WaterBoss®
water softener

MODELS 700, 900, AND 950

OWNER'S MANUAL AND INSTALLATION GUIDE

VERSION 7.9

10 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.

TO PLACE THE EQUIPMENT UNDER WARRANTY, THE WARRANTY REGISTRATION CARD MUST BE COMPLETED AND RETURNED BY THE ORIGINAL OWNER TO **WaterBoss®** WITHIN 30 DAYS OF INSTALLATION.

Coverage

This limited warranty covers the **WaterBoss®** 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

WaterBoss® warrants that upon receipt from the original owner of any mechanical or electronic part which is found to be defective in materials or workmanship, **WaterBoss®** will repair or replace the defective item for 5 years from date of original installation. Media is not warranted.

WaterBoss® further warrants that upon receipt from the original owner of any **WaterBoss®** media tank/ main control valve, brine cabinet, found to be defective in material or workmanship, **WaterBoss®** will repair or replace the defective item for 10 years from date of original installation.

All defective parts must be returned, along with the equipment serial number and date of original installation, to **WaterBoss®** PREPAID, and replacement parts will be returned by **WaterBoss®** 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. **WaterBoss®** 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, sulphur, 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, **WaterBoss®** 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:

WaterBoss®
4343 S. Hamilton Rd.
Groveport, OH 43125

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.) **WaterBoss®** reserves the right to replace defective parts with exact duplicates or their equivalent.

Call the HelpLine, 1-800-437-8993, for Return Information from 8 a.m. to 5 p.m. EST. The HelpLine fax number is (614) 836-5349

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General Information

Congratulations on choosing a superior **WaterBoss®** 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. Keep it handy for a reference guide and service log. If you have trouble with the operation of your appliance, see *Troubleshooting* in the back of this manual or contact the HelpLine: 1-800-437-8993 from 8 a.m. to 5 p.m. EST. The HelpLine fax number is (614) 836-5349. Help is also available on the WaterBoss website: www.waterboss.com.

The HelpLine is available to answer questions about specific water problems, appliance installation, and operation. When calling the HelpLine, please have this guide and the serial number of your appliance available.

WaterBoss®
4343 S. Hamilton Rd.
Groveport, OH 43125
1-800-437-8993
www.waterboss.com

Warning: This appliance must be applied to potable water only.

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 models:

- WaterBoss® 700
- WaterBoss® 900
- WaterBoss® 950

For Owner's Reference

Date of Installation: _____

Model Number: _____

Serial Number[1]: _____

Hardness: _____

Iron: _____

pH: _____

Water Pressure: _____

Water Temp: _____

Returned Warranty Card Date[2]: _____

[1] The serial number is located underneath the valve cover.
[2] Completely fill out the Warranty Card and return it by mail to ensure that the appliance is registered with the factory and the warranty becomes validated.

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 switch to a salt substitute (such as potassium chloride) in place of water conditioner salt at any time. If potassium chloride is used in place of salt, increase your hardness setting by 12% (multiply by 1.12). See *Setting the Controller*.
   Caution: Do not use potassium chloride if your water contains iron and/or manganese.
3. Should your electricity be off for any reason check your controller for the correct time and reset as necessary (See *Advanced 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. Protect the appliance, including the drain line, from freezing.
6. Adhere to all operational, maintenance, and placement requirements.
7. If dirt, sand, or large particles are present in the water supply, the appropriate **WaterBoss®** filter can eliminate this problem.
8. 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 of chlorine bleach solution to the brine well of the brine cabinet. The brine cabinet should have water in it. Start a manual regeneration.
9. The bypass valve (located on the main control valve) enables you to bypass the appliance if any work is being performed on the appliance, well pump, or plumbing. See *Bypass Valve*. Use Bypass mode also for watering plants or lawns with untreated water.
10. Before putting the appliance back in service after work has been performed, turn on the nearest cold water tap until water runs clear.
11. Inspect and clean the brine cabinet and air check/draw tube assembly annually or when sediment is present in the brine cabinet.
12. Potassium permanganate will need to be added periodically to any iron filter.
13. Model 950 contains redox media and activated carbon media. These have a finite life and will eventually require replacement if the advertised performance capabilities of this device are to be maintained.
14. This product is certified for barium and radium 226/228 reduction according to NSF/ANSI Standard 44. Any Bypass system must be completely in the Service position to ensure maximum barium and radium 226/228 reduction.

Checklist Before Installation

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 **WaterBoss**® Water Filter can address these water shortcomings.

- **Model 900-IF (Iron Filter)**—Reduces iron, manganese, hydrogen sulfide, and iron bacteria.
- **Model 900-NF (Acid Neutralizing filter)**—Adjusts low pH water to a non-corrosive state.

❒ **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. You should also increase your water hardness setting by 5 grains per gallon (86 mg/L) for every 1 ppm (1 mg/L) of ferrous iron.

❒ **Water Characteristics**—Models 700, 900, and 950 require a pH of 7 or above to function properly. An iron test to determine iron levels is also necessary. The 900-NF Acid Neutralizing Filter adjusts pH levels of 6.3 or above.

❒ **Water Hardness**—Double check hardness of water with test strips provided to verify that your appliance is right for the job.

- **Model 950** is FOR MUNICIPALLY-SUPPLIED WATER without iron. Model 950 will condition water up to 35 grains of hardness per gallon (600 mg/L).
- **Model 700** will condition water for up to 70 grains of hardness per gallon (1,200 mg/L).
- **Model 900** will condition water for up to 90 grains of hardness per gallon (1,540 mg/L). (See *Specifications*.)

❒ **Water Pressure**—Not less than 20 psi or greater than 120 psi (1.4–8.3 bar) constant. If water pressure exceeds 70 psi (4.8 bar), a pressure regulator is recommended.

❒ **Water Supply Flow Rate**—A minimum of 2 gallons (7.6 L) for the 700 and 900 models to 3 gallons (11.4 L) for the 950 model 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.

Checklist Before Installation, Cont.

- ❒ **Water Temperature**—Not less than 40° or greater than 120°F (4°–49°C).
- ❒ **Drain**—Drain 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 and Start-Up Procedures*.
- ❒ **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.

  If you have any questions, call the HelpLine. See *General Information* at the front of the manual for information about the HelpLine.

Precautions

Do

1. Comply with all state and local, building, plumbing, and electrical codes.
2. Test your water quality with the strips provided. Optionally, obtain a report on your water's quality.
3. Install the appliance before the water heater.
4. Install the appliance after the pressure tank on well-water installations.
5. Examine the inlet line to ensure water will flow through it freely and that the inlet pipe size is correct. For well water with iron, the recommended minimum inlet pipe size is 3/4-inch I.D. and for municipal water the recommended minimum inlet pipe size is 1/2-inch I.D.
6. Install a pressure-reducing valve if the inlet pressure exceeds 70 psi (4.8 bar).
7. Install a gravity drain on the cabinet.
8. Secure the drain line on the appliance and at the drain outlet. See *Installation Steps and Start-Up Procedures*.
9. 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 *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 overtighten the plastic fittings.
5. Do not plumb the appliance against a wall that would prohibit access to plumbing. See *Installation Steps and Start-Up Procedures*.
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 microbiologically 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 microbiologically unsafe water safe to consume or use.

Installation Steps and Start-Up Procedures

The water softener is capable of treating a combination of undesirable constituents (such as iron, dirt, sediment, chlorine, and/or lead) in water. See *Specifications* for the capabilities of your appliance. Install, set up, and use the appliance within the operating limits outlined in this manual. Failure to comply with these specifications may decrease the effectiveness of the backwash and cause control valve malfunction. The water softener, like any other appliance, requires correct installation and setting for optimum performance.

Each water treatment appliance includes water test strips and eight feet of drain line.

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.
Note: A minimum 3/4-inch pipe is required between the pressure tank and the appliance for the appliance to function properly.
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.*
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.

