HAGUE
Quality Water International®



Model 97
MAXIMIZER®

Version 1.4

Owner's Manual & Installation Guide

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15 Year Limited Warranty

To Whom Warranty Is Extended

This warranty is issued to the original owner at the original location site and is not transferable to other sites or to subsequent owners of the system.

The warranty begins on the date of purchase, or 60 days from the date of manufacture if the date of purchase cannot be verified.

Coverage

This limited warranty covers the Hague Quality Water International system delivered to the original owner at the original location when the system is purchased for personal, family, or household use. It is intended to cover defects occurring in workmanship or materials or both.

Warrantor's Performance and Length of Limited Warranty

Hague Quality Water International warrants that upon receipt from the owner of any Hague Media Tank, Brine Tank, or Main Control Valve found to be defective in material or workmanship, Hague will repair or replace the defective item, at no charge for that item, for 15 YEARS from date of installation. Media is not warranted. The warranty period for any replacement will run for the balance of the original warranty length. If industry standards, product improvements, or product obsolescence prohibit Hague from furnishing an identical model replacement and repair is not available, Hague reserves the right to provide a replacement product of comparable capacity and functionality; however, the owner will be charged for the additional value of the replacement, if applicable.

Hague Quality Water International further warrants that upon receipt from the owner of any other mechanical or electronic parts, and fine mesh polystyrene resin, which are found to be defective in material or workmanship, Hague will repair or replace the defective parts, at no charge for those parts for 5 YEARS from date of installation.

All defective parts must be returned, along with the equipment serial number and date of original installation, to Hague Quality Water International PREPAID, and replacement parts will be returned by Hague Quality Water International to the original owner FREIGHT COLLECT.

Further Exclusions and Limitations on Warranty

THERE ARE NO WARRANTIES OTHER THAN THOSE DESCRIBED IN THIS WARRANTY INSTRUMENT.

This warranty does not cover any service call or labor costs incurred with respect to the removal and replacement of any defective part or parts. Hague Quality Water International will not be liable for, nor will it pay service call or labor charges incurred or expended with respect to this warranty.

In the event the water supply being processed through this product contains sand, bacterial iron, algae, sulfur, tannins, organic matter, or other unusual substances, then, unless the system is represented as being capable of handling these substances in the system specifications, other special treatment of the water supply must be used to remove these substances before they enter this product. Otherwise, Hague Quality Water International shall have no obligations under this warranty.

This warranty does not cover damage to a part or parts of the system from causes such as fire, accidents, freezing, or unreasonable use, abuse, or neglect by the owner.

This warranty does not cover damage to a part or parts of the system resulting from improper installation. All plumbing and electrical connections should be made in accordance with all local codes and the installation instructions provided with the system. The warranty does not cover damage resulting from use with inadequate or defective plumbing; inadequate or defective water supply or pressure; inadequate or defective house wiring; improper voltage, electrical service, or electrical connections; or violation of applicable building, plumbing, or electrical codes, laws, ordinances, or regulations.

THIS WARRANTY DOES NOT COVER INCIDENTAL, CONSEQUENTIAL, OR SECONDARY DAMAGES.

ANY IMPLIED WARRANTIES ON THE PRODUCT DESCRIBED IN THIS WARRANTY WILL NOT BE EFFECTIVE AFTER THE EXPIRATION OF THIS WARRANTY.

No dealer, agent, representative or other person is authorized to extend or expand this limited warranty.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and 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.

Claims Procedures

Any defects covered by this warranty should be promptly reported to:

Hague Quality Water International
1900 Prospect Court
Appleton, WI, 54914

When writing about the defects, please provide the original owner's name, telephone number, and original address, serial number and model number of the product, and date of purchase (this information should be listed in General Information at the front of this manual). No warranty coverage will be provided if the claimant is unable to provide proof of purchase upon request.

Product registration is available but not required to obtain any of the warranty coverage described herein. Please register your product at haguewater.com/warranty-registration. Scan the QR code to get started.

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General Information



Congratulations on choosing a superior Hague water treatment appliance! Soon you and your family will be enjoying clean, clear water. Use this guide to attain the maximum benefit from your appliance. As an owner, you may find the first few pages to be the most helpful in solving your needs. If you have trouble with the operation of your appliance, see Troubleshooting in the back of this manual or contact your independent Hague dealer.

Warning: This appliance must be applied to potable water only. It is recommended that an independent Hague dealer install and maintain this appliance.

Note: The manufacturer reserves the right to make specification and product changes without prior notice.
This manual is for installation, operation, and maintenance of the following water conditioning appliance model(s):

- **97MM**
- **97MMB1**
- **97MMP1**

If your specific model is not listed here, your appliance has been customized to solve additional water conditioning problems that you may have. Your dealer will be happy to explain any additional special features.

For Owner's Reference

Date of Installation:	
Model Number:	
Serial Number[1]:	
Installer's Signature:	
Dealership Name:	
Dealership Address:	
Dealership Phone Number:	
Hardness:	
Iron:	
pH:	
Water Pressure:	
Water Temperature:	
Returned Warranty Card Date[2]:	

[1] The serial number is located on the left front support panel.

[2] Visit https://www.haguewater.com/warranty-registration/ and complete the form to register the warranty.

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Getting Maximum Efficiency From the Appliance

To achieve the maximum benefit and performance from this appliance, familiarize yourself with this manual and the appliance.

1. The salt level should always be at least 1/3 full. Refill the salt when the level drops below the water level in the brine cabinet. A resin cleaner can be used on a monthly basis. Clean white pellet, cube-style, or solar salt is recommended. Do not use rock salt.
   Caution: Do not mix different types of salt.

2. You may use a salt substitute (such as potassium chloride) in place of water conditioner salt. A Hague dealer should be contacted before a switch is made to a salt substitute. If potassium chloride is used in place of salt, the technician must select the potassium option during the programming of the controller. **(see Service Settings)**
   Caution: Do not use potassium chloride if there is iron and/or manganese in the water.

3. Should your electricity be off for any reason, check your controller for the correct time and reset as necessary. ***(see Touch Screen Controller - Customer Settings)***

4. Program the appliance to regenerate at a time when the water is not being used. ***If there is more than one appliance, allow two hours between each regeneration.***

5. If dirt, sand, or large particles are present in the water supply, the appropriate Hague filter can eliminate this problem.

6. The appliance may be disinfected with 5.25% sodium hypochlorite, which is the active ingredient in household chlorine bleach. To disinfect the appliance, add 4.0 fluid ounces (120 mL) of chlorine bleach solution to the brine well of the brine tank. The brine tank should have water in it. Start a manual regeneration. ***Warning: Do not mix bleach with commercial resin cleaners since a dangerous chemical reaction may occur.***

7. Protect the appliance, including the drain line, from freezing.

8. The bypass valve (attached to the main control valve) enables you to bypass the appliance if any work is being performed on the appliance, well pump, or plumbing. Use Bypass mode also for watering plants or lawns with untreated water. To bypass, turn the blue knob counterclockwise until it hits the stop; turn it clockwise to restore service. ***(see Bypass Valve Overview)***

9. Before putting the appliance back in service after work has been performed, turn on the nearest cold water tap until water runs clear.

10. Adhere to all operational, maintenance, and placement requirements.

11. Inspect and clean the brine tank and air check/draw tube assembly annually or when sediment is present in the brine tank.

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Checklist Before You Begin *(Refer to this checklist before installation)*

- ❑ **Water Quality** - If the water supply contains sand, sulfur, bacteria, iron bacteria, tannins, algae, oil, acid, or other unusual substances, consider pre-treating the water to remove these contaminants before the water supply enters the appliance, unless the appliance is represented as being capable of treating these contaminants in its specifications.

  The appropriate Hague Water Filter can address these water shortcomings.

- ❑ **Iron** - A common problem found in many water supplies is iron. It is important to know what type of and how much iron is in the water supply.

Iron Type	Description
Ferrous Iron* *(sometimes called clear water or dissolved iron)*	Only type of iron that can be treated with a water softener.
Ferric Iron	Insoluble and the particles can eventually foul a resin bed. It should be filtered out before the water reaches the softener.
Organic Iron or Bacterial Iron	Attached to other organic compounds in the water. Additional treatment is needed to remove this type of iron.
Colloidal Iron	Not dissolved, yet stays in suspension. A softener cannot remove this type of iron.
** If the water supply contains ferrous iron, a commercially available resin bed cleaner should be used every six months. Follow the instructions on the container.*	

- ❑ **Water Pressure** - Not less than 20 psi or greater than 80 psi (1.4–5.5 bar) constant. If water pressure exceeds 70 psi (4.8 bar), a pressure regulator is recommended.

- ❑ **Water Supply Flow Rate** - A minimum of 2.4 gallons (9 liters) per minute or equal to the backwash flow rate of the particular model is recommended. For the purposes of plumbing sizing, only the rated service flow rate and corresponding pressure loss may be used. Prolonged operation of a water conditioner at flow rates exceeding the tested service flow rate may compromise performance.

- ❑ **Water Temperature** - Not less than 40°F or greater than 120°F (4°C - 49°C).

- ❑ **Drain** - Connect the appliance to an appropriate drain, such as a floor drain or washer drain that will comply with all local and state plumbing codes. To prevent back-siphoning, provide an adequate air gap or a siphon break. ***(see Installation Steps)***

- ❑ **Electricity** - The transformer supplied is for a standard 115 volt, 60-cycle AC outlet for locations in North America or 220 volt, 50-cycle AC outlet for locations outside North America.

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Precautions

Do

1. Comply with all state and local, building, plumbing, and electrical codes.
2. Install the appliance before the water heater.
3. Install the appliance after the pressure tank on well-water installations.
4. Install a pressure-reducing valve if the inlet pressure exceeds 70 psi (4.8 bar).
5. Examine the inlet line to ensure water will flow through it freely and that the inlet pipe size is sized correctly. For well water with iron, the recommended minimum inlet pipe size 3/4-inch I.D. and for municipal water the recommended minimum inlet pipe size is 1/2-inch I.D.
6. Install a gravity drain on the cabinets.
7. Secure the drain line on the appliance and at the drain outlet. ***(see Installation Steps)***
8. Allow a minimum of 8 to 10 feet (2.4 to 3.0 m) of 3/4-inch pipe from the outlet of the appliance to the inlet of the water heater.

Do Not

1. Do not install if checklist items are not satisfactory. ***(see Checklist Before Installation)***
2. Do not install if the incoming or outlet piping water temperature exceeds 120°F (49°C). See Water Conditioner Specifications.
3. Do not allow soldering torch heat to be transferred to valve components or plastic parts when using the optional copper adapters.
4. Do not over tighten the plastic fittings.
5. Do not plumb the appliance against a wall that would prohibit access to plumbing. ***(see Installation Steps)***
6. Do not install the appliance backward. Follow the arrows on the inlet and outlet.
7. Do not plug the transformer into an outlet that is activated by an On/Off switch.
8. Do not connect the drain and the overflow (gravity drain) lines together.
9. Do not use to treat water that is micro-biologically unsafe or of unknown quality without adequate disinfection before or after the appliance.
10. Do not allow your appliance or drain line to freeze.

Note: A bacteriostasis claim does not mean that these devices will make micro-biologically unsafe water safe to consume or use.

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Installation Steps

Step 1 Prepare the Placement Area

A. Make sure the placement area is clean.

B. Turn off the electricity and water supply to the water heater. For gas water heaters, turn the gas cock to “Pilot.”

C. Examine the inlet plumbing to ensure that the pipe is not plugged with lime, iron, or any other substance. Clean or replace plugged plumbing.

