

SEARS

INSTALLATION MANUAL

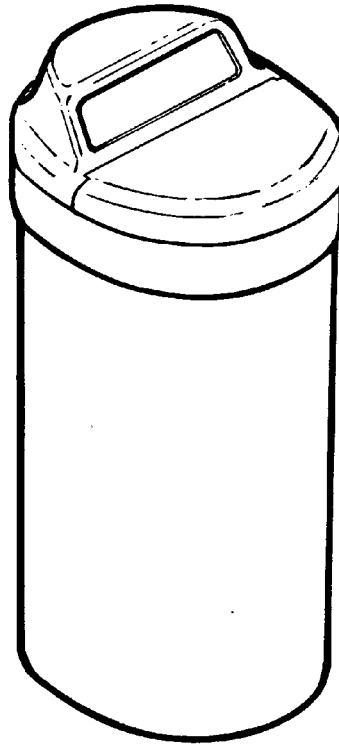
for softeners with
standard flow valve

Caution: Read All
Safety Guides Before
You Start To Install
Your Softener.

If you have questions when
installing, operating or main-
taining your softener, and
when setting the timer, call
this toll-free number...

1-800-426-9345

SAVE THIS MANUAL



Water Softeners

- ◆ Safety Guides
- ◆ Unpacking
- ◆ Where To Install
- ◆ How To Install
- ◆ Pressure Testing

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

Sears, Roebuck and Co., Hoffman Estates, IL 60179 USA

INTRODUCTION

This manual gives you the steps needed to install your new Sears Water Softener. To better understand how the water softener is installed, and to know what you will need, please read this entire manual before beginning.

After you have installed the water softener, the included Owners Manual tells you how to start, program, operate and maintain it. The owners manual also has the product warranty, and a listing of repair parts available from Sears.

Your Sears Water Softener will remove hardness minerals (measured in grains per gallon¹/₄ gpg) and some clear water iron (measured in parts per million¹/₄ ppm) from water. See the specifications, in your owners manual, for the maximum limits of hardness and iron 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 other unsafe water safe to drink.

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 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, or call sears Water Line ¹/₄ 1-800-426-9345.**

TABLE OF CONTENTS

	PAGE NO.
SECTION 1 BEFORE INSTALLING CHECKS AND TESTS	
A. SAFETY GUIDES	4
B. UNPACKING THE WATER SOFTENER	5
C. WATER SYSTEM TESTS	6
SECTION 2 PLAN YOUR INSTALLATION	
A. WHERE TO INSTALL THE SOFTENER	7
B. TOOLS, PIPE AND FITTINGS, OTHER MATERIALS NEEDED	8-9
C. TYPICAL SOLDERED COPPER (OR CPVC) IN AND OUT PIPES	10
D. TYPICAL THREADED IN AND OUT PIPES TO SOFTENER	11
SECTION 3 STEP BY STEP GUIDES TO INSTALL	
A. ASSEMBLE INLET – OUTLET ADAPTORS, OR PLASTIC BYPASS VALVE	12-13
B. INSTALLING 3-VALVE BYPASS, OR SINGLE BRASS VALVE	14
C. LOCATE AND CONNECT WATER SOFTENER	15
D. CONNECT VALVE AND SALT TANK DRAIN HOSES	16-17
E. PRESSURE TEST – CHECK FOR LEAKS	18
F. GROUNDING – CONNECT TO ELECTRICAL POWER	19-20
RESTART THE WATER HEATER	20

1A.

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 water softener will remove hardness minerals and “clear water” iron from water, up to the limits shown on the specifications page of your owners manual. It will not remove other types of iron, acids, tastes and odors, etc. It will not purify polluted water or make it 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 in your owners manual.

CAUTIONS

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 the transformer included, and plug it into a 120V outlet.

▲ Unplug the transformer right away if the power cable should become damaged or frayed. Make repairs before plugging back into the power outlet.

▲ Always unplug the softener from electrical power before removing outer valve covers.

SECTION 1

BEFORE INSTALLING CHECKS AND TESTS

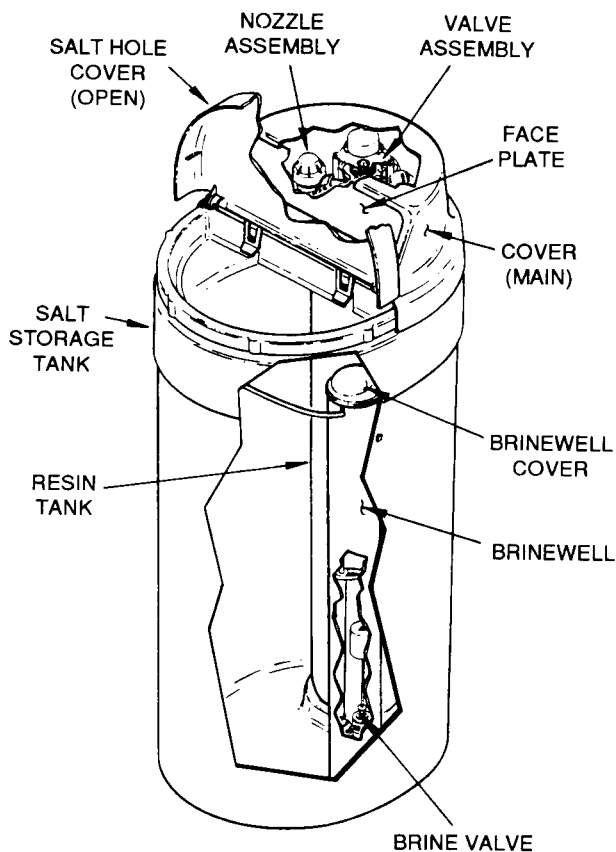
1B. UNPACKING THE WATER SOFTENER

Directions for unpacking the softener are on the top of the shipping carton. This manual, and the owners manual, were on the small parts cardboard packing piece. You will need the small parts to install the softener. So you don't lose any parts, keep them on the cardboard piece until you are ready to use them. Remove all other cardboard pieces, foam packings, tapes, etc. from the softener and discard.

