect the appropriate size and type of tubing/piping and associated fittings to the corresponding MRS-600HE System outlet connection. Route the line(s) to the equipment being serviced (i.e.; steam, espresso, coffee, etc.). Close the inlet, outlet and bypass valves. Apply pressure to the existing filtration system and place it back into service.
6. For safety in transit, the storage tank is shipped without a precharge. Locate the Schrader® valve on the storage tank and precharge to 48 – 50 psi (3.3 - 3.4 bar, 0.33 - 0.34 MPa) with a source of clean, dry air. See **Figure 3** (below).
7. Connect a 3/8" (9.5 mm) OD tube to the reject Y-connector (labeled WASTE) located in the lower right corner of the processor. Route the other end of the tubing to a drain nearby, securing it properly. Allow an air gap at the drain, following any applicable local and national codes. See **Figures 2** (page 4) **and 4** (below).

⚠ WARNING Refer to "Reject to Drain, Maximum" under "RO Production in the Performance Table" (page 10) to determine the maximum reject (waste) flow rate. Verify the drain has ample capacity for this waste flow, plus all other sources of waste flow sharing this drain.

Figure 3. Precharging Storage Tank

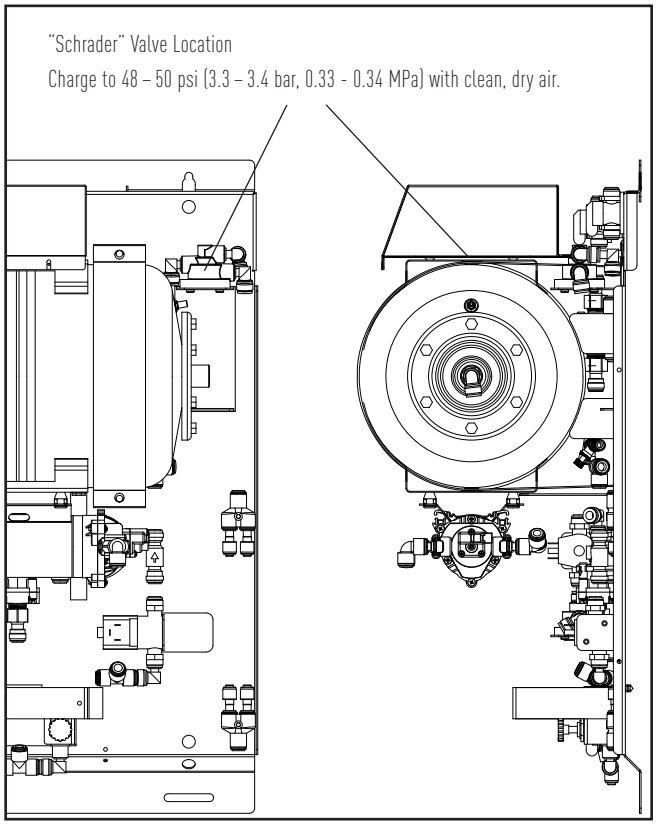
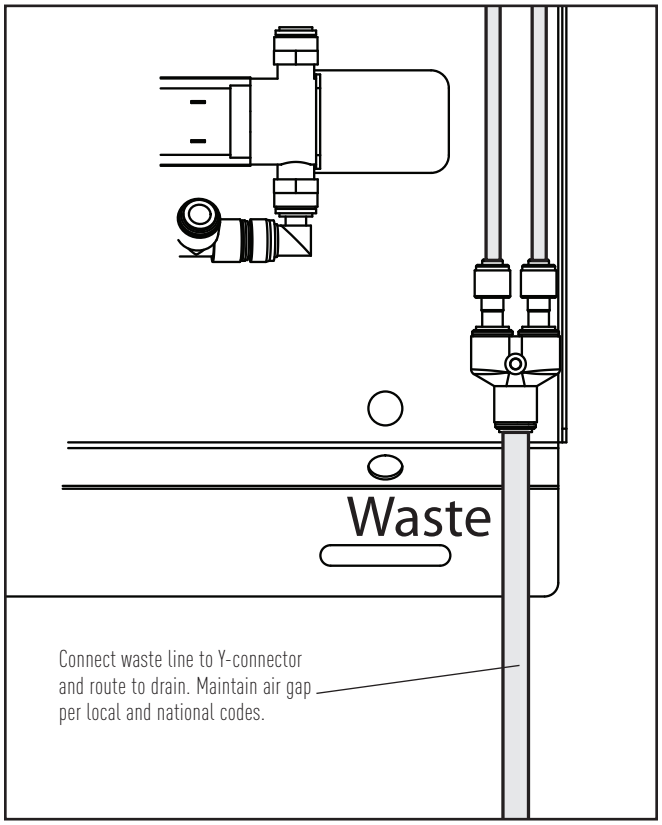


Figure 4. Reject Y-Connector Detail

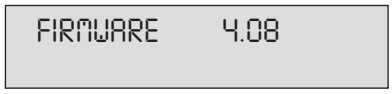


CONTROL SYSTEM OPERATION

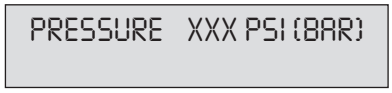
The MRS-600HE System includes a microprocessor based control system that monitors system conditions and controls the system operation. A digital display panel provides operational information and three (3) buttons provide operator access. To follow is a list of modes and a description of each function. Use this as a guide during startup, normal operation and when service is required.

Operational Mode

- **INITIAL POWER-UP:** When power is first applied to the system, the panel will display the system identification with software version. After several seconds, it will automatically transition to the MAIN SCREEN VIEW.



- **MAIN SCREEN VIEW:** When the system is in normal operation and not operating in any of the following operational modes, the panel will display the storage tank water pressure.



- **PRESSURIZE:** When pressure in the storage tank drops below the pressure "on" setting, the system will start processing water and refill the storage tank. Once the pressure in the storage tank rises above the pressure "off" setting, the system will stop. Storage tank water pressure will be displayed.

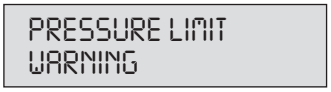
- **DEEP FLUSHING:** If the MRS-600HE System remains idle for the programmed length of time, the control system will automatically go into DEEP FLUSHING mode. During this time, there will be flow to drain (reject). Remaining flush time in seconds and storage tank water pressure will be displayed.

- **RE-PRESSURIZE:** At the start of the DEEP FLUSHING operation, the system will repressurize to the normal tank full pressure, then begin DEEP FLUSHING. Storage tank water pressure will be displayed.

  Under normal conditions, the pressure in the storage tank will remain above the minimum allowable flush pressure throughout the DEEP FLUSHING operation. Once the DEEP FLUSHING operation ends, the system returns to normal operation, but will not PRESSURIZE until the storage tank water pressure drops below the minimum allowable flush pressure. Once it runs and fills, the system returns to operating within the normal "on" and "off" pressure settings.

  If the RO water pressure drops below the minimum allowable pressure setting during DEEP FLUSHING, the control will terminate the DEEP FLUSHING process and remain idle until water is drawn. Once water is drawn, the system returns to normal operation as described in "PRESSURIZE" mode above.

- **PRESSURE LIMIT WARNING:** This message indicates a fault with the pressure sensing circuit or the detection of pressure exceeding 114 psi (7.9 bar, 0.79 MPa). See Troubleshooting Guide on page 15 for guidance on how to correct this condition.



Programming Mode

The controller has several user accessible menus. This menu "loop" allows for adjustment of several variable parameters. The Controller has three (3) buttons below the display for these adjustments. In most cases, a description of the button function is shown in the digital display area.

Once you enter the programming mode, the controller will save your last entry upon pressing ENTER. If an adjustment is made without pressing ENTER, the controller returns to the main screen and the adjustment will not be saved. If a key is not depressed for about 25 seconds, the controller exits programming mode and returns to the operational mode.

