SCALE REDUCTION SYSTEM

INSTALLATION GUIDE & OWNER'S MANUAL

FOR MODELS

- AS-1054
- SS-1054

INDEX

YOUR SYSTEM:

Installation Date: _____

Installer: _____

City/State: _____

Phone: _____

Model: _____

Serial #: _____

YOUR WATER RESULTS:

Total Hardness: _____ gpg

Iron (Fe): _____ ppm

Acidity (pH): _____

Total Dissolved Solids (TDS): _____ ppm

Total Compensated Hardness: _____ gpg

PRODUCT WARRANTY

In the unlikely event that your system has defects in material or assembly, the manufacturer will proudly stand behind our products and support the original owner for the following:

5 YEARS	**5 Years**
on Mineral Tank	**on All Parts**

System must be installed in accordance with specifications outlined in this manual and local plumbing codes to qualify for the factory warranty. Warranty coverage is limited and will not cover damaged due to accident, fire, flood, freezing, any other "Act of God," change in water conditions, misapplication, neglect, vacuum, lack of maintenance, or equipment installed on a non-potable water source.

Periodic media replacement based on water usage is necessary to maintain longterm effectiveness.

GENERAL OPERATION

Your scale reduction system is design to affect the minerals found in hard water, reducing their ability to accumulate throughout your home. Using a microscopic technology, the media inside the tank alters the state of dissolved calcium and magnesium into crystals so they pass through your faucets, fixtures, and appliances without causing damage.

The system also includes carbon filtration media inside to reduce chemicals present in your water and the harsh odors that come with them. Together, it delivers high quality water that can easily be added to any home.

Unlike a traditional water softener, your scale reduction system needs no salt, no electricity, and uses no additional water to regenerate the media inside. Creating an efficient, low maintenance answer to hard water issues.

BENEFITS OF SCALE PREVENTION

- Protects efficiency ratings of modern appliances.
- Simple installation at the water source point-of-entry with no electrical or drain needed.
- No on-going salt usage or wastewater
- Chemical-free operation to reduce environmental impact.
- Not affected by municipal restrictions or “bans” on water softeners

WHAT TO EXPECT AFTER INSTALLATION

- **Soaps & Detergents—** Use low or phoshate-free cleaning products with your treated water for best results. Modern surfactant or detergent based liquid soaps are recommended over solid caustic soaps.
- **Sinks, Faucets, & Fixtures—** When treated water is left to evaporate off a surface, you may see small spots left behind. These can be wiped off easily with a wet cloth or sponge. No more soaking in vinegar or harsh chemicals like what is needed for hard water spotting.
- **Dishwasher—** It’s recommended that you reduce the amount of dishwashing detergent used by 50%. Detergents with high phosphates may cause spotting. The use of a rinse aid may be advised.
- **Shower Doors, Tile, & Bathtubs—** When treated water evaporates off the surface, you may see spotting. Wipe away with a wet cloth or sponge; there is no need for vinegar or cleaners like with hard water.
- **Personal Products—** Shampoos and body wash will lather better and rinse off faster. Reduce the amount used while bathing if experiencing too many suds or that soap is being left behind after rinsing. We recommend the use of modern liquid soaps for best results.

BEST PRACTICES FOR THE FIRST 30-90 DAYS

If you’ve lived with hard water before installing your scale reduction system, you will want to be aware of the following conditions with treated water.

- Any scale buildup that already exists in your home will slowly be removed after the water is treated. Water may appear “milky” from the additional calcium being released, but is still safe to drink.
- Faucet aerators and drains may plug from the old scale releasing from the plumbing and water heater.
- If your dishwasher is severely coated with scale at the time of installation, we recommend that you use a product like Jet-Dry Dishwasher Cleaner to accelerate the removal of existing hard water buildup.
- After 30-60 days of treated water, we recommend draining your water heater tank per the manufacturer’s instructions. Repeat this process again after a full year to dramatically extend the life of your water heater.