D. Make sure the inlet/outlet and drain connections meet the applicable state and local codes.

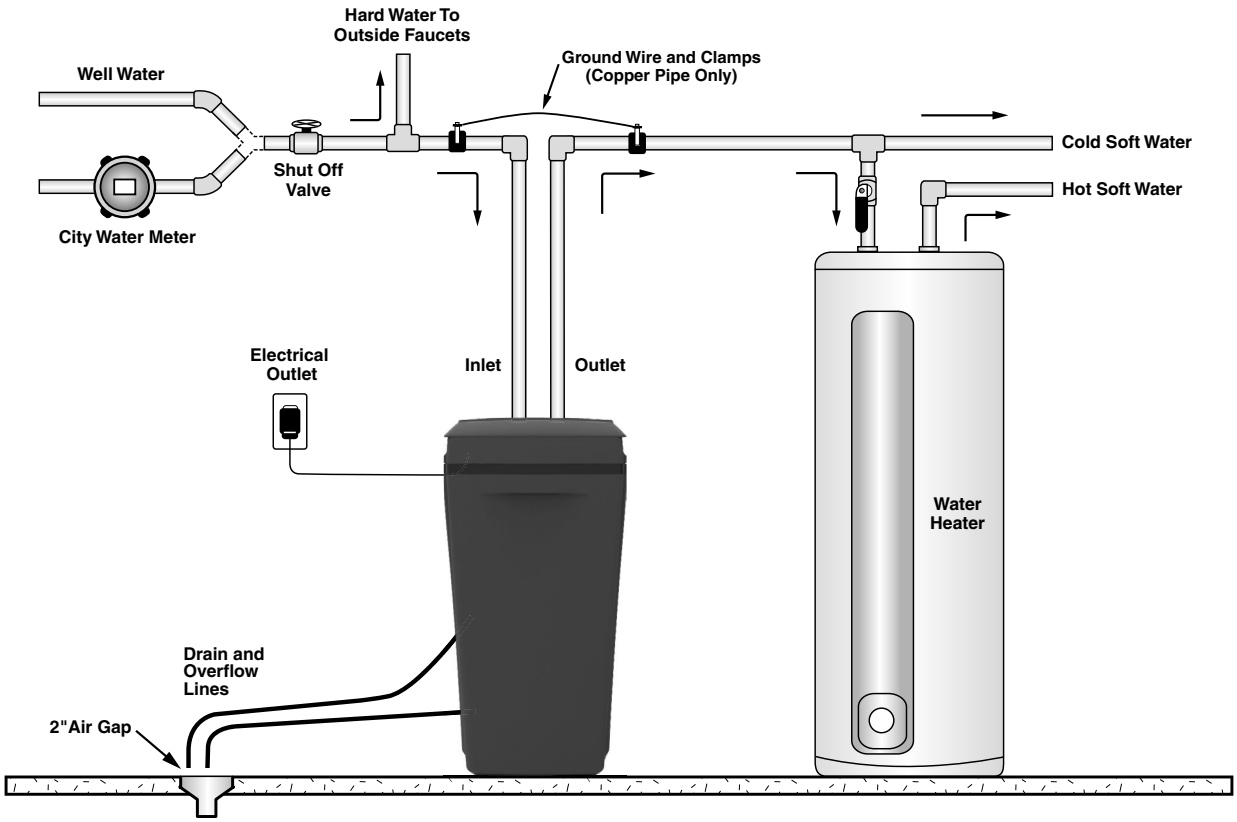
E. Check the arrows on the bypass valve to ensure that the water flows in the proper direction. ***(see Bypass Valve Overview)*** ***Caution: Do not plumb the appliance in backward.***

F. Place the appliance in the desired location using ***Figure 1*** as a guide. The diagram in Figure 1 applies to basement, slab, crawl space, and outside installations.

G. For most installations, install the appliance after the pressure tank and any water filter appliance or water meter and before the water heater unless otherwise recommended. When installing any additional filters, such as a carbon filter for well water, place the filter after any water conditioning appliance unless otherwise recommended.
Water Heaters: If less than 10 feet (3 meters) of pipe connects the water treatment appliance(s) to the water heater, install a check valve between the water treatment appliance and the water heater as close to the water heater as possible. Ensure that the water heater has an adequately rated temperature and pressure safety relief valve.

H. For outside installations, the appliance should be enclosed so it is protected from the weather.

Figure 1: Appliance Placement



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Installation Steps

Step 2 Turn Off Water Supply

A. Turn off the water supply.

B. Open the hot and cold water taps to depressurize the lines.

Step 3 Connect Water Lines

A. Connect water lines in compliance with all state and local, building, plumbing, and electrical codes.

Step 4 Connect Gravity Overflow Connection

The overflow line drains away excess water should the cabinet fill with too much water or the appliance malfunction.

A. Check that the overflow elbow is in the down position.

B. Connect 1/2-inch I.D. tubing (size cannot be reduced) between the overflow fitting and a floor drain, laundry tub, or other suitable waste receptor. This tubing is not supplied with the appliance. Ensure that the overflow line ends at a drain that is at least 3 inches (8 cm) lower than the bottom of the overflow fitting. Maintain a minimum 2-inch (5 cm) air gap between the overflow line and the flood level rim of the waste receptor to prevent back-siphoning. The gravity line cannot be run overhead.

Step 5 Connect Drain Line

The drain line carries away the backwash water as part of the regeneration cycle.

A. Connect the drain line to the drain end cap with a minimum 1/2-inch I.D. tubing (not supplied). The size cannot be reduced.
Note: If the drain line is 25 feet (7.6 meters) or longer, increase the drain line to 3/4-inch I.D. The end of the drain line must be equal to or lower in height than the control valve.
Caution: The drain line must not be kinked, crimped, or restricted in any way.

B. Route the drain line to a floor drain, laundry tub, or other suitable waste receptor. Maintain the same 2-inch (5 cm) air gap as with the overflow line. This drain line should make the shortest run to the suitable drain.

C. The drain line may be elevated up to 8 feet (2.4 meters) from the discharge on the appliance as long as the water pressure in your system is 40 psi (2.8 bar) or more.

Step 6 Flush Lines

A. Place the appliance in the Bypass position.

B. Turn on the main water supply.

C. Open the nearest cold water faucet to flush the plumbing of any excess soldering flux, air, or any other foreign material.

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Installation Steps

Step 7 Check for Leaks

A. Close all faucets.

B. Check all lines and connections for leaks. If leaks are found:

1. Turn off the main water supply.
2. Open a cold water faucet to depressurize the lines.
3. Close the faucet to eliminate any siphoning action.
4. Repair all leaks.
5. Turn on the water supply.
6. Place the bypass in the Service position to slowly fill the media tank.
7. Open a cold water faucet to purge air out of the media tank.
8. Close the faucet and recheck for leaks.

Step 8 Plug in the Transformer

A. Connect the transformer power cord to the back of the controller.

B. Plug the transformer into an appropriate outlet.

C. Ensure that the outlet selected is not operated by an On/Off switch.

Step 9 Set Up the Controller

A. Program the appliance controller. ***(see Setting Touch screen Controller)***

Step 10 Add Water to the Brine Cabinet

A. Add 2 gallons (7.6 L) of water to the brine cabinet. After the first regeneration, the appliance will automatically refill the correct amount of water into the brine cabinet.

B. Ensure that the bypass is in Service position.

C. Ensure that the salt dosage is set as recommended for the application.

D. Initiate a manual regeneration ***(see Setting Touch screen Controller)*** and inspect for proper operation. Allow the appliance to draw all the water out of the brine cabinet until the air check/draw tube sets (8 - 10 minutes).

E. Press the Regenerate button to advance to the Brine Refill position. Let the tank fill with the proper amount of water. The controller will then step the main control valve to the Home position.
Note: This initial startup is the only time you will add water to the brine cabinet. Do not add water at any other time.

Step 11 Fill Brine Cabinet With Salt

A. Fill the brine cabinet with salt. Use clean white pellet, cube-style, or solar salt. Do not mix pellet with solar salt.
Note: Always keep the salt level above the water level. For convenience, completely fill the tank when refilling with salt.

B. After you add salt, including adding it after the tank has run out of salt, wait two hours for saturated brine before starting any regeneration.
Caution: Use of potassium chloride when iron and/or manganese are present in the raw water supply is not recommended.

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Installation Steps

Step 12 Complete the Installation

A. Ensure that the bypass is left in the Service position. ***(see Bypass Valve Overview)***

B. Ensure the water supply is on.

C. Open the inlet valve and turn on the electricity to the water heater. For gas water heaters, return the gas cock to "On."

D. Open a cold water tap and allow the appliance to flush for 20 minutes or until approximately 72 gallons (270 liters) have passed through the appliance. This procedure is required to meet NSF compliance. Verify the flow rate on the controller, which indicates water flow. ***(see Figure 3)***

E. Adjust the blending valve if it is being used. ***(see Blending Dial Overview)***

F. Test the water at the test port to verify soft water.

G. Place the cover on the cabinet.

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Bypass Valve Overview

The bypass valve can isolate the appliance should the appliance malfunction or leak. It can also permit the use of untreated water for watering plants, shrubs, or lawns.

The bypass valve is attached to the main control valve. **See Figure 3**. To engage the bypass valve, locate the blue knob on top of the bypass valve. Turn the knob counterclockwise until it hits the stop. The appliance will be bypassed and all water to the home is raw, untreated water. To prevent untreated water from entering the home, water should not be used inside the home when the appliance is in Bypass mode. Ensure that the appliance is returned to Service mode when the appliance is repaired or the use of untreated water is complete by turning the blue knob clockwise until it hits the stop.

Blending Dial Overview

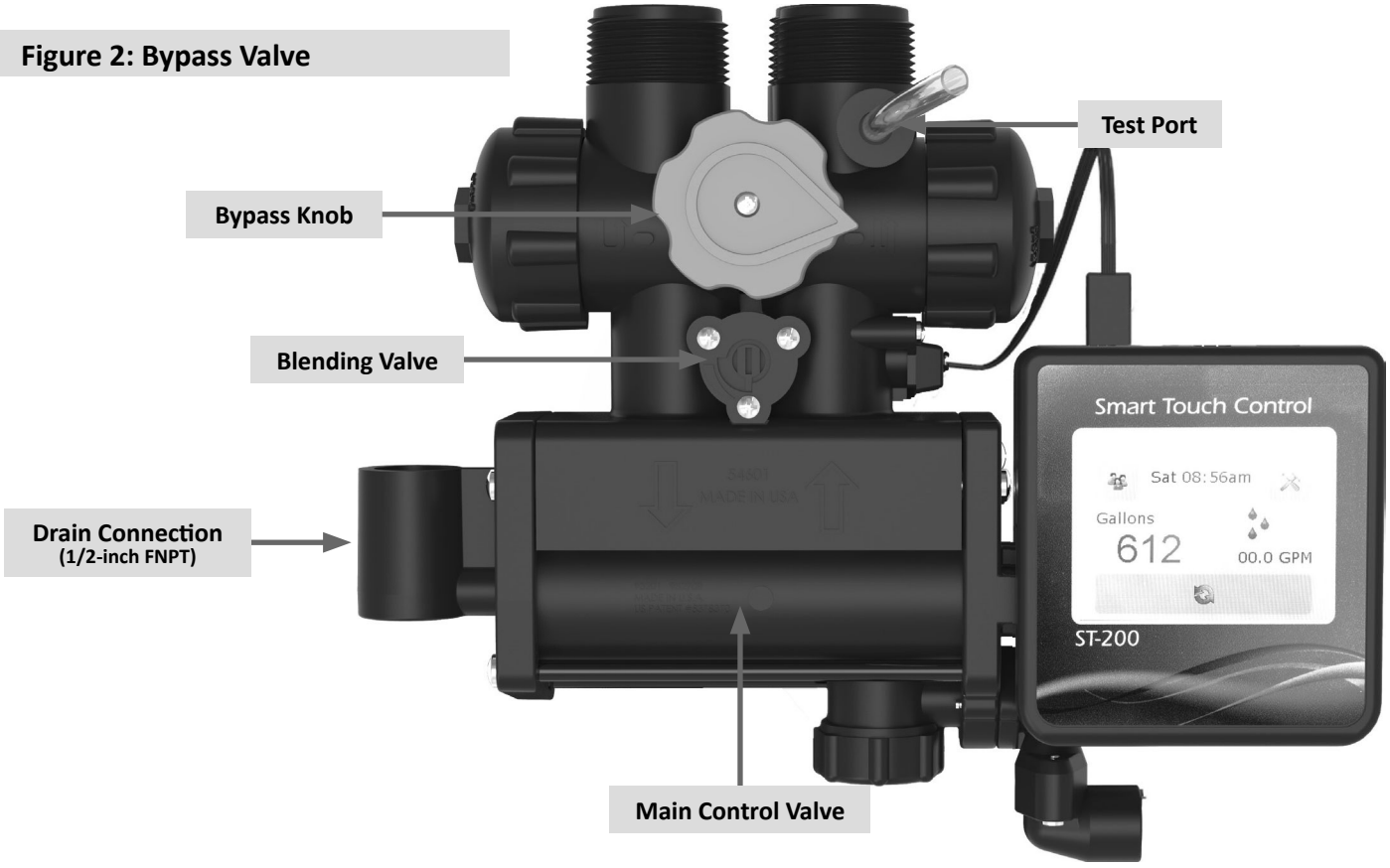
In some situations, the blending valve may be used to decrease water softness. The amount of hardness blended back into the water line is determined by the hardness of the incoming water and the setting of the blending valve. Where extremely hard water is present, the blending valve may only need to be "cracked" open. Where the incoming water has relatively low levels of hardness, the blending valve will need to be opened further.

