



MORTON® Water Softener

Model M45C

How to install, operate
and maintain your Demand
Controlled Water Softener
with Wi-Fi

Do not return water softener to store

If you have any questions or concerns when
installing, operating or maintaining your
water softener, call our toll free number:

1-888-64 WATER
(1-888-649-2837)

or visit www.mortonwatersofteners.com

When you call, please be prepared to provide
the model and serial number of your product,
found on the rating decal, located on the rim
below the salt lid hinges.

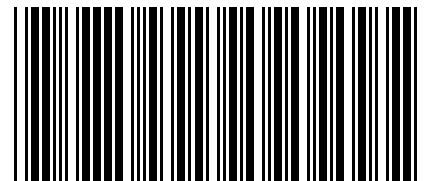
Systems tested and certified by NSF International
against NSF/ANSI Standard 44
for hardness reduction and efficiency,
and certified to NSF/ANSI Standard 372.



For best results use Morton® Clean and Protect® or Morton®
Clean and Protect® Plus Rust Defense® Pellets in your water softener.



Installation and Operation Manual



7381229 (Rev. B 2/12/20)

Protect your new water softener with Morton® Clean and Protect® or Morton® Clean and Protect® Plus Rust Defense® Pellets



Morton® Water Softener Salt Pellets are made with a time-release formula that works with your softener to help prevent mineral buildup and keep your home's pipes and appliances working at their best. Whether you're looking to remove iron and fight buildup, or extend your water softener's life, Morton® has the right salt for you. Use one or both of our premium formula pellets in any water softener for the best results.

Remember to fill your water softener with Morton® America's #1 Brand of Water Softener Salt!

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FCC NOTICE

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to

correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

IMPORTANT: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Inspect Shipment

The parts required to assemble and install the unit are included in a bag. Thoroughly check the water softener for possible shipping damage and parts loss. Also inspect and note any damage to the shipping carton.

Remove and discard (or recycle) all packing materials. To avoid loss of small parts, we suggest you keep the small parts in the parts bag until you are ready to use them.

Packing List

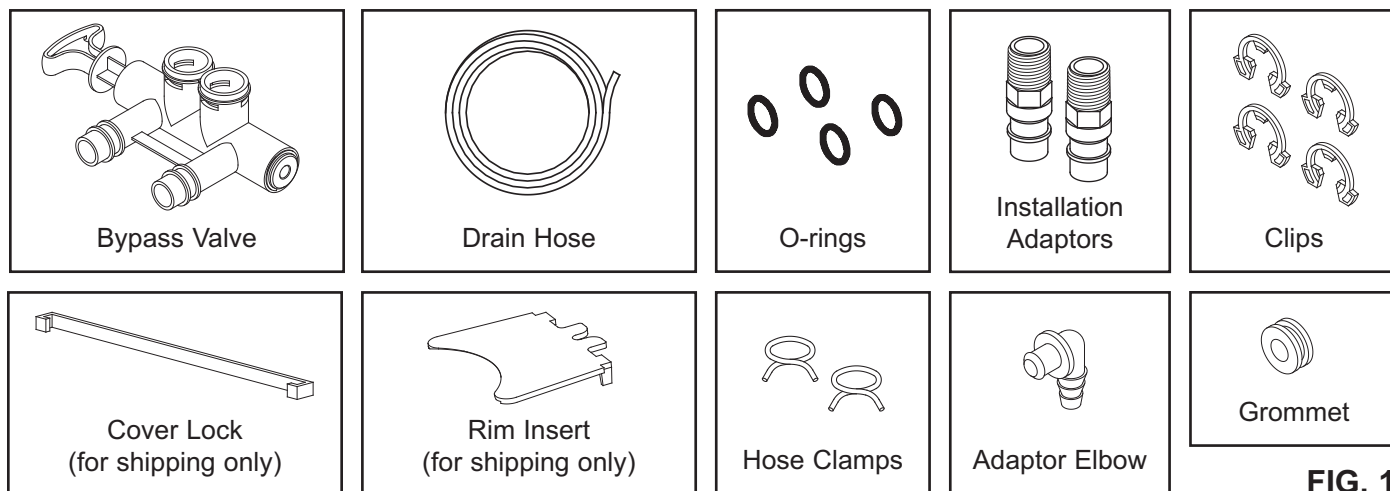


FIG. 1

Do not return the water softener to store.

If you have any questions, or there are missing parts or damage, please call **Toll Free 1-888-64WATER (1-888-649-2837)**.

When you call, please be prepared to provide the model and serial number of your product, found on the rating decal, located on the rim below the salt lid hinges.

For more installation or service information, visit www.mortonwatersofteners.com.

Dimensions

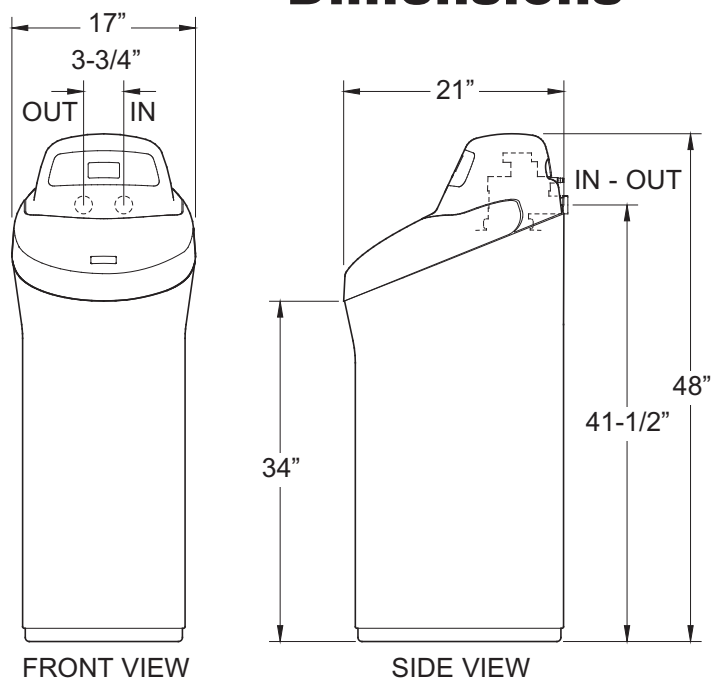


FIG. 2

Specifications & Performance Claims

This model is efficiency rated. The efficiency rating is valid only at the minimum salt dose. This system has a demand initiated regeneration (D.I.R.) feature that complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in their operation.

This water softener and filter has a rated softener efficiency of not less than 3,350 grains of total hardness exchange per pound of salt (based on sodium chloride) and shall not deliver more salt than its listed rating or be operated at a sustained maximum service flow rate greater than its listed rating. This system has been proven to deliver soft water for at least ten continuous minutes at the rated service flow rate. The rated salt efficiency is measured by laboratory tests described in NSF/ANSI Standard 44. These tests represent the maximum possible efficiency that the system can achieve. Operational efficiency is the actual efficiency after the system has been installed. It is typically less than the rated efficiency, due to individual application factors including water hardness, water usage, and other contaminants that reduce a softener's capacity.

	Model M45C
Model Code	o45
Rated Softening Capacity (Grains @ Salt Dose)	13,233 @ 2.6 lbs. 35,700 @ 9.9 lbs. 45,400 @ 17.2 lbs.
Rated Efficiency (Grains/Pound of Salt @ Minimum Salt Dose)	5,070 @ 2.6 lbs.
Water Used During Regeneration @ Minimum Salt Dose	4.3 gallons / 1,000 grains
Total Water Used Per Regeneration @ Maximum Salt Dose	43.7 gallons
Rated Service Flow Rate	10.0 gpm
Amount of High Capacity Ion Exchange Resin	1.26 cu. ft.
Pressure Drop at Rated Service Flow	11.2 psig
Intermittent Flow Rate @ 15 psi*	12.3 gpm
Water Supply Max. Hardness	120 gpg
Water Supply Max. Clear Water Iron	12 ppm**
Water Pressure Limits (min. / max.)	20 - 125 psi***
Water Temperature Limits (min. / max.)	40 - 120 °F
Minimum Water Supply Flow Rate	3 gpm
Maximum Drain Flow Rate	2.2 gpm

*Intermittent flow rate does not represent the maximum service flow rate used for determining the softener's rated capacity and efficiency. Continuous operation at flow rates greater than the service flow rate may affect capacity and efficiency performance.

**Capacity to reduce clear water iron is substantiated by laboratory test data. State of Wisconsin requires additional treatment if water supply contains clear water iron exceeding 5 ppm.

***Canada working pressure: 1.4 - 7.0 kg/cm².

This system conforms to NSF/ANSI Standard 44 for the specific performance claims as verified and substantiated by test data.

Variable Salt Dose: The salt dose is selected by the electronic controls at regeneration time based on the amount needed.

In the state of California: You must turn the Salt Efficiency Feature setting to ON. This may initiate more frequent recharges. However, it will operate at 4,000 grains per pound of salt or higher. To turn on the Salt Efficiency Feature, follow the instructions in the "Salt Efficiency" section of this manual.

Before You Start

- The water softener requires a minimum water flow of 3 gallons per minute at the inlet. Maximum allowable inlet water pressure is 125 psi. If daytime pressure is over 80 psi, nighttime pressure may exceed the maximum. Use a pressure reducing valve if necessary (Adding a pressure reducing valve may reduce the flow). If your home is equipped with a back flow preventer, an expansion tank must be installed in accordance with local codes and laws.
- The water softener works on 24V DC electrical power, supplied by a direct plug-in power supply (included). Be sure to use the included power supply and plug it into a nominal 120V, 60 Hz household outlet that is in a dry location only, grounded and properly protected by an overcurrent device such as a circuit breaker or fuse.
- Do not use this system to treat water that is microbiologically unsafe or of unknown quality without adequate disinfection upstream or downstream of the system.



European Directive 2002/96/EC requires all electrical and electronic equipment to be disposed of according to Waste Electrical and Electronic Equipment (WEEE) requirements. This directive or similar laws are in place nationally and can vary from region to region. Please refer to your state and local laws for proper disposal of this equipment.

Water Conditioning Information

Iron

Iron in water can cause stains on clothing and plumbing fixtures. It can negatively affect the taste of food, drinking water, and other beverages. Iron in water is measured in parts per million (ppm). The total* ppm of iron, and type or types*, is determined by chemical analysis. Four different types of iron in water are:

- Ferrous (clear water) iron
- Ferric (red water) iron
- Bacterial and organically bound iron
- Colloidal and inorganically bound iron (ferrous or ferric)

Ferrous (clear water) iron is soluble and dissolves in water. This water softener will reduce moderate amounts of this type of iron (see specifications).**

Ferrous (clear water) iron is usually detected by taking a sample of water in a clear bottle or glass.

Immediately after taking, the sample is clear. As the water sample stands, it gradually clouds and turns slightly yellow or brown as air oxidizes the iron. This usually occurs in 15 to 30 minutes.

When using the softener to reduce Ferrous (clear water) iron, add 5 grains to the hardness setting for every 1 ppm of Ferrous (clear water) iron. See "Set Water Hardness Number" section.

Ferric (red water), and bacterial and organically bound irons are insoluble. This water softener will not remove ferric or bacterial iron. This iron is visible

immediately when drawn from a faucet because it has oxidized before reaching the home. It appears as small cloudy yellow, orange, or reddish suspended particles. After the water stands for a period of time, the particles settle to the bottom of the container. Generally these irons are removed from water by filtration. Chlorination is also recommended for bacterial iron.

Colloidal and inorganically bound iron is of ferric or ferrous form that will not filter or exchange out of water. This water softener will not remove colloidal iron. In some instances, treatment may improve colloidal iron water. Colloidal iron water usually has a yellow appearance when drawn. After standing for several hours, the color persists and the iron does not settle, but remains suspended in the water.

Sediment

Sediment is fine, foreign material particles suspended in water. This material is most often clay or silt. Extreme amounts of sediment may give the water a cloudy appearance, and may require a sediment filter be installed upstream of the water softener.

* Water may contain one or more of the four types of iron and any combination of these. Total iron is the sum of the contents.

** Capacity to reduce clear water iron is substantiated by laboratory test data.

Installation Requirements

Location Requirements

Consider all of the following when selecting an installation location for the water softener.

- Do not locate the water softener where freezing temperatures occur. Do not attempt to treat water over 120°F. Freezing temperatures or hot water damage voids the warranty.
- To condition all water in the home, install the water softener close to the water supply inlet, and upstream of all other plumbing connections, except outside water pipes. Outside faucets should remain on hard water to avoid wasting conditioned water and salt.
- A nearby drain is needed to carry away regeneration discharge (drain) water. Use a floor drain, laundry tub, sump, standpipe, or other options (check your local codes). See "Air Gap Requirements" and "Valve Drain Requirements" sections.
- The water softener works on 24V DC electrical power, supplied by a direct plug-in power supply (included). Provide nearby a 120V, 60Hz electrical outlet in accordance with NEC and local codes.
- Always install the water softener between the water inlet and water heater. Any other installed water conditioning equipment should be installed between the water inlet and water softener (See Figure 4 below).
- Avoid installing in direct sunlight. Excessive sun heat may cause distortion or other damage to non-metallic parts.

