



# Installation Guide

HardnessMaster™



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Congratulations for purchasing an environmentally friendly electronic water conditioner, and thank you for choosing the HardnessMaster™ system to treat your home. Please read this short manual in its entirety for a quick and successful installation.

### Your box contains:

- HardnessMaster™ energizing unit UL approved
- AC/DC switching power supply
- One core signal cable of sufficient length
- Four cable ties
- Two screws with wall anchors
- Instruction manual

### Installation site:

- Locate the incoming water supply and if possible find a straight length of pipe after the water meter (if any) of at least six inches. The pipe can be horizontal, vertical or diagonal.
- If no electrical outlet is present near the installation site, an extension cord may be used or consult a qualified electrician.
- In case the water supply is from a roof tank, install the coil after the tank. The signal coil should not be closer than six inches (15 cm) from any major steel/iron objects, motors and appliances for best performance.
- Install the HardnessMaster™ System unit upstream of the water softener if you plan to run them together. If you have a whole house water treatment system, install the HardnessMaster™ upstream for best results.

### WARNINGS

- Do not immerse in water
- Removing the back plate will void the Warranty and Performance Guarantee
- HardnessMaster™ treated water reverts to its original state after 48 hours. This means that the water sitting in your water heater for several days will tend to behave as untreated water causing those nasty hard water stains. After the existing water has been replaced by freshly treated water, the anti-scaling effects of HardnessMaster™ will be noticeable again. If you plan to keep taking frequent long periods of absence, not using your hot water, we recommend installing a supplemental treatment unit on the outlet of the water heater
- Do not dismantle your existing water softener before you are fully satisfied.



## INSTRUCTION MANUAL

### Installing the coil

Unroll the cable and secure the middle of the cable to the pipe with a cable tie. (Image 1). Make 18 windings with one half of the cable, starting at the arrow of image 2. The horizontal arrow gives the winding direction. Secure the last winding with a cable tie. Start winding the second half of the cable on top of the first layer following the direction of the cable (image 3), in such a way, that when done both cable ends are on opposite sides of the pipe and on one side of the coil (Image 4). Secure again with a cable tie. If coiled incorrectly, the 2<sup>nd</sup> coil will create a loop or bend (Image Incorrect). Cut the cable to appropriate length to reach the location where you will mount the energizing unit and **remove 0.2" (0.5 cm) of the insulation of both cable ends**. Insert the cable ends in the spring connector, polarity is not important.



Image 1

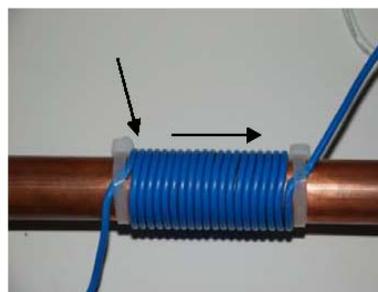
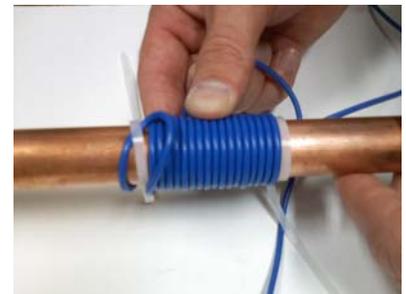


Image 2



Incorrect

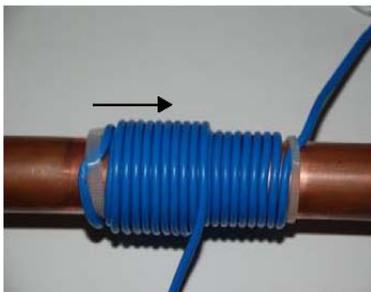


Image 3



Image 4

### Mounting the control box

Use the two screws and if necessary the wall anchors to mount the control box to the wall. A screwdriver and a drill are needed. You can mount the unit horizontal or vertical.

### Putting the HardnessMaster™ into operation

Insert the 12VDC plug of the adaptor into the power jack at the bottom of the HardnessMaster™ and connect the adaptor to either 110V or 220 V AC. The Red light and the Green light should show. The Red light indicates "Power present", the Green light indicates "Coil connected and signal being generated".



## HARDNESSMASTER PERFORMANCE GUIDE

The HardnessMaster™ hard water conditioner system treats all incoming water as it passes the coil and alters the scaling properties of the dissolved minerals so that it does not adhere to surfaces and form hard scale.

Your HardnessMaster™ System will:

1. Prevent any further hard-scale buildup
2. Remove the existing scale that is inside your water system
3. Soften the existing hard scale around taps, basins, toilets, etc.
4. Reduce soap scum and improve the lather of soap
5. Make the water feel softer
6. Reduce the harsh effects of hard water on skin and clothes.