The blending valve is located between the input and output connections on the top of the bypass valve. (**see Figure 2)**. It is adjusted by placing a flat blade screwdriver in the slot provided and turning clockwise to open. Total movement of the blending valve from full closed to full open is 1/4 revolution. Precise setting of the blending valve will require "trial and error" testing. The initial setting should be conservative. Because of the blending valve's ease of access and adjustment, the user can increase or decrease the setting according to their preference over a period of time.

Use of the blending valve is not recommended where objectionable concentrations of ferrous iron or sediment are present. Because the blending valve is mixing "raw" water with softened, any ferrous iron or sediment in the "raw" water will also be blended and reintroduced into the softened water line.

Note: If the appliance is installed for barium and/or radium reduction, the blending valve must remain in the fully closed position at all times.

Figure 2: Bypass Valve



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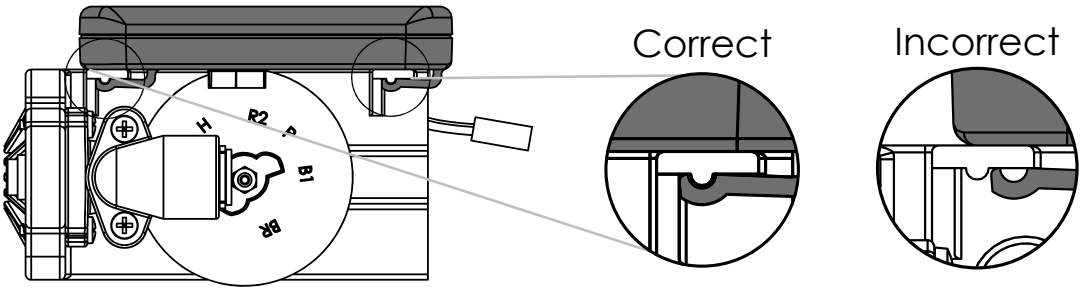
Setting the Touch Screen Controller

This appliance features a touch screen controller with a color screen display. The controller can be used to view the appliance's status, perform regenerations, and change settings. An independent Hague dealer should set the Service Settings during the installation of the appliance.

Figure 3: Smart Touch Controller



Note: Ensure that the bottom of the controller is firmly locked onto the four tabs on the top of the drive end cap assembly.





Button Function

1. "OK" Button - Press after information is added and move to next screen.
2. "Back" Button - Navigates to the previous screen.
3. "Clr" Button - Resets all values to 0 and/or default value.
4. "Esc" Button - Escapes to the main menu.
5. "day" Button - Press each time to advance day when applicable.
6. "AP" Button - Toggles time between AM/PM when applicable.

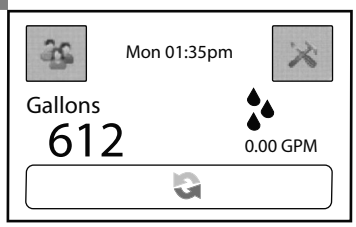
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Service Settings

To program Service Settings on the controller, tap twice on the screen to bring up the “Main Menu”. Follow the following steps to set the Smart Touch controller in the Service Settings.

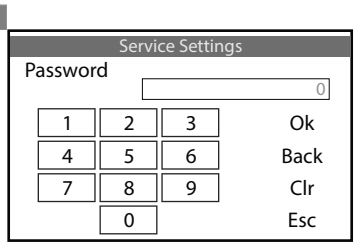
Note: The Service Settings must be set before the Customer Settings.

1



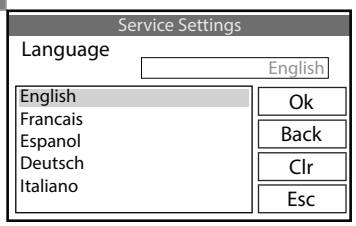
Main Menu
Tap “Service Settings”

2



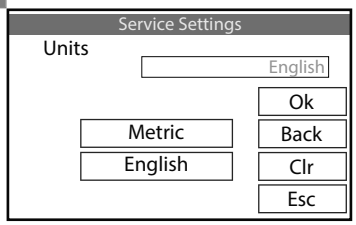
Password
Enter the password
“OK” to continue

3



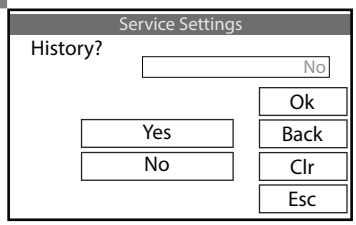
Language
Select the desired language
(English, Français, Español, Deutsch, Italiano)
“OK” to continue

4



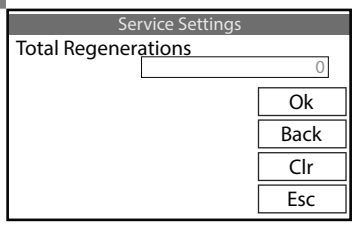
Units
Select units of measure
(Metric or English)
“OK” to continue

5



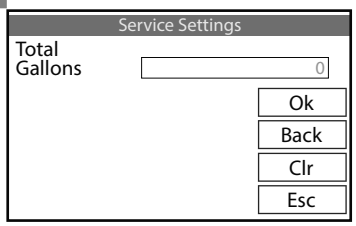
History?
Option to show history
(Yes or No)
(see History in next section)
“OK” to continue

6



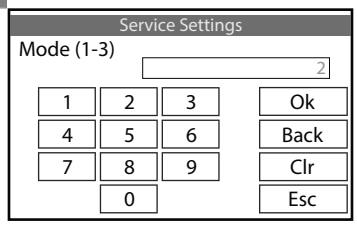
Total Regenerations
Displays number of regenerations
(For Reference Only)
Value does reset
“OK” to continue

7



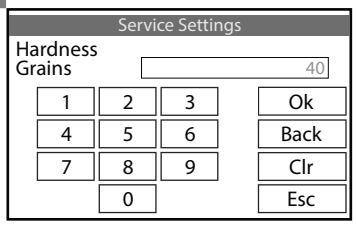
Total Gallons
Displays number of gallons
that has passed through the unit.
(For Reference Only)
Value does reset
“OK” to continue

8



Mode (1-3)
Enter operating mode
(1 to 3)
(see Operating Modes section)
“OK” to continue

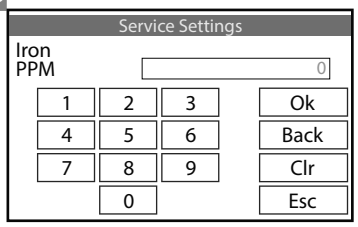
9



Hardness Grains
Enter Hardness test results
(1 to 199 Grains) or
(00000 to 3999 mg/L)
“OK” to continue

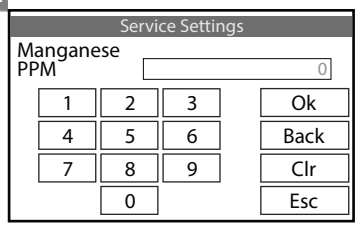
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10



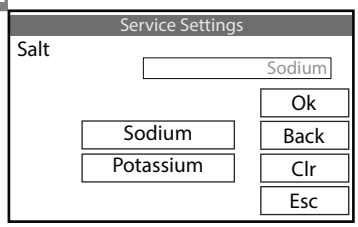
Iron ppm
Enter Iron test results
(0 to 99 ppm (mg/L))
"OK" to continue

11



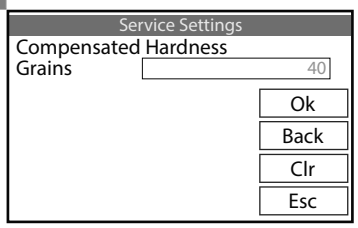
Manganese ppm
Enter Manganese test results
(0 to 99 ppm (mg/L))
"OK" to continue

12



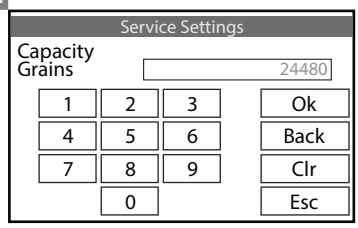
Salt
Select Regenerant
(Sodium or Potassium)
"OK" to continue

13



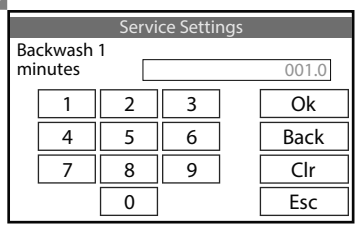
Compensated Hardness Grains
Automatically calculated
"OK" to continue

14



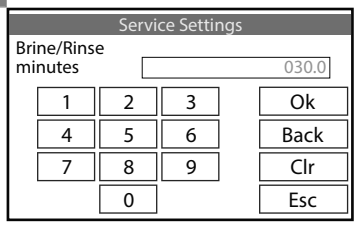
Capacity Grains
The desired capacity number
(52 to 9999 Grains) or
(788 to 6999 gm)
"OK" to continue

15



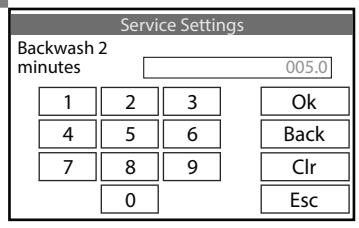
Backwash 1 Minutes
First backwash cycle duration
Preset - 001.0
(0 to 999.9)
"OK" to continue

16



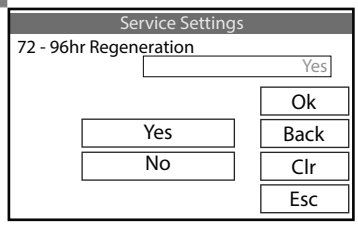
Brine/Rinse Minutes
Brine and rinse cycle duration
Preset - 030.0
(0 to 999.9)
"OK" to continue

17



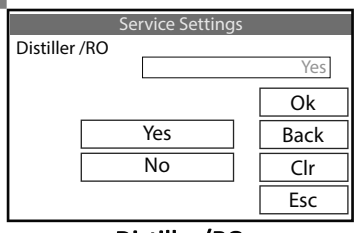
Backwash 2 Minutes
Second backwash cycle duration
Preset - 005.0
(0 to 999.9)
"OK" to continue

18



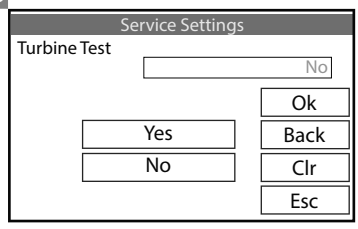
72-96hr Regeneration
Force regeneration setting
(Yes or No)
(see Operating Modes section)
"OK" to continue

