MAYTAG®
ST SERIES

WATER TREATMENT SYSTEM OPERATION MANUAL



Certified by
International Association of Plumbing and Mechanical Officials (IAPMO) R&T
NSF/ANSI 42, 44, 61 & 372 · IPC · IRC

Reference Performance Data Sheet

W11572554A

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WATER TREATMENT SYSTEM SAFETY

Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.



This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and either the word "DANGER" or "WARNING." These words mean:

⚠ DANGER — **You can be killed or seriously injured if you don't immediately follow instructions.**

⚠ WARNING — **You can be killed or seriously injured if you don't follow instructions.**

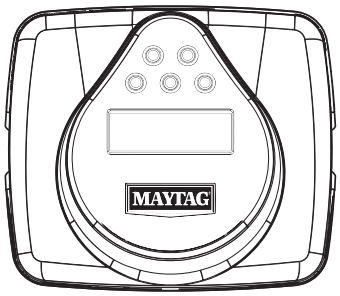
All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

INTRODUCTION

IMPORTANT: Failure to follow this instruction can result in personal injury or damage to the equipment. This purpose of this installation manual is to guide the installer through the installation and operation process of MAYTAG® series water treatment system.

This manual is a reference and not included in every system installation situation. The technician installing this equipment must have:

- Training in the MAYTAG® series controllers.
- Knowledge of water treatment and how to determine proper control settings.
- Basic plumbing skills.
- The directional instructions “left” and “right” are determined by looking at the front of unit.

Left  Right

Inspect the unit for damage or missing parts. Contact your supplier if any discrepancies exist.

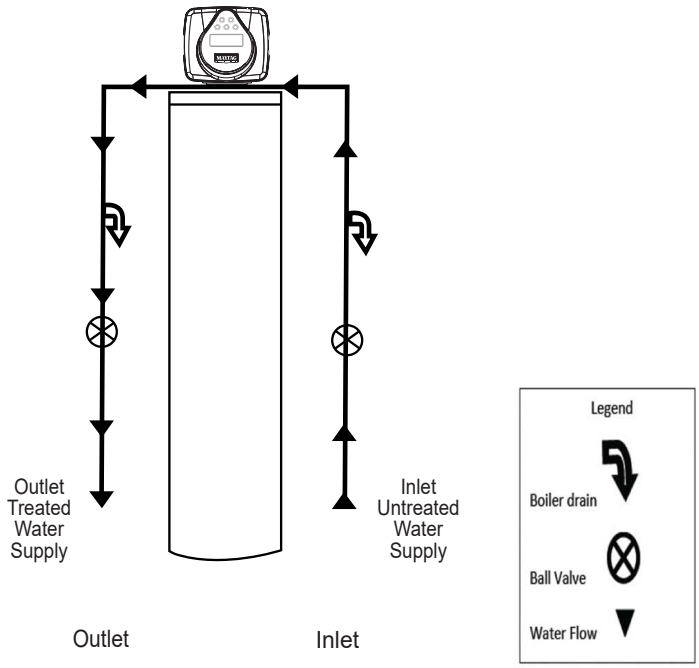


Figure 1: Typical Inlet/Outlet Piping and Valves for Proper Startup and Servicing

Main Parts

- Mineral Tank with Valve
- Brine Tank with Cover
- Brine Well Assembly
- Water Bypass
- Plumbing Connectors

INSPECTION

The system is shipped with several parts unassembled. When parts are removed from the packing, they must be inspected for damage.

If any parts are damaged or missing, contact your supplier.
IMPORTANT: When handling the mineral tank do not turn it upside down or drop on its side.

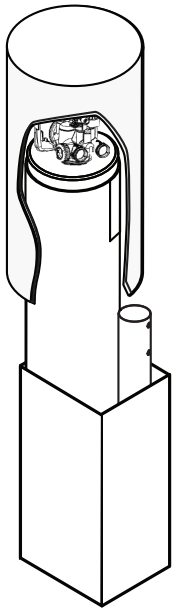


Figure 2

Remove system from carton:

1. Remove the box top from the system.
2. Remove the brine tank cover and lay aside for now.
3. Lift the brine tank up and off the top of the system. Set brine tank up and in position.
4. Remove the components from the shipping carton (bypass box, brine tube assembly, plumbing connectors & brine tubing)
5. Remove tank w/valve from box. Set upright and in position.

To assemble the Salt Tank:

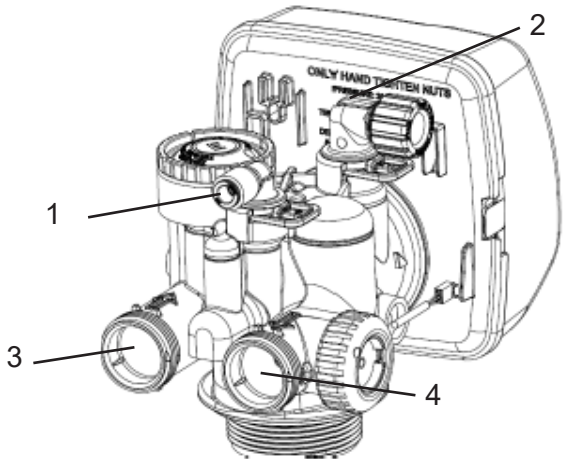
1. Stand the salt tank up and in position. Level as needed. The tank has two ports that will be connected. One to a drain and one to the valve.
2. Remove the brine well cap from the brine well.
3. Remove the overflow fitting from the brine well cap.
4. Place the brine well in position inside the brine tank aligning the two holes in the brine well with the two holes in the side of the brine tank.
5. Install the overflow fitting in the bottom hole to secure the brine well to the brine tank.

IMPORTANT: The mineral tank contains loose particles that will shift. If the tank is turned upside down or laid back quickly, the particles may enter the valve. If this happens, the valve may need to be disassembled and cleaned.

1. Stand the tank up and in position.
2. If the floor under the mineral tank is uneven, level as needed.

PARTS AND FEATURES

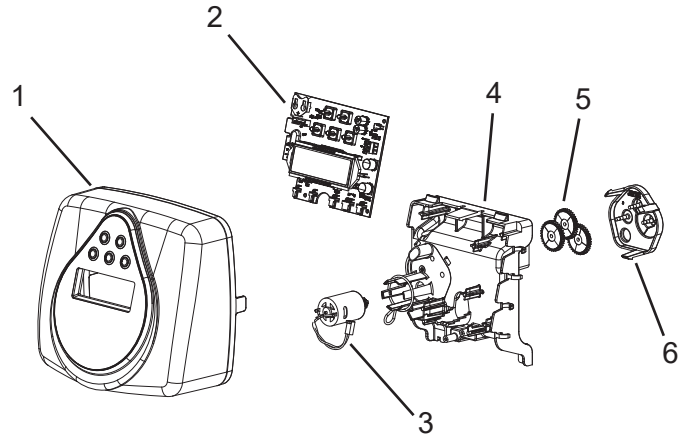
Valve Layout



1. Refill Flow Control Fitting
2. Drain Fitting
3. Untreated Water Inlet
4. Treated Water Outlet

Figure 3

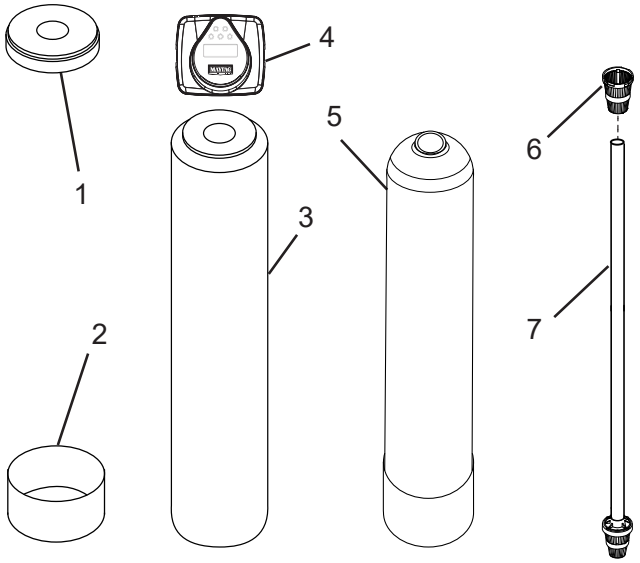
Control Layout



1. Face Cover Assembly
2.Circuit Board
3. Motor
4. Drive Bracket Asy
5. Drive Gear 12x36
6. Drive Gear Cover

Figure 5

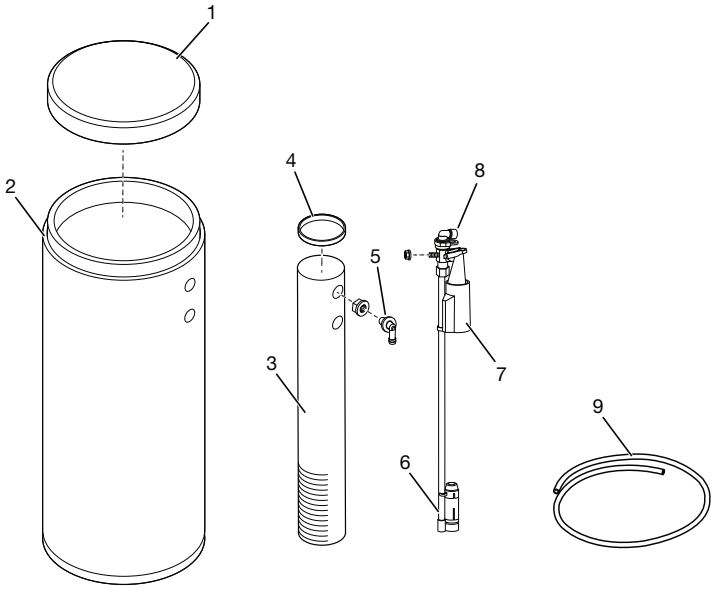
Mineral Tank



1. Tank Jacket Cover
2. Tank Jacket Sleeve
3. Tank Jacket
4. Valve
5. Mineral Tank
6. Upper Basket
7. Distributor Asy

Figure 4

Brine Tank



1. Cover
2. Brine Tank
3. Brine Well
4. Brine Well Cap
5. Overflow Fitting
6. Air Check
7. Float
8. Brine Valve Asy
9. Tubing

Figure 6

EQUIPMENT DIMENSIONS

Dimensions	10 x 44” Tank (25.4 x 111.76 cm)	10 x 54” Tank (25.4 x 137.16 cm)	13 x 54” Tank (33.02 x 137.16 cm)
A	44.25” (112.39 cm)	54.25” (137.79 cm)	54.25” (137.79 cm)
B	52.0” (132.08 cm)	62.0” (157.48 cm)	62.0” (154.9 cm)
C	41.25” (104.77 cm)	41.25” (104.77 cm)	41.25” (104.77 cm)
D	52.0” (132.08 cm)	62.0” (157.48 cm)	62.0” (157.48 cm)
E	47.0” (119.38 cm)	57.0” (144.78 cm)	57.0” (144.78 cm)
F	32.0” (81.28 cm)	32.0” (81.28 cm)	32.0” (81.28 cm)
G	35.31” (89.68 cm)	35.31” (89.68 cm)	35.31” (89.68 cm)

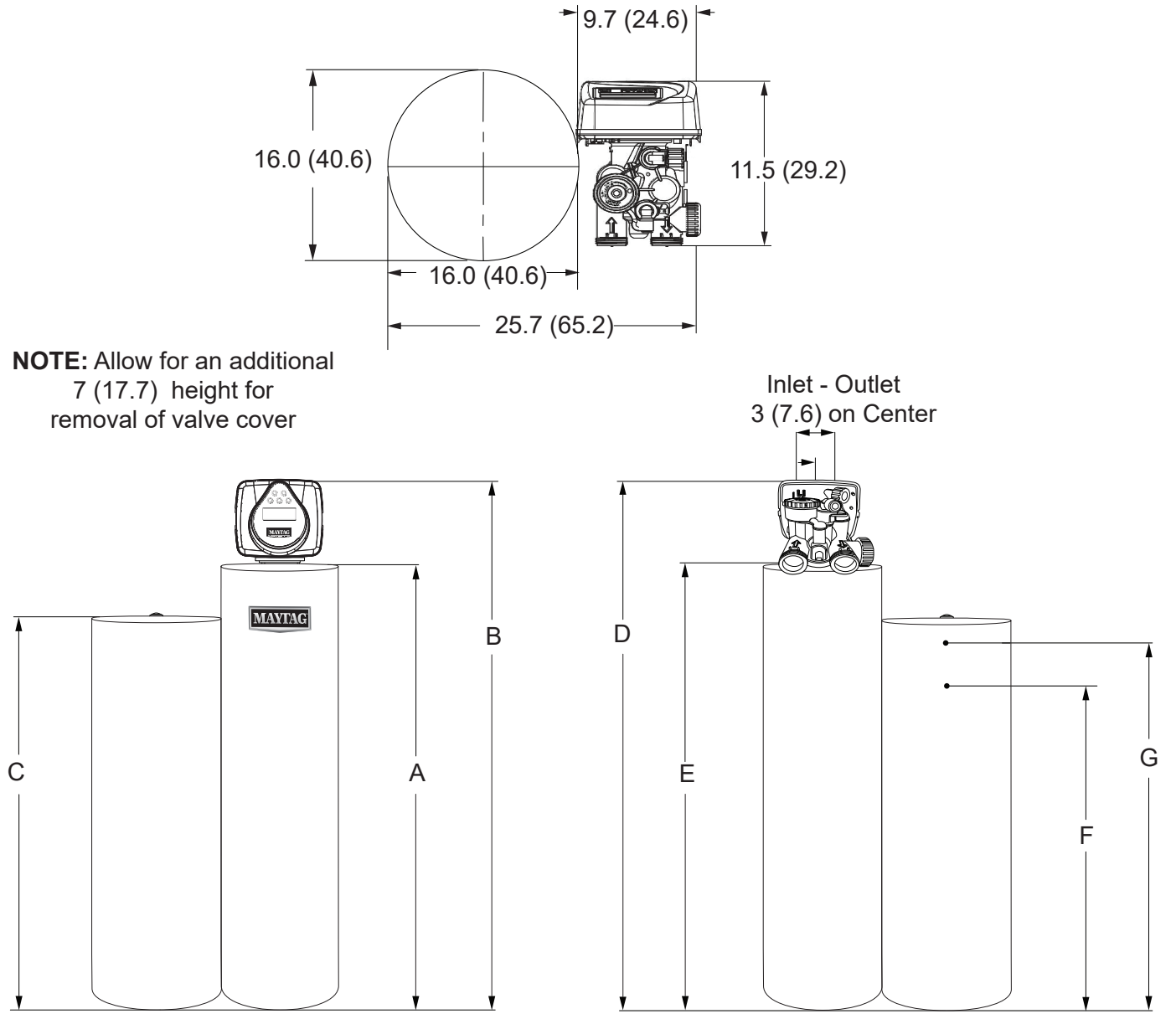


Figure 7: Equipment Dimensions

Dimensions are given in: In (cm)

SYSTEM LAYOUT

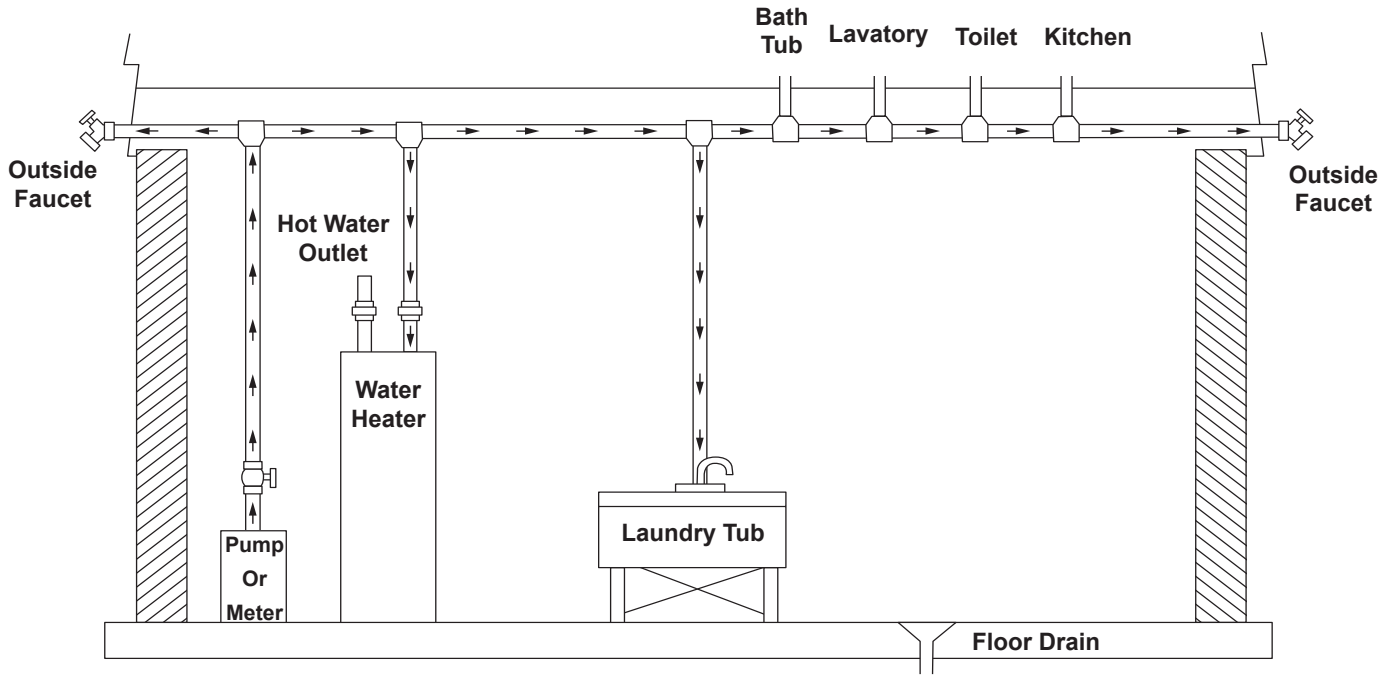


Figure 8: Standard Basement Before Installation (Cold water lines shown)

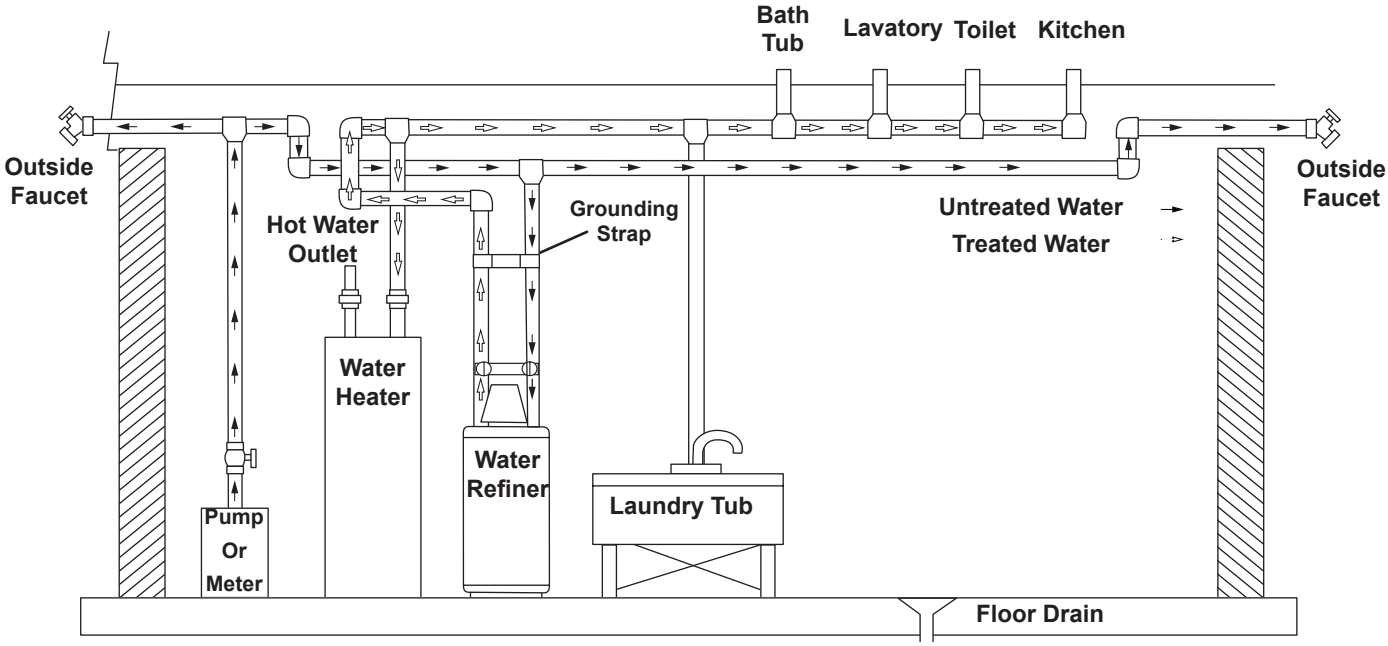


Figure 9: Treated Water Flow Diagram

SYSTEM SPECIFICATIONS

Model Number	3M-ST32-XXX	3M-ST40-XXX	3M-ST48-XXX	3M-ST64-XXX	3M-ST80-XXX
Recharge Style	Upflow	Upflow	Upflow	Upflow	Upflow
Mineral Tank Size	10” x 44”	10” x 54”	10” x 54”	13” x 54”	13” x 54”
Resin Volume	1.00 ft³	1.25 ft³	1.50 ft³	2.00 ft³	2.50 ft³
Recharge (Salt) Tank Size	16” x 40”	16” x 40”	16” x 40”	16” x 40”	16” x 40”
Salt Storage	338 lbs	338 lbs	338 lbs	338 lbs	338 lbs
Drain Water Rate	2.7 gpm	2.7 gpm	2.7 gpm	4.2 gpm	4.2 gpm
Service Connection Size	1” NPT	1” NPT	1” NPT	1” NPT	1” NPT
Drain Connection Size	3/4” NPT	3/4” NPT	3/4” NPT	3/4” NPT	3/4” NPT
Recharge (Brine) Connection Size	3/8” NPT	3/8” NPT	3/8” NPT	3/8” NPT	3/8” NPT
Typical Installation Space Requirement	28”W x 20”D x 62”H	28”W x 20”D x 72”H	28”W x 20”D x 72”H	28”W x 20”D x 72”H	28”W x 20”D x 72”H
Shipping Weight	104 lbs	121 lbs	134 lbs	174 lbs	199 lbs