Plumbing Codes

All plumbing must be completed in accordance with national, state and local plumbing codes.

In the state of Massachusetts: The Commonwealth of Massachusetts plumbing code 248-CMR shall be adhered to. A licensed plumber shall be used for this installation.

Air Gap Requirements

A drain is needed for the water discharged from the valve during the softener's regeneration cycle (See Figure 3). A floor drain, close to the water softener, is preferred. A laundry tub, standpipe, etc. are other drain options. Secure valve drain hose in place. Leave an air gap of 1-1/2" between the end of the hose and the drain. This gap is needed to prevent backflow of sewer water into the water softener. Do not put the end of the drain hose into the drain.

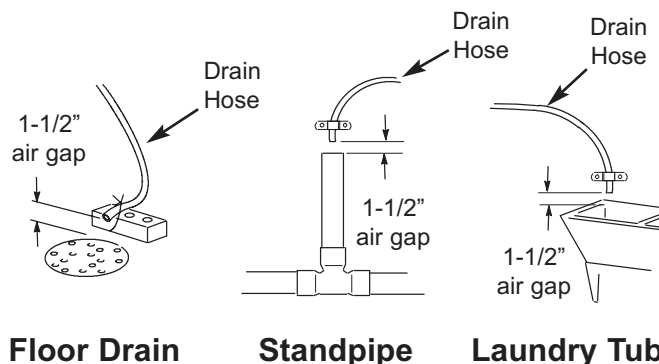


FIG. 3

The Proper Order To Install Water Treatment Equipment

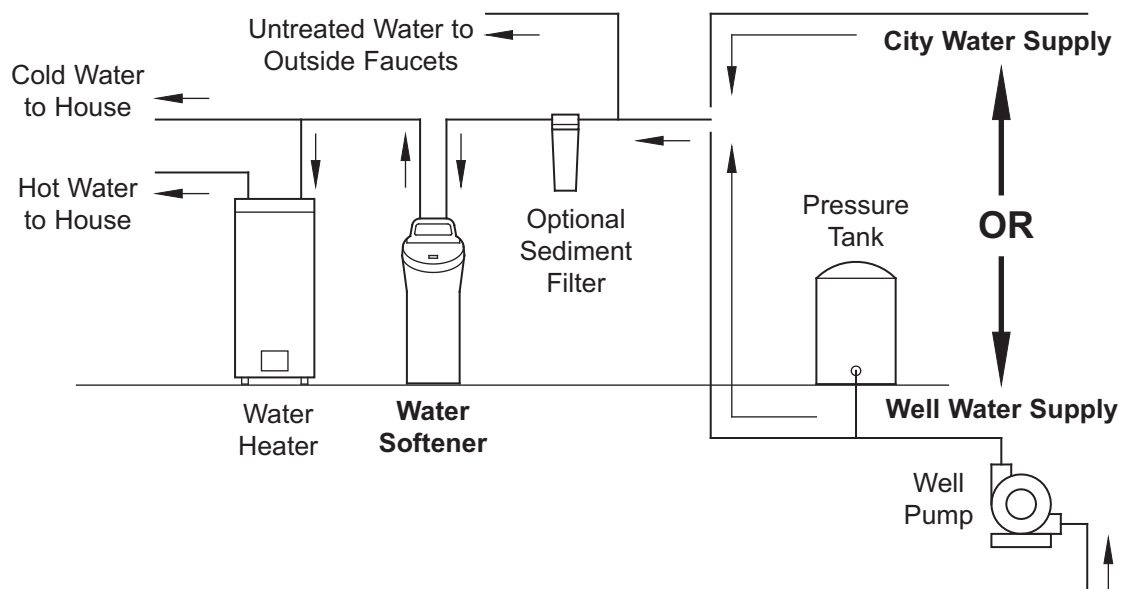


FIG. 4

Installation Requirements

Valve Drain Requirements

Using the flexible drain hose (included), measure and cut to the length needed. Flexible drain hose is not allowed in all localities (check your plumbing codes). If local codes do not allow use of a flexible drain hose, a rigid valve drain run must be used. Purchase a compression fitting (1/4 NPT x 1/2 in. minimum tube) and 1/2" tubing from your local hardware store. Plumb a rigid drain as needed (See Figure 6).

NOTE: Avoid drain hose runs longer than 30 feet. Avoid elevating the hose more than 8 feet above the floor. Make the valve drain line as short and direct as possible.

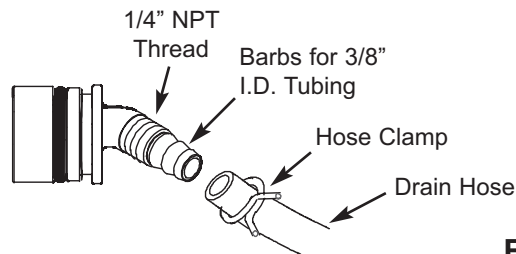


FIG. 5

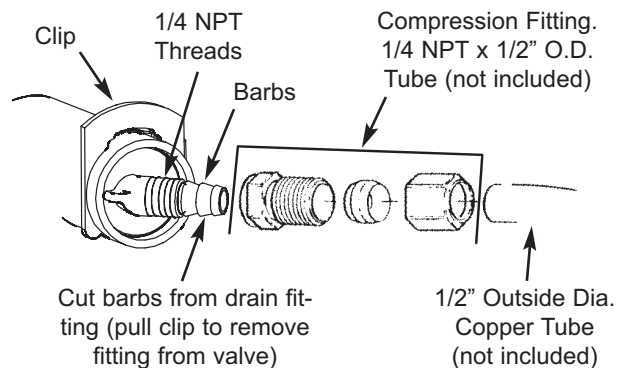


FIG. 6

Inlet / Outlet Plumbing Options

Always install either a single bypass valve (provided), as shown in Figure 7, or, if desired, parts for a 3 valve bypass system (not included) can be purchased and assembled, as shown in Figure 8. Bypass valves allow you to turn off water to the softener for maintenance if needed, but still have water in house pipes.

Pipe fittings must be 3/4" minimum.

Use:

- Copper pipe
- Threaded pipe
- PEX (Crosslinked Polyethylene) pipe
- CPVC plastic pipe
- Other pipe approved for use with potable water

IMPORTANT: Do not solder with plumbing attached to installation adaptors and single bypass valve. Soldering heat will damage the adaptors and valve.

Single Bypass Valve

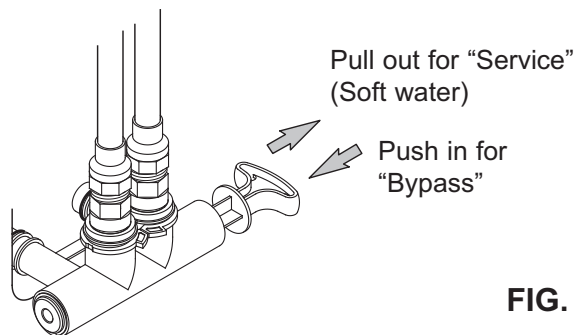


FIG. 7

3 Valve Bypass

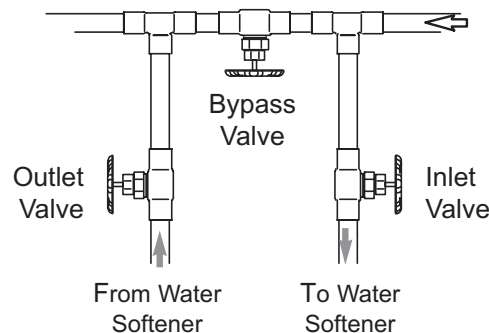


FIG. 8

Installation Instructions

TYPICAL INSTALLATION

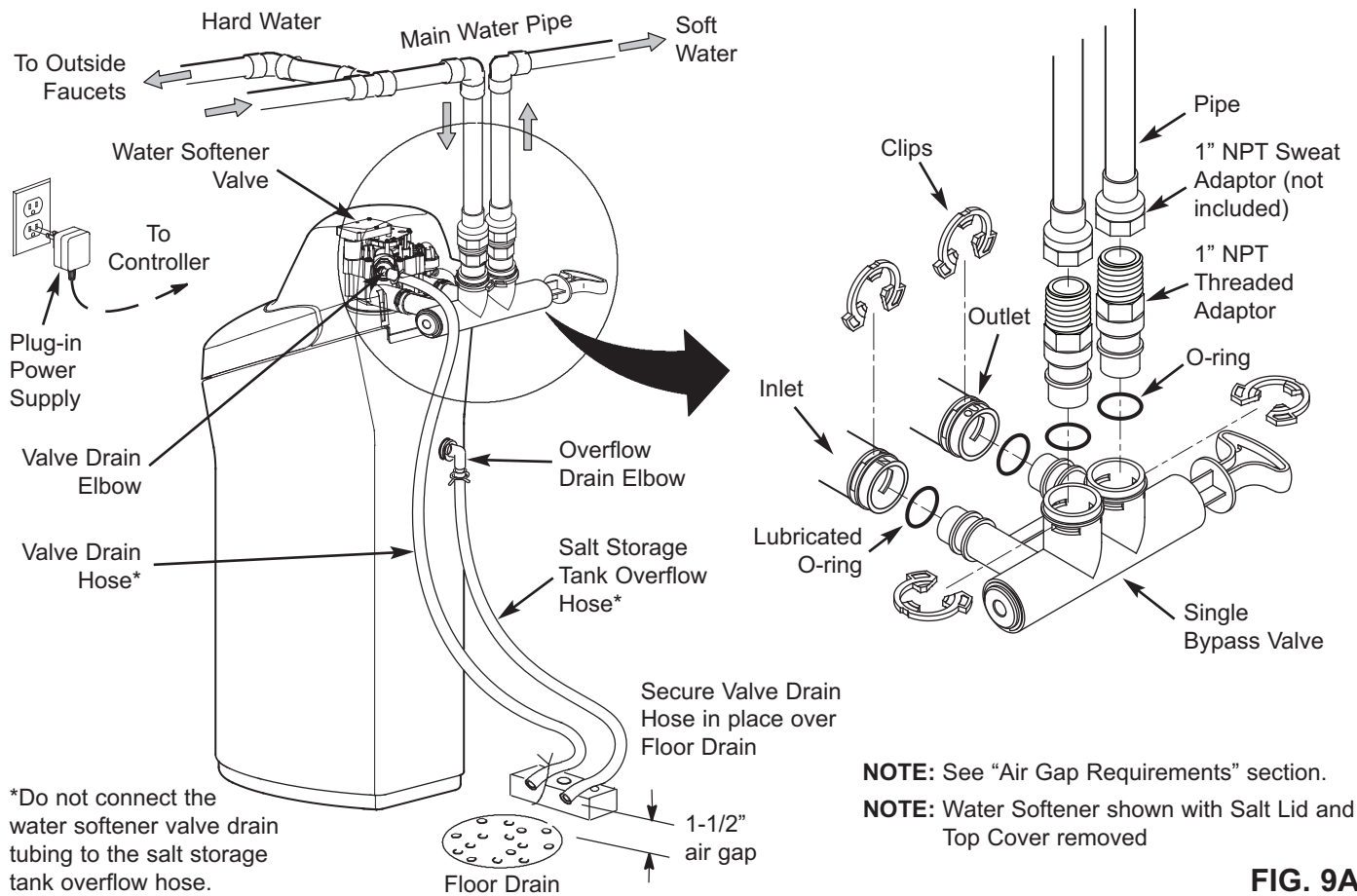


FIG. 9A

Step 1. Turn Off Water Supply

1. Close the main water supply valve, located near the well pump or water meter.
2. Shut off the electric or fuel supply to the water heater.
3. Open all faucets to drain all water from house pipes.

NOTE: Be sure not to drain water from the water heater, as damage to the water heater elements could result.

Step 2. Assembly

1. Morton® water softener models are factory assembled. During installation, unsnap and remove the top cover, together with the salt lid, to expose the softener valve assembly. Set them aside to prevent damage. Check the brinewell to be sure it is secured and vertical (See Figure 11).
2. Install the brine tank overflow grommet and elbow into the 13/16" diameter hole in the back of the salt storage tank wall (See Figure 11).

Step 3. Move the Unit into Place

1. Move the water softener into the desired location. Set it on a solid, level surface.

IMPORTANT: Do not place shims directly under the salt storage tank to level the softener. The weight of the tank, when full of water and salt, may cause the tank to fracture at the shim.

2. Visually check and remove any debris from the water softener valve inlet and outlet ports.
3. Make sure the turbine assembly spins freely in the "out" port of the valve (See Figure 10).
4. If not already done, put a light coating of silicone grease on the single bypass valve o-rings.
5. Push the single bypass valve into the softener valve as far as it will go. Snap the two large holding clips into place, from the top down as shown in Figures 12 & 13.

IMPORTANT: Be sure the clips snap firmly into place so the single bypass valve will not pull out.