19



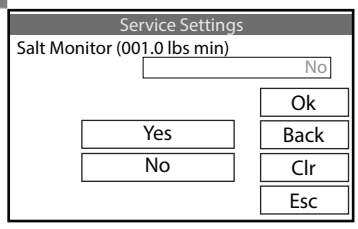
Distiller/RO
Yes, if distiller or RO is in use
(Yes or No)
"OK" to continue

20



Turbine Test
Used for advanced diagnosis
(Yes or No)
"OK" to continue

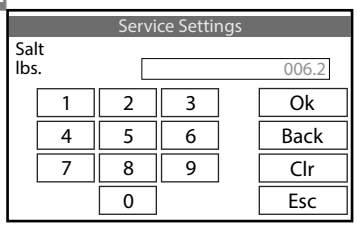
21



Salt Monitor
Optional salt monitor in use
(Yes or No)
"OK" to continue

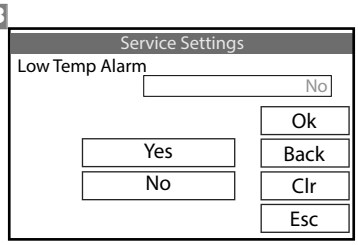
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22



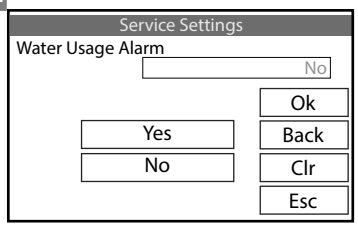
Salt lbs.
Amount of salt for each regeneration.
Preset - 006.2
(1.0 to 80.0 lbs.)
(0.45 - 36.99 kg)
"OK" to continue

23



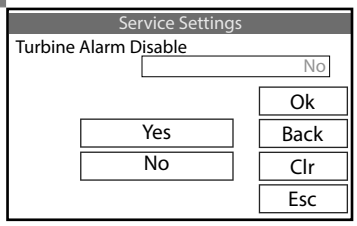
Low Temp Alarm
Detects low ambient temperature
(Yes or No)
"OK" to continue

24



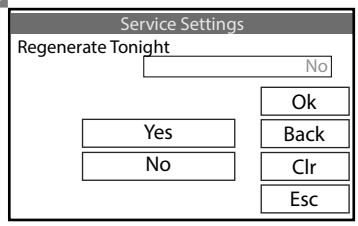
Water Usage Alarm
Detects prolonged non-stop
water flow
(Yes or No)
"OK" to continue

25



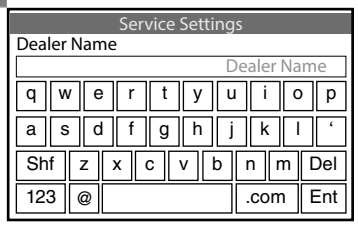
Turbine Disconnect Alarm
Detects disconnected sensor wire
(Yes or No)
"OK" to continue

26



Regenerate Tonight
Set to regenerate tonight
(Yes or No)
"OK" to continue

27



Dealer Name
Enter the
dealership/business name
"Ent" to continue

28



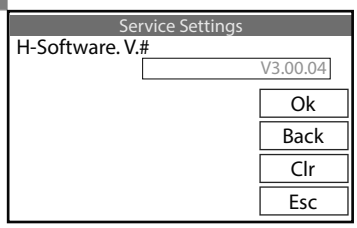
Dealer Phone Number
Enter the dealership/business
phone number
"Ent" to continue

Service Settings - History

History - is an optional set of menus that acts as a clipboard for storing the history of water chemistry, total regenerations, amount of water to pass through the unit, unit model number, and other settings. The history can be used for diagnosis purposes or just for reference. History settings DO NOT affect operation.

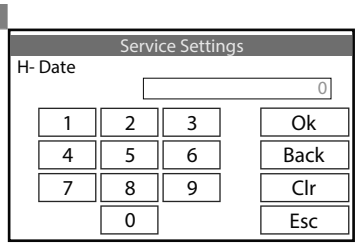
When you select "Yes" in the history screen the following screens will be available. Take notice of the "H-" prefix to signify that you are viewing the history.

1



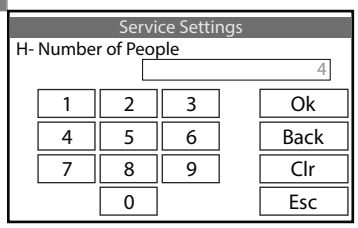
H-Software. V.#
Software version number
(For Reference Only)
"OK" to continue

2



H- Date
Enter Installation Date
Format - MMDDYY
(000000 to 999999)
"OK" to continue

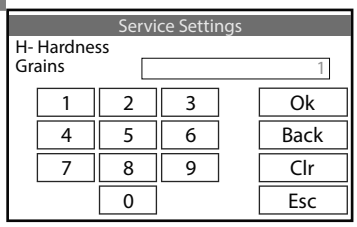
3



H-Number of People
Enter number of
people in the household
(1 to 50)
"OK" to continue

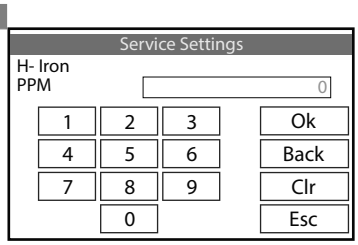
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4



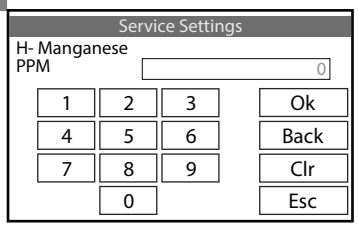
H-Hardness grains
Enter hardness test results
(1 to 199 ppm (mg/L))
"OK" to continue

5



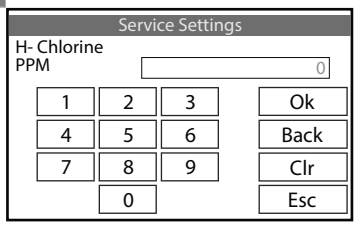
H-Iron ppm
Enter Iron test results
(0 to 99 ppm (mg/L))
"OK" to continue

6



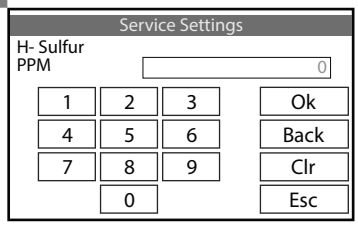
H-Manganese ppm
Enter Manganese test results
(0 to 99 ppm (mg/L))
"OK" to continue

7



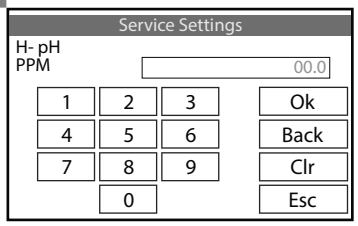
H-Chlorine ppm
Enter Chlorine test results
(0 to 99 ppm (mg/L))
"OK" to continue

8



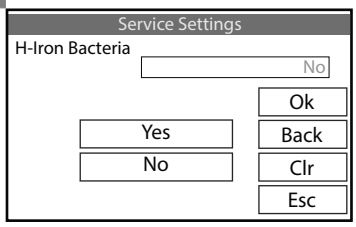
H-Sulfur ppm
Enter Sulfur test results
(0 to 99 ppm (mg/L))
"OK" to continue

9



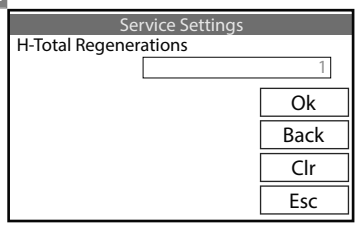
H-pH ppm
Enter pH test results
(0 to 99.9)
"OK" to continue

10



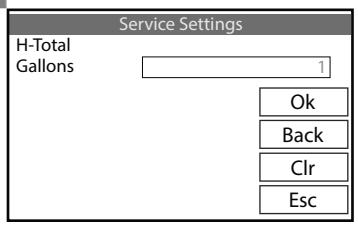
H-Iron Bacteria
Is Iron Bacteria present
(Yes or No)
"OK" to continue

11



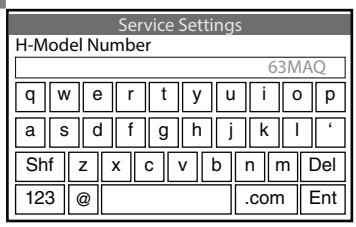
H- Total Regenerations
Displays number of regenerations
Value does not reset
(For Reference Only)
"OK" to continue

12



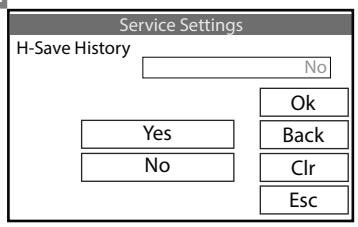
H- Total Gallons
Number of gallons that
has passed through the unit.
Value does not reset
(For Reference Only)
"OK" to continue

13



H-Model Number
Enter Model Number
(00AAA to 99ZZZ)
"Ent" to continue

14



H- Save History
Choose to save history
(Yes or No)
"OK" to continue

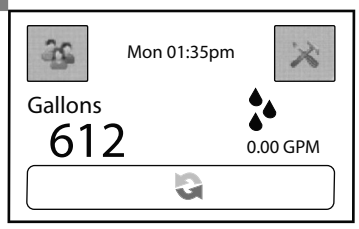
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Customer Settings

To program Customer Settings on the controller, tap twice on the screen to bring up the “Main Menu”. Follow the following steps to set the Smart Touch controller in the Customer Settings.

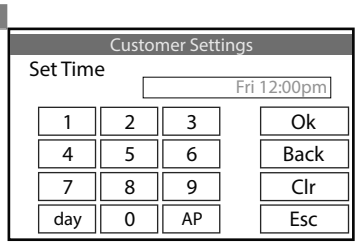
Note: The Service Settings must be set before the Customer Settings.

1



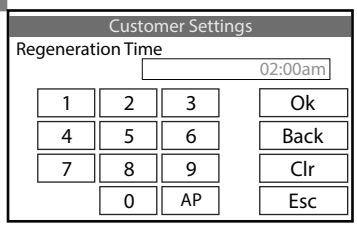
Main Menu
Tap “Customer Settings”

2



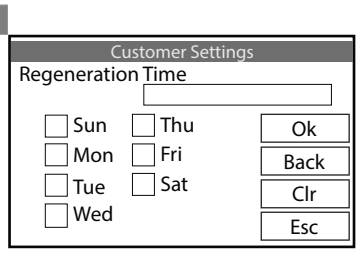
Set Time
Enter day, time, & AM/PM
Tap “day” to change day of the week
Tap “AP” for AM/PM.
(hh:mm)
“OK” to continue

3



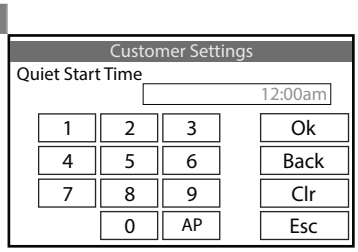
Regeneration Time
Enter desired regeneration time
Enter time & AM/PM
Tap “AP” for AM/PM.
(hh:mm)
“OK” to continue

4



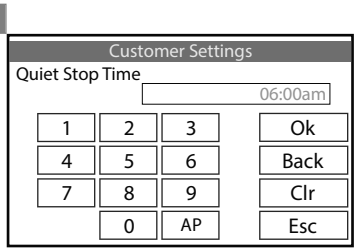
Regeneration Time
Mode 1 & Days of Week Only
(see Operating Modes section)
“OK” to continue

5



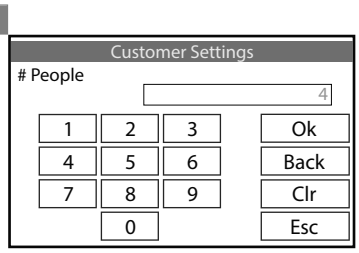
Quiet Start Time
Enter silent mode.
Enter time & AM/PM
Tap “AP” for AM/PM.
(hh:mm)
“OK” to continue

6



Quiet Stop Time
Stop silent mode.
Enter time & AM/PM
Tap “AP” for AM/PM.
(hh:mm)
“OK” to continue

7



 # People
Enter number of
people in the household
(1 to 50)
“OK” to continue

Note: Whenever you experience an electrical outage, check your controller for the correct time and date. Make any necessary corrections.

