

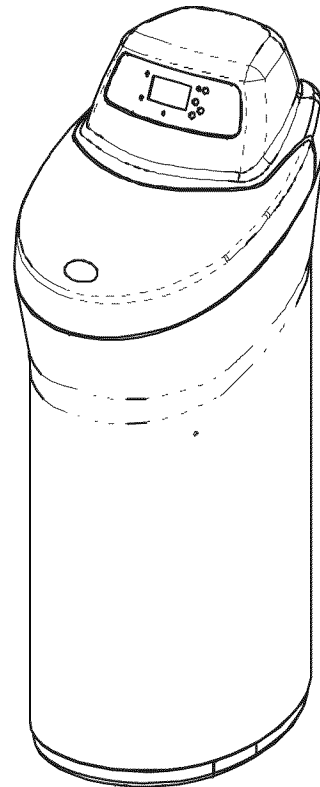
## OWNER'S MANUAL



# Water Softener

## with High Performance Valve

IntelliSoft 420 Series  
MODEL NO. 625.384260



**Caution:**  
Read and follow all safety rules and operating instructions before first use of this product.

Questions ?  
Visit [www.KenmoreWater.com](http://www.KenmoreWater.com)  
or call toll free 1-800-426-9345 (M - F, 7 AM - 6 PM CST)

**Repair or Parts ? Call toll free 1-800-469-4663**  
See back cover for other Sears service numbers.

**SAVE THIS MANUAL**  
Use the plastic bag and tie provided, to hang manuals nearby the softener for future reference.

- Warranty
- Installation
- Start Up / Setting Timer
- How It Works
- Care Of
- Specifications
- Repair Parts

System tested and certified by NSF International against NSF/ANSI Standard 44 for water softener performance, and the reduction of barium and radium 226/228.



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Sears Brands Management Corporation, Hoffman Estates, IL 60179 U.S.A.

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## WARRANTY ON WATER SOFTENER

### ONE YEAR LIMITED WARRANTY ON WATER SOFTENER

When installed, operated and maintained according to all instructions supplied with the product, if this Kenmore Elite appliance fails due to a defect in material and workmanship within one year from the date of purchase, call 1-800-4-MY-HOME® to arrange for free repair.

### THREE YEAR LIMITED WARRANTY ON ELECTRONIC PARTS

When installed, operated and maintained according to all instructions supplied with the product, if any of the following electronic parts fail due to a defect in material or workmanship, call 1-800-4-MY-HOME® to arrange for free part replacement: Brine Tank Light, Electronic Board, Sensor Housing, Wiring Harness, Transformer, Micro Switch, Drive Motor, Power Cable. After the first year you must pay an initial trip charge.

### TEN YEAR LIMITED WARRANTY AGAINST LEAKS

When installed, operated and maintained according to all instructions supplied with the product, if the water softener tank or salt storage drum develops a leak within ten years from the date of purchase, call 1-800-4-MY-HOME® to arrange for free tank or drum replacement. After the first year you must pay an initial trip charge.

All warranty coverage does not include water softener resin, which is an expendable item.

If this appliance is used for other than private family purposes, this warranty applies for only 90 days from the date of purchase.

#### **This warranty covers only defects in material and workmanship. Sears will NOT pay for:**

1. A service technician to instruct the user in correct product installation, operation or maintenance.
2. A service technician to clean or maintain this product.
3. Damage to or failure of this product if it is not installed, operated or maintained according to the all instructions supplied with the product.
4. Damage to or failure of this product resulting from accident, abuse, misuse or use for other than its intended purpose.
5. Damage to or failure of this product caused by the use of detergents, cleaners, chemicals or utensils other than those recommended in all instructions supplied with the product.
6. Damage to or failure of parts or systems resulting from unauthorized modifications made to this product.

#### **Disclaimer of implied warranties; limitation of remedies**

Customer's sole and exclusive remedy under this limited warranty shall be product repair as provided herein. Implied warranties, including warranties of merchantability or fitness for a particular purpose, are limited to one year or the shortest period allowed by law. Sears shall not be liable for incidental or consequential damages. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, or limitation on the duration of implied warranties of merchantability or fitness, so these exclusions or limitations may not apply to you.

This warranty applies only while this appliance is used in the United States or Canada.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**Sears Brands Management Corporation, Hoffman Estates, IL 60179**  
**Sears Canada Inc., Toronto, Ontario, Canada M5B 2M5**

Questions? Call The Kenmore Water Line 1-800-426-9345

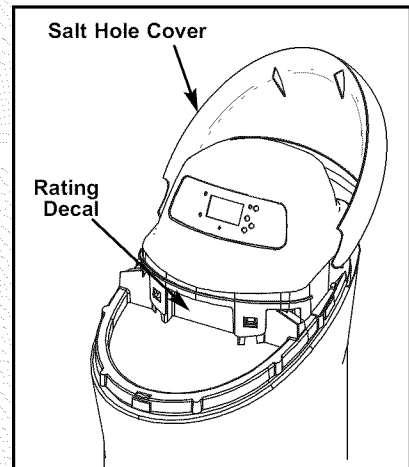
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### FACTS AND FIGURES TO KEEP

Fill in the blanks below and keep this book in a safe place so you always have these facts.

Water Softener Model No.\* \_\_\_\_\_  
 Serial Number \_\_\_\_\_  
 Date Installed \_\_\_\_\_  
 Water Hardness \_\_\_\_\_ Grains Per Gallon  
 Iron Content \_\_\_\_\_ Parts Per Million  
 pH \_\_\_\_\_ Taste and/or Odor \_\_\_\_\_  
 Water Pressure \_\_\_\_\_ Pounds/Square Inch  
 Water Flow Rate \_\_\_\_\_ Gallons Per Minute



\* The model number is on the rating decal, located on the rim, under the salt hole cover.

## Questions?

**Call the Kenmore Water Line at 1-800-426-9345  
 or visit KenmoreWater.com**

For repair or replacement parts, call toll-free 1-800-366-7278  
 See back cover for other Sears service numbers.

**Questions? Call The Kenmore Water Line 1-800-426-9345**



# Safety Guides

- ▲ Read all steps, guides and rules carefully before installing and using your new water softener. Follow all steps exactly to correctly install. Failure to follow them could cause personal injury or property damage. Reading this book will also help you to get all of the benefits from your water softener.
- ▲ Your Kenmore Water Softener will remove hardness minerals from water. This is measured in grains per gallon (gpg). It will also remove some clear water iron\*, barium and radium 226/228\*\*. These are measured in parts per million (ppm). See the specifications page for the maximum limits of hardness and iron, barium and radium 226/228 removal.
- ▲ A water softener will not improve other water problems such as acidity, tastes and odors, or iron other than clear water iron. It will not purify contaminated water, or make unsafe water safe to drink.
- ▲ Check with your local public works department for plumbing, electric and sanitation codes. You must follow their guides as you install your softener. Use only LEAD FREE SOLDER AND FLUX, as required by federal and state codes, when installing soldered copper plumbing.
- ▲ Protect the softener and piping from freezing. Damage from freezing voids the softener warranty. See how to protect from freezing on page 34.

**CAUTION: Please read and comply with the following guides to prevent damage to the softener or other property, personal injury, or possible fatal shock.**

- ▲ ***This softener works on 24 volts only. Be sure to use only the transformer included. Plug it into a nominal 120V, 60 cycle household outlet that is grounded and properly protected by an overcurrent device such as a circuit breaker or fuse. If transformer is replaced, use only the authorized service Class II, 24 volt, 10 VA transformer.***
- ▲ Unplug the transformer right away if the power cable should become damaged or frayed. Make repairs, or replace the transformer, before plugging back into the power outlet.
- ▲ Always unplug the softener from electrical power before removing outer valve covers.
- ▲ This system is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

\* The capacity to reduce clear water iron is substantiated by WQA test data.

\*\* If conditioner is being used to remove barium and/or radium 226 and 228, please verify performance by contacting 612-607-1700, ext. 6470 for testing treated water supply, or check the water testing section of your local phone directory.



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.

**Questions? Call The Kenmore Water Line 1-800-426-9345**

# Unpack and Check Your Carton

## INSPECT SHIPMENT

Your water softener is shipped complete in one carton. Use care when handling the softener. DO NOT turn upside down. DO NOT drop, or set on sharp objects that could make a hole in the bottom. The water softener is heavy, do not try to lift it or move more than is necessary.

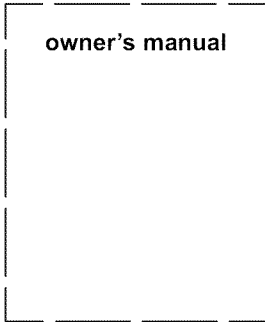
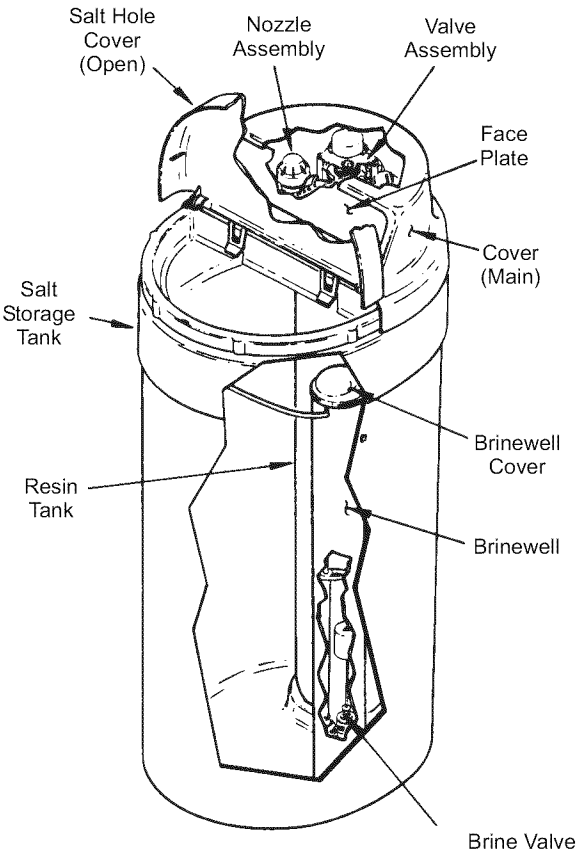
Remove all items from your shipping carton. Check all items against the packing list below. Note any items lost or damaged in shipment.

Note any damage to the shipping carton. Refer to the exploded view and parts list in the back of the manual for the part names and numbers of missing or damaged items.

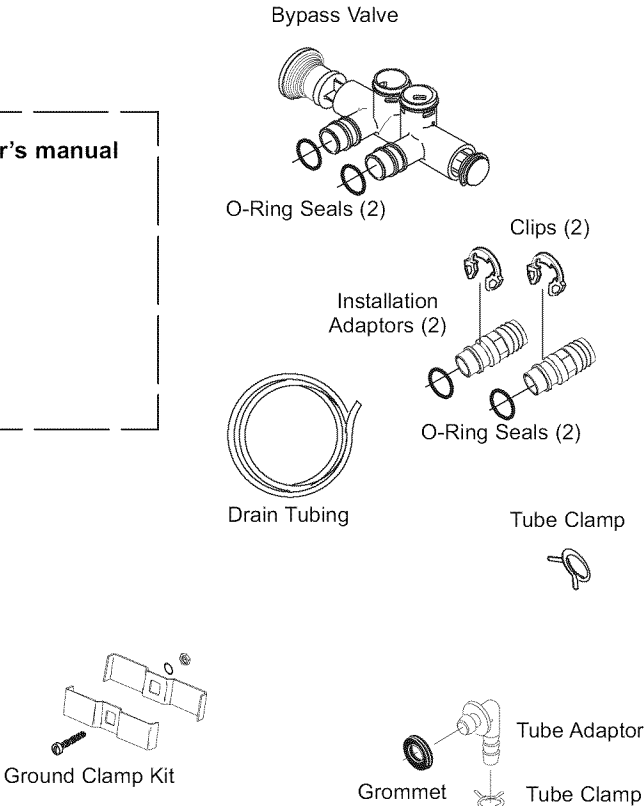
Contact the store where purchased if problems exist.

## Packing List

### PARTS DESCRIPTIONS



### SMALL PARTS



Additional Installation Fittings available from Sears (see parts listing in back of manual)

**FIG. 1**

**Questions? Call The Kenmore Water Line 1-800-426-9345**

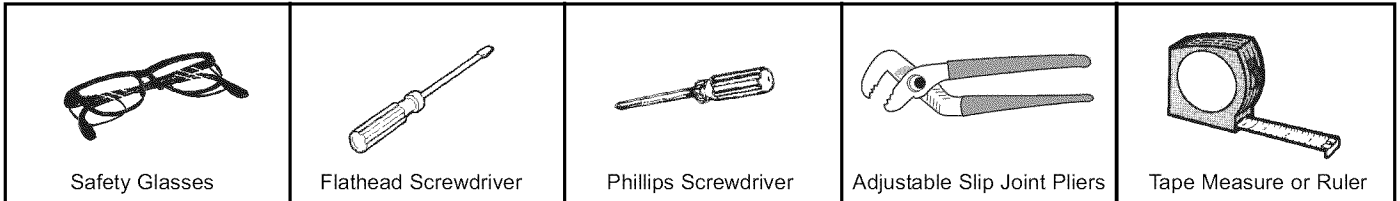
# Plan Your Installation

## PLAN YOUR INSTALLATION

It is recommended to read through the entire manual before beginning your installation. Follow all steps exactly. Reading this manual will also help you get all the benefits from your system.

### TOOLS NEEDED:

- Safety glasses
- Flathead screw driver
- Phillips screw driver
- Adjustable slip joint pliers
- Tape measure or ruler

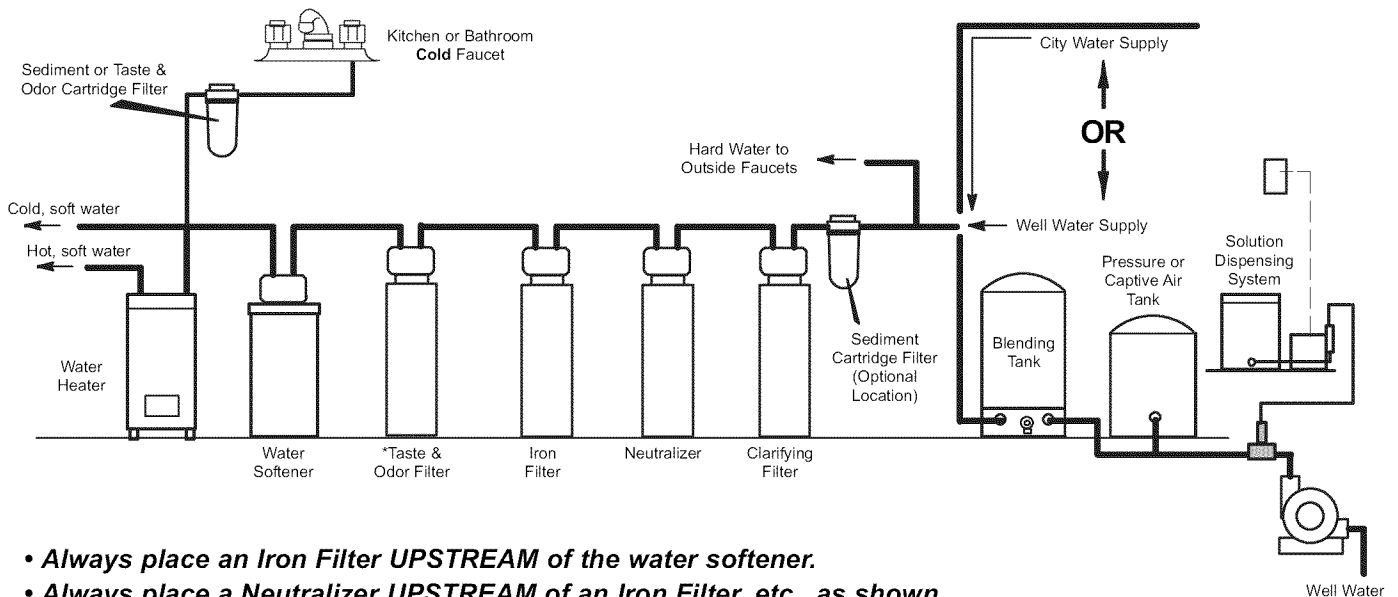


### ADDITIONAL TOOLS NEEDED FOR THE FOLLOWING INSTALLATIONS:

SOLDERED COPPER	THREADED PIPE	CPVC OR PVC PLASTIC
<ul style="list-style-type: none"> <li>• Tubing Cutter</li> <li>• Propane Torch</li> <li>• Solid Core LEADFREE Solder</li> <li>• Paste Flux</li> <li>• Emery Cloth</li> <li>• or Sandpaper</li> </ul>	<ul style="list-style-type: none"> <li>• Hacksaw or Pipe Cutter</li> <li>• Pipe Wrenches</li> <li>• Pipe Threading Tool</li> <li>• Pipe Joint Compound approved for use on potable water</li> </ul>	<ul style="list-style-type: none"> <li>• Hacksaw</li> <li>• Adjustable Wrench</li> <li>• Primer and Solvent Cement approved for use on potable water-</li> </ul>

## THE PROPER ORDER TO INSTALL WATER TREATING EQUIPMENT

(Shows sequence of equipment only. Seldom, if ever, would all items be needed.)



- **Always place an Iron Filter UPSTREAM of the water softener.**
- **Always place a Neutralizer UPSTREAM of an Iron Filter, etc., as shown.**
- \* **Place a Taste & Odor Filter UPSTREAM of a water softener on a chlorinated water supply and DOWNSTREAM of a water softener on a non-chlorinated water supply.**

FIG. 2

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# Plan Your Installation

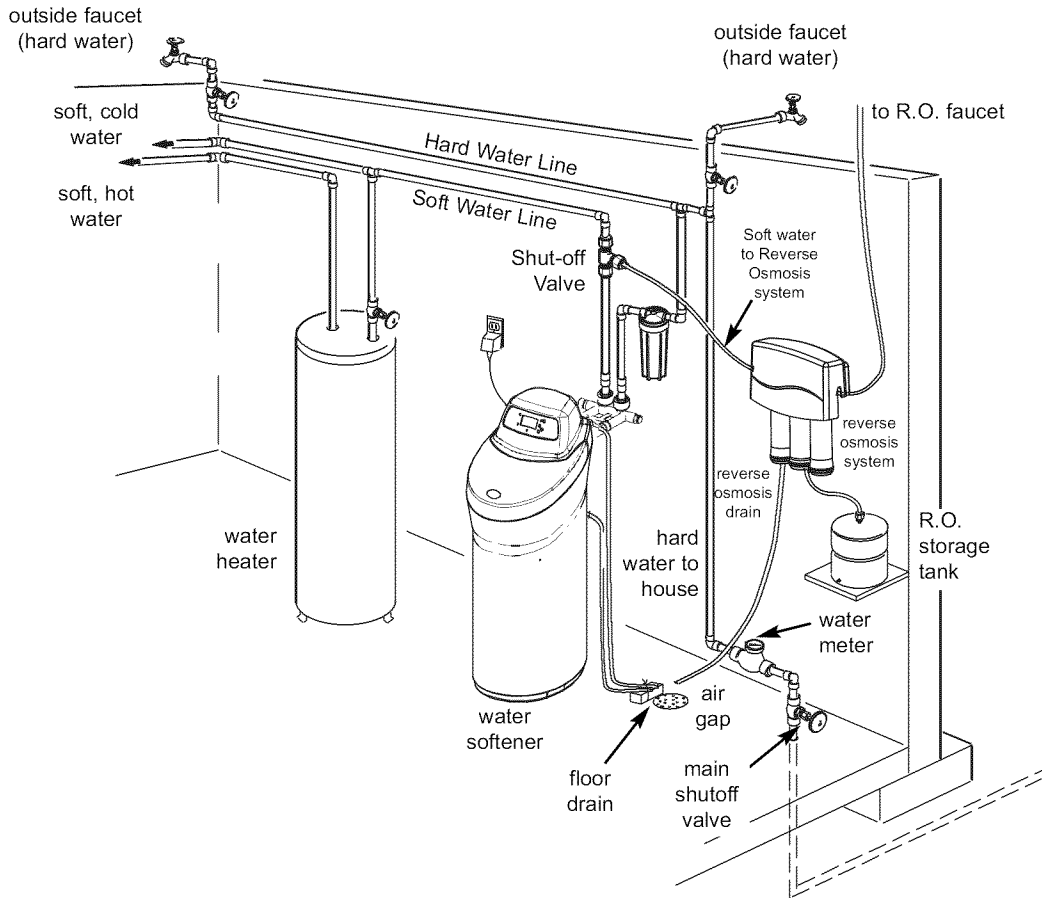


FIG. 3

## Typical Installation

### WHERE TO INSTALL THE WATER SOFTENER

Review the following points before you choose a place to put your softener.