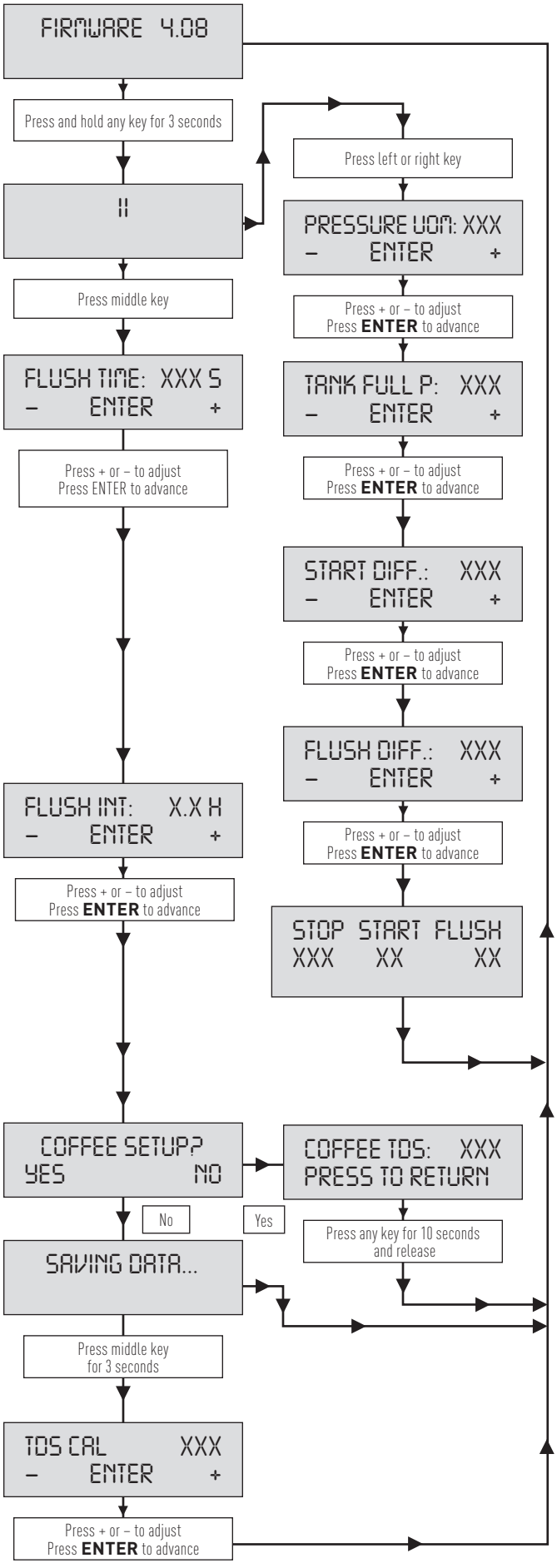
- **Press and hold any key for three (3) seconds to enter programming mode.**
- **II – Press the middle key to advance to "FLUSH TIME: XXX S"** screen. Press left or right key to advance to "PRESSURE UOM: XXX" screen.
- **PRESSURE UOM: XXX** - This parameter determines whether psi or BAR will be the unit of measure used to display the storage tank water pressure. Use the +/- keys to adjust this value. Press ENTER to save the selected value and advance to the next screen.
- **TANK FULL P: XXX** - This parameter determines the pressure at which RO water production will stop, or turn "off". This setting is normally 100 psi (6.9 bar, 0.69 MPa). Range is 70 – 100 psi (4.8 – 6.9 bar, 0.48 - 0.69 MPa) in five (5) psi (0.3 – 0.4 bar, 0.03 - 0.04 MPa) increments. Use the +/- keys to adjust this value. Press ENTER to save the selected value and advance to the next screen.
- **START DIFF.: XXX** - This parameter determines the pressure differential between the RO water production start ("on") pressure and stop ("off") pressure. This setting is normally 20 psi (1.4 bar, 0.14 MPa). Range is 10 – 25 psi (0.7 – 1.7 bar, 0.07 - 0.17 MPa) in five (5) psi (0.3 – 0.4 bar, 0.03 - 0.04 MPa) increments. Use the +/- keys to adjust this value. Press ENTER to save the selected value and advance to the next screen.

CONTROL SYSTEM OPERATION, continued

- **FLUSH DIFF.: XXX** - This parameter determines the pressure differential between the RO water production start ("on") pressure and minimum allowable flush pressure. This setting is normally 20 psi (1.4 bar, 0.14 MPa). Range is 0 – 25 psi (0.0 – 1.7 bar, 0.00 - 0.17 MPa) in five (5) psi (0.3 – 0.4 bar, 0.03 - 0.04 MPa) increments. Use the +/- keys to adjust this value. Press ENTER to save the selected value and advance to the next screen.
- **FLUSH TIME: XXX S** - This parameter determines the flush duration. Upon determining the recovery and reject flow (see "RECOVERY ADJUSTMENT / CALIBRATION" section) a time value in seconds is entered for this setting. Range is 0 – 990 seconds in five (5) second increments. Use the +/- keys to adjust this value. Press ENTER to save the selected value and advance to the next screen.
- **FLUSH INT: X.X H** - This parameter determines the flush interval. If the system does not process water for the time value selected, the system will enter DEEP FLUSHING mode. Range is 0.0 – 9.5 hours in 0.5 hour increments. Use the +/- keys to adjust this value.

NOTE: The factory default setting of 1.5 hours is adequate in most applications. Press ENTER to save the selected value and advance to the next screen.

- **COFFEE SETUP?:** This parameter allows viewing the TDS reading in the coffee (blended)* outlet line with a more frequent up-date rate than in operational mode. Use this mode when adjusting the blend* valves (See "DUAL OUTLET AND BLEND ADJUSTMENT" section). Select YES to enter this mode or NO to advance.
- **COFFEE TDS:** This is a view-only screen. The value displayed is the TDS level of the water in the coffee (blended)* outlet line. The most accurate readings are attained by having flow on the coffee line. Press any key TWICE to advance to the next screen.
- **SAVING DATA ... :** This is a view-only screen. The controller is saving the settings and returning to the MAIN SCREEN VIEW. If desired, press and hold the middle key for three (3) seconds to enter TDS calibration mode.
- **TDS CAL:** This parameter allows adjustment of the TDS value (in ppm) the controller will display. Make adjustments if the TDS level displayed by the controller does not match within ± five (5) units of the TDS value registered on a second calibrated TDS meter. Use the +/- keys to adjust this value until it matches the value of the second calibrated TDS meter. Press ENTER to save and return to the MAIN SCREEN VIEW.



* Blend system not performance tested or certified by NSF®.

ELECTRICAL CONNECTIONS

The RO system is prewired at the factory. Verify that the supply voltage matches the RO system operating voltage. Also verify that the supply is a GFI, RCD, or equivalent protected circuit rated at 10 amps minimum. Plug in power cord when instructed to do so in the following sections.

CARTRIDGE INSTALLATION AND ACTIVATION

1. Remove the outer shrinkwrap and protective cap from the 2SR-BW & MR-600, MR-600-1 or MR-600F RO Cartridges. Position a bucket under the 2SR-BW Cartridge head. Slowly open the inlet shut-off valve. Apply power to the system by plugging the power cord into the receptacle. Within moments, the controller display should illuminate and the system will go into PRESSURIZE mode. Once a solid flow of water has been established, flush one (1) gallon (3.8 l). Unplug power cord. Empty bucket.
2. Install the 2SR-BW Cartridge. Align the lugs on the cartridge with the slots in the head. Holding the head and cartridge firmly, press the cartridge upward into the head fully, and then turn the cartridge to the right until it stops.
3. Disconnect the 3/8" (9.5 mm) OD line from 2SR-BW Cartridge to booster pump inlet at booster bump. Route this line into the bucket and secure. Plug in power cord. Once a solid flow of water has been established, flush one (1) gallon (3.8 l). Unplug power cord. Reconnect 3/8" (9.5 mm) OD line to booster pump inlet. Empty bucket.
4. Temporarily route a BLUE line from the 3/8" (9.5 mm) storage tank drain valve to drain. Open storage tank drain valve.
5. Install MR-600, MR-600-1 or MR-600F Cartridge. Align the lugs on the cartridge with the slots in the head. Holding the head and cartridge firmly, press the cartridge upward into the head fully, and then turn the cartridge to the right until it stops
6. .Plug in power cord. Once a solid flow of water has been established from the storage tank drain valve, allow the system to process water (in pressurize mode) for the following length of time:

   - MR-600 Cartridge: 3 Hours
   - MR-600-1 Cartridge: 3 Hours
   - MR-600F Cartridge: 30 Minutes

   A continuous stream of water should be present at both the storage tank drain valve and the waste (reject) line. After the specified flushing time has elapsed, unplug power cord.

⚠ WARNING DO NOT USE THIS PRODUCT WATER! It may contain a preservative solution from the RO cartridge and should not be consumed!