Installation Instructions

TYPICAL INSTALLATION (with optional motorized water shutoff valve)

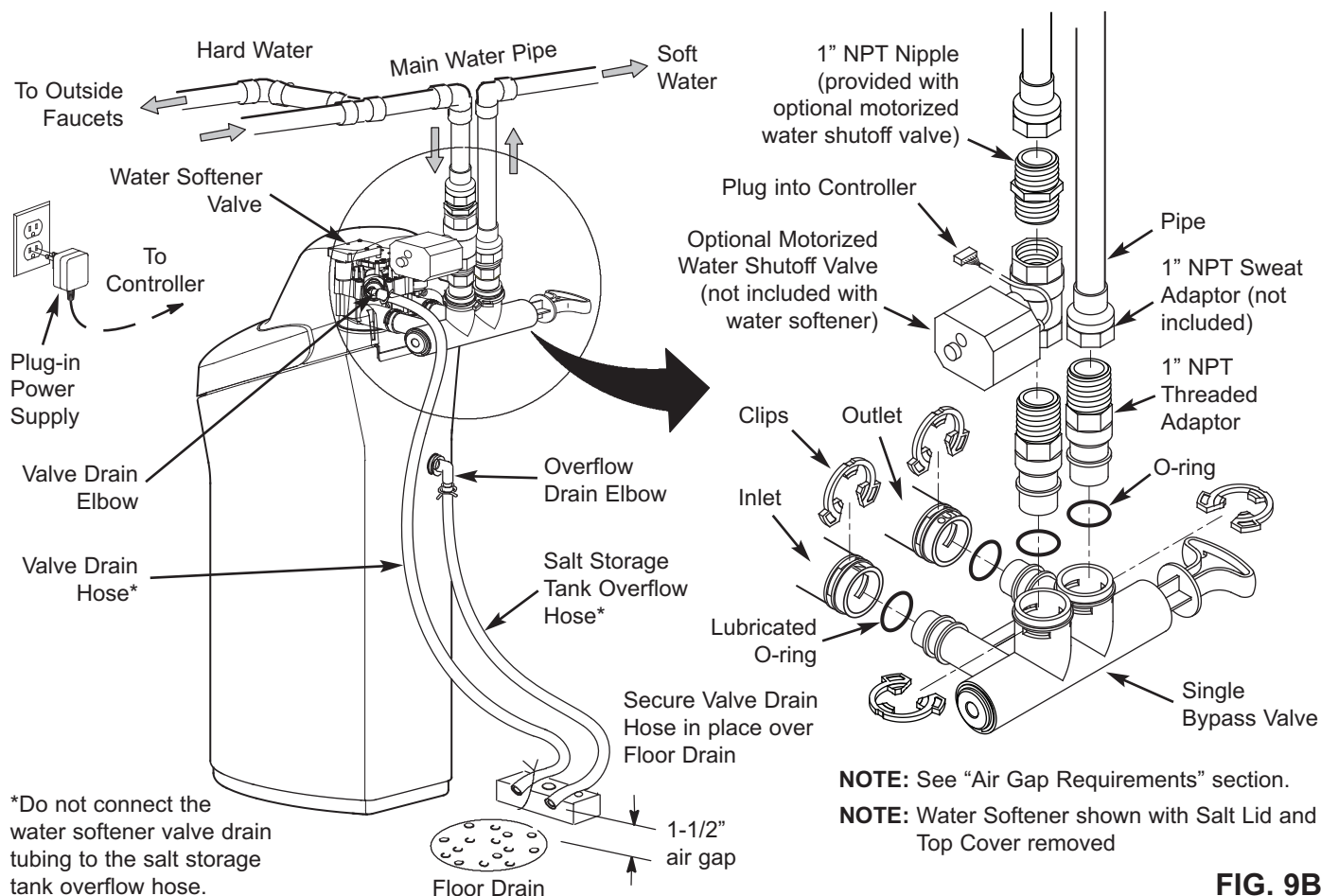


FIG. 9B

Step 4. (Optional) Install the Motorized Water Shutoff Valve

If you purchased the optional water shutoff valve, install it in the plumbing upstream of the softener inlet. Figure 9B shows installation with the shutoff valve immediately upstream of the bypass valve inlet, using one of the softener's installation adaptors and the 1" NPT nipple provided with the shutoff valve.

The shutoff valve may also be installed in the plumbing farther upstream of the softener, making sure that the 10 foot long cable will reach the softener's electronic control board (See Figure 9C). The shutoff valve's inlet and outlet are female 1" NPT. Support the weight of the shutoff valve.

After completing plumbing, make sure that the water softener is not powered up, and plug the cable from the shutoff valve into the corresponding connector on the electronic control board (See Fig. 9C or Schematic on Page 26).

CAUTION: Do not place fingers into the motorized shutoff valve when it is plugged into the electronic controller.

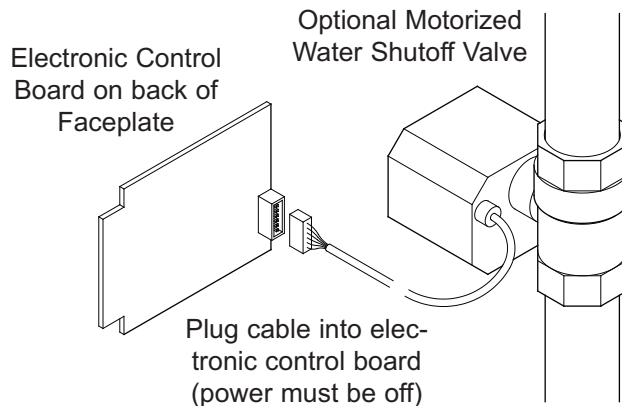


FIG. 9C

NOTE: The shutoff valve may be operated manually by pulling out and turning the knob on the shutoff valve body (See Fig. 64 on Page 27), although there is no need to do this when installing.

Installation Instructions

Step 5. Complete Inlet and Outlet Plumbing

Measure, cut, and loosely assemble pipe and fittings from the main water pipe to the inlet and outlet ports of the water softener valve. Be sure to keep fittings fully together, and pipes squared and straight.

Be sure hard water supply pipe goes to the water softener valve inlet side.

NOTE: Inlet and outlet are marked on the water softener valve. Trace the water flow direction to be sure hard water is to inlet.

IMPORTANT: Be sure to fit, align and support all plumbing to prevent putting stress on the water softener valve inlet and outlet. Undue stress from misaligned or unsupported plumbing may cause damage to the valve.

Complete the inlet and outlet plumbing for the type of pipes you will be using.

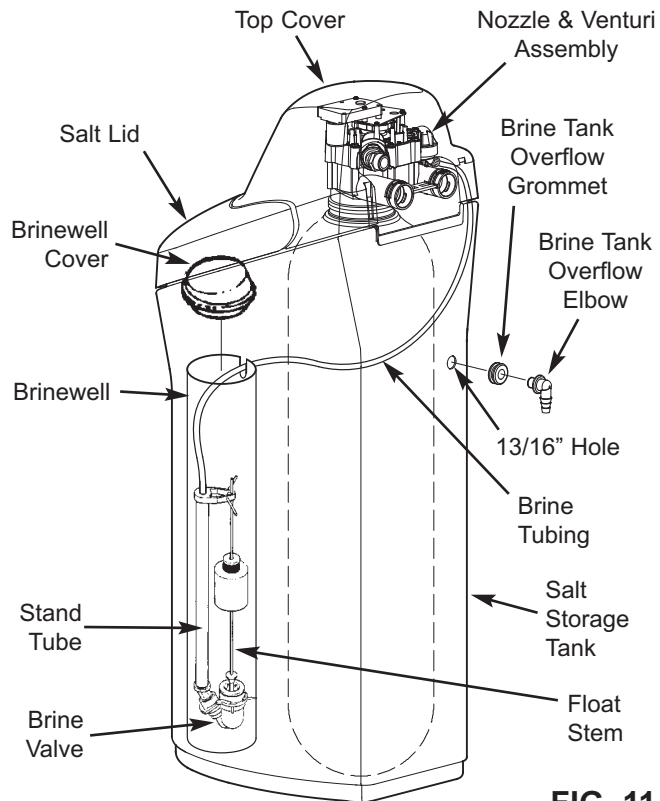


FIG. 11

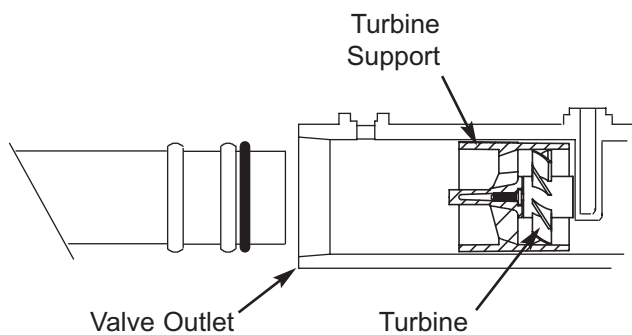


FIG. 10

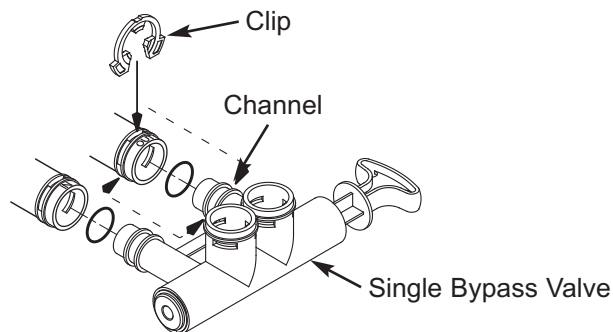


FIG. 12

Correct Assembly

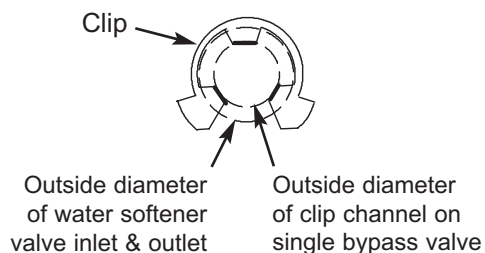


FIG. 13

NOTE: Be sure all 3 tabs of the clip go through the matching holes on the water softener valve inlet or outlet, and fully into the channel on the single bypass valve. Make sure that the tabs are fully seated.

Installation Instructions

Step 6. Cold Water Pipe Grounding

CAUTION: The house cold water pipe (metal only) is often used as a ground for the house electrical system. The 3-valve bypass type of installation, shown in Figure 8, will maintain ground continuity. If you use a plastic bypass valve at the unit, continuity is broken. To restore the ground, do the following:

1. Install a #4 copper wire across the removed section of main water pipe, securely clamping it at both ends (See Figure 14) - parts not included.

NOTE: Check local plumbing and electrical codes for proper installation of the ground wire. The installation must conform to them. In Massachusetts, plumbing codes of Massachusetts shall be conformed to. Consult with your licensed plumber.

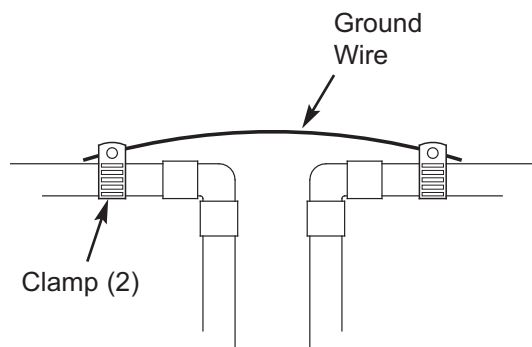


FIG. 14

Step 7. Install Valve Drain Hose

NOTE: See valve drain options on pages 7 & 8.

1. Measure, cut to needed length and connect the 3/8" drain line (provided) to the water softener valve drain fitting. Use a hose clamp to hold the hose in place.

IMPORTANT: If codes require a rigid drain line see "Valve Drain requirements" section.

2. Run the drain hose (or a rigid line) to the floor drain. Secure drain hose. This will prevent "whipping" during regenerations. **Be sure to provide a 1-1/2" minimum air gap to prevent possible sewer water backup.** See "Air Gap Requirements" section.

NOTE: In addition to a floor drain, you can use a laundry tub or standpipe as a good drain point for this hose.. Avoid long drain hose runs, or elevating the hose more than 8' above the floor.

Step 8. Install Salt Storage Tank Overflow Hose

1. Measure, cut to needed length and connect the 3/8" drain line (provided) to the salt storage tank overflow elbow and secure in place with a hose clamp.
2. Run the hose to the floor drain, or other suitable drain point no higher than the drain fitting on the salt storage tank (This is a gravity drain). If the tank overfills with water, the excess water flows to the drain point. Cut the drain line to the desired length and route it neatly out of the way.

IMPORTANT: For proper operation of the water softener, do not connect the water softener valve drain hose from Step 7 to the salt storage tank overflow hose.

Step 9. Pressure Testing for Leaks

To prevent air pressure in the water softener and plumbing system, do the following steps exactly in order:

1. Fully open two or more softened cold water faucets nearby the water softener, located downstream from the water softener.
2. Place the single bypass valve or 3 valve bypass in "bypass" position. See Figures 7 & 8.
3. Fully open the main water supply valve. Run water until there is a steady flow from the opened faucets, with no air bubbles.
4. Place bypass valve(s) in "service" or soft water position exactly as follows:
 - Single bypass valve: Slowly move the valve stem toward "service," pausing several times to allow the water softener to fill with water.
 - 3 valve bypass: Fully close the bypass valve and open the outlet valve. Slowly open the inlet valve, pausing several times to allow the water softener to fill with water.
5. After about three minutes, open a hot water faucet until there is a steady flow and there are no air bubbles, then close this faucet.
6. Close all cold water faucets and check for leaks at the plumbing connections that you made.
7. Check for leaks around clips at softener's inlet and outlet. If a leak occurs at a clip, depressurize the plumbing (turn off the water supply and open faucets) before removing clip. When removing clips at the softener's inlet or outlet, push the single

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Installation Instructions

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bypass valve body toward the softener (See Figure 15). Improper removal may damage clips. Do not reinstall damaged clips.