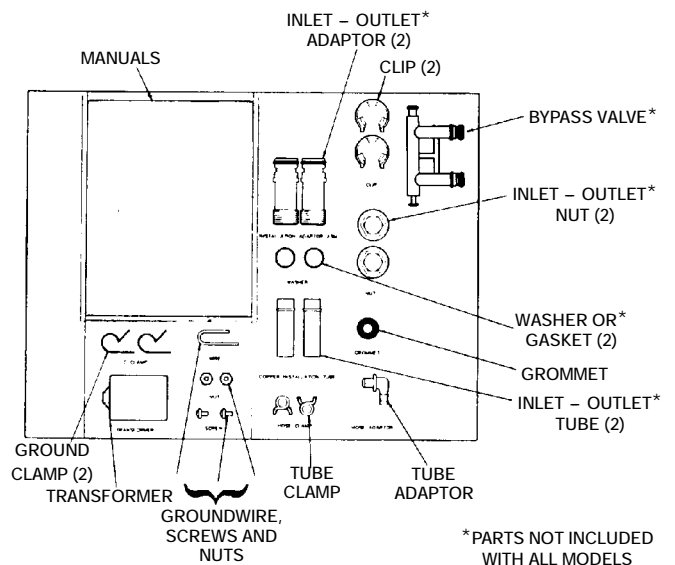
Check the softener for shipping damage. If you find damage, report it to your Sears store.

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 and to avoid damage, or personal injury, do not try to lift it or move more than necessary. See page 15, when you are ready to move it into installation position.

PARTS DESCRIPTIONS



SMALL PARTS



1C. WATER SYSTEM TESTS

Has your water supply had a chemical analysis? Please see page 2.

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 120 psi. If pressure is over 120 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 120 psi. Adding a pressure reducing valve may reduce the flow.

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.

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. To make an easy check of your flow rate, do the following. You will need a 1 gallon container (can, jar, pail, etc.).

1. Fully open 2 cold water faucets close to the point water enters the house.
2. With both faucets open, fill the gallon container at 1 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.

FOR FUTURE REFERENCE, ENTER RESULTS OF YOUR WATER SYSTEM TESTS IN THE "FACTS AND FIGURES TO KEEP" TABLE IN YOUR OWNERS MANUAL.

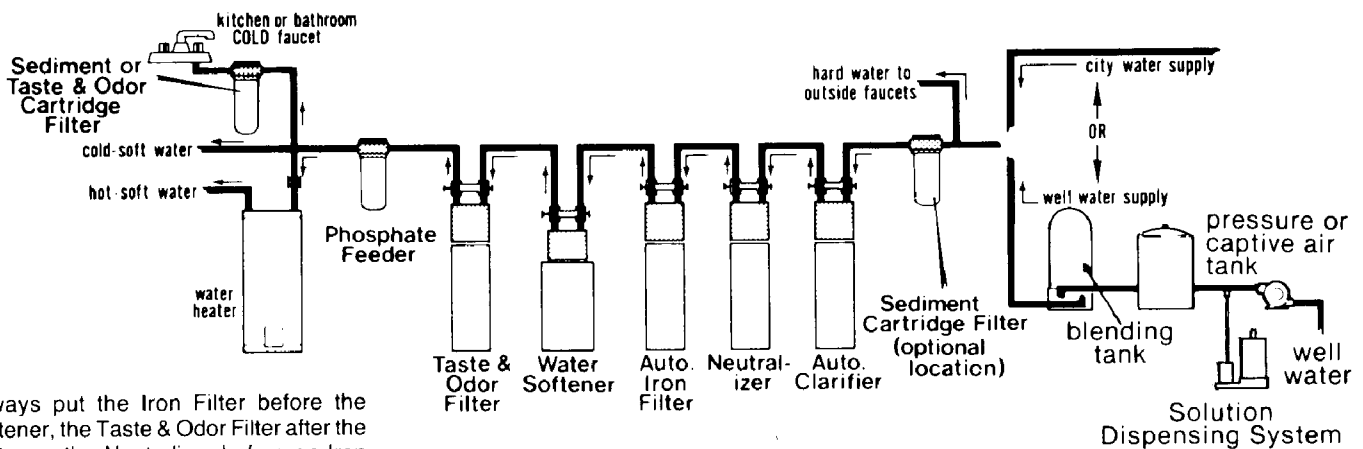
2A. WHERE TO INSTALL THE SOFTENER

Think of the following points as you choose a place to put your softener. (see FIG. 1).

- Place as close as possible to the pressure tank (well water) or water meter (city water).
- Place as close as possible to a water drain such as a floor drain, laundry tub, sump or standpipe.
- ▲ Connect to the house main water pipe **BEFORE THE WATER HEATER**. **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 as possible.
- Keep outside faucets on hard water to save soft water and salt.
- ▲ **Do not** install in a place where the softener could **freeze**. Freeze damage voids the warranty by Sears, Roebuck and Co.
- ▲ Put the softener in a place water damage is least likely to occur if it develops a leak. Sears or the manufacturer will not repair or pay for water damage.
- ▲ A 120V electrical outlet, to plug the transformer into is needed within 10 feet of the softener (the softener has a 10 foot power cable). **Be sure the outlet and transformer are in an inside place, to protect from wet weather**. So the softener always has electrical power, use a continuously “live” outlet, that cannot be accidentally switched off.
- ▲ When installing in an outside location, you must take the steps necessary to assure the softener, installation plumbing, and wiring, are as well protected from the elements, contamination, vandalism, etc., as when installed indoors.
- ▲ Keep the softener out of direct sunlight. The sun’s heat can melt plastic parts.

FIG. 1 THE PROPER ORDER TO INSTALL WATER TREATING EQUIPMENT

(Shows sequence of equipment only – seldom, if ever, would all items be needed)



*Always put the Iron Filter before the softener, the Taste & Odor Filter after the softener, the Neutralizer before an Iron Filter, etc., as shown.

2B. TOOLS, PIPE AND 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 pages 10 (soldered copper) and 11 (threaded). Select the drawing best for you and use it as a guide to plan what materials you will need. As you plan your in and out piping, keep in mind the following check list. Then get all the materials you will need before you start.

NOTE:

Use page 9 to make a plan drawing for your specific installation.

Some models may include a plastic bypass valve, an installation kit and a length of drain tubing.

- ✓ In and out pipes to the softener must be at least 3/4 in. size. Some local codes may tell you to use no less than 1 in. pipe size (see Note on pages 10 or 11). You should maintain the same, or larger, pipe size as the water supply pipe, up to the softener inlet and outlet.
- ✓ Use copper, brass, or galvanized pipe and fittings. Some codes may also allow CPVC plastic pipe.
- ✓ Copper and galvanized pipe corrode fast when connected together. Use pipe and fittings of the same material.
- ✓ You can buy adaptors to go from a copper or threaded main water pipe to CPVC in and out pipe.

