



**Flow-Tech Home
Anti-Scale System
MAX Model
Installation Manual**

FLOW-TECHHOME™
exclusively distributed by
PLUMBER'S CHOICE WATER SYSTEMS

Patented Technology



ISO 9001:2008 Approved

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SAFETY INFORMATION



Due to magnetic field, as with many electronic devices, for precaution, keep Flow-Tech Home Anti-scale unit at least two(2) feet away from any pacemaker or medical device implants.

SPECIFICATIONS

SIZING

- Up to 1" pipe
- For homes with multiple water heaters, call your representative for sizing and installation assistance

ELECTRICAL SPECIFICATIONS

- Voltage Rating 100 - 240 Vac
- Supply Frequency 50 - 60 Hz
- Power Rating <1 Watt (@ 12 Vdc input)

POST-INSTALLATION RECOMMENDATIONS

The screen should be checked periodically to ensure proper operation of the unit. This is something the homeowner can do. They should call you if the screen is not illuminated.

Over time, the Flow-Tech Home system will dissolve and break up existing lime-scale build-up in water heaters and plumbing. These limescale particles may show up inside screens on faucets. Simply remove and rinse the screens during this descaling period. When all of the scale has been removed from the system, this will stop.

A follow-up visit is recommended 90-120 days after installation to check for proper operation and to remove any broken up scale from the hot water heater. Water heater should be blown-down/drained.

SETTING PROPER EXPECTATIONS

Flow-Tech Home is an environmentally friendly and safe alternative to water softeners. Once installed, the Flow-Tech unit immediately begins to work. The unit transmits a low-frequency signal that is pulsed several thousand times per second and is propagated throughout the home's entire plumbing system. This electromagnetic signal alters the charge on the minerals that are dissolved in the water. This new state forces the minerals to form tiny seed crystals that grow when supersaturated. They remain in suspension and are harmlessly washed away with the waste water.

Flow-Tech Home stops encrusted scale that is formed by supersaturation, however, it can not stop spotting caused by evaporation. Customers may experience some light evaporative spotting inside their dishwasher or shower. If this occurs, the spots will be much easier to remove. Spotting in showers or dishwashers may be reduced or eliminated with the use of Jet Dry, Lemi Shine or a dose of vinegar with each dishwasher load. Use of Rain-X on showers doors is also an option.

Flow-Tech Home is not a water softener. Water conditioned by the Flow-Tech system will not provide the slick feel that is associated with salt-softened water, yet the water will feel softer than unsoftened water. Soaps will lather and create suds at a greater rate than they do with unsoftened water. The amount of soap and detergent needed is reduced. Failure to reduce laundry detergent may make clothes feel stiff due to over soaping.

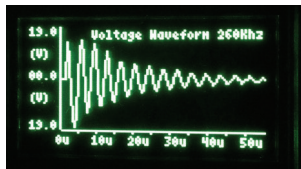
Flow-Tech does not remove minerals from the water, it simply renders them harmless. Initial hardness may even increase as old scale is dissolved and removed from a plumbing system. Flow-Tech does not add or remove anything from the water, therefore it has no effect on the taste or smell of the water.

TROUBLESHOOTING

Operation Screen When Low Current is Detected

If the current is below 0.2A peak-to-peak, the diagnostic reading tends to be unsteady because the noise level of the reading becomes significant. If this occurs, it will follow with a message to check installation/ground.

If you get this error message on a plastic system, please call 615-866-6100 ext. 3 for assistance.



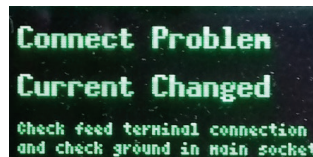
Instead of showing a “current waveform,” the unit shows the “voltage waveform,” which in the case of low current will always be about 38V peak-to-peak. In this case, the vertical axis changes to say (V) and the message at the top says Voltage Waveform.

NOTE: Unit cannot overcome extremely poor ground or no ground. Check ground connection to conductive plumbing system and inspect for properly installed ground rod on plastic plumbing system. If not properly grounded, an electrician will be required to resolve the problem.

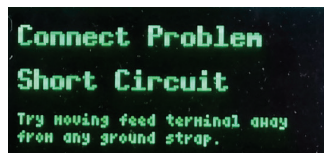
Errors: Short Circuit, Unexpected Changes to Current

If a sudden change is detected, the unit displays this error message, then starts a new power-up.

As shown on the error screen, check signal wire connection to conductive pipe and test the power outlet with a ground tester.



If a short circuit is found, this display is shown. After ten seconds, the unit re-starts power-up test to see if the condition has been corrected and if it can cope by adjusting the supply voltage. If not, check wiring to be sure it is NOT coiled. If error persists, try moving the feed signal wire away from any ground wire or strap.