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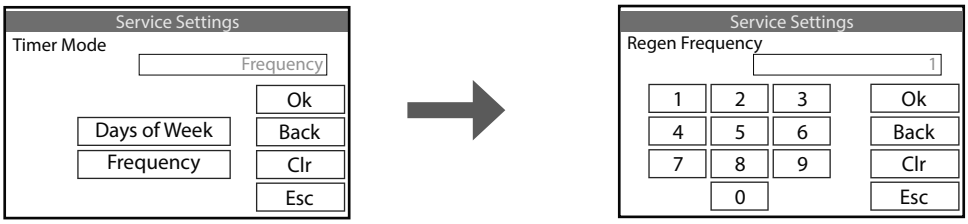
Smart Touch Operating Modes

The controller has a Timer mode (Mode 1 Frequency and Mode 1 Days of the Week), a Demand Delayed mode (Mode 2), and a Demand Immediate mode (Mode 3). These modes are equipped with Capacity Guard®, which ensures that a supply of conditioned water will be available even with excessive water usage.

Mode 1 - Timer Mode - Frequency

When the appliance is in Mode 1 - **Frequency**, it will regenerate based on the frequency that is set.

For example every one day or up to every 20 days. The days between regenerations can be set in the “Service Settings”.



When Frequency is selected, the next screen will allow you to chose how many days between regenerations.

Enter the number of days (1-20) between regenerations.

Mode 1 - Timer Mode - Days of Week

When the appliance is in Mode 1 - **Days of Week**, it will regenerate on a specific day(s) of the week.



When Days of Week is selected, the regeneration days can be selected in the “Customer Settings”.

In “Customer Settings”, check the days in which you would like the unit to regenerate. “OK” to continue.

Mode 2 - Demand Delayed Mode

When the appliance is in the Patented Savematic Demand Delayed mode, it will regenerate based on the actual water usage and the total capacity of the appliance. The time that the regeneration takes place can be set, for example 2:00 AM. Should the total capacity be depleted before the set regeneration time, a forced regeneration will occur.

Mode 3 - Demand Immediate Mode

When the appliance is in the Demand Immediate mode, it will regenerate based on water usage alone. Regeneration will occur when the capacity limit is reached. The time of regeneration cannot be set.

72 - 96 Hour Regeneration

If this value is set to Yes, the appliance will be forced to regenerate every 96 hours unless a regeneration based on water usage occurs within the time interval. The value should always be set to Yes if iron is present in the water.

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Mode Setting Chart

This section provides guidance for using different service settings to achieve the desired capacity.

97 Maximizer	97MM
Mode 1 and Mode 2	Yes
Regeneration Frequency	Mode 1 only
96 hour regeneration (if iron present—yes)[1]	Yes or No
#1 Salt Setting	
Backwash 1 (minutes)	01.0
Brine/Rinse (minutes)	19.5
Backwash 2 (minutes)	03.0
Capacity–grains @ salt–lb (grams @ salt–kg)	5,400 @ 1 (350 @ 0.5)
#2 Salt Setting	
Backwash 1 (minutes)	01.0
Brine/Rinse (minutes)	22.0
Backwash 2 (minutes)	03.0
Capacity–grains @ salt–lb (grams @ salt–kg)	13,700 @ 3 (888 @ 1.4)
#3 Salt Setting	
Backwash 1 (minutes)[2]	01.0
Brine/Rinse (minutes)	26.0
Backwash 2 (minutes)	03.0
Capacity–grains @ salt–lb (grams @ salt–kg)	23,700 @ 6 (1,540 @ 2.7)
#4 Salt Setting[3]	
Backwash 1 (minutes)[2]	01.0
Brine/Rinse (minutes)	30.0
Backwash 2 (minutes)	03.0
Capacity–grains @ salt–lb (grams @ salt–kg)	30,800 @ 9 (2,000 @ 4.1)

[1] If iron is present in water supply, use salt setting #3 or #4.

[2] If iron is present in the water supply, set Backwash 1 to 7 minutes.

[3] Do not use this salt setting in California.

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Cabinet and Cover

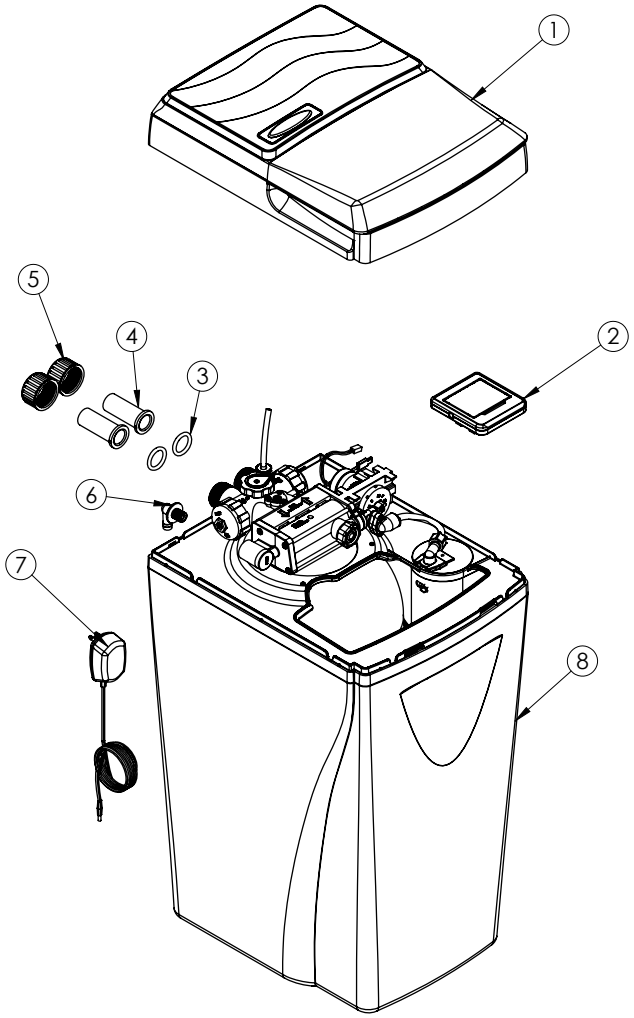


Figure 4: Cabinet and Cover Assemblies

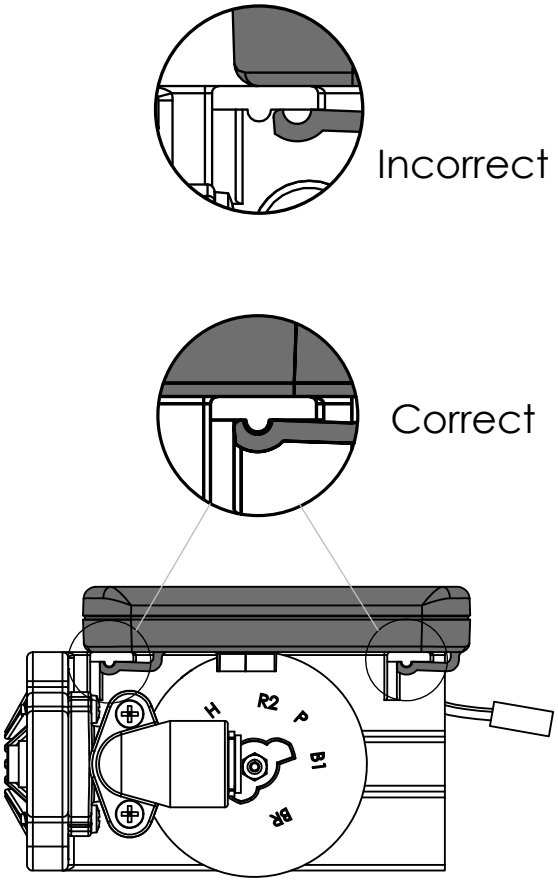


Figure 5: Controller Tab Lock Detail

	Part #	Description	Qty.
1	100242132	Cover Assembly	1
2	100241051	Touch Controller	1
3	100241873	Bypass Nut Gasket	2
4	100241817	1-inch CPVC CTS Adapter	2
	100241812	3/4-inch Copper Adapter (optional)	
	100241814	3/4-inch PVC Adapter (optional)	
	100241816	1-inch Copper Adapter (optional)	
5	100241810	Bypass Nut	2
6	100238195	Cabinet Overflow	1
7	100238182	12V Transformer/Power Cord	1
8	100241622	Cabinet - Dark Grey	1

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Cabinet and Assemblies

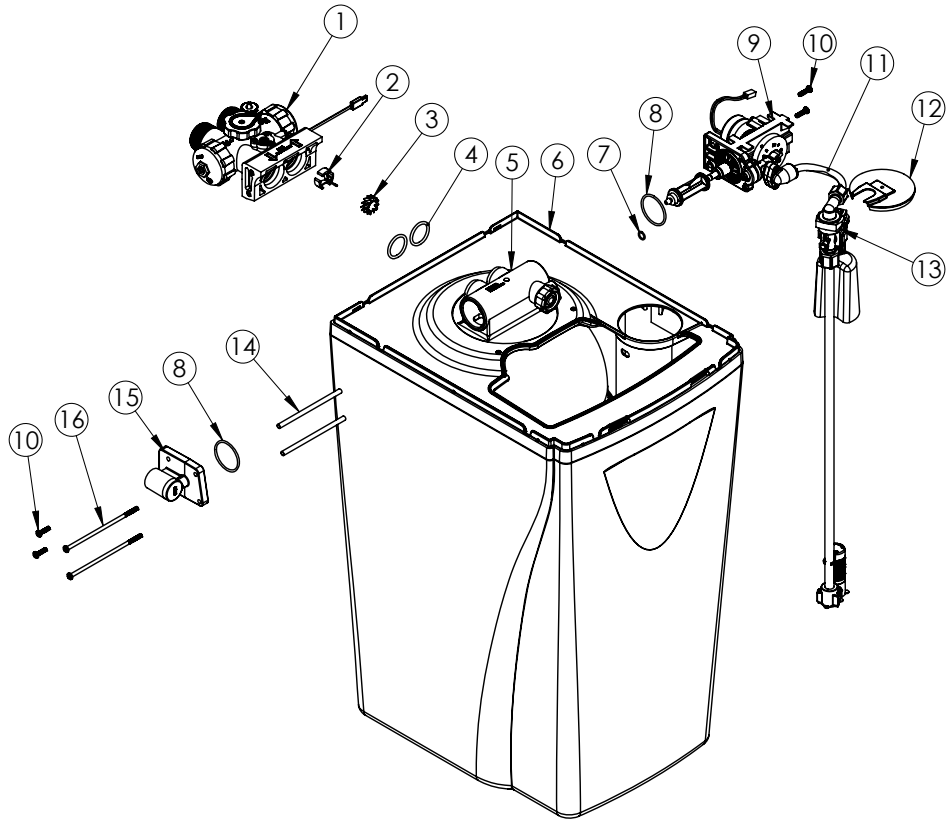


Figure 6: Cabinet and Assemblies

	Part #	Description	Qty.
1	100241195	Bypass Valve Assembly	1
2	100238202	Turbine Axle	1
3	100238201	Turbine Assembly	1
4	100242050	O-Ring - IO Adapter	2
5	100242140	Media Tank Assembly	1
6	100242133	97MM Support Panel - Black	1
7	100241869	O-Ring - Small End Cap	1
8	100241865	O-Ring - End Cap	1
9	100242117	Drive End Cap Assembly	1
10	100238199	Screw - End Cap	2
11	100242057	3/8-inch Brine Line - (6-inch)	1
12	100240996	Brine Well Cover	1
13	100347034	Safety Shutoff Assembly	1
14	100242049	Spacer Tube	2
15	90614-x.x	**(see Drain End Cap Assembly)** Drain End Cap Assembly	1
16	100238198	Screw - End Cap Long	2