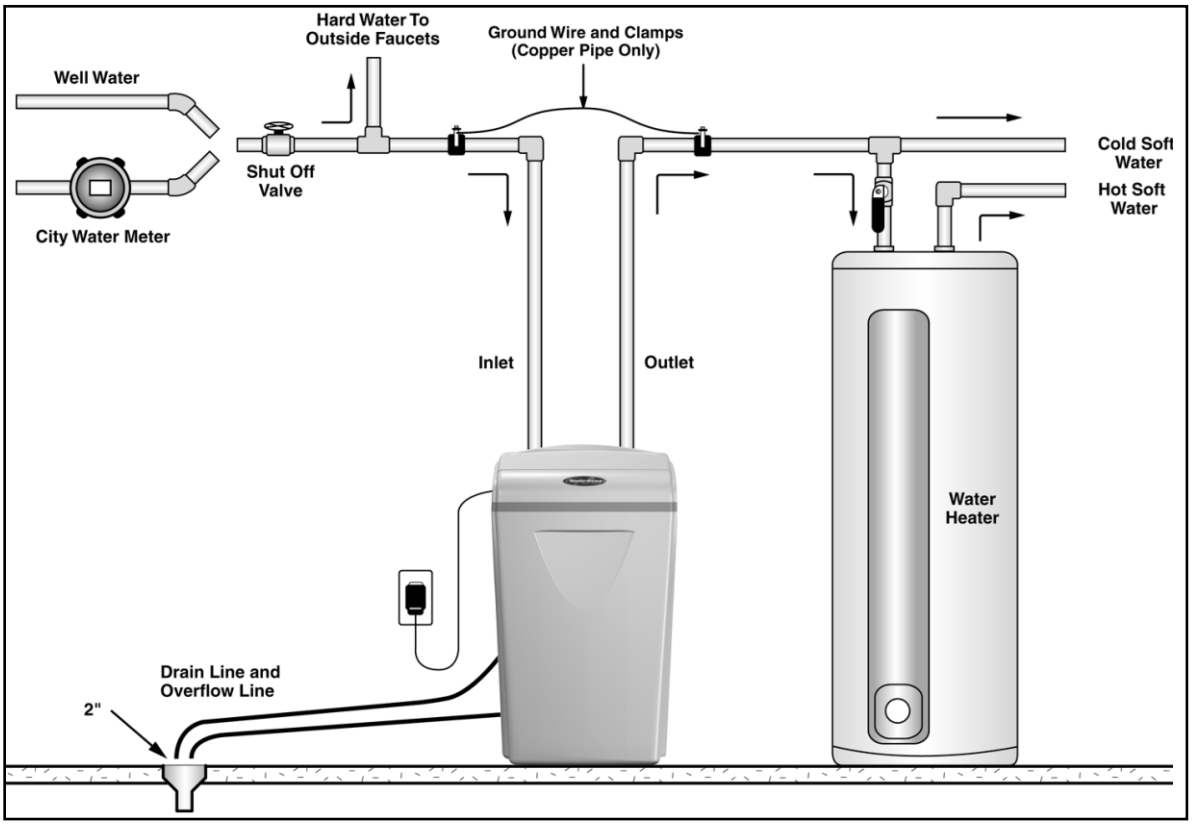


Figure 1: Appliance Placement

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. Contact the HelpLine for further assistance in determining the proper installation sequence. **Water Heaters:** If less than 10 feet (3.0 m) 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.

Step 2 *Test Your Water*

A. Remove any packaging or installation materials from the brine cabinet.

B. Test your water quality with the strips provided. (See *Setting the Controller*.) Optionally, obtain a report on your water's quality.

Step 3 *Turn Off Water Supply*

A. Turn off the water supply.

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

Step 4 *Connect Water Lines*

Note: See *Optional Plumbing Procedures* for information on copper fittings and joining plastic pipe.

A. Lift and remove the cabinet cover.

B. Install connection fittings*. ***Connection fittings are NOT provided with your appliance.*** Connection fittings provide a convenient, easy-to-use three-piece assembly for 3/4-inch copper plumbing or 3/4-inch CTS CPVC plastic tubing. Ensure that the three components (1: collar, 2: metal retaining ring, and 3: nylon sleeve) are correctly installed in sequence on the pipe.
Note: PTFE tape or plumber's putty is NOT necessary and should NOT be used with connection fittings.

C. Attach the water lines to the appliance in compliance with all state and local, building, plumbing, and electrical codes. (See Figure 2) Do NOT overtighten the connections on the plastic threads.

D. Check the arrows on the valve to ensure that the water flows in the proper direction.
Caution: Do NOT plumb your appliance in backward.

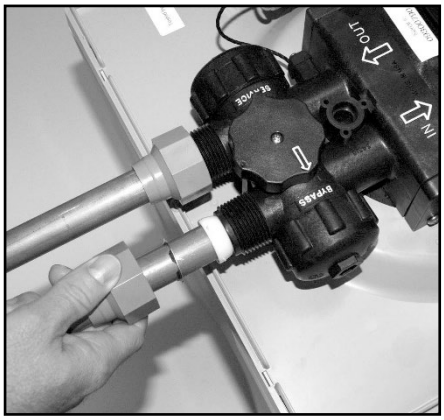


Figure 2: Connect Water Lines. Note the Bypass Valve Position.
Connection fittings are NOT INCLUDED additional purchase required.

Step 5 *Connect Gravity Overflow Connection*

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

A. Attach the gravity overflow connection elbow and check that it is in the down position. (See Figure 3)

B. Connect 1/2-inch I.D. tubing (size cannot be reduced) between the overflow fitting and a suitable 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-inch (8 cm) lower than the bottom of the overflow fitting. Maintain a minimum of 2-inch (5 cm) air gap. The gravity line cannot be run overhead.

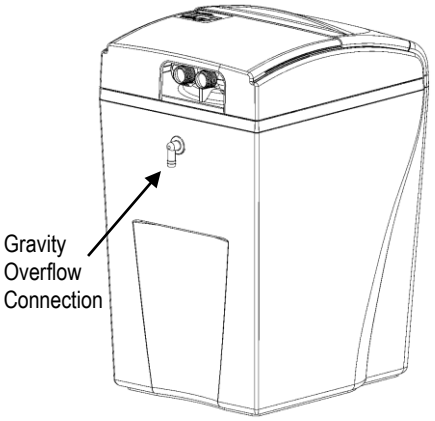


Figure 3: Gravity Overflow Connection

Step 6 *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 (See Figure 4) with a minimum 1/2-inch I.D. tubing (supplied). The size cannot be reduced.
Note: Using PTFE tape or plumber's putty, screw the threaded drain fitting into the drain end cap.

B. Route the drain line to a floor drain, laundry tub, or other suitable waste receptor. Maintain a minimum 2-inch (5 cm) air gap between the drain line and the flood level rim of the waste receptor to prevent back-siphoning. 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 m) from the discharge on the appliance as long as the water pressure in your system is 40 psi (2.8 bar) or more.

D. If the drain line is 25 feet (7.6 m) 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.

Figure 4: Connect Drain Line

Step 7 *Flush Lines*

A. Place the appliance in the Bypass position. (See Figure 5)
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.
D. Return the appliance to Service position.
Note: To prevent untreated water from entering your home, avoid using water inside your home when the appliance is in Bypass position. Remember to return the appliance to Service position when you have finished using untreated water.

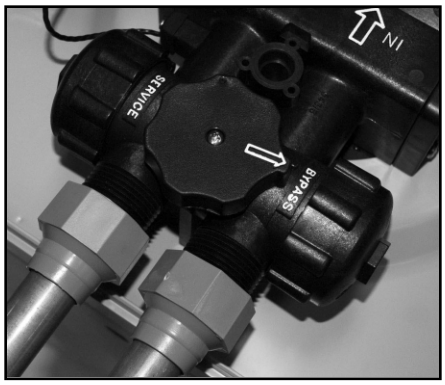


Figure 5: Bypass Position

Step 8 *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 appliance in the Service position to slowly fill the media tank. (See Figure 6)
7. Open a cold water faucet to purge air out of the media tank.
8. Close the faucet and recheck for leaks.

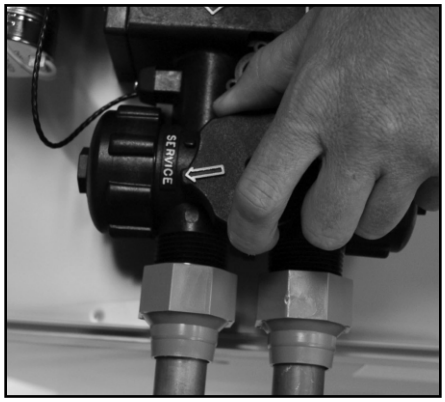


Figure 6: Service Position

Step 9 *Plug in the Transformer*

A. Connect the transformer power cord to the back of the controller. (See Figure 7)
B. Plug the transformer into an appropriate outlet.
C. Ensure that the outlet selected is not operated by an On/Off switch.

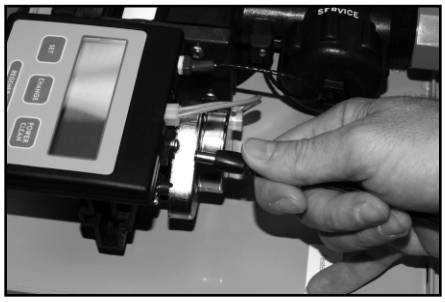


Figure 7: Connect Power Cord

Step 10 *Set Up the Controller*

A. Program the appliance controller. See *Setting the Controller*.

Step 11 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 the appliance is in Service position and your water supply is turned on.
C. Press the Regenerate button to advance to the Brine Refill (04) position. Let the tank fill with the proper amount of water. The controller will then step the 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 12 Fill the 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.

Step 13 Complete the Installation

A. Ensure that the appliance is in the Service position. (See Figure 6)
B. Ensure the water supply is on.
C. Turn on the electricity and water supply 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 (273 L) have passed through the appliance. This procedure is required to meet NSF requirements. Verify the flow rate on the controller, which indicates water flow. See Figure 2.
E. Replace the cabinet cover.