- ✓ Sears has kits and bypass valves you can buy to help make installing your softener easier. See pages 10 and 11.
- ✓ ALWAYS install a bypass valve or valves. Either use 3 shut-off valves, or 1 of Sears special valves. Bypass valves let you turn off water to the softener if needed to make repairs, but still have water in the house pipes.
- ✓ Drain tubing (3/8 in. inside diameter) is needed for valve and salt tank drains. See steps 1 and 2 on pages 16 and 17. Some models include a length of drain tubing, or you can buy it at most Sears stores.

If a rigid valve drain is needed to comply with plumbing codes, you can buy the parts needed (see page 16) to change the softener to a 1/2 in. copper tubing drain.


- ✓ **TOOLS NEEDED:**– Common and cross point (Phillips) screw drivers, slip joint pliers and a tape measure or rule. ALSO 1/4
 - 1/4 for **SOLDERED COPPER** – tubing cutter, propane torch, solid-core LEAD-FREE solder, paste flux, emery cloth, sandpaper or steel wool.
 - 1/4 for **THREADED PIPE** – hacksaw or pipe cutter, pipe wrenches, pipe threading tool, pipe joint compound approved for use on potable water.
 - 1/4 for **CPVC PLASTIC** – hacksaw, adjustable wrench, solvent cement approved for use on potable water, primer.

2B. PIPE AND FITTINGS, PLAN DRAWING

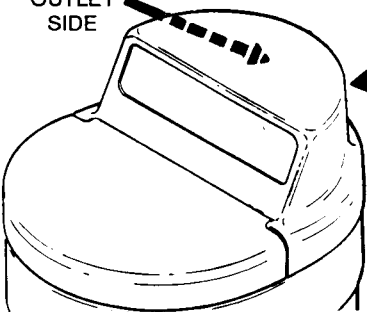
YOUR HOUSE MAIN WATER PIPE*


LEFT RIGHT

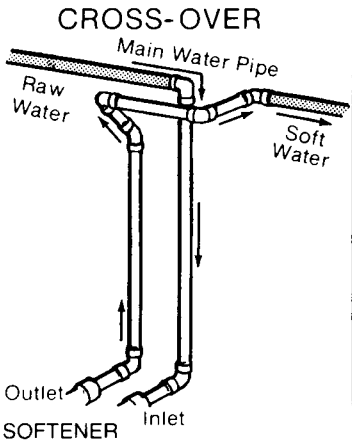
*IN WHAT DIRECTION DOES THE WATERFLOW? BE SURE TO PLAN IN AND OUT PIPING SO WATERFLOW IS TO THE SOFTENER INLET. PLAN A CROSSOVER IF FLOW IS FROM LEFT TO RIGHT.

120V-60Hz ELEC. OUTLET 

DRAW THE PLANS FOR YOUR IN AND OUT PIPING HERE. BE SURE TO FOLLOW GUIDES LISTED, PAGE 8. INCLUDE ALL PIPE, FITTINGS AND ACCESSORIES YOU WILL USE. MAKE A LIST OF ALL MATERIALS YOU NEED AND BUY THEM BEFORE YOU BEGIN TO INSTALL THE SOFTENER.

VALVE OUTLET SIDE 

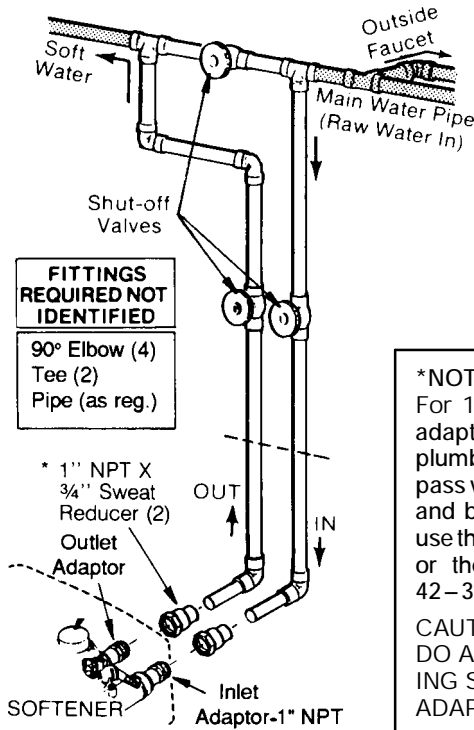
VALVE INLET SIDE 

CROSS-OVER 

2C. TYPICAL SOLDERED COPPER (OR CPVC) IN AND OUT PIPES TO SOFTENER

FIG. 2

(A) IN AND OUT PLUMBING USING A 3 VALVE BYPASS



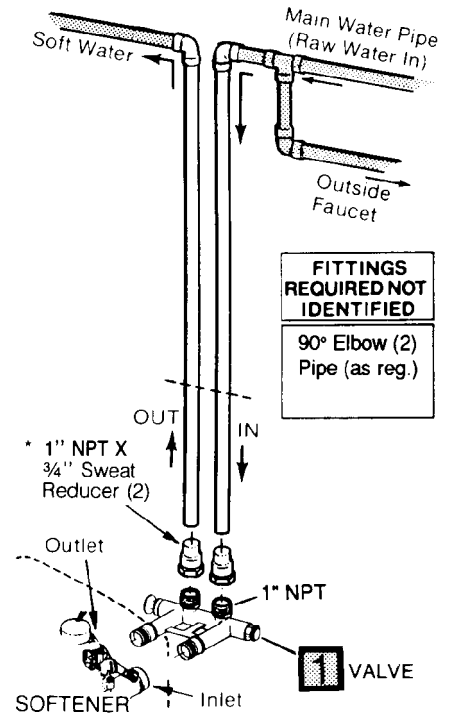
FITTINGS REQUIRED NOT IDENTIFIED
 90° Elbow (4)
 Tee (2)
 Pipe (as reg.)