No Signal Detectable Outside the Range of the Immediate Install

1. Be sure you are testing where there is conductive metal available to touch the tester to. Look for nearest metal fixture or angle stop.
2. Ensure the outlet is grounded, and neither cord nor signal wire are coiled.
3. If still unable to get a signal, call 615-866-6100 ext. 3.

INSTALLATION REQUIREMENTS

Package Contents

The box should contain:

- Flow-Tech Home Max unit
- Four(4) clamps
- One(1) piece of jumper wire
- Consumer information/warranty card to be left with customer
- Manual to be retained by installer

If anything is missing or damaged, contact your representative immediately. Keep manual for reference in the unlikely event that the unit requires service.

Tools Required

To properly install the Flow-Tech Home Anti-Scale unit, the following items are needed:

- Outlet Ground Tester or Multimeter (preferred)
- Flow-Tech Home Signal Tester or Pico Scope
- Screwdriver
- Wire strippers
- Screws appropriate for the surface where unit is being installed

Other items potentially needed include:

- Extension cord
- Additional length of 12 gauge wire and ground clamps
- On Electric Water Heaters, a low-watt density element is required.

Plumbing and Electrical System Requirements

For the Flow-Tech Home Anti-Scale unit to perform correctly, the following requirements must be met:

- The home’s electrical system must be properly grounded. The Institute of Electrical and Electronics Engineers (IEEE) standards recommend a ground resistance of 5 Ohms or less.
- *If system is not properly grounded a licensed electrician should be called.*
- Generally an outlet ground tester will suffice, but there is the possibility of a false positive reading. To avoid this, use a multimeter to confirm electrical system is properly grounded with low resistance.
- A second point of ground is required. If the plumbing system is grounded, this will suffice. If not, a second point of ground can be created. Call technical support to assist.

- Conductive metal piping is required to be attached to both tag lines to the cold water supply and the jumper wire to the hot water line. Installation on old galvanized plumbing is NOT recommended.
- If the plumbing system is PEX the Flow-Tech will still work but the tag line must attach directly to the copper nipple on the water heater.

INSTALLATION INSTRUCTIONS

1. If water heater is electric, be sure the element is a low-watt density element. If a high-watt density element is in place it will need to be changed out with a low-watt density element. (Diagram A)
2. The Flow-Tech Home units should ideally be installed near the hot water heater(s). Signal wires/clamps should be installed directly to the nipples on the water heater when possible.
3. You need (2) screws to mount the unit to the wall. The type of screw needed will depend on the mounting surface. Install the unit on the wall using the holes in the base of the unit. Make sure screws are secured tightly.
4. Using clamps enclosed, attach one clamp to the conductive pipe on the cold water supply and the other clamp on the conductive hot water pipe. (Diagram B)
5. Attach the yellow signal wire from the Flow-Tech unit to the cold water feed. If the wire is too long you can cut it. DO NOT COIL IT.
6. Use the secondary jumper wire provided in the box to jump from the original clamp to a secondary clamp on the hot line out of the water heater. Be sure to strip the coating from the end of the wire to make sure you have good conductive connections.
7. Plug the power cord into a **PROPERLY GROUNDED ELECTRICAL OUTLET**. To ensure the outlet is properly grounded use an Electrical Receptacle Wall Plug AC Outlet Ground Tester or multimeter. These can be purchased at any hardware store.
8. The unit will run a self-diagnostic start-up procedure for approximately 80 seconds. If no error screen appears, the system is ready for testing. See troubleshooting if error screen appears.
9. Do not coil the power cord or tie to the pipes, since this will interfere with the signal. If the cord needs to be bound, fold accordion style and use a zip tie.

TESTING FOR SIGNAL INDUCTION

1. Once the unit is plugged in, hold the Flow-Tech signal tester to the pipe several inches upstream from the cold water ground clamp and verify that the tester light illuminates.
2. Next, hold the tester to the pipe several inches downstream from the hot water ground clamp and verify that the tester light illuminates.

3. If a signal is detected on both pipes, the installation is correct.
4. On plastic/non-conductive material, find the nearest fixture or angle stop to perform the test.
5. While no further testing is necessary, in most cases, a signal can be detected throughout the plumbing network. It will be weaker and may require an Oscilloscope to detect, especially if the plumbing network is plastic. The signal necessary to protect the plumbing system is only a fraction of what can be detected by the tester.

INSTALLATION DIAGRAMS

Diagram A

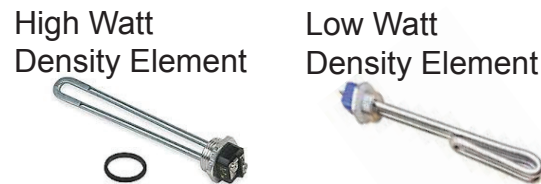


Diagram B