Bypass Valve

Your appliance is equipped with a bypass valve. 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 is located on the main control valve. (See Figure 8) To engage the bypass, turn the knob to the Bypass position. 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 position. Ensure that the appliance is returned to Service position when the appliance is repaired or the use of untreated water is complete by turning the knob to Service.

To blend hardness back into the water using the bypass, turn the knob slightly from the Service position toward the Bypass position.

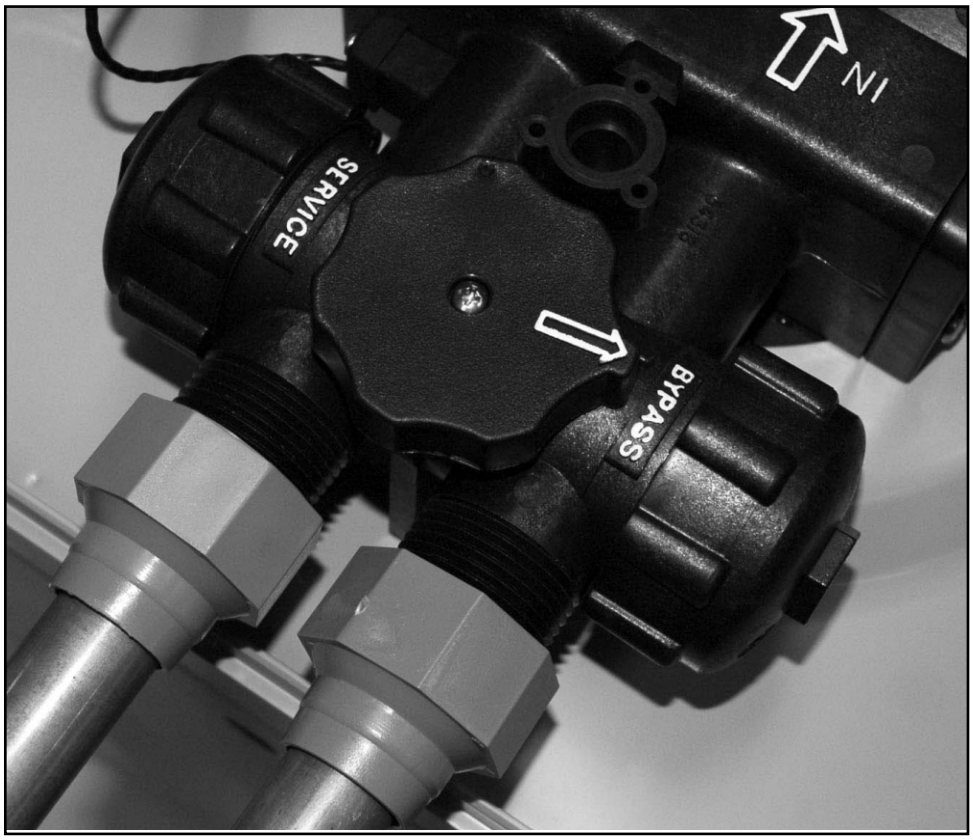


Figure 8: Bypass Valve

Four-Button Controller

This appliance features a four-button controller with an LCD display. The controller can be used to view the appliance's status, perform regenerations, and change settings. The controller must be set up correctly for the appliance to perform properly.

Note: Ensure that the bottom of the controller is firmly locked onto the four tabs on the top of the drive end cap assembly. See *Cabinet and Cover Assemblies* diagram later in this manual.

Figure 2: Four-Button Controller

Controller Part	Function
LCD Display	Shows the status of the controller
Demand Mode	The controller measures water usage and regenerates based on need, so you do not have to worry about vacation settings or extra guests. The appliance will regenerate using only the necessary amount of water and salt. If your power has been off, the appliance will retain programmed settings indefinitely **Note:** You should not need to change from Demand Mode
Soft Water Remaining	Shows the gallons (or liters) of soft water remaining until the next automatic regeneration. Typically, each person in the household uses about 75 gallons (284 L) per day. Water remaining is in gallons in hundreds (or liters in hundreds or thousands, depending on how much capacity is remaining). For example 88 = 8,800 gallons (33 = 3,300 or 33,000 liters)
Recharge/ Regeneration Status	Shows regeneration cycle numbers during regeneration. The read-out will flash with the cycle number. The flashing regeneration numbers are: First cycle (01) First Backwash Second and Third cycles (02) Brine/Slow Rinse Fourth cycle (03) Second Backwash Fifth cycle (04) Brine Refill Sixth cycle (HO) Service (Briefly) When regeneration is complete, the display shows the number of gallons in hundreds of soft water remaining. (See above) Regeneration typically is complete in about 30 minutes.
waterMizer™	Indicates that water is flowing through the appliance; the waterMizer™ indicator turns whenever water is being used; useful for checking for proper plumbing and leaks
powerClean™	Displays when feature is activated. See *Power Clean™ Button*

Four-Button Controller, Cont.

Button	Function
Set	Used to set Customer Settings
Change	Used to change Customer Settings
Power Clean (700 and 900 only)	Activates/deactivates the powerClean™ feature, which is a service/maintenance step for water supplies that have an excessive amount of iron. "powerClean™" will display when this feature is activated. The appliance will regenerate every other day with five pounds (2.3 kg) of salt. Leave the powerClean™ feature on for a minimum of two weeks. The frequent regeneration will eliminate iron buildup in the resin bed. The use of salt with an iron cleaning agent or iron out cleaner is recommended for continuous use as a preventive measure against iron fouling of the resin bed. Use this feature every six months as a part of your routine maintenance procedure to ensure a long service life for your water treatment appliance
Regenerate	Used when starting your water conditioner to start an immediate regeneration, or to restore capacity if you run out of salt **To Start an Immediate Regeneration** 1. Press and hold the Regenerate button for about five seconds. 2. The appliance is in regeneration mode and will display the status of each cycle. 3. After all regeneration cycles are complete, the display will return to normal operating mode. **To Quickly Advance Through the Regeneration Cycles** (used when starting up or diagnosing the appliance only) 1. Press and hold the Regenerate button for about five seconds until the cycle begins. 2. The cycle position will display (for example, 01). 3. If the controller does not advance to the next cycle position after 20 seconds, press and hold the Regenerate button until the cycle number changes (about 2 seconds). Each cycle can be advanced by pressing the Regenerate button. Always wait until the cycle position displays before advancing to the next cycle position.

Setting the Controller

Step 1 *Determine the Controller Setting Number*

A. For municipal water, call the water department to determine the hardness and pH of your water supply.

B. For well water, use the hardness test strips provided with your appliance, or have a sample of your untreated water tested by a water testing laboratory.

1. **Test Strips**—Follow the instructions on the test strips. If the color on your test strip is between two readings, use the higher number. Compare the colors as soon as you remove them from your water. This number gives the hardness in grains per gallon and parts per million (mg/L).
2. **Testing Laboratory**—To ensure proper settings, have a sample of your untreated water tested for iron and pH. To find a facility to test your water sample, check your Yellow Pages under Water Analysis or Water Testing or contact the company below to conduct a test for you.

   National Testing Laboratories, Ltd.
   1-800-458-3330
   www.ntllabs.com or www.watercheck.com

3. If the pH is below seven and you have a 700 or 900 unit, call the HelpLine listed in *General Information*.

C. Use the following example to determine the controller setting.

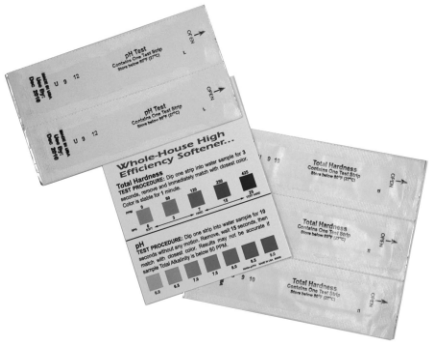


Figure 3: Hardness Test Strips

	Your Water	English Example	Metric Example
Enter hardness grains per gallon (mg/L)		20	342
If your water contains 3 ppm (mg/L) iron, add 15 (257)*	+	+ 15	257
The sum is your controller setting number		35	600 (rounded)

*Increase your water hardness setting by 5 grains per gallon for every 1 ppm (mg/L) of ferrous iron.

Step 2 *Enter Your Setting Number Into the Controller*

A. Press and hold the Set button for about 5 seconds until “25” displays.

B. Press the Change button until the display matches your compensated number. Once you pass “70” (models 700 and 950) or “90” (model 900), the display will reset to “03.”

C. Press Set to save the hardness setting number.

D. To recheck the hardness setting number, hold down the Set button for about 5 seconds. **Note:** Refer to *Specifications* for the maximum water hardness that your appliance can handle.

Your controller is now set.

Advanced Customer Settings

Most customers will want to use the factory default settings, so no changes are necessary. However, you can reset the controller settings if the factory default settings are not suitable for your needs.

Note: Be sure to check that the Time of Day is correct.

Set High Capacity or High Efficiency

Your appliance can be programmed for High Capacity (HC) or High Efficiency (HE).