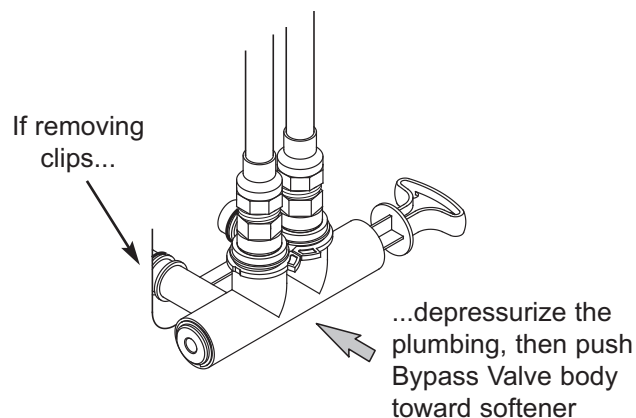


FIG. 15

Step 10. Add Water and Salt to the Salt Storage Tank

1. Using a container, add about three gallons of clean water into the salt storage tank.
2. Add Morton® Clean and Protect™ or Clean and Protect™ Plus Rust Defense™ Pellets to the storage tank.

NOTE: See Page 19 for additional information on salt.

Step 11. Plug in the Power Supply

During installation, the water softener wiring may be moved or jostled from place. Check to be sure all leadwire connectors are secure on the back of the electronic board and be sure all wiring is away from the valve gear and motor area, which rotates during regenerations.

1. Plug the water softener's power supply into an electrical outlet that is not controlled by a switch and is approved by local codes.

Step 12. Program the Controller

1. Install the softener's top cover and salt lid.
2. Complete the programming steps on pages 14-16.

Step 13. Sanitizing the Softener

Care is taken at the factory to keep your unit clean and sanitary. Materials used to make the unit will not infect or contaminate your water supply, and will not cause bacteria to form or grow. However, during shipping, storage, installation and operation, bacteria could get into the unit. For this reason, sanitizing as follows is suggested* when installing.

1. Open salt lid, remove the brinewell cover and pour about 3 oz. (6 tablespoons) of household bleach into the softener brinewell. Replace the brinewell cover.
2. Make sure the bypass valve(s) is in the "service" (open) position.
- 3 **Start a recharge:** Press the RECHARGE button and hold for 3 seconds, until "RECHARGE NOW" begins to flash in the display. This recharge draws the sanitizing bleach into and through the water softener. Any air remaining in the unit is purged to the drain.
- 4 After the recharge has completed, fully open a cold water faucet, downstream from the softener, and allow 50 gallons of water to pass through the system. This should take at least 20 minutes. Close the faucet.

*Recommended by the Water Quality Association. On some water supplies, the unit may need periodic disinfecting.

Step 14. Restart the Water Heater

Turn on the electricity or fuel supply to the water heater and relight the pilot, if applicable.

NOTE: The water heater is filled with hard water and, as hot water is used, it refills with conditioned water. In a few days, the hot water will be fully conditioned. To have fully conditioned hot water immediately, wait until the initial recharge (Step 13) is over. Then, drain the water heater (following instructions for water heater) until water runs cold.

Questions? Call Toll Free 1-888-64 WATER (1-888-649-2837)
or visit www.mortonwaterssofteners.com

When you call, please be prepared to provide the model and serial number, found on the rating decal, located on the rim below the salt lid hinges.

Programming the Water Softener

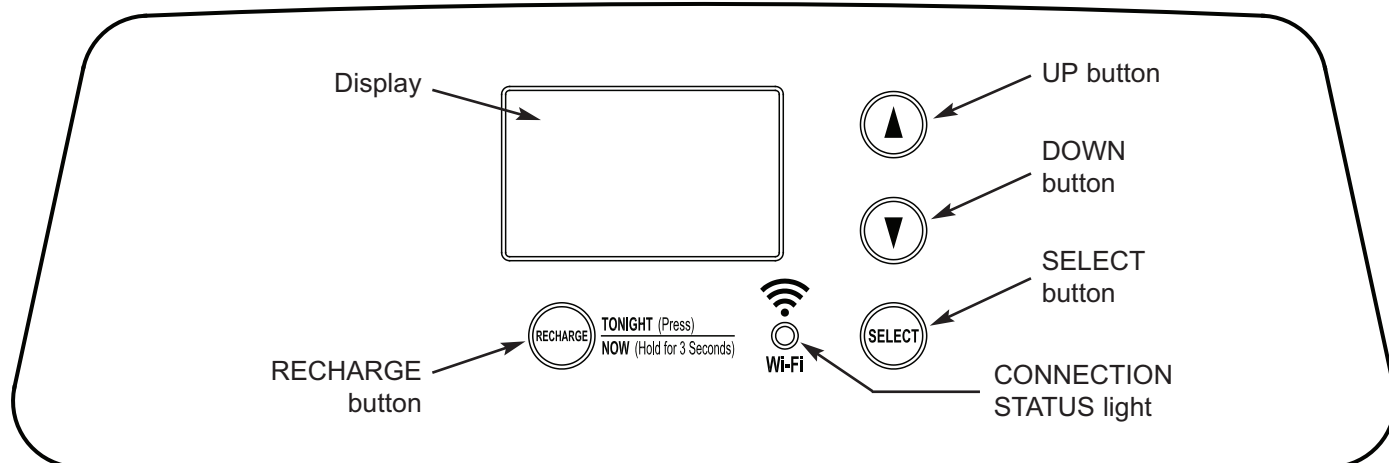


FIG. 16

Clean Reminder

The screen in Figure 17 appears, with “CLEAn” flashing in the display, when four months have elapsed on the system’s timer since start up or the last reset.



FIG. 17

This is a reminder to use Morton® MWSC Water Softener Cleanser three times a year. To reset the timer, press any button on the control panel and “CLEAn” will disappear.

Program the Softener

When the power supply is plugged into the electrical outlet, the model code (o45) and a software version number (example: r4.1), are briefly shown in the face-plate display. Then the words “SET TIME” appear and “12:00 PM” begins to flash.



FIG. 18

NOTE: If “- - -” shows in the display, press the ▲ UP or ▼ DOWN button until the model code shows in the display. Then, press the SELECT button to set, and change to the flashing “SET TIME” display.

Step 1. Set Time of Day

If the words “SET TIME” do not show in the display, press the SELECT button several times until they do.



FIG. 19

continued on next page

Programming the Water Softener

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1. Press the ▲ UP or ▼ DOWN buttons to set the present time. Up moves the display ahead; down sets the time back. Be sure AM or PM is correct.

NOTE: Press buttons and quickly release to slowly advance the display. Hold the buttons down for fast advance.

NOTE: On Wi-Fi connected systems, the current time will be updated and maintained automatically via Wi-Fi.

2. When the correct time is displayed, press the SELECT button, and the display will change to show the “Hardness” screen.

Step 2. Set Water Hardness Number

If you completed the previous step, the words “SET HARDNESS” should show in the display. Otherwise, press the SELECT button several times until they do.

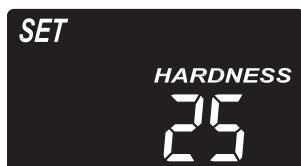


FIG. 20

1. Press the ▲ UP or ▼ DOWN buttons to set the hardness of your water supply, in grains per gallon. The default is 25.

NOTE: If your water supply contains iron, compensate for it by adding to the water hardness number. For example, assume your water is 20 gpg hard and contains 2 ppm iron. Add 5 to the hardness number for each 1 ppm of iron. In this example, you would use 30 for your hardness number.

$$\begin{array}{r} 20 \text{ gpg hardness} \\ 2 \text{ ppm iron} \times 5 = 10 \\ \text{(times)} \quad \quad \quad \underline{+10} \\ \quad \quad \quad \quad \quad \quad 30 \text{ HARDNESS NUMBER} \end{array}$$

2. When finished setting your water’s hardness number, press the SELECT button, and the display will change to show the “Recharge Time” screen.

Step 3. Set Recharge (Regeneration) Start Time

If you completed the previous step, the words “SET RECHARGE TIME” should show in the display. Otherwise, press the SELECT button several times until they do.



FIG. 21

1. The softener’s default recharge start time is 2:00 AM. This is normally a time of day when water is not being used in the household. Hard water bypasses the softener if the household draws water during the recharge cycle. If a different recharge start time is desired, press the ▲ UP or ▼ DOWN buttons to change the time, in 1-hour increments. Be sure AM or PM is correct.
2. When the desired recharge start time is displayed, press the SELECT button, and the display will change to show one of the “Salt Type” screens shown below.

Step 4. Set Salt Type

If you completed the previous step, either “nACL” (for Sodium Chloride) or “kCL” (for Potassium Chloride) should show in the display. Otherwise, press the SELECT button several times until one of them does.



FIG. 22

1. Press the ▲ UP or ▼ DOWN buttons to set the type of salt you will be using in your water softener. The default is NaCl (standard Sodium Chloride water softener salt). If you will be using KCl (Potassium Chloride) instead, be sure to set salt type to KCl. This setting adjusts the regeneration cycle times to compensate for the different rate at which KCl dissolves. See also Page 22 for more information on salt types.
2. When the correct salt type is displayed, press the SELECT button, and the display will change to show the “Set Salt Level” screen.

Programming the Water Softener

Step 5. Set Salt Level

If you completed the previous step, the words "SET SALT LEVEL" should show in the display. Otherwise, press the SELECT button until they do.

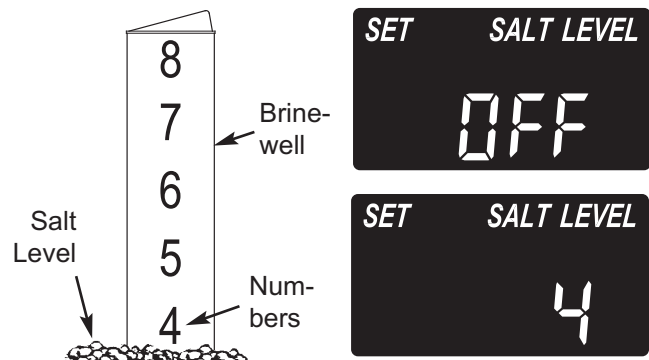


FIG. 23

1. Lift the salt lid and level the salt in the storage tank.
2. The salt level scale, on the brine well inside the tank, has numbers from 0 to 8 (see Fig. 23). Observe the highest number the leveled salt is at, or closest to.
3. Press the ▲ UP or ▼ DOWN buttons until the number on the screen corresponds to the salt level. At level 2 or below, "LOW SALT LEVEL" will flash in the display. If you wish to turn this feature off, press the ▼ DOWN button past 0, and the word "OFF" flashes in the display.
4. When finished setting the salt level, press the SELECT button. The display returns to the normal time of day screen (Fig. 24).



FIG. 24

Salt Level Monitor System

You must set salt level each time salt is added to the water softener. The salt monitor system estimates salt levels, and accuracy will vary with different salts. At level 2 or below, "LOW SALT LEVEL" will flash in the display (Fig. 25) to remind you to add salt.



FIG. 25

Extra Recharge

Sometimes, a manually initiated recharge (regeneration) may be desired, or needed. Two examples are:

- You have used more water than usual (guests visiting) and you may run out of soft water before the next automatic regeneration.
- You did not add salt to the softener before it ran out. Add salt to the softener before regenerating.

You can start a regeneration immediately, or you can set the controller to regenerate at the next preset recharge time (2:00 AM, or as set).

Recharge Now

Press the RECHARGE button and hold for 3 seconds, until the words "RECHARGE NOW" begin to flash in the display.



FIG. 26

The softener enters the fill cycle of regeneration immediately. This regeneration will take about 2 hours to complete. Then, you will have soft water again.

NOTE: If the "Clean Feature" is set ON, the normal regeneration cycle is preceded by a cleaning backwash and rinse.

Recharge Tonight

If you do not want to start an immediate recharge, but would like an extra recharge at the next preset recharge start time, do the following to schedule a recharge:

Press and release (do not hold) the RECHARGE button. "RECHARGE TONIGHT" will begin flashing in the display, and the softener will begin regeneration at the next preset recharge time (2:00 AM, or as set).

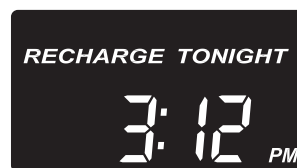


FIG. 27

If you decide to cancel the regeneration before it starts, press and release the RECHARGE button once more. "RECHARGE TONIGHT" will stop flashing in the display.

Connecting the System to Wi-Fi

Step 1. Download the iQua™ App

Go to the App Store or Google Play and download the **iQua™** app. This must be installed on your phone to set up an account and connect your water softener to the “cloud”.