FIG. 1

OPERATING POSITION

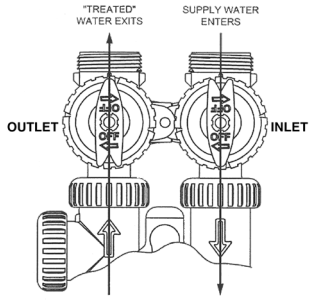


FIG. 2

BYPASS POSITION

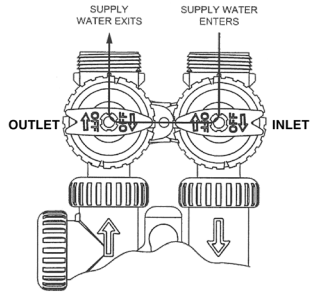


FIG. 3

FILL POSITION

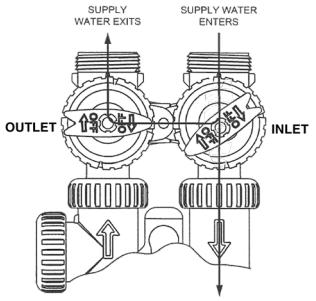


FIG. 4

DIAGNOSTIC POSITION

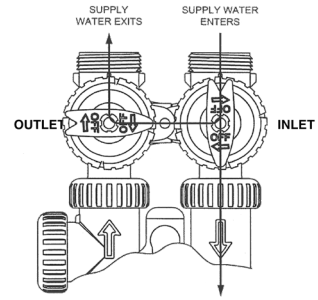
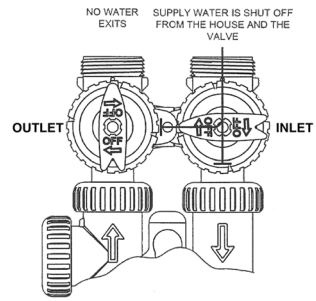


FIG. 5

SHUT OFF POSITION



BYPASS VALVE OPERATION

The bypass valve is used to isolate the system's operation from the plumbing system's water pressure in order to perform repairs or maintenance. The bypass provided with your water system is uniquely designed to be versatile with many advanced features. The 1" full flow valve incorporates four positions, including a diagnostic position that allows service personnel to work on a pressurized system while still providing untreated water to the building. It's completely non-metallic design allows for easy serviceability without the needs for tools.

The bypass body and rotors are glass-filled Noryl while the nuts and caps are glass-filled polypropylene. All seals are self-lubricating EPDM to help prevent seizing after long periods of non-use. Internal O-rings can easily be replaced if maintenance is required.

The bypass consists of two interchangeable plug valves that are operated independently by red arrow-shaped handles. The handles will point in the direction of the water flow in any given position. The plug valves enable the bypass valve to operate in multiple positions. See diagrams for details.

1. **Normal Operating Position—** Inlet handle is turned to have the arrow pointing toward the unit. Water flows through the control valve during normal operation. This position also allows the control valve to isolate the media bed during the regeneration cycle. The outlet handle is pointed away from the unit to allow the flow of treated water to leave the system and enter the building's plumbing system. (See Fig. 1)

2. **Bypass Position—** The inlet and outlet handles point towards each other. This isolates the control valve from the water pressure contained in the plumbing system. Any water drawn from the building while the system is in this position will receive untreated water directly from the source. (See Fig. 2)

3. **Fill Position—** During initial start up, the media tank will need to be filled with water. Slowly open the inlet handle to be partially open; handle arrow should point at a 30°-45° angle from the closed position. The outlet handle should remain closed, pointing toward the center of the bypass. (See Fig. 3)

4. **Diagnostic Position—** The inlet handle arrow points toward the unit to allow water pressure to flow into the control valve. The outlet handle remains closed, pointed toward the center of the bypass. (See Fig. 4) This is helpful to have water run through the system without it affecting the rest of the building.