- High Capacity means the appliance will regenerate less often, but use more salt.
- High Efficiency will make the appliance regenerate more often and use less salt. This is the default. The High Efficiency setting meets or exceeds the requirement some states have for salt efficiency.

To Enter Advanced Customer Settings Mode

A. Press and hold the Set and Change buttons at the same time for 3 seconds. The display should show only the controller type. After 3 seconds, the entire screen is lit for a half second, and then "HC" displays.
B. Press Change to toggle the digit display between "HC" and "HE."
C. When the desired value is displayed, press Set.
Note: HE ensures the appliance chooses salt settings that get 4,000 grains per pound (570 grams/kg) of salt for each regeneration or better. This choice meets or exceeds the requirement some states currently have in regards to salt efficiency.

Note: All models are equipped with patented capacity guard.

Once in HC or HE, you can set the mode, hours to next regeneration, gallons or liters, time format, time of day, and time of regeneration.

Step 1 *Set Mode*

Display reads "Demand Mode."

To Change Mode

A. Press Change.
- Delay Mode allows regeneration at a specific time (for example, at 2 a.m. when less water is typically being used).
- Demand Mode triggers a regeneration as soon as softening capacity is exhausted. This is the default.

B. When the desired mode is displayed, press Set.

Step 2 *Set 96 Hours Until Regeneration*

Display reads "96 Hours."

To Change Setting

A. Press Change to turn Off. If "96 Hours" is selected, the appliance will work no more than 4 days without a regeneration. Default is for "96 Hours" to be On.
Note: If there is iron in your water, select this option. If you are using model 950, on most municipal water supplies, turn this option Off.

B. When the desired setting is displayed, press Set.

Step 3 *Set Gallons or Liters*

Display reads “Gallons (or Liters) x 100.”

To Set Gallons or Liters

A. Press Change to toggle between gallons and liters. Choosing “Gallons” sets the controller to English units, and choosing “Liters” sets it to metric units.
B. When the desired units are displayed, press Set.

Step 4 *Set Time Format*

Display reads “12” if gallons were chosen or “24” if liters were chosen.

To Set Time Format

A. Press Change to toggle between 24 and 12. This controls the selection of a 12-hour (AM/PM) or 24-hour clock. If 24-hour, 00=midnight.
B. When the desired time format is displayed, press Set.

Step 5 *Set Time of Day*

Display reads “Set Time” and “12” (or “24”).

To Change Time of Day

A. Press Change until the current time is displayed. Default is 12 PM.
Note: Set time to the nearest hour.
B. When the desired time is displayed, press Set.

Step 6 *Set Regeneration Time*

Display reads “Set Reg. Time” followed by the current regeneration time that is set (02).

To Change Regeneration Time

A. Press Change. Default is 2 AM.
B. When the desired regeneration time is displayed, press Set.

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

Programming is now complete.

Optional Plumbing Procedures

This section provides information on plumbing with copper fittings and with plastic pipe.

Hard Plumbing the Bypass With Copper Fittings

Do not use connection fittings for hard plumbing with copper fittings. When preparing the male threaded fittings of the I/O adapter, use the following guidelines to avoid damage to the plastic pipe threads.

A. Wrap the threads three times with 1/2-in. wide PTFE tape. Place each consecutive wrap on top of the previous wrap.
B. To prevent tearing of the tape, use PTFE paste on the first two male threads only. The paste lubricates the tape and fills the small void areas that might exist between the threads. When the joint is complete, there will be a small bead of sealant at the fitting interface, which indicates a properly joined connection.
C. Use a union with a threaded connection to facilitate repair of potential leaks in soldered joints.
D. Prepare the copper tail assemblies in advance to enable them to cool prior to final assembly. Advance preparation and cooling will prevent heat damage to the plastic pipe threads of the adapter.
E. Ensure that the copper tube is at least 4 in. (10 cm) long.
F. Turn the fitting counterclockwise until you feel the threads engage and then tighten to prevent cross threading. Do NOT overtighten the fittings.
   Caution: Do NOT allow heat from the torch to transfer to the plastic valve component, which could be damaged.

Optional Plumbing Procedures, Cont.

Plastic (PVC/CPVC) Pipe Joining Procedures

To ensure reliable joint integrity when using solvent cement for PVC/CPVC plumbing, follow these recommendations:

A. **Cutting**—The pipe must be cut square to allow for the proper interfacing of the pipe end and the fitting socket bottom. Use a wheel cutter, miter saw, or a ratchet shear for best results.

B. **Deburring and Beveling**—Use a knife, plastic pipe deburring tool, or a file to remove burrs from the end of the pipe. Be sure to remove all burrs from the inside as well as the outside of the pipe. Remove all loose plastic debris since it could clog the injector. All pipe ends should be beveled to permit easier insertion of the pipe into the fitting. Failure to bevel the pipe end may cause a "wiping" effect in the fitting where the cement is forced to the end of the fitting socket. This creates a weak joint.

C. **Test Dry Fit of the Joint**—Tapered fitting sockets are designed so that an interference fit should occur when the pipe is inserted about one-third to two-thirds of the way into the socket. Occasionally, when pipe and fitting dimensions are at the tolerance extremes, it will be possible to fully insert dry pipe to the bottom of the fitting socket. When this happens, a sufficient quantity of cement must be applied to the joint to fill the gap between the pipe and fitting.

D. **Inspection, Cleaning, and Priming**—Inspect the inside of the pipe and fitting sockets and remove dirt, grease, or moisture with a clean dry cloth. If wiping fails to clean the surfaces, use a chemical cleaner. Check for possible damage such as splits or cracks and replace if necessary. Use purple primer to penetrate and soften the bonding surfaces of the PVC or CPVC pipe and fittings. Proceed without hesitation to the cementing procedure while the primed surfaces are still wet.

E. **Application of Solvent Cement**—Apply the solvent cement evenly and quickly around the outside of the pipe while the primer is still wet. Apply a light coat of cement evenly around the inside of the fitting socket. Do not allow excess cement to "puddle" in the fitting. Apply a second coat of cement to the pipe end.

F. **Joint Assembly**—Working quickly, insert the pipe into the fitting socket and give a one-quarter turn of the pipe or fitting while pushing toward the fitting stop. This action will evenly distribute the cement. Do NOT continue to rotate the pipe or fitting after the stop has been reached. Hold the joint tightly together for about 15 seconds to prevent the pipe from "creeping" out of the fitting. A good joint will have sufficient cement to make a small bead all the way around the outside of the fitting hub. The joint should not be disturbed immediately after the cementing procedure. Allow adequate time for the joint to cure properly. Exact drying time is hard to predict because of environmental variables. Follow the recommended joint curing times on the primer and cement container labels.