* 1" NPT X 3/4" Sweat Reducer (2)
 Outlet Adaptor
 Inlet Adaptor-1" NPT

***NOTE:**
 For 1 in. plumbing connection, buy 2 sweat adaptors (1 in. female thread x 1 in. sweat) and plumb directly to the inlet-outlet adaptors or bypass valve. Threads on the inlet-outlet adaptors and bypass valve are 1 in. pipe thread. Do not use the installation kit, Sears Stock No. 42-3441, or the flexible connectors, Sears Stock No. 42-34401.

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

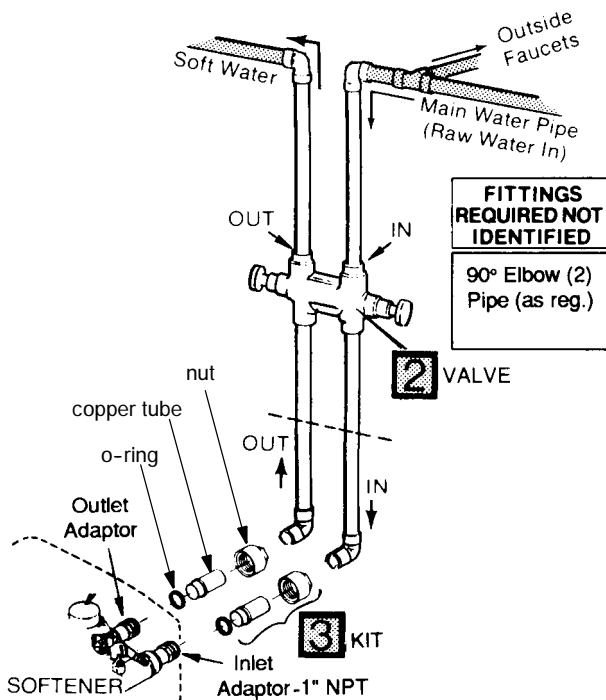
(B) IN AND OUT PLUMBING USING SEARS SPECIAL PLASTIC BYPASS VALVE



FITTINGS REQUIRED NOT IDENTIFIED
 90° Elbow (2)
 Pipe (as reg.)

* 1" NPT X 3/4" Sweat Reducer (2)
 Outlet
 Inlet
 1" NPT VALVE

(C) IN AND OUT PLUMBING USING SEARS SPECIAL BRASS BYPASS VALVE



FITTINGS REQUIRED NOT IDENTIFIED
 90° Elbow (2)
 Pipe (as reg.)

SEARS KITS AND VALVES TO MAKE INSTALLING YOUR SOFTENER EASIER

<p>1 BYPASS VALVE (Plastic) Sears Stock No. 42-3437</p>	<p>2 BYPASS VALVE (Brass) Sears Stock No. 42-3436 (included with some models)</p>
---	--

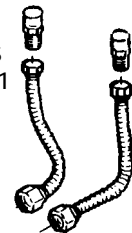
One, easy working valve takes the place of 3 separate valves.

<p>3 INSTALLATION KIT Sears Stock No. 42-3441 (included with some models)</p>	<p>USE AS SHOWN IN (C), OR TO REPLACE THE 1 1/2" X 3/4" SWEAT ADAPTORS IN (A) AND (B).</p>
--	---

FLEXIBLE CONNECTORS
 Sears Stock No. 42-34401

Allows easy hook up even if pipes are not exactly aligned.

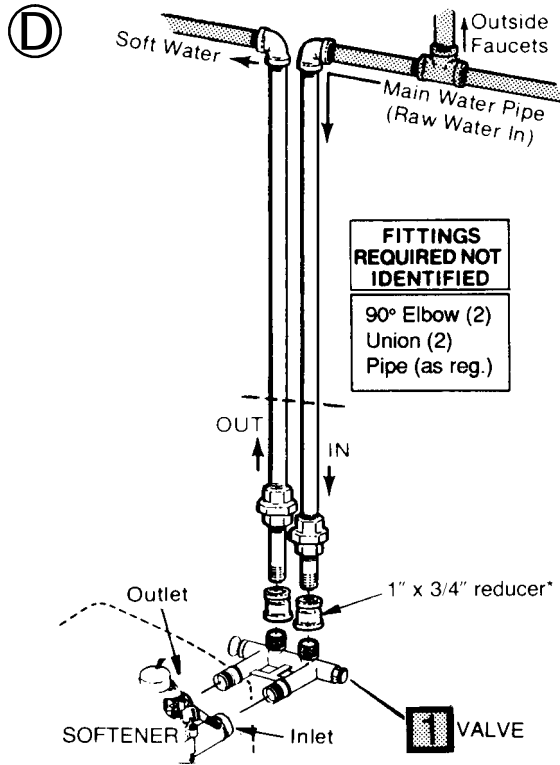
(CHECK LOCAL PLUMBING CODES)



CONNECT FROM IN-OUT PIPES, AT DOTTED LINE, DIRECTLY TO THE INLET AND OUTLET ADAPTORS OR TO BYPASS VALVE **(1)**. SEE **(A)**, **(B)**, **(C)** AND **(D)**.

2C. TYPICAL THREADED IN AND OUT PIPES TO SOFTENER

FIG. 3



NOTE:

If you are planning a threaded plumbing installation, with a 3-valve bypass, use Fig. 2Ⓐ as a guide. Use union fittings, as needed, to connect the plumbing.

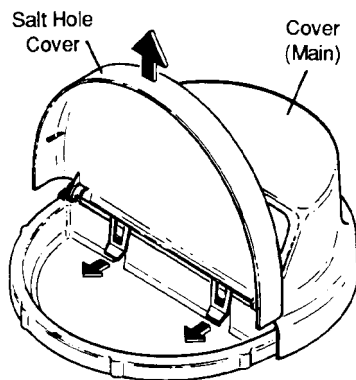
*NOTE:

For 1 in. plumbing connection, use a 1 in. threaded straight connector.

3A. ASSEMBLE INLET-OUTLET ADAPTORS, OR PLASTIC BYPASS VALVE

1. Close the shut-off valve on the house main water pipe, near the water meter or pressure tank, to turn off the water.
2. Shut off the gas or electric supply to the water heater.
3. Open the highest and lowest water faucets in your house to let water drain from the pipes. Close faucets after water has drained.
4. If not already done, remove all cardboard or plastic packing pieces from inside the softener. Set the cardboard liner (with parts for installing fastened to it) where you can easily see it, and get to parts as you need them.

Remove the salt hole cover -- lift straight upward, and the main cover -- pull outward on 2 tabs to release. Set both covers aside so they will not get scratched or broken.