7. Disconnect the 3/8" (9.5 mm) tube from the outlet (right side) of the in-line filter. Attach a short section of 3/8" (9.5 mm) OD tubing to the in-line filter and route line into bucket and secure. Close the storage tank drain valve. Plug in power cord. Once a solid flow of water has been established, flush one (1) gallon (3.8 l) through the in-line filter to drain. Unplug power cord. Reconnect original 3/8" (9.5 mm) OD line to the in-line filter outlet.

RECOVERY ADJUSTMENT / CALIBRATION

1. Carefully remove and RETAIN the factory installed capillary tubes (restrictors) from the end of the two (2) 1/4" (6.4 mm) OD tubes connected to the upper Y-connector on the reject line, then reconnect the lines. Store these restrictors with the other restrictors in the parts kit for possible reuse in the following steps. See **Figures 5** (page 9) **and 6** (page 9)**.**
2. Locate the needle valve from the parts kit. Attach a section of 3/8" (9.5 mm) OD tubing to this valve. Open valve partially.

NOTE: The needle valve will be used to adjust / calibrate the system recovery. Once calibration is complete, it is removed.

3. Remove the 3/8" (9.5 mm) OD tube from the reject Y-connector and install the needle valve assembly. Connect a section of BLACK 3/8" (9.5 mm) OD tubing to the outlet of this valve. See **Figure 5** (page 9) for details on the calibration set-up.
4. Measure the raw water TDS. Refer to **Table 1** (page 10). Find the TDS range in the column labeled "Raw Feed Water TDS" that corresponds to your TDS measurement. Read across that row to determine maximum recovery, permeate to reject ratio and permeate / reject volumes.
5. Using two (2) 32 oz. or 1,000 ml graduated containers, apply power to the system and collect the permeate flow (blue line from storage tank drain valve) in one container and the reject (black line from reject needle valve) flow in the second container. Compare the ratio of volume collected to the data shown in **Table 1** (page 10). Adjust the reject needle valve as needed to match the ratio specified. Empty the containers and collect additional samples after each adjustment of the reject needle valve.
6. Once the ratio of "Permeate to Reject" closely matches the data in **Table 1** (page 10), the Reject ONLY volume requires measurement. Using only one (1) graduated cylinder, collect the Reject ONLY flow for one (1) minute and record this volume.

NOTE: Reject volume in one (1) minute may exceed 32 oz. / 1,000 ml. If so, use a larger container, or collect samples in multiple containers and add all of the collected volumes together.

7. Unplug power cord. Close storage tank drain valve.
8. See **Table 2** (page 10). Find the volume range in the column labeled "Reject Volume per Minute" that corresponds to the volume collected in Step 6. Read across that same row to identify the correct capillary tube combination, located under the columns labeled "Capillary Tube #1 & #2".
9. Locate the correct capillary tubes (restrictors) from the parts kit. Remove the two (2) 1/4" (6.4 mm) OD tubes from the upper Y-connector. Insert the capillary tubes into each line and reassemble to the Y-connector. See **Figures 5** (page 9) **and 6** (page 9).

NOTE: In some cases, the capillary tube requires trimming. Use a SHARP utility knife to cut the tube cleanly without tearing or crushing the tube.

10. Remove the reject needle valve assembly and reconnect the 3/8" (9.5 mm) tube that is routed to drain.
11. Refer to **Table 2** (page 10) and locate the column labeled "Flush Time in Seconds". The correct value for this setting can be found in the same row of data used to determine the capillary combination in the previous steps. Enter this value in the controller under "FLUSH TIME XXX".
12. Adjust "FLUSH INT X.X H" to 1.5 H.

Figure 5. Permeate to Reject Calibration Set-up

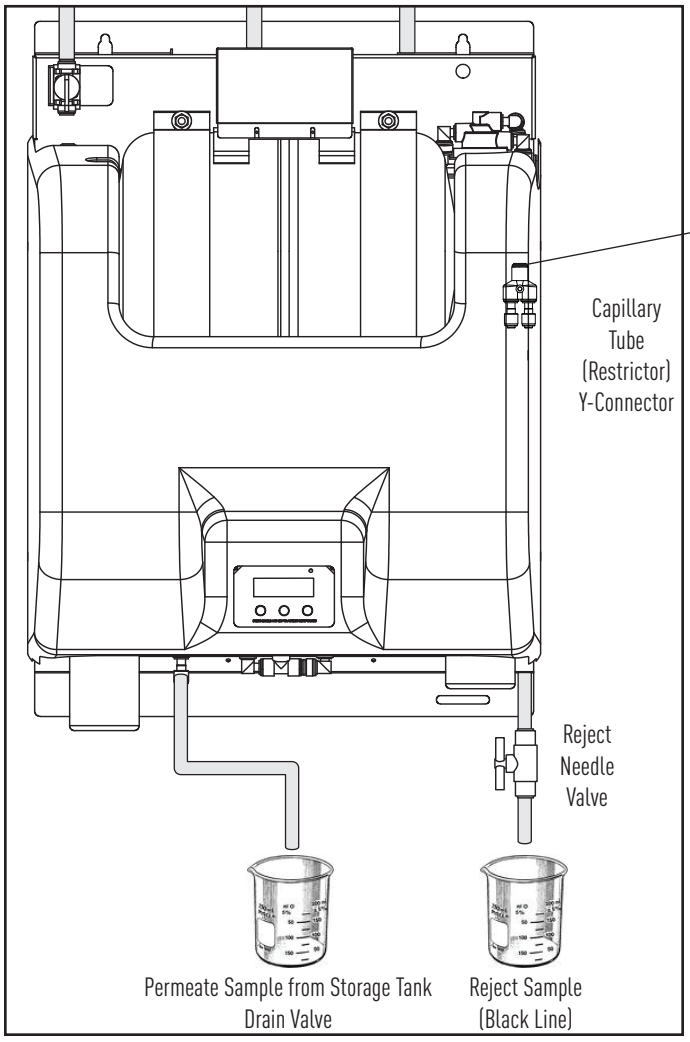


Figure 6. Capillary Tube (Restrictor) Y-Connector Detail

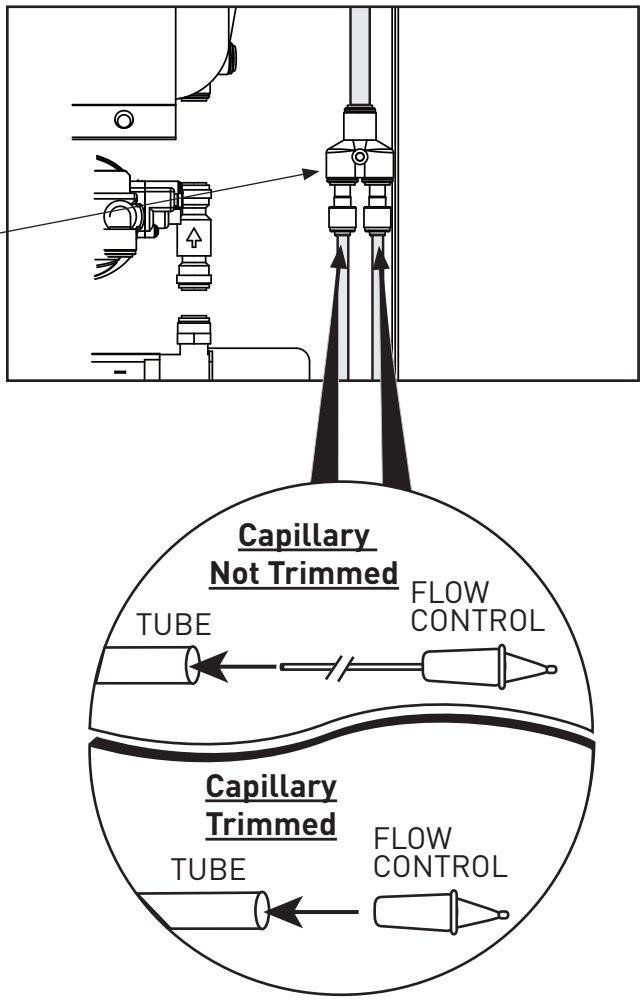


Table 1 - Recovery & Permeate to Reject Ratio

Raw (Feed) Water TDS		Maximum Recovery	Ratio			Permeate & Reject Volumes at Specified Recovery*			
						Permeate (Blue Line)		Reject (Black Line)	
Soft Water (less than 1 gpg/17.1 ppm)	Hard Water (1 gpg/17.1 ppm or greater)		Permeate	to	Reject	Ounces	Milliliters	Ounces	Milliliters
0 – 1,000	0 – 200	80.0%	1	to	0.25	80.0	800	20.0	200
	201 – 250	77.4%	1	to	0.29	77.4	774	22.6	226
	251 – 300	72.8%	1	to	0.37	72.8	728	27.2	272
	301 – 350	68.3%	1	to	0.46	68.3	683	31.7	317
	351 – 400	63.8%	1	to	0.57	63.8	638	36.2	362
	401 – 450	59.3%	1	to	0.69	59.3	593	40.7	407
	451 – 500	54.7%	1	to	0.83	54.7	547	45.3	453
	501 – 550	50.2%	1	to	0.99	50.2	502	49.8	498
	551 – 600	45.7%	1	to	1.19	45.7	457	54.3	543
	601 – 650	41.2%	1	to	1.43	41.2	412	58.8	588
	651 – 700	36.7%	1	to	1.73	36.7	367	63.3	633
	701 – 750	32.1%	1	to	2.11	32.1	321	67.9	679
	751 – 1,000	30.0%	1	to	2.33	30.0	300	70.0	700