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Injector

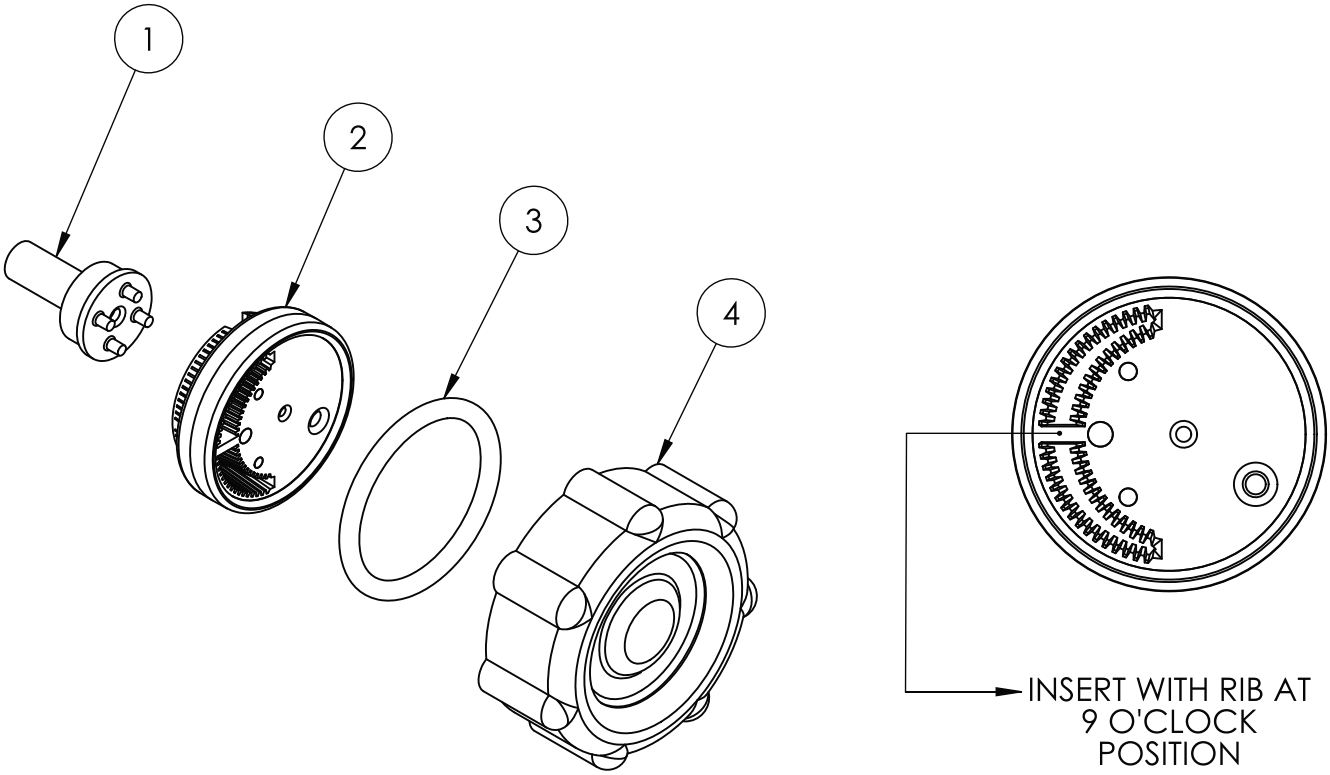


Figure 7: Injector Assembly

	Part #	Description	Qty.	Note
1	100241946	Injector Throat	1	In conjunction with the injector nozzle it creates the vacuum that draws the brine solution from the brine cabinet. The center hole should be clear of debris, round, and undamaged. The throat should be pressed flush into the opening in the valve. If the throat is removed, it must be replaced with a new one.
2	100237421	Injector Nozzle	1	Together with the throat creates the vacuum that draws the brine solution from the brine cabinet. The small hole in the injector nozzle is the one that creates the "injection stream" that enters the throat. It is important that this hole is round, undamaged, and clear of debris. If this hole becomes clogged, do not use anything (such as metal objects) to clear this opening. Damage may occur. Use a clean cloth and flush with water. If necessary, a wooden toothpick may be used. When assembling to the valve, the nozzle hole should line up with the throat. Flush screen with water to clean. The over-mold gasket seals between the injector nozzle and the injector cap.
3	100242034	O-Ring	1	
4	100037729	Injector Cap, Screw On	1	Holds the injector assembly together and seals the assembly to the main control valve.

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Bypass Valve

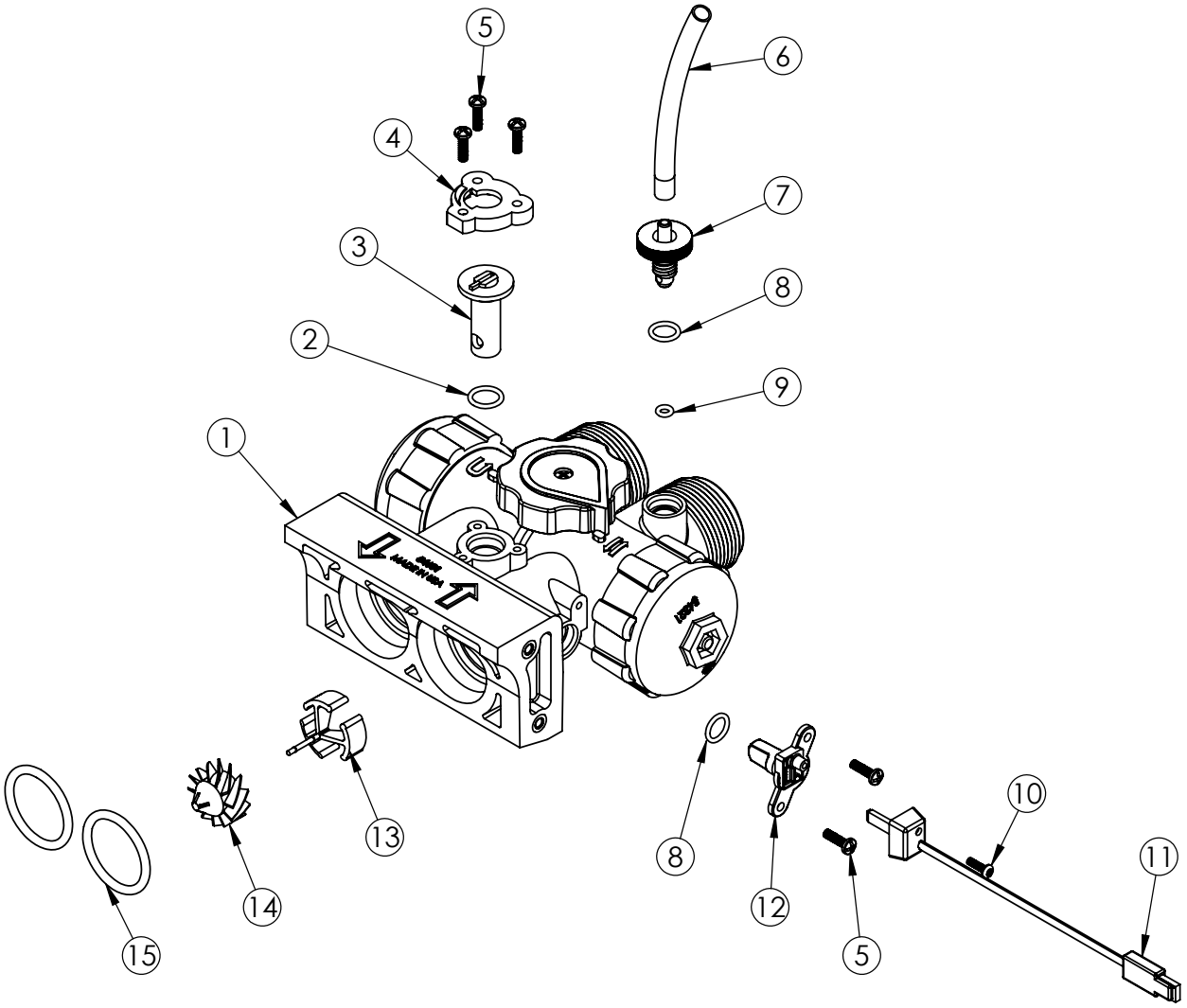


Figure 8: Bypass Valve Assembly

	Part #	Description	Qty.	Note
1	100241195	Bypass Valve Assembly (Also includes items 2-15)	1	Makes the connection between the plumbing and the appliance. The bypass valve assembly allows water to bypass the appliance for service or when untreated water is desired. The recommended seal for the 1-1/4-inch male inlet-outlet threads is the plastic bypass nut (100241810), O-Ring (100241873), and 1-inch CPVC CTS adapter (100241817). Make sure the O-Ring is between the bypass valve assembly and the flange on the cpvc adapter. The O-Ring seal areas at the main control valve inlet and outlet must be smooth, free of defects and debris, and lubricated with silicone grease before assembling. When attaching to the main control valve, put the O-Rings on the male bosses on the main control valve and push the bypass valve assembly into place; if not, the O-Rings may be “pinched.” If the O-Rings get pinched, replace with new ones. The bypass valve assembly is preassembled and is not considered field-serviceable. If the bypass valve assembly is damaged, it must be replaced with a new assembly.

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Bypass Valve

	Part #	Description	Qty.	Note
2	100241868	O-Ring	1	
3	100241811	Blending Dial	1	The dial permits the addition of “untreated water” into the soft water outlet. It is closed when pointing toward the main control valve and open when pointing toward the inlet side.
4	100241811	Cap - Blending Dial	1	The cap should be held in place by the three 1/2-inch self-tapping screws and be in the proper orientation.
5	100241865	Screw	5	
6	100241863	Tubing 5.0 inch	1	
7	100241805	Test Port Valve	1	The test port valve is used to draw water samples from the unit. When the bypass valve is in the service position, the water tested should be soft, treated water. When the bypass valve is in bypass position, the water treated is from the raw, incoming water supply. Note: there are two types of seals on the test port. One seal is an O-Ring which seals off the threaded area when the valve is opened. The other seal is a compression O-Ring seal between the test port valve material and the bypass housing. If this seal is “overtightened,” it can damage the O-Ring and cause a permanent leak.
8	100241869	O-Ring	1	
9	100241820	O-Ring	1	
10	100241861	Screw	1	
11	100238200	Turbine Sensor Wire Assembly w/Cap	1	Picks up the magnetic field from the turbine and relays it to the controller. Care should be taken when putting the sensor wire into the sensor housing. The cap is then put in place and the self tapping mounting screw is installed. A slot is provided in the cap for the wire to exit. The three wire socket connector must be properly installed in the controller. Stops on the connector prevent improper (upside down) assembly. Do not force the connector past the stops.
12	93271	Turbine Sensor Housing	1	
13	100238202	Plastic Turbine Axle	1	Sits on a ridge in the main control valve side of the outlet stream of the bypass valve assembly. Needs to fit around the Turbine Sensor Housing (93271) when assembled. If the plastic turbine axle is not correctly seated, the sensor wire may not sense the turbine magnet.
14	100238201	Turbine	1	The turbine must have a 1/8-inch diameter rare earth magnet pressed into place adjacent to the axle opening. When assembled to the axle, the turbine should spin freely. Do not use any lubricants. If the turbine should become “jammed,” clean and flush the turbine and bypass valve.
15	100242050	O-Ring	2	