Assembly and Parts

Cabinet/Cover/Salt Lid Assemblies

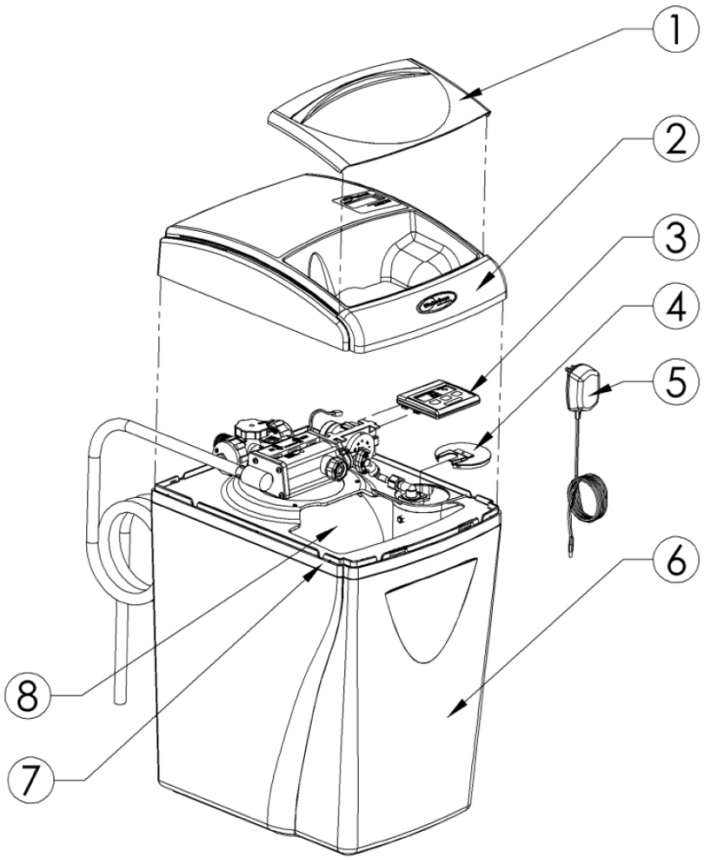


Figure 4: Cabinet and Cover Assemblies

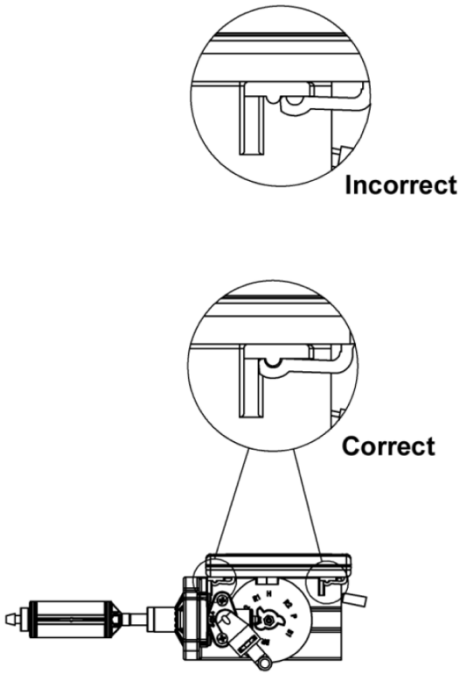


Figure 5: Controller Tab Lock Detail

	Part #	Description	Quantity
1	100240991	Salt Port Lid	1
2	100241011	Valve Cover Assembly	1
3	100241148	Computer Control Assembly (700 and 950)	1
	100241150	Computer Control Assembly (900)	
4	100240996	Brine Well Cover	1
5	100238182	12V Transformer/Power Cord	1
6	100240987	Cabinet 700	1
	100240995	Cabinet 900/950	
7	100240990	Support Panel	1
8	100037755	Media tank, empty, 700 only	1
	100037754	Media tank, empty, 900 only	
	100037756	Media tank, empty, fill plug, 950 only	

Cabinet and Assemblies

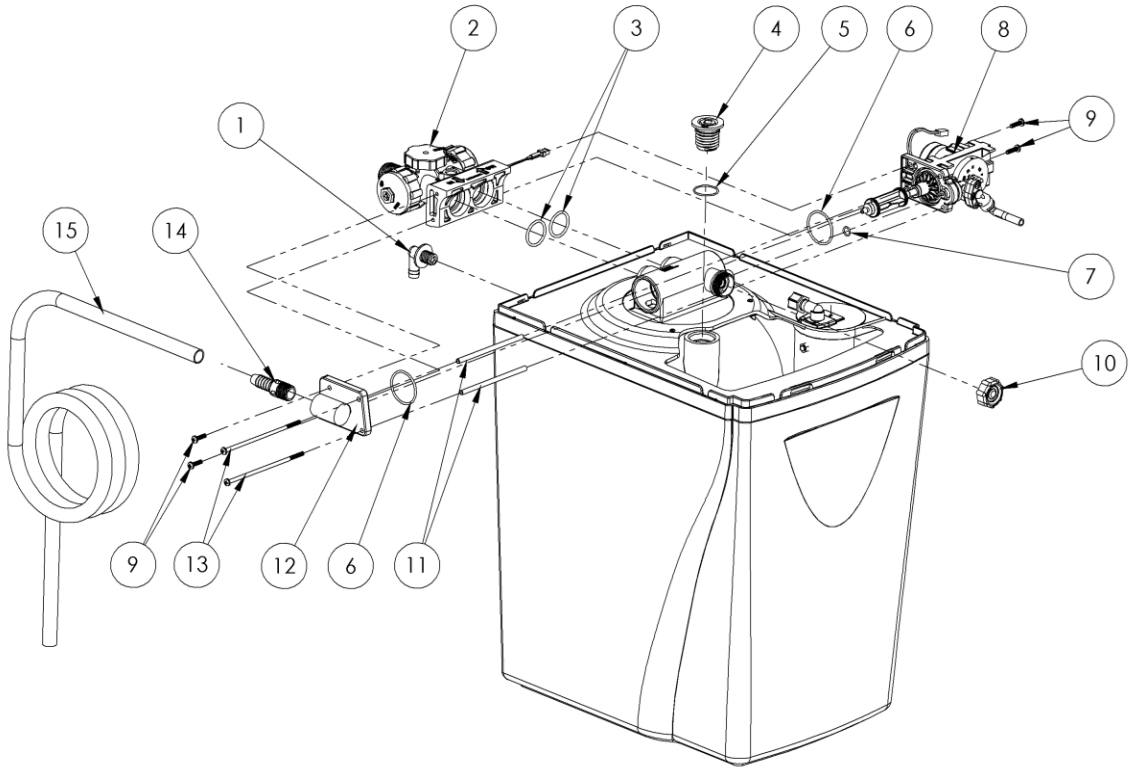


Figure 6: Cabinet and Assemblies

	Part #	Description	Quantity
1	100238195	Overflow Elbow	1
2	100238184	Bypass Valve Assembly	1
3	100242050	O-Ring	2
4	100241974	Fill Plug, Model 950 only	1
5	100241972	O-Ring, Model 950 only	1
6	100241865	O-Ring	2
7	100241869	O-Ring	1
8	100252693	Drive End Cap Assembly	1
9	100238199	Screw	4
10	100241983	Injector Assembly	1
11	100242049	Sleeve	2
12	100238192	Drain End Cap Assembly, Model 700 and 900 only, not shown	1
	100241852	Drain End Cap Assembly, Model 950 only	
13	100238198	Screw	2
14	100238185	Drain Fitting, 1/2-inch MNPT x Barb	1
15	100242053	Drain Line	1

Injector Assembly

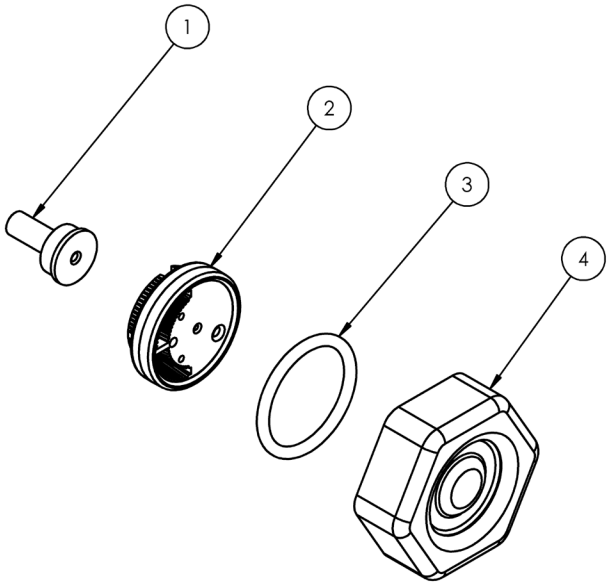


Figure 7: Injector Assembly

	Part #	Description	Quantity
1	100241946	Injector Throat	1
2	100237421	Injector Nozzle with Over-Mold Gasket	1
3	100242034	O-Ring	1
4	100037729	Injector Cap	1
	100238192	All of the above parts	

100241946 Injector Throat	In conjunction with the Injector Nozzle (100237421) 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.
100237421 Injector Nozzle with Over-Mold Gasket	Together with the Throat (100241946) creates the vacuum that draws the brine solution from the Brine Cabinet. The small hole in the Injector Nozzle (100237421) 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.
100037729 Injector Cap	Holds the injector assembly together and seals the assembly to the Main Control Valve.

Bypass Valve Assembly

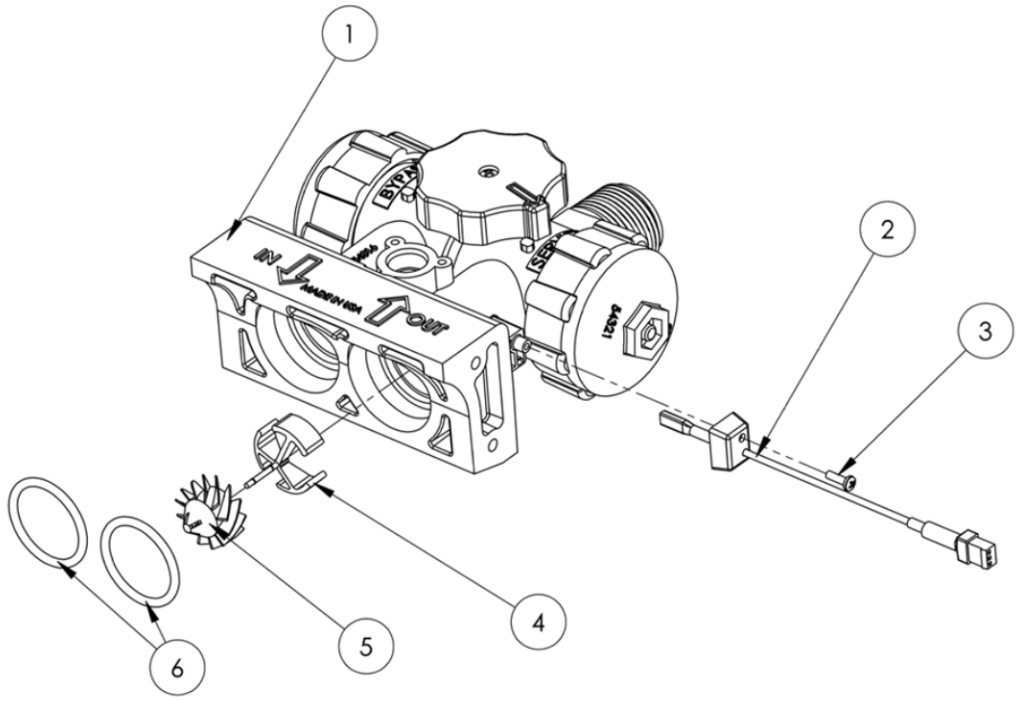


Figure 8: Bypass Valve Assembly

	Part #	Description	Quantity
1	100238184	Bypass Valve Assembly (also includes items 2-6)	1
2	100238200	Turbine Sensor/Cap Assembly	1
3	100241861	Sensor Cap Screw, self-tapping	1
4	100238202	Plastic Turbine Axle	1
5	100238201	Turbine Assembly	1
6	100242050	O-Ring	2