*Measure in either Ounces or Milliliters and use that same unit of measure for both the Permeate and Reject volumes.

Table 2 - Capillary Tube and Flush Time Selector

Reject Volume per Minute		Capillary Tube		Flush Time in Seconds
Ounces	Milliliters	#1	#2	
0.0 – 6.1	0 – 179	Red	PLUG	840
6.1 – 14.0	180 – 414	Brown – Trimmed	PLUG	360
14.0 – 20.1	415 – 593	Brown – Trimmed	Red	255
20.1 – 25.9	594 – 766	Green	PLUG	200
25.9 – 31.9	767 – 945	Green	Red	160
31.9 – 40.1	946 – 1186	Blue – Trimmed	PLUG	125
40.1 – 46.2	1187 – 1365	Blue – Trimmed	Red	110
46.2 – 51.6	1366 – 1525	White – Trimmed	PLUG	100
51.6 – 57.6	1526 – 1703	White – Trimmed	Red	90
57.6 – 65.5	1704 – 1938	White – Trimmed	Brown – Trimmed	80
65.6 – 72.9	1939 – 2155	Grey	Red	70
72.9 – 77.4	2156 – 2290	White – Trimmed	Green	65
77.4 – 83.7	2291 – 2475	White	Blue – Trimmed	60
83.7 – 91.6	2476 – 2709	White – Trimmed	Blue – Trimmed	55
91.6 – 97.5	2710 – 2883	White	White	50
97.5 – 103.1	2884 – 3048	White – Trimmed	White – Trimmed	50
103.1 – 116.5	3049 – 3444	Grey	White	45
116.5 – 135.5	3445 – 4006	Grey	Grey	40

DISINFECTION

When cartridge activation and recovery adjustments are complete, the storage tank and associated piping must be disinfected, then completely flushed. The steps for this are outlined below.

1. Bypass the in-line filter by disconnecting the inlet and outlet tubing from the closest tee fittings and install a section of 3/8" (9.5 mm) tubing to "bridge" these connection points.
2. Locate the 3/8" (9.5 mm) OD tubing that connects to the inlet (left side) of the storage tank. Disconnect the end which connects to the elbow fitting at the processor. Measure 1 ounce (29.6 ml) of 5.25% bleach for every 7.5 gallons (28.4 l) of storage tank capacity. Using an eyedropper, introduce this volume of bleach into the tube that leads to the storage tank. Reconnect this tube to the elbow fitting. Apply power to the system by plugging the power cord into the receptacle. The booster pump should begin to run and fill the storage tank.
3. Once sufficient water has entered the storage tank (more than 1/2 full), demand treated water from at least one piece of equipment the MRS-600HE System is supplying water to. Once all of the air has been purged and a solid flow of water is observed, stop the flow at the connected equipment. Purge the air from all remaining pieces of connected equipment by demanding water from each one individually.
4. Allow the storage tank to fill until the booster pump turns off. Allow the chlorinated water to remain in the storage tank and distribution piping for 30 minutes.
5. Unplug the power cord. Drain the storage tank by demanding water downstream and allow the storage tank to drain. Once the storage tank is empty, stop demanding water downstream.
6. Apply power to the system by plugging the power cord into the receptacle. Once sufficient water has entered the storage tank (more than 1/2 full), demand treated water from at least one piece of equipment the MRS-600HE System is supplying water to. After five (5) minutes, stop the flow at the connected equipment. Flush the lines to each remaining piece of connected equipment by demanding water from them for two (2) minutes each.
7. Allow the storage tank to fill until the booster pump turns off.
8. Unplug the power cord. Drain the storage tank by demanding water downstream and allow the storage tank to drain. Once the storage tank is empty, stop demanding water downstream.
9. Repeat steps 5 – 7 until no residual chlorine odor is detected from the water exiting the storage tank or connected equipment.
10. Remove bypass line installed in step 1 and reconnect in-line filter.
11. Plug in power cord. Allow system to run and fill the storage tank. It will require 5–10 minutes to fill the on-board tank.

PLACING MRS-600HE SYSTEM INTO SERVICE

Once the cartridges have been activated and the storage tank and distribution piping sanitized, the MRS-600HE System can be placed into service.

During normal operation, the valves on the MRS-600HE System should be in the following positions:

A. System inlet and outlet valves: open.

B. System bypass valves: closed.

Once initial system startup has been completed, it is a good idea to measure the outlet water flow rate and quality to verify the system's performance. The initial values should be recorded for future comparison to detect any changes in performance. A **Performance Log** (page 14) has been provided on to record this information.

OPERATION

1. During normal operation, a continuous supply of water must be available to the system.
2. The system inlet and outlet valves must be open, the sample outlet and flushing valves must be closed and the drain line must be unrestricted.

DUAL OUTLET AND BLEND ADJUSTMENT*

The MRS-600HE System is capable of producing two (2) water qualities, which are detailed below.

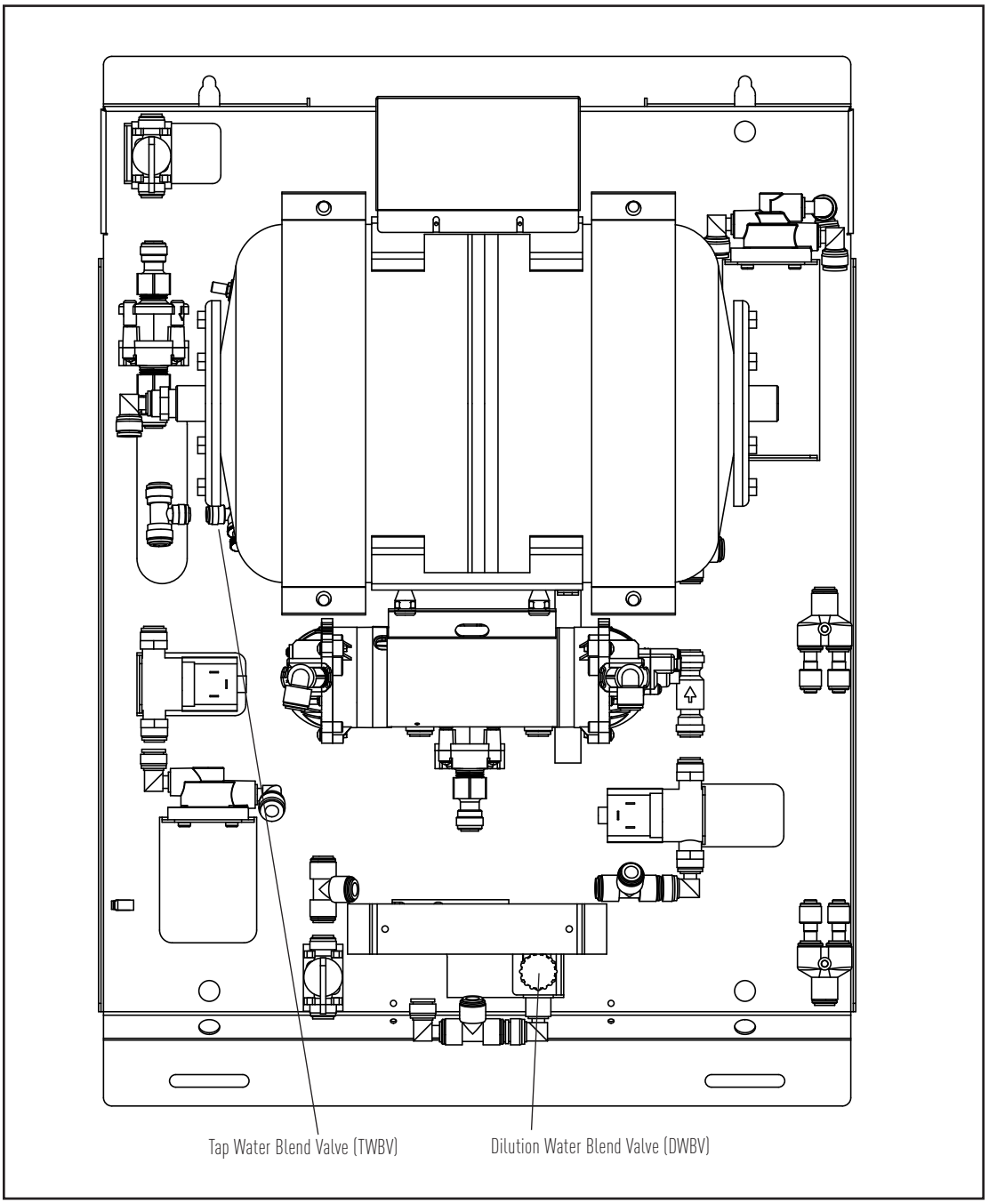
- The outlet marked "STEAMER" provides water directly from the RO Membrane. The TDS of this water is very low, ideally suited for applications such as flash steamers and other equipment that "boils away" the water. This outlet requires no adjustment.
- The outlet marked "COFFEE" can produce a wide range of water qualities. It combines or "blends"two (2) sources of water; 1) directly from the RO Membrane and, 2) filtered water containing the same level on mineral content as the raw (feed) water. The following text describes the adjustment of this feature.