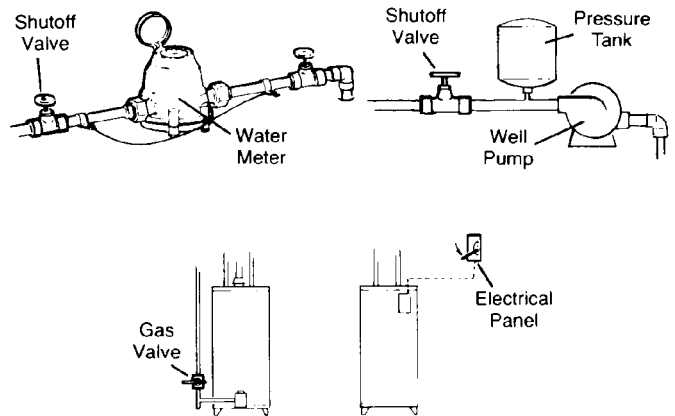


5. INSTALL THE INLET AND OUTLET ADAPTORS OR SEARS BYPASS VALVE. STOCK NO. 42-3437 (FIG. 4, 5 AND 6).

NOTE:

If you **will** install the bypass valve (use following steps a and c), the adaptors are not used. If you **do not** install the bypass valve, you must use the adaptors (use following steps a and b).

- a. Visually check and remove any foreign materials from the valve inlet and outlet ports (FIG. 4).



- b. **INLET AND OUTLET ADAPTORS** (Adaptors and clips are on the cardboard liner). Push the adaptors into the valve inlet and outlet ports as far as they will go. Both adaptors are the same and fit either valve port. **Snap the 2 large holding clips into place, from the top down as shown.**

CAUTION^{1/4} Be sure the clips snap firmly into place so the adaptors will not pull out. **GO TO PAGE 14.**

c. **BYPASS VALVE STOCK NO. 42-3437**

– If not already done, put a light coating of silicone grease or Vaseline on the bypass valve o-rings.

Push the bypass valve into the softener valve as far as it will go. **Snap the 2 large holding clips into place, from the top down as shown.**

CAUTION^{1/4} Be sure the clips snap firmly into place so the bypass valve will not pull out.

GO TO PAGE 15.

SECTION 3

STEP BY STEP GUIDES TO INSTALL

3A. ASSEMBLE INLET-OUTLET ADAPTORS, OR PLASTIC BYPASS VALVE

FIG. 4 INSTALLING INLET-OUTLET ADAPTORS OR BYPASS VALVE

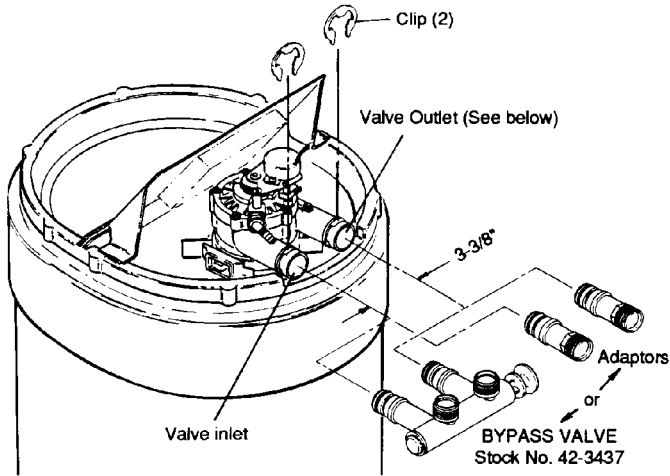


FIG. 5 INSTALLING HOLDING CLIP

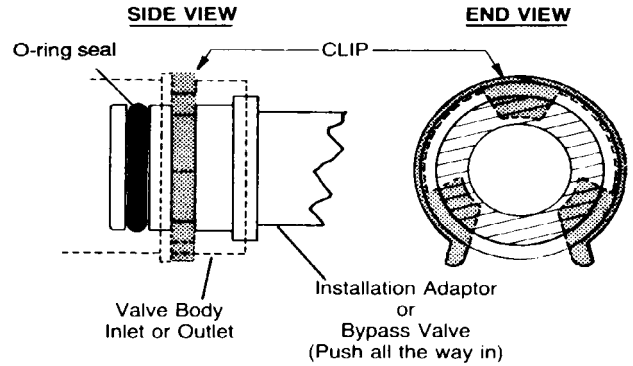
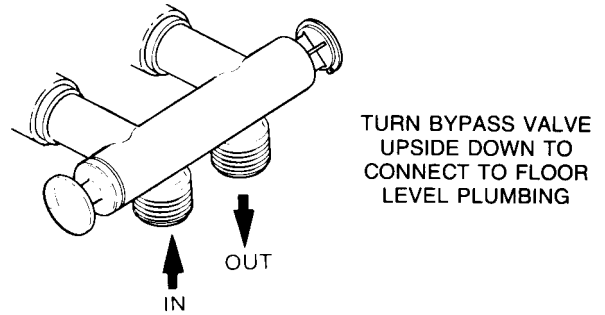


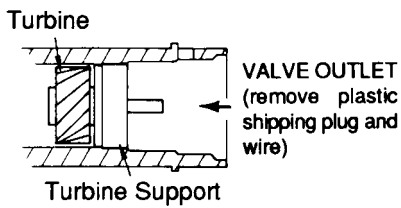
FIG. 6 BYPASS VALVE TURNED DOWNWARD



NOTE:

The softener includes either the adaptors, or the bypass valve, depending on the model.

ELECTRONIC DEMAND MODELS ONLY
Be sure the turbine and support are firmly in place in the valve outlet.