1. Place as close as possible but always after, the pressure tank (well water) or water meter (city water). See Fig. 3.
2. Place as close as possible to a water drain such as a floor drain, laundry tub, sump or standpipe. See Fig. 3.
3. Connect to the house main water pipe **BEFORE THE WATER HEATER**. See Fig. 3. **Temperature of water going through the softener must not be more than 120°F (49°C)**. Hot water will damage inner softener parts. *To reduce the risk of hot water backup*, piping between the softener and water heater should be as long of a run as possible.
4. Keep outside faucets on hard water to save soft water and salt. See Fig. 3.
5. **Do not** install in a place where the softener could **freeze**. Damage caused by freezing voids the warranty by Sears Brands Management Corporation.
6. Put the softener in a place where water damage is least likely to occur if it develops a leak. Sears or the manufacturer will not repair or pay for water damage.
7. A grounded, 120V electrical outlet is needed within 10 feet of the softener. See Fig. 3. This is to plug in the transformer. The softener has a 10 foot power cable. **Be sure the outlet and transformer are in an inside place, to protect from wet weather.** Use a continuously "live" outlet, which cannot be accidentally switched off.
8. When installing in an outside location, you must take the steps necessary to assure the softener, installation plumbing, and wiring, are protected from the elements, direct sunlight, contamination, vandalism, etc.

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# Plan Your Installation

## Suggested Slab Foundation Installation

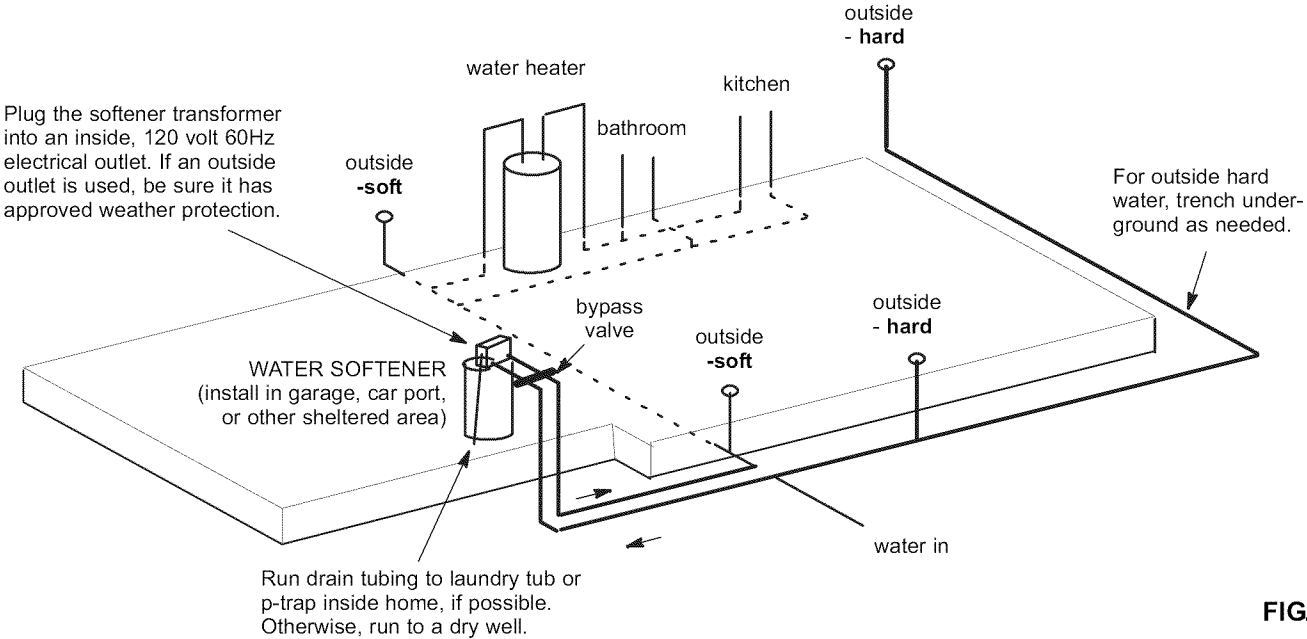
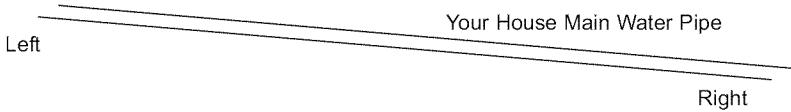


FIG. 4

### DRAW IN YOUR PIPES AND FITTINGS

Draw the plans for your "IN" and "OUT" piping here. Include all pipe, fittings and accessories you will use.

Make a list of all materials you will need and buy them before you begin to install the water softener.



**\* In what direction does the water flow?**

Be sure to plan "IN" and "OUT" piping so water flow is to the softener valve inlet. Plan a crossover if flow is from left to right.

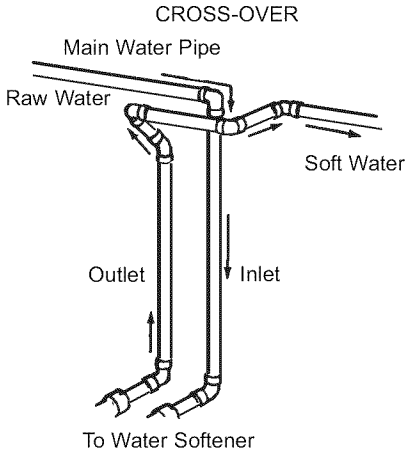
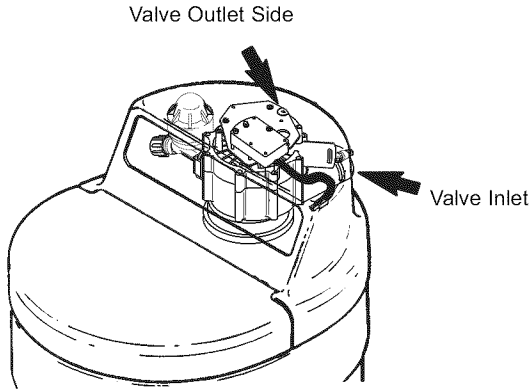
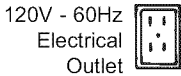


FIG. 5

Questions? Call The Kenmore Water Line 1-800-426-9345



# Plan Your Installation

## PIPE, FITTINGS, OTHER MATERIALS NEEDED

You must first decide how to run "in" and "out" pipes to the softener. Look at your house main water pipe at the point you will connect the softener. Is the pipe soldered copper, glued plastic, or threaded galvanized or brass? What is the pipe size? What kind of pipe and fittings is it easiest for you to work with, and what tools do you have?

Now look at the common plans for "in" and "out" piping on soldered copper. See Fig. 6. Use it as a guide to plan what materials you will need. Get all the materials you will need before you start.

Use Fig. 5 to make a plan drawing for your specific installation. "In" and "out" fittings included with the softener are 1" NPT threaded adaptors. You should maintain the same, or larger, pipe size as the water supply pipe, up to the softener inlet and outlet. Use copper, brass, galvanized or PVC plastic pipe and fittings for the "in" and "out" pipes. Be sure to check local codes.

**Note: If converting from galvanized to copper pipe use approved dielectric insulating connectors.**

ALWAYS install the bypass valve (that is included with the unit) or a three valve bypass. See Fig. 9 to 13. Bypass valves let you turn off water to the softener if needed for repairs, but still have water in the house pipes.

Drain tubing (3/8" inside diameter), is needed for the valve and salt tank drains. See Fig. 16. If a rigid valve drain is needed to comply with plumbing codes, you can buy the parts needed (see Fig. 16) to change the softener to a 1/2 inch minimum copper tubing drain.

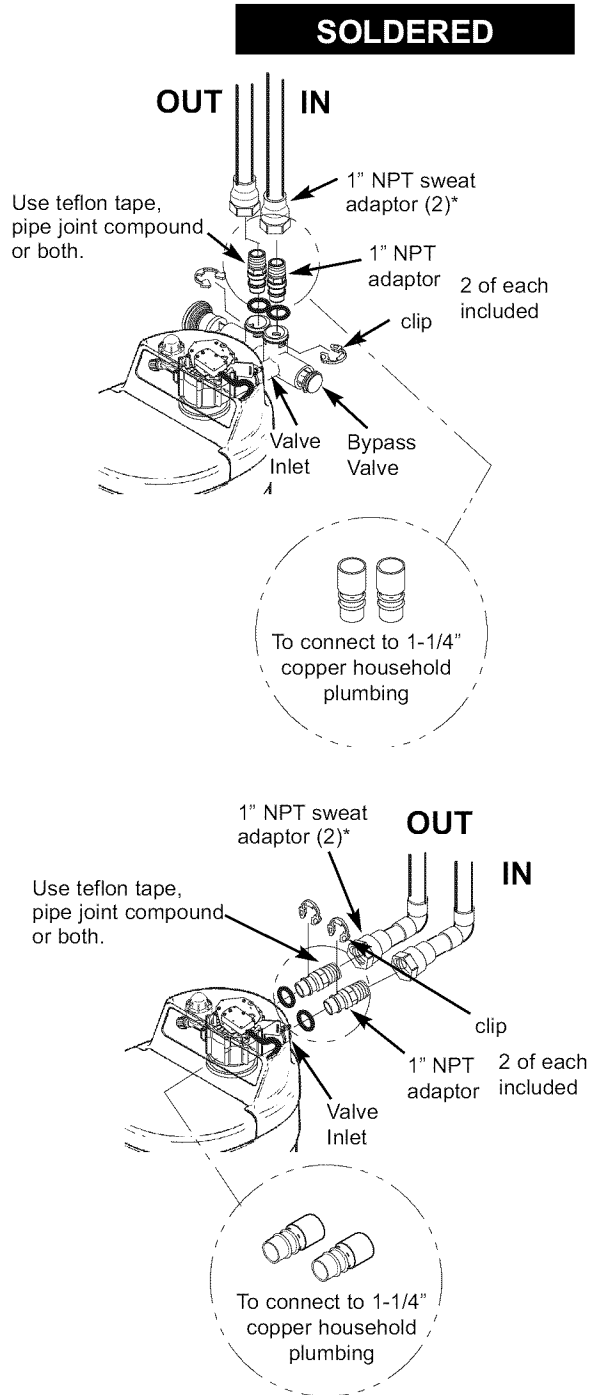


FIG. 6

**\*NOTE:**  
For plumbing connection, buy 2 sweat adaptors and plumb directly to the inlet - outlet adaptors. Threads on the inlet - outlet adaptors are 1" NPT.

**CAUTION:**  
**DO ALL SOLDERING BEFORE CONNECTING SWEAT ADAPTORS TO INLET-OUTLET ADAPTORS OR BYPASS VALVE.**

# Read Before Beginning Installation

## BEFORE INSTALLING CHECKS & TESTS

Your water supply needs to be checked for chemical analysis, water pressure and water flow rate. To accomplish this, complete the following steps:

**Check Water's Chemical Analysis:** Sears sells a complete line of water treating equipment to correct various water problems. To be sure you have the proper type and size equipment, You must have your water tested. Your Sears store can give you a water test results for hardness, iron and acidity, and tell you what equipment you need. Simply take at least a 4 oz. sample of your water to Sears, and they will test it while you wait. If you need help to get your water tested, or if you have other questions about your water, ask at your Sears store.

**NOTE: Add these readings to the Facts and Figure table on page 3.**

**Check Your Water Pressure:** For your softener to work right, a water pressure of no lower than 20 pounds per square inch (psi) is needed in the house water pipes. The highest pressure allowed in the water pipes is 125 psi. If pressure is over 125 psi, buy and install a pressure reducing valve in the water inlet pipe to the softener.

**NOTE: If water pressure during the day is 100 psi or more, pressure during the night may go over 125 psi. Adding a pressure reducing valve may reduce the flow.**

**NOTE: Add these readings to the Facts and Figure table on page 3.**

If you have a well water system, look at the pressure gauge to find the water pressure. Call your local water department if you have city water. They will tell you what the water pressure is where you live.

**NOTE: Add these readings to the Facts and Figure table on page 3.**

**Check your water flow rate:** A water flow of at least 3 gallons per minute is needed. A lower flow will keep your softener from working as well as it should. Complete the following steps to make an easy check of your flow rate.

1. Fully open two cold water faucets close to the point water enters the house.
2. With both faucets open, fill a gallon container at one faucet while looking at a watch or clock to see how many seconds it takes.
3. Empty the container and go to the second faucet (be sure BOTH faucets are still on). Fill the gallon container at the second faucet and see how many seconds it takes.
4. Turn off both faucets. Now add the number of seconds it took to fill the container at both faucets.
5. A total of 90 seconds, or less, means the system flow rate is good.

**NOTE: Add these readings to the Facts and Figure table on page 3.**

**NOTE: Codes in the state of Massachusetts require installation by a licensed plumber. For installation, use plumbing code 248CMR of the Commonwealth of Massachusetts.**

# Install Single Bypass Valve

## ASSEMBLE INLET OUTLET ADAPTORS, OR SINGLE BYPASS VALVE

Complete the following steps to assemble the adaptors or bypass valve.

1. Close the shutoff valve on the house main water pipe, near the water meter or pressure tank, to turn off the water. See Fig. 7.
2. Shut off the gas or electric supply to the water heater. See Fig. 7.
3. Open the highest and lowest water faucets in your house. This will let water drain from the pipes. Close faucets after water has drained.
4. Remove the main cover. See Fig. 8.  
Pull outward on two (2) tabs to release.

The salt hole cover remains attached to the main cover when removed. Set both covers aside so they will not get scratched or broken.

## INSTALL SEARS BYPASS VALVE AND / OR THE INLET OUTLET THREADED ADAPTORS

**NOTE:** If you will not install the bypass valve because you will have a three (3) valve bypass, skip steps 6 & 7, but do steps 5 and 8.

5. Visually check and remove any foreign materials from the valve inlet and outlet ports. See Fig. 9. Carefully remove the two large plastic clips (you will use them). Check to be sure the turbine and turbine support are firmly in place. See Fig. 10.

### BYPASS VALVE:

6. Put a light coating of silicone grease on the o-ring seals and slide onto the bypass valve.
7. Push the 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. See Fig. 11.**

**CAUTION:** Be sure the clips snap firmly into place so the bypass valve will not pull out. See Fig. 11.

### INLET AND OUTLET THREADED ADAPTORS:

8. Put a light coating of silicone grease on the o-ring seals and slide into the threaded adaptors. Push the adaptors into the valve inlet and outlet ports, or bypass valve ports, as far as they will go. Both adaptors are the same and fit either port. **Snap the two large holding clips into place, as shown. See Fig. 11.**

**CAUTION:** Be sure the clips snap firmly into place so the tubes will not pull out. See Fig. 11.

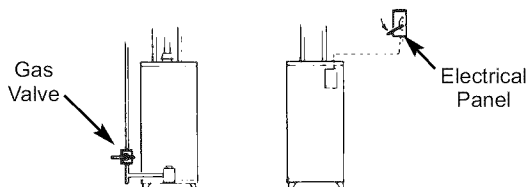
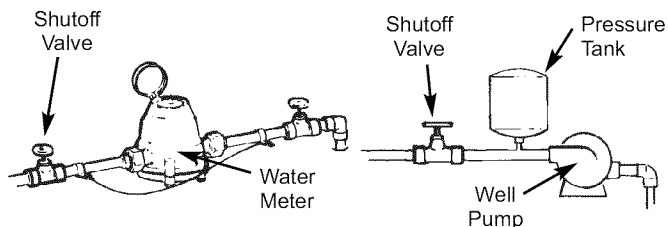


FIG. 7

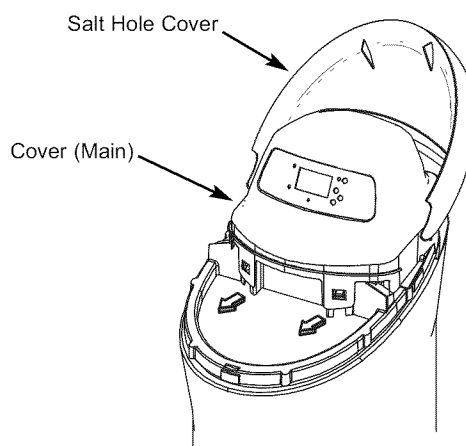


FIG. 8

## INSTALLING BYPASS VALVE, AND/OR INLET AND OUTLET THREADED ADAPTORS

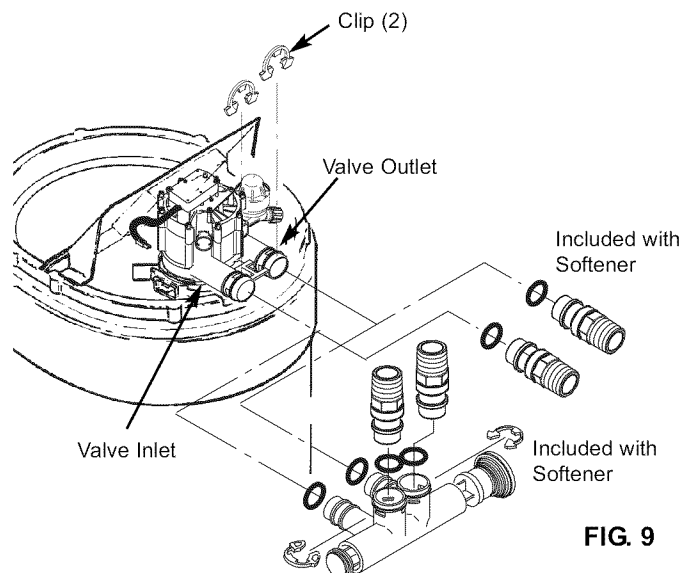


FIG. 9

Questions? Call The Kenmore Water Line 1-800-426-9345

# Install Single Bypass Valve

Before installing the bypass valve, or copper tube, be sure the turbine and support are firmly in place in the valve outlet port.

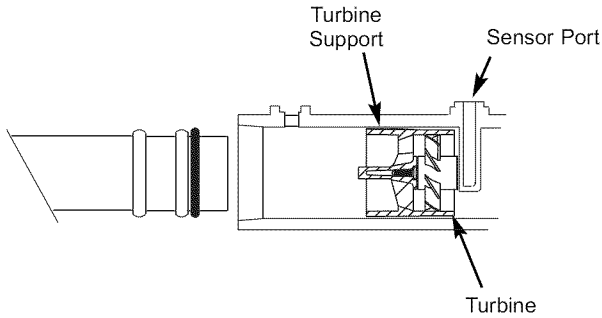


FIG. 10

## INSTALLING HOLDING CLIPS

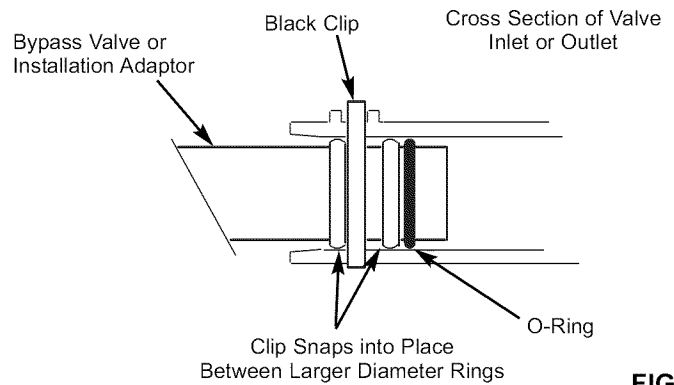


FIG. 11

## BYPASS VALVE TURNED DOWNWARD

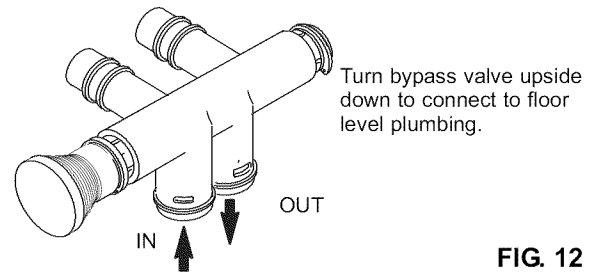


FIG. 12

# Install 3-Valve Bypass

## INSTALLING 3 VALVE BYPASS AND PIPES

Complete the following steps to install the three (3) valve bypass:

- Cut the house main water pipe where you will connect the softener.
- Loosely put together pipe, fittings, and the three (3) valves.
- Place valve(s) within easy reach.