Model Number	3M-STR32-XXX	3M-STR32XC-XXX	3M-STR40-XXX	3M-STR64-XXX
Recharge Style	Upflow	Upflow	Upflow	Upflow
Mineral Tank Size	10” x 44”	10” x 54”	10” x 54”	13” x 54”
Resin Volume	1.00 ft³	1.00 ft³	1.25 ft³	2.00 ft³
Recharge (Salt) Tank Size	16” x 40”	16” x 40”	16” x 40”	16” x 40”
Salt Storage	338 lbs	338 lbs	338 lbs	338 lbs
Drain Water Rate	2.7 gpm	2.7 gpm	2.7 gpm	4.2 gpm
Service Connection Size	1” NPT	1” NPT	1” NPT	1” NPT
Drain Connection Size	3/4” NPT	3/4” NPT	3/4” NPT	3/4” NPT
Recharge (Brine) Connection Size	3/8” NPT	3/8” NPT	3/8” NPT	3/8” NPT
Typical Installation Space Requirement	28”W x 20”D x 62”H	28”W x 20”D x 72”H	28”W x 20”D x 72”H	28”W x 20”D x 72”H
Shipping Weight	116 lbs	127 lbs	133 lbs	192 lbs

INSTALLATION INSTRUCTIONS

Location Requirements

Indoor Location Requirements

IMPORTANT:
For indoor location of the Water Treatment System, make sure to follow these requirements:

- Install the appliance on flat and level surface.
- Make sure to maintain the space to access the equipment for maintenance and adding regenerant (salt) to brine tank.
- Operating ambient temperature: 34°F-120°F (1°C-49°C).
- Operating water temperature: 35°-100°F (1.7°C-37.8°C).Working water pressure range: 20 psi - 120 psi (1.38 bar - 8.27 bar).
- Maintain constant electrical supply to operate the control.
- Total minimum pipe run to water heater of 10 ft. (3 m) to avoid the backup of hot water into system.
- Local drain for discharge as close as possible to the appliance.
- Water line connections with shutoff or bypass valves.
- Must meet any local and state codes for site of installation.
- Valve is designed for minor plumbing misalignments. Do not support weight of system on the plumbing.
- Make sure that all the soldered pipes are fully cooled before attaching plastic valve to the plumbing.

Outdoor Location Requirements

IMPORTANT:

- Place the unit at the dry location only, unless listed as Class 2 Power Supply which is suitable for outdoor use.
- A protected environment is recommended when the water system is installed outdoors. Ensure that important measures are taken for outdoor location as mentioned below:
- **Moisture** - Water projected by a nozzle against the enclosure from any direction shall not effect the operation of the machine.
- **Direct Sunlight** - In direct sunlight the material will fade or discolor over time. The integrity of the material will not degrade to cause system failures. Use of weather cover is recommended.
- **Temperature** - Extreme hot or cold temperature will cause damage to the valve or control. Freezing temperatures will freeze the water in the valve. This will cause physical damage to the internal parts as well as the plumbing and mineral. High temperatures will affect the control. The display may become unreadable but the control must continue to function. When the temperature returns to normal operating limits, the display will re-appear. A weather cover is recommended to assist with high temperature applications.
- **Insects and Dust** - The controller and valve have been designed to keep all but the smallest insects out of the critical areas. Dust is not totally avoidable, but cannot enter in an amount sufficient to interfere with satisfactory operation of the machine. Use of weather cover is recommended.

Electrical Requirements

There are no user serviceable parts in the AC adapter, motor, or PC board, in the event of a failure, these parts must be replaced.

- All electrical connections must be completed according to the local codes.
- Only use the AC power adapter which is supplied with the appliance.
- Plug the AC adapter into an electrical outlet that is not switched ON/OFF.
- To disconnect power, unplug the AC adapter from power supply.

Mechanical Requirements

IMPORTANT:

- Plumbing must be installed in accordance with the International Plumbing Code and any local codes and ordinances.
- Do not use petroleum based lubricants, oils, or hydrocarbon based lubricants. Use only 100% silicone lubricants.
- All plastic connections should be hand tightened. Thread seal tape may be used on connections where o-ring seal is not used.
- **NOTE:** Do not use pliers or pipe wrenches to tighten the plastic connections.
- Soldering near the drain line must be done before connecting the drain line to the valve. Excessive heat will cause interior damage to the valve.
- Refer to the drain line requirements.
- Do not use lead based solder for sweat solder connections.
- The drain line must be a minimum of 1/2” (1.27 cm) diameter. Use 3/4” (1.9 cm) pipe if the backwash flow rate is greater than 7 gpm (26.5 Lpm) or the pipe length is greater than 20 feet (6 m).
- Do not support the weight of the system on the control valve fittings, plumbing, or the bypass.
- It is not recommended to use sealants on the threads. Use thread seal tape on the threads of the 1” (2.54 cm) NPT elbow, drain line connections, and other NPT threads.
- Install appropriate grounding strap across the inlet and outlet metal piping of the water treatment system to ensure that a proper ground is maintained.
- If the plumbing to the water treatment system is metal, a ground strap must be installed.

General Requirements

⚠WARNING

Excessive Weight Hazard

Use two or more people to move and install water treatment system.

Failure to do so can result in back or other injury.

IMPORTANT: Make sure that the valve and tank components of this unit have been assembled and tightened to the proper factory torque specifications. Over tightening can cause improper valve and tank alignment and can damage the tank O-ring (P/N V3180).

- Keep the mineral tank in the upright position. Do not turn upside down or drop. Turning the tank upside down will cause media to enter the valve.
- Do not allow the water system to freeze. Damage from freezing will void this water system's warranty.
- Operating ambient temperature: 34°F - 120°F (1°C - 49°C).
- Operating water temperature: 35°F - 100°F (1.7°C - 37.8°C).
- Working water pressure range: 20 psi - 120 psi (1.38 bar - 8.27 bar).
- Use only regenerant designed for water softening. Do not use ice melting salt, block salt or rock salt.
- When filling mineral tank, do not open water valve completely. Fill tank slowly to avoid media from exiting the tank.
- When installing the water connection (bypass or plumbing adapters) connect to the plumbing system first. Allow heated parts to cool and cemented parts to set before installing any plastic parts. Do not get primer or solvent on o-rings, nuts, or the valve.

Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts.

EQUIPMENT INSTALLATION

NOTE: Before turning on the water.

- If the plumbing to the water treatment system is metal, a ground strap must be installed.
- The plumbing must be self-supporting and secure to avoid movement. A piece of metal or a ground strap is secured to both the inlet and outlet pipes. (See Figure 10)

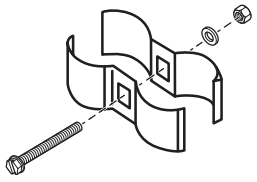


Figure 10

IMPORTANT: The inlet water must be connected to the inlet port of the valve. When replacing an existing system, it is possible that the inlet and outlet get exchanged or plumbing to be installed in an opposite order. Do not solder pipes with lead-based solder.

IMPORTANT: Do not use tools to tighten plastic fittings. Over time, stress can cause break of the connections. When the bypass is used, only hand tighten the nuts.

IMPORTANT: Do not use petroleum based lubricants. Use only 100% silicone based lubricant products when installing any MAYTAG® brand valve. Non-silicone based lubricants can cause plastic components to fail over time.

NOTE: Several fitting packages are available to connect the valve to the water plumbing. See “Bypass Fitting Packages”.

NOTE: The MAYTAG® system should be installed by someone familiar with plumbing practices.

- The system is located after the pressure tank (or incoming water supply) and any filtration equipment. Water that leaves the system will feed the hot water heater and the rest of the building.
- Place the mineral tank and brine tank in position.
- Connect the drain line and Overflow. See “Drain Line and Overflow Line Connection”.
- Use the bypass and plumbing adapters and connect the valve to the building plumbing. Make sure that the water inlet and outlet on the valve matches the inlet and outlet of the plumbing. “Water Line Connection”.
- Connect the brine line. See "Brine Line Connection to Valve”.
- Connect the brine tank overflow. See "Overflow Line Connection".
- Before loading regenerant or applying power, read the entire manual and refer to the following sections.: "Installation Instructions", “Equipment Installation”, “System Operation” and “Placing Water System into Operation”.

Bypass Valve Operation

The bypass valve is typically used to isolate the control valve from the plumbing system’s water pressure in order to perform control valve repairs or maintenance. The bypass valve is particularly unique in the water treatment industry due to its versatility and state of the art design features. The full flow bypass valve incorporates four positions: normal, bypass, diagnostic mode and shut off mode; the diagnostic position allows service personal to work on a pressurized system while still providing untreated bypass water to the facility or residence. Its completely non-metallic, all-plastic design allows for easy access and serviceability without the need for tools. Radial seals handle side-to-side and up/down minor plumbing misalignments, connections need only hand tightening.

The bypass body and rotors are glass-filled Noryl[1] (or equivalent) and the nuts and caps are glass-filled poly-propylene. All seals are self-lubricating EPDM to help avoid the valve from seizing after long periods of non-use. Internal o-rings can easily be replaced if service is required. One internally lubricated o-ring on the rotor creates less friction.

The bypass consists of two interchangeable plug valves that are operated independently by red arrow-shaped handles. The handles identify the flow direction of the water. The plug valves enable the bypass valve to operate in four positions.

1. **Normal Operation:** The inlet and outlet handles point in the direction of flow indicated by the engraved arrows on the control valve. Water flows through the control valve during normal operation and this position also allows the control valve to isolate the media bed during the regeneration cycle. (See Figure 11)

2. **Bypass Operation:** The inlet and outlet handles point to the center of the bypass, the control valve is isolated from the water pressure contained in the plumbing system. Untreated water is supplied to the plumbing system. (See Figure 12)

3. **Diagnostic Mode:** The inlet handle points in the direction of flow and the outlet handle points to the center of bypass valve, system water pressure is allowed to the control valve and the plumbing system while not allowing water to exit from the control valve to the plumbing. (See Figure 13)

4. **Shut Off Mode:** The inlet handle points to the center of the bypass valve and the outlet handle points in the direction of flow, the water is shut off to the plumbing system. If water is available on the outlet side of the softener it is an indication of water bypass around the system (i.e. a plumbing connection somewhere in the building bypasses the system). (See Figure 14)

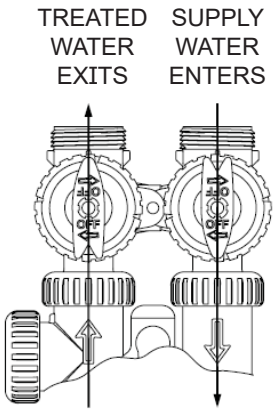


Figure 11

NORMAL OPERATION

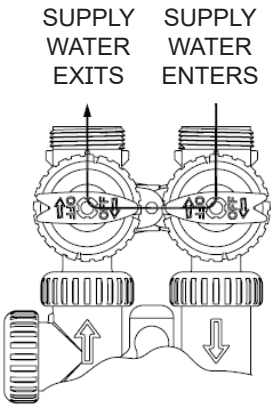


Figure 12

BYPASS OPERATION

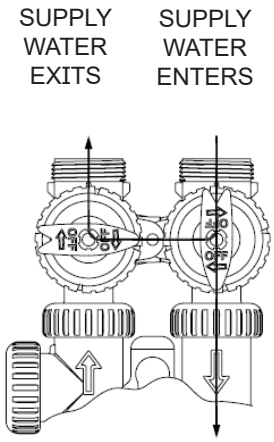


Figure 13

DIAGNOSTIC MODE

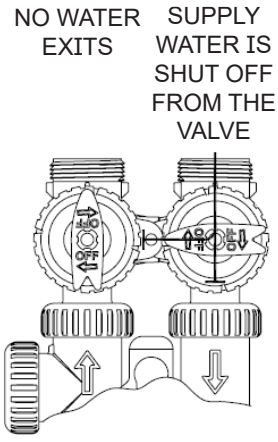
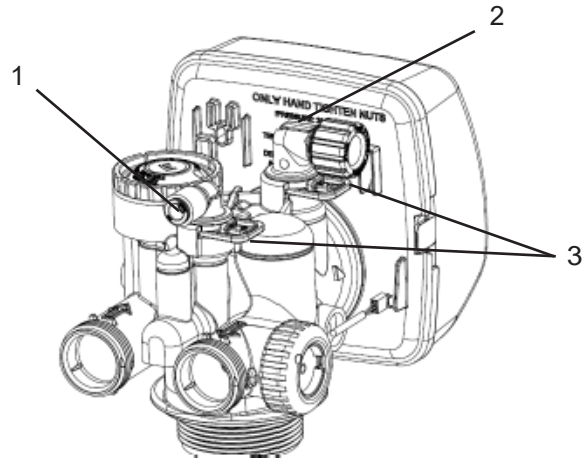


Figure 14

SHUT OFF MODE

Brine Line and Safety Brine Valve Connections



1. *Refill Flow (regenerant) Control Fitting*
2. *Drain Fitting*
3. *Locking Clip (2) Required*

Figure 15
Brine Line Connection to Valve

The brine line must be connected from the control valve to the safety brine valve assembly in the brine tank. Be sure that the brine line tube is secure and free from air leaks. Even a small leak may cause the brine line tube to drain out, and the system will not draw regenerant from the brine tank. This may also introduce air into the valve causing problems with valve operation. Connect the brine line to the refill flow control (regenerant) fitting and safety brine valve fitting by following the instructions. (See figures 15 & 16)

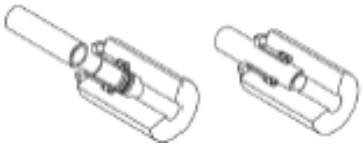


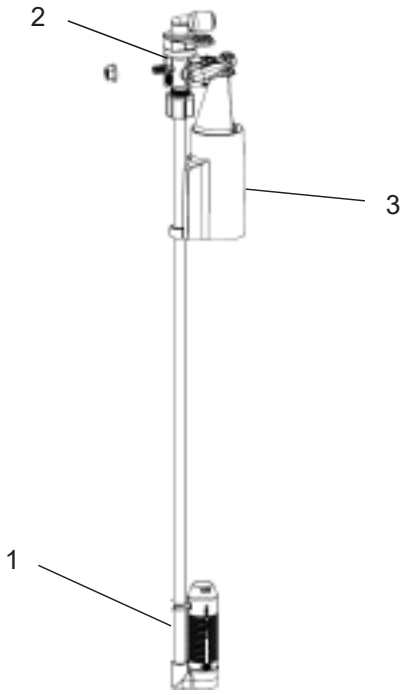
Figure 16
Brine Line Insertion

1. Trim tubing to length. Be sure tubing is free of debris, nicks or scratches, which may cause fittings to leak past the quad seal.

2. Firmly insert the tubing into the fitting. Be certain tubing goes past the quad seal and properly bottoms in fitting. (See figure 16) The fitting will grab the tubing and hold and seal it in place.

3. To remove the tubing, push the collet around the tubing in and at the same time pull the tubing out.

Safety Brine Valve Assembly



1. *474 Air Check Assy. with ½" (1.27 cm) riser pipe.*
2. *474 Safety Brine Valve with ⅜" (0.95 cm) elbow.*
3. *474 Float Assy.*

Figure 17
Safety Brine Valve Assembly

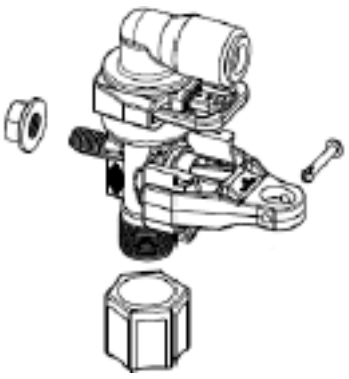


Figure 18
Safety Brine Valve

Drain Line and Overflow Connection

Drain Line Connection

NOTE: Standard commercial practices are expressed here. Local codes may require changes to the following suggestions. Check with local authorities before installing a system.

1. The unit should be above and not more than 40 feet (12.2 m) from the drain. The drain line flow control can be installed with the standard 3/4" NPT (1.9 cm) drain line elbow, which accommodates 3/4" NPT (1.9 cm) drain line or the optional nut and poly tube insert which can be used with a 5/8" O.D. (1.59 cm) flexible poly tube drain line connection. Use thread seal tape when using the 3/4" NPT (1.9 cm) to connect to PVC or CPVC pipe to the drain line connection of the control valve. The drain line flow control can be rotated 180 degrees so the drain lince can be orientated to the nearest drain.

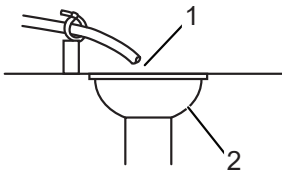
2. If the backwash flow rate exceeds 7 gpm (26.5 Lpm) or if the unit is located more than 40 feet (12.2 m) from drain, use ¾" (1.9 cm) tubing, PVC or CPVC pipe. Use an appropriate fitting to connect the ¾" (1.9 cm) tubing, PVC or CPVC pipe to the drain connection of the control valve.

3. The drain line may be elevated up to 6 feet (1.8 m) providing the run does not exceed 40 feet (12.2 m) and water pressure at the system is not less than 40 psi (2.76 bar). Elevation can increase by 2 feet (61 cm) for each additional 10 psi (.69 bar) of water pressure at the drain connector.

4. Where the drain line is elevated but empties into a drain below the level of the control valve, form a 7" (17.7 cm) loop at the far end of the line o that the bottom of the loop is level with the drain line connection. This will provide an adequate siphon trap. Tie or wire the hose in place at the drain point. Also provide an air gap of at least 1-1/2" (3.8 cm) between the end of the hose and the drain point.

5. Where the drain empties into an overhead sewer line, a sink-type trap must be used.

6. Secure the end of the drain line to avoid it from moving.



1. Air Gap
2. Drain

Figure 19
Secure Drain Line

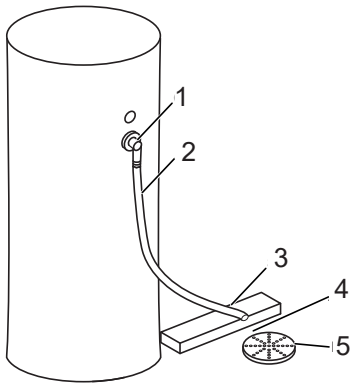
Overflow Line Connection

In the event of a malfunction, the brine (regenerant) tank overflow will direct “overflow” to the drain instead of spilling on the floor. This fitting will be located under the brine line tubing hole on the side of the brine tank.

To connect the overflow line, locate overflow fitting on side of brine tank. Slide one end of the 5/8" O.D. (1.59 cm) overflow line over the barbed end of the overflow fitting approximately ¾" (1.9 cm), then run the other end of the overflow line to the drain. Do not elevate overflow line higher than overflow fitting.
(See Figure 20)

Drain Tubing sold separately in 100 ft rolls
(Part No. 3PET58100B).

NOTE: Do not tie into drain line of system. Overflow line must be a direct, separate line from overflow fitting to drain, sewer or tub. Allow an air gap as per drain line instructions.



1. Overflow Fitting
2. Drain Tubing
3. Secure hose in place
4. Air Gag
5. Drain

Figure 20
Brine Tank with Overflow Fitting

Media Volume, Salt and Capacity Settings

Water Treatment System Set Up: Softening
Media Volume, Salt Amounts and Estimated Capacity

Table 1 shows the estimated salt amount for each setting, as well as the estimated capacity of that salt setting for each resin amount.