* Blend system not performance tested or certified by NSF®.

DUAL OUTLET AND BLEND ADJUSTMENT,* continued

1. Open the tap water blend valve (TWBV) and dilution water blend valve (DWBV) fully. See **Figure 7** (below) for location of these valves.
2. Demand flow on the "COFFEE" line. The flow rate should equal the maximum expected demand of all connected equipment.
3. Access the "COFFEE TDS: XXX" view screen on the controller to observe a real-time reading of the TDS quantity in the water flowing to the "COFFEE" line.
4. Compare TDS value on controller to application requirement. If controller reading is higher than requirement, slowly close TWBV until TDS value is met. If controller reading is lower than requirement, slowly close DWBV until TDS value is met.

Figure 7. RO Blend Valve Locations*



* Blend system not performance tested or certified by NSF®.

PERFORMANCE SECTION

RO Production*

RO Cartridge/Module Type / Trade Name	MR-600 Cartridge (EV9627-13)	MR-600-1 Cartridge (EV9627-23) or MR-600F Cartridge (EV9627-22)
Gallons / Liters per Day	482 / 1,824	760 / 2,876
Gallons / Liters per Hour	20.1 / 76.0	31.7 / 119.8
Gallons / Liters per Minute	0.335 / 1.27	0.528 / 2.00
Ounces / Milliliters per Minute	42.8 / 1,267	67.6 / 1,997
Inlet Supply Requirements, Minimum gpm / lpm	1.5 / 5.7	1.5 / 5.7
Reject to Drain, Maximum gpm / lpm	1.1 / 4.2	1.1 / 4.2
Salt Rejection	85% minimum	85% minimum
Recovery†	Varies based on water conditions - 30 – 80%	Varies based on water conditions – 30 – 80%
NSF Certified Recovery Rating	79.55%	75.61%
Efficiency Rating‡	76.75%	75.95%

*Production rates based on the following: 750 ppm TDS Soft Water @ 50 psi (3.4 bar, 0.34 MPa), 77°F (25°C), to Atmosphere, SDI = <3,

†Recovery rating refers to the percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is bypassed.

‡Efficiency rating means the percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate typical daily usage.

Stored Water System	
Flow Rate (gpm / lpm)	Dependent on: Pressure / volume in storage, line sizes
Volume (Gallons / Liters)	Dependent on: Pressure / volume in storage
Pressure (typical)	60–100 psi (6.1 – 6.9 bar, 0.41 - 0.69 MPa) in storage tank 50 psi (3.4 bar, 0.34 MPa) maximum at each outlet

Dimensions and operating weights

System Only	MRS-600HE System
Dimensions	30" H x 23" W x 13.6" D (762 mm H x 584 mm W x 345 mm D) [Add 3" (76 mm) on all four (4)sides for cover removal and service access]
Operating Weight	90 lbs. (40.8 Kg) (not including external storage tanks)

Cartridges and Elements	
Reverse Osmosis	24" (610 mm) TFC
Conditioning Cartridge	10" (254 mm) Scale Control
Carbon Postfilter	10" (254 mm) In-line

Performance Log

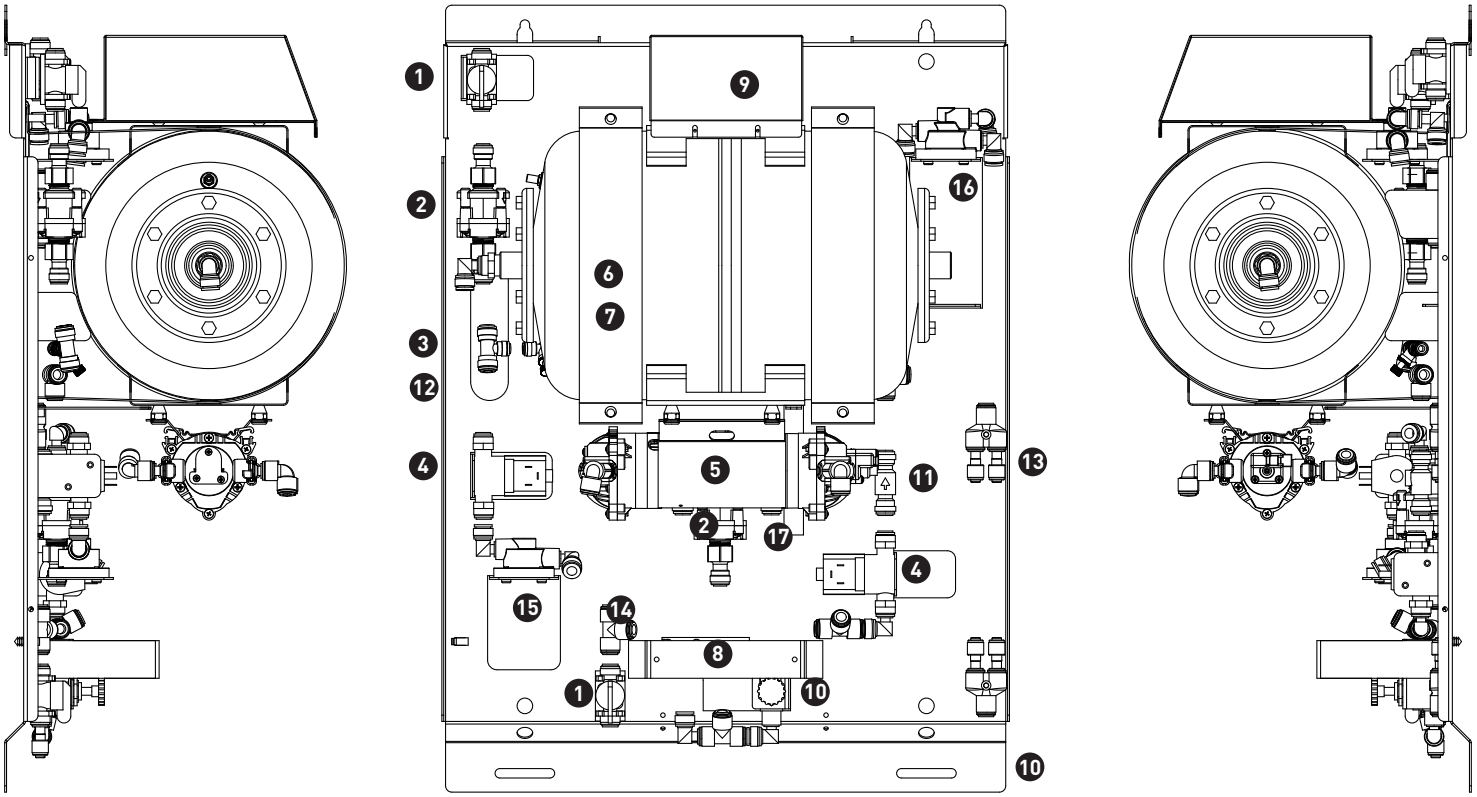
Test Date	Run Hours	Permeate Flow Only ounce / min or ml / min	Reject Flow ounce / min or ml / min	Inlet Pressure / Temp. psi / °F or MPa / °C	Inlet TDS mg / l	STEAMER Outlet TDS mg / l	COFFEE Outlet TDS mg / l	Percent TDS Reduction