When all pipe, fittings and valves make a good fit together, tighten all threaded joints (use pipe dope on outside threads), or solder all sweat joints.

## 3 VALVE BYPASS

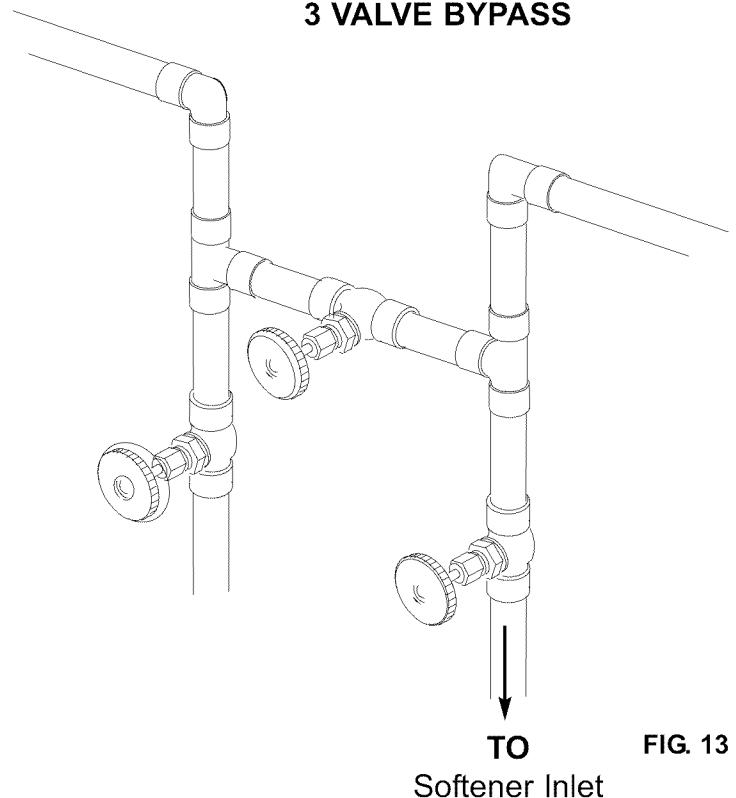


FIG. 13

Questions? Call The Kenmore Water Line 1-800-426-9345

# Locate Water Softener and Connect Pipes

## POSITION SOFTENER INTO PLACE

Complete the following steps to position the softener.

1. Grip under the ridge on the salt tank sidewall.
2. Carefully rock back and forth into position.
3. Move the softener into position.
4. Place on a level and smooth surface. If needed, put a piece of 3/4" plywood, at least 17" x 20", under the tank. Then put spacers under the plywood to level the softener. See Fig. 14.

**NOTE:** Do not put shims or spacers directly under the tank, without the plywood. The weight of the softener, when full of salt and water, may cause the tank to puncture or break at the shim or spacer.

## CONNECT THE SOFTENER

Refer to your plan drawing. See Fig. 5.

Measure, cut (thread if needed) and put all pipe and fittings together up to the main water pipe, or to the bypass valve(s) you installed in the previous step.

**CAUTION:** Never solder fittings while connected to nonmetallic parts. Wait until soldered pipe has cooled before connection. See Fig. 15.

**CAUTION:** Be careful when putting pipe fittings together. Do not cross thread, and do not overtighten.

## MOVE SOFTENER INTO PLACE

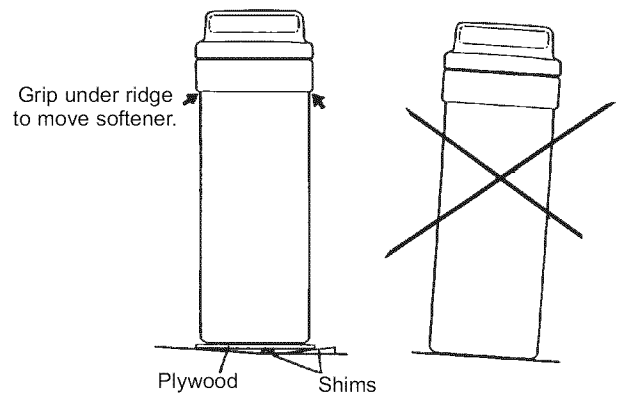


FIG. 14

## TYPICAL SOLDERING CONNECTIONS

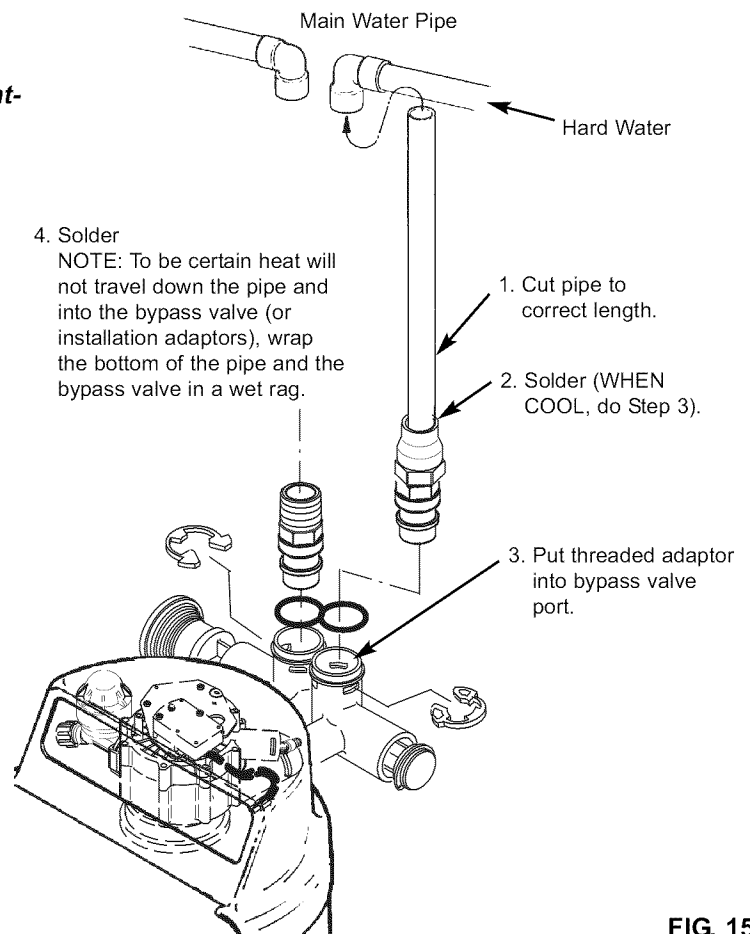


FIG. 15

Questions? Call The Kenmore Water Line 1-800-426-9345

# Connect Valve and Salt Tank Drains

## CONNECT THE VALVE DRAIN HOSE

Take a length of 3/8" inside diameter drain tubing and attach one end to the drain fitting. See Fig. 16. Use a tube clamp to hold it in place. Put the other end of the tubing over a floor drain, into a laundry tub, standpipe, or other suitable drain. **Check your local codes.**

Leave an air gap of about 1-1/2" between the end of the hose and the drain. This gap is needed so you don't get a backflow of sewer water into the softener. Do not put the end of the hose **into** the drain or connect without the air gap.

Place and support the hose so it does not kink or have sharp bends. Secure the hose end so water pressure does not cause the hose to "whip". Tie or wire it in place. Do not pinch the hose shut. **The softener will not work if this drain hose is pinched, plugged, closed or restricted in any way.** Direct drain flow down into drain from drain line as flow could possibly over shoot the drain cover.

Keep the hose lower than the drain fitting. In some homes, to get to a drain you must raise the hose and run it overhead. If you need an overhead drain, **do not raise the hose more than 8'** above the floor. A copper drain tube is best to use.

**COPPER DRAIN TUBE:** The local plumbing codes may require the use a copper valve drain tube. A cop-

per tube is also best to use for an overhead drain. Use a copper drain tube if the softener is installed outside, or in the sunlight. Heat from the sun can soften, flatten and close up some kinds of tubes.

To adapt a copper drain tube to the softener, buy a compression fitting (1/4" female pipe threads x 1/2" O.D. tube) and tubing from your local hardware store.

## CONNECT SALT TANK OVERFLOW TUBING

1. Locate the rubber grommet, tube adaptor and tube clamp (see Fig. 16) that are in the parts bag.
2. Push the grommet into the hole in the salt tank wall so half is inside and half is outside.
3. Push the bigger end of the tube adaptor into the grommet.
4. Push one end of a length of 3/8" I.D. tubing onto the tube adaptor, using the tube clamp to hold it in place.
5. Put the other end of the tubing over the floor drain.

**IMPORTANT: Overflow water must run downward through the tubing. Do not raise the tubing higher than the grommet and tube adaptor. See Fig. 16.**

**IMPORTANT: Do not connect to the valve drain hose you installed in step 1. Both drains must have a separate hose or tube.**

**NOTE: Overflow drain tubing is available from Sears. See parts list in back of manual.**

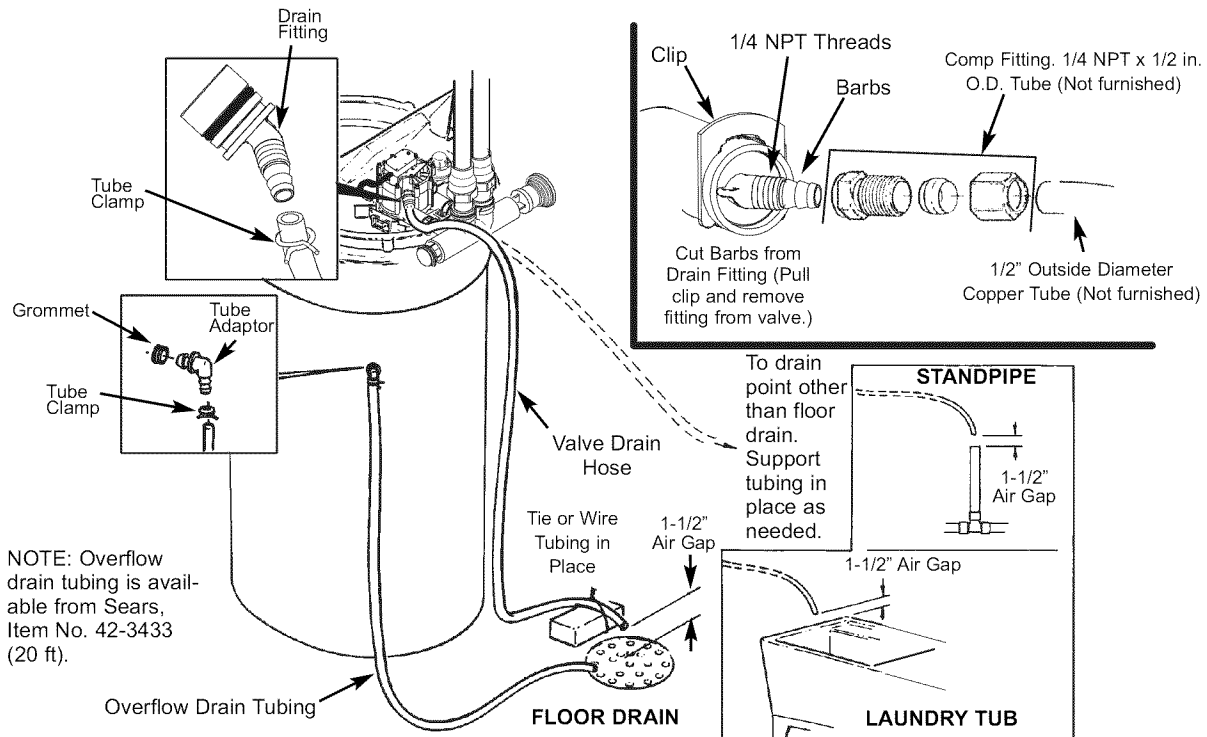


FIG. 16

Questions? Call The Kenmore Water Line 1-800-426-9345

# Leak Test

## LEAK TEST

To check for leaks, complete the following steps:

**CAUTION:** To avoid water or air pressure damage to softener inner parts, and to flush pipe chips or other residue from the water pipes, be sure to do the following steps exactly as instructed.

1. Fully open two cold, soft water faucets near the softener.
2. Look at the pictures in Fig. 18 and 19 to determine your kind of bypass valve(s). Place bypass valve(s) in "bypass" position. On a single valve, slide the stem inward to bypass. On a three (3) valve system, close the inlet and outlet valves and open the bypass valve.
3. **Fully open** the house main water pipe shutoff valve. Observe steady water flow from both open faucets.
4. Place bypass valve(s) in SERVICE **EXACTLY** as follows: **Keep soft water faucets open.**
  - a. **Single Bypass Valve:** **Slowly**, slide pull the valve stem outward toward *service*, pausing several times to allow the softener to pressurize slowly.
  - b. **Three Valve Bypass:** Fully close the bypass valve and open the outlet valve. **Slowly**, open the inlet valve, pausing several times to allow the softener to pressurize slowly.
5. **After about three minutes, open a hot water faucet for about one minute, or until all air is expelled, then close.**
6. **Close both cold water faucets.**
7. Check your plumbing work for leaks and fix right away if any are found. **Be sure to observe previous caution notes.**

**NOTE:** If this procedure is performed on a new softener, water coming from the taps may initially be discolored. This normally occurs the first time water runs through the resin bed. The discolored water is not harmful, and the discoloration will not last more than a few minutes.

## HOUSE MAIN WATER SHUTOFF VALVES

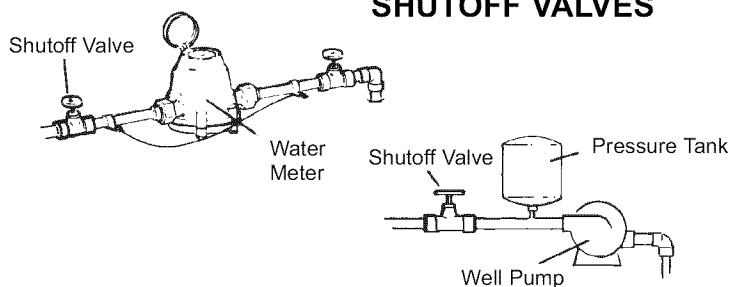


FIG. 17

## SINGLE BYPASS

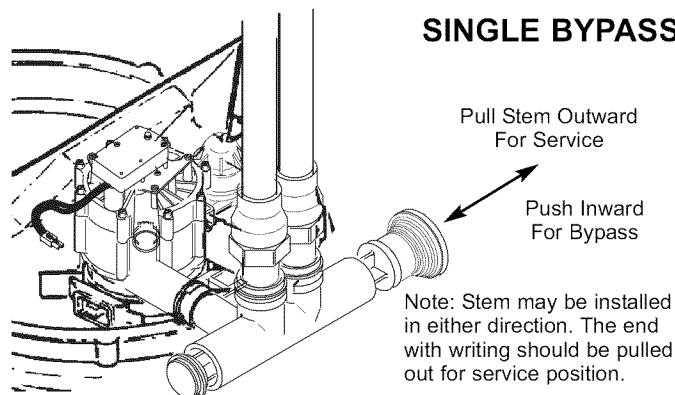


FIG. 18

## VALVE BYPASS

**FOR SERVICE**  
Close bypass valve.  
Open inlet & outlet valves.

**FOR BYPASS**  
Open bypass valve.  
Close inlet & outlet valves.

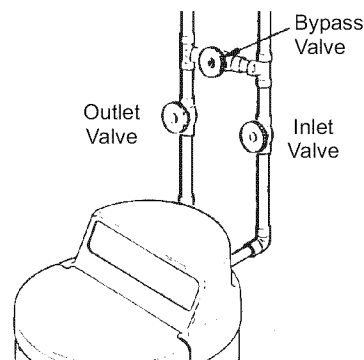


FIG. 19

# Electrical Requirements

## INSTALL GROUNDING CLAMP BETWEEN THE SOFTENER IN AND OUT PIPES

The house cold water pipe (iron or copper) is often used to ground all electrical outlets in the home. Outlets are grounded to protect you from shock when you touch any electric appliance plugged into the outlet. If you installed the single bypass valve, the cold water pipe ground is broken. See Fig. 20 and 21.

**IMPORTANT:** Be sure the cold water pipe has direct metal to metal contact all the way to the ground. Plastic, rubber or other electrically insulating parts such as hoses, fittings, washers or gaskets can break the direct metal to metal contact. Also check the water meter (city water) or the well pump. Install #4 copper jumper wires, clamped tightly on both ends, across insulated parts. See Fig. 21.

To restore the ground, take the ground clamp kit that is in the parts bag. Install across the inlet and outlet copper tubes. See Fig. 20. Be sure good contact is made between the pipe and the clamps.

## ELECTRICAL POWER OUTLET FOR YOUR SOFTENER

The softener works on 24 volt, 60 Hz electric power. The included transformer changes standard 120 volt AC house power to 24 volts. You must plug the transformer into a grounded, 120 volt outlet only. Be sure the outlet is always "live" so someone cannot turn it off by mistake. See Fig. 22.

Note: The included transformer is made for *inside use only*. Be sure the electrical outlet you plug the transformer into is inside, to protect from weather.

## PLUG IN THE TRANSFORMER

Plug the transformer into the electrical outlet.

## COLD WATER PIPE GROUNDING

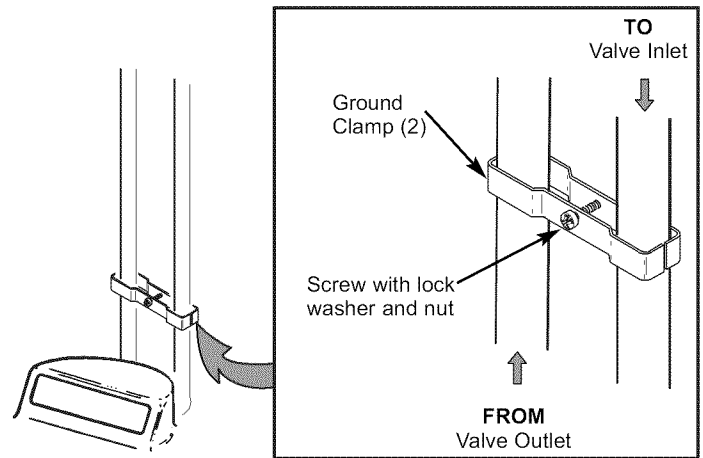


FIG. 20

## WATER METER JUMPER WIRE

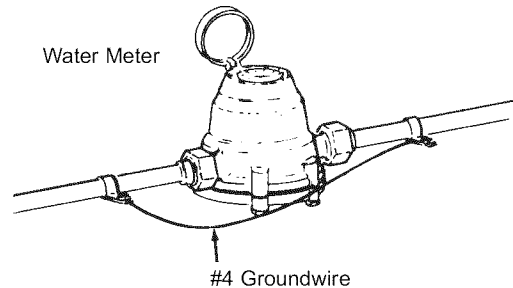


FIG. 21

## CONNECTING TRANSFORMER

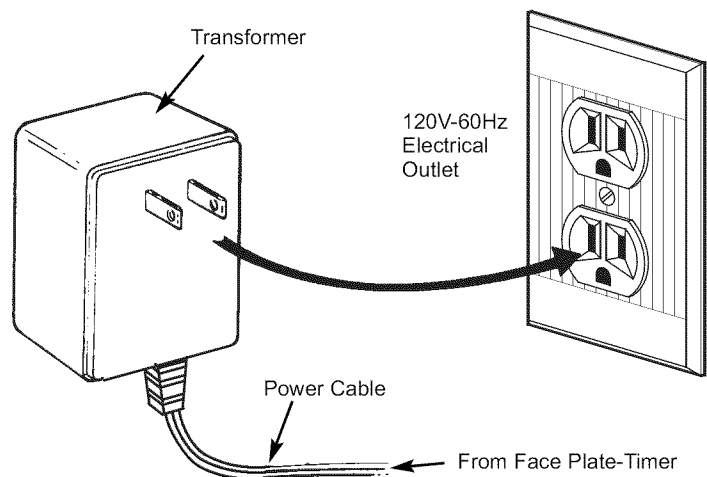


FIG. 22

Questions? Call The Kenmore Water Line 1-800-426-9345

# Install Covers and Restart Water Heater

## INSTALL COVERS

After installing your water softener, replace the covers. Angle the covers so the main cover clips onto the back first, then bring down in front and clip on the two (2) tabs inside the rim of the salt hole and lower the salt cover closed. See Fig. 23.