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Drive End Cap

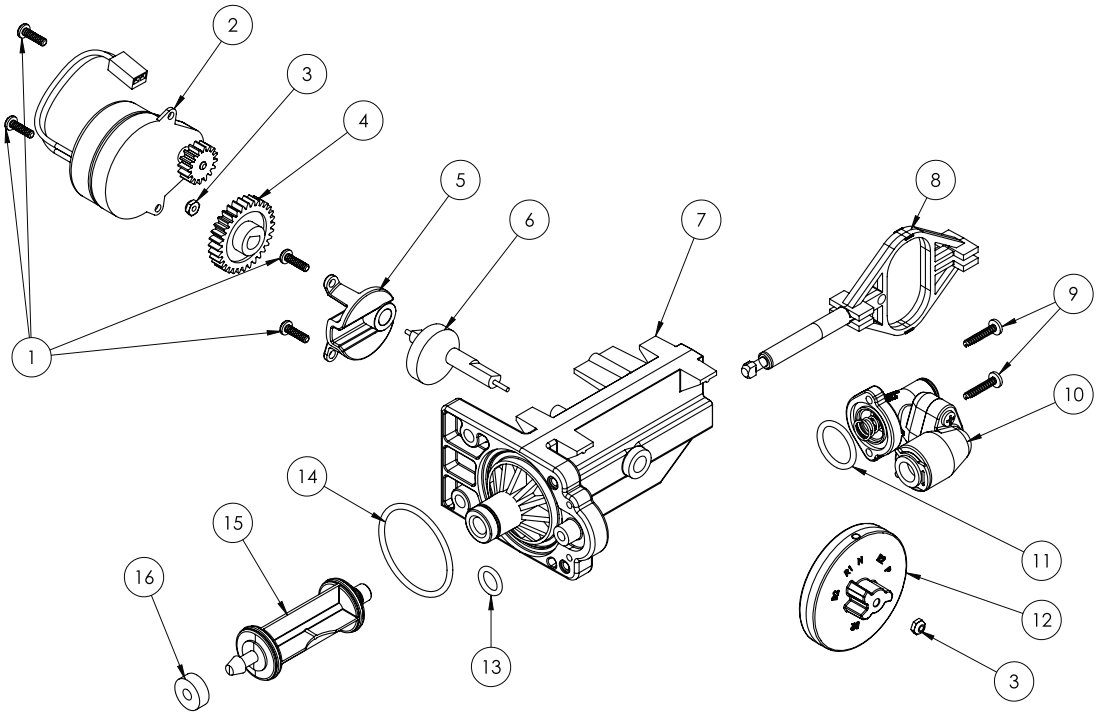


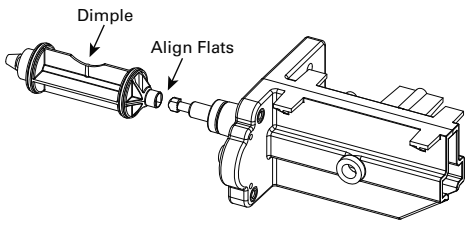
Figure 9: Drive End Assembly

	Part #	Description	Qty.	Note
1	100238196	Screw, self-tapping	2	
2	100238181	Drive Motor	1	The motor is held in place by two 1/2-inch self-tapping screws. The screws should be “snug.” The brass pinion gear on the motor should engage the plastic drive gear. The wires should be securely fastened to the control.
3	100238190	1/4-inch Hex Nut	2	
4	100238188	Drive Gear	1	The drive gear is assembled to the slide cam by means of a “keyed” opening which transfers the “torque” generated by the motor to the rest of the drive system. If the drive system becomes jammed, this opening can become “rounded” causing the gear to turn, but not the piston slide cam. If this occurs, clear the jam and replace the drive gear and piston slide cam.
5	100241941	Piston Slide Cam Cover	1	The cover secures the piston slide cam in place and acts as a bushing for the cam shaft.
6	100241940	Piston Slide Cam	1	This is the “heart” of the drive system. There is a threaded stainless steel shaft that runs through the main drive axle. The drive gear is attached at the short end and the magnet disc at the other end. The slide cam is assembled inside of the piston slide. This cam shaft should turn freely before the motor is assembled.

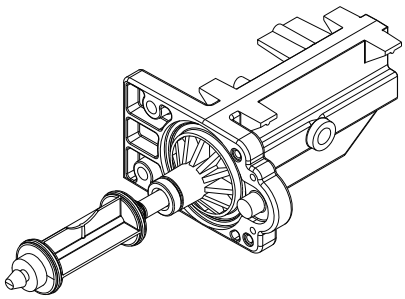
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Drive End Cap

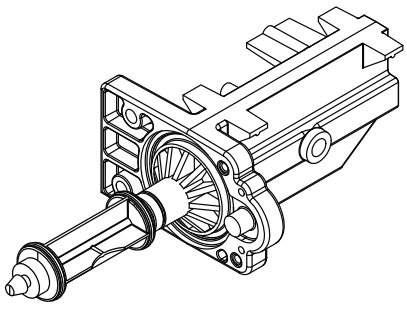
	Part #	Description	Qty.	Note
7	100037805	Drive End Cap	1	Seals the two openings on the main control valve. The larger diameter opening is sealed with an O-Ring used as an axial or “face” seal. The O-Ring sits in a groove in the end cap. This groove must be free of defects such as pits or scratches and also free of debris. The smaller diameter seal is accomplished with an O-Ring used as a radial seal. The O-Ring should be placed on the male boss on the end cap. When assembling the end cap to the main control valve, care should be taken to make sure the small O-Ring is aligned with the opening in the main control valve and that the large O-Ring stays in the groove in the end cap. If misaligned, the O-Rings can become pinched and leak.
8	100342604	Piston Slide	1	The slide should move freely inside the end cap housing.
9	100238197	Screw, self-tapping	4	
10	100242017	Brine Valve Housing Assembly	1	Attaches to the drive end cap with two 3/4-inch self-tapping screws and has one O-Ring seal. The O-Ring is used as axial or “face” seal. The O-Ring sits in a groove in the brine valve housing. The groove and the face seal must be free of defects such as pits and scratches or debris.
11	100241867	O-Ring	1	
12	100238193	Magnet Disk Assembly	1	
13	100037867	O-Ring	1	
14	100241865	O-Ring	1	
15	100238189	Drive Piston Assembly (includes 100242051 - Drain Gasket)	1	The drive piston attaches to the piston slide by placing the “slot” of the piston onto the matching flat of the slide. To remove piston, rotate piston 90° counterclockwise. To replace piston, rotate 90° clockwise until you hear an audible “click.” **(see figure 10 below)**
16	100242051	Drain Gasket	1	
	100242111	Entire Assembly (all of the above parts except 1 and 2)		



Position Piston Assembly (100238189) Vertical



Slide Piston Assembly Onto Piston Slide. Push Toward End Cap to Stop.



Rotate The Piston Assembly 90 Degrees Clockwise Until You Hear An Audible Click As It Snaps Into Place.

Figure 10: Piston Slide Assembly

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Brine Valve Housing

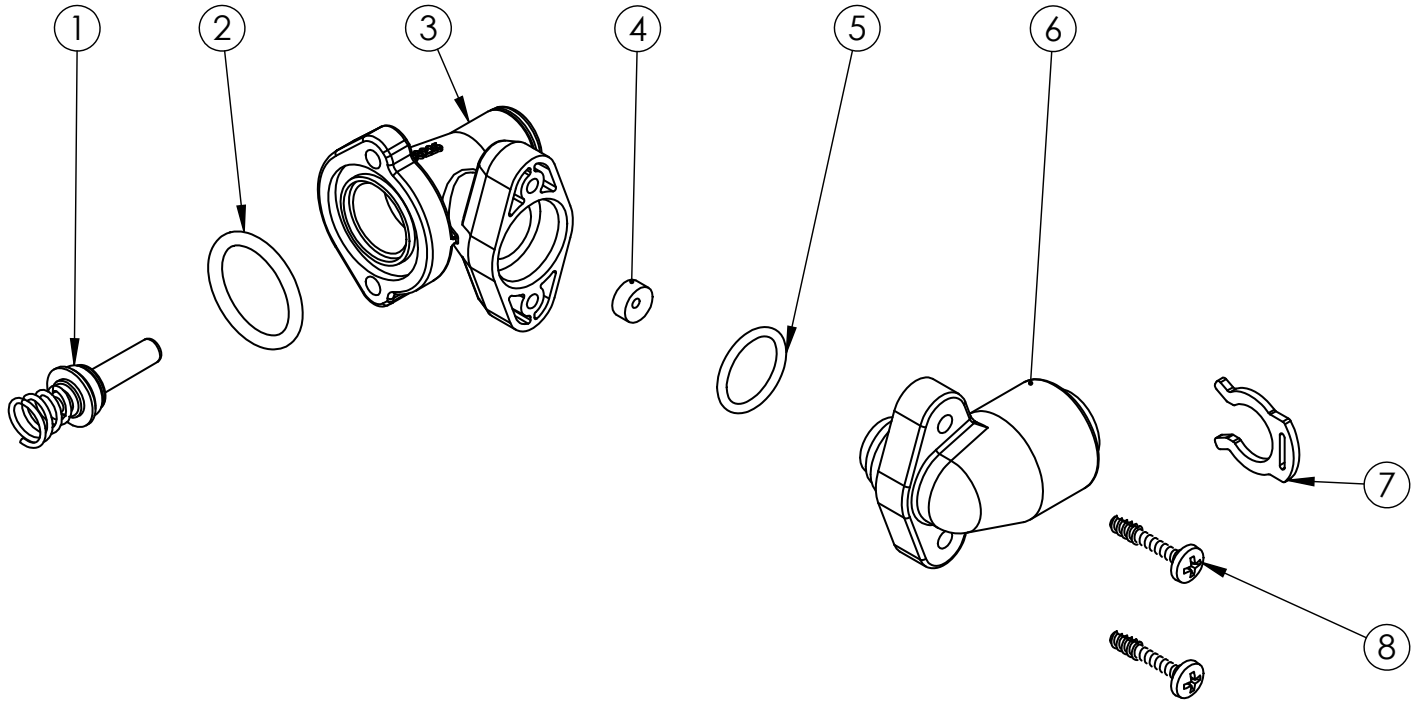


Figure 11: Brine Valve Housing Assembly

	Part #	Description	Qty.	Note
1	100237712	Piston Assembly (includes O-Ring & Spring)	1	The piston should have an O-Ring on the shaft side of the flange and a spring pressed onto a boss on the other side. The O-Ring should be free of defects such as cuts or debris on the shaft side.
2	100241867	O-Ring	1	
3	100237707	Brine Valve Housing	1	Just inside the entrance hole for the brine piston is a concave seat area that must be free of defects such as nicks, indentations, or debris. This seat area ensures a leak-free seal for the static O-Ring on the brine piston. If any defects are detected by visual inspection, repair or replace as needed.
4	100241875	.5 gpm Flow Control	1	The flow button has two distinct and different sides. One is “flat”; the other is “concave.” The button should be centered in the housing opening with the four locater “ribs” with the concave side facing the housing end cap.
5	100242033	O-Ring	1	
6	100241962	Housing End Cap	1	The cap is held in place by two 3/4-inch self-tapping screws that engage the housing flange. An O-Ring seals the cap and housing. Place the O-Ring onto the housing end cap, lubricate with silicone grease and then using a twisting action, insert the cap into the housing. **Caution: the 3/8-inch locking clip must be installed to prevent air from being drawn into the appliance during brine rinse.**
7	100236202	Locking Clip 3/8”	1	
8	100238197	Screw	2	