NOTES:

TROUBLESHOOTING GUIDE

Problem	Possible Cause	Remedy
1. Insufficient product water during normal operating periods.	a. Prefiltration system restriction.	a. Check prefiltration system and / or replace prefilter cartridge(s)
	b. SR cartridge plugged.	b. Replace SR cartridge.
	c. RO cartridge plugged.	c. Replace RO cartridge.
	d. Insufficient system inlet pressure	d. Check / repair booster pump and inlet line.
	e. Incorrect storage tank precharge.	e. Empty water in storage tank. Check precharge pressure. Adjust to 48–50 psi (3.3 – 3.4 bar, 0.33 - 0.34 MPa). Presence of water at Schrader® valve indicates failed bladder - Replace bladder or tank.
2. Insufficient product water volume during peak periods.	a. Refer to problem 1.	a. Refer to problem 1.
	b. System rated output too low for application.	b. Verify system output. If output is within specification, increase output if applicable.
	c. System storage capacity low.	c. Increase storage capacity if applicable.
3. Low quality RO water.	a. Refer to problem 1.	a. Refer to problem 1.
	b. RO cartridge failure.	b. Replace RO cartridge.
4. Low water pressure at water using equipment.	a. Tubing / piping run to equipment restrictive.	a. Increase tubing / piping diameter. Refer to "System Installation" section for recommendations.
	b. Incorrect storage tank precharge.	b. Empty water in storage tank. Check precharge pressure. Adjust to 48–50 psi (3.3 – 3.5 bar, 0.33 - 0.34 MPa). Presence of water at Schrader valve indicates failed bladder - Replace bladder or tank.
5. Objectionable product water odor.	a. Prefiltration cartridge(s) exhausted.	a. Replace prefiltration cartridge(s).
	b. Storage tank requires disinfection.	b. Disinfect storage tank.
6. Reject (waste) flow too low or decreases over time.	a. Drain line restricted.	a. Check / correct any restrictions in drain line tubing. Make sure to allow an air gap at the drain. Disconnect reject line at quick connect fitting and inspect for obstruction or damage. Remove obstruction. Replace if required.
	b. Insufficient system inlet pressure.	b. Check / repair booster pump and inlet line.
7. Reject (waste) flow too high or increases over time.	a. Drain line restrictors missing or incorrect size.	a. Check restrictor Y-connector for presence of restrictors . • If present, measure reject flow rate for 1 minute and compare to flow rate shown in Table 2 for the restrictor combination currently installed. Flow should be within +/- 5% of value. If not, replace restrictors and retest or complete the "RECOVERY ADJUSTMENT / CALIBRATION" procedure. • If not present, complete the "RECOVERY ADJUSTMENT / CALIBRATION" procedure.
	b. Drain line restrictors worn.	b. Measure reject flow rate for 1 minute and compare to flow rate shown in Table 2 for the restrictor combination currently installed. Flow should be within +/- 5% of value. If not, replace restrictors and retest or complete "RECOVERY ADJUSTMENT / CALIBRATION" procedure.
8. Pressure limit warning error.	a. Electrical connector at the pressure transducer not fully engaged.	a. Check electrical connector engagement with pressure transducer, then press any key on controller to clear the fault. If the fault reappears after returning to normal operation, go to 8b.
	b. RO permeate pressure exceeds 114 psi (7.9 bar, 0.79 MPa).	b. Check for restriction / blockage in permeate line causing abnormally high pressure. Relieve pressure in permeate line and correct restriction / blockage condition, then press any key on controller to clear the fault. If the fault reappears after returning to normal operation, go to 8c.
	c. RO cartridge bypassing.	c. Measure RO permeate flow and TDS and compare to previously recorded values, or system specifications. High permeate flow and / or poor TDS reduction indicate excessive passage of water around or within the RO cartridge. Remove the RO cartridge and check the integrity of all three (3) O-ring seals and correct as needed. If seals appear OK, replace the RO cartridge. After making the repairs, press any key on controller to clear the fault, then recheck RO permeate flows and TDS and compare to previously recorded values or system specifications. If the fault reappears after returning to normal operation, replace controller and / or pressure transducer or contact Pentair® Everpure® Technical Support for further assistance.

Figure 8. Parts Diagram



Number	Part Number	Description
1	EV3111-92	Valve, Ball, 3/8" PI x 3/8" PI
2	183-151-00	Pressure Reducing Valve
3	EV3128-39	Valve, 1/4" Control - TWBV
4	EV3128-08	Valve, Solenoid (metal body)
	EV3133-04	Valve, Solenoid (plastic body)
5	EV3128-18	Pump, dual head
6	EV3135-37	Accumulator Tank with Bladder
7	41-230-00	Replacement Bladder Only, 1 pack
	94-697-00	Replacement Bladder Only, 25 pack
8	EV3128-17	Controller with Pressure Switch Inputs (Systems mfg. on or before 01/2010)
	EV3131-44	Controller with Transducer Input (Systems mfg. 02/2010 to 04/2014)
	EV3141-91	Controller with Transducer Input (Systems manufactured 05/2014 to present)
9	EV3128-15	Power Supply - Non-switching (US, China & Australia systems mfg. on or before 02/2012)
	EV3130-34	Power Supply - Switching (European systems manufactured on or before 04/2014) (US, China & Australia systems manufactured 03/2012 to present)
	EV3143-06	Power Supply - Switching (European systems manufactured 05/2014 to present)

Number	Part Number	Description
10	EV3111-61	Valve, 3/8" Needle - DWBV & Reject Calibration
11	EV3103-91	Check Valve, 3/8"
12	EV3128-40	Check Valve, 1/4"
13	EV3128-27	Restrictor, Blue, 735 ml / min
	EV3128-28	Restrictor, White, 1052 ml / min
	EV3128-29	Restrictor, Grey, 1577 ml / min
	EV3128-30	Restrictor, Red, 125 ml / min
	EV3128-31	Restrictor, Brown, 189 ml / min
	EV3128-32	Restrictor, Green, 525 ml / min
	EV3128-33	Plug, 1/4" OD
14	84-2040-60	Pressure Switch - Flush Operation (Systems mfg. on or before 1/2010)
	EV3129-52	Pressure Transducer (Systems mfg. 2/2010 to present)
15	EV9627-14	Cartridge, 2SR-BW, 1 pack
16	EV9627-13	Cartridge, MR-600, 1 pack
	EV9627-22	Cartridge, MR-600F, 1 pack
	EV9627-23	Cartridge, MR-600-1, 1 pack
17	EV9627-15	In-line Filter, GS-215RO-H, 1 pack

Contact your local Pentair® Everpure® Dealer for replacement and spare parts.

MAINTENANCE

The MRS-600HE System requires very little maintenance. Regular cartridge replacement, system recovery verification, storage tank precharge pressure verification and sanitization are the only normal requirements. Typical service schedules are as listed below.

Every Six (6) Months

– Replace the Everpure 2SR-BW Cartridge:

- Open both bypass valves.
- Remove power from system by unplugging power cord. Disconnect power between controller and booster pump by separating in-line two (2) -pin male/female electrical connector.
- Close the inlet valve.
- Place a bucket under the exhausted cartridge to catch any excess water that may spill from the head. Remove the exhausted cartridge by turning the cartridge to the left until it stops and pulling it downward until it is free from its head.
- Remove the outer shrink-wrap and protective cap from the new 2SR-BW cartridge.
- Align the lugs on the new cartridge with the slots in the head.
- Holding the head and cartridge firmly, press the cartridge upward into the head fully, and then turn the cartridge to the right until it stops.
- Disconnect the 3/8" (9.5 mm) OD line from the 2SR-BW Cartridge to the booster pump inlet at the booster pump. Route the line into a bucket and secure. Plug in power cord.
- Temporarily route a blue line from the 3/8" (9.5 mm) storage tank drain valve to drain. Open inlet valve. Open storage tank drain valve. Drain storage tank until system starts processing water. Close storage tank drain valve.
- Once a solid flow of water has been established, flush 1 gallon (3.8 l). Unplug power cord. Reconnect 3/8" (9.5 mm) OD line to booster pump inlet. Reconnect power between controller and booster pump by joining in-line two (2) -pin male/female electrical connector. Plug in power cord.
- Close both bypass valves.