Media Volume (ft) ³	Salt Setting	Total Salt Amount Per Regenera-tion (lbs)	Estimated Capacity (kg)
	E	3	10,000
0.5	S	4.5	13,000
	Q	7.5	15,000
	E	4.5	15,000
0.75	S	7	19,000
	Q	11	23,000
	E	6	20,000
1.0	S	9	25,000
	Q	15	30,000
	E	7.5	25,000
1.25	S	11	34,000
	Q	19	38,000
	E	9	30,000
1.5	S	13.5	38,000
	Q	22.5	45,000
	E	12	40,000
2.0	S	18	50,000
	Q	30	60,000
	E	15	50,000
2.5	S	22.5	67,000
	Q	37	75,000
	E	18	60,000
3.0	S	27	75,000
	Q	45	90,000

E = High Efficiency salt, approximately 6 lbs. per cu. ft. of media

S = Standard salt, approximately 9 lbs. per cu. ft. of media

Q = Quality salt, approximately 15 lbs. per cu. ft. of media

Table 1

Cycles and Softening Set Up

The Maytag® series control valve is an upflow valve, only one backwash occurs after brining. The Maytag water treatment professional has the option of having the re-generant refill after the rinse cycle or have the regenerant prefill before regeneration. If the Maytag water treatment professional chooses to have the regenerant prefill before regeneration, the prefill starts 240 minutes prior to the brine draw cycle. The system remains in Normal Mode in which the brine is being made, treated (conditioned) water is still available.

When setting up the system refer to Table 1 to select the volume of media, the total salt amount per regeneration (lbs) and the estimated capacity for the system.

NOTE: The regeneration cycle times are fully adjustable. Refer to Table 3.

Up flow Regenerant Prefill	Up flow Regenerant Refill After Rinse
1st Cycle: Fill	Rinse (0:00:15 SEC)
Dissolve Brine	1st Cycle: Regenerate (Brine Draw)
Rinse (0:00:15 SEC)	2nd Cycle: Backwash
2nd Cycle: Regenerate (Brine Draw)	3rd Cycle: Rinse
3rd Cycle: Backwash	4th Cycle: Fill/Dissolve
4th Cycle: Rinse	5th Cycle: Service
Fill (0:00:05 SEC)	
5th Cycle: Service	

Table 2
System Cycles

Cycle	Range		
	Softening Upflow Brining	Filtering-Regenerant Downflow Brining	Filtering-Backwash Downflow Brining
Backwash	oFF, 1 - 120 (Minutes)	oFF, 1 - 120 (Minutes)	oFF, 1 - 120 (Minutes)
Regenerate (Brine Draw)	oFF, 1 - 180 (Minutes)	oFF, 1 - 180 (Minutes)	N/A
Rinse	oFF, 1 - 120 (Minutes)	oFF, 1 - 120 (Minutes)	oFF, 1 - 120 (Minutes)
Fill (Regenerant)	oFF, 0.1 - 200.0 (lbs)	oFF, 0.05 - 20.00 (gals)	N/A
Softening	1 - 480 (Minutes)	N/A	N/A
Filtering	N/A	1 - 480 (Minutes)	1 - 480 (Minutes)

Table 3
Regeneration Cycle Times in Units

SYSTEM OPERATION

Fill/Dissolve Water is directed down through the media bed up through the distributor tube at a controlled rate to provide treated water to the brine tank, to create brine for the next regeneration.

Regenerate (Upflow) The control directs water through the brine injector and brine is drawn from the regenerant tank. The brine is then directed down the distributor tube up through the resin bed then up to the drain. The hardness ions are displaced by sodium ions and are sent to the drain. The resin is regenerated during the brine cycle. Brine draw is completed when the air check closes.

Backwash (Upflow) The flow of water is directed down the distributor tube and up through the resin bed. During the backwash cycle, the bed is expanded and debris is flushed to the drain.

Rinse (Downflow) The control directs water down through the resin bed up through the distributor tube to the drain. Any remaining brine residual is rinsed from the resin bed.

Service (Downflow) Untreated water is directed down through the resin bed and up through the distributor tube. The hardness ions attach themselves to the resin and are removed from the water. The water is refined as it passes through the resin bead.

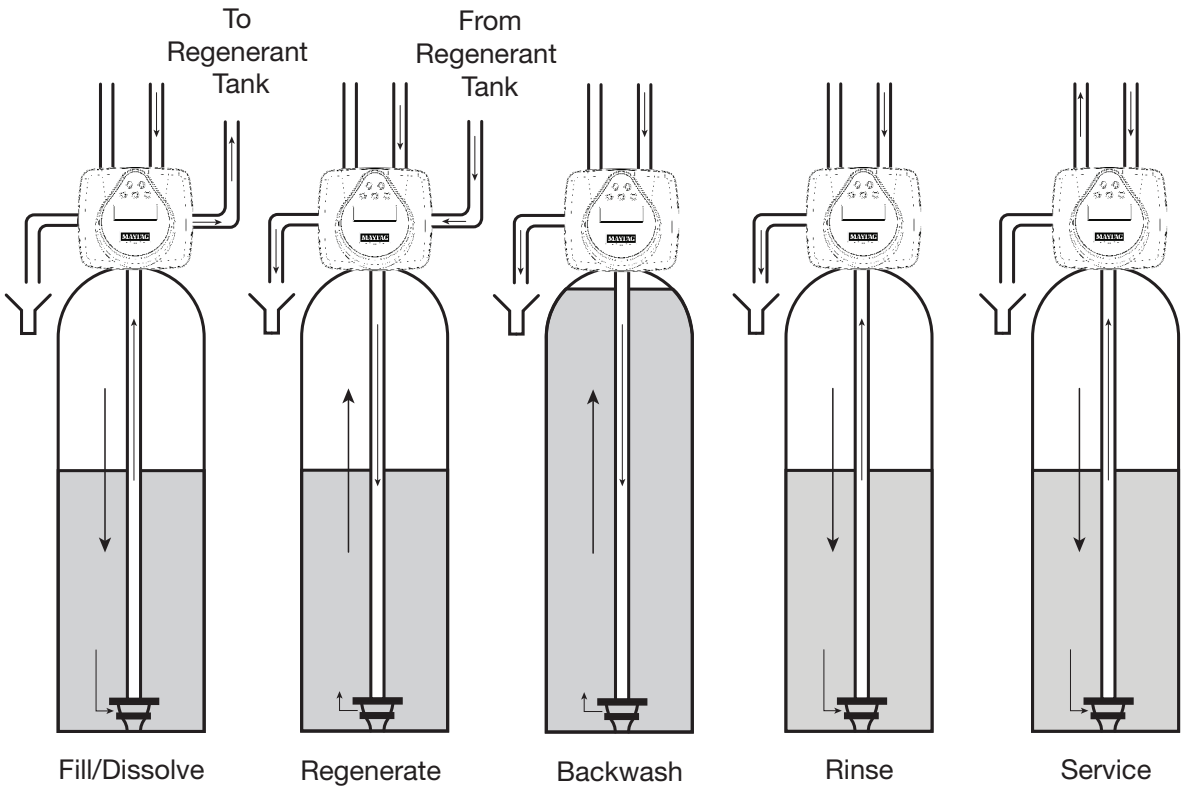


Figure 21
Cycle Water Flows

General Programming Instructions

The control valve offers multiple procedures that allow the valve to be modified to suit the needs of the installation. These procedures are:

- Cycle Sequence
- Softener System Setup
- User Display Settings
- Diagnostics
- Valve History

Once the Cycle Sequence has been set, the other procedures can be accessed in any order. Details on each of the procedures are provided on the following pages.

To “lock out” access to diagnostic and valve history displays and modifications to settings except hardness, day override, time of regeneration and time of day by anyone but the manufacturer, press ▼ NEXT ▲ and CLOCK in sequence after settings are made. To “unlock”, so other displays can be viewed and changes can be made, press ▼ NEXT ▲ and CLOCK in sequence.

When in operation normal user displays such as time of day, volume remaining before regeneration, present flow rate or days remaining before regeneration are shown. When stepping through a procedure, if no buttons are pressed within five minutes, the display returns to a normal user display. Any changes made prior to the five minute time out are incorporated.

To quickly exit Softener Setup, Diagnostics or Valve History press CLOCK. Any changes made prior to the exit are incorporated.

To clear the Service Call reminder, press ▲ and ▼simultaneously while CALL is displayed.

When desired, all programming and information in Diagnostics may be reset to defaults when the valve is installed in a new location. To reset to defaults, press NEXT and ▼ simultaneously to go to the Softening/Filtering Screen. Press ▲ and ▼ simultaneously to reset diagnostic values and all programming to defaults. Screen will return to User Display.

Sometimes it is desirable to have the valve initiate and complete two regenerations within 24 hours and then return to the preset regeneration procedure. It is possible to do a double regeneration if the control valve is set to “NORMAL” or “NORMAL + “On 0” in Softener System Setup or Filter System Setup. To do a double regeneration:

1. Press the “REGEN” button once. REGEN TODAY will flash on the display.
2. Press and hold the “REGEN” button for three seconds until the valve regeneration initiates.

Once the valve has completed the immediate regeneration, the valve will regenerate one more time at the preset regeneration time.

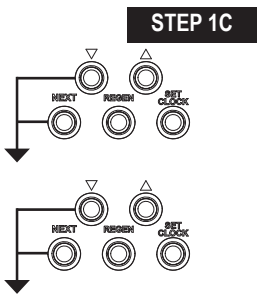
Prior to selecting the upflow regeneration cycle, verify that the correct body, main piston, regenerant piston and stack are being used, and that the injector plug(s) are in the correct location. Refer Figure 29 & Figure 30.

Proportional Brining
If the system is set up as a prefill upflow softener the control valve can also be set to normal or proportional brining.

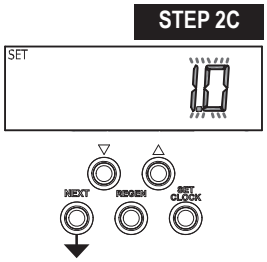


This step will appear after Step 8S and before Step 10S if the system is set up as a prefill upflow softener. The following options can be selected:
• NORMAL FILL - System always prefills with the salt level selected.
• ProP FILL - If proportional brining is selected, the actual salt fill time will be calculated by dividing the actual volume of treated water used by the full volumetric capacity, then multiplying this value by the maximum salt fill time.
Press NEXT to go to the next step. Press REGEN to return to the previous step.

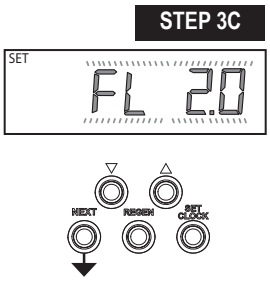
Cycle Sequence



Step 1C – Press NEXT and ▼ simultaneously for 3 seconds and release. Then press NEXT and ▼ simultaneously for 3 seconds and release. If screen in Step 2C does not appear in 5 seconds the lock on the valve is activated. To unlock press ▼ NEXT, ▲, and CLOCK in sequence, then press NEXT and ▼ simultaneously for 3 seconds and release. Then press NEXT and ▼ simultaneously for 3 seconds and release.

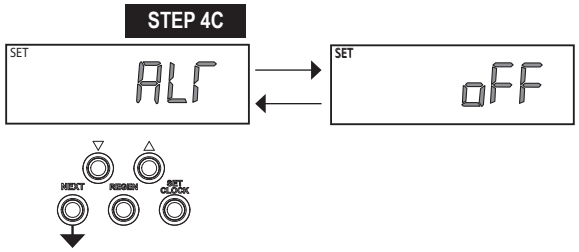


Step 2C – Use ▲ or ▼ to select 1.0 for 1” valve, 1.25 for 1.25” valve, 1.5 for 1.5” valve, 2.0 for 2” valve, or 1.0T for twin valve.
(SET TO 1.0)
Press NEXT to go to next Step. Press REGEN to return to exit Cycle Sequence.

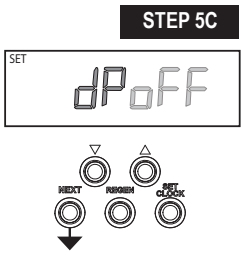


Step 3C – When 1.5 or 2.0 are selected, an additional screen will appear. It is used to select which size flow meter is to be used with the valve, 1.5", 2.0", 3.0", 1.0r or PUL (Variable Meter Calibration.) Variable meter pulses of 0.1-150.0 PPG can be selected. (N/A)

If Step 2C is set to 1.0, Step 3C will not be displayed.



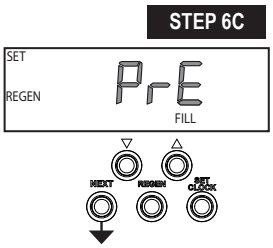
Step 4C – Allows selection of one of the following using the ▲ or ▼, buttons:
• the Control Valve to act as an alternator; or
• the Control Valve to have a no hard water bypass: or
• the Control Valve to have a Separate Source during the regeneration cycle; or
• the Control Valve to operate with the System Controller.
Select OFF when none of these features are used.
(SET TO oFF)
Press NEXT to go to Step 5C. Press REGEN to return to exit Cycle Sequence.



Step 5C – dp Select OFF using the ▲ or ▼:

(SET TO oFF)

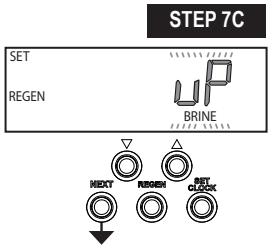
Press NEXT to go to Step 6C. Press REGEN to return to previous step.



Step 6C – Set Refill option using ▼ or ▲:

- "PoST" to refill the brine tank after the final rinse; or
- "PrE" to refill the brine tank two hours before the regeneration time set.

If "Filter" is selected in Step 2F, this screen will not appear.
(SET TO PrE)
Press NEXT to go to Step 7C. Press REGEN to return to previous step.



RETURN TO
NORMAL MODE

Step 7C – Set regenerant downflow or upflow using ▼ or ▲:

- "dn" if the regenerant is to flow downward through the media; or
- "UP" if the regenerant is to flow upward through the media.

(SET TO uP)
Prior to selecting a regenerant flow direction, verify the correct valve body, main piston, regenerant piston, and stack are being used, and that the injector or injector plug(s) are in the correct locations. Refer to Operation Manual for drawings and part numbers.
Press NEXT to Return to NORMAL MODE. Press REGEN to return to previous step.

If Step 2C is set to 1.0, Step 8C will not be displayed.

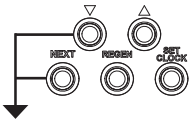
Softener System Setup

In Softener System Setup the Manufacturer chooses the value for the specified cycles (the order of which is specified by the selections for Step 6C and Step 7C in Cycle Sequence) and specifies other operating parameters for the system. If a cycle is present the value can be set to off. Fill is in pounds of salt and all other cycles are in minutes.

Step 6C	Step 7C	Cycle Order
Post	dn	Backwash, Brine, Backwash, Rinse, Fill
Pre	dn	Fill, Service, Backwash, Brine, Backwash, Rinse
Post	UP	Brine, Backwash, Rinse, Fill
Pre	UP	Fill, Service, Brine, Backwash, Rinse

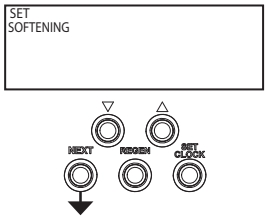
NOTE: If "Pre" is selected in Step 6C and "UP" is selected in Step 7C, the proportional brining display will appear after the Grains Capacity display (Step 8S).

STEP 1S



Step 1S – Press NEXT and ▼ simultaneously for 3 seconds and release. If screen in Step 2S does not appear in 5 seconds the lock on the valve is activated. To unlock press ▼, NEXT, ▲ and CLOCK in sequence, then press NEXT and ▼ simultaneously for 3 seconds and release.

STEP 2S



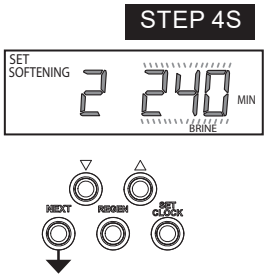
Step 2S – Choose SOFTENING using ▼ or ▲.
(SET TO SOFTENING)
Press NEXT to go to Step 3S. Press REGEN to exit Softener System Setup.

STEP 3S



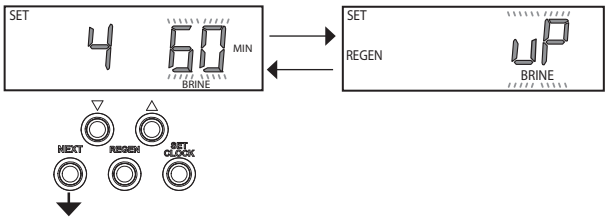
Step 3S – Select the LBS of salt (which in this example is FILL) using ▼ or ▲. Refer to Table 1 for salt setting.
(SET LBS OF SALT)
Press NEXT to go to Step 4S. Press REGEN to exit Softener System Setup.

STEP 4S



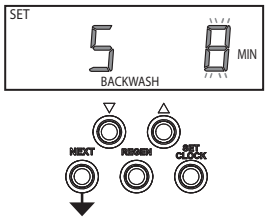
Step 4S - Select the time (which in this example is the time between the fill cycle and the brine draw cycle) using ▼ or ▲. The fill cycle will start 240 minutes prior to the brine draw cycle. The system will remain in Normal Mode and will provide conditioned water during this time.
(FACTORY SET TO 240 MIN)
Press NEXT to go to Step 5S. Press REGEN to exit Softener System Setup.

STEP 5S



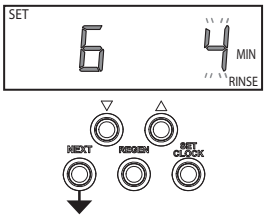
Step 5S – Select the time (which in this example is uP BRINE) using ▼ or ▲.
NOTE: The display will flash between cycle number and time, and brine direction (dn or uP).
(SET TO UP)
Press NEXT to go to Step 6S. Press REGEN to return to previous step.

STEP 6S



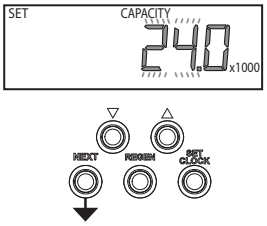
Step 6S – Select the time (which in this example is BACKWASH) using ▼ or ▲.
Press NEXT to go to Step 7S. Press REGEN to return to previous step.

STEP 7S



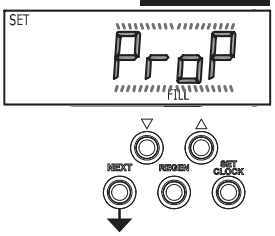
Step 7S – Select the time (which in this example is RINSE) using▼ or▲.
Press NEXT to go to Step 8S. Press REGEN to return to previous step.

STEP 8S



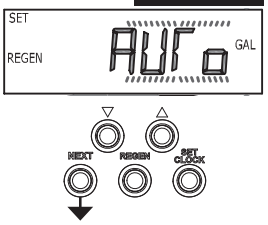
Step 8S –Set Grains Capacity using ▼ or ▲. The ion exchange capacity is in grains of hardness as calcium carbonate for the system based on the pounds of salt that will be used. The capacity and hardness levels entered are used to automatically calculate reserve capacity when gallon capacity is set to AUTO.
Refer to Table 1 for capacity setting.
(SET CAPACITY)
Press NEXT to go to Step 9S. Press REGEN to return to previous step.

STEP 9S



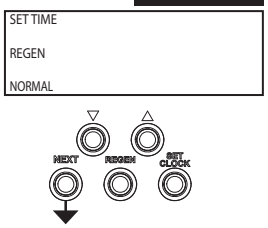
Step 9S - The following options can be selected:
NORMAL FILL - System always prefills with the salt level selected.
ProP FILL- If proportional brining is selected, the actual salt fill time will be calculated by dividing the actual volume of treated water used by the full volumetric capacity, then multiplying this value by the maximum salt fill time.
(SET TO ProP)
Press NEXT to go to Step 10S. Press REGEN to exit Softener System Setup.

STEP 10S

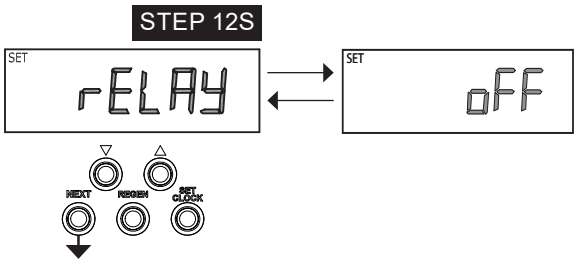


Step 10S – Set Volume Capacity using the ▼ or ▲ button. If value is set to:
• “AUTO”– capacity will be automatically calculated and reserve capacity will be automatically estimated;
• “OFF”– regeneration will be based solely on the day override set.
Refer to Programming: Installer Settings Step 3I; or
• a number – regeneration initiation will be based off the value specified.
If “OFF” or a number is used, hardness display will not be allowed to be set in Installer Settings Step 2I.
If “OFF” is selected, Regeneration Time is automatically “Delayed”, so Step 11S will not appear.
Refer to Setting Options Table
(SET TO AUTO)
Press NEXT to go to Step 11S. Press REGEN to return to previous step.