## RESTART THE WATER HEATER

Turn on the gas (or electric) supply to the water heater and light the pilot.

**YOUR PLUMBING INSTALLATION AND ELECTRICAL WORK ARE NOW COMPLETE.**

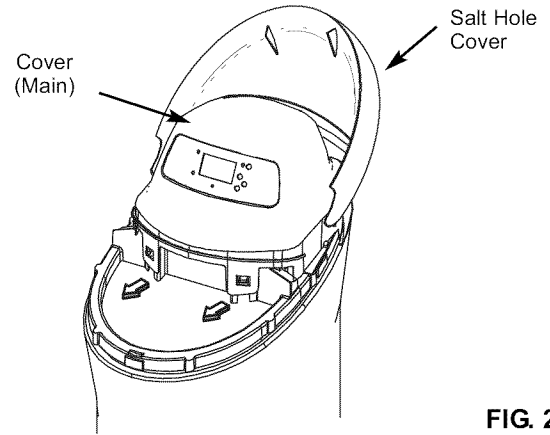


FIG. 23

# Program The Timer

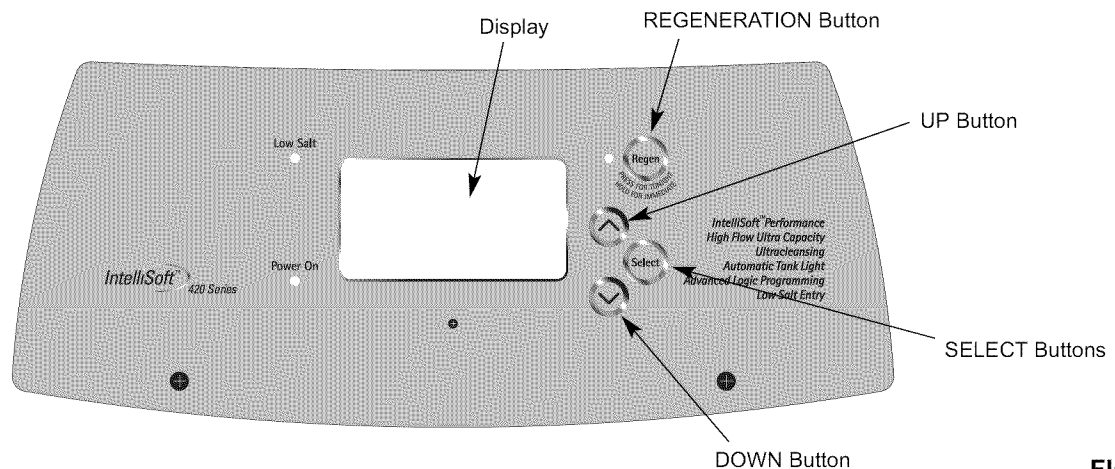


FIG. 24

## PROGRAM THE TIMER

1. When the transformer is plugged in, a model code (H46) and a test number (example: G1.1) show in the face plate display for 4 seconds. Then, 12:00 AM and **PRESENT TIME** begin to flash.

**NOTE: If “- - -” shows in the display, press the UP or DOWN button until H46 shows in the display. Then, press the SELECT button to set, and change to the flashing PRESENT TIME display.**

2. To check the model code, unplug the transformer at the wall outlet and plug in again. **If other than H46 shows, refer to the Troubleshooting Section.**

**SOUND “BEEPER”:** A “beeper” sounds while pressing buttons for timer setup. One beep signals a change in the face plate display. Repeated beeps mean the timer will not accept a change from the button you have pressed, telling you to use another button. For example, while setting the hardness the beeper sounds repeatedly when the display reaches 1 using the DOWN button, or the highest hardness setting using the UP button.

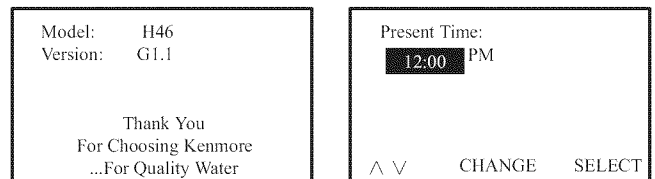


FIG. 25

Questions? Call The Kenmore Water Line 1-800-426-9345

# Program The Timer

## SET PRESENT TIME OF DAY

If the words *PRESENT TIME* do not show in the display, press the SELECT button until they do show in the display. Press the UP or DOWN buttons to set the present time. Press UP to move the display ahead; press DOWN to move the time backward. If the present time is between noon and midnight, be sure PM shows. If the present time is between midnight and noon, be sure AM shows. Each press of the UP or DOWN buttons changes the time by one (1) minute. Holding the buttons in changes the time rapidly.

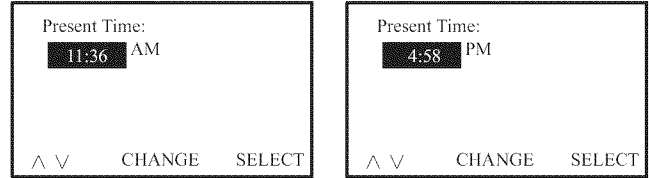


FIG. 26

## SET WATER HARDNESS NUMBER

To set the water hardness number, complete the following steps:

1. Press the SELECT button once to display 25 (flashing) and *HARDNESS*. The grains per gallon (gpg) hardness of your water supply is on your water analysis report. Be sure to enter water test results on the Facts & Figure Chart on page 3.
2. 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.*

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

3. Press the UP or DOWN buttons to set your water hardness number in the display. The DOWN button moves the display to 1. The UP button moves the display to the highest setting (see maximum setting for your model in the specifications).

**NOTE:** Each press of the UP or DOWN button changes the display by 1 between 1 and 25. Between 25 and the highest number, the display changes 5 at a time (25, 30, 35, etc.) Holding the UP or DOWN button in changes the display twice each second.

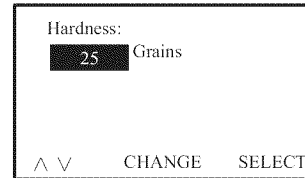


FIG. 27

# Program The Timer

## SET REGENERATION TIME

To complete setting the regeneration time, complete the following steps:

1. Press the SELECT button to display 2:00 AM (flashing) and RECHARGE TIME.
2. At the 2:00 AM recharge time setting, the softener begins regeneration (see pages 29 - 31) at 2:00 AM. This is a good time in most households because water is not being used. If a different recharge time setting would be better for your household, complete the following step.
3. Press the UP or DOWN buttons to set the desired recharge starting hour. Be sure to observe the AM-PM as you did when setting the present time of day.  
**Note: Each press of the UP or DOWN buttons changes the display one hour. Holding the buttons in changes the display twice each second.**

4. Press the SELECT button once again, to complete initial programming, and the current time of day shows in the display.

Normal Operating Screen has several useful items that can be viewed at a glance. The black bars on the left column display the amount of salt in the storage tank. The present time is shown in the upper right hand corner. Options are shown in the top center of the display. If the unit is going to recharge tonight or is in a recharge, this is shown. By pressing the Up arrow displays the "More" screen.

"More" Screen shows the water used today, average daily use, average pounds of salt used per recharge and recharge count. If the recharge count is reset to zero, the average pounds of salt per recharge is reset also.

PROGRAM MEMORY If electrical power to the softener goes off, the time display is blank but the face plate timer keeps the correct time for about 72 hours. When electrical power comes on again, you have to reset the present time only if the Set Present Time display is showing. The HARDNESS and RECHARGE TIME never require resetting unless a change is desired. Even if the timer is incorrect after a long power outage, the softener works as it should to keep your water soft. However, regenerations may occur at the wrong time of day until you reset the timer to the correct time of day.

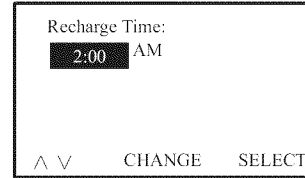


FIG. 28

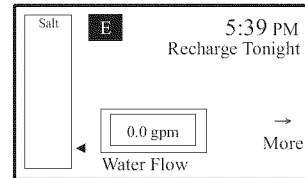


FIG. 29

# Sanitize The Water Softener

## SANITIZE THE WATER SOFTENER

Care is taken at the factory to keep your water softener clean and sanitary. Materials used to make the softener will not infect or contaminate your water supply, or cause bacteria to form or grow. However, during shipping, storage, installing and operating, bacteria could get into the softener.

### SANITIZE YOUR WATER SOFTENER AS FOLLOWS:

1. **Be certain the bypass valve is pulled out to "service" position.**
2. Lift the salt hole cover and use a pail add up to 3 gallons of water to the salt storage tank.
3. Remove the brine well cover (Fig. 30) and pour about 3/4 ounce, or 1 to 2 tablespoons, of common 5.25%, *unscented*, household bleach (Clorox, Linco, BoPeep, White Sail, Eagle, etc.) in the softener brine well. Replace the brine well cover.
4. Press the **REGENERATION** button and *hold for 3 seconds*, until the RECHARGE screen is displayed and the green recharge LED is flashing. This recharge draws the sanitizing bleach into and through the water softener to sanitize it. Any air remaining in the unit is purged to the drain.
5. 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.

**NOTE:** This recharge takes about 2-1/2 to 2-3/4 hours, depending on the salt type setting.

**NOTE:** During a recharge the water softener bypasses raw water to the home. You will not get salty water or affect the regeneration cycle if water is used at this time.

You can sanitize the softener *with or without* salt in the storage tank.

<sup>1</sup> Recommended by the Water Quality Association.

On some water supplies, the water softener may need periodic disinfecting.

Your new Sears softener is now softening the water for your household needs. However, your **WATER HEATER is filled with hard water**. To have fully soft water right away, you can drain the water heater so it refills with soft water. If you don't drain the water heater, it will take a few days before you have fully soft water.

To drain the water heater, open a hot water faucet and let it run until the water runs cold. Then close the faucet.

**NOTE:** If this procedure is performed on a new softener, water coming from the taps may initially be discolored. This normally occurs the first time water runs through the resin bed. The discolored water is not harmful, and the discoloration will not last more than a few minutes.

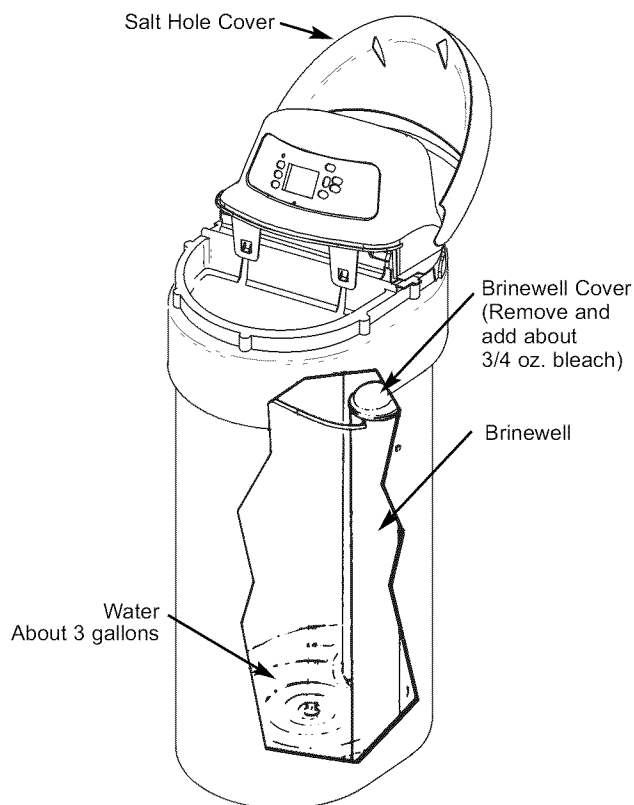


FIG. 30

Questions? Call The Kenmore Water Line 1-800-426-9345

# Adding Salt To The Storage Tank

## ADDING SALT TO THE STORAGE TANK

Brine (salt dissolved in water) is needed for each and every regeneration. The water for making brine is metered into the salt storage tank by the softener. You must keep salt in the tank, but because the water softener is very efficient, it is not necessary to keep it full.

**Especially in humid areas**, it is best to fill the storage tank one quarter to one half full, and to add salt more often. Salt bridging occurs more often when conditions are humid.

Use NUGGET or PELLET water softener salt. DO NOT use rock salts, as they have dirt and sediments that will stop the softener from working. To maintain optimum performance of your water softener, the salt tank should be cleaned out every 2 to 3 years.

Before adding salt, be sure the brinewell cover is in place on the top of the brinewell. It is recommended to set the salt monitor system, although it is not required for proper operation.

**NOTE: The salt monitor system is calibrated to the density of nugget or pellet water softener salt. The monitor will not work as accurately with other types of salt including rock and solar.**

If you choose Potassium Chloride (KCl) as a regenerant, following these suggestions will help give you years of maintenance free service.

1. Place only one bag of KCl in your softener at a time (the salt storage tank should contain no more than 60 pounds of KCl at any one time).
2. A softener using KCl should not be placed in areas with temperature fluctuations and high humidity (KCl will harden in these environments and may make the softener inoperable).
3. Check the brine tank and brine well (black tube in salt storage tank) monthly. If hardening is present, pour small amounts of warm water on hardened areas until they loosen.

Persons who are on sodium restricted diets should consider the added sodium as part of their overall sodium intake. For example, if your water supply is 15 grains hard, and you drank 3 quarts of softened water you would consume 335 milligrams of sodium. That is equivalent to eating 2-1/2 slices of white bread.

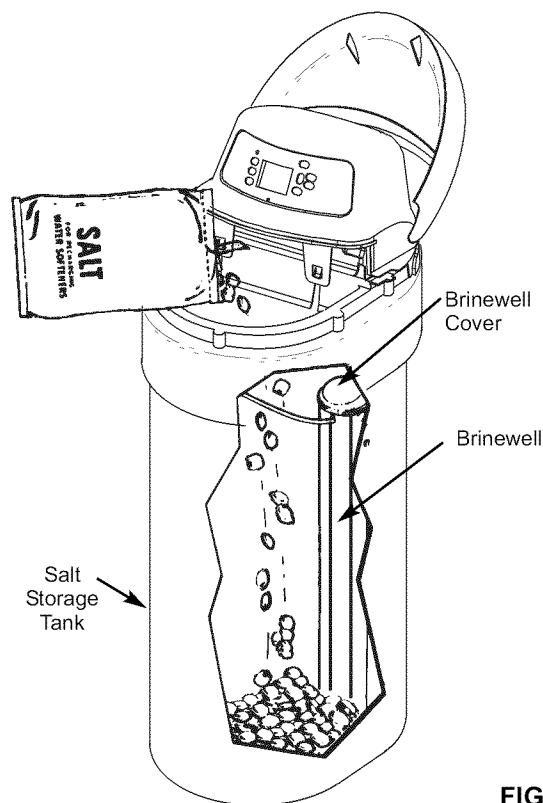


FIG. 31

## WATER SOFTENING SALT WITH IRON REMOVING ADDITIVES

Some salts have an additive to help the softener handle iron in the water supply. These salts may be used if your water supply has a high iron content. It is recommended to use Sears Resin Bed Cleaner (refer to the Parts List in back of manual for part number) for periodic treatments to keep your resin bed clean. This is available at your local Sears store.

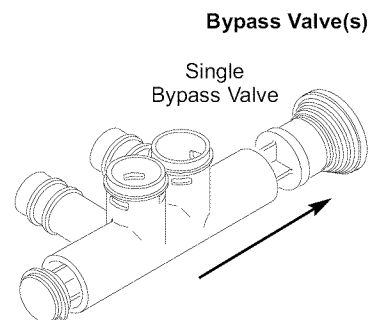
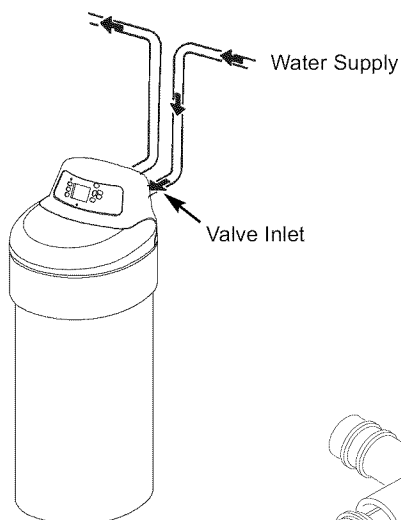
Persons who are concerned about their drinking water should consider a Kenmore Drinking Water System that will remove or reduce in excess of 90% of the sodium and other drinking water contaminants.

# Check List

## CHECK LIST OF STEP-BY-STEP GUIDES TO INSTALL

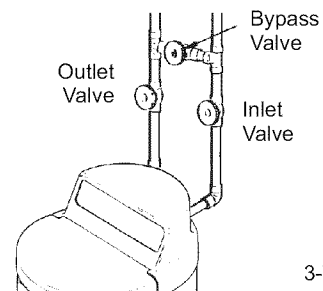
Review the following list to ensure you have completed all the installation procedures.

- \_\_\_ 1. Check the incoming water. Has incoming water been tested?
- \_\_\_ 2. Remove cardboard packaging from salt tank.
- \_\_\_ 3. Is the incoming water going to the valve inlet?
- \_\_\_ 4. Is the bypass valve placed into the service position?
- \_\_\_ 5. Is the ground clamp installed?
- \_\_\_ 6. Are the drain lines clamped and secured?
- \_\_\_ 7. Is the unit plugged into a continuously live outlet?
- \_\_\_ 8. Has salt been added to the salt tank?
- \_\_\_ 9. Has the unit been sanitized? See page 20.



Note: Stem may be installed in either direction. The end with writing should be pulled out for service position.

**FOR SERVICE**  
Close bypass valve.  
Open inlet & outlet valves.



**FIG. 32**

# Faceplate Timer Features

## EXTRA RECHARGE

Sometimes, a manually started regeneration (recharge) 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 timer started regeneration.
- You did not refill the softener with salt before it was gone. Add salt to the softener before regenerating.

You can start a regeneration right away, or you can set the timer to regenerate at the next 2:00 AM (or other pre-set recharge time).

## RECHARGE NOW

Press the REGENERATION button and hold until \*RECHARGE screen shows in the display and the green recharge LED is flashing. This screen shows the regeneration time and cycle time remaining. After regeneration, you will have soft water again.

**\* NOTE: If the CLEAN feature is set to ON, a cleaning backwash (CLEAN and BkwsH or Rinse flashes in the display, along with the minutes of the clean cycle remaining) precedes the recharge.**

## RECHARGE TONIGHT

Press and release (do not hold) the REGENERATION button. RECHARGE TONIGHT flashes in the display, the green recharge LED is on and the softener begins regeneration at the next preset recharge time. Press and release the REGENERATION button once more if you decide to cancel the regeneration, RECHARGE TONIGHT will no longer be displayed on the screen and the green recharge LED will turn off.

## MENU SELECTIONS:

The timer has menu driven programming. To get to the main menu from the normal operating screen view, press the SELECT button. Once in a menu, pressing the UP or DOWN buttons will move the black bar over the menu choices, and pressing the SELECT key will enter the individual menus which are described below. By placing the black bar over the word "Back" and pressing SELECT, will move back one screen. By placing the black bar over the word "Exit" will return the screen to the normal operating screen.