Top Fill Plug Assembly (950)

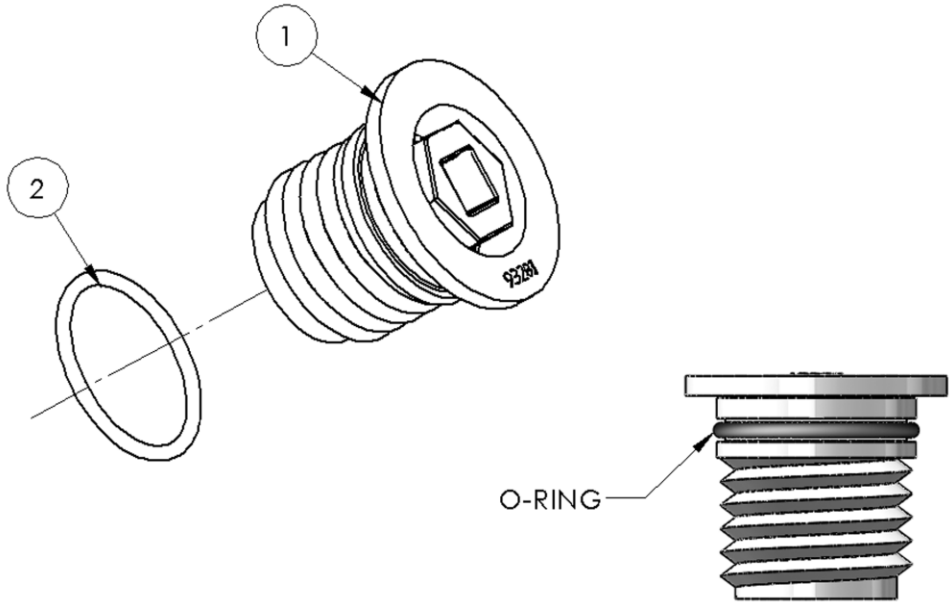


Figure 9: Fill Plug Assembly

	Part #	Description	Quantity
1	100241974	Fill Plug	1
2	100241972	Fill Plug O-Ring	1

100241974 Fill Plug	The Fill Plug (100241974) seals the media access ports in the Media Tank. Care should be taken that the O-Ring seal area is kept clean and free of debris. Also, the O-Ring should be in the proper location in the groove. Do not overtighten the Fill Plug when assembling. When the flange comes into contact with the Media Tank, stop tightening. A 3/4-inch socket is recommended for assembly.

Drive End Cap Assembly

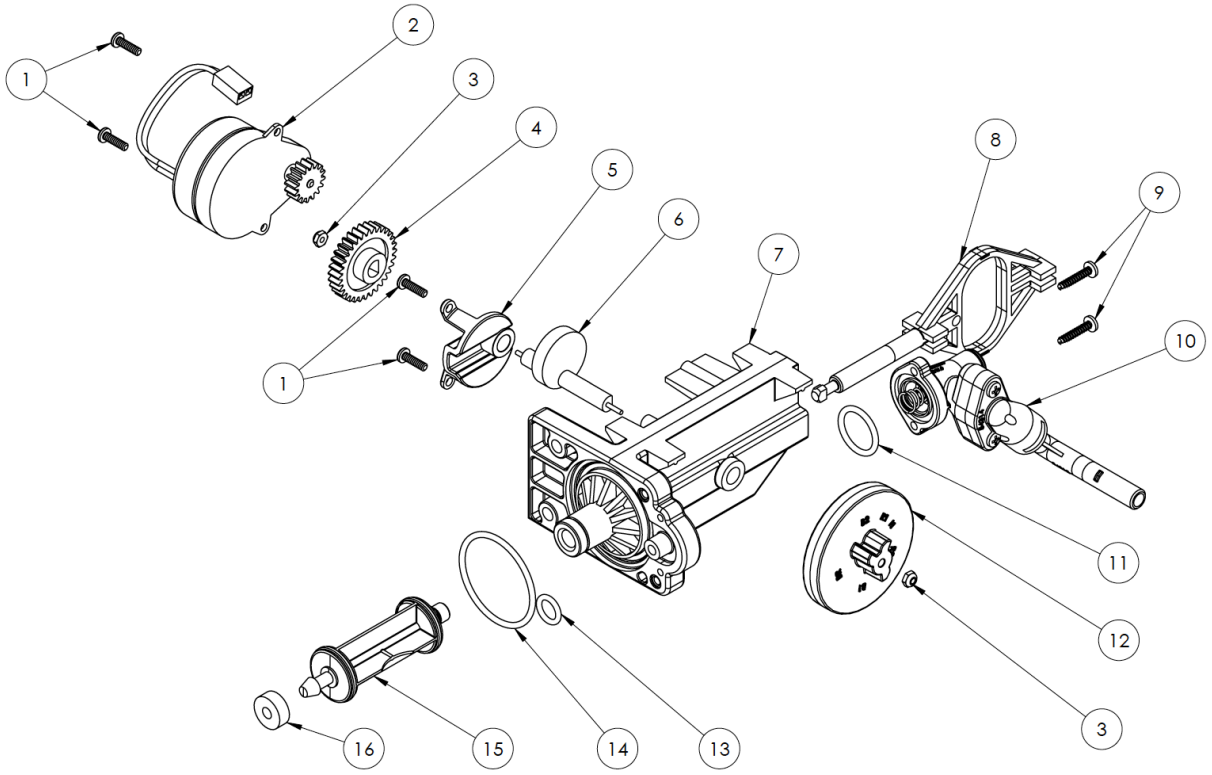


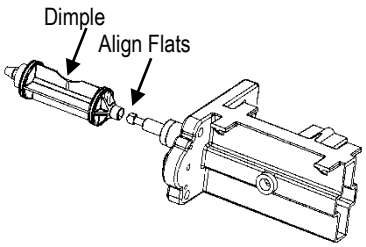
Figure 10: Drive End Cap Assembly

	Part #	Description	Quantity
1	100238196	Screw, self-tapping	2
2	100238181	Drive Motor	1
3	100238190	1/4-inch Hex Nut	2
4	100238188	Drive Gear	1
5	100241861	Cam Cover	2
6	100241940	Piston Slide Cam	1
7	100037805	Drive End Cap	1
8	100240958	Piston Slide	1
9	100238197	Screw, self-tapping	2
10	100241120	Brine Valve Assembly	1
11	100241867	O-Ring	1
12	100241057	Magnet Disk Assembly	1
13	100241869	O-Ring	1
14	100241865	O-Ring	1
15	100238189	Drive Piston Assembly	1
16	100242051	Drain Gasket	1
	100252693	Entire Assembly (all of the above parts except 1, 2, and 13)	

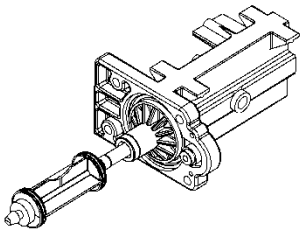
Assembly and Parts, Cont.

Drive End Cap Assembly Cont.

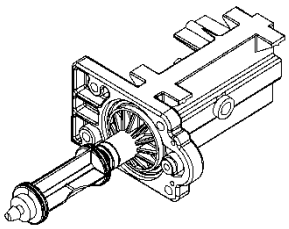
100238181 Drive Motor	The Motor is held in place by two, 1/2-inch self-tapping screws. The screws should be “snug.” The brass pinion gear on the Motor should engage the plastic Drive Gear (100238188). The wires should be securely fastened to the Controller.
100238188 Drive Gear	The Drive gear is assembled 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 (100238188) and Piston Slide Cam (100241940).
100241941 Piston Slide Cam Cover	The cover secures the Piston Slide Cam (100241940) in place and acts as a bushing for the Cam Shaft.
100241940 Piston Slide Cam	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 (100238188) is attached at the short end and the Magnet Disk (100241057) at the other end. The Slide Cam is assembled inside of the Piston Slide (100240958). This Cam Shaft should turn freely before the Motor is assembled.
100037805 Drive End Cap	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.
100240958 Piston Slide	The Slide should move freely inside the End Cap Housing.
100238189 Drive Piston Assembly	The Drive Piston attaches to the Piston Slide (100240958) 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 reference drawings below.