5. **Shut Off Position—** The inlet handle is closed with the arrow pointing toward the center of the bypass. The outlet handle should point away from the unit. (See Fig. 5) This will stop all water flow to the building. If water is still available to the plumbing system in this position, this means a plumbing connection somewhere that is going around the unit.

INSTALLATION INSTRUCTIONS

PRE-INSTALLATION CHECKLIST

Plumbing Connections— All plumbing materials and the installation must adhere to State and Local Plumbing Codes. Please see the warning below for additional considerations when installing into a copper or galvanized steel plumbing system.

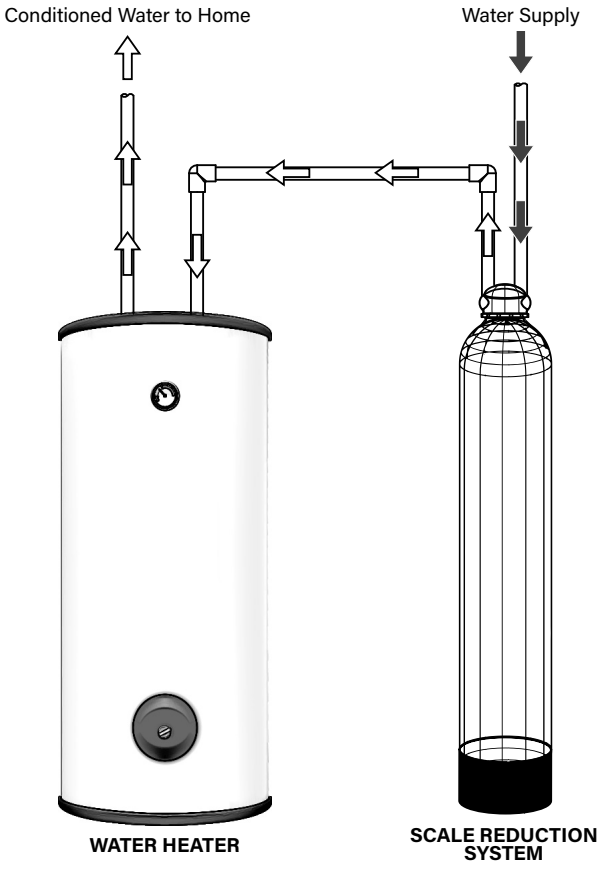
Water Pressure— Proper operation of the equipment requires:

- A minimum of 25 pounds water pressure.
- A maximum of 100 pounds water pressure.
- A minimum flow rate of 3 gallons per minute.

Temperature— Equipment must not be installed where it will be exposed to temperatures below 40° F or above 100° F.

Bypass Valve— The system includes a bypass valve. If the existing plumbing already has a bypass, the one provided may be removed. If you used the bypass provided, a full port ball valve should be installed on the inlet side. The equipment is designed to accommodate minor plumbing misalignments, but is not able to support the weight of the system or plumbing.

INSTALLATION OF SYSTEM



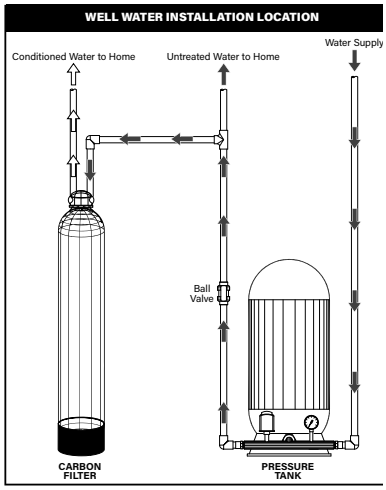
WARNING— Please be aware that some homes may have been constructed to building codes that encouraged the grounding of electrical appliances to the plumbing system. If this system will be installed in a copper, galvanized steel, or metal (conductive) plumbing system, the plastic components of the system will interrupt the electrical continuity of the plumbing system.