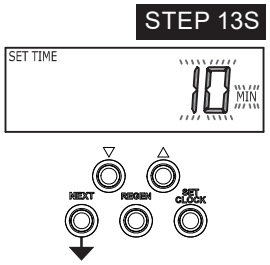
STEP 11S



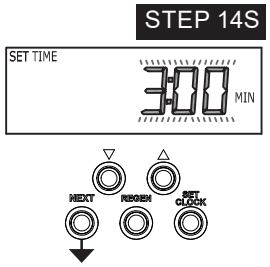
Step 11S – Set Regeneration Time Options using▼ or ▲ If value is set to:
• “NORMAL” means regeneration will occur at the preset time;
• “on 0” means regeneration will occur immediately when the gallons capacity reaches 0 (zero); or
• “NORMAL + on 0” means regeneration will occur at one of the following:
— the preset time when the gallons capacity falls below the reserve or the specified number of days between regenerations is reached, whichever comes first; or
— after 10 minutes of no water usage when the gallons capacity reaches 0 (zero).
Refer to Setting Options Table for more detail.
“on 0” is the default if Step 2C is set to 1.0T, and “NORMAL + on 0” is not available.
This step will not appear if Step 10S is set to oFF or Step 4C is set to “SYS”.
(SET TO NORMAL)
Press NEXT to go to Step 12S. Press REGEN to return to previous step.



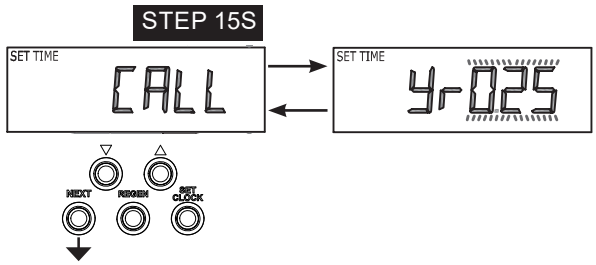
Step 12S – Set Relay operation using ▼ or ▲. The choices are:
• Set Time: After the start of a regeneration the amount of time that should pass prior to activating the relay. The start of regeneration is defined as the first backwash cycle, Dn brine cycle or UP brine cycle which ever comes first.
• Set Softening Gal: Relay activates after a set volume has been used while in service, then deactivates after the meter stops registering flow and the set time period has expired.
• Set Softening Regen Gal: Relay activates after a set volume has been used while in service or during regeneration, then deactivates after the meter stops registering flow and the set time period has expired.
• Set HoLd Gal: Relay closes every set number of gallons and releases when ▲ is pressed.
• Set Error: Relay closes when a valve/MAV error is generated, and opens when the error is reset.
• Set Off:
(SET TO OFF)
Press NEXT to go to Step 13S. Press REGEN to return to previous step.
If Step 12S is set to oFF, Steps 13S and 14S will not be displayed.



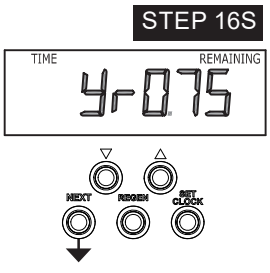
Step 13S: Set Relay Actuation Time or Gallons using ▲or ▼ The choices are:
• Relay Actuation Time: After the start of a regeneration the amount of time that should pass prior to activating the relay. The start of regeneration is defined as the first backwash cycle or Dn brine cycle, which ever comes first. Ranges from 1 minute to 500 minutes.
• Relay Actuation Gallons: Relay activates after a set number of gallons have passed. Ranges from 1 to 100 gallons.
• Relay HoLd: Relay closes every set number of gallons. Ranges from 1,000 to 99,000,000 gallons.
Press NEXT to go to Step 14S. Press REGEN to return to previous step.



Step 14S: Set Relay Deactivate Time using ▲ or ▼.
• If Set Time on is selected in Step 12S the relay will deactivate after the time set has expired. Ranges from 1 second to 500 minutes.
• If Set Gal Softening on or Set Gal Softening Regen on is selected in Step 12S the relay will deactivate after the time set has expired or after the meter stops registering flow, whichever comes first. Ranges from 1 second to 500 minutes.
• Does not display for HoLd Gal selection.
Press NEXT to go to Step 15S. Press REGEN to return to previous step.



Step 15S: Set the Service Call Indicator by using ▲ or ▼. Range is in ¼ of a year increments from 0.25 to 9.75 years. Selecting OFF will disable this feature.
Press NEXT to go to Step 16S. Press REGEN to return to previous step.
If Step 15S is set to oFF, Steps 16S will not be displayed.



RETURN TO NORMAL MODE

Step 16S: Displays time remaining before a service call is requested. To reset the time remaining to the original programmed value, press and hold ▲ and ▼ for approximately 3 seconds. The display will return to the value selected in Step 15S.

NOTE: To clear the Service Call reminder, press ▲ and ▼ simultaneously while the reminder screen is displayed.

SETTING OPTIONS TABLE[1]

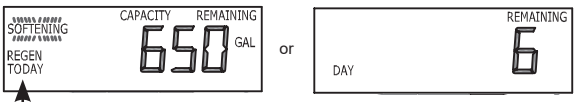
System Type	Regeneration Option	Regeneration Type	Day Override	
Softening	Auto	Normal	1-28 days	Regeneration occurs at the next regeneration time when volume capacity falls below the reserve capacity, or the specified number of days is reached, whichever comes first.
Softening	Auto	Normal	OFF	Regeneration occurs at the next regeneration time when volume capacity falls below the reserve capacity.
Softening or Filtering	20 - 1,500,000 Gallons	Normal	1-28 days	Regeneration occurs at the next regeneration time when volume capacity reaches 0, or the specified number of days is reached, whichever comes first.
Softening or Filtering	20 - 1,500,000 Gallons	Normal	OFF	Regeneration occurs at the next regeneration time when volume capacity reaches 0.
Softening or Filtering	OFF	Normal	1-28 days	Time Clock operation. Regeneration occurs at the next regeneration time the specified number of days is reached.
Softening	Auto or 20 - 1,500,000 Gallons	On 0	1-28 days	Regeneration occurs immediately when volume capacity reaches 0, or the specified number of days is reached, whichever comes first.
Softening or Filtering	20 - 1,500,000 Gallons	On 0	OFF	Regeneration occurs immediately when volume capacity reaches 0.
Softening	Auto	Normal + On 0	1-28 days	Regeneration occurs at the next regeneration time when volume capacity falls below the reserve capacity, or the specified number of days is reached, or regeneration occurs after 10 minutes of no water usage when volume capacity reaches 0.
Softening or Filtering	20 - 1,500,000 Gallons	Normal + On 0	1-28 days	Regeneration occurs at the next regeneration time the specified number of days is reached or regeneration occurs after 10 minutes of no water usage when volume capacity reaches 0.
Softening	Auto	Normal + On 0	OFF	Regeneration occurs at the next regeneration time when volume capacity falls below the reserve capacity, or regeneration occurs after 10 minutes of no water usage when volume capacity reaches 0.

[1] Reserve Capacity estimate is based on history of water usage. Reserve Capacity estimate is not available with alternator systems or Twin Tank Valve.

User Display Settings

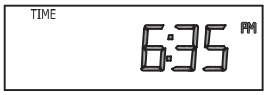
General Operation

When the system is operating, one of several displays may be shown. Pressing NEXT will alternate between the displays. One of the displays is always the current time of day.



REGEN TODAY will Flash if a regeneration is expected “Tonight.”

Days remaining is the number of days left before the system goes through a regeneration cycle. Capacity remaining is the gallons that will be treated before the system goes through a regeneration cycle.



Another display shows the current treated water flow rate through the system. The fourth display will show either dP or hold if the dP switch is closed.



The service call display will not appear if OFF is selected in Step 15S of Softener System Setup. To clear the Service Call reminder, press ▲ and ▼ simultaneously while CALL is displayed.



If the system has called for a regeneration that will occur at the preset time of regeneration, the words REGEN TODAY will appear on the display.



If a water meter is installed, the word “Softening” or “Filtering” flashes on the display when water is being treated (i.e. water is flowing through the system).

Regeneration Mode

Typically a system is set to regenerate at a time of low water usage. An example of a time with low water usage is when a household is asleep. If there is a demand for water when the system is regenerating, untreated water will be used.

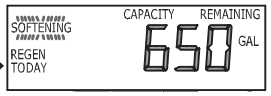


When the system begins to regenerate, the display will change to include information about the step of the regeneration process and the time remaining for that step to be completed. The system runs through the steps automatically and will reset itself to provide treated water when the regeneration has been completed.

Manual Regeneration

Sometimes there is a need to regenerate the system sooner than when the system calls for it, usually referred to as manual regeneration. There may be a period of heavy water usage because of guests or a heavy laundry day.

REGEN TODAY will Flash if a regeneration is expected “Tonight.”



To initiate a manual regeneration at the preset delayed regeneration time, when the regeneration time option is set to “NORMAL” or “NORMAL + on 0”, press and release “REGEN”. The words “REGEN TODAY” will flash on the display to indicate that the system will regenerate at the preset delayed regeneration time. If you pressed the “REGEN” button in error, pressing the button again will cancel the request. Note: If the regeneration time option is set to “on 0” there is no set delayed regeneration time so “REGEN TODAY” will not activate if “REGEN” is pressed.

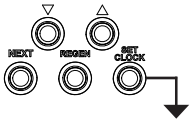
To initiate a manual regeneration immediately, press and hold “REGEN” for three seconds. The system will begin to regenerate immediately. The request cannot be canceled.

NOTE: For softeners, if the brine tank does not contain salt, fill with salt and wait at least two hours before regenerating.

Set Time of Day

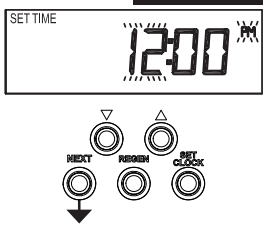
The user can also set the time of day. Time of day should only need to be set if the battery has been depleted because of extended power outages or when daylight saving time begins or ends. If an extended power outage occurs, the time of day will flash on and off which indicates the time of day should be reset. The non rechargeable battery should also be replaced.

STEP 1U



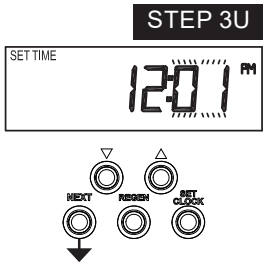
STEP 1U – Press SET CLOCK.

STEP 2U



STEP 2U - Current Time (hour): Set the hour of the day using ▼or ▲. AM/PM toggles after 12. Press NEXT to go to Step 3U.

STEP 3U



STEP 3U - Current Time (minutes): Set the minutes of the day using ▼ or ▲. Press NEXT to exit Set Time of Day. Press REGEN to return to previous step.

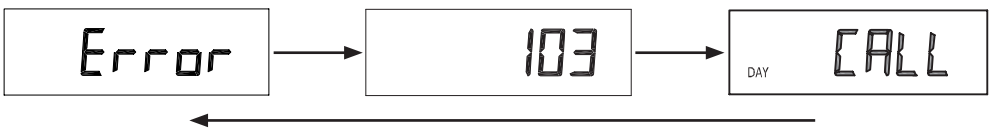
RETURN TO NORMAL MODE

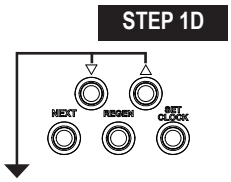
Power Loss

If the power goes out the system will keep time until the battery is depleted. If an extended power outage occurs, the time of day will flash on and off which indicates the time of day should be reset and the battery replaced. The system will remember the rest.

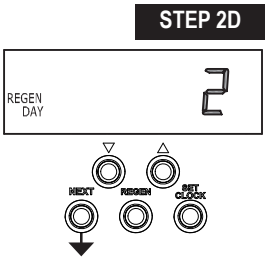
Error Message

If the word “ERROR,” a number and the word “CALL” are alternately flashing on the display contact the OEM for help. A number indicates that the valve was not able to function properly.

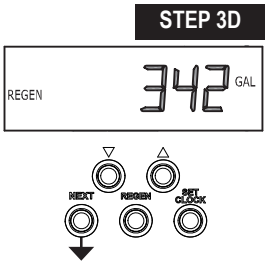




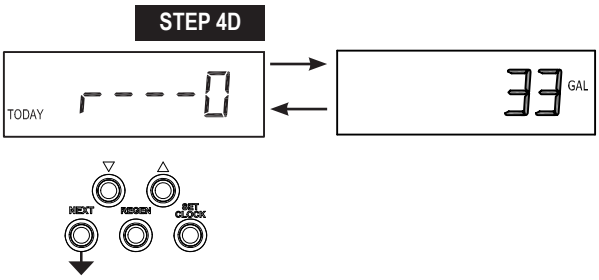
STEP 1D – Press ▲ and ▼ simultaneously for three seconds. If screen in step 2D does not appear in 5 seconds the lock on the valve is activated. To unlock press ▼ NEXT, ▲ and CLOCK in sequence, then
press ▲ and ▼ simultaneously for 3 seconds.



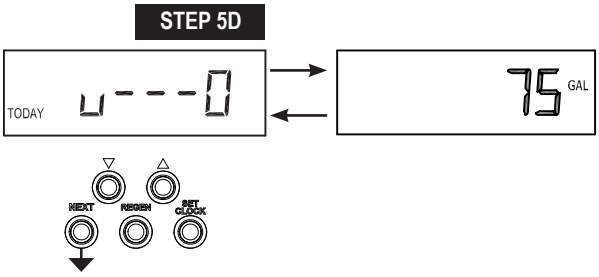
STEP 2D – Days, since last regeneration: This display shows the days since the last regeneration occurred. Press NEXT to go to Step 3D. Press REGEN to exit Diagnostics.



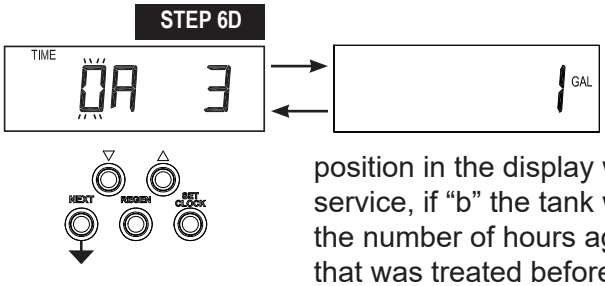
STEP 3D – Volume, since last regeneration: This display shows the volume of water that has been treated since the last regeneration. This display will equal zero if a water meter is not installed. Press NEXT to go to Step 4D. Press REGEN to return to previous step.



STEP 4D – Volume, reserve capacity used for last 7 days: If the valve is set up as a softener, a meter is installed and Set Volume Capacity is set to “Auto,” this display shows 0 day (for today) and flashes the reserve capacity. Pressing ▲ will show day 1 (which would be yesterday) and flashes the reserve capacity used. Pressing ▲ again will show day 2 (the day before yesterday) and the reserve capacity. Keep pressing ▲ to show the capacity for days 3, 4, 5 and 6. ▼ can be pressed to move backwards in the day series. Press NEXT at any time to go to Step 5D. Press REGEN to return to previous step.

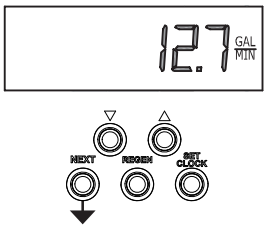


STEP 5D - Volume, 63-day usage history: This display shows day 1 (for yesterday) and flashes the volume of water treated yesterday. Pressing ▲ will show day 2 (which would be the day before yesterday) and flashes the volume of water treated on that day. Continue to press ▲ to show the maximum volume of water treated for the last 63 days. If a regeneration occurred on the day the word “REGEN” will also be displayed. This display will show dashes if a water meter is not installed. Press NEXT at any time to go to Step 6D. Press REGEN to return to previous step.



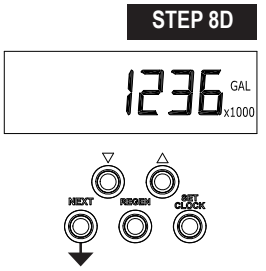
STEP 6D – Twin Tank Valve transfer history: only displays when 1.0T was selected in Step 2S. Use ▲ or ▼ to scroll through the last 10 tank transfers. The first position in the display ranges from 0 to 9 with the lowest number being the most recent transfer. The second position in the display will be either “A” or “b”. If “A” then the tank with the valve on it was in service, if “b” the tank with the in/out head on it was in service. The next three digits represent the number of hours ago that the transfer occurred. The display alternates with the volume that was treated before the tank transferred.
Press NEXT to go to Step 7D. Press REGEN to return to previous step.

STEP 7D



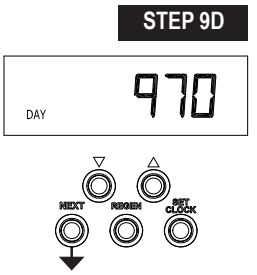
STEP 7D – Flow rate, maximum last seven days: The maximum flow rate in gallons per minute that occurred in the last seven days will be displayed. This display will equal zero if a water meter is not installed. Press NEXT to go to Step 8D. Press REGEN to return to previous step.

STEP 8D



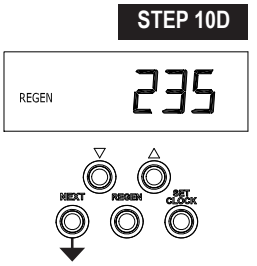
STEP 8D – Gallons, total used since start-up: This display shows the total gallons treated since startup. This display will equal zero if a water meter is not installed. Press NEXT to go to Step 9D. Press REGEN to return to previous step.

STEP 9D



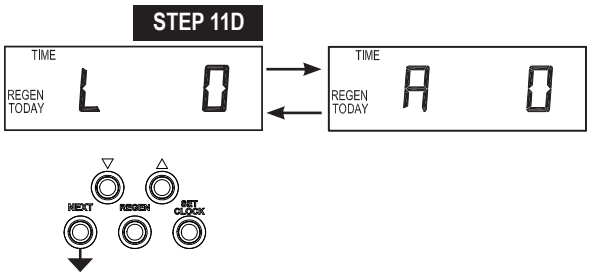
STEP 9D – Days, total since start-up: This display shows the total days since startup. Press NEXT to go to Step 10D. Press REGEN to return to previous step.

STEP 10D



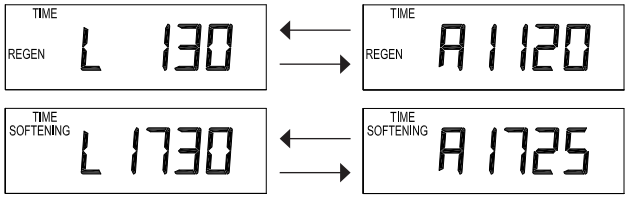
STEP 10D – Regenerations, total number since start-up: This display shows the total number of regenerations that have occurred since startup. Press NEXT to go to Step 11D. Press REGEN to return to previous step.

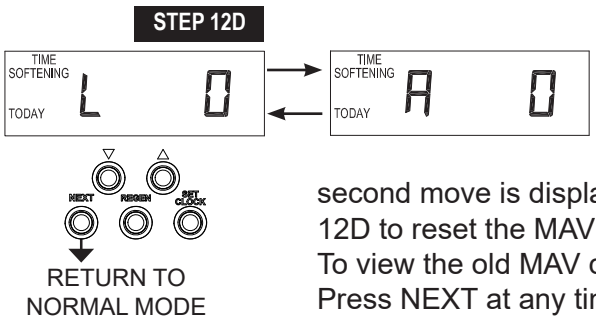
STEP 11D



STEP 11D – MAV Drive History in the direction of extended piston rod position. Display will only be shown if 1.0T is selected in Step 2C, or OFF is not selected in Step 4C. Up to a four digit number will appear after the “L” which stands for latest and “A” which stands for average. Drive time is measured in 1/100 of a second; i.e., a 17.10 second move is displayed as “1710”. Press NEXT at any time to go to Step 12D. Press REGEN to return to previous step.

Press and hold ▲ and ▼ for 3 seconds while in Step 11D to reset the MAV drive history in both the retracted and extended piston rod position. To view the old MAV drive history data for retracted and extended rod position press and hold REGEN and ▲ while in Step 11D. Press NEXT to advance display to the old MAV drive history.

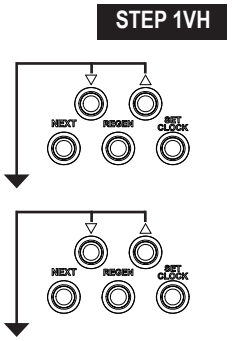




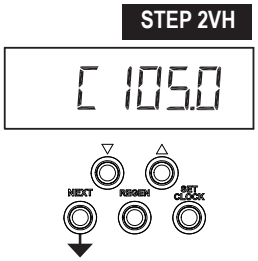
STEP 12D – MAV Drive History in the direction of retracted piston rod position. Display will only be shown if 1.0T is selected in Step 2C, or OFF is not selected in Step 4C. Up to a four digit number will appear after the “L” which stands for latest and “A” which stands for average. Drive time is measured in 1/100 of a second; i.e., a 17.15 second move is displayed as “1715”. Press and hold ▲ and ▼ for 3 seconds while in Step 12D to reset the MAV drive history in both the extended and retracted piston rod position. To view the old MAV drive history data see Step 11D.
Press NEXT at any time exit Diagnostics. Press REGEN to return to previous step.