Step 2. Set Up Your Account

1. Activate the **iQua™** app.
2. On the welcome screen, click **Create an Account**.

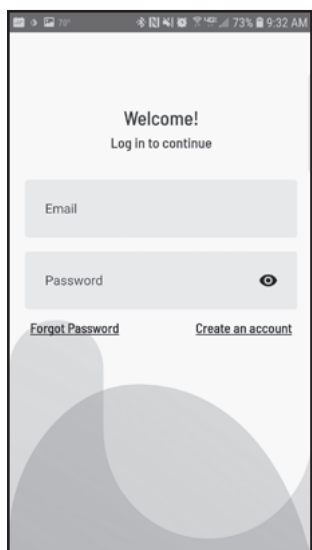


FIG. 28

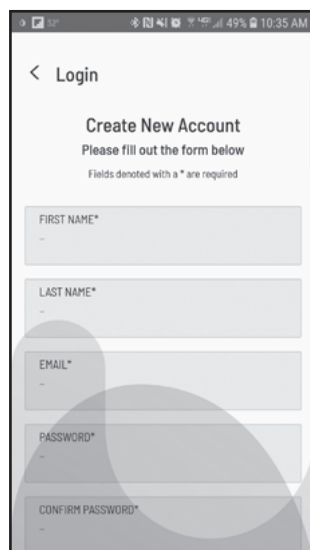


FIG. 29

3. Fill in the required fields with your information (name, phone number, address, etc.). Enter the e-mail address you want to receive notifications. Create a password to access your account.
4. Agree to the terms and press **Complete**.

5. A message to check your e-mail appears. An activation e-mail has been sent to the address you provided when creating the account. If you don't see it your inbox, check your spam or junk folders, and flag it as safe so that future notifications from myiqua.com will not be blocked. Wait to click the link in this e-mail until you have put the water softener control into Connect Mode, as follows.

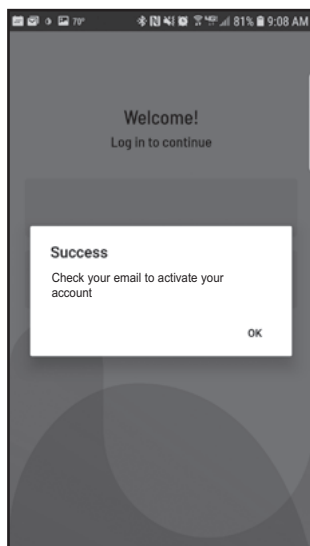


FIG. 30

Step 3. Put Water Softener Control into Connect Mode

1. If you haven't already done so, program the water softener with time, hardness, salt level, etc., as shown on pages 14-16.
2. Make sure that the softener's display shows the current time, without the word “SET”. Press the SELECT button several times if “SET” shows.
3. On the water softener's front panel (see Fig. 31), press both the ▲ UP and ▼ DOWN buttons, and hold them for 3 seconds.

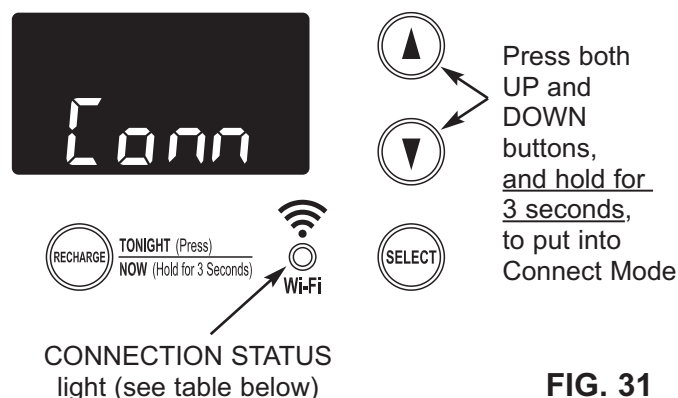


FIG. 31

4. Release the buttons when “Conn” appears in the display (See Fig. 31) and the connection status light begins flashing amber.
5. The system is now in Connect Mode, ready to be connected to the “cloud”, and will remain for 15 minutes. If Connect Mode has “timed out” and the light is off, you can enter Connect Mode again by pressing both the ▲ UP and ▼ DOWN buttons and holding them for 3 seconds.

Connection Status light indication	Status
Flashing Amber (for up to 15 minutes)	System is in Connect Mode, waiting to be connected to the “cloud” via the home’s wireless router.
Green	System successfully connected to the “cloud” and registered.
Red	System is currently receiving an over-the-air update.
No light	System not currently connected to the “cloud”.

6. With the system in the Connect Mode, follow the instructions on the next page to use the app to connect your water softener to the “cloud” via the home’s wireless router.

Connecting the System to Wi-Fi

Step 4. Connect and Register Your Water Softener

1. If you completed the steps on the previous page, you will have received an account activation e-mail from myiqua.com. Open this e-mail and click on the **Activate Account** link.
2. Sign in to your account using the e-mail address and password you provided when setting it up.
3. The app screen will change to show **Searching for your device...**
4. Verify that the softener is still in Connect Mode (flashing amber light). When the display on the water softener changes from “Conn” to “C-1”, it is communicating with your phone.

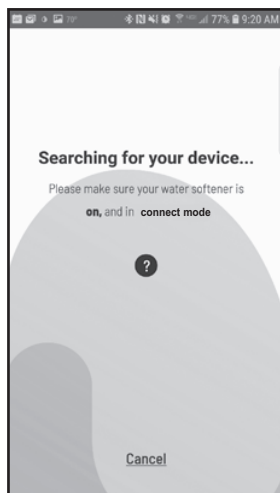


FIG. 32



FIG. 33



FIG. 34

5. The app screen will change to show a list of devices in range. There should be a name that begins with **WCD**, followed by a serial number. This is your Morton water softener. Select it and the screen changes to **Pairing Your Device**.

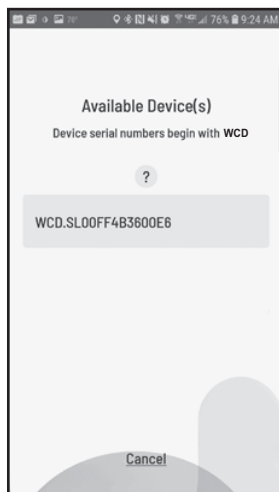


FIG. 35

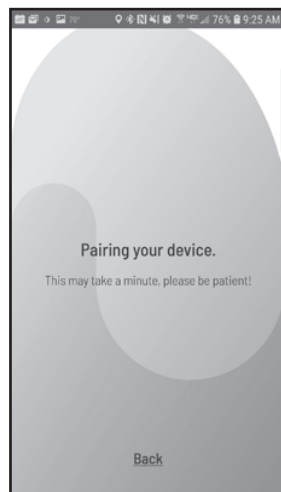


FIG. 36

6. The app screen will change to show a list of wireless networks in range. Select your home's wi-fi router and enter your wi-fi network password.

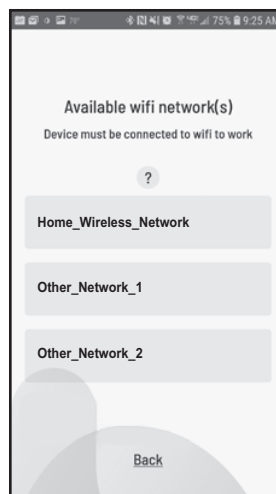


FIG. 37

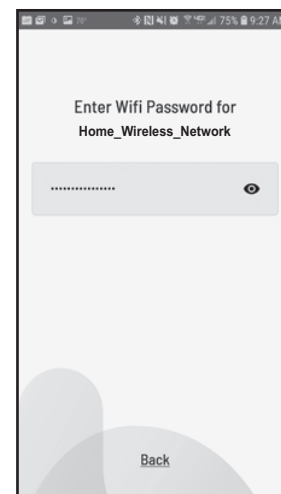


FIG. 38

7. The water softener's display will change to “C-2” when the system connects with the home's wireless network. It will change again to “C-3” when it connects with the iQua™ server in the “cloud”.



FIG. 39



FIG. 40

8. The app will prompt you to provide a nickname for your softener. This will be displayed on the “Devices” list when you sign in to the app. After entering the nickname, press **Complete Setup**.

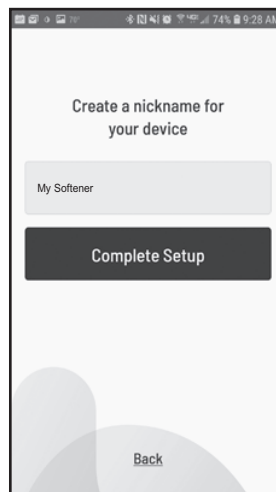


FIG. 41

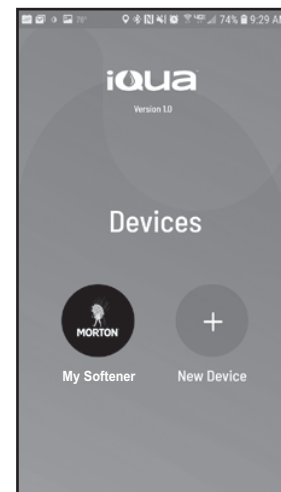


FIG. 42

Controller Features

Optional Settings:

- Salt Efficiency
- Clean Feature
- Clean Feature Minutes
- Maximum Days Between Regenerations
- 97% Feature
- 12 / 24 Hour Clock
- Backwash & Fast Rinse Times

1. To set any of these options, press and hold the SELECT button for 3 seconds until "000" shows in the display.



FIG. 43

Then press (do not hold) SELECT again to display one of the "Salt Efficiency" screens shown below.

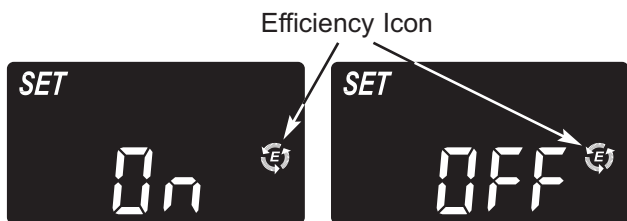


FIG. 44

Salt Efficiency: When this feature is ON, the water softener will operate at salt efficiencies of 4000 grains of hardness per pound of salt or higher. The softener may recharge more often using smaller salt dosage and less water. This softener is shipped with the efficiency feature set OFF. Use the ▲ UP or ▼ DOWN buttons to change between OFF and ON. An efficiency icon will be displayed when this feature is ON.


Displayed when efficiency is set to "ON"



FIG. 45

California Efficiency Requirement

Your Morton® Water Softener has a "High Efficiency" feature with an ON or OFF setting. This softener setting is shipped in the OFF position, which utilizes the maximum rated capacity while most often achieving maximum salt efficiencies. When installing this unit in the State of California, you **MUST** turn this setting to the ON position, which may initiate more frequent recharges. However it will operate at 4000 grains per pound of salt or higher.

If you wish to turn the Salt Efficiency feature ON ( icon will show in the display), follow the instructions on this page.

2. Press SELECT again to display the "Set Clean" screen.



FIG. 46

Clean: This feature is beneficial on water supplies containing iron and/or high amounts of sediments (sand, silt, dirt, etc.). When set to ON, a backwash and fast rinse cycle will occur first, preceding the normal regeneration sequence. This provides extra cleaning of the resin bed before it is regenerated with the salt brine. To conserve water, if your water supply does not contain iron or sediments, be sure this feature is set to OFF. The default is OFF. Use the ▲ UP or ▼ DOWN buttons to change between OFF and ON.

3. Press SELECT again to display the "Set Clean Time" screen.



FIG. 47

Clean Feature Minutes: If you have set the Clean Feature ON, the length of the extra backwash cycle automatically is set to 7 minutes.

continued on next page

Controller Features

continued from previous page

However, you can adjust this time from 1 to 30 minutes in length. To change this cycle time, use the ▲ UP button to increase the time, or the ▼ DOWN button to shorten the time. If no change is desired, continue to next step.

4. Press SELECT again to display the “Recharge Days” screen.



FIG. 48

Maximum Days Between Regenerations:

The electronic controller automatically determines regeneration frequency. This provides the greatest operating efficiency and, under most conditions this feature will be left in its default mode. However, you can set this feature to force a regeneration every set number of days. You may want to do this if, for example, your water supply contains iron and you want the softener to regenerate at least once every few days to keep the resin bed clean. Use the ▲ UP or ▼ DOWN buttons to change the number of days (up to 15). If no change is desired, continue to next step.

5. Press SELECT again to display the “97%” screen.



FIG. 49

97% Feature: The 97% Feature can save salt and water by regenerating when 97% of the softener’s capacity has been used up. With this feature ON, the regeneration can occur at any time (whenever the system has reached 97% of its capacity). The default is OFF. If this feature is desired, turn it on by pressing the ▲ UP button.

6. Press SELECT again to display the “12 or 24 hr” screen.



FIG. 50

12 or 24 Hour Clock: All time displays are shown in 12 hour (AM/PM) time format at the default setting. If 24 hour time format is desired, set to 24 hr by pressing the ▲ UP button.