This will result in any stray currents from improperly grounded appliances downstream or potential galvanic activity to no longer be grounded. A grounded "jumper wire" bridging the equipment and reestablishing the contiguous conductive nature of the plumbing system needs to be installed prior to your systems use.

A simple ground jumper wire and pipe clamp can be purchased at any hardware store.

- The system is relatively light in comparison to a traditional water softener and is only partially filled with media. This is normal to allow the media bed space to expand during water flow.
- Place the system on a smooth, level surface. Do not install laying down; system must be operated in the vertical position. You may place the tank in any position during shipping and placement without damaging the functionality.
- Observe all local plumbing and building codes when installing the system.

INSTALLATION PROCESS



1. **System Location—** Place the scale reduction tank in the desired location. Ensure the area has a smooth, level surface and will not experience freezing temperatures.
2. **Attached Bypass—** Connect the bypass valve provided to the 1" openings on the top of the media tank.
3. **Connect Inlet—** Plumb in the cold water supply from the water source to the inlet port of the bypass valve.
4. **Start Up Instructions—**
   - Place a bucket under the outlet port of the bypass valve or run a temporary line from the outlet to a drain.
   - **Slowly** open the inlet valve to the Fill Position shown on Page 4. Allow the tank to fill with water until a steady stream of water comes out of the outlet port.
   - **Close** the inlet side of the bypass to stop the flow of water.
   - Connect the outlet port of the bypass valve to the cold water plumbing that delivers to the rest of the building.
   - Fully open the inlet valve of the bypass to allow water to enter the system. The unit is now providing conditioned water to the building.
   - Open faucets downstream from the system to release any air in the lines.
   - Be sure to check for any leaks and repair before completion.

USE WITH OTHER WATER TREATMENT PRODUCTS

1. **Sequence—** Due to the unique properties of the scale reduction process, it must be the last stage in the chain when installed with other water treatment equipment. Do not install any filters AFTER the scale reduction system or BEFORE any devices for which scale prevention is required.
2. **Avoid Phosphate—** Do not apply phosphate or any other antiscalant either before or after the scale reduction system.
3. **Iron and Manganese—** The scale reduction media inside the tank MUST be protected from excess levels of certain metals that can coat the active surface. Public water supplies rarely, if ever, include these contaminants, but well water should be tested for the presence of iron or manganese prior to installing a scale reduction system. If they are present, please see the Sequence note above for the placement of an additional filter.
4. **Copper—** If copper levels in the water exceed 1.3 mg/L, it will reduce the effectiveness of the media inside the system. Copper typically originates from new plumbing installed upstream of the system. When dealing with new copper pipes, we recommend waiting 3-4 weeks after the plumbing was added before putting the scale reduction system into operation (i.e. wait to install or place system into bypass during this time). This will allow the copper surfaces to be fully flushed and create a natural protective surface that will prevent further contamination.

   It's also recommended to avoid excess flux on inner surfaces of the pip and to use a low-corrosivity water soluble flux listed under the ASTM B813 standard.

SPECIFICATIONS

SCALE REDUCTION CAPABILITIES					
Model Size:	**AS-1045**			**SS-1045**	
Maximum Hardness (GPG)	25			50	
Maximum Chlorine (PPM)	0.5			0.5	
Media Included (Cu. Ft.)	Crystallin Assisted	Granular Activated Carbon	Ionic Guard	Crystallin Assisted	Granular Activated Carbon
Max. Service Flow (GPM)	11			12.5	
Min.-Max. Operating Pressure (PSI)	25-100			25-100	
Min.-Max. Operating Temp. (°F)	40-100			40-100	
Plumbing Size:	1″			1″	
Total Dimensions: ▪ **Valve & Media Tank** (Width x Height) ▪ **Inlet/Outlet Width**	10″x56.5″ 3″			10″x56.5″ 3″