3B. INSTALL 3-VALVE BYPASS, OR SINGLE BRASS BYPASS VALVE

1. INSTALLING 3 VALVE BYPASS, OR SEARS BYPASS VALVE, STOCK NO. 42-3436, AND PIPES (FIG. 7)

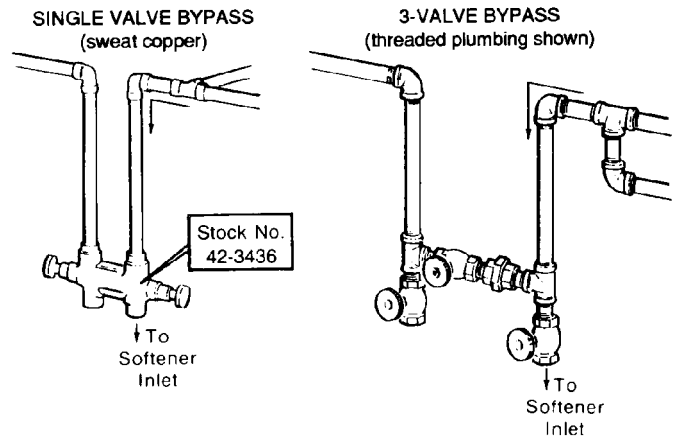
- a. Cut the house main water pipe where you will connect the softener. Loosely put together pipe, fittings, and the 3 valves or Sears special bypass valve. Place valve(s) within easy reach.

IMPORTANT:

When looking at the front of the softener, the inlet is on the right side. If water in your house main water pipe runs from left to right, be sure to use a “cross-over” as shown on page 9.

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

FIG. 7 BYPASS VALVES

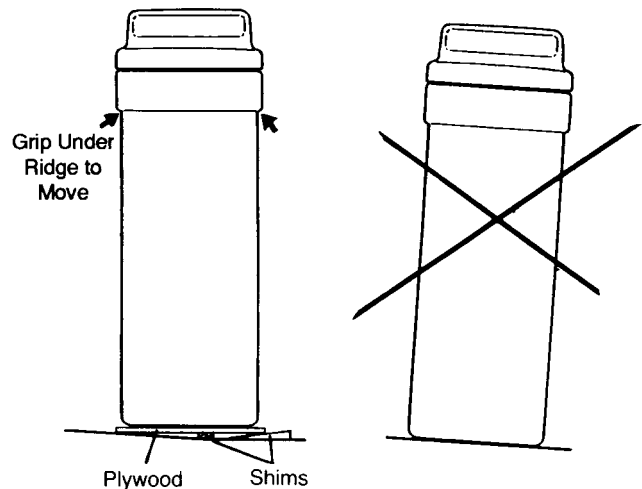


3C. LOCATE SOFTENER AND CONNECT PIPES

1. MOVE THE SOFTENER INTO PLACE

Move the softener into place, onto 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. **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.

To move the softener, grip under the ridge on the salt tank sidewall and carefully rock back and forth, into position.



2. CONNECT THE SOFTENER

(Refer to your plan drawing on page 9, and to page 10 or 11. Read the IMPORTANT note on page 14. Then, 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 on page 14.

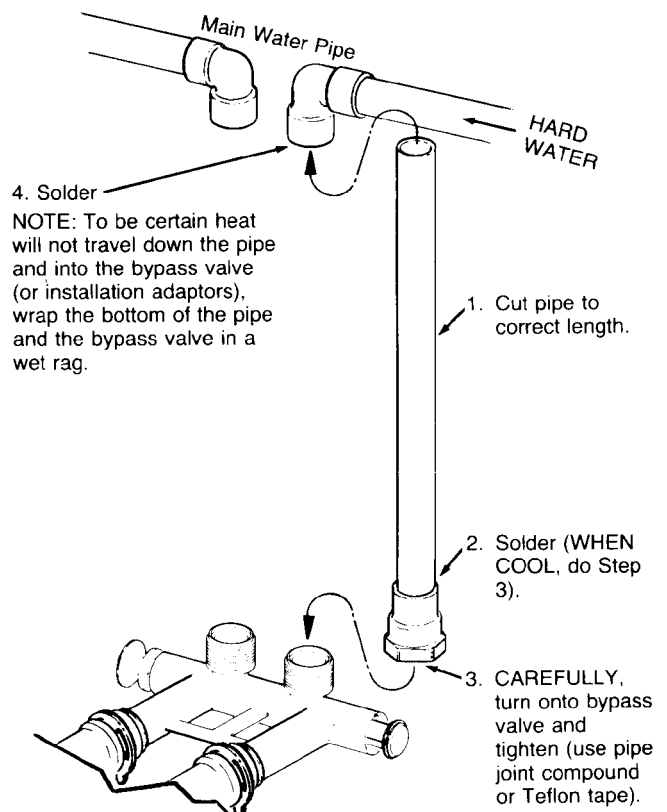
NOTE:

- a. Include adaptors, reducers, union fittings, *flexible connectors, installation kit, etc., as needed.
- b. Cut pipe lengths exact for correct aligning, and to prevent stress on the softener valve.
- c. Use pipe joint compound or Teflon tape on outside pipe threads.
- d. When all piping fits together 1/4" solder all sweat fittings.
1/4" prime and cement all CPVC joints.
1/4" tighten all threaded joints.

CAUTIONS:

- ▲ **Never solder fittings while connected to non-metallic parts.** Wait until soldered pipe has cooled before connection (see fig. 8).
- ▲ **Be very careful when putting pipe fittings onto the plastic threads of the softener adaptors, or the bypass valve.** Do not cross thread, and do not overtighten.

FIG. 8 TYPICAL SOLDERING CONNECTION



*Flexible connectors are not allowed in all areas. CHECK YOUR LOCAL CODES.

3D. CONNECT VALVE AND SALT TANK DRAINS

1. CONNECT THE VALVE DRAIN TUBING

Take a length of 3/8" inside diameter (I.D.) drain tubing and attach 1 end to the drain fitting (FIG. 9). 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.**

IMPORTANT: (see FIG. 9)