– Verify storage tank precharge pressure:

- Open both bypass valves.
- Remove power from system by unplugging power cord.
- Close the inlet and both outlet valves.
- Temporarily route a blue line from the 3/8" (9.5 mm) storage tank drain valve to drain. Open storage tank drain valve. Drain storage tank. Close storage tank drain valve. Remove blue line from storage tank drain valve.
- Locate the Schrader® valve and check precharge pressure. The precharge pressure in the storage tank should be 48 – 50 psi (3.3 – 3.4 bar, 0.33 - 0.34 MPa). Adjust precharge pressure in the storage tank to 48-50 psi (3.3 – 3.4 bar, 0.33 - 0.34 MPa) with a source of clean, dry air. See **Figure 3** (page 5).

NOTE: If precharge pressure is found to be very low when initially checked, storage tank was not precharged to the correct pressure in the past, or has lost it's charge. It is advisable to check the precharge again in the very near future, to verify the precharge pressure has not changed. Loss of precharge pressure indicates a leak at the Schrader® valve, bladder and/or tank seal.

- Open inlet valve. Plug in power cord. After a brief delay, the system will automatically start processing water. Allow the storage tank to fill until the booster pump turns off.
- Open both outlet valves.
- Close both bypass valves.

Every Twelve (12) Months

– Sanitize the storage tank and lines:

- Refer to "DISINFECTION" section for sanitization procedure.

– Verify system recovery:

- Temporarily route a blue line from the 3/8" (9.5 mm) storage tank drain valve to drain. Open storage tank drain valve. Drain storage tank until system starts processing water. Close storage tank drain valve.
- Using only 1 graduated cylinder, collect the Reject ONLY flow for 1 minute and record this volume.
- Compare this volume to the volume of reject flow recorded previously. If the volume varies more than +/- 5% from the previous recorded volume, see troubleshooting section for possible cause and remedy. If the correct flow cannot be attained, see "RECOVERY ADJUSTMENT/CALIBRATION" section and perform all steps to recalibrate system.

– Replace the MR-600, MR-600-1 or MR-600F Cartridge:

- Open both bypass valves.
- Remove power from system by unplugging power cord.
- Close the inlet valve.
- Place a bucket under the exhausted MR-600 or MR-600F cartridge to catch any excess water that may spill from the head. Remove the exhausted cartridge by turning the cartridge to the left until it stops and pulling it downward until it is free from its head.
- Remove the outer shrink-wrap and protective cap from the new MR-600, MR-600-1 or MR-600F cartridge.
- Align the lugs on the new cartridge with the slots in the head.
- Holding the head and cartridge firmly, press the cartridge upward into the head fully, and then turn the cartridge to the right until it stops.
- Remove both capillary restrictors temporarily.
- Temporarily route a blue line from the 3/8" (9.5 mm) storage tank drain valve to drain. Open inlet valve. Open storage tank drain valve. Plug in power cord.
- Drain storage tank until system starts processing water (pressurize mode). Once a solid flow of water has been established from the storage tank drain valve, allow the system to process water (in pressurize mode) for the following length of time:

  - MR-600 Cartridge: 3 Hours
  - MR-600-1 Cartridge: 3 Hours
  - MR-600F Cartridge: 30 Minutes

  A continuous stream of water should be present at both the storage tank drain valve and the waste (reject) line. After the specified flushing time has elapsed, unplug power cord.

⚠ WARNING Do not use this product water! It may contain a preservative solution from the RO cartridge and should not be consumed!

- Close storage tank drain valve. Remove blue line from storage tank drain valve. Reinstall capillary tubes.
- Close both bypass valves. Plug in power cord.

– Replace the GS-215RO-H Post Carbon Cartridge:

- Open both bypass valves.
- Remove power from system by unplugging power cord.
- Close the inlet and both outlet valves.
- Temporarily route a blue line from the 3/8" (9.5 mm) storage tank drain valve to drain. Open storage tank drain valve. Drain storage tank. Close storage tank drain valve. Remove blue line from storage tank drain valve.
- Place a bucket under the exhausted GS-215RO-H Cartridge to catch any water that may spill when removing lines or replacing cartridge. Remove lines noting flow direction, then cut the cable ties and remove the cartridge.
- Place new cartridge into cartridge "cradles" in same flow direction as original cartridge. Secure with cable ties provided in cartridge kit.
- Connect inlet line to cartridge port. Connect a temporary section of 3/8" (9.5 mm) OD tubing to the cartridge outlet port and route line into bucket and secure.
- Open inlet valve. Plug in power cord. After a brief delay, the system will automatically start processing water. Once a solid flow of water has been established through the temporary line, flush 1 gallon (3.8 l) or until water is clear.
- Unplug power cord. Remove temporary line and reconnect outlet line to cartridge. Plug in power cord.
- Open both outlet valves.
- Close both bypass valves.