## SETTINGS:

In this menu, changes can be made to Language, Present Time, Hardness and Recharge Time.

Language for all screens can be in English, Spanish or French. Move the black bar to Language, and press SELECT. Move black bar over your choice and press SELECT. Screen returns to Settings Menu.

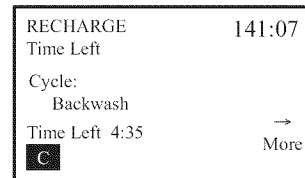


FIG. 33

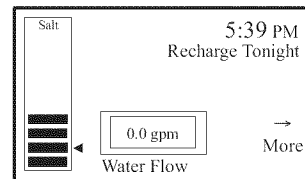


FIG. 34

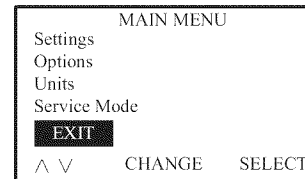


FIG. 35

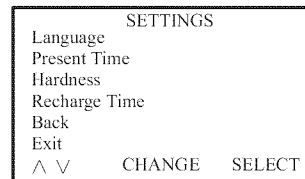


FIG. 36

# Faceplate Timer Features

Language for all screens can be in English, Spanish or French. Move the black bar to Language, and press SELECT. Move black bar over your choice and press SELECT. Screen returns to Settings Menu.

**NOTE: If Language has been mistakenly changed, press SELECT button until you see English, Español and Français in the display. The maximum number of presses is six and it could be fewer depending on which screen was displayed. Use the UP or DOWN arrows to place the black bar over language desired. Press SELECT twice to return to normal operating screen.**

Present Time changes the current time of the faceplate. Be sure to have correct AM or PM time, or softener will recharge at the wrong time of day. One press of the UP or DOWN button changes the time by one minute intervals. Press and hold either the UP or DOWN arrow, to scroll through the time at a faster rate.

Hardness changes the hardness setting. Default is 25. Pressing the UP or DOWN button changes the number by one. Once correct number is shown, press SELECT to change to new setting.

Recharge Time is the when the softener is scheduled to start a recharge. Default is 2:00 AM. Using the UP or DOWN arrows changes the time by one hour increments. When the desired time is shown, press SELECT to change and return to Settings menu.

## OPTIONS:

Choices are Salt Options, QuickCharge, Rinse Option and Recharge Count.

Salt Options has several selections:

When salt is added to tank, Salt Level must be changed to the new salt level in the tank. Use the UP or DOWN arrows to set. Observe the bars and the corresponding number value in the display. This number must match the number on the brine tube in the brine tank that the salt level is closest to. When the correct number is displayed, press the SELECT key. Screen will return to Salt Options screen. The salt monitor is an estimate of your salt level; accuracy depends on type of salt used and regeneration characteristics.

**NOTE: The display automatically defaults to this screen and the tank light turns on when the salt cover is opened on the softener and returns to normal operating screen when salt cover is closed.**

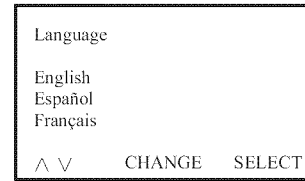


FIG. 37

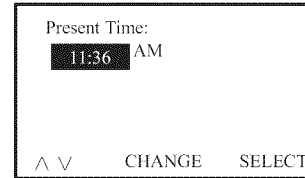


FIG. 38

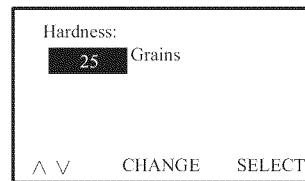


FIG. 39

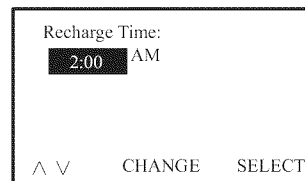


FIG. 40

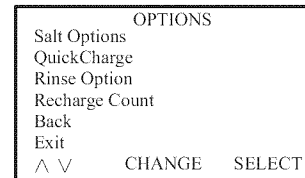


FIG. 41

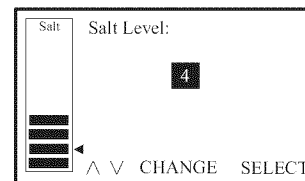


FIG. 42

# Faceplate Timer Features

Salt Alert Level is the level at which you want your softener to signal that the salt level is low. When salt level drops to this point, the low salt LED will flash on the faceplate. Move the small cursor up or down by pressing the UP or DOWN arrows and observe the number in the display. When the correct number is displayed, press the SELECT key. Screen will return to Salt Options screen.

**NOTE: This warning will indicate the softener's inability to reduce barium and radium 226/228 efficiently. Changing the Salt Alert Level to less than 2 will void the proper function of this indicator.**

Salt Type allows you to choose between sodium chloride (NaCl), which is regular softener salt, or potassium chloride (KCl), which is an alternative to sodium chloride. KCl should be used in accordance to the following steps to help give you years of maintenance free service.

1. Place only one bag of KCl in your softener at a time (the salt storage tank should contain no more than 60 pounds of KCl at any one time).
2. A softener using KCl should not be placed in areas with high temperature changes or high humidity (KCl will harden in these environments and may make the softener inoperable).
3. Check the brine tank and brinewell (black tube in salt storage tank) monthly. If hardening is present, pour small amounts of warm water on hardened areas until they loosen.
4. Be sure to set the correct salt type depending on which salt type is used (NaCl or KCl). Use the UP or DOWN arrows to toggle between NaCl or KCl and press SELECT to enter information and return to Salt Options screen.

**NOTE: If KCl is selected the normal operating screen will display KCl in the lower right hand corner of the display.**

Salt Efficiency has three options.

High Performance, Salt Efficient and Max. Salt Efficient.

Using Sodium Chloride (NaCl) with these options, High Performance allows the softener to operate at a normal efficiency rate. This is good for households with high water usage. At the Salt Efficient setting, the softener operates at a minimum of 4,000 grains per pound of salt and set at Max. Salt Efficient, the softener operates at a minimum of 4,250 grains per pound of salt. Use the UP or DOWN arrows to move the black bar over your choice. Press SELECT, and a warning screen will appear. Changing this setting will affect performance. Choose either Cancel or Accept. Display will return to Salt Options menu, press SELECT once more to return to normal operating screen. An "E" will be displayed on the screen if either Salt Efficient or Max. Salt Efficient is selected.

**NOTE: The state of California requires a setting of Salt Efficient or Max. Salt Efficient.**

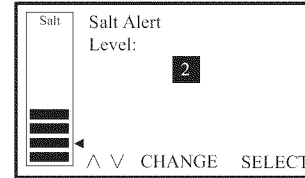


FIG. 43

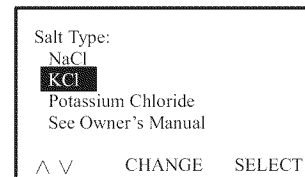


FIG. 44

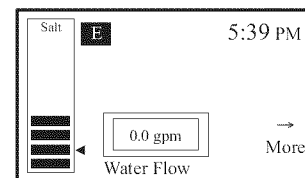


FIG. 45

# Faceplate Timer Features

The QuickCharge option is an integral part of the IntelliSoft water and salt saving system. When this option is selected, the softener will automatically recharge if 95% of capacity has been unexpectedly used and there is less than 1/2 gpm flow. The recharge will last 30 minutes and give the softener approximately 5,000 grains capacity. The softener will also run through a normal recharge cycle that night. Move the black bar over On or Off and press SELECT. Display will return to Salt Options menu, press SELECT once more to return to normal operating screen. A "Q" will be displayed on the normal operating screen if this option is chosen. The QuickCharge option is ON when the softener leaves the factory.

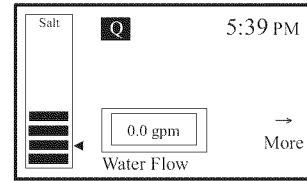


FIG. 46

Rinse Option has three choices.

WaterSaver reduces by 20% the amount of water used during regeneration. This option should only be used if feed water is from a municipal supply, 8 grains of hardness maximum, and no iron present. At Normal setting the softener operates at normal water usage for regenerations, and Clean Feature adds an extra backwash and fast rinse in the regeneration cycle. Clean feature may be used when feed water has higher sediment or iron content. Default setting is "Normal". Move the black bar over choice and press SELECT. Display will return to Salt Options menu, press SELECT once more to return to normal operating screen. A "W" or "C" will be displayed on the normal operating screen if WaterSaver or Clean Feature option is chosen.

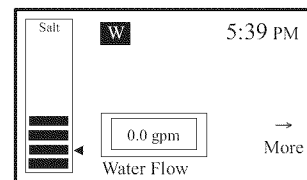


FIG. 47

Recharge Count keeps track of the number of recharges, either from initial set up, or since last reset. Use the UP or DOWN arrows to move the black bar over Yes or No and press SELECT. On the "More" screen, Avg. Salt/Rchg is reset to 0 also, if yes is selected. Display will return to Salt Options menu, press SELECT once more to return to normal operating screen.

## UNITS:

Choices are 12/24 Hour Clock, Gallons/Liters, Grains/PPM and Pounds/Kilograms.

12/24 Hour Clock option allows you to choose how the time is displayed on the normal operating screen. Move the black bar over 24 Hour or 12 Hour and press SELECT. Display will return to Units menu, press SELECT once more to return to normal operating screen. If 12 Hour clock is chosen, an AM or PM will be displayed, be sure that time is correctly set for AM or PM.

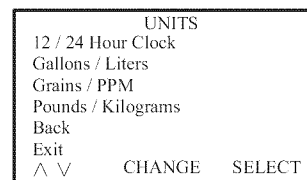


FIG. 48

Questions? Call The Kenmore Water Line 1-800-426-9345

# Faceplate Timer Features

Gallons/Liters option allows you to choose how the water usage is displayed on the normal operating screen. Move the black bar over Gallons or Liters and press SELECT. Display will return to Units menu, press SELECT once more to return to normal operating screen. Display will show either “lpm” for liters per minute or “gpm” for gallons per minute.

Grains/PPM option allows you to choose either grains or parts per million. Move the black bar over Grains or PPM and press SELECT. Display will return to Units menu, press SELECT once more to return to normal operating screen. All settings will be measured in grains or parts per million.

Pounds/Kilograms option allows you to choose either pounds or kilograms of salt used. Move the black bar over Pounds or Kilograms and press SELECT. Display will return to Units menu, press SELECT once more to return to normal operating screen.

## **SERVICE MODE:**

Choices are Time Options, Diagnostics, Set Model and Factory Defaults.

Time Options has several selections. Clean Time, Backwash Time, Fast Rinse Time and Max Days/Recharges can be modified to different time settings. Use the UP or DOWN arrows to change the number of minutes desired for each cycle and press the SELECT key. Screen returns to Time Options menu. Press SELECT once more to return to normal operating screen.

Diagnostics is a view only screen that displays information about the softener. What position the valve is in, if the motor is on or off, is the position switch open or closed, is some of the information on this screen.

Set Model screen changes the model code from either H46 or H47 to HF45. H46 or H47 are the required codes for your softener to function properly.

Factory Defaults resets all settings. You must reprogram the timer to any customized settings if this option is used.

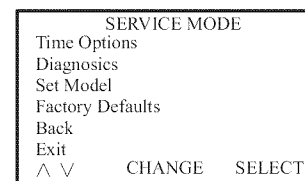


FIG. 49

# Faceplate Timer Features

## KENMORE'S ULTRA CLEANSING FEATURE

The ultra 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 ultra cleansing feature provides added protection for water using appliances by reducing the chance of larger particles entering the various products valves and screens. The "Rinse Option" may be turned to "Clean Feature" to provide an extra backwash that will help keep the ultra cleansing screen clean. The default is "Normal". See Page 26.

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

Sears offers a full line of dedicated sediment filtration products.

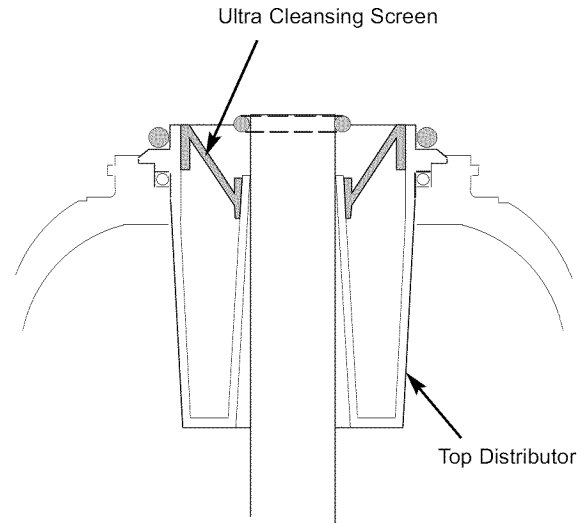


FIG. 50

# How Your Water Softener Works

## SOFT WATER SERVICE AND REGENERATION

### SERVICE

When the softener is giving you soft water, it is called "Service". During service, hard water comes from the house main water pipe into the softener. Inside the softener resin tank is a bed made up of thousands of tiny, plastic resin beads. As hard water passes through the bed, each bead attracts and holds the hardness minerals. This is called ion exchanging. Water without the hardness minerals (soft water) flows out of the softener and into the house soft water pipes. After a period of time, the resin beads hold all of the hardness minerals they can, and cleaning with salt brine is needed. This cleaning is called regeneration or recharge. Regeneration is started at 2:00 a.m. by the electronic timer. It takes place in 5 stages or cycles.

- These are:
1. Fill
  2. Brining
  3. Brine Rinse
  4. Backwash
  5. Fast Rinse

**NOTE:** If the Clean Feature is set to "On", additional backwash and fast rinse cycles occur before the fill cycle.

### REGENERATION

The five steps listed above are described in detail over the next several pages.

**FILL:** Salt, dissolved in water, is called brine. Brine is needed to clean the hardness minerals from the resin beads. To make the brine, water flows into the salt storage area during the fill stage. Fill cycle length depends on how much soft water making capacity you have used since the last regeneration. As you use more water, fill time increases so more brine is made. The greater amount of brine cleans more hardness minerals from the resin bed.

## WATER FLOW THROUGH THE SOFTENER IN SERVICE

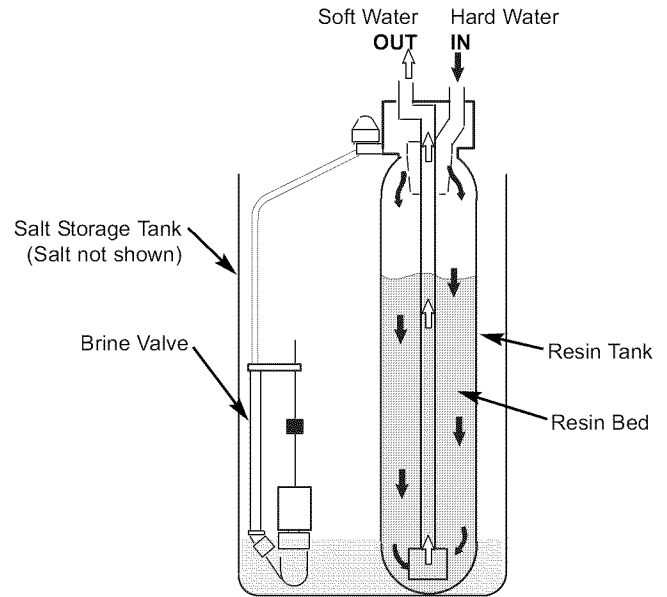


FIG. 51

## WATER FLOW THROUGH THE SOFTENER IN FILL

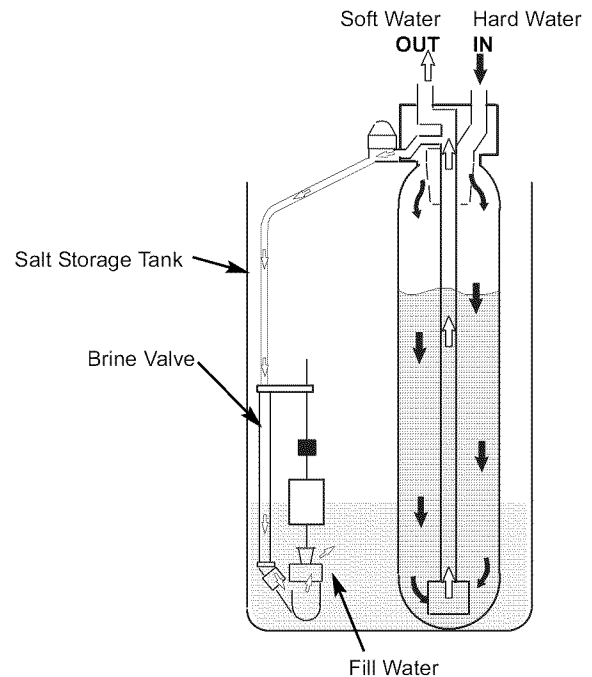


FIG. 52

# How Your Water Softener Works

## SOFT WATER SERVICE AND REGENERATION

**BRINING:** During brining, the brine is moved from the salt storage area, into the resin tank. Inside the resin tank, brine cleans hardness minerals from the resin beads and they are discharged out the drain. How much brine is needed to clean the resin depends on:

- The amount of water used between regenerations.
- The amount of resin in the softener,
- How fast the brine goes through the bed.

The nozzle and venturi makes suction to take brine from the salt tank and put it into the resin tank. They keep the brine flow down to a very slow rate to get the best resin cleaning with the least salt.

**BRINE RINSE:** After all of the brine is moved into the resin tank, the brine valve closes. Water keeps flowing the same way it did during brining except the brine flow has stopped. Hardness minerals and brine flush from the resin tank to the drain. Brining and brine rinse together vary in the length of time they take, relative to the fill cycle length.

**BACKWASH:** During backwash, water flows UP through the resin tank at a fast rate to flush iron minerals, dirt and sediments from the bed and to the drain. The bed lifts and expands for good cleaning.

## WATER FLOW THROUGH THE SOFTENER IN BRINING AND BRINE RINSE

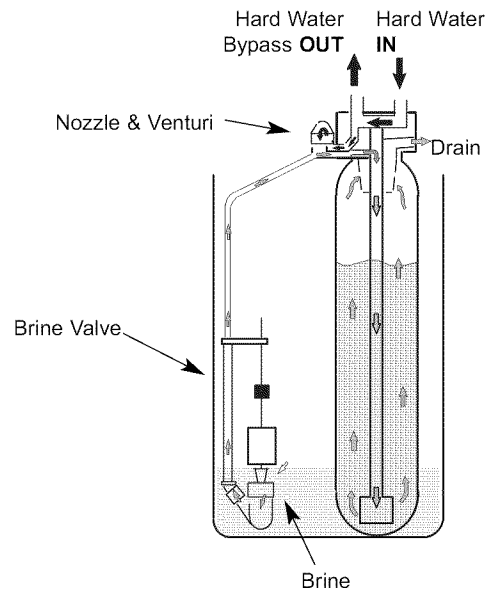


FIG. 53

## WATER FLOW THROUGH THE SOFTENER IN BACKWASH

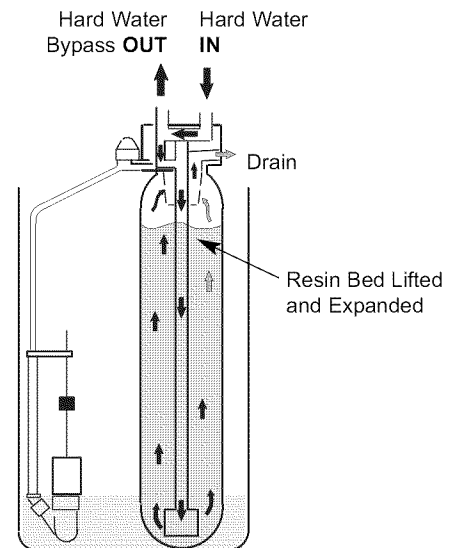


FIG. 54

Questions? Call The Kenmore Water Line 1-800-426-9345

# How Your Water Softener Works

**FAST RINSE:** Backwash is followed by a fast flow of water down through the resin tank. The fast flow packs the resin bed and gets it ready for return to service.