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

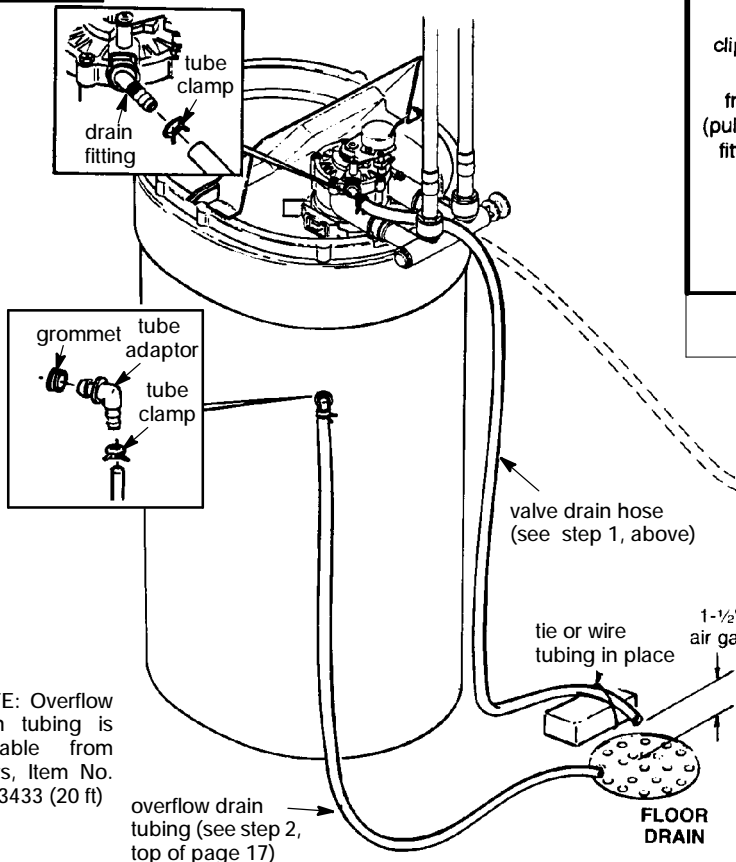
▲ Place and support the tubing so it does not kink or have sharp bends. So water pressure does not cause the tubing to "whip", tie or wire it in place. Do not pinch the tubing shut. **The softener will not work if this drain tubing is pinched, plugged, closed or restricted in any way.**

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

COPPER DRAIN TUBE: The plumbing codes where you live may say that you must use a copper valve drain tube. A copper tube is also best to use for an over-head drain. Use a copper drain tube if the softener is installed outside, or in the sunlight. Heat from the sun makes many kinds of rubber or plastic hose to soften, flatten and close up.

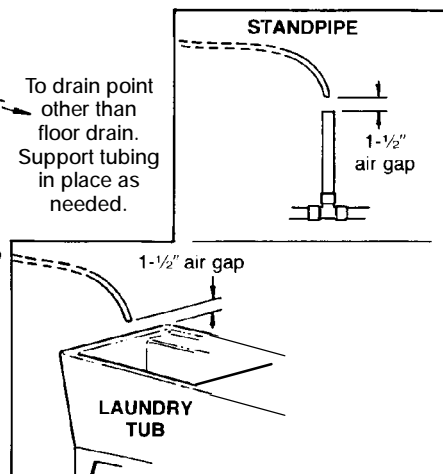
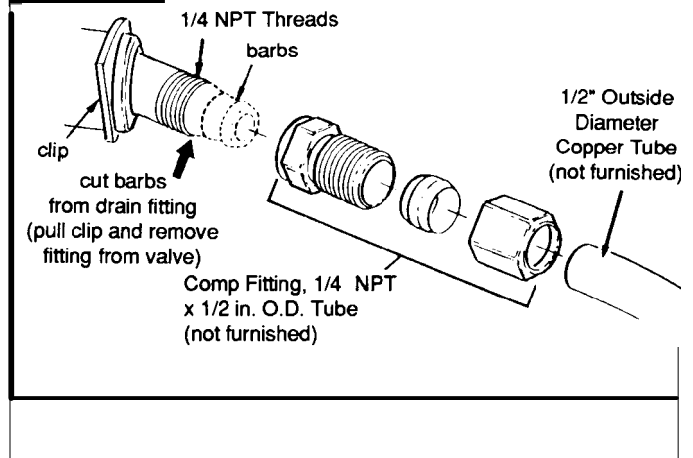
To adapt a copper drain tube to the softener, use a hacksaw to cut the barbed end from the drain fitting as Fig. 10 shows. Buy a compression fitting (1/4 in. female pipe threads x 1/2 in. O.D. tube) and tube from your local hardware store.

FIG. 9 DRAIN TUBING



NOTE: Overflow drain tubing is available from Sears, Item No. 42-3433 (20 ft)

FIG. 10 COPPER DRAIN TUBE



3D. CONNECT VALVE AND SALT TANK DRAINS

2. CONNECT SALT TANK OVERFLOW TUBING

- a. Take the rubber grommet, tube adaptor and tube clamp (FIG. 9) that are on the small parts cardboard liner.
- b. Push the grommet into the hole in the salt tank wall so half is inside and half is outside.
- c. Push the bigger end of the tube adaptor into the grommet.
- d. Push one end of a length of $3/8^2$ I.D. tubing onto the tube adaptor, using the tube clamp

to hold it in place. Put the other end of the tubing over the floor drain.

IMPORTANT:

- The salt tank overflow is for safety only. If the salt tank should overflow with water, the overflow tubing carries it to the drain.
- Over-fill water must run downward through the tubing. Do not raise the tubing higher than the grommet and tube adaptor (FIG. 9).
- **Do not** connect to the valve drain tubing you installed in step 1. Both drains must have a separate length of tubing.

SECTION 3

STEP BY STEP GUIDES TO INSTALL

3E. PRESSURE TEST – CHECK FOR LEAKS

TESTING YOUR PLUMBING WORK FOR WATER LEAKS.

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.

Look at the picture in FIG. 12 showing your kind of bypass valve(s).

1. Fully open 2 cold, soft water faucets nearby the softener.
2. Place bypass valve(s) in “bypass” position. On a single valve, slide the stem into BY-PASS. On a 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 the valve stem toward *service*, pausing several times to allow the softener to pressurize slowly.
 - b. 3-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 3 minutes, open a hot water faucet for about 1 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.**