When desired, all programming and information in Diagnostics may be reset to defaults when the valve is installed in a new location. To reset to defaults, press NEXT and ▼ simultaneously to go to the Softening/Filtering screen. Press ▲ and ▼ simultaneously to reset all programming and diagnostic values to defaults. Screen will return to User Display.

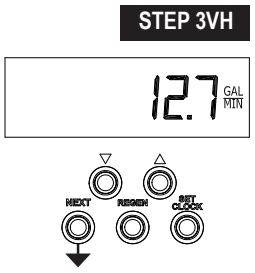
Valve History



STEP 1VH – Press ▲ and ▼ simultaneously for three seconds and release. Then press ▲ and ▼ simultaneously and release. If screen in step 2VH does not appear in 5 seconds the lock on the valve is activated. To unlock press ▼ NEXT ▲ and CLOCK in sequence, then press ▲ and ▼ simultaneously for 3 seconds and release. Then press ▲ and ▼ simultaneously and release.



STEP 2VH[2] – Software Version: This display shows the software version of the valve. Press NEXT to go to Step 3VH. Press REGEN to exit Valve History.

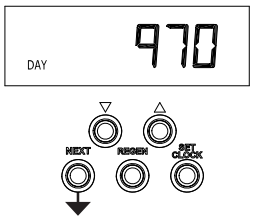


STEP 3VH – Flow rate, maximum since startup: This display shows the maximum flow rate in gallons per minute that has occurred since startup. This display will equal zero if a water meter is not installed. Press NEXT to go to Step 4VH. Press REGEN to return to previous step.



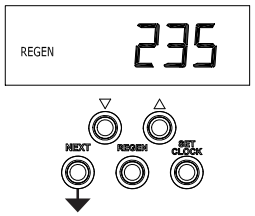
STEP 4VH – Gallons, total used since start-up: This display shows the total gallons treated since startup. This display will equal zero if a water meter is not installed. Press NEXT to go to Step 5VH. Press REGEN to return to previous step.

STEP 5VH



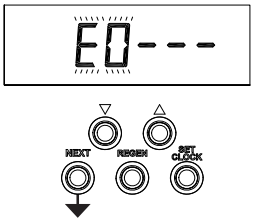
STEP 5VH – Days, total since start-up: This display shows the total days since startup. Press NEXT to go to Step 6VH. Press REGEN to return to previous step.

STEP 6VH



STEP 6VH – Regenerations, total number since start-up: This display shows the total number of regenerations that have occurred since startup. Press NEXT to go to Step 7VH. Press REGEN to return to previous step.

STEP 7VH



RETURN TO NORMAL MODE

STEP 7VH – Error Log: This display shows a history of the last 10 errors generated by the control during operation. Press ▲ or ▼ to view each recorded error. Press NEXT to exit Valve History. Press REGEN to return to previous step.

[2]Values in steps 2VH through 7VH cannot be reset.

PLACING WATER SYSTEM INTO OPERATION

1. Flush water lines

NOTE: After inlet, outlet, brine and drain connections are completed, but before restoring water to house:

- Open the inlet ball valve.
- Close the inlet boiler drain.
- Close the outlet ball valve.
- Turn the bypass handles to the bypass position as shown in Figure 22 to the right
- Open the outlet boiler drain on the outlet side of the system.
- Slowly turn on the water supply to the house and flush the lines into a bucket or garden hose to purge color, cement, sealants or solder residue.
- Once the lines are clear close the outlet boiler drain.
- Check all new connections for leaks.
- With the water supply to the house still on and the bypass in bypass position proceed to the next section.

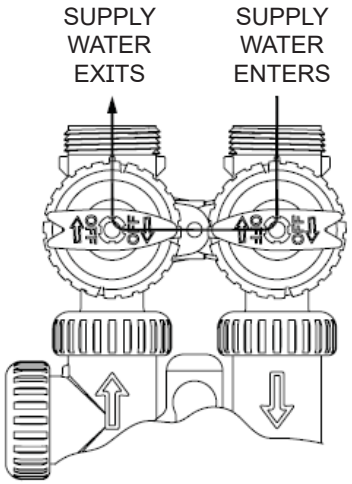
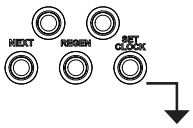


Figure 22

2. Plug in, initialize, and set time on the water system control

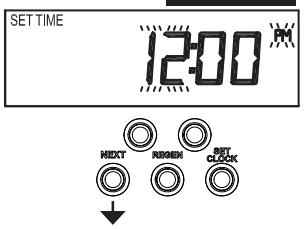
- Plug the control into power outlet, the display will flash through diagnostic screens, the motor will energize, and index the piston to the service cycle..
- The display will flash “TIME OF DAY”. Set Time of Day:

STEP 1U



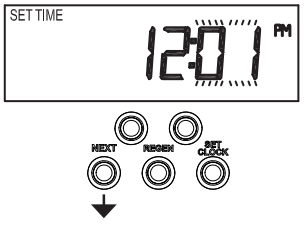
STEP 1U – Press CLOCK.

STEP 2U



STEP 2U - Current Time (hour): Set the hour of the day using ▼or ▲. AM/PM toggles after 12. Press NEXT to go to Step 3U.

STEP 3U



STEP 3U - Current Time (minutes): Set the minutes of the day using ▼ or ▲. Press NEXT to exit Set Time of Day. Press REGEN to return to previous step.

RETURN TO NORMAL MODE

3. Fill mineral tank, purge air, backwash and rinse to flush lines

Fill the mineral tank with water

- Press and hold REGEN button more than 3 seconds until the motor starts. Wait until the motor stops and display shows the current cycle.
- Press and release the REGEN button each time the motor stops to advance through each cycle until you reach the “BACKWASH” cycle. Once in the “BACKWASH” cycle.
- Begin to fill the unit slowly by slightly opening the bypass valve INLET handle allowing air to purge, then open the Inlet bypass handle to ½ service flow rate. Do not open fully.
- **IMPORTANT:** If water flows too rapidly, there may be a loss of the media.
- Once the air has finished purging from the tank, and water begins to flow steadily from the drain line. Verify all air is out, then open the bypass valve INLET handle all the way to maximum flow.
- Unplug the AC power adapter, allowing extended backwashing of media. This may take 15 to 30 minutes until water to the drain runs clear of color and media fines.
- Continue letting the water run to drain until the water runs clear from the drain line. This flushes color, and media fines from the media bed. To aid in rinsing the media, turn the water on and off quickly to spur water hammer, releasing more color. Once the water to the drain continuously runs clear, plug the AC power adapter back in and proceed to next step.
- Press and release the REGEN button. The control will advance to the “RINSE cycle. Once in the “RINSE” cycle, allow water to run to the drain until water runs clear. You may need to unplug the AC power adapter allowing extended rinsing time to the media. Once water continuously runs clear to the drain, plug the AC power adapter back in. Then press and release the REGEN button, once the motor stops, press and release the REGEN button again to advance to the service position. “SOFTENING” will flash then “TIME OF DAY” will be displayed. These backwashing and rinsing steps are mandatory to properly startup the system. Failure to complete these steps will lead to service issues. The backwash and rinse steps may need to be repeated to make sure the drain water is completely clear.
- Continue to next section.

4. Brine cycle check & initial brine tank fill

Add water to brine (regenerant) tank (Proceed ONLY when color in drain water is completely clear).

NOTE: Before starting next cycle (Fill). Verify brine line is properly attached to the control valve, and brine elbow in brine tank. During the fill cycle water will begin to flow into brine tank.

- Press and hold the REGEN button more than 3 seconds until the motor starts. Wait until the motor stops and display shows the current cycle.
- When Pre Fill is selected in set up: The control will advance to the “FILL” cycle to prime the brine line tube between the brine tank and the control valve and add treated water to the brine tank. The Maytag® series controller will direct water down through the brine line tube and into the brine tank. Watch the bottom of the brine tank, once all air bubbles have been purged from the brine line tube and the water level is rising. Allow about 4 to 5 inches of water to fill the bottom of brine tank. Do not overfill.
- When Pre Fill is selected in set up press and release the REGEN button to advance to the next cycle. Each time the motor stops, press and release the REGEN button to advance through each cycle until you reach the “BRINE” cycle
- Continue to next section.
- Proceed with the normal regeneration.

5. Brine cycle check & initial brine draw

Draw water from the brine (regenerant) tank.

- With the controller in the “BRINE” cycle, check to see that the water in the brine tank is being drawn out of the brine tank. The water level in the brine tank should recede very slowly.
- If the water in the brine tank does not recede, or goes up, refer to the troubleshooting section.
- If the water level is receding from the brine tank, wait for the air check assembly to check and stop the flow of water from the brine tank. Press and release the REGEN button to advance to the next cycle. Each time the motor stops, press and release the REGEN button again until you reach the “SERVICE” position. “SOFTENING will flash then time of day will be displayed.
- Slowly turn the bypass outlet handle to the “Normal Operation” position and open the outlet ball valve allowing water to flow through system and enter the house. (Refer to Figure 23)
- Check all plumbing for leaks.
- Turn on a faucet plumbed after the water system. Run the faucet until the water runs clear. Once the water runs clear turn faucet off.
- Place salt (regenerant) in the brine tank. Replace cover on brine tank securely.
- Continue to next section.

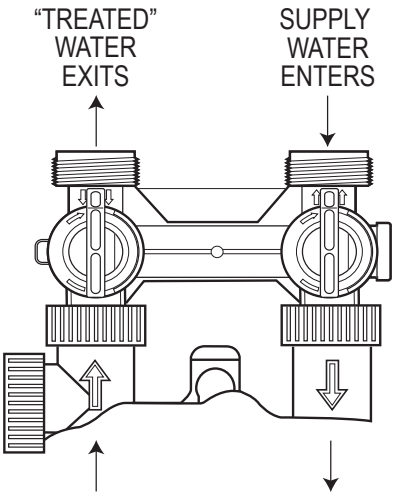


Figure 23

6. To Sanitize and Disinfect the System (last step after placing the system into operation)

Depending upon the conditions of use, the style of Water Treatment Sytem, the type of ion exchanger, and the disinfectant available, a choice can be made among the following methods.

Sodium or Calcium Hypochlorite

These materials are satisfactory for use with polystyrene resins, synthetic gel zeolite, greensand and bentonites.

5.25% Sodium Hypochlorite.

These solutions are available under trade names such as Clorox*. If stronger solutions are used, such as those sold for commercial laundries, adjust the dosage accordingly.

- Dosage
  - Polystyrene resin; 1.2 fluid ounce (35.5 ml) per cubic foot.
  - Non-resinous exchangers; 0.8 fluid ounce (23.7 ml) per cubic foot.
- Regenerant tank conditioners
  - Backwash the conditioner and add the required amount of hypochlorite solution to the well of the regenerant tank. The regenerant tank should have water in it to permit the solution to be carried into the conditioner.
  - Proceed with the normal regeneration.

*Clorox is a trademark of the Clorox Company.

Calcium Hypochlorite

Calcium hypochlorite, 70% available chlorine, is available in several forms including tablets and granules. These solid materials may be used directly without dissolving before use.

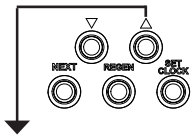
- Dosage
  - Two grains (approximately 0.1 ounce [3 ml]) per cubic foot.
- Regenerant tank
  - Backwash the system and add the required amount of hypochlorite to the well of the regenerant tank. The regenerant tank should have water in it to permit the chlorine solution to be carried into the conditioner.

7. Programming: Installer Settings

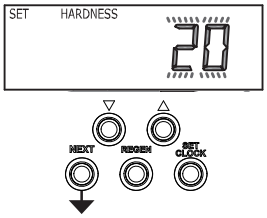
New controls are sent with the battery turned off. The battery back up will turn on automatically the first time that the time of day is programmed on page 26.

STEP 1I

STEP 1I - Press NEXT and ▲ simultaneously for 3 seconds.

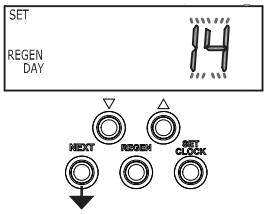


STEP 2I



STEP 2I – Hardness: Set the amount of hardness in grains of hardness as calcium carbonate per gallon using ▼ or ▲. The default is 20 with value ranges from 1 to 150 in 1 grain increments. Note: The grains per gallon can be increased if soluble iron needs to be reduced. This display will not appear if "FILTER" is selected in Step 2F or if 'AUTO' is not selected in Set Volume Capacity in Softener System Setup.
Press NEXT to go to step 3I. Press REGEN to exit Installer Display Settings.

STEP 3I

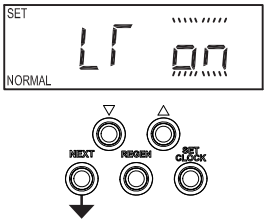


STEP 3I – Day Override: When volume capacity is set to "oFF", sets the number of days between regenerations. When volume capacity is set to AUTO or to a number, sets the maximum number of days between regenerations. If value set to "oFF", regeneration initiation is based solely on volume used. If value is set as a number (allowable range from 1 to 28) a regeneration initiation will be called for on that day even if sufficient volume of water were not used to call for a regeneration. Set Day Override using ▼ or ▲:

- number of days between regeneration (1 to 28); or
- "oFF".

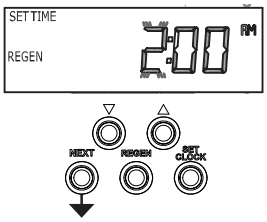
Refer to Setting Options Table for more detail on setup.
Press NEXT to go to step 4I. Press REGEN to return to previous step.

STEP 4I



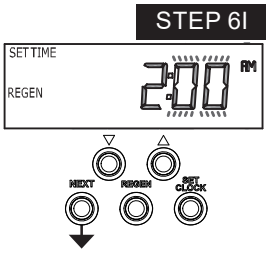
STEP 4I – Backlight Operation: Set the normal activity of the backlight. Set to ON, the backlight is always on. Set to OFF, the backlight turns off after 5 minutes of keyboard inactivity. When the backlight is inactive, any button push will activate the backlight.
Press NEXT to go to Step 5I. Press REGEN to return to previous step.

STEP 5I



STEP 5I – Next Regeneration Time (hour): Set the hour of day for regeneration using ▼ or ▲. AM/PM toggles after 12. The default time is 2:00 AM. This display will show "on 0" if "on 0" is selected in Set Regeneration Time Option in Softener System Setup or Filter System Setup.
Press NEXT to go to step 6I. Press REGEN to return to previous step.

STEP 6I



RETURN TO NORMAL MODE

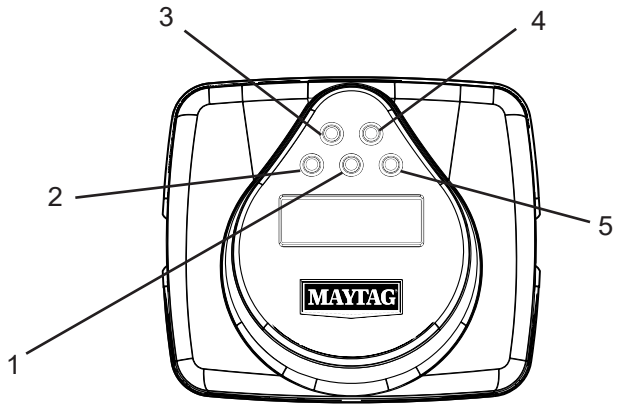
STEP 6I – Next Regeneration Time (minutes): Set the minutes of day for regeneration using ▼ or ▲. This display will not be shown if "on 0" is selected in Set Regeneration Time Option in Softener System Setup or Filter System Setup.
Press NEXT to exit Installer Display Settings. Press REGEN to return to previous step.

The MAYTAG® water treatment system is now fully operational.

DRAWINGS AND PART NUMBERS

Control Valve - Front and Back View

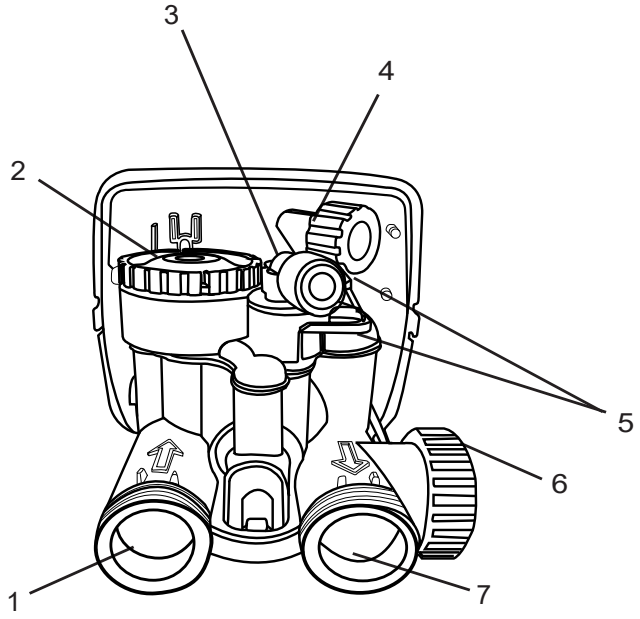
FRONT



1. Regen Button
2. Next Button
3. Down Button
4. Up Button
5. Set Clock

Figure 24

BACK



1. Inlet
2. Injector Cap
3. Brine Fitting w/Nut
4. 3/4 inch Drain Line Flow Control Assembly
5. Locking Clip (2) Required
6. Meter Assembly
7. Outlet

Figure 25

Control Valve - Front Cover and Drive Assembly

Front Cover and Drive Assembly

Drawing No.	Mfg. Part No.	Description	Quantity
1	V4378	Front Cover Assembly	1
2	V3107-01	Motor	1
3	V3002-A	Drive Bracket Asy	1
4	V4404LD-BOARD	LD PC Board	1
5	V3110	Drive Reducing Gear 12x36	3
6	V3109	Drive Gear Cover	1
7	V3106-01	Drive Bracket & Spring Clip	1
Not Shown	V3186-06	Power Supply US 15VDC	1
Not Shown	V3946	Wide Backplate	1

There are no user serviceable parts are on the PC board, the motor or the AC adapter.

Power Supply	U.S.	International
Supply Voltage	100-120 VAC	100-240 VAC
Supply Frequency	50/60 Hz	50/60 Hz
Output Voltage	15 VDC	15 VDC
Output Current	500 mA	500 mA

Relay Driver Output Type – Single Solid-State 12VDC "wet" contact - N.O.
Relay Driver Output Capacity - 12VDC @100mA.
NOTE: Check for proper mounting dimensions on valve back plate prior to mounting an external relay under control cover.