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

Brine Valve Housing Assembly

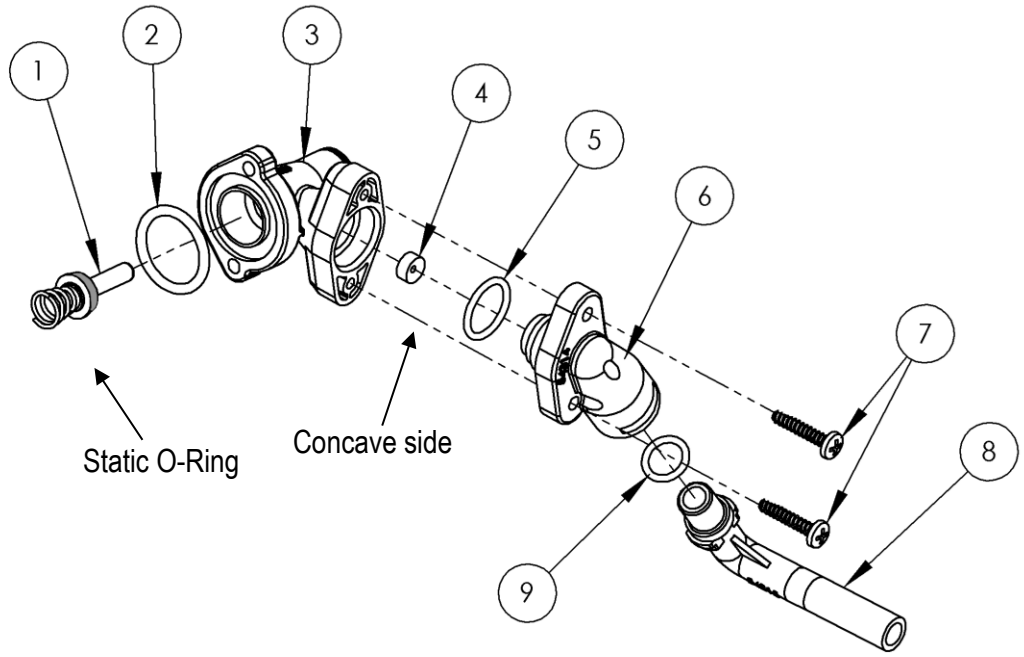


Figure 11: Brine Valve Housing Assembly

	Part #	Description	Quantity
1	100237712	Piston Assembly (includes O-Ring & Spring)	1
2	100241867	O-Ring	1
3	100237707	Housing	1
4	100241875	0.5 gpm Flow Control	1
5	100242033	O-Ring	1
6	100241001	Brine Valve Cap for Brine Elbow	1
7	100238197	Screw, self-tapping	2
8	100241002	Brine Valve Elbow	1
9	100241869	O-Ring	1
	100241120	Entire Assembly (all of the above parts)	

100237712 Brine Piston	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.
100237707 Housing	Just inside the entrance hole for the Brine Piston (100237712) 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.
100241875 0.5 gpm Flow Control	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 locator “ribs” with the concave side facing the Housing End Cap (100241001).
100241001 Brine Valve Cap for Brine Elbow	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.

Safety Shutoff Assembly

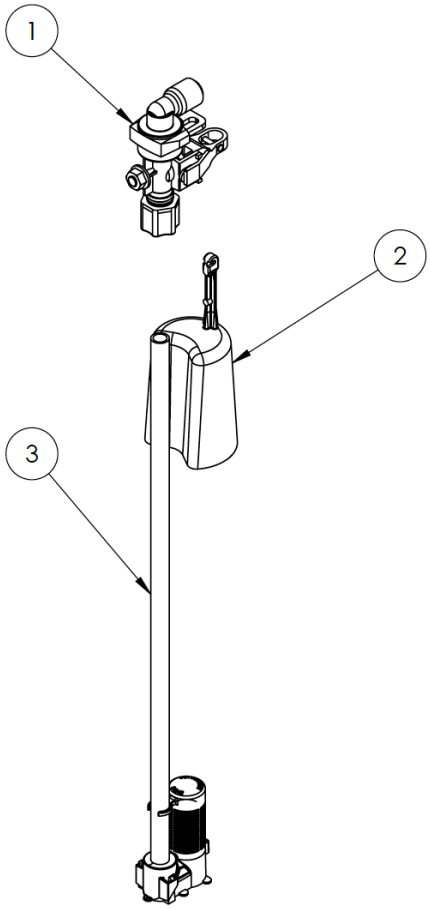


Figure 12: Safety Shutoff Assembly

	Part #	Description	Quantity
1	100240967	Safety Shutoff (See Figure 13)	1
2	100241668	Float	1
3	100039601	Air Check, 700	1
	100240937	Air Check, 900, 950	
	100065565	Entire Assembly (all of the above parts)-for 700	
	100238183	Entire Assembly (all of the above parts)-for 900 and 950	

Safety Shutoff Valve Elbow Installation

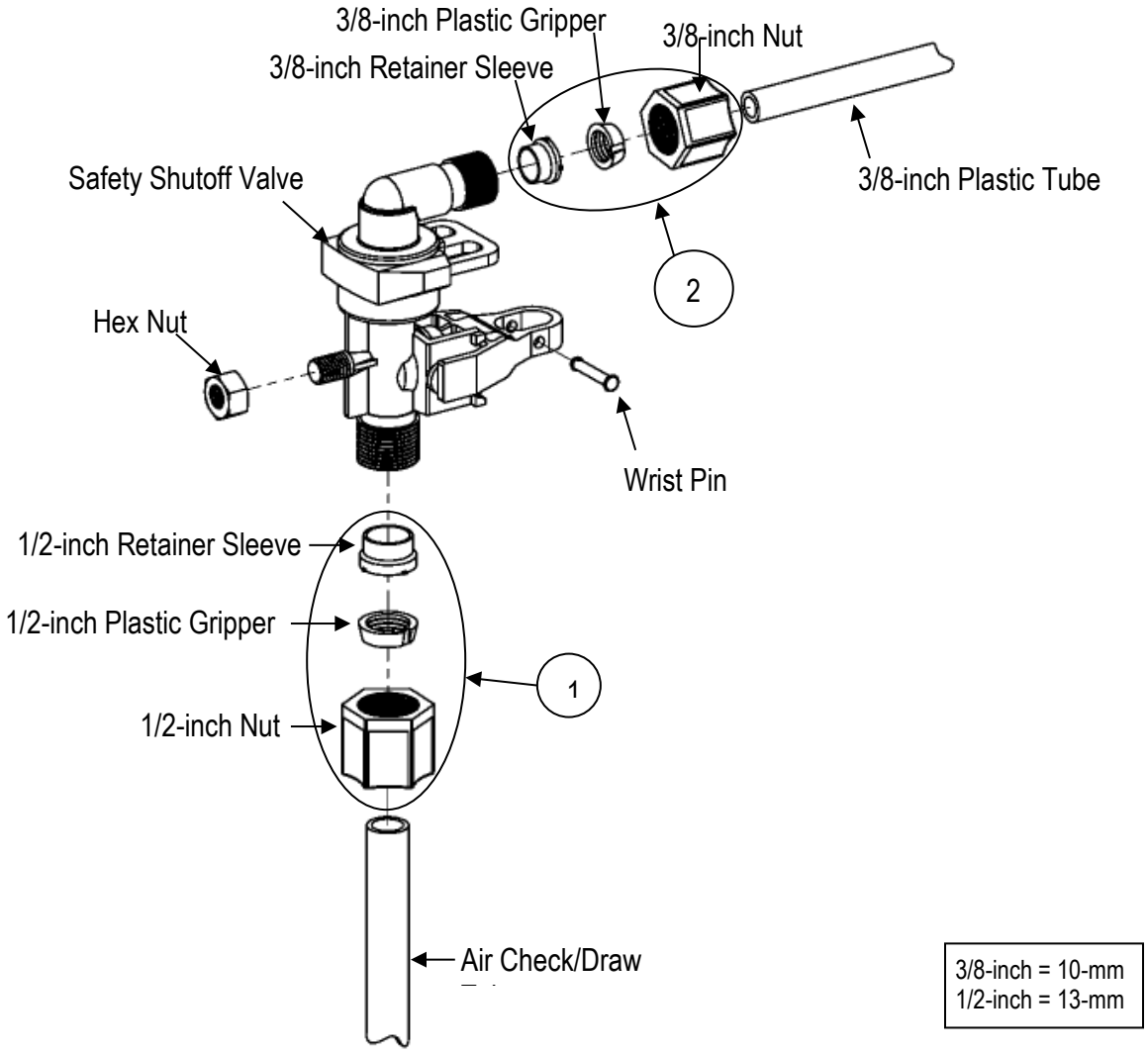


Figure 13: Safety Shutoff Valve Elbow Installation

	Part #	Description	Quantity
1	100237978	1/2-inch (13-mm) Compression Assembly	1
2	100237983	3/8-inch (10-mm) Compression Assembly	1

The nut, gripper, and retainer sleeve are a three-piece assembly that can come apart if removed from the elbow body. Parts must be reassembled exactly as shown to function properly.