FIG. 11 HOUSE MAIN WATER SHUTOFF VALVES

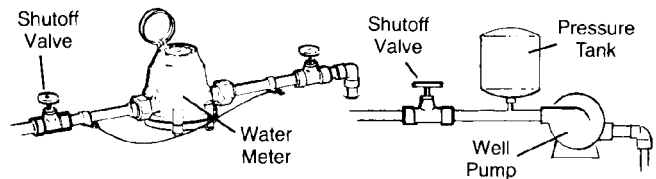
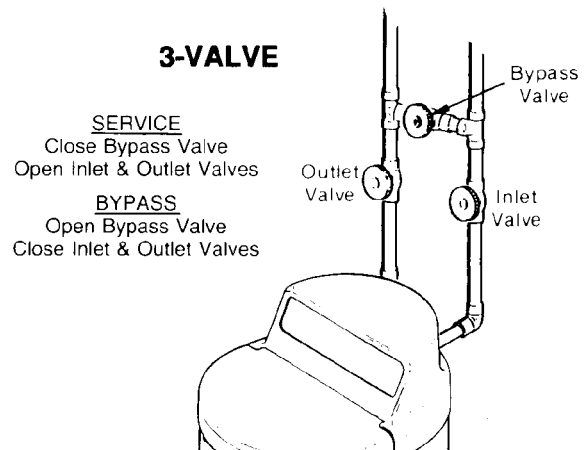
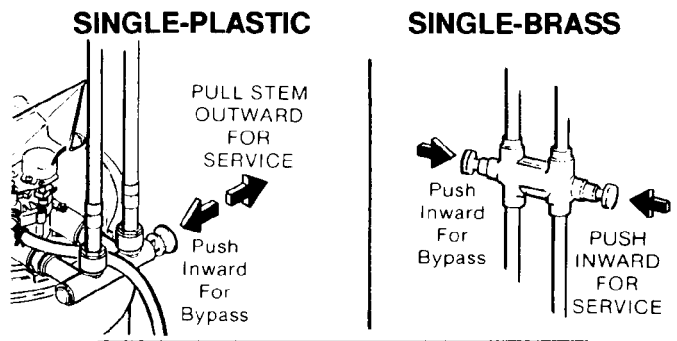


FIG. 12 BYPASS VALVE(S) SOFT WATER SERVICE/HARD WATER BYPASS

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



3F. GROUNDING, CONNECT TO ELECTRICAL POWER

1. INSTALL GROUNDING WIRE 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 didn't install a 3-valve bypass, or a brass single bypass valve (FIG. 12), the cold water pipe ground is broken.

To restore the ground, take the clamps (2), screws (2), nuts (2) and ground wire that are on the cardboard liner. Install across the iron or copper in and out pipes as shown in FIG. 13. Be sure good contact is made between the pipe and the clamps. Fasten the ground wire tightly between the clamps.

FIG. 13 COLD WATER PIPE GROUND

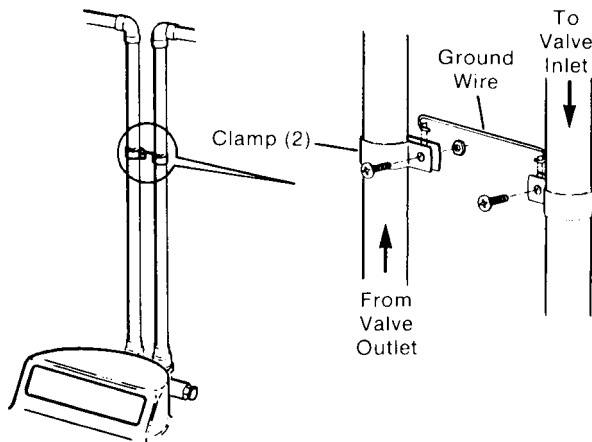
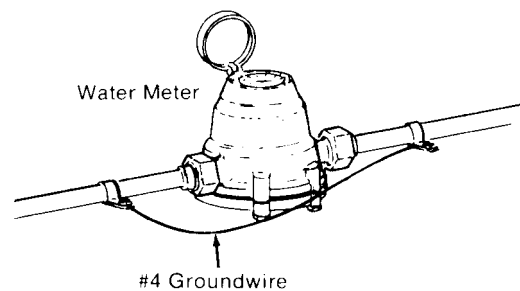


FIG. 14 WATER METER JUMPER WIRE



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 (FIG. 14).

2. 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 120 volt outlet only. Be sure the outlet is always "live" so someone cannot turn it off by mistake.

NOTE:

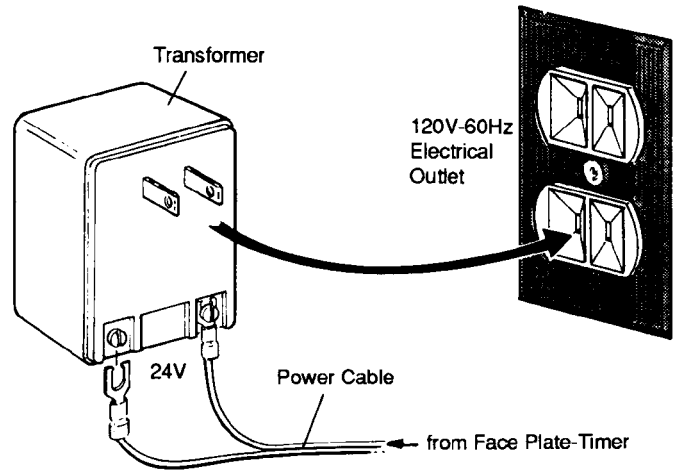
The included transformer is made for *inside use only*. Be sure the electrical outlet you plug the transformer into is inside, to protect from weather (see page 7).

3F. CONNECT TO ELECTRICAL POWER

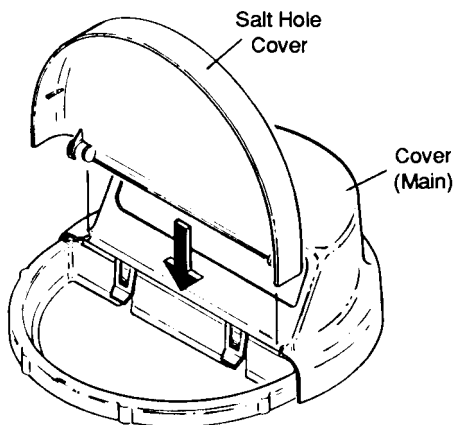
3. FASTEN THE POWER CABLE AND PLUG IN THE TRANSFORMER

Looking at FIG. 15, fasten the 2 power cable lugs (1 under each screw) to the transformer as shown. Tighten both screws. Then plug the transformer into the electrical outlet.

FIG. 15 CONNECTING TRANSFORMER



INSTALL COVERS



After installing your water softener, replace the covers. First, position the main covers on the softener. Then, set the salt hole cover into the main cover, as shown, and lower closed.

RESTART THE WATER HEATER

TURN ON THE GAS (OR ELECTRIC) SUPPLY TO THE WATER HEATER AND LIGHT THE PILOT.

NOTE:

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 it, 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.

YOUR PLUMBING AND ELECTRICAL WORK IS COMPLETE. Now go to your owners manual and do the softener start-up steps ¼ setting the timer, filling the storage tank with salt, sanitizing, etc.