After fast rinse, the softener returns to service. Hard water goes into the resin tank where the resin bed again takes out the hardness minerals. Soft water goes to the house soft water pipes.

## SOFT WATER SERVICE AND REGENERATION

### AUTOMATIC BYPASS

During the brining, brine rinse and backwash cycles of regeneration, **HARD** water goes through the softener valve and to the house pipes. If a faucet is opened, hard water is there for your needs. However, you should not use hot water, if possible, because the water heater will refill with hard water. The softener, as factory programmed, regenerates from 2:00 AM to about 4:20 AM, a time when not much water is used.

If you start your day prior to 4 AM, you may need to change the recharge starting time. Set the recharge time to 12:00 AM or 1:00 AM. Then regeneration will start and end that much earlier and your water heater will not refill with hard water if a hot faucet is opened.

### ELECTRONICS

Two main parts of the softener's electronics are: a **WATER METER**, and a **COMPUTER**.

- **WATER METER** The water meter is in the softener valve outlet. As water flows through the meter, it sends electric pulses to the computer. The computer changes the pulses to a measure in gallons of water.
- **COMPUTER** The computer is part of the faceplate timer circuit board. It is programmed to know the softener's capacity (how many grains of hardness minerals it will take out of the water before a regeneration is needed). When starting the softener, you set it for the grains per gallon (gpg) hardness of the water.

To find a regeneration pattern best for your needs, the computer uses:

- (1) water usage from the meter
- (2) hardness setting
- (3) softener capacity
- (4) time since the last regeneration.

The computer always adjusts this pattern to your water using habits. It works toward providing you with soft water for the longest time and at the most efficient salt usage.

## WATER FLOW THROUGH THE SOFTENER IN FAST RINSE

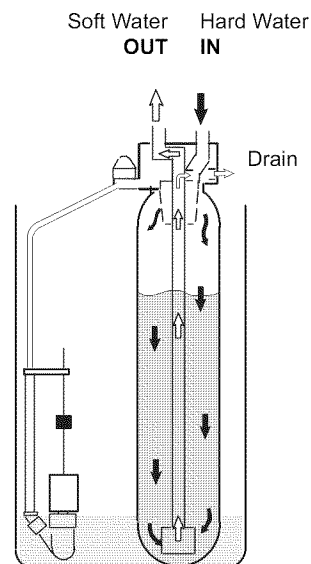


FIG. 55

Softening capacity is used as hard water goes through the softener and hardness minerals are removed. When the computer determines that only enough capacity remains to provide soft water up to the next regeneration starting time (2:00 AM, or as otherwise set) it will schedule a regeneration. When the regeneration begins, \***RECHARGE** or **RECHARGE TIME REMAINING** flashes during the regeneration.

\* **Note:** If the **CLEAN** feature is set to **ON**, a cleaning backwash (**CLEAN** and **Bkwsh** or **Rinse** flashes in the display, along with the minutes of the clean cycle remaining), precedes the recharge.

# Care Of Your Water Softener

## SALT BRIDGE

Sometimes, a hard crust or salt bridge forms in the salt storage 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 salt. Then salt will not dissolve (melt) in the water to make brine. Without brine, the resin bed does not regenerate and you will have hard water.

If the storage tank is full of salt, it is hard to tell if you have a salt bridge. Salt is loose on top, but the bridge is under it. The following is the best way to check for a salt bridge.

Salt should be loose all the way to the bottom of the tank. Hold a broom handle, or like tool, up to the softener as shown in Fig. 56. Make a pencil mark on the handle, 1" or 2" below the top height of the rim. Then, carefully push it straight down into the salt. If a hard object is felt before the pencil mark gets to the top of the tank, it's most likely a salt bridge. Carefully push into the bridge in a few places to break it. **Do not try to break the salt bridge by pounding on the outside of the salt tank. You may damage the tank.**

If the wrong kind of salt made the bridge, take it out. Then fill the tank with nugget or pellet salt only.

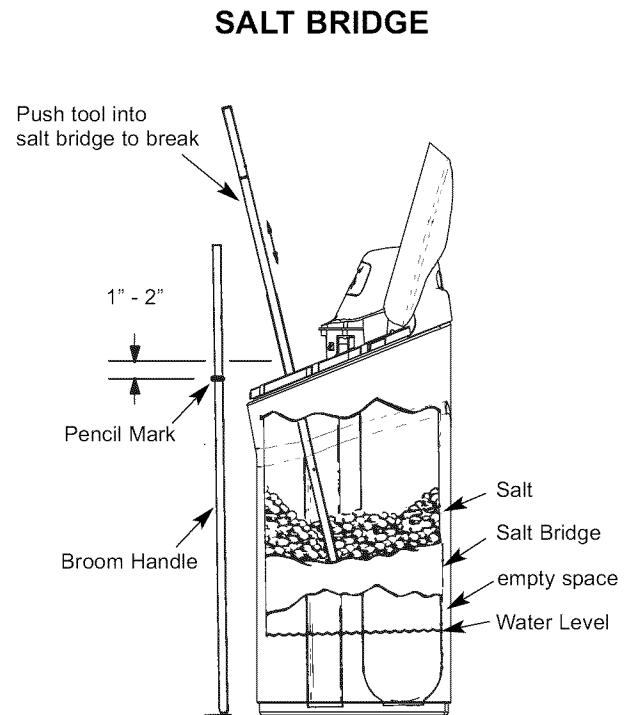


FIG. 56

# Care Of Your Water Softener

## KEEPING THE WATER SOFTENER CLEAN

### NOZZLE & VENTURI

A clean nozzle and venturi (see Fig. 57) is a must for the softener to work right. This small unit moves brine from the salt storage tank to the resin tank during regeneration. If it becomes plugged with sand, silt, dirt, etc., the softener will not work and you will get hard water.

To clean the nozzle and venturi, complete the following steps:

1. Remove the softener top cover. Be sure the softener is in service cycle (no water pressure at nozzle and venturi).
2. Turn off the cap from the nozzle and venturi housing.
3. Lift out the screen support and screen. Do not lose the large o-ring seal.
4. Remove the nozzle and venturi. Wash and rinse the parts in warm water until clean. If needed, use a small brush to remove iron or dirt. Also check and clean the gasket, flow plugs and screens.
5. Carefully replace all parts in the correct order.
6. Lubricate the o-ring seal with silicone grease or Vaseline and place in position.
7. Install and tighten the cap, **by hand only. Do not overtighten, which may break the cap or housing.**

### IRON FROM RESIN BED

Your water softener takes hardness minerals (calcium and magnesium) out of the water. It can also control some "clear water" iron. See maximum allowed in the specifications section in this manual. With clear water iron, water from a faucet is clear when first put into a glass. After 15 to 30 minutes, the water begins to cloud or turn rust colored. A water softener WILL NOT remove any iron which makes the water cloudy or rusty as it comes from the faucet (called red water iron). To take red water iron out of water, or over the maximum of clear water iron, an iron filter or other equipment is needed. Your local Sears store has trained people to help you with iron water problems.

If your water supply has clear water iron, even though less than the maximum allowed, regular resin bed cleaning is needed. Your local Sears store has resin bed cleaner for this. See Parts List in back of manual for part numbers. Clean the bed at least every six (6) months. If iron shows up in the soft water before six (6) months, clean more often. Printed instructions are on the resin bed cleaner bottle.

### Cleaning Nozzle & Venturi

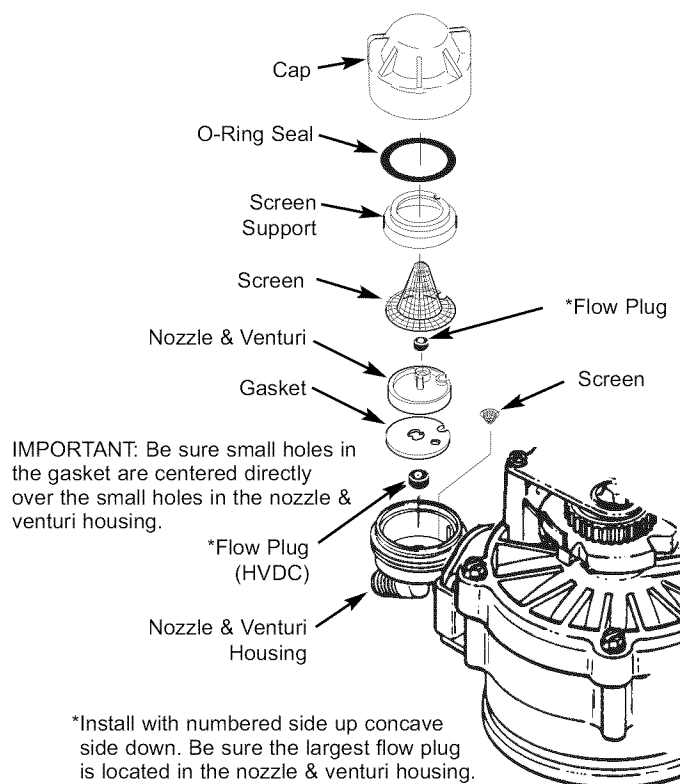


FIG. 57

# Care Of Your Water Softener

## 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 a 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 transformer at the wall outlet. Remove the salt hole cover and the main cover. Take off both drain hoses.
5. 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. Remove the brinewell cover and disconnect the brine valve tubing at the nozzle and venturi assembly. Lift the brine valve out of the brinewell. Tip the brine valve upside down to drain water.
7. Lay a piece of 2 inch thick board near the floor drain. Move the softener close to the drain. **SLOWLY and CAREFULLY**, 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 will 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 rags to keep dirt, bugs, etc. out.

## DRAIN ALL WATER FROM SOFTENER

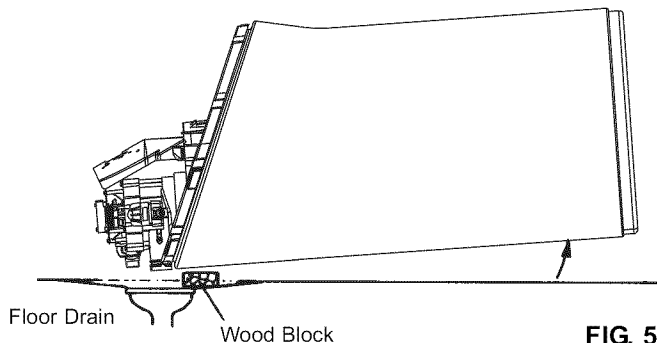


FIG. 58

# Care Of Your Water Softener

## CHECKLIST TO HELP YOU SAVE MONEY

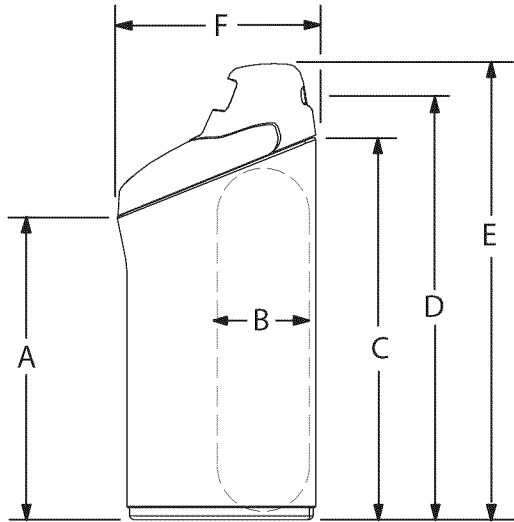
If your water softener fails to work, make the following easy checks. Often, you will find what is wrong yourself and you won't have to call and wait for service. If you do not find anything wrong, while making the checks, and your softener still does not work, call your Sears Service Department.

1. Also read ERROR CODE.
2. If an error code is not displayed, press and *hold* the SELECT button until the display changes. Then, press the SELECT button again and *hold* until a flashing model code appears. For Model No. 625.384260 it must show **H46**. If any other number shows, the face plate computer is working on incorrect input and would probably be the cause of the problem. **To set the correct code**, press either the UP or DOWN button. When correct model code (H46) shows, press SELECT to return a flashing 12:00 AM display. *Reset the present time, hardness number, etc.*

PROBLEM	CAUSE	CORRECTION
<b>No soft water</b>	No salt (or salt bridged) in the storage tank	Add salt, see page 21, or break the salt bridge, see page 29. Press REGENERATION button and hold to start a regeneration, see page 23.
	Transformer unplugged at the wall outlet, or power cable leads loose from the electronic board, fuse blown, circuit breaker popped, or circuit switched off.	Check for loss of power due to any of these and correct. With the power back on, look at the time display and read PROGRAM MEMORY, see page 19.
	Manual bypass valve(s) in bypass position	Look at Fig. 18 & 19 on page 15. Move the stem in a single valve to service. In a 3-valve bypass, open the inlet and outlet valve, and be sure to fully close the bypass valve.
	Dirty, plugged or damaged nozzle venturi	Take apart and clean or replace damaged parts, see page 33.
	Valve drain hose plugged or restricted	The drain hose must not have kinks, sharp bends, or be raised too high above the softener, see page 14.
<b>Water hard sometimes</b>	Hardness number setting too low	Press and release the SELECT button until HARDNESS shows in the display. Read the hardness number in the display and be sure the same grains per gallon number is shown as on your water analysis report. See page 18 to reset. Press and release the SELECT button until the present time shows in the display.
	Using hot water when softener is regenerating	Avoid using hot water during this time because the water heater refills with hard water, see Automatic Bypass, page 31.
	Increase in the grains of hardness in your water supply	Ask your Sears retail store for a new water analysis. Then make a new hardness number setting, page 18.
<b>Brine tank flooded</b>	Restricted drain line	Check for kinks, bends or obstructions, see page 14.
	Plugged or dirty nozzle & venturi	Take apart and clean or replace damaged parts, see page 33.
	Valve rotor-disc & seals	Check for scratches or grooves, replace if needed.
<b>Salty tasting water immediately after regeneration</b>	Restricted drain line	Check for kinks, bends or obstructions, see page 14.

Questions? Call The Kenmore Water Line 1-800-426-9345

# Specifications

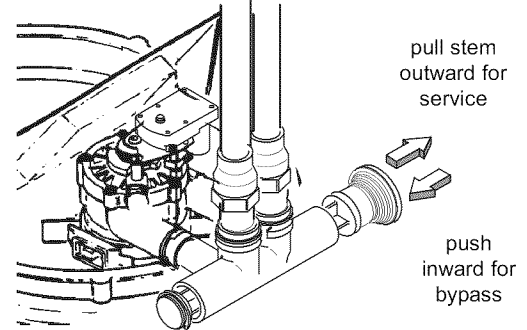


		Inches	cm
<b>A</b>	Salt Tank Height	34	86.4
<b>B</b>	Resin Tank Diameter (nominal)	10	25.4
<b>C</b>	Resin Tank Height (nominal)	40	101.6
<b>D</b>	Inlet-Outlet Height	41-1/2	105.4
<b>E</b>	Overall Height	48	121.9
<b>F<sup>1</sup></b>	Length	21	53.3
<b>F<sup>2</sup></b>	Width	17	43.2
-	Distance between inlet-outlet centerlines	3-3/4	8.6

## BYPASS VALVES

Bypass valve(s) should always remain in soft water service position. Position in "bypass" only if needed for softener repairs.

### SINGLE BYPASS



### 3 VALVE BYPASS

**FOR SERVICE**  
close bypass valve  
open inlet & outlet valves

**FOR BYPASS**  
open bypass  
close inlet & outlet

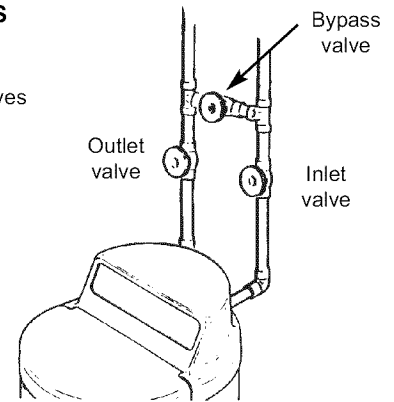


FIG. 59

## MODEL NO. 625.384260 - TIMER CODE H46

WATER SUPPLY TO WATER SOFTENER	
Minimum water system flow (gpm)	3
Minimum-maximum water pressure (psi)	20 - 125
Minimum-maximum water temperature (°F)	40 - 120
Maximum water hardness (gpg)	160
Maximum "clear water" iron (ppm)*	11
SALT FOR WATER SOFTENER	
Type of salt needed	nugget
Alternate type of salt	pure, evaporated, compacted water softener salt

gpm = gallons per minute    gpg = grains per gallon  
psi = pounds per square inch    ppm = parts per million

\* Capacity to remove clear water iron is substantiated by WQA test data. State of Wisconsin requires additional treatment if water supply contains greater than 5 ppm clear water iron.

Questions? Call The Kenmore Water Line 1-800-426-9345

# Specifications

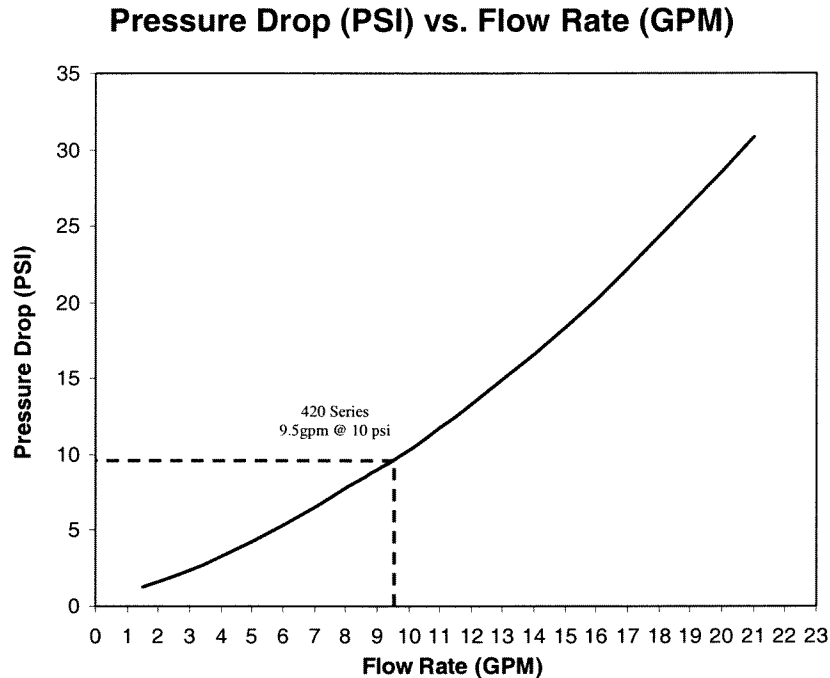


FIG. 60

OTHER SPECIFICATIONS	
Type of ion exchange material (resin)	high capacity
Amount of resin (cu. ft.)	1.20
Rated Softening Capacity (Grains @ Pounds Salt Dose)	12,500 @ 2.5 33,300 @ 9.4 42,300 @ 16.3
Efficiency Rating (Grains / Pound of Salt @ Minimum Salt Dose)	5010 @ 2.5
Rated Service Flow Rate (gpm)	9.5
Pressure Drop at Rated Service Flow Rate (psi)	10
Intermittent Flow Rate @ 15 psi (gpm) *	13.0
Max. Drain Flow Rate (gpm)	2.0

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

These systems conform to NSF / ANSI 44 for the specific performance claims as verified and substantiated by test data.

The efficiency rating is only valid at the minimum stated salt dosage. These softeners were efficiency rated according to NSF / ANSI Standard 44.