When connecting the 100241002 brine valve elbow 3/8-inch (10-mm) plastic tube, first assemble the nut, gripper, and retainer sleeve on the tubing. Then screw the nut on the elbow body. With a wrench, tighten the nut securely to create a water-tight connection.

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 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	waterMizer indicator should turn with water usage. If no flow, see below
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
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, 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

Troubleshooting, Cont.

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 cabinet	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
	Sticking brine refill valve	Remove valve. Check for obstruction
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 20 psi (1.4 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 lines and fittings for loose connections
	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 cabinet	Clean brine valve housing, replace piston assembly
Controller error messages	“E1” Home not found	Cycle power by unplugging the transformer and plugging it back in. It will look for Home again. Make sure the controller is pushed all the way onto the drive end cap
	“E2” Motor error	Plug motor in and cycle power. If it is already plugged in, then motor wiring or the motor plug is defective
	“E3” Home offset	Disk did not start in proper home location. Controller will automatically try to reset itself by finding Home and continuing the regeneration. Make sure the controller is pushed all the way onto the drive end cap
	“E4” Home latched	Gear teeth are not engaged, gear is stripped, or something is jammed in the valve. Cycle the power to reset
	“E5” Memory Error	Replace controller

WaterBoss® Water Conditioner Specifications

	700	900	950
Max Compensated Hardness gpg (mg/L)	70 (1,200)	90 (1,540)	35 (600)
Maximum ferrous iron reduction[1]	10 ppm[1]	10 ppm[1]	0
Minimum pH (standard units)	7	7	7
Media type and amounts	Self-Cleaning Filter Media. Super Fine Mesh Resin Total–0.7 cu. ft. (20 L)	Self-Cleaning Filter Media. Super Fine Mesh Resin Total–1 cu. ft. (28 L)	Redox Media–4 lb (1.8 kg) Activated Carbon–0.25 cu. ft. (7 L) Super Fine Mesh Resin–0.7 cu. ft. (20 L) Total: 1 cu. ft. (29 L)
Salt[2]–pounds (kg) Capacity–grains (grams) Water–gallons (L) Time–minutes	1 (0.5) 4,500 (292) 14.5 (54.8) 18:30	1 (0.5) 5,510 (357) 17.2 (65.1) 24:00	1 (0.5) 5,000 (324) 18.5 (70.1) 18:30
Salt[2]–pounds (kg) Capacity–grains (grams) Water–gallons (L) Time–minutes	6.5 (2.9) 19,100 (1,238) 22.4 (85.8) 32:00	8 (3.6) 28,775 (1,865) 23.5 (89.0) 33:30	6.5 (2.9) 19,100 (1,238) 23.9 (90.5) 32:00
Salt[2]–pounds (kg) Capacity–grains (grams) Water–gallons (L) Time–minutes	12 (5.4) 22,700 (1,471) 28.6 (108.3) 41:00	15 (6.8) 36,490 (2,365) 32 (121) 46:30	12 (5.4) 22,700 (1,471) 30.1 (113.9) 41:00
Minimum / Maximum water and ambient temperature–°F (°C)	40/120 (4–49)	40/120 (4–49)	40/120 (4–49)
Mineral tank size–in. (cm)	10.5 I.D. x 19 (26.7 I.D. x 48.3)	10.5 I.D. x 26 (26.7 I.D. x 66)	10.5 I.D. x 26 (26.7 I.D. x 66)
Peak flow rate	8 gpm (30 L/min)	7.5 gpm (30 L/min)	8 gpm (30 L/min)
Pressure drop at service flow rate of 8 gpm (30.3 L/min)–psi (bar)	15 (1.0)	15 (1.0)	15 (1.0)
Maximum flow rate to drain during regeneration–backwash gpm (L/min)	2.0 (7.6)	2.0 (7.6)	3.0 (11.4)
Water Pressure (min–max psi) (bar)*	20–80 (1.4/5.5)	20–80 (1.4/5.5)	20–80 (1.4/5.5)
Minimum water flow required–gpm (L/min)	2.0 (7.6)	2.0 (7.6)	3.0 (11.4)
Maximum chlorine (ppm)	0.0	0.0	3.0
Controller type	4 Button	4 Button	4 Button
Frequency of regeneration	Demand	Demand	Demand
Salt storage–lb (kg)	120 (54)	170 (77)	170 (77)
Height–in. (cm)	25.5 (65)	30.5 (78)	30.5 (78)
Footprint–in. (cm)	15 x 19 (38 x 48)	15 x 19 (38 x 48)	15 x 19 (38 x 48)
Electrical rating	12 VAC, 50/60 Hz, 0.015kW-hr	12 VAC, 50/60 Hz, 0.015kW-hr	12 VAC, 50/60 Hz, 0.015kW-hr
Plumbing connections	1" male (MNPT)	1" male (MNPT)	1" male (MNPT)
Shipping weight—approximate–lb (kg)	85 (39)	105 (48)	105 (48)

[1] The state of Wisconsin limits iron reduction claims to 5 ppm.
[2] Use clean white pellet, cube-style, or solar salt
* IAPMO Unified Plumbing Code limits water supply pressure to 80 psi maximum.

Efficiency Statements

This product is efficiency rated according to NSF/ANSI 44. The stated efficiencies are valid only at the specified salt dosage and 8 gpm (30 L/min):

Model	Rated Efficiency	Salt Dosage	Capacity at That Dosage
700	4,470 grains/lb (639 grams/kg)	1 lb (0.5 kg)	4,470 grains (290 grams)
900	5,510 grains/lb (787 grams/kg)	1 lb (0.5 kg)	5,510 grains (357 grams)
950	5,000 grains/lb (714 grams/kg)	1 lb (0.5 kg)	5,000 grains (324 grams)

An Efficiency-rated water softener is a Demand-initiated regeneration softener that also complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in its operation.

Efficiency-rated water softeners shall have a rated salt efficiency of not less than 3,350 grains of total hardness exchange per pound of salt (based on NaCl equivalency) (477 grams of total hardness exchange per kilogram of salt), and shall not deliver more salt than its listed rating.

Efficiency is measured by a laboratory test described in NSF/ANSI 44. The test represents the maximum possible efficiency that the system can achieve. Operational efficiency is the actual efficiency achieved after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminates that reduce the softeners' capacity.

Reduction capabilities for specific contaminants verified by test data.

Name of Substance	USEPA Max. Contaminant Level	pH	Flow Rate	Pressure
Barium	2.0 mg/L	7.5 ± 0.5	8.0 gpm (30 L/min)	35 ± 5 psig (2.4 ± 0.3 bar)
Radium 226/228	5 pCi/L	7.5 ± 0.5	8.0 gpm (30 L/min)	35 ± 5 psig (2.4 ± 0.3 bar)

Certificates

State of California
Department of Health Services

Water Treatment Device
Certificate Number

05 - 1718

Date Issued: December 12, 2005

Trademark/Model Designation	Replacement Elements
Waterboss 700	N/A

Manufacturer: Waterboss

The water treatment device(s) listed on this certificate have met the testing requirements pursuant to Section 116830 of the Health and Safety Code for the following health related contaminants:

Microbiological Contaminants and Turbidity
None

Inorganic/Radiological Contaminants
Barium
Radium 226/228

Organic Contaminants
None

Rated Service Capacity: N/A

Rated Service Flow: 8 gpm

Conditions of Certification:

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

State of California
Department of Health Services

Water Treatment Device
Certificate Number

05 - 1719

Date Issued: December 12, 2005

Trademark/Model Designation	Replacement Elements
Waterboss 900	N/A
Waterboss Proseries 51PS-B	N/A

Manufacturer: Waterboss

The water treatment device(s) listed on this certificate have met the testing requirements pursuant to Section 116830 of the Health and Safety Code for the following health related contaminants:

Microbiological Contaminants and Turbidity
None

Inorganic/Radiological Contaminants
Barium
Radium 226/228

Organic Contaminants
None

Rated Service Capacity: N/A

Rated Service Flow: 8 gpm

Conditions of Certification:

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

State of California
Department of Health Services

Water Treatment Device
Certificate Number

05 - 1720

Date Issued: December 12, 2005

Trademark/Model Designation	Replacement Elements
Waterboss 950	N/A

Manufacturer: Waterboss

The water treatment device(s) listed on this certificate have met the testing requirements pursuant to Section 116830 of the Health and Safety Code for the following health related contaminants:

Microbiological Contaminants and Turbidity
None

Inorganic/Radiological Contaminants
Barium
Radium 226/228

Organic Contaminants
None

Rated Service Capacity: N/A

Rated Service Flow: 8 gpm

Conditions of Certification:

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

WaterBoss® has these third-party listings:

System Tested and Certified by NSF International according to CSA B483.1 and NSF/ANSI Standard 44 for the reduction of Barium, Radium 226/228, and Hardness Reduction.

WaterBoss®
4343 S. Hamilton Rd. Groveport, OH 43125
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