7. Press SELECT again to display the backwash time “Add” screen.



FIG. 51

Backwash & Fast Rinse Times: If you experience salty tasting water after regeneration, you may need to increase the backwash and fast rinse times. The cycle times during regeneration are determined by the softener’s electronic controller. However, you may increase the backwash and fast rinse times, in 1 minute increments.

If you wish to increase the backwash time, use the ▲ UP or ▼ DOWN buttons to add up to 15 minutes. Then press SELECT to display the fast rinse time “Add” screen.

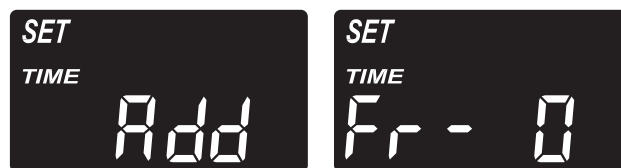


FIG. 52

If you wish to increase the fast rinse time, use the ▲ UP or ▼ DOWN buttons to add up to 15 minutes.

8. Press SELECT to return to the normal run (time of day) screen.



FIG. 53

Controller Features

Power Outage Memory

If electrical power to the softener is interrupted, the time display is blank, but the electronic controller keeps correct time for several hours. When power is restored, you must reset the present time only if the display is flashing. All other settings are maintained and never require resetting unless a change is desired. If the time is flashing after a long power outage, the softener continues to work as it should to provide you with soft water. However, regenerations may occur at the wrong time of day until you reset the clock to the correct time of day.

NOTE: If the water softener was regenerating when power was lost, it will now finish the cycle.

Vacation Note

Morton demand controlled water softeners regenerate only while water is being used and softening capacity must be restored. For this reason, the unit will not regenerate when you are away from home for extended periods.

Cleansing Feature

The cleansing feature keeps larger particles of sediment from entering the home's plumbing system. As water passes through the softener, the larger sediment particles are collected in the integrated basket and then rinsed to the drain before each regeneration. The cleansing feature provides added protection for water using appliances by reducing the chance of larger particles entering the various products valves and screens. The "Clean Feature" may be turned ON to provide an extra backwash that will help keep the cleansing screen clean. The default is OFF.

IMPORTANT: The cleansing feature is not intended to replace pretreatment filtration. For problem water applications, additional sediment filtration is recommended.

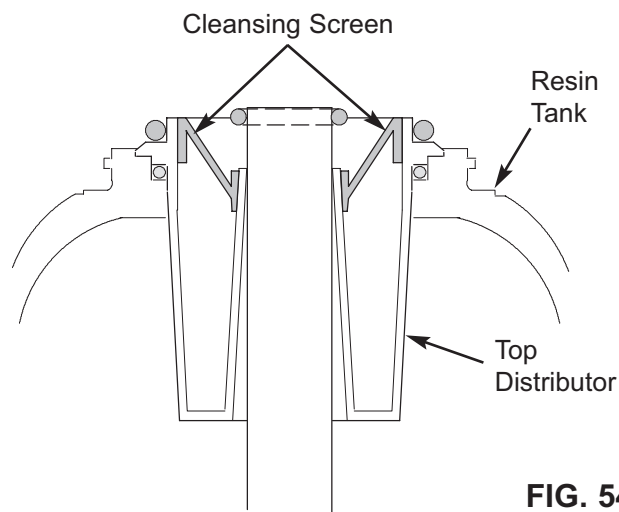


FIG. 54

Routine Maintenance

Refilling with Salt

Lift the salt lid and check the salt storage level frequently. If the water softener uses all the Morton® Clean and Protect™ or Clean and Protect™ Plus Rust Defense™ Pellets before you refill it, you will experience hard water. Until you have established a refilling routine, check the salt every two or three weeks. Always add if less than 1/4 full. Be sure the brinewell cover is on.

NOTE: In humid areas, it is best to keep the salt storage level lower, and to refill more often to avoid salt “bridging”.

Recommended Salt: We recommend using Morton® Clean and Protect™ or Clean and Protect™ Plus Rust Defense™ Pellets in the familiar yellow bag. For soft water, nothing works harder. Guaranteed®.

Salt Not Recommended: Rock salt, high in impurities, block, granulated, table, ice melting, ice cream making salts, etc., are not recommended.

Salt with Iron Removing Additives: Some salts have an additive to help a water conditioner handle iron in a water supply. For this we recommend Morton® Rust Remover Super Pellets® in the green bag.

Breaking a Salt Bridge

Sometimes, a hard crust or salt “bridge” forms in the brine tank. It is usually caused by high humidity or the wrong kind of salt. When the salt “bridges,” an empty space forms between the water and the salt. Then, salt will not dissolve in the water to make brine. Without brine, the resin bed is not recharged and hard water will result.

If the storage tank is full of salt, it is difficult to tell if you have a salt bridge. A bridge may be underneath loose salt. Take a broom handle, or like tool, and hold it next to the water softener. Measure the distance from the floor to the rim of the water softener. Then, carefully push the broom handle straight down into the salt. If a hard object is felt before the pencil mark is even with the top, it is most likely a salt bridge. Carefully push into the bridge in several places to break it. Do not use any sharp or pointed objects as you may puncture the brine tank. Do not try to break the salt bridge by pounding on the outside of the salt tank. You may damage the tank.

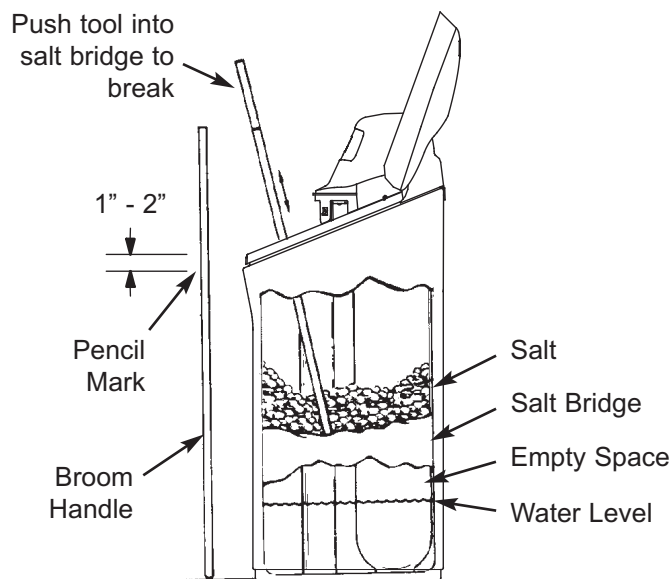


FIG. 55

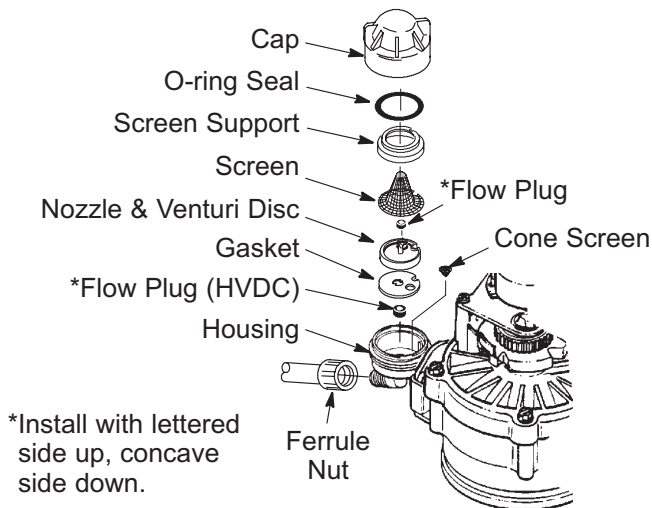
Questions? Call Toll Free 1-888-64 WATER (1-888-649-2837)
or visit www.mortonwaterssofteners.com

When you call, please be prepared to provide the model and serial number, found on the rating decal, located on the rim below the salt lid hinges.

Routine Maintenance

Cleaning the Nozzle & Venturi

A clean nozzle & venturi (See Figure 56) is a necessity for the water softener to work properly. This small component creates the suction to move brine from the brine tank, into the resin tank. If it should become plugged with sand, silt, dirt, etc., the water softener will not work, and hard water will result.



IMPORTANT: Be sure small hole in the gasket is centered directly over the small hole in the nozzle & venturi housing. Be sure the numbers are facing up.

FIG. 56

To get access to the nozzle & venturi, remove the water softener's top cover. Put the bypass valve(s) into the bypass position. Be sure the water softener is in soft water (service) cycle (no water pressure at nozzle & venturi). Then, holding the nozzle & venturi housing with one hand, unscrew the cap. Do not lose the o-ring seal. Lift out the screen support and screen. Then, remove the nozzle & venturi disc, gasket and flow plug(s). Wash the parts in warm, soapy water and rinse in fresh water. Be sure to clean both the top and bottom of the nozzle & venturi disc. If needed, use a small brush to remove iron or dirt. Do not scratch, misshape, etc., surfaces of the nozzle & venturi.

Carefully replace all parts in the correct order. Lubricate the o-ring seal with silicone grease and locate in place. Install and tighten the cap by hand, while supporting the housing. Overtightening may break the cap or housing. Put the bypass valve(s) into service (soft water) position.

Recharge the softener to reduce water level in the tank. This will also assure that the softener is completely recharged and ready to provide softened water again. Check the water level in the tank by looking down the brinewell. If the water level does not drop after a recharge, the problem has not been resolved. Call 1-888-64 WATER or visit www.mortonwatersofteners.com.

Protect the Water Softener from Freezing

If the softener is installed where it could freeze (summer cabin, lake home, etc.), you must drain all water from it to stop possible freeze damage. To drain the softener:

1. Close the shut-off valve on the house main water pipe, near the water meter or pressure tank.
2. Open a faucet in the soft water pipes to vent pressure in the softener.
3. Move the stem in the single bypass valve to bypass. Close the inlet and outlet valve in a 3 valve bypass system, and open the bypass valve. If you want water in the house pipes again, reopen the shut-off valve on the main water pipe.
4. Unplug the power supply at the wall outlet. Remove the softener's top cover, together with the salt lid. Take off both drain hoses if they will interfere with moving the softener into position over the drain.
5. Push the bypass valve body toward the softener (as shown in Figure 15) and carefully remove the large holding clips at the softener inlet and outlet. Separate the softener from the plastic installation adaptors, or from the bypass valve.
6. Lay a piece of 2 inch thick board near the floor drain (See Figure 57).
7. Move the softener close to the drain. Slowly and gently, tip it over until the rim rests on the wood block with the inlet and outlet over the drain. Do not allow the softener's weight to rest on the inlet and outlet fittings or they may break.
8. Tip the bottom of the softener up a few inches and hold until all water has drained. Leave the softener laying like this until you are ready to use it. Plug the inlet and outlet with clean rags to keep dirt, bugs, etc. out.

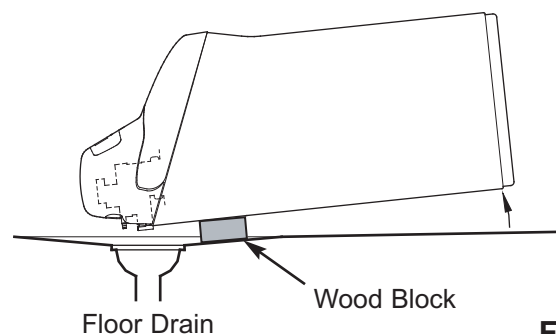


FIG. 57

Troubleshooting

Automatic Electronic Diagnostics

This water softener self-monitors electronic components and circuits for correct operation. If a malfunction occurs, an error code appears in the display.



FIG. 58

Error Codes 01, 02, 03, 04 & 05:

These are the water softener error codes unrelated to the optional water shutoff valve. While one is in the display, the SELECT button remains operational so the service person can perform the Manual Advance Diagnostics, below, to further isolate the problem.

Procedure for removing error codes 01 through 05 from display:

1. Unplug power supply from electrical outlet.
2. Correct problem.
3. Plug power supply back in.
4. Wait 8 minutes. The error code will return if the problem was not corrected.

Error Codes 07, 08 & 09:

These error codes indicate a problem with the optional water shutoff valve. Make sure that the water shutoff valve is still plugged into the water softener's control board. To clear one of these codes from the display, press the RECHARGE button and hold for 3 seconds. If the error code is displayed again after a minute or two, the water shutoff valve probably needs to be replaced.

Manual Advance Diagnostics

Use the following procedures to advance the water softener through the regeneration cycles to check operation.

Remove the top cover to expose the valve and observe cam and switch operation during valve rotation.

1. Press and hold SELECT for 3 seconds until "000" shows in the display, then release.
2. The 3 digits indicate water meter operation:
 - 000 (steady) = Soft water not in use, and no flow through the meter.
Open a nearby soft water faucet.
 - 000 to 140 (continual) = Repeats for each gallon of water passing through the meter.

3. The letter "P" and a dash (or dashes) indicate POSITION switch operation (See Figure 59). If the letter appears, the switch is closed. If the dash shows, the switch is open.