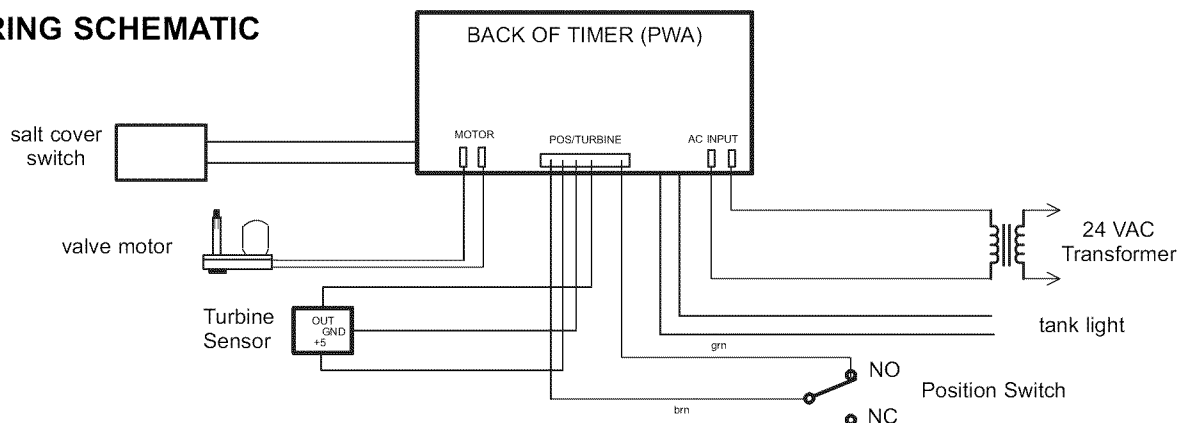
## Performance Claims

Contaminant	Influent Challenge Level	Maximum Allowable Product Water Level
Barium	10 ±10% mg/L	2.0 mg/L
Radium 226/228	25 pCi/L	5 pCi/L

Questions? Call The Kenmore Water Line 1-800-426-9345

# Service Tech Information

## WIRING SCHEMATIC



## FACEPLATE

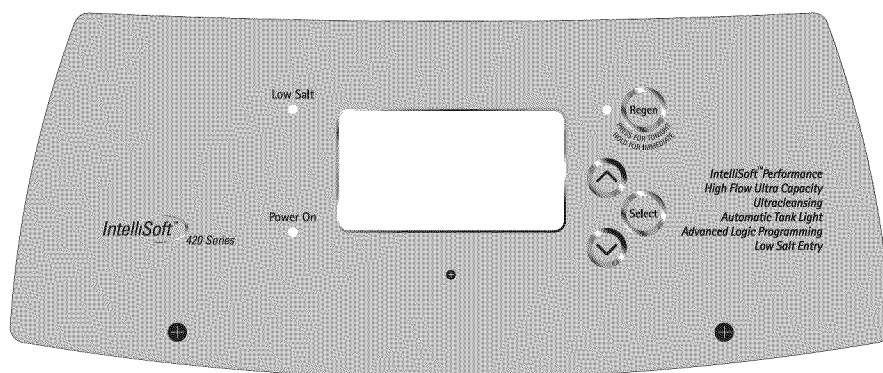


FIG. 61

Keep this manual with your water softener. If repairs are needed, the service technician must have the information on the following pages.

### ALWAYS MAKE THESE INITIAL CHECKS FIRST

#### 1. Does the time display show the correct time of day?

- If display is blank, check power source to the softener.
- If time is flashing, power was off for over 48 hours. The softener resumes normal operation but regenerations occur at the wrong time.
- If an error code (Example: Err3) shows in the faceplate display, go to AUTOMATIC ELECTRONIC DIAGNOSTICS.

#### 2. Plumbing bypass valve(s) must be fully in service position.

#### 3. The inlet and outlet pipes must connect to the softener inlet and outlet respectively.

#### 4. Is the transformer plugged into a "live", grounded wall outlet, and the power cable fastened securely to the controller?

#### 5. The valve drain hose must be free of kinks and sharp bends, and not elevated over 8 ft. above the floor.

#### 6. Is there salt in the storage tank?

#### 7. Is the brine tubing connected? Brine tubing connects to nozzle venturi and brine valve assembly.

#### 8. Is the brine valve float set right?

#### 9. Press the SELECT button two times to display the hardness setting.

Be sure it is the correct setting for the household's water supply. (Make a hardness test of the raw water and compare with the hardness setting. Also test a soft water sample to verify if a problem exists.) Press the SELECT button twice more to return to present time in the display.

If you do not find the problem after making initial checks, do the **MANUAL INITIATED ELECTRONIC DIAGNOSTICS**, and the **MANUAL ADVANCE REGENERATION CHECK**.

Questions? Call The Kenmore Water Line 1-800-426-9345

# Service Tech Information

The faceplate timer (PWA) computer has a self-diagnostic function for the electrical system, except for input power and water meter. The computer monitors electronic components and circuits for correct operation. If a malfunction occurs, an error code appears in the faceplate display.

The chart below shows the error codes that could appear, and the possible problems for each code.

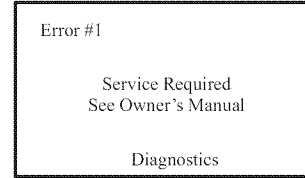


FIG. 62

CODE	POSSIBLE PROBLEM	
	MOST LIKELY	LESS LIKELY
Err1, Err3, Err4	wiring harness connections at switch and faceplate not connected / position switch inoperable / motor inoperable	
Err5	faceplate timer (PWA)	

While an error code appears in the display, all faceplate buttons are inoperable except the SELECT button. SELECT remains operational so the service person can make the MANUAL INITIATED ELECTRONIC DIAGNOSTICS (below) to further isolate the problem, and check the water meter.

## PROCEDURE FOR REMOVING ERROR CODE FROM FACEPLATE:

- Unplug transformer from outlet.  
• Plug in transformer.  
• Wait for 8 minutes.
- Unplug transformer from outlet.  
• Correct problem.  
• Plug in transformer.  
• Wait for 8 minutes.

The error code will return if the problem was not corrected.

## MANUAL INITIATED ELECTRONICS DIAGNOSTICS:

- To enter diagnostics, press the SELECT button once to go to the Main Menu. Move the black bar to Service Mode and press Select. Move black bar to Diagnostics and press Select.

You will see the display, showing valve cycle position, position switch status (open or closed), and turbine operation.

**TURBINE OPERATION:** If no water is flowing through the softener, the turbine indicator displays 3 zeros. When water is flowing, a 000 to 140 count repeats for each gallon of water passing through the turbine. To check for positive operation of the turbine if zeros are shown, open a nearby soft water faucet and observe the turbine count. If you don't get a reading in the display, with faucet open, pull the sensor from the valve outlet port. Pass a small magnet back and forth in front of the sensor. You should get a reading in the display. If you get a reading, unhook the in and out plumbing and check the turbine for binding.

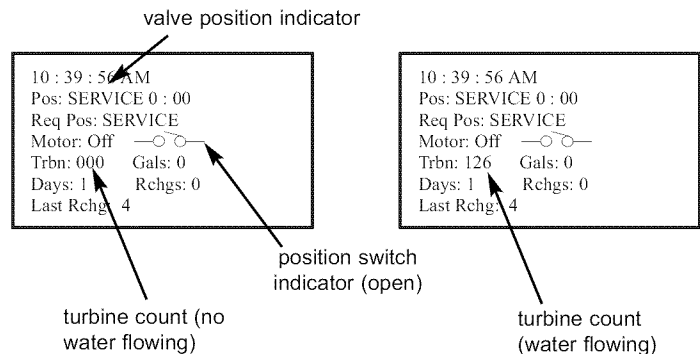


FIG. 63

# Service Tech Information

**POSITION SWITCH STATUS:** With the valve in service, or any of the recharge cycles, the switch indicator will show open, while the valve is rotating from one position to another, the indicator will show the switch closed. A defect is probable if indications vary from this pattern.

**NOTE:** If the faceplate is left in a diagnostic display (or a flashing display when setting times or hardness), present time automatically returns if a button is not pressed within 4 minutes. To return to the diagnostic display, repeat step 1.

2. Press the RECHARGE button to advance the valve to each position and observe the switch and position indicators to verify component operation, or to possibly isolate a defect.
3. Press Select once to move back to the Service Mode screen. Move black bar to Set Model and press Select. A model code shows in the display, see Fig. 65.

This code identifies the softener nominal capacity size. If the wrong number shows, the softener will operate on incorrect data. Do the following as needed.

**If the correct model code (HF46) shows:** Press the SELECT button until the normal operating display shows.

**To change the number:** Press the UP or DOWN button until the correct model code (HF46) shows. Then, press the SELECT button and reset the timer.

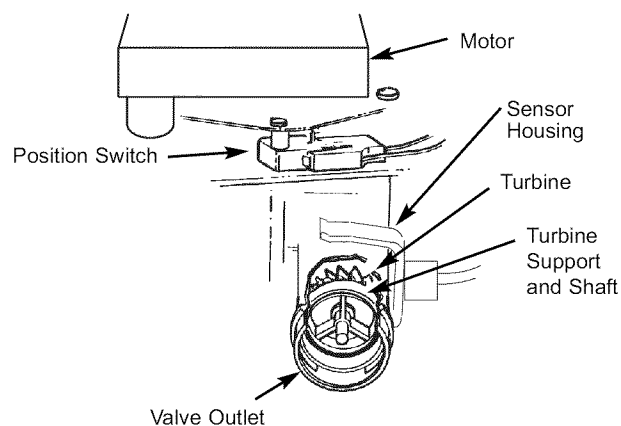


FIG. 64

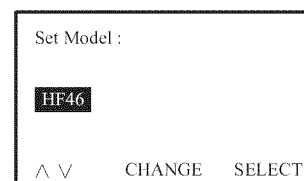


FIG. 65

## TIMER PWA REPLACEMENT

**Be sure the valve is in service position when replacing the timer PWA (observe valve cycle indicator).** If after installing and programming the replacement timer PWA, the valve is not in service position, do the following to assure correct cycle orientation, or timing, between the faceplate and valve.

Use the MANUAL ADVANCE procedures with the RECHARGE NOW button, advance through the recharge cycles until the valve stops in service position, and RECHARGE no longer flashes in the display.

**NOTE:** The valve motor may automatically drive through several valve positions while searching for service. If an error code occurs, unplug the transformer, then plug in again.

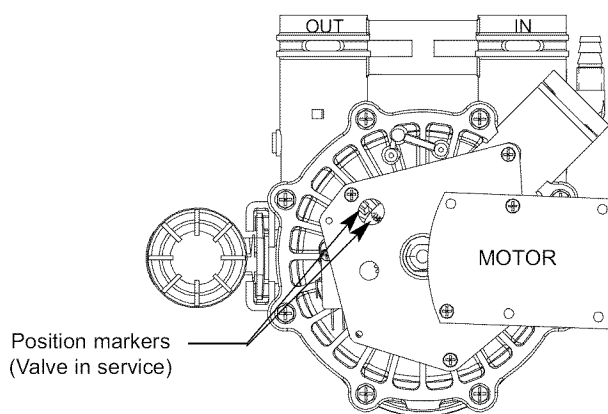


FIG. 66

Questions? Call The Kenmore Water Line 1-800-426-9345

# Service Tech Information

## 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 faceplate 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 REGENERATION button and hold in for 3 seconds. \*RECHARGE and Fill begin to flash (or clean backwash begins, if set) as the softener enters the fill cycle of regeneration.

**\* NOTE: If the CLEAN feature is set to ON, a cleaning backwash (CLEAN and Bkwhs or Rinse flashes in the display, along with the minutes of the clean cycle remaining), precedes the recharge.**

2. When FILL is on steady, remove the brinewell cover and, using a flashlight, observe fill water entering the tank.
3. If water does not enter the tank, look for an obstructed nozzle, venturi, fill flow plug, brine tubing, or brine valve riser pipe.

## CYCLE FLOW RATES (GALLONS PER MIN.)

FILL (flow to salt storage tank)	0.3 (1.1 liters)
BRINING (flow to drain)	.22 (.83 liters)
BRINE RINSE (flow to drain)	.15 (.57 liters)
MAX. BACKWASH (flow to drain)	2.0 (7.6 liters)
MAX. FAST RINSE (flow to drain)	2.0 (7.6 liters)

4. After observing fill, press the REGENERATION button to move the softener into brining. 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.

**NOTE: Be sure a salt bridge is not preventing water with salt contact.**

5. If the softener does not draw brine:
  - nozzle and/or venturi dirty or defective.
  - nozzle and venturi not seated properly on gasket
  - restricted drain (check drain fitting and hose)
  - defective nozzle and venturi seal
  - other inner valve defect (rotor seal, rotor & disc, wave washer, etc.)

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

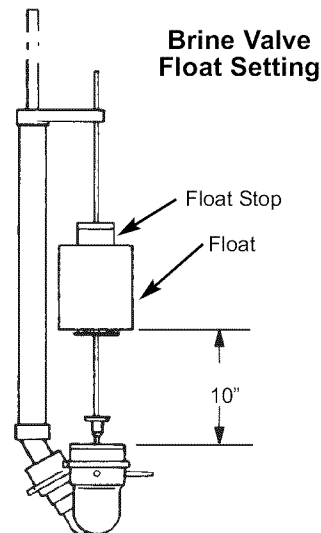


FIG. 67

6. Again press REGENERATION to move the softener into backwash. Look for a fast flow of water from the drain hose.
7. An obstructed flow indicates a plugged top distributor, backwash flow plug or drain hose.
8. Press REGENERATION to move the softener into fast rinse. 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.
9. To return the softener to service, press REGENERATION once more.

Questions? Call The Kenmore Water Line 1-800-426-9345

# Service Tech Information

## ROTARY VALVE SERVICE

**IMPORTANT:** Before working on the valve, turn off the water supply and disconnect from electrical power.

### TO RELIEVE PRESSURE:

- **3 VALVE BYPASS:** Close the inlet valve and open a soft water faucet. Then close the outlet valve and open the bypass valve.
- **SEARS SPECIAL BYPASS:** Slide the bypass valve stem to bypass position. Loosen three hex head screws toward the back side of the valve to allow pressure water to bleed out. Catch water with a rag.

### DISASSEMBLY

To remove a part or group of parts, refer to the valve drawing. A common screwdriver or nut driver, Phillips screwdriver and pliers are the only tools needed to completely disassemble.

### SERVICING THE VALVE

Inspect all o-rings, seals and gaskets for wear or defects.

Inspect the bottom surface of the rotor for scratches, chips or wear.

**Note:** If replacement is needed, be sure to use the current replacement part.

### ASSEMBLY

Be sure all parts are in place and in the proper position. Lubricate ALL o-rings and seals with FDA approved silicone grease. To install the rotor seal, first place the seal into the valve groove, rounded side down (see cross-section). Apply a light coating of silicone grease to the seal's crossing ribs. Then, carefully center the wear strip on the seal, and push it downward onto the seal.

Install the nozzle and venturi seal and drain seal. Assemble wave washer bearing, the wave washer, and two o-rings, onto the rotor top shaft. Then center the rotor in the valve body, on the rotor seal.

Lower the cover onto the valve body and rotor shaft. Then install the cover holding screws. **Before tightening the screws,** install the valve cam and gear.

Then, turn the rotor (clockwise only) to service position. Tighten the screws using a criss-cross pattern. If a torque wrench is available, torque to 30-40 inch pounds. Do not over tighten.

Lubricate the gear on the motor, and the valve cam gear with Molykote grease, or other high quality gear lubricant.

Be sure to orient switch as shown, with lever toward the cam.

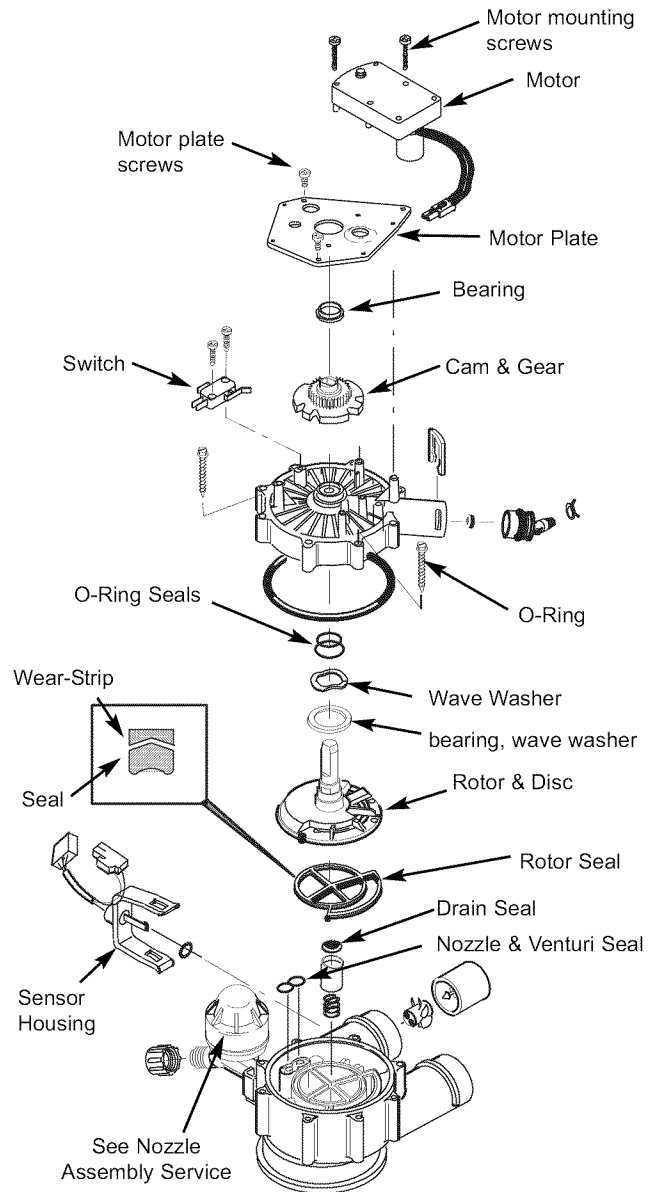


FIG. 68

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# Service Tech Information

## WATER FLOW THROUGH THE SOFTENER VALVE

### SERVICE CYCLE

Hard water enters the valve inlet port. Internal valve porting routes the water down and out the top distributor, into the resin tank. Hard water is softened as it passes through the resin bed, then enters the bottom distributor. Soft water flows back into the valve and out the valve outlet, to the house soft water pipes.

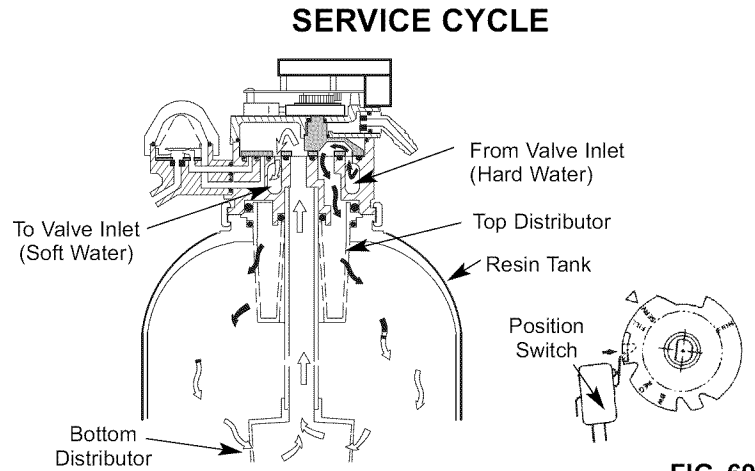


FIG. 69

### FILL CYCLE

To begin a regeneration, the electronic timer energizes the circuit to the valve motor. The valve motor rotates the rotor and disc and the valve cam until the position switch lever drops, to open the motor circuit and position the valve in FILL. As the rotor and disc rotates, the port opens for SOFT water fin through the venturi. Fill flow continues to the brine valve, and into the salt storage tank. Soft water is still available to the house lines.in.