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Drain End Cap

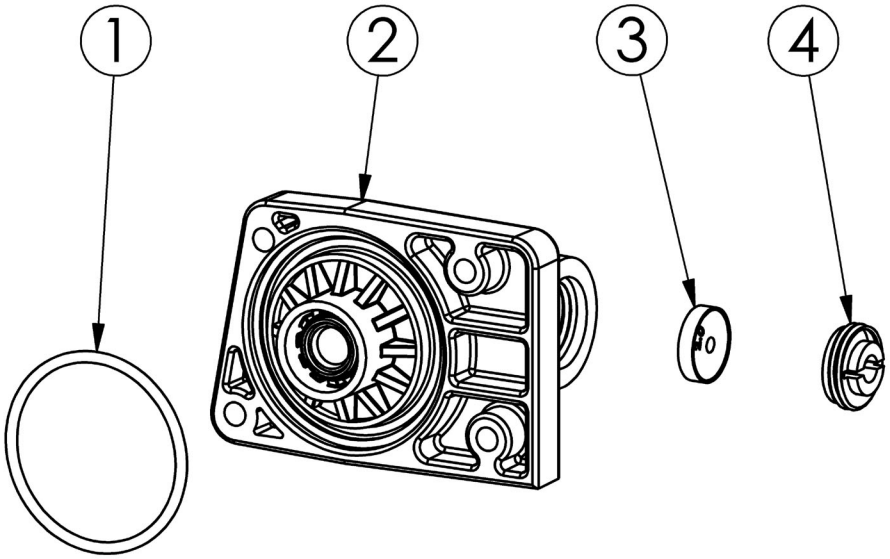


Figure 12: Drain End Cap Assembly

	Part #	Description	Qty.	Note
	100238228	Drain End Cap Assembly		Entire Assembly
	100241852	Drain End Cap Assembly		Entire Assembly (Optional for 97MMB1 or 97MMP1 only)
1	100241865	O-Ring	1	
2	100241822	Drain End Cap	1	The drain end cap seals the left opening on the main control valve. The opening is sealed with an o-ring used as axial or “face” seal. The o-ring sits in a groove in the end cap. This groove must be free of defects such as pits or scratches and also free of debris. When assembling the end cap to the main control valve, care should be taken to make sure that the o-ring stays in the groove in the end cap. If misaligned, the o-ring can become pinched and leak.
3	100242255 2.4 GPM* 100242256 3.0GPM*	Drain Line Flow Control	1	The drain line flow control (DLFC) maintains a constant (plus or minus 10%) backwash flow rate at varying pressures. Care should be taken when replacing DLFCs to ensure that the correct rate is being used for a particular model. Refer to specifications. When assembling the flow control, ensure that the rounded (radiused) side of the hole faces in toward the water flow. • H2086 - 2.4* • H2086 - 3.0* *** Indicates the backwash flow rate in gpm.**
4	100241821	Retainer	1	The retainer holds the backwash flow control in place. One side is smooth and the other has a groove for a screwdriver. When assembling the retainer to the drain end cap, the retainer should be screwed in until it stops. If the retainer is not fully engaged, the flow control may not function properly.

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Safety Shutoff

	Part #	Description	Qty.
	100347034	Entire Safety Shutoff Assembly	
1	100240967	Safety Shutoff	1
2	100241669	Float	1
3	100338939	Air Check/Draw Tube	1

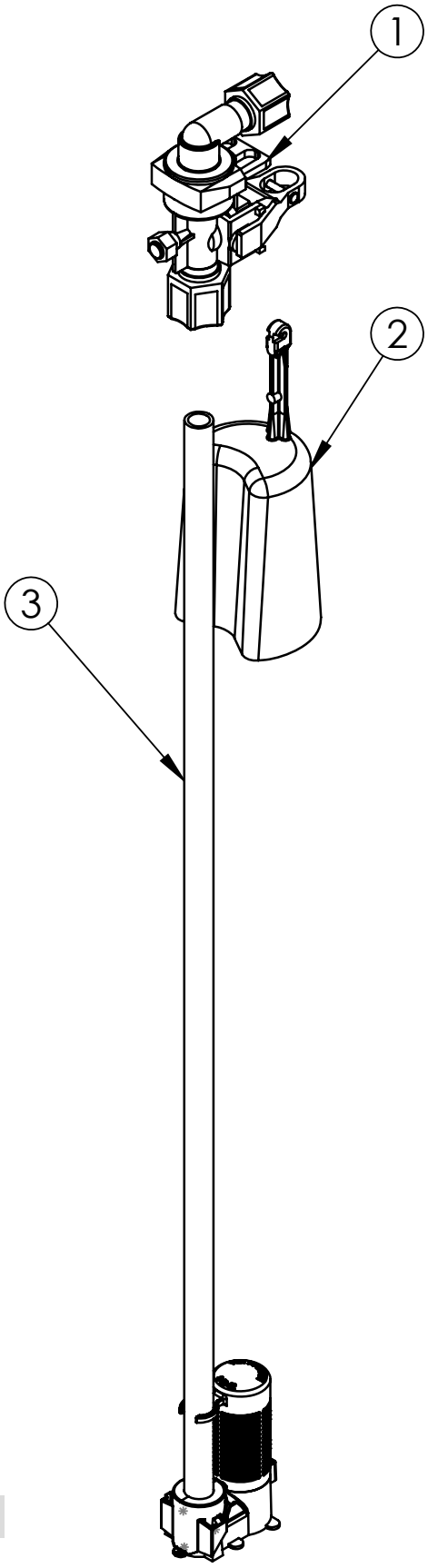


Figure 13: Safety Shutoff Assembly

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Troubleshooting

Problem	Possible Cause	Solution
No Soft Water After Regeneration	No salt in brine cabinet	Add salt
	Sediment in brine cabinet has plugged the brine line and air check/draw tube	Remove the brine line and flush clean Remove the air check/draw tube and flush with clean water. Clean injector assembly. Clean any sediment from brine cabinet
	Flow control is plugged	Remove brine piston housing and clear debris from the flow control
	Drain line is pinched, frozen, or restricted	Straighten, thaw, or unclog the drain line
	Clogged injector assembly	Remove injector cap and clean nozzle and throat with a wooden toothpick. Replace throat if removed
	Salt bridge has formed due to high humidity or the wrong kind of salt	Test with a blunt object like a broom handle. Push the handle into the salt to dislodge the salt bridge, or use hot water around the inside perimeter to loosen salt
No Soft Water	The bypass valve is in the Bypass position	Place the bypass valve in the Service position
	Appliance is plumbed backward	Check that appliance is plumbed correctly
	Extended power outage	Reset the time of day
	Water hardness has increased	Re-test the water and re-enter a new setting number
	Not metering water	Flow should be indicated with water usage. If no flow, see below
	Blending dial is open	Make sure blending dial is closed
No Flow Is Indicated When Water Is Flowing	The bypass valve is in the Bypass position	Place the bypass valve in the Service position
	Appliance is plumbed backward	Check that appliance is plumbed correctly
	Sensor not receiving signal from magnet on turbine	Remove sensor from bypass housing. Test with magnet on either flat side of sensor. If flow is indicated, check turbine. If no flow, replace sensor
	Turbine is jammed	Remove bypass valve and clear debris from turbine
Flow Indicated When Water Is Not Being Used	The household plumbing system has a leak	Repair the leak
No Read-Out In Display	Electric cord is unplugged	Plug in the transformer
	No electric power at outlet	Check power source. Make sure outlet is not controlled by a switch
	Defective transformer	Test with voltmeter for 12 VAC at control. If less than 10 VAC or greater than 14 VAC, replace the transformer
	Defective circuit board	With 12 VAC present at controller, replace the controller
	High ambient room temperature. If the temperature exceeds 120°F (49°C), the display will blank out. This does not affect the operation of the controller	No action necessary
	Display is in sleep mode.	Touch display or flow water to wake up display. Even with display off the controller is still operating.

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Troubleshooting

Problem	Possible Cause	Solution
Appliance Stays In Regeneration	Controller not attached properly	Make sure the controller is pushed all the way onto the drive end cap
	Defective magnet disk	Replace magnet disk
	Foreign object in main control valve	Remove foreign object(s) from the main control valve
	Broken valve assembly. Motor running	Repair the drive end cap
Excess Water In Brine Tank	Restricted, frozen, or pinched drain line	Remove restriction, thaw, or straighten drain line
	Plugged brine line, brine line flow control, or air check/draw tube	Clean flow control, air check/draw tube, and brine line. Clean any sediment from the brine cabinet
	Plugged injector assembly	Clean or replace injector. Replace throat if removed
Not Regenerating In Proper Sequence	Magnet disk defective	Replace magnet disk
	Defective controller	Replace controller
Salty Water	Plugged injector	Replace injector screen, nozzle, and throat
	Low water pressure	Maintain minimum pressure of 30 psi (2.1 bar)
	Drain line or flow control is restricted	Remove restriction
	Brine line restricted or crimped	Remove restriction, replace if crimped
	Excessive amount of water in brine cabinet	Verify correct water level relative to salt setting. Check brine line and fittings for loose connections
	Insufficient rinse time	Check mode setting chart for proper brine rinse time. Adjust time, if necessary
	Intermittent pressure drop from feed source	Install check valve on the inlet water line to the appliance (Check local plumbing codes first)
	Brine valve drips water back to brine tank	Clean brine valve housing, replace piston assembly

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Water Conditioner Specifications

Maximizer® Model 97	97MM
Max Compensated Hardness - gpg (g/L)	90 (1540)
Maximum ferrous iron reduction[1] - ppm	10
Minimum pH - standard units	7
Filtration - nominal rating - microns	20
Media Amount - cu. ft. (L) and Type	1.0 (28) Fine Mesh Cation Resin
Backwash Rate @ min. water pressure maximum flow to drain - gpm (L/min)[2]	2.4 (9.1)
Backwash Rate @ min. water pressure maximum flow to drain (97MMB1 or 97MMP1 only) - gpm (L/min)[2]	3.0 (11.4)
Water Pressure - min–max psi (bar)	20–80 (1.4/5.5)
Flow Rate @ 15 psi (1.0 bar) drop-as tested by Hague - gpm (L/min)[3]	10.7 (40.5)
Pressure Drop in psi (bar) @ Service Flow Rate of 8 gpm (30 L/min)	9.9 (0.7)
#1 Setting - Salt lb/grains (kg/grams) removed	1/5,400 (0.5/350)
#2 Setting - Salt lb/grains (kg/grams) removed	3/13,700 (1.4/888)
#3 Setting - Salt lb/grains (kg/grams) removed	6/23,700 (2.7/1,540)
#4 Setting - Salt lb/grains (kg/grams) removed	9/30,800 (4.1/2,000)
#1 Salt Setting - Total length of regeneration - min/gal (L)	25/20 (76)
#2 Salt Setting - Total length of regeneration - min/gal (L)	27.5/21 (79)
#3 Salt Setting - Total length of regeneration - min/gal (L)	31.5/23 (87)
#4 Salt Setting - Total length of regeneration - min/gal (L)	35.5/25 (95)
Minimum / Maximum water and ambient temperature - °F (°C)	40/120 (4/49)
Salt storage - lb (kg)	170 (77)
Height - in. (cm)	30 (76)
Footprint - in. (cm)	15 x 19 (38 x 48)
Electrical rating	115 V, 60 Cycle
Plumbing connections	1-1/4-inch male (MNPT)

For All Models:

Use clean white pellet, cube-style, or solar salt.
Drain Line (Minimum I.D.) 1/2-inch
Brine & Rinse total–0.75 gpm (2.8 L/min)
Brine Draw–0.25 gpm (0.9 L/min)
Rinse–0.5 gpm (1.9 L/min)

[1] Iron reduction to 0.3 ppm or less. Iron reduction claims limited to 5 ppm in the state of Wisconsin.

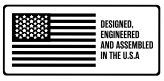
[2] Rate of flow must be verified at the end of the drain line.

[3] For the purposes of plumbing appliance sizing, only the rated service flow rate and corresponding pressure loss may be used. Prolonged operation of a water softener at flow rates exceeding the tested service flow rate of 8 gpm (30 L/min) may compromise performance.

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Notes

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