Wiring For Correct On/Off Operation	
PC Board Relay Terminal Block	Relay
RLY 1	Coil -
COM	Coil +

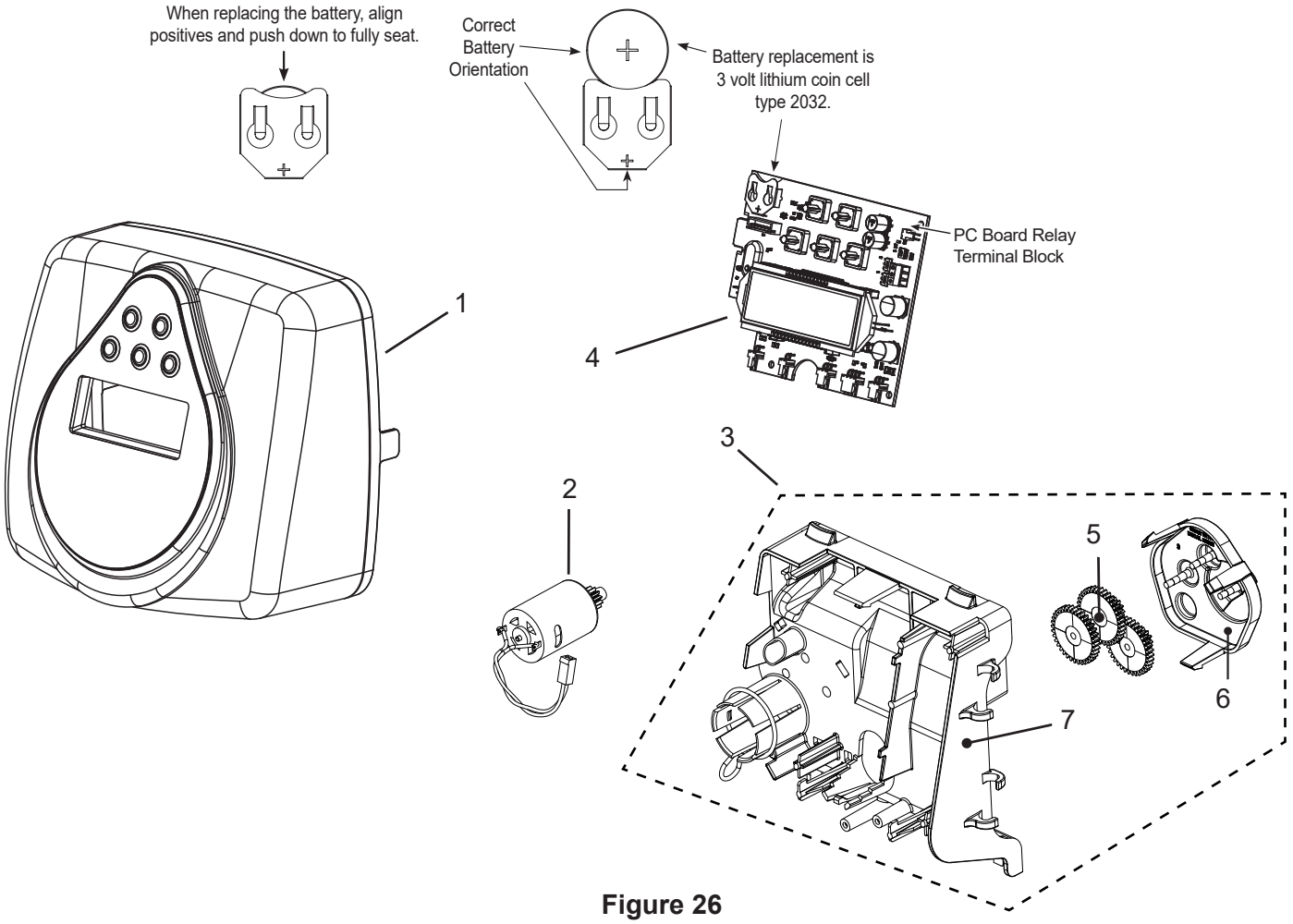


Figure 26

Brine Tank Assembly and Parts List

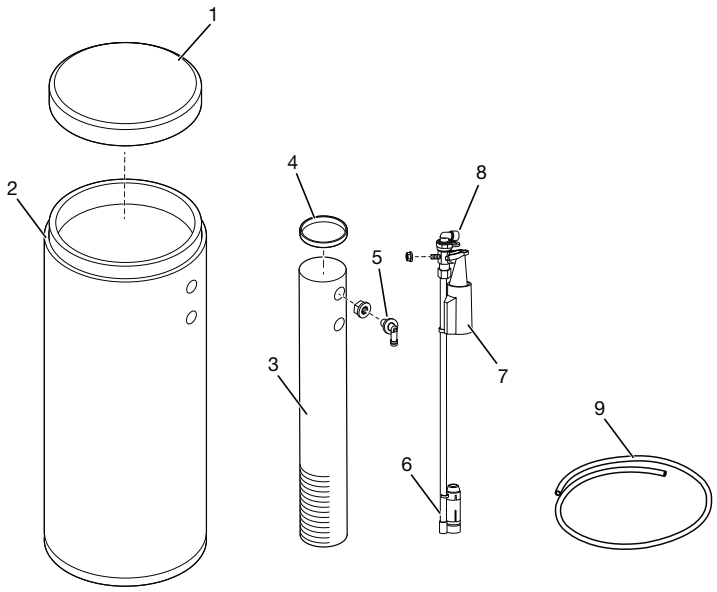


Figure 27

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3BTCVR16GRAYNL-M		16in IM BT Cover w/Label	1
***2	3BTASY1640MOBILGREY		Brine Tank Assembly w/SBV	1
3	3BW436SL	H1030-36S	Brine Well w/Slots	1
4	3BWCAP4	H7016	Brine Well Cap	2
5	3OF2PC	H1018	Overflow Fitting Assembly	1
6	3BVACPU474	H4500-48	Air Check Assembly	1
7	3BVFLOAT4749	H4640-9.5	Brine Float Assembly w/Pin	1
8	3BV474W/3/8E	H4600	Brine Valve 474 w/ 3/8 Elbow	1
**9	3PET38BLK100	2T20-0604BK	Tubing	1
*	3LLB-M-BT_2.85X11.85	309060	Brine Tank Cover Label	1

* Not shown on drawing

** Includes 5 ft of tubing supplied with the system. To reorder, tubing is sold in 100 ft roll

*** Complete brine tank assembly includes all parts in the drawing above except for the cover, the cover will need to be ordered separately

Some images are enlarged for viewing purposes

Mineral Tank Assembly, Valve Cover, and Parts List

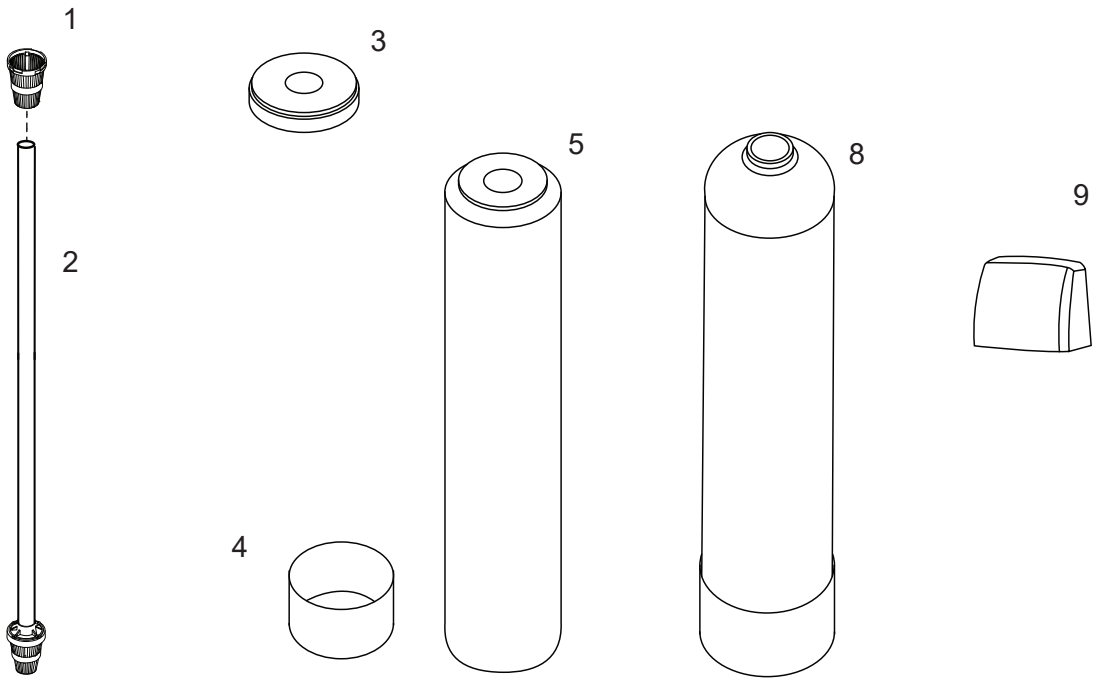


Figure 28

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3TDD1203		Top Distributor	1
*2	3DIST10554ST		Distributor Assembly	1
*3	3TJCAPGRAY		Tank Jacket Cap Cool Gray 10 inch	1
	3TJCAPGRAY13INCH		Tank Jacket Cap Cool Gray 13 inch	
*4	3TJSLEEVEMOBILGRAY		Tank Jacket Sleeve 10" Mobil Gray	1
*5	3TJBM1044MOBILGRAY		Tank Jacket 10 x 44 Mobil Gray	1
	3TJBM1054MOBILGRAY		Tank Jacket 10 x 54 Mobil Gray	
	3TJBM1354MOBILGRAY		Tank Jacket 13 x 54 Mobil Gray	
**6	3LLB-M-TJ_4.5X1.6331		Tank Jacket Label	1
* **7	3TJBMFOAMSTRIP25FT		Foam strips for Tank Jacket (Length varies by Model)	
*8	3MT1044PK12		Mineral Tank 10 x 44	1
	3MT1054PK12		Mineral Tank 10 x 54	
	3MT1354PK12		Mineral Tank 13 x 54	
9	3CVWTHRCVR-LD-COOLGRAY		Mid Size Weather Cover Cool Gray	1
* Varies by Model				
** Not Shown				

Control Valve - Drive Cap, Piston, Regenerant Piston, and Stacker Assembly

Drawing No.	Part No.	Mfg Part No.	Description	Quantity
1	3CVSPACERSTACKV3005	V3005	Spacer Stack Assembly	1
2	3CVDRIVECAPASYV3004	V3004	Drive Cap Assembly	1
3		V3496	Drive Back Plate	1
4a	3CVPISTONDWNFLOW3011	V3011	Piston Downflow Asy (solid amber color)	1
4b	3CVPISTONUPFLOW30110	V3011-01	Piston Upflow Asy (black & amber color)	1
5	3CVPISTONREGENV3174	V3174	Regenerant Piston	1
6		V3135	O-Ring 228	1
7	3CVTNKADPTORINGV3180	V3180	O-Ring 337	1
8	3CVBPFTG ORINGV3105	V3105	O-Ring 215 (Distributor Tube)	1
9		V3001	Body Assembly Downflow	1
		V3001UP	Body Assembly Upflow	1

NOTE: V3004 drive cap assembly includes o-ring 228
The control valve uses the upflow position V3011-01 (black & amber color).

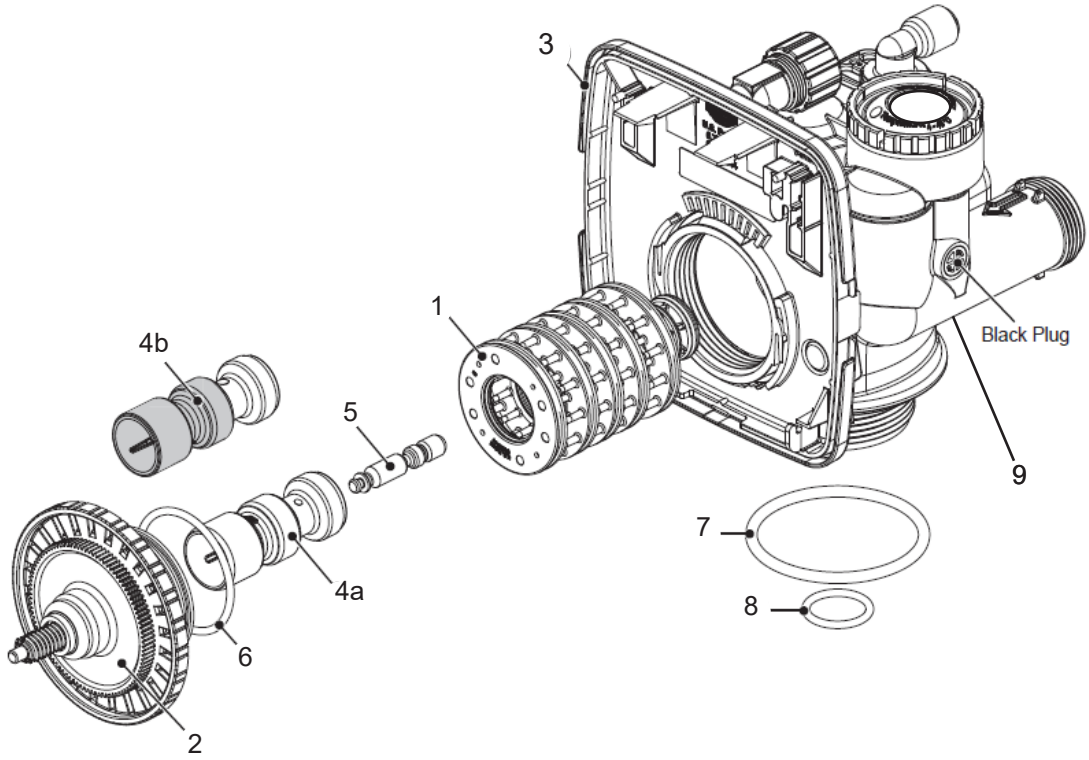


Figure 29
Drive Cap, Piston, Regenerant Piston and Stacker Assembly

Control Valve - Injector Cap and Injector

Drawing No.	Part No.	Mfg Part No.	Description	Quantity
1	3CVINJCAPV3176	V3176	Injector Cap	1
2	3CVORINGINJBPV3152	V3152	O-Ring 135	1
3	3CVINJSCREENV3177-01	V3177-01	Injector Screen Cage	1
4	3CVINJASYV3010-1Z	V3010-1Z	Injector Asy Z Plug	1
5	3CVINJASYCV3010-1A	V3010-1A	Injector Asy A Black	1
	3CVINJASYCV3010-1B	V3010-1B	Injector Asy B Brown	1
	3CVINJASYCV3010-1C	V3010-1C	Injector Asy C Violet	1
	3CVINJASYCV3010-1D	V3010-1D	Injector Asy D Red	1
	3CVINJASYEV3010-1E	V3010-1E	Injector Asy E White	1
	3CVINJASYFV3010-1F	V3010-1F	Injector Asy F Blue	1
	3CVINJASYGV3010-1G	V3010-1G	Injector Asy G Yellow	1
	3CVINJASYHV3010-1H	V3010-1H	Injector Asy H Green	1
	3CVINJASYIV3010-1I	V3010-1I	Injector Asy I Orange	1
	3CVINJASYJV3010-1J	V3010-1J	Injector Asy J Light Blue	1
	3CVINJASYCV3010-1K	V3010-1K	Injector Asy K Light Green	1
Not Shown		V3170	O-Ring 011	*
Not Shown		V3171	O-Ring 013	*

* The injector plug and the injector each contain one 011 (lower) and 013 (upper) o-ring.

NOTE: The control valve uses the upflow position and the injector is located in the UP hole and injector plug is in the other hole.

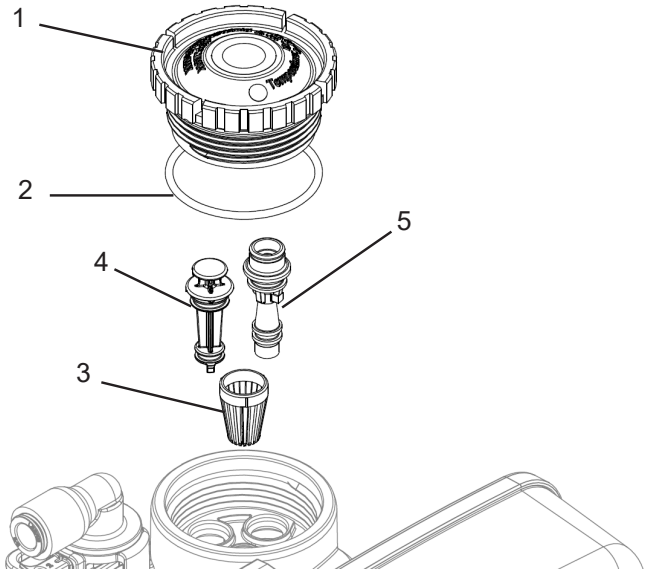


Figure 30

Refill Flow Control Assembly and Refill Port Plug

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVREFILLPORTPLUGASY	V3195-01	Refill Port Plug Asy	This part is required for back wash only filters
2	3CVLOCKINGCLIPH4615	H4615	Elbow Locking Clip	1
3		H4628	Elbow ⅜ ”	1
4	3CVELBOWORINGV3163	V3163	O-Ring 019	1
5	3CVRETAINERASYV3165	V3165-01*	RFC Retainer Asy (0.5 gpm)	*
6		V3182	Refill Flow Control	1
7	3CVBRINEELBOW3/8ASY	V3330-01	Brine Elbow Asy w/RFC ⅜”	1
**		V3552	Brine Elbow Asy w/RFC ½”	Option
**		H4650	Elbow ½” with nut and insert	Option
* V3165-01Assembly includes V3182 (0.5 gpm Refill Flow Control)				
**Not Shown				

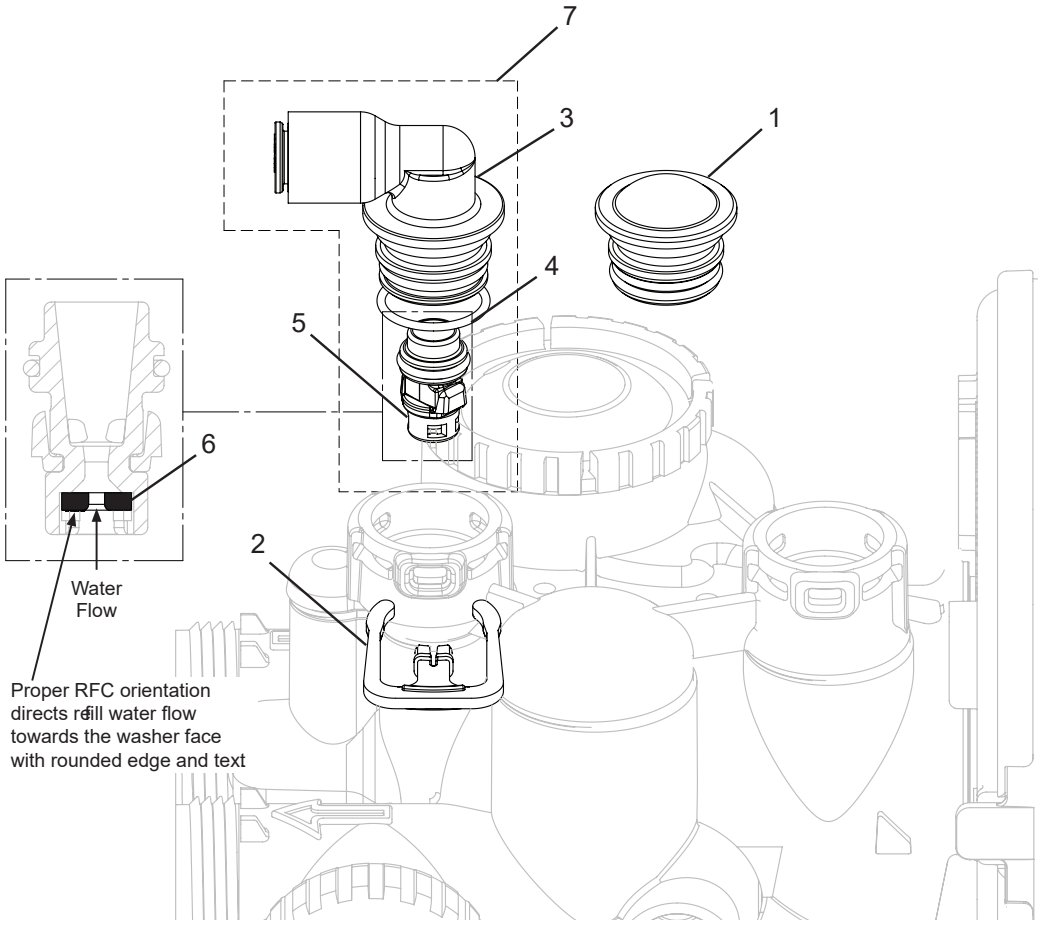


Figure 31

Drain Line Flow Control Assembly

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVLOCKINGCLIPH4615	H4615	Elbow Locking Clip	1
2	3CVDRAININSERT5/8TUB	PKP10TS8-Bulk	Polytube insert ⅝	Option
3	3CVDRAINNUT5/8V3192	V3192	Nut ¾ Drain Elbow	Option
4*	3CVDRAINELBOW3/4ASY	V3158-01	Drain Elbow ¾ Male	1
4*	3CVDRAINELBOWNOSILEN	V3158-02	Drain Elbow ¾ Male No Silencer	1
5	3CVELBOWORINGV3163	V3163	O-Ring 019	1
6*	3CVDLFCRETAINERASY	V3159-01	DLFC Retainer Asy	1
7		V3162-007	DFLC 0.7 gpm for ¾	One DLFC must be used if ¾ fitting is used
		V3162-010	DFLC 1.0 gpm for ¾	
		V3162-013	DFLC 1.3 gpm for ¾	
		V3162-017	DFLC 1.7 gpm for ¾	
	3CVDLFC022 V3162-022	V3162-022	DFLC 2.2 gpm for ¾	
	3CVDLFC027 V3162-027	V3162-027	DFLC 2.7 gpm for ¾	
	3CVDLFC032 V3162-032	V3162-032	DFLC 3.2 gpm for ¾	
	3CVDLFC042 V3162-042	V3162-042	DFLC 4.2 gpm for ¾	
	3CVDLFC053 V3162-053	V3162-053	DFLC 5.3 gpm for ¾	
	3CVDLFC065 V3162-065	V3162-065	DFLC 6.5 gpm for ¾	
	3CVDLFC075 V3162-075	V3162-075	DFLC 7.5 gpm for ¾	
	3CVDLFC090 V3162-090	V3162-090	DFLC 9.0 gpm for ¾	
	3CVDLFC100 V3162-100	V3162-100	DFLC 10.0 gpm for ¾	

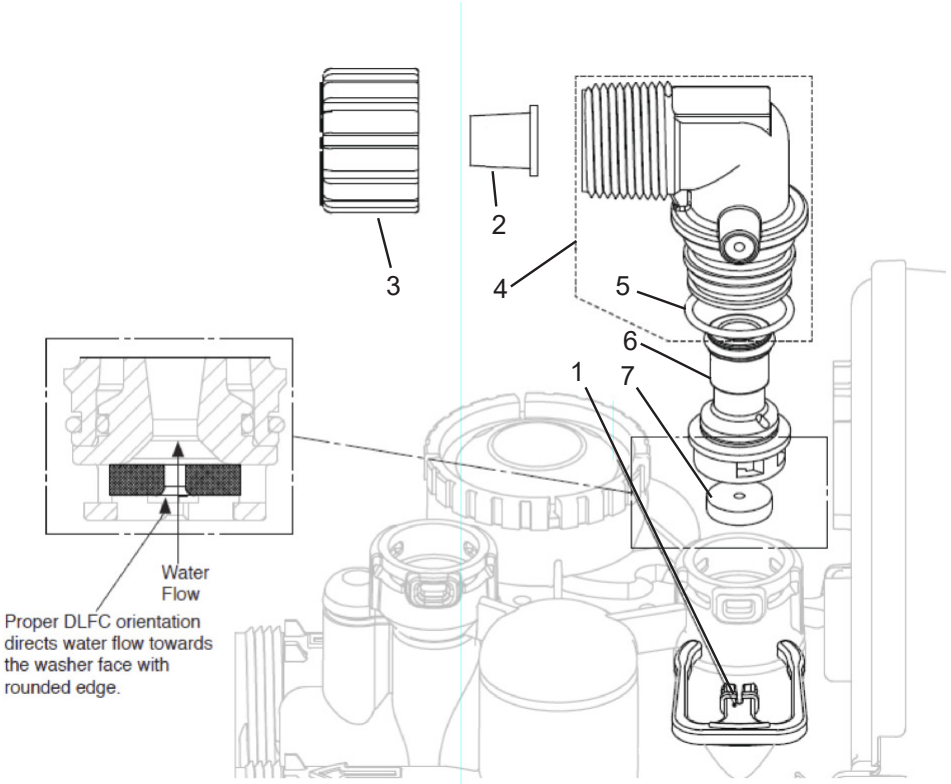


Figure 32

Water Meter, Meter Plug, and Mixing Valve

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1”QC	1
2	3CVMETERASYV3003	V3003*	Meter ASY	1
3	3CVTURBINEASYV311801	V3118-01	Turbine ASY	1
4	3CVBPFTG ORINGV3105	V3105	O-Ring 215	1
5	3CVMETERPLUG300301	V3003-01	Meter Plug ASY	1

*Order number V3003 includes V3118-01 Turbine Asy and V3105 O-Ring 215.