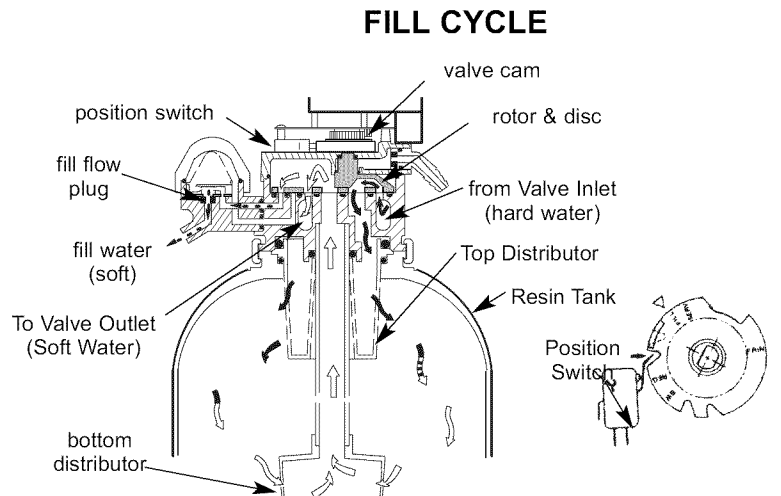


FIG. 70

### BRINING AND BRINE RINSE CYCLE

#### BRINING AND BRINE RINSE CYCLES

After fill, timer/switch action allows the motor to turn the rotor and disc into BRINING position. Water flow is directed to the nozzle. Suction, created by the nozzle and venturi, draws brine from the salt storage tank and injects it into the resin bed via the bottom distributor. Flow continues out the top distributor and to the drain. Hard water is available at the valve outlet.

When the brine valve closes to end brine draw, water flow continues in the same directions to slowly RINSE brine from the resin bed and to the drain.

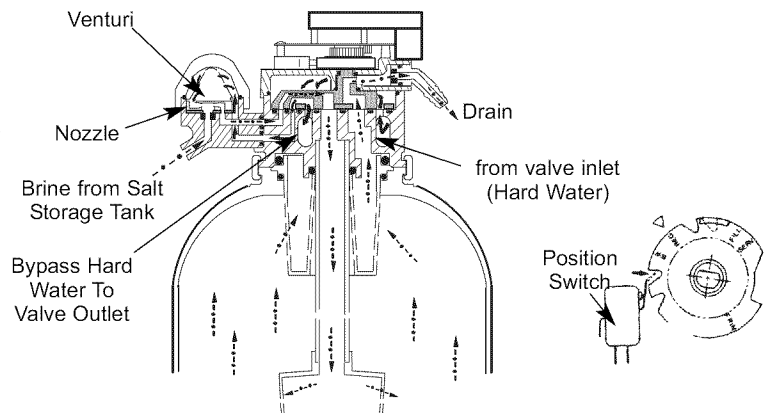


FIG. 71

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# Service Tech Information

## WATER FLOW THROUGH THE SOFTENER VALVE

### BACKWASH CYCLE

Timer/switch action again allows the motor to turn the rotor & disc to place the valve in BACKWASH, stopping water flow to the nozzle. Water is routed down and out the bottom distributor, up through the bed, and out the top distributor to the drain. The fast flow (controlled by a flow plug in the drain fitting) flushes dirt, sediments, iron deposits, remaining brine and hardness to the drain.

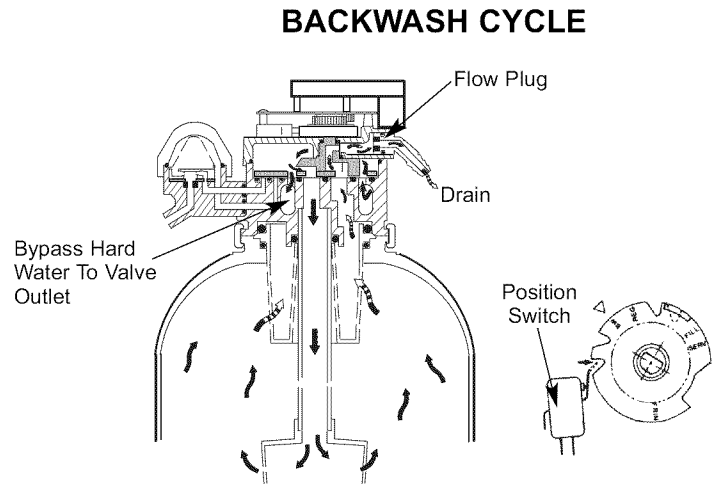


FIG. 72

### FAST RINSE CYCLE

During FAST RINSE, the rotor & disc is positioned so water flow enters the resin tank through the top distributor, and exits through the bottom distributor, to the drain.

The electronic timer again energizes the motor to return the valve to *service*. As the valve rotates, the position switch lever drops to open the circuit. The valve remains positioned in service until the electronic timer initiates the next regeneration.

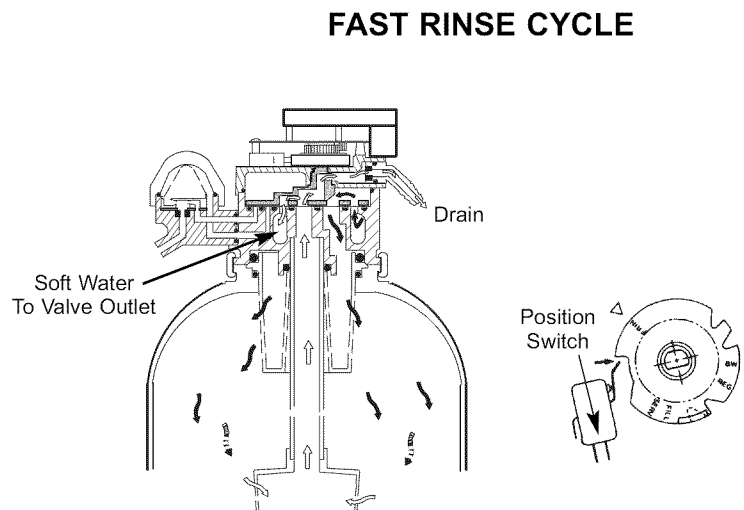


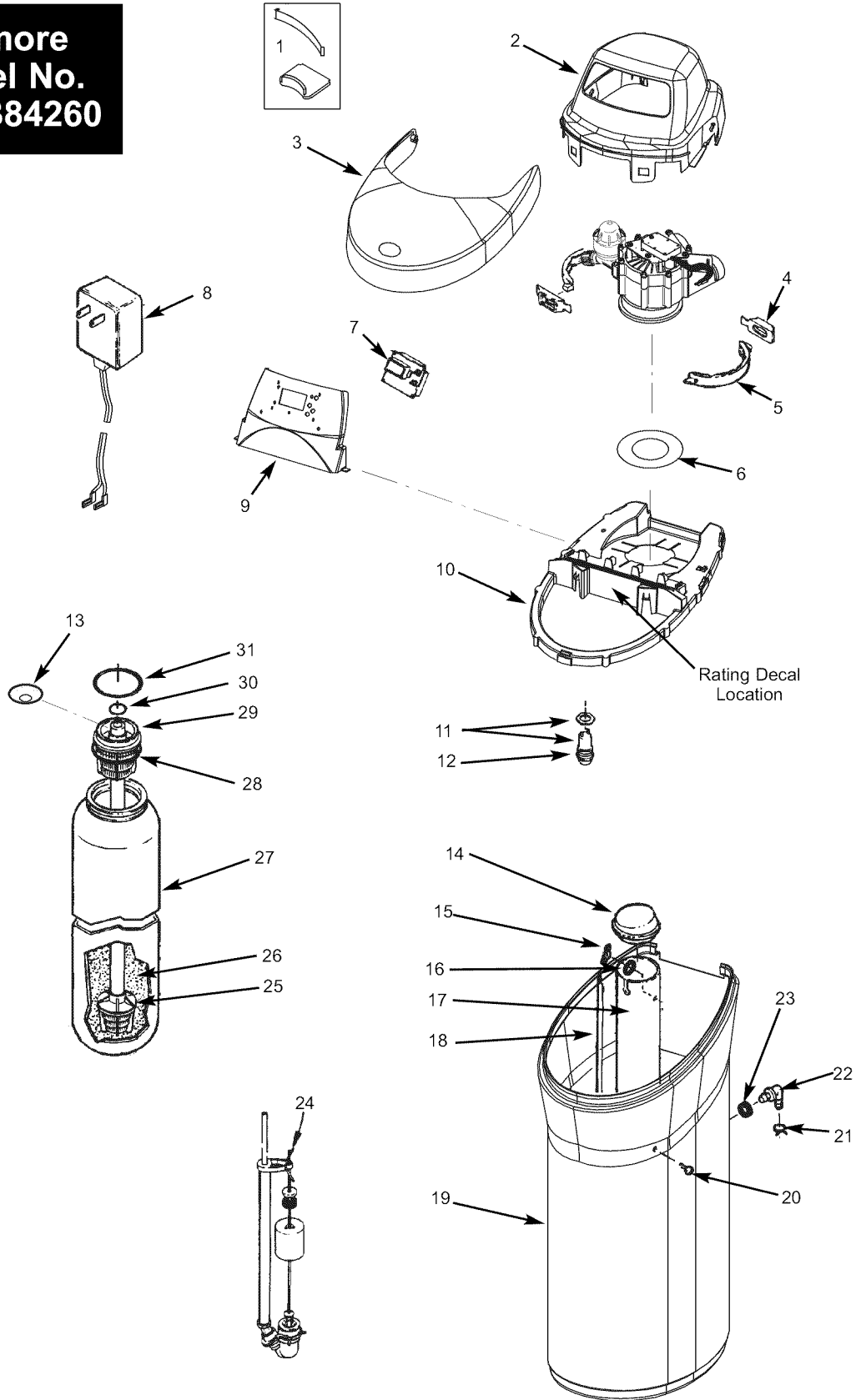
FIG. 73

# Notes

Questions? Call The Kenmore Water Line 1-800-426-9345

# Exploded View

**Kenmore  
Model No.  
625.384260**



Questions? Call The Kenmore Water Line 1-800-426-9345

# Parts List

Kenmore Model No. 625.384260		
A. WATER SOFTENER COMPLETE		
Key No.	Part Number	Part Description
1	----	Cover Lock (Required for shipping only)
1	----	Rim Insert (Required for shipping only)
2	7284396	Cover (main)
3	7284435	Salt Hole Cover (order following decal)
-	7284443	Instruction Decal
4	7088033	Clamp Retainer (2 required)
5	7176292	Clamp Section (2 required)
6	7232446	Vapor Barrier
7	7288578	Timer Repl. (PWA)
8	7275907	Transformer, 24 V - 10 VA ●
9	7229956	Faceplate (order following decal)
	7286306	Faceplate Decal
10	7284736	Rim (includes key no. 11 & 12)
11	7252268	O-Ring, 11/16" x 1-1/32"
12	7286021	Light Asm.
13	7265025	Ultra Cleansing Screen
14	7219888	Brinewell Cover, with decal
15	7082150	Wing Nut, 1/4"
16	7003847	O-Ring, 1/4" x 1/2"
17	7109871	Brinewell
18	7214236	Decal, Salt Level ①
19	7287158	Salt Storage Drum
20	7284613	Plastic Screw, 1/4" x 5/8"
21	0900431	Tube Clamp ●
22	1103200	Tube Adaptor ●
23	9003500	Grommet ●
24	7310202	Brine Valve Asm (see pages 48 & 49 also)
25	7105047	Replacement Distributor
26	0502272	Resin
27	7301075	Resin Tank (includes key no. 26)
28	7170270	O-Ring, 2-3/4" x 3"
29	7077870	Top Distributor
30	7170254	O-Ring, 13/16" x 1-1/16"
31	7170296	O-Ring, 2-7/8" x 3-1/4"
◆	3442699	Resin Bed Cleaner
◆	7287213	Parts Bag (includes parts marked with a ● pages 47, 49 & 51). Order manuals separately if needed.
◆	7282611	Owner's Manual
◆ Not illustrated.		
① Aligns with top of brinewell.		
● Included in parts bag.		

Questions? Call The Kenmore Water Line 1-800-426-9345

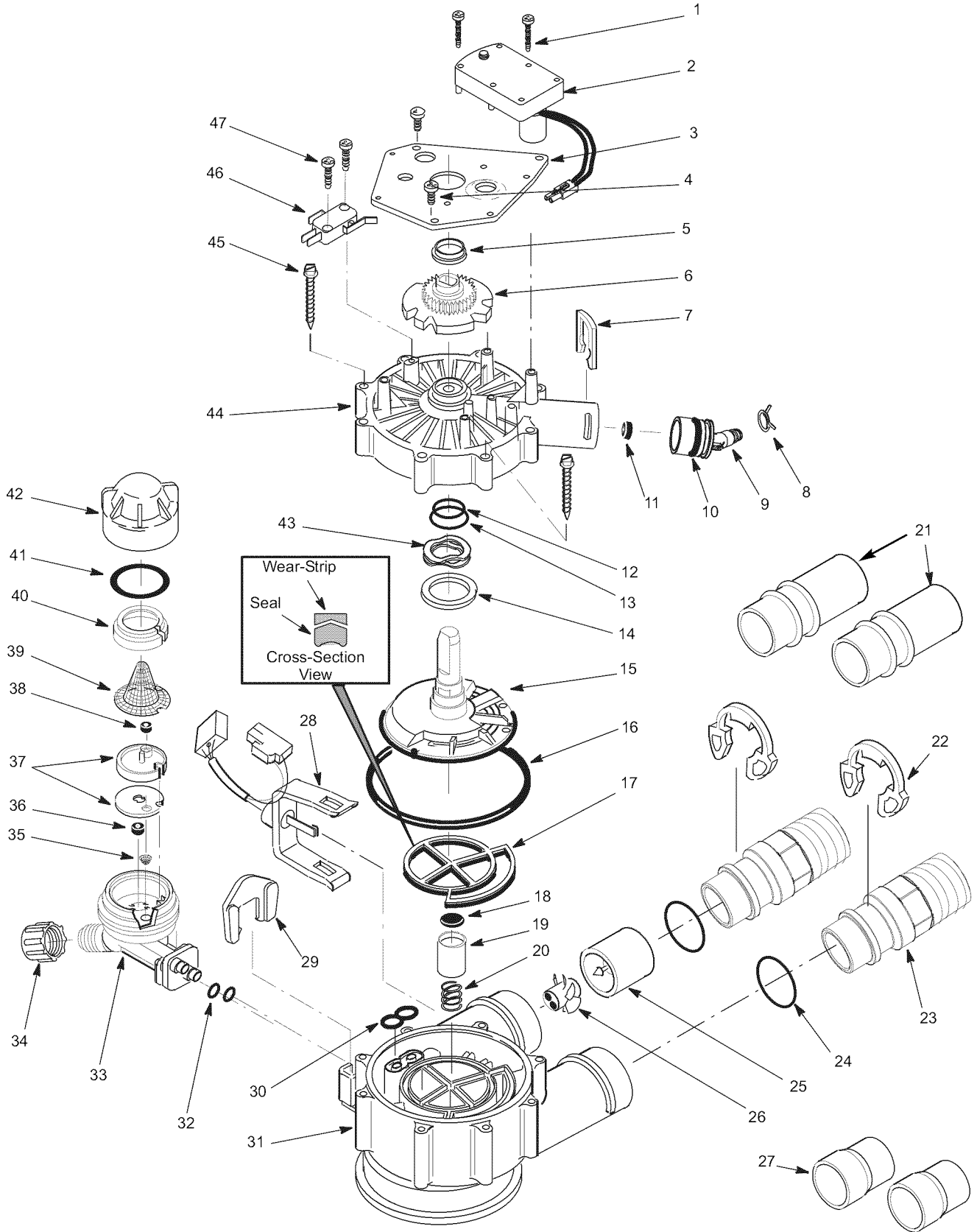


# Parts List

Kenmore Model No. 625.384260		
B. BRINE VALVE ASSEMBLY		
Key No.	Part Number	Part Description
1	7168647	Ceramic Weight
2	0513860	Float Stop
3	7097202	Float (includes Key No. 4)
4	0516947	Float Seal
5	7220627	Float Rod & Stem
6	7308904	Guide Cap
7	7170288	O-Ring, 15/16" x 1-3/16"
8	0516211	Seal
9	0516924	Retainer, Bottom Seal
10	7116713	Clip
11	7308881	Brine Valve Body
12	7142942	Clip
13	7131365	Screen
14	7094979	Insert
15	7092294	Retaining Ring
16	7176161	O-Ring, 15/16" x 9/16"
17	7221746	Brine Tube
18	7113016	Tubing Assembly (includes Key Nos. 14, 15 & 16)
19	7171349	Cone Screen
20	7248706	Grounding Kit ●
● Included in parts bag, see page 47.		

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# Exploded View



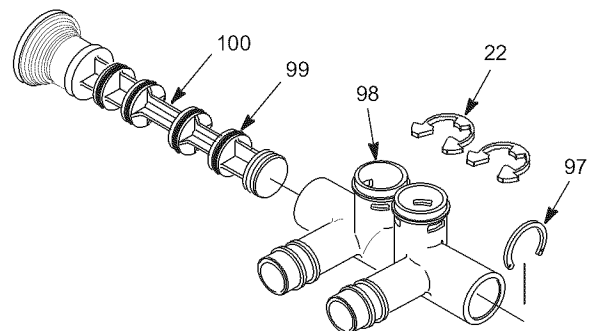
Questions? Call The Kenmore Water Line 1-800-426-9345

# Parts List

Key No.	Part Number	Part Description
1	7224087	Screw, #8-32 x 1" (2 req.)
2	7286039	Motor (incl. 2 ea. of Key No. 1)
3	7231393	Motor Plate
4	0900857	Screw, #6-20 x 3/8" (3 req.)
5	7171250	Bearing
6	7283489	Cam & Gear
7	7169180	Clip (Drain)
8	0900431	Hose Clamp
9	7271270	Drain Hose Adaptor
10	7170288	O-Ring, 15/16" x 1-3/16"
11	0501228	Flow Plug, #18
12	7170327	O-Ring, 5/8" x 13/16"
13	7173024	O-Ring, 1-1/8" x 1-1/2"
14	7174313	Bearing, Wave Washer
15	7185500	Rotor & Disc
16	7173032	O-Ring, 4-1/2" x 4-7/8"
17	7185495	Rotor Seal
18	7172989	Seal
19	7171187	Plug (Drain Seal)
20	7129889	Spring
21	7262506	Installation Adaptor Kit, 1" (includes 2 copper tubes, clips & o-rings) *
22	7089306	Clip (4 req.) ●
23	7271204	Installation Adaptor, 1" NPT (2 req.) ●
24	7170262	O-Ring, 1-1/8" x 1-3/8" (4 req.)
25	7094898	Turbine Support
26	7101548	Turbine
27	7232234	Copper Reducer Bushing, 1" x 3/4" (2 req.) *
28	7309811	Wire Harness (Sensor)
29	7081201	Retainer (Nozzle & Venturi)

Key No.	Part Number	Part Description
30	7195482	Seal (Nozzle & Venturi)
31	7171145	Valve Body
32	7170319	O-Ring, 1/4" x 3/8" (2 req.)
33	7081104	Nozzle & Venturi Housing
34	1202600	Nut-Ferrule
35	7095030	Cone Screen
36	1148800	Flow Plug, .3 gpm
37	7114533	Nozzle & Venturi - Gasket Kit
-	7204362	Gasket only
38	7084607	Flow Plug, .15 gpm
39	7146043	Screen
40	7167659	Screen Support
41	7170262	O-Ring, 1-1/8" x 1-3/8"
42	7199729	Cap
43	7175199	Wave Washer
44	7171161	Valve Cover
45	7172997	Screw, #10 x 2-5/8" (8 req.)
46	7305150	Switch
47	7140738	Screw, #4-24 x 3/4" (2 req.)
◆	3479901	Adaptor Kit, 1" to 1-1/4"
◆	7253808	Nozzle & Venturi Asm. (includes Key Nos. 33, & 35 - 42)
◆	7185487	Seal Kit (includes Key Nos. 12, 13, 16, 17, 18 & 30)
◆	7139999	Drain Tubing, 3/8" I.D. x 20 ft. ▲
◆	42-34407	Flexible Connectors, 1"
◆	7123613	Silicone Grease (for O-Rings)
* Not included.		
● Included in parts bag, see page 47.		
◆ Not illustrated.		
▲ Included with softener.		

Key No.	Part Number	Part Description
97	7175238	C Ring
98	7214155	Bypass Body
99	7173016	O-Ring, 1.109 ID x 1.387 OD (4)
100	7172882	Stem
◆	7214317	Bypass Valve (Complete) ●



Questions? Call The Kenmore Water Line 1-800-426-9345

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