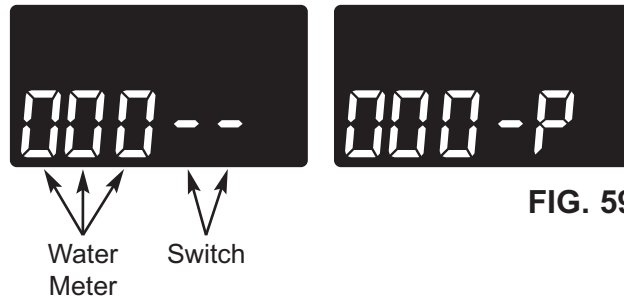


FIG. 59

4. Use the RECHARGE button to manually advance the valve into each cycle and check correct switch operation.

NOTE: Be sure water is in contact with the salt, and not separated by a salt bridge (See "Breaking A Salt Bridge" section).

5. While in this diagnostic screen, the following information is available and may be beneficial for various reasons. This information is retained by the computer from the first time electrical power is applied to the electronic controller.
 - a. Press the ▲ UP button to display the number of days this electronic control has had electrical power applied.
 - b. Press the ▼ DOWN button to display the number of regenerations initiated by this electronic control since the code number was entered.
6. Press and hold the SELECT button until the model code (o45) shows in the display. This code identifies the softener model. If an incorrect model code is displayed, the softener will operate on incorrect configuration data.



FIG. 60

7. To change the code number, press the ▲ UP or ▼ DOWN button until the correct code shows.
8. To return to the present time display, press the SELECT button.

Troubleshooting

Resetting to Factory Defaults

To reset the electronic controller to its factory default for all settings (time, hardness, etc.):

1. Press the SELECT button and hold it until the display changes twice to show "CODE" and the flashing model code.
2. Press the ▲ UP button (a few times, if necessary) to display a flashing "SoS".



FIG. 61

3. Press the SELECT button, and the electronic controller will restart.
4. Set the present time, hardness, etc., as described on pages 14-16.

Manual Advance Regeneration Check

This check verifies proper operation of the valve motor, brine tank fill, brine draw, regeneration flow rates, and other controller functions. Always make the initial checks, and the manual initiated diagnostics.

NOTE: The electronic control display must show a steady time (not flashing). If an error code shows, first press the SELECT button to enter the diagnostic display.

1. Press the RECHARGE button and hold in for 3 seconds. RECHARGE begins to flash as the softener's valve advances from the service to fill position. Remove the brinewell cover and, using a flashlight, observe fill water entering the tank.

If water does not enter the tank, look for an obstructed nozzle, venturi, fill flow plug, brine tubing, or brine valve riser pipe.

2. After observing fill, press the RECHARGE button to move the softener's valve into the brine position. A slow flow of water to the drain will begin. Verify brine draw from the brine tank by shining a flashlight into the brinewell and observing a noticeable drop in the liquid level. This may take 15 to 20 minutes.

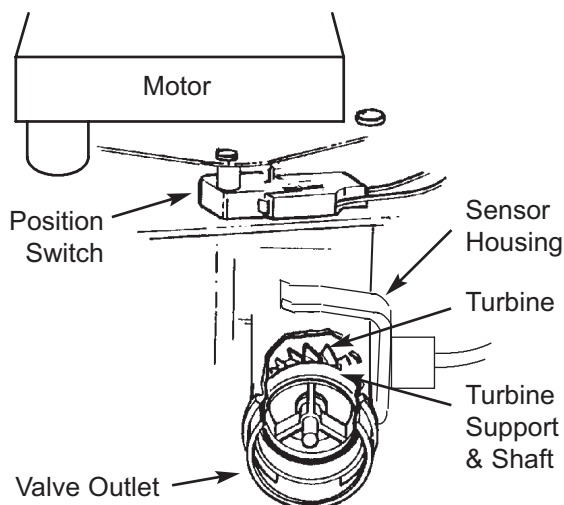


FIG. 62

NOTE: Be sure water is in contact with the salt, and not separated by a salt bridge (See "Breaking A Salt Bridge" section).

If the water softener does not draw brine, check for (most likely to least likely):

- Dirty or plugged nozzle and venturi, see "Cleaning the Nozzle and Venturi" section.
- Nozzle and venturi not seated on the gasket, or gasket deformed.
- Valve seals leaking.
- Restriction in valve drain, causing a back-pressure (bends, kinks, elevated too high, etc.). See "Install Valve Drain Hose" section.
- Obstruction in brine valve or brine tubing.

NOTE: If water system pressure is low, an elevated drain hose may cause back pressure, stopping brine draw.

3. Press the RECHARGE button to move the softener's valve into the backwash position. Look for a fast flow of water from the drain hose. Check that the drain can adequately handle the flow and volume.

An obstructed flow indicates a plugged top distributor, backwash flow plug, or drain hose.

4. Press the RECHARGE button to move the softener's valve into the fast rinse position. Again look for a fast drain flow. Allow the softener to rinse for a few minutes to flush out any brine that may remain in the resin tank from the brining cycle test.
5. To return the softener's valve to the service position, press the RECHARGE button.

Wiring Schematic

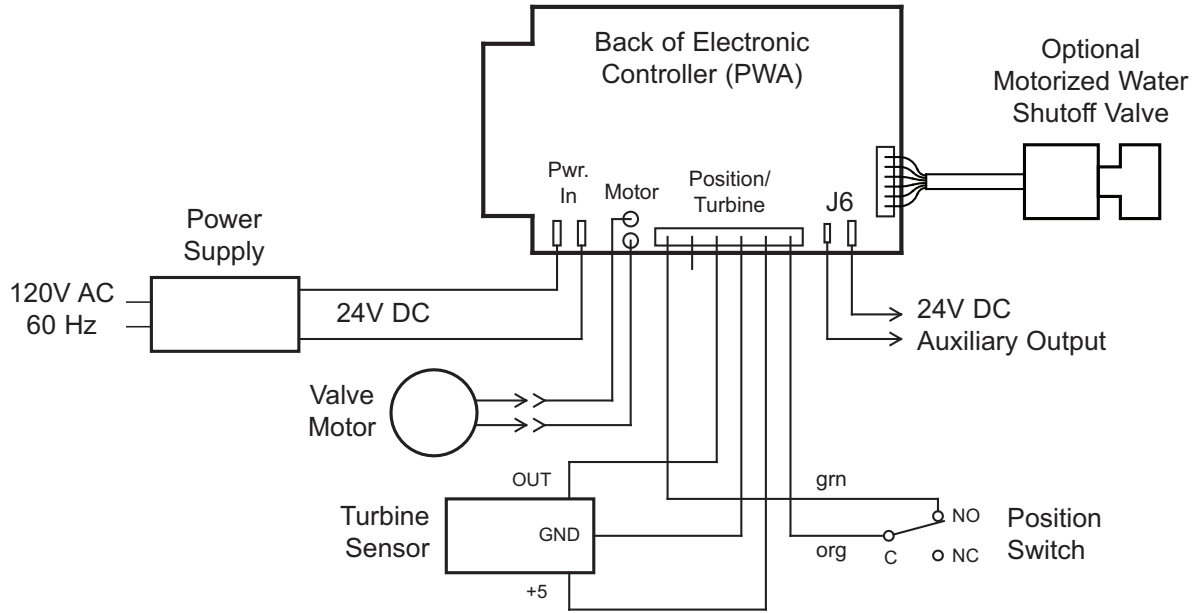


FIG. 63

Need help troubleshooting? Call Toll Free 1-888-64 WATER (1-888-649-2837)
 or visit www.mortonwatersofteners.com

When you call, please be prepared to provide the model and serial number,
 found on the rating decal, located on the rim below the salt lid hinges.

Optional Motorized Water Shutoff Valve

The Motorized Water Shutoff Valve (sold separately) may be used with this Morton® Wi-Fi connected water softener and the **iQua™** app to remotely turn off the home's water supply. For example, you may want to turn off the water when going away on vacation. Install the motorized shutoff valve in the plumbing, upstream of the softener (see page 10), and plug the cable into the softener's electronic control board with the power off (see page 10 and Figure 63).

On the **iQua™** app, near the bottom of the softener's main dashboard, there is a line labeled "Water Control" with a button that, when pressed, alternates between "Water On" and "Water Off". If you receive an alert indicating continuous water flow, you can use this control to remotely shut off the water.

The system default for triggering a continuous water flow alert is 20 minutes of flow at 0.4 gallons per minute or higher. The time and water flow trigger values may also be adjusted in the "Alerts" section.

To manually operate the motorized water shutoff valve, pull out the round knob on the valve and turn it until the red line in the sight glass matches the desired (open or closed) position. See Figure 64. If you manually operate the valve, the app's "Water Control" feature will be disabled until you reset it by clicking "Yes" next to the "Regain Control?" prompt.

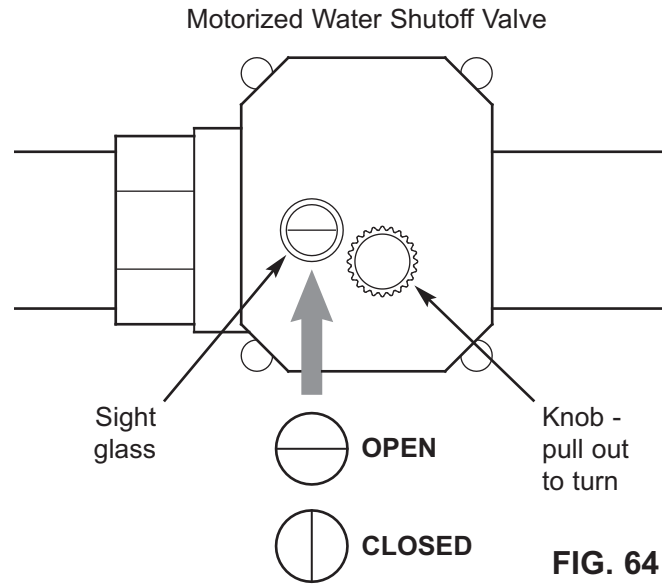
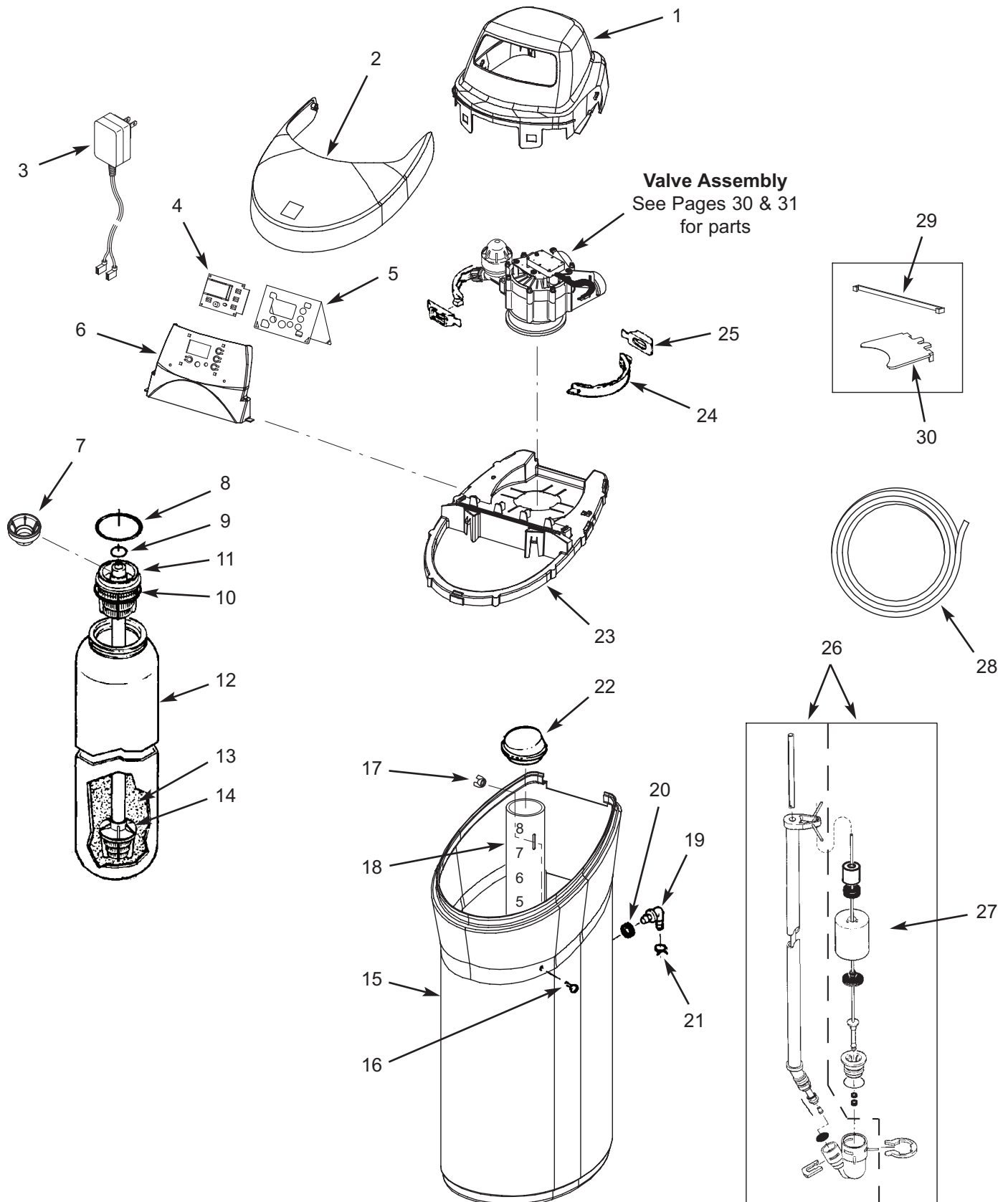