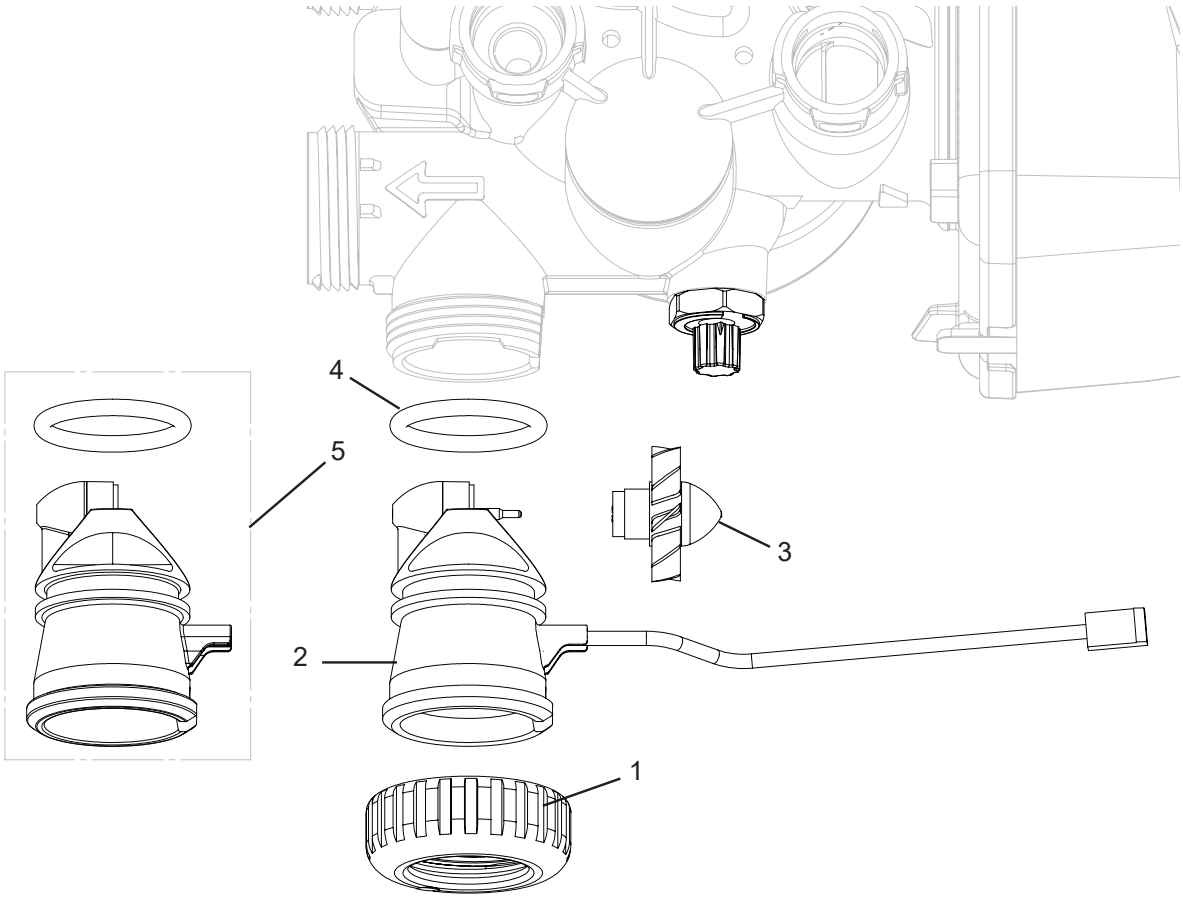


Figure 33

Bypass Valve

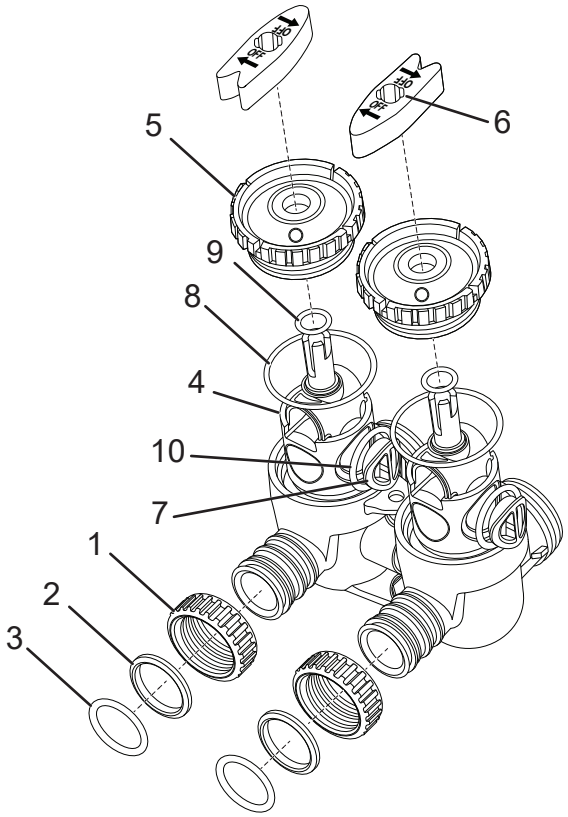


Figure 34

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
	3CVBYPASSV3006	V3006	Bypass Assembly	1
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) Quick Connect (QC)	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V3145	Bypass 1" (2.54 cm) Rotor	2
5		V3146	Bypass Cap	2
6		V3147	Bypass Handle	2
7		V3148	Bypass Rotor Seal Retainer	2
8	3CVORINGINJBPV3152	V3152	O-Ring 135	2
9		V3155	O-Ring 112	2
10		V3156	O-Ring 214	2

BYPASS FITTING PACKAGES

Bypass Fitting Packages

Order No.: 3CVBPFTGV3007-01
Description: Fitting 3/4” x 1” (1.9 x 2.54 cm) PVC Solvent Elbow Assembly

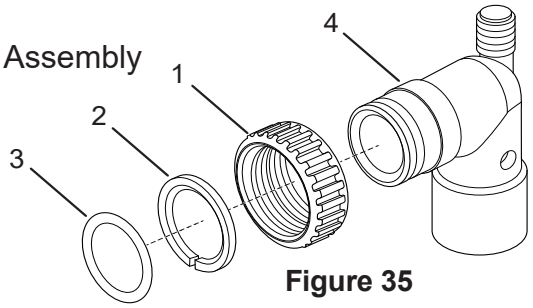


Figure 35

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V3189	3/4"x1" PVC 90°	2

Order No.: 3CVBPFTGV3007-15
Description: 3/4” (1.9 cm) John Guest® QC 90° Assembly

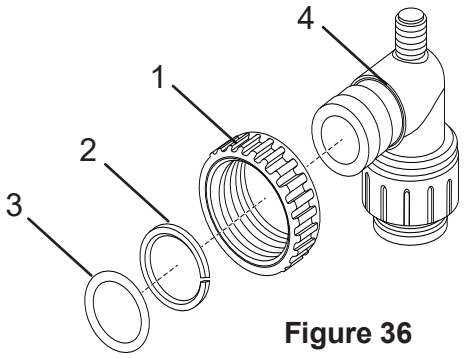


Figure 36

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V3790	3/4" John Guest® QC 90°	2

Bypass Fitting Packages

Order No.: 3CVBPFTGV3007-03
Description: Fitting 3/4” (1.9 cm) Brass Sweat Assembly LF

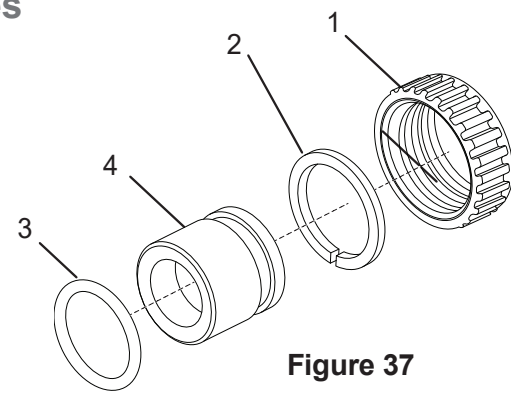


Figure 37

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V3188-01LF	3/4" Brass Sweat LF	2
Do not install in California				

Order No.: 3CVBPFTGV3007-02
Description: Fitting 1” (2.54 cm) Brass Sweat Assembly LF

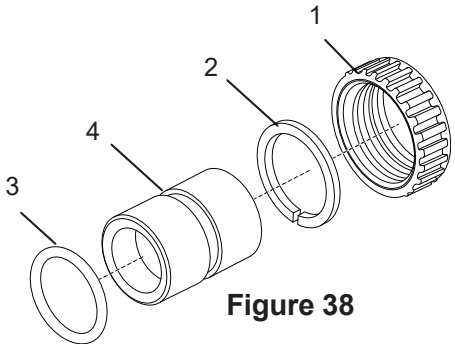


Figure 38

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V3188-LF	1" Brass Sweat LF	2
Do not install in California				

Order No.: 3CVBPFTGV007-04
Description: Fitting 1” (2.54 cm) Male MPT Assembly

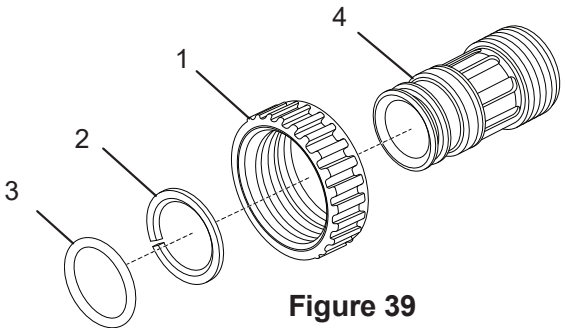


Figure 39

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V3164	1" Male MPT	2

Bypass Fitting Packages

Order No.: 3CVBPFTGV3007-12
Description: Fitting 3/4” (1.9 cm) Brass SharkBite® Assembly LF

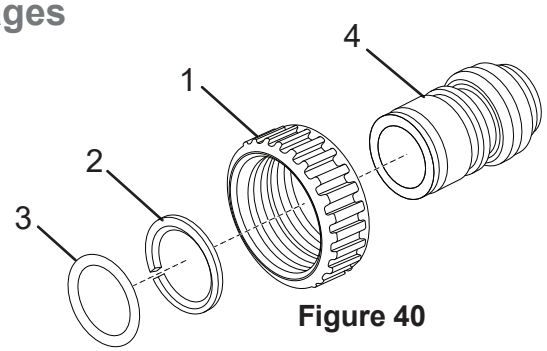


Figure 40

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V3628-LF	3/4" Brass SharkBite® Assembly LF	2

Order No.: 3CVBPFTG1.0V3007-13
Description: Fitting 1” (2.54 cm) Brass SharkBite® Assembly LF

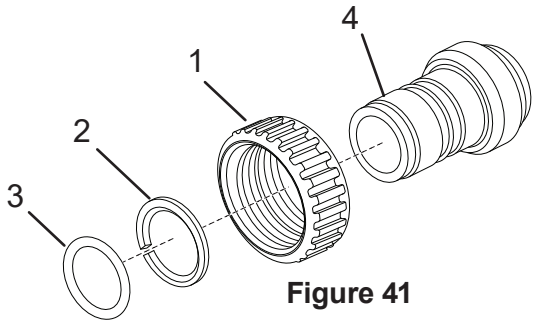


Figure 41

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V3629-LF	1" Brass SharkBite® LF	2

Order No.: 3CVBPFTGV3191-01
Description: Fitting Bypass Vertical Adapter Assembly

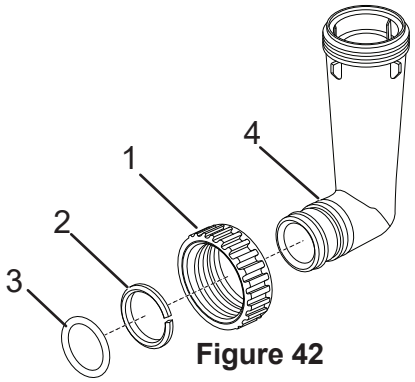


Figure 42

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V3191	Bypass Vertical Adapter	2

Bypass Fitting Packages

Order No.: 3CVBPFTGV3007-17
Description: Fitting 1” (2.54 cm) John Guest® QC Assembly

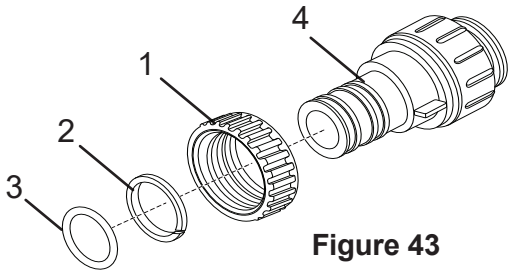


Figure 43

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V4045	1" John Guest® QC ASY	2

Order No.: 3CVBPFTGV3007-00
Description: Fitting 1” (2.54 cm) PVC Male NPT Elbow Assembly

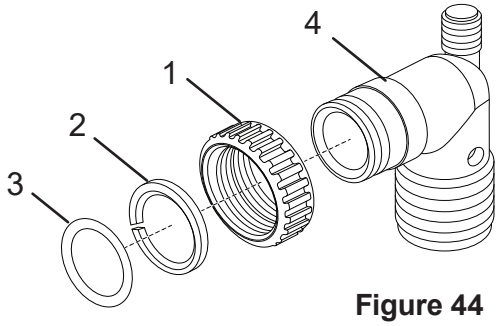


Figure 44

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V3149	1" PVC Male NPT Elbow	2

Order No.: 3CVBPFTGV3007-18
Description: Fitting 3/4" (1.9 cm) Plastic Male NPT Assembly

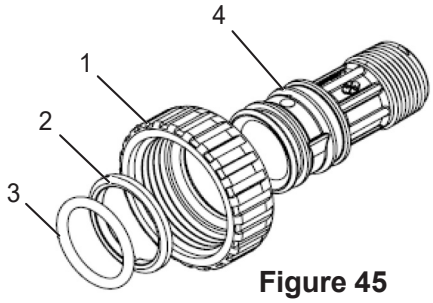


Figure 45

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V4232	3/4" Plastic male NPT Fitting	2

Order No.: 3CVBPFTGV3007-19
Description: Fitting 3/4" (1.9 cm) John Guest® Straight QC Assembly

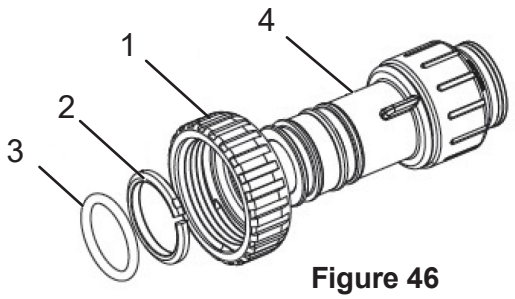


Figure 46

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V4223	3/4" John Guest® Straight QC Fitting	2

Order No.: 3CVBPFTGV3007-20
Description: Fitting 1" (2.54 cm) John Guest® QC Elbow Assembly

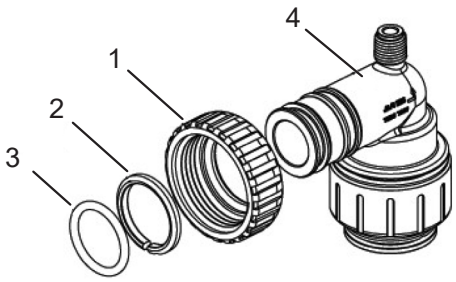


Figure 47

Drawing No.	Part No.	Mfg. Part No.	Description	Quantity
1	3CVBPFTG NUT1INV3151	V3151	Nut 1" (2.54 cm) QC	2
2	3CVBPFTG RINGV3150	V3150	Split Ring	2
3	3CVBPFTG ORINGV3105	V3105	O-Ring 215	2
4		V4317	1" John Guest® QC Elbow Fitting	2

TROUBLESHOOTING

Problem	Possible Cause	Solution
No Display on PC Board	**1.** No power at electric outlet **2.** Control valve Power Adapter not plugged into outlet or power cord end not connected to PC board connection **3.** Improper power supply **4.** Defective Power Adapter **5.** . Defective PC Board)	**1.** Repair outlet or use working outlet **2.** Plug Power Adapter into outlet or connect power cord end to PC Board connection **3.** Verify proper voltage is being delivered to PC Board **4.** Replace Power Adapter) **5.** Replace PC Board
PC Board does not display correct time of day	**1.** Power Adapter plugged into electric outlet controlled by light switch **2.** Tripped breaker switch and/or tripped GFI **3.** Power outage **4.** Defective PC Board	**1.** Use uninterrupted outlet **2.** Reset breaker switch and/ or GFI Switch **3.** Reset time of day. If PC Board has battery back up present the battery may be depleted. Refer to battery replacement drawing for instructions **4.** Replace PC Board
Display does not indicate that water is flowing. Refer to User Display Settings for how the display indicates water is flowing	**1.** Bypass valve in bypass position **2.** Meter is not connected to meter connection on PC Board **3.** Restricted/stalled meter turbine **4.** Meter wire not installed securely into three pin connector **5.** Defective meter **6.** Defective PC Board	**1.** Turn bypass handles to place bypass in service position **2.** Connect meter to three pin connection labeled METER on PC board **3.** Remove meter and check for rotation or foreign material **4.** Verify meter cable wires are installed securely into three pin connector labeled METER **5.** Replace meter **6.** Replace PC Board
Control valve regenerates at wrong time of day	**1.** Power outage **2.** Time of day not set correctly **3.** Time of regeneration set incorrectly **4.** Control valve set at “on 0” (immediate regeneration) **5.** Control valve set at “NORMAL + on 0” (delayed and/ or immediate)	**1.** Reset time of day. If PC Board has battery back up present the battery may be depleted. Refer to battery replacement for instructions. **2.** Reset to correct time of day **3.** Reset regeneration time **4.** Check programming setting and reset to NORMAL (for a delayed regen time) **5.** Check programming setting and reset to NORMAL (for a delayed regen time)
Time of day flashes on and off	Power outage	Reset time of day. If PC Board has battery back up present the battery may be depleted. Refer to battery replacement for instructions.