Figure 9. Dimensional Drawing

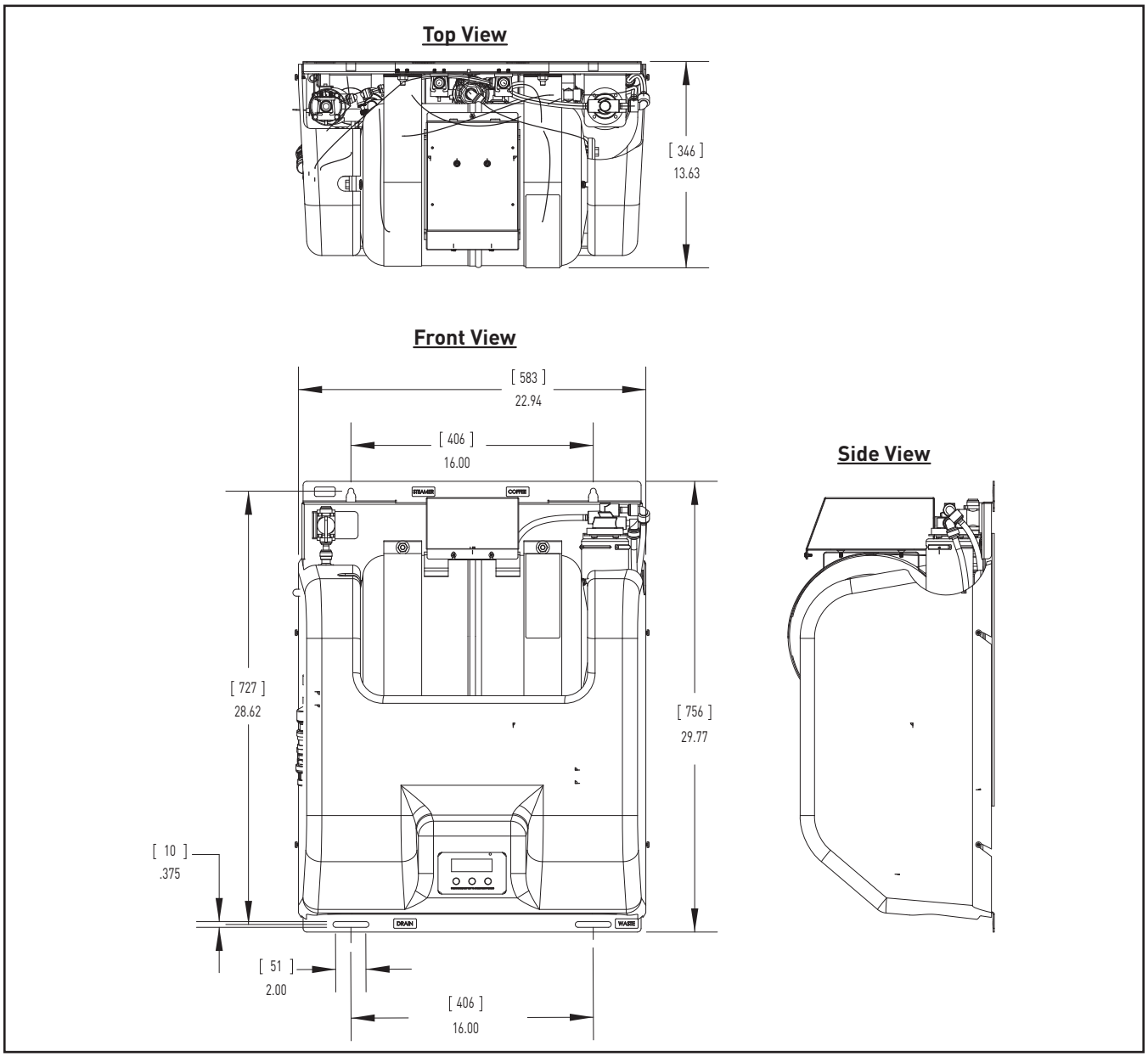
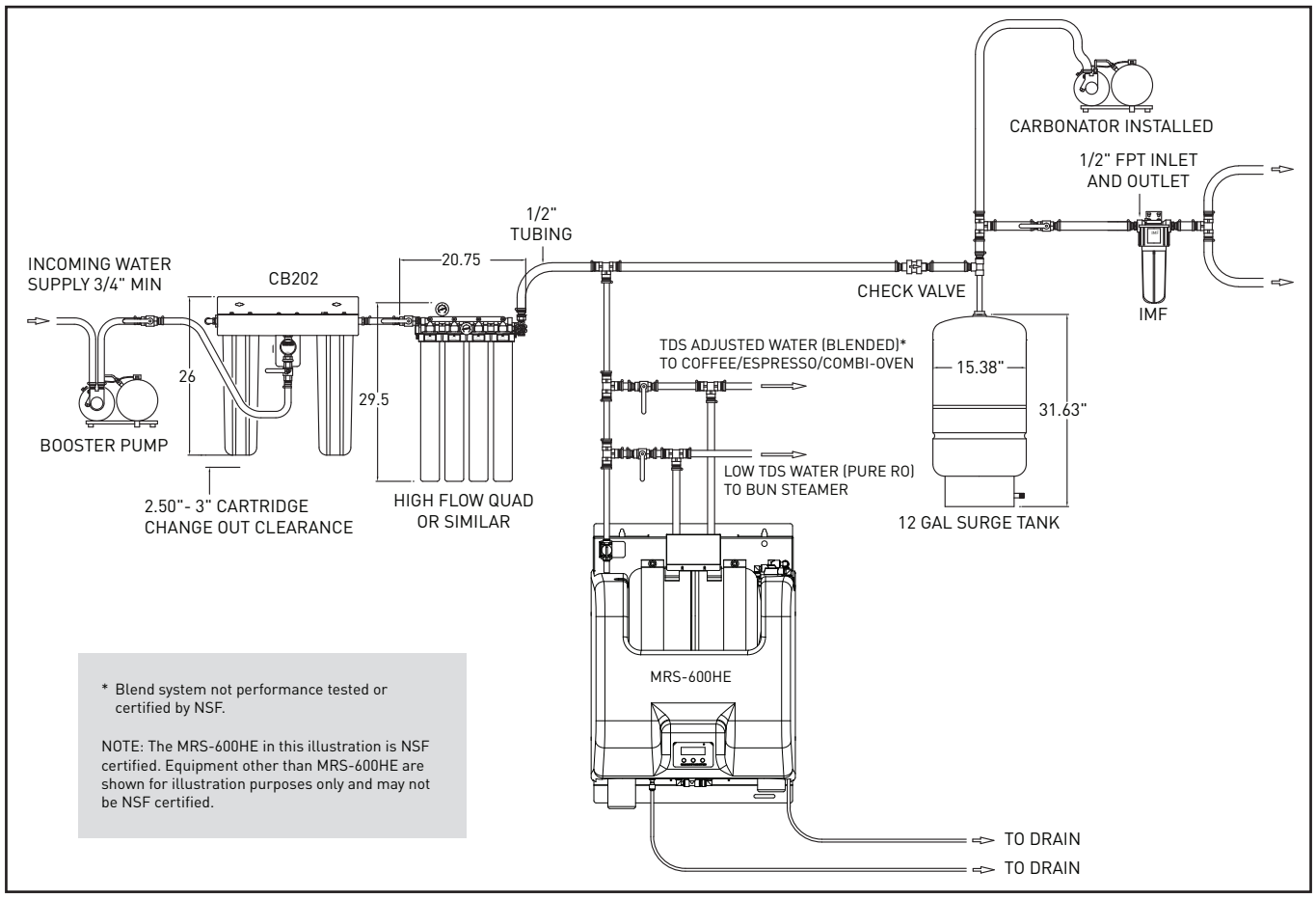


Figure 10. General Installation Arrangement



Check for compliance with state and local laws and regulations.

Do not use with water that is microbiologically unsafe, or of unknown quality without adequate disinfection before or after the system.

Substances reduced are not necessarily in your water. System must be maintained according to manufacturer's instruction, including replacement of filter cartridges.

This system contains a replaceable mineral reduction (RO) module critical for the effective reduction of total dissolved solids.

Product water should be tested periodically to verify that the system is working properly.

This reverse osmosis system contains a replaceable component critical to the efficiency of the system. Replacement of the reverse osmosis component should be with one of identical specifications, as defined by the manufacturer, to assure the same efficiency and containment reduction performance.

Efficiency rating refers to percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate typical daily usage.

Recovery rating refers to percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is bypassed.

System Tested and Certified by NSF International against NSF / ANSI Standard 58 for the reduction of: Total Dissolved Solids (TDS)

LIMITED WARRANTY

COMMERCIAL WATER TREATMENT EQUIPMENT

You have just purchased one of the finest water treatment units made. As an expression of confidence in this product, Pentair Filtration Solutions, LLC ("PFS") offers the following product warranty. This product is warranted against material defects in materials and workmanship to the original end-user when installed in accordance with the PFS specifications. The warranty period commences on the date of purchase and is administered as follows:

For a period of ONE YEAR Replaceable elements (i.e., filter & water treatment cartridges)*
For a period of ONE YEAR The entire system (excluding replaceable elements)

The unit must be used in operating conditions that conform to PFS's recommended guidelines. This warranty will not apply if the unit has been modified, repaired or altered by someone not authorized by PFS.

If a part described above is found to have a material defect in materials or workmanship within the specified warranty period, you should notify Pentair® Everpure technical service at the phone number listed below. Any part found materially defective within the terms of this warranty will be repaired or replaced (at PFS's discretion) by your local dealer or Pentair Everpure technical service. You pay only freight from our factory and local dealer charges. Any item repaired or replaced pursuant to this warranty will be covered under the original warranty terms of the system.

PFS is not responsible for damage caused by accident, fire, flood, freezing, Act of God, misuse, misapplication, neglect, oxidizing agents (such as chlorine, ozone, chloramines and other related components), alteration, installation or operation contrary to our printed instructions, or by the use of accessories or components which do not meet PFS's specifications. Refer to the specifications section in the Installation and Operating manual for approved application parameters.

Our product performance specifications are furnished with each water treatment unit. TO THE EXTENT PERMITTED BY LAW, EVERPURE DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE; TO THE EXTENT REQUIRED BY LAW, ANY SUCH IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE PERIOD SPECIFIED ABOVE FOR THE ENTIRE WATER TREATMENT UNIT.

As a manufacturer, we do not know the characteristics of your water supply or the purpose for which you are purchasing this product. The quality of water supplies may vary seasonally or over a period of time, and your water usage rate may vary as well. Water characteristics can also differ considerably if this product is moved to a new location. For these reasons, we assume no liability for the determination of the proper equipment necessary to meet your requirements, and we do not authorize others to assume such obligations for us. Further, we assume no liability and extend no warranties, express or implied, for the use of this product with a non-potable water source or a water source which does not meet the conditions for use described in the owner's guide or performance data sheet for this product.

OUR OBLIGATIONS UNDER THIS WARRANTY ARE LIMITED TO THE REPAIR OR REPLACEMENT (AT PFS'S DISCRETION) OF THE FAILED PARTS OF THE WATER TREATMENT UNIT, AND WE ASSUME NO LIABILITY WHATSOEVER FOR DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, GENERAL OR OTHER DAMAGES.

Some states do not allow the exclusion of implied warranties or limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Similarly, some states do not allow the exclusion of incidental or consequential damages, so the above limitation or exclusion 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.

*Warranty applies to material defects in materials & workmanship only.

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