FIG. 64

Softener Exploded View



Softener Parts List

Key No.	Part No.	Description
1	7329803	Top Cover
2	7381504	Repl. Salt Lid (includes instruction decal & Morton badge)
3	7351054	Power Supply, 24V DC
4	7381300	Repl. Electronic Control Board (PWA)
5	7382403	Heat Shield
6	7372741	Faceplate (order decal below)
■	7381245	Faceplate Decal
7	7265025	Filter Screen
-	7112963	Distributor O-Ring Kit (includes Key Nos. 8-10)
8	↑	O-Ring, 2-7/8" x 3-1/4"
9	↑	O-Ring, 13/16" x 1-1/16"
10	↑	O-Ring, 2-3/4" x 3"
11	7077870	Top Distributor
12	7247996	Repl. Resin Tank, 10" x 40"
13	0502272	Resin, 1 cu. ft.
14	7105047	Repl. Bottom Distributor
15	7338365	Repl. Brine Tank

Key No.	Part No.	Description
-	7327576	Brinewell Mounting Hardware Kit (includes Key Nos. 16 & 17)
16	↑	Screw, 1/4-20 x 5/8"
17	↑	Wing Nut, 1/4-20
18	7214375	Brinewell Assembly (including salt level decal)
-	7331258	Overflow Hose Adaptor Kit (includes Key Nos. 19-21)
19	↑	Adaptor Elbow
20	↑	Grommet
21	↑	Hose Clamp
22	7155115	Cover, Brinewell
23	7325396	Rim
-	7331177	Tank Neck Clamp Kit (includes Key Nos. 24 & 25)
24	↑	Clamp Section (2 req.)
25	↑	Retainer Clip (2 req.)
26	7310202	Brine Valve Assembly
27	7327568	Float, Stem & Guide Assembly
28	7139999	Drain Hose
29	-	Cover Lock (for shipping only)
30	-	Rim Insert (for shipping only)
■	7381229	Owner's Manual

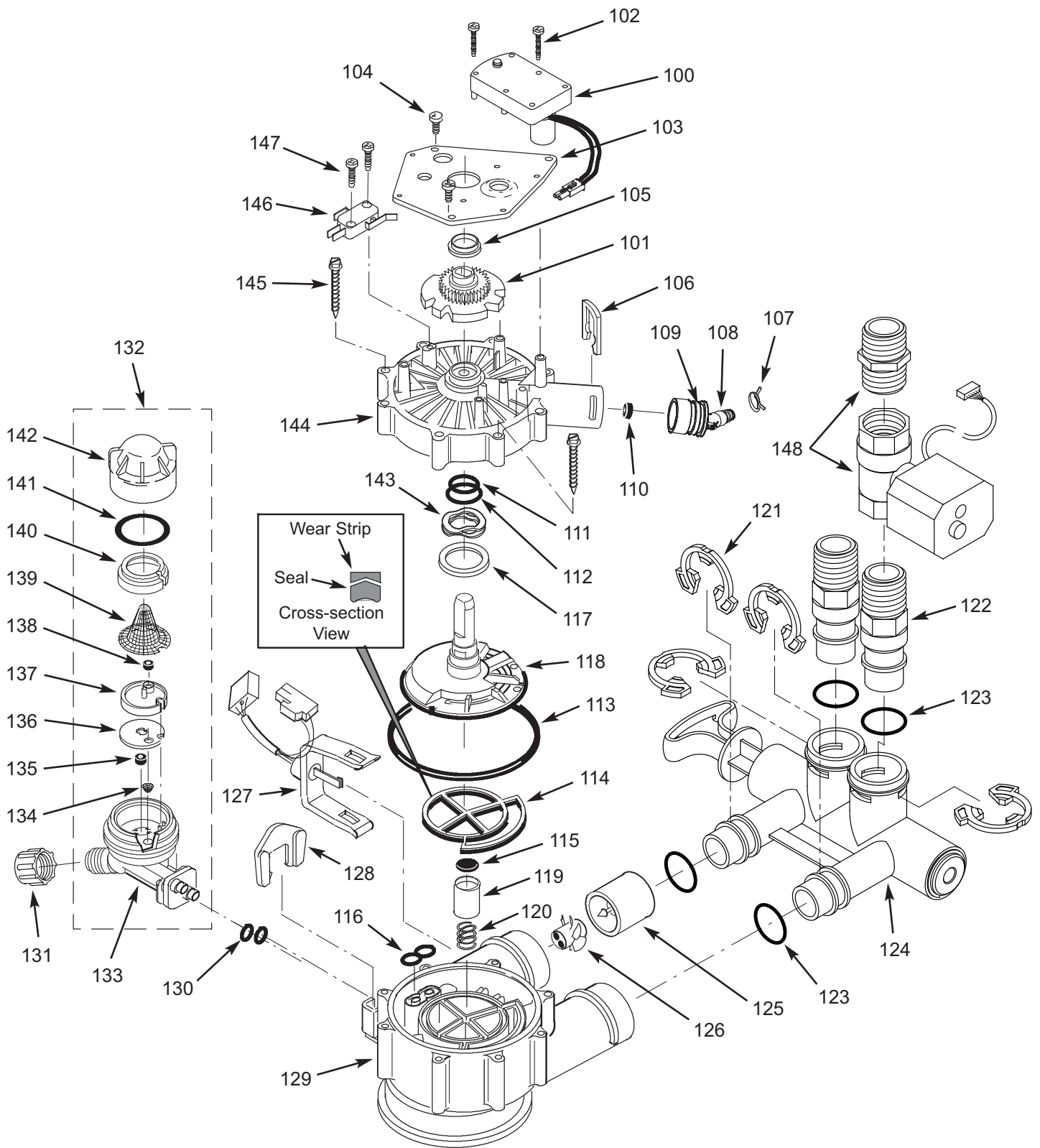
■ Not illustrated.

Questions? Call Toll Free 1-888-64 WATER (1-888-649-2837)

or visit www.mortonwaterssofteners.com

When you call, please be prepared to provide the model and serial number, found on the rating decal, located on the rim below the salt lid hinges.

Valve Exploded View



Valve Parts List

Key No.	Part No.	Description
–	7373828	Motor, Cam & Gear Kit, 1" (includes Key Nos. 100-102)
100	↑	Motor
101	↑	Cam & Gear
102	7224087	Screw, #8-32 x 1" (2 req.)
103	7231393	Motor Plate
104	0900857	Screw, #6-20 x 3/8" (3 req.)
105	7171250	Bearing
–	7331169	Drain Hose Adaptor Kit (includes Key Nos. 106-110)
106	↑	Clip, Drain
107	↑	Hose Clamp
108	↑	Drain Hose Adaptor
109	↑	O-Ring, 15/16" x 1-3/16"
110	↑	Flow Plug, 2.0 gpm
–	7185487	Seal Kit (includes Key Nos. 111-116)
111	↑	O-Ring, 5/8" x 13/16"
112	↑	O-Ring, 1-1/8" x 1-1/2"
113	↑	O-Ring, 4-1/2" x 4-7/8"
114	↑	Rotor Seal
115	↑	Seal
116	↑	Seal, Nozzle & Venturi
117	7174313	Bearing, Wave Washer
118	7185500	Rotor & Disc
–	7342712	Drain Plug Kit, 1" (includes Key Nos. 115, 119 & 120)
119	↑	Plug, Drain Seal
120	↑	Spring
121	7337589	Clip, 1", pack of 4
122	7342704	Installation Adaptor, 1", pack of 2, including 2 ea. Clips & O-Rings (See Key Nos. 121 & 123)
123	7337597	O-Ring, 1-1/16" x 1-5/16", pack of 4
124	7214383	Bypass Valve Assembly, 1", including 2 ea. Clips & O-Rings (See Key Nos. 121 & 123)

Key No.	Part No.	Description
–	7290931	Turbine & Support Assembly, including 2 O-Rings (See Key No. 123) & 1 ea. of Key Nos. 125 & 126
125	↑	Turbine Support & Shaft
126	↑	Turbine
127	7309811	Wire Harness, Sensor
128	7081201	Retainer, Nozzle & Venturi
129	7171145	Valve Body
130	7342649	O-Ring, 1/4" x 3/8", pack of 2
131	1202600	Nut - Ferrule
132	7257454	Nozzle & Venturi Assembly (incl. Key Nos. 128, 130 & 133-142)
133	↑	Housing, Nozzle & Venturi
134	↑	Cone Screen
135	↑	Fill Flow Plug, 0.3 gpm
136	↑	Gasket
137	↑	Nozzle & Venturi Disc, Blue
138	↑	Flow Plug, 0.15 gpm
139	↑	Screen
140	↑	Screen Support
141	↑	O-Ring, 1-1/8" x 1-3/8"
142	↑	Cap
■	7298913	Repl. Nozzle, Venturi & Gasket Kit (includes Key Nos. 130, 134, 136, 137 & 141)
143	7175199	Wave Washer
144	7171161	Valve Cover
145	7342681	Screw, #10 x 2-5/8", pack of 8
146	7305150	Switch
147	7140738	Screw, #4-24 x 3/4" (2 req.)
148	7379785	Motorized Water Shutoff Valve, including 1" NPT Nipple *

■ Not illustrated

* Not included with softener

Questions? Call Toll Free 1-888-64 WATER (1-888-649-2837)

or visit www.mortonwatersofteners.com

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EXTEND YOUR WARRANTY: Use Morton® MWSC Water Softener Cleanser

The factory warranty for your water softener is shown below. The one year warranty period, on all parts other than the salt storage tank and fiberglass mineral tank, can be extended to five (5) years from the date of purchase if you use Morton® MWSC Water Softener Cleanser on your system. Use one bottle of Morton® MWSC Water Softener Cleanser, as directed, every four months from the date of purchase of the water softener. Retain proof of purchase of Morton® MWSC Water Softener Cleanser to validate any warranty claim after the first year. Use of any water softener additive other than Morton® MWSC will invalidate any extended warranty coverage.

WATER SOFTENER LIMITED WARRANTY - MODEL M45C

Warrantor guarantees, to the original owner, that:

One Year Full Warranty:

- For a period of one (1) year from the date of purchase, all parts will be free from defects in materials and workmanship and will perform their normal functions.
- For a period of one (1) year from the date of purchase, labor to repair or replace any part deemed to be defective in materials or workmanship, will be provided at no additional cost.

Limited Warranties:

- For a period of ten (10) years from the date of purchase, the salt storage tank and fiberglass mineral tank will not rust, corrode, leak, burst, or in any other manner, fail to perform its proper functions.
- For a period of three (3) years from the date of purchase, the electronic control board will be free of defects in materials and workmanship and will perform its normal functions.

If, during such respective period, a part proves to be defective, Warrantor will ship a replacement part, directly to your home, without charge. Labor necessary to maintain this product is not covered by the product warranty.

If you have questions regarding a Morton water softener or MWSC, need assistance with installation or troubleshooting, wish to order a part or report a warranty issue, we are just a phone call away. Simply dial 1-888-64WATER (1-888-649-2837) for assistance, or visit www.mortonwatersofteners.com.

This water softener is manufactured for Morton Salt, Inc., P.O. Box 25290, Woodbury, MN 55125-0290

General Provisions

The warranty does not apply to any defect, malfunction or failure arising from, relating to or caused by: (i) operation at water pressures which exceed 125 psi or at water temperatures which exceed 120°F; (ii) repairs made by others than, or without the consent of, Seller or if the product has been subject to abuse, misuse, neglect, tampering, accident or damage by circumstances beyond Seller's control; (iii) products damaged or abused in shipment without fault of Seller; (iv) non-residential installations; (v) defects or failures due to misapplication, abuse, improper installation or abnormal conditions of temperature, humidity, abrasives, dirt or corrosive matter; (vi) unusual force of nature such as, but not limited to, flood, hurricane, tornado or earthquake; and (vii) products which have been in any way tampered with, modified or altered.

The foregoing warranties do not cover and Seller shall not be responsible for reimbursement for labor, transportation, removal, installation, or other expenses which may be incurred by Purchaser in connection with replacement or repair or returning the product to Seller.

THERE ARE NO WARRANTIES ON THE WATER SOFTENER BEYOND THOSE SPECIFICALLY DESCRIBED ABOVE. ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. SELLER'S SOLE LIABILITY FOR ANY PRODUCT IS LIMITED TO THE REPAIR OR REPLACEMENT OF SUCH PRODUCT, OR A REFUND OF THE PURCHASE PRICE ACTUALLY RECEIVED BY SELLER FOR SUCH PRODUCT, AT SELLER'S SOLE DISCRETION. SELLER WILL NOT BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OF ANY KIND, NATURE OR DESCRIPTION WHATSOEVER. NO MORTON DEALER, AGENT, REPRESENTATIVE, OR OTHER PERSON IS AUTHORIZED TO EXTEND, EXPAND OR MODIFY THE WARRANTIES EXPRESSLY DESCRIBED ABOVE.

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