Problem	Possible Cause	Solution
Timer does not display correct time of day	**1.** Switched outlet **2.** Power outage **3.** Defective PC board	**1.** Use uninterrupted outlet **2.** Transformer unplugged **3.** Replace PC board
Timer does not display time of day	**1.** Transformer unplugged **2.** No electric power at outlet **3.** Defective transformer **4.** Defective PC board	**1.** Connect power **2.** Repair outlet or use working outlet **3.** Replace transformer **4.** Replace PC board
Control valve does not regenerate automatically when the correct button (s) is depressed and held. For TC valves the buttons are ▲&▼. For all other valves the button is REGEN	**1.** Broken drive gear or drive cap assembly **2.** Broken Piston Rod **3.** Defective PC Board	**1.** Replace drive gear or drive cap assembly **2.** Replace piston rod **3.** Defective PC Board
Control valve does not regenerate automatically but does when the correct button (s) is depressed and held. For TC valves the buttons are ▲&▼ For all other valves the button is REGEN	**1.** Bypass valve in bypass position **2.** Meter is not connected to meter connection on PC Board **3.** Restricted/ stalled meter turbine **4.** Incorrect programming **5.** Meter wire not installed securely into three pin connector **6.** Defective meter **7.** Defective PC Board	**1.** Turn bypass handles to place bypass in service position **2.** Connect meter to three pin connection labeled METER on PC Board **3.** Remove meter and check for rotation or foreign material **4.** Check for programming error **5.** Verify meter cable wires are installed securely into three pin connector labeled METER **6.** Replace meter **7.** Replace PC Board
Hard or untreated water is being delivered	**1.** Bypass valve is open or faulty **2.** Media is exhausted due to high water usage **3.** Meter not registering **4.** Water quality fluctuation **5.** No regenerant or low level of regenerant in regenerant tank **6.** Control fails to draw in regenerant **7.** Insufficient regenerant level in regenerant tank	**1.** Fully close bypass valve or replace **2.** Check program settings or diagnostics for abnormal water usage **3.** Remove meter and check for rotation or foreign material **4.** Test water and adjust program values accordingly **5.** Add proper regenerant to tank **6.** Refer to Trouble Shooting Guide "Control valve fails to draw in regenerant/air" **7.** Check refill setting in programming. Check refill flow control for restrictions or debris and clean or replace

Problem	Possible Cause	Solution
Control valve uses too much regenerant	**1.** Improper refill setting **2.** Improper program settings **3.** Control valve regenerates frequently	**1.** Check refill setting **2.** Check program setting to make sure they are specific to the water quality and application needs **3.** Check for leaking fixtures that may be exhausting capacity or system is undersized
Residual regenerant being delivered to service	**1.** Low water pressure **2.** Incorrect injector size **3.** Restricted drain line	**1.** Check incoming water pressure – water pressure must remain at minimum of 25 psi **2.** Replace injector with correct size for the application **3.** Check drain line for restrictions or debris and clean
Excessive water in regenerant tank	**1.** Improper program settings **2.** Plugged injector **3.** Drive cap assembly not tightened in properly **4.** Damaged seal/ stack assembly **5.** Restricted or kinked drain line **6.** Plugged backwash flow controller **7.** Missing refill flow controller	**1.** Check refill setting **2.** Remove injector and clean or replace **3.** Re-tighten the drive cap assembly **4.** Replace seal/ stack **5.** Check drain line for restrictions or debris and or un-kink drain line **6.** Remove backwash flow controller and clean or replace **7.** Replace refill flow controller
Control valve fails to draw in regenerant/air	**1.** Injector is plugged **2.** Faulty regenerant piston **3.** Regenerant line connection leak **4.** Drain line restriction of debris cause excess back pressure **5.** Drain line too long or too high **6.** Low water pressure	**1.** Remove injector and clean or replace **2.** Replace regenerant piston **3.** Inspect regenerant line for air leak **4.** Inspect drain line and clean to correct restriction **5.** Shorten length and or height **6.** Check incoming water pressure-water pressure must remain at minimum of 20 psi (1.38 bar)
Water running to drain	**1.** Power outage during regeneration **2.** Damaged seal/ stack assembly **3.** Piston assembly failure **4.** Drive cap assembly not tightened in properly	**1.** Upon power being restored control will finish the remaining regeneration time. Reset time of day. **2.** Replace seal/ stack assembly **3.** Replace piston assembly **4.** Re-tighten the drive cap assembly

Problem	Possible Cause	Solution
Err – 101 = Control unable to sense motor movement	**1.** Motor not inserted full to engage pinion, motor wires broken or disconnected **2.** PC Board not properly snapped into drive bracket **3.** Missing reduction gears	**1.** Disconnect power, make sure motor is fully engaged, check for broken wires, make sure two pin connector on motor is connected to the two pin connection on the PC Board labeled MOTOR. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect **2.** Properly snap PC Board into drive bracket and then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect **3.** Replace missing gears
Err – 102 = Control valve motor ran too short and was unable to find the next cycle position and stalled	**1.** Foreign material is lodged in control valve **2.** Mechanical binding **3.** Main drive gear too tight **4.** Improper voltage being delivered to PC Board	**1.** Open up control valve and pull out piston assembly and seal / stack assembly for inspection. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect **2.** Check piston and seal/ stack assembly, check reduction gears, check drive bracket and main drive gear interface. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect **3.** Loosen main drive gear. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect **4.** Verify that proper voltage is being supplied. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect

Problem	Possible Cause	Solution
Err – 103 = Control valve motor ran too long and was unable to find the next cycle position	**1.** Motor failure during a regeneration **2.** Foreign matter built up on piston and stack assemblies creating friction and drag enough to time out motor **3.** Drive bracket not snapped in properly and out enough that reduction gears and drive gear do not interface	**1.** Check motor connections then press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect **2.** Replace piston and stack assemblies. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect **3.** Snap drive bracket in properly then press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect
Err – 104 = Control valve motor ran too long and timed out trying to reach home position	Drive bracket not snapped in properly and out enough that reduction gears and drive gear do not interface	Snap drive bracket in properly then press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect
Err – 106, Err - 116 = MAV/ SEPS/ NHBP/ AUX MAV valve motor ran too long and unable to find the proper park position Motorized Alternating Valve = MAV Separate Source =SEPS No Hard Water Bypass = NHBP Auxiliary MAV = AUX MAV	**1.** Control valve programmed for ALT A or B, nHbP, SEPS, or AUX MAV with out having a MAV or NHBP valve attached to operate that function **2.** MAV/ NHBP motor wire not connected to PC Board **3.** MAV/ NHBP motor not fully engaged with reduction gears **4.** Foreign matter built up on piston and stack assemblies creating friction and drag enough to time out motor	**1.** Press NEXT and REGEN buttons for 3 seconds to re synchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect. Then re-program valve to proper setting **2.** Connect MAV/ NHBP motor to PC board two pin connection labeled DRIVE. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect **3.** Properly insert motor into casing, do not force into casing Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect **4.** Replace piston and stack assemblies. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect
Err – 107, Err - 117 = MAV/ SEPS/ NHBP/AUX MAV valve motor ran too short (stalled) while looking for proper park position Motorized Alternating Valve = MAV Separate Source = SEPS\ No Hard Water Bypass = NHBP Auxiliary MAV = AUX MAV	**1.** Foreign material is lodged in MAV/ NHBP valve **2.** Mechanical binding	**1.** Open up MAV/NHBP valve and check piston and seal/ stack assembly for foreign material. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect **2.** Check piston and seal/stack assembly, check reduction gears, drive gear interface, and check MAV/NHBP black drive pinion on motor for being jammed into motor body. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect

Error Code	Description of Error
101	Valve Motor Output Energized - NOT SENSING VALVE MOVEMENT - perform soft reset to clear
102	Valve Motor/Stager #1 RAN TOO SHORT, STALLED - unable to find next cycle position - perform soft reset to clear try to regen to be sure obstruction is clear
103	Valve Motor/Stager #1 RAN TOO LONG - unable to find next cycle position - perform soft reset to clear
104	Valve Motor UNABLE TO FIND HOME POSITION - during regeneration or control reset - perform soft reset to clear
106	Alternator MAV/NHBP Motor RAN TOO LONG - unable to find proper park position - perform soft reset to clear
107	Alternator MAV/NHBP Motor RAN TOO SHORT, STALLED - unable to find proper park position - perform soft reset to clear
109	INVALID MOTOR STATE DETECTED, Internal Software Error - proper software operation can no longer be maintained by the micro-controller - perform soft reset to clear
116	Aux MAV / NHBP Motor RAN TOO LONG - unable to find proper park position - perform soft reset to clear

PERFORMANCE DATA SHEET

MAYTAG® WATER TREATMENT SYSTEM

Model Numbers	* *** 3M-ST32-XXX	* *** 3M-ST40-XXX	* **** 3M-ST48-XXX	* *** 3M-ST64-XXX	* *** 3M-ST80-XXX
Rated flow rate	9.0 gpm	10.0 gpm	13.0 gpm	15.0 gpm	15.0 gpm
Pressure drop @ rated flow rate	8 psi	9 psi	15 psi	15 psi	15 psi
Peak flow rate and pressure drop	15.9 gpm @ 15 psi 18.2 gpm @ 20 psi 22.4 gpm @ 25 psi	16.2 gpm @15 psi 19.2 gpm @ 20 psi 22.0 gpm @ 25 psi	17.7 gpm @ 15 psi 21.1 gpm @ 20 psi 24.0 gpm @ 25 psi	20.0 gpm @ 15 psi 23.5 gpm @ 20 psi 26.6 gpm @ 25 psi	14.5 gpm @ 15 psi 17.3 gpm @ 20 psi 19.8 gpm @ 25 psi
Electrical Requirements	Input: 100V-120V ~ 50/60Hz 0.35A12V Output: 15VDC ⎓ 0.5A	Input: 100V-120V ~ 50/60Hz 0.35A12V Output: 15VDC ⎓ 0.5A	Input: 100V-120V ~ 50/60Hz 0.35A12V Output: 15VDC ⎓ 0.5A	Input: 100V-120V ~ 50/60Hz 0.35A12V Output: 15VDC ⎓ 0.5A	Input: 100V-120V ~ 50/60Hz 0.35A12V Output: 15VDC ⎓ 0.5A
Capacities at rated service flow	18,200 @ Low (4.5lbs) 23,500 @ Std (9.0lbs) 28,000 @ High (15.0lbs)	22,750 @ Low (5.6lbs) 29,375 @ Std (11.3lbs) 35,500 @ High (18.8lbs)	27,300 @ Low (6.75bs) 35,250 @ Std (13.5lbs) 42,000 @ High (22.5lbs)	36,400 @ Low (9.0lbs) 48,000 @ Std (18.0lbs) 56,000 @ High (30.0lbs)	45,500 @ Low (11.25lbs) 58,750 @ Std (22.5lbs) 70,000 @ High (37.5lbs)
Type and amount of Ion Exchange resin	Premium Cation 1.0 cu ft	Premium Cation 1.25 cu ft	Premium Cation 1.5 cu ft	Premium Cation 2.0 cu ft	Premium Cation 2.5 cu ft
Working Water Pressure	20 to 120 psi (1.38 to 8.27 kg/cm²)	20 to 120 psi (1.38 to 8.27 kg/cm²)	20 to 120 psi (1.38 to 8.27 kg/cm²)	20 to 120 psi (1.38 to 8.27 kg/cm²)	20 to 120 psi (1.38 to 8.27 kg/cm²)
Operating Temperature (min/max)	35 to 100°F (1.7 to 37.8°C)	35 to 100°F (1.7 to 37.8°C)	35 to 100°F (1.7 to 37.8°C)	35 to 100°F (1.7 to 37.8°C)	35 to 100°F (1.7 to 37.8°C)
Maximum flow rate in gpm or L/min to drain during regeneration	2.7 gal/min (10.22 L/min)	2.7 gal/min (10.22 L/min)	2.7 gal/min (10.22 L/min)	4.2 gal/min (10.22 L/min)	4.2 gal/min (17.03 L/min)
Efficiency rating Efficiency rated salt setting	4043 grains/pound Low (4.5 lbs)	4375 grains/pound Low (5.6 lbs)	4375 grains/pound Low (6.75 lbs)	4043 grains/pound Low (9.0 lbs)	4043 grains/pound Low (11.25 lbs)
Efficiency rated capacity	18,200 grains	22,750 grains	27,300 grains	36,400 grains	45,500 grains
Accepted type or grade, pellet or solar salt for water softeners.	Sodium Chloride	Sodium Chloride	Sodium Chloride	Sodium Chloride	Sodium Chloride

* These systems conform to NSF/ANSI 44 for the specific performance claims as verified and substantiated by test data.
NSF/ANSI 44 Performance Claims: – Hardness, Radium 226, 228 and Barium claims;
NSF/ANSI 61: Drinking Water System Components – Health Effects;
NSF/ANSI 372 Lead Free Compliance; Uniform Plumbing Code (UPC),
International Plumbing Code (IPC) and International Residential Code (IRC).

** These systems conform to NSF/ANSI Standard 42: Reduction claim: Aesthetic Chlorine/Taste and Odor up to 197,389 gallons as verified and substantiated by test data The concentration of the indicated substances in water entering the conditioner was reduced to a concentration less than or equal to the permissible limit.
*** A study by Kent State University (Reduction in Strontium in Drinking Water by Whole House Ion exchange) has found that water softeners that reduce hardness to less than one grain per gallon will also effectively reduce Strontium from the water.

Substance	Influent Challenge Concentration	Reduction Requirement	Average% Reduction
Chlorine	2.0 mg/L ± 10%	>50% reduction	89.9%
Barium	2.0 mg/L	<2.0 mg/L	N/A
Radium 226/228	5 pCi/L	<5.0 pCi/L	N/A

- Efficiency rated water softener is a demand initiated regeneration (DIR) softener which 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 3350 grains of total hardness exchange per pound of salt (based on NaCl equivalency) (477 grams of total hardness exchanged per kilogram of salt), and shall not deliver more salt than its listed rating. The Efficiency of the water softener, the salt dosage at that efficiency, the capacity at that salt dosage and that of the efficiency is only valid at the stated salt dosage.
- 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 contaminants that reduce softeners capacity. While the testing was performed under standard laboratory conditions, actual performance can vary.
- Refer to the system installation and operations manual for set-up and programming instructions.
- System testing utilized sodium chloride regenerant specifically formulated for water conditioning units. Please see operations manual for user responsibility, parts and service availability, any further restrictions or limitations to the use of this product.

PERFORMANCE DATA SHEET

MAYTAG® WATER TREATMENT SYSTEM

Model Numbers	* ** *** 3M-STR32-XXX	* ** *** 3M-STR32XC-XXX	* ** *** 3M-STR40-XXX	* ** *** 3M-STR64-XXX
Rated flow rate	9.0.0 gpm	10.0.0 gpm	10.0 gpm	15.0 gpm
Pressure drop @ rated flow rate	8 psi	8 psi	9 psi	15 psi
Peak flow rate and pressure drop	15.9 gpm @ 15 psi 18.2 gpm @ 20 psi 22.4 gpm @ 25 psi	15.9 gpm @ 15 psi 18.2 gpm @ 20 psi 22.4 gpm @ 25 psi	15.5 gpm @15 psi 18.7 gpm @ 20 psi 21.7 gpm @ 25 psi	16.5 gpm @ 15 psi 19.8 gpm @ 20 psi 22.8 gpm @ 25 psi
Electrical Requirements	Input: 100V-120V ~ 50/60Hz 0.35A12V Output: 15VDC ⎓ 0.5A	Input: 100V-120V ~ 50/60Hz 0.35A12V Output: 15VDC ⎓ 0.5A	Input: 100V-120V ~ 50/60Hz 0.35A12V Output: 15VDC ⎓ 0.5A	Input: 100V-120V ~ 50/60Hz 0.35A12V Output: 15VDC ⎓ 0.5A
Capacities at rated service flow	18,200 @ Low (4.5lbs) 23,500 @ Std (9.0lbs) 28,000 @ High (15.0lbs)	18,200 @ Low (4.5lbs) 23,500 @ Std (9.0lbs) 28,000 @ High (15.0lbs)	22,750 @ Low (5.6lbs) 29,375 @ Std (11.3lbs) 35,500 @ High (18.8lbs)	36,400 @ Low (9.0lbs) 48,000 @ Std (18.0lbs) 56,000 @ High (30.0lbs)
Type and amount of Ion Exchange resin	Premium Cation 1.0 cu ft	Premium Cation 1.0 cu ft	Premium Cation 1.25 cu ft	Premium Cation 2.0 cu ft
Working Water Pressure	20 to 120 psi (1.38 to 8.27 kg/cm²)	20 to 120 psi (1.38 to 8.27 kg/cm²)	20 to 120 psi (1.38 to 8.27 kg/cm²)	20 to 120 psi (1.38 to 8.27 kg/cm²)
Operating Temperature (min/max)	35 to 100°F (1.7 to 37.8°C)	35 to 100°F (1.7 to 37.8°C)	35 to 100°F (1.7 to 37.8°C)	35 to 100°F (1.7 to 37.8°C)
Maximum flow rate in gpm or L/min to drain during regeneration	2.7 gal/min (10.22 L/min)	2.7 gal/min (10.22 L/min)	2.7 gal/min (10.22 L/min)	4.2 gal/min (10.22 L/min)
Efficiency rating Efficiency rated salt setting	4043 grains/pound Low (4.5 lbs)	4043 grains/pound Low (4.5 lbs)	4375 grains/pound Low (5.6 lbs)	4043 grains/pound Low (9.0 lbs)
Efficiency rated capacity	18,200 grains	18,200 grains	22,750 grains	36,400 grains
Accepted type or grade, pellet or solar salt for water softeners.	Sodium Chloride	Sodium Chloride	Sodium Chloride	Sodium Chloride

* These systems conform to NSF/ANSI 44 for the specific performance claims as verified and substantiated by test data.
NSF/ANSI 44 Performance Claims: – Hardness, Radium 226, 228 and Barium claims;
NSF/ANSI 61: Drinking Water System Components – Health Effects;
NSF/ANSI 372 Lead Free Compliance; Uniform Plumbing Code (UPC),
International Plumbing Code (IPC) and International Residential Code (IRC).

** These systems conform to NSF/ANSI Standard 42: Reduction claim: Aesthetic Chlorine/Taste and Odor up to 197,389 gallons as verified and substantiated by test data The concentration of the indicated substances in water entering the conditioner was reduced to a concentration less than or equal to the permissible limit.
*** A study by Kent State University (Reduction in Strontium in Drinking Water by Whole House Ion exchange) has found that water softeners that reduce hardness to less than one grain per gallon will also effectively reduce Strontium from the water

Substance	Influent Challenge Concentration	Reduction Requirement	Average% Reduction
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Barium	2.0 mg/L	<2.0 mg/L	N/A
Radium 226/228	5 pCi/L	<5.0 pCi/L	N/A

- Efficiency rated water softener is a demand initiated regeneration (DIR) softener which also complies with specific performance specifications intended to minimize the amount of (regenerant) brine and water used in its operation.
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- 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 contaminants that reduce softeners capacity. While the testing was performed under standard laboratory conditions, actual performance can vary.
- Refer to the system installation and operations manual for set-up and programming instructions.
- System testing utilized sodium chloride regenerant specifically formulated for water conditioning units. Please see operations manual for user responsibility, parts and service availability, any further restrictions or limitations to the use of this product.

MAYTAG® WATER TREATMENT SYSTEMS

WHAT'S INSIDE MATTERS™

LIFETIME LIMITED WARRANTY

The LeverEdge (hereinafter LE) warrants any Maytag brand water treatment system manufactured by LE and installed by a duly authorized Maytag dealer, to be free from defects in materials and workmanship to the original residential purchaser (hereinafter CONSUMER) from the date of purchase. All aspects of this warranty are subject to the following limitations, terms and conditions.

1. DURATION OF WARRANTY

If LE equipment consisting of the Mineral and Storage Tanks, Controls and Valves, Pumps and Switches, Ion Exchange Resin and Treatment Media, Drinking Water Systems (excluding replacement exchange modules or inline filters) and Ultraviolet Lights (excluding bulbs and sleeves) is determined to have failed as a result of a manufacturing defect, LE will, at its sole discretion, repair or replace the defective part at NO CHARGE to the CONSUMER (excluding labor, and applicable shipping and handling costs) for the duration of the CONSUMER's ownership of the original equipment (hereinafter "LIFETIME").

2. LIMITATIONS OF COVERAGE

This warranty extends only to the CONSUMER for damage resulting from defects in materials and workmanship, and does not include renewable components. It does not extend to damage caused by the CONSUMER'S neglect or abuse, or by accident, to damage caused by wind, hail or abnormal weather conditions, or to damage caused by acts of God, civil insurrection or extraordinary circumstances beyond the control of LE.

LE shall not be liable for any direct or indirect damage resulting from the use of the equipment, and in no event shall the extent of this warranty coverage exceed the purchase price of the equipment.

LE cannot know the characteristics of a CONSUMER'S water supply or the purpose for which one is purchasing LE equipment. Also, water qualities vary seasonally and over time. Therefore, LE assumes no liability for the determination of the proper equipment necessary to meet a CONSUMER'S requirements, nor does it authorize others to assume such obligations on its behalf.

This warranty excludes any equipment which was not manufactured by LE and installed by an authorized Maytag dealer or on which the date code has been removed or altered. Any tampering or attempted repair performed by anyone other than an authorized dealer, including the CONSUMER, voids this warranty.

3. MISCELLANEOUS

In order to be considered for validation, all claims for warranty coverage must be accompanied by a copy of the purchase agreement indicating the date of initial installation, and a copy of the CONSUMER's current utility bill. LE reserves the right to inspect the Maytag equipment prior to honoring any warranty claim.

This warranty is only issued by LE, and the CONSUMER is hereby advised that Maytag is not the manufacturer of the equipment, and provides no additional or separate warranty whatsoever in connection with the equipment.

This warranty gives you specific legal rights, and you may have other rights which may vary from state to state. Any and all inquiries or claims under this warranty must be submitted in writing to The LeverEdge, Attn: Warranty Department, 1423 Gunn Highway, Odessa, FL 33556.

THE LEVEREDGE
1423 Gunn Highway
Odessa, FL 33556
Phone: (866) 910-8351
www.theleveredge.com

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Notes

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