## IMPORTANT NOTES

### CLEAN AERATOR SCREENS:

During the de-scaling period, some deposits may collect inside the nozzles or aerator screens. Make sure to inspect those places regularly during the initial three months until no more loose scale appears: unscrew, shake loose scale, reinstall.

### DRAIN YOUR WATER HEATER:

It is recommended to drain the water heater for best results. Drain about 5 gallons (22 liters) of water from the water heater. Do this by connecting a hose to the valve at the bottom and drain into a bucket. Perform this operation once a month for 90 days or until water comes out clear.

1. **In older buildings** with existing scale, for some time after installation, the unit will be de-scaling your water system. This often results in the water appearing to be harder and loose scale particles appearing in places like showerheads and aerator screens. Once interior de-scaling is complete, your water system will be scale-free and the HardnessMaster™ will deliver the best results.

2. The calcium hardness previously in solution is now in **SUSPENSION** in form of a fine invisible powder which flows to the drain. As water evaporates on dishes or sinks, some white spots may become visible in a form of a fine and innocuous powder which will easily wipe away leaving no marks or spotting.

3. Water Softeners often leave deposits inside a water system. Therefore, if a softener is in use, you may want to allow the HardnessMaster™ System to remove the deposits before the softener is switched off. In that case, it is strongly recommended to leave the softener and the HardnessMaster™ System on, together during four to eight weeks (depending on water usage and amount of existing deposits). You will notice your softener working more efficiently and using less salt.



## FREQUENTLY ASKED QUESTIONS

### *How will you know that the HardnessMaster™ system is working?*

The amount of time required before you experience the effects of the system varies depending on the amount of water used. Generally, signs of aggressive de-scaling are seen within one to two weeks. Note: The system may initially seem to be less than fully effective at times. This is due to the removal of the existing scale, which is brought back into solution briefly creating the effect of increased water hardness. Once the pre existing scale has been removed from the pipes, the full effectiveness of the system will be experienced.

### *What does the HardnessMaster™ System do that a water softener does not?*

1. It removes scale buildup in hot water heaters, saving energy costs.
2. Saves money by not requiring the purchase or use of salt.
3. Provides salt-free water, a concern for many health-conscious people.
4. Provides environmentally clean water while eliminating the discharge of salt-laden water into the water table as a result of the periodic regeneration cycle of conventional water softeners.
5. Reduces the consumption of detergents.
6. The commercial models provide big savings for commercial users. Apartment buildings and other commercial and industrial users experience savings in energy costs, showerhead replacement and equipment maintenance

### *What does a water softener do that a HardnessMaster™ System does not?*

1. The water softener softens hard water by replacing the calcium and magnesium with sodium.
2. The water softener adds salt in your water and drains damaging chlorides into the environment.
3. The water softener requires that you purchase salt periodically.
4. The softener gives you a silky feeling that you cannot get rid of soap from your body.
5. The water softener requires that you waste water for regeneration.



## WHAT TO EXPECT:

**External Scale Indicators:** It is good to use external scale as a tracking reference to determine that the system is working. Areas to identify are:

1. Scale around taps, sinks, etc. will begin to soften, provided that the newly treated water is in regular contact with the area. Once softened, the deposits will disappear on their own, or they can be easily removed using a stiff scouring pad.
2. Surfaces in contact or splashed with water become easier to clean.
3. Scale on showerheads softens and disappears, periodic showerhead cleaning or replacement becomes unnecessary.

## Internal Scale Indicators

1. As the heating element inside your hot water system is de-scaling, water heating will become progressively more efficient. Water will then heat faster saving up to 30% in energy use. You may save additional energy by reducing thermostat settings while still having sufficient hot water.
2. If the water system was severely scaled, an improvement in water flow also may be noticed.

## Soap, Scum, and Skin Effects

You will usually notice:

1. A reduction of around 20% in soap detergents needed.
2. Less scum forms on the bathtub and there is improved soap lather.
3. A great improvement in skin condition for anyone suffering from dry or itchy skin. Even those with normal skin can expect improvements and reduction in the use of hand creams.

## After the First 90-120 Days

All de-scaling should be complete and you will be left with:

1. Soft-feeling water from every tap.
2. Clean pipes, faucets and showerheads.
3. Cleaner dishes, sinks, tubs and shower stalls.
4. Savings in energy and detergent expenses.

Check the HardnessMaster™ control panel periodically:

It is recommended that you verify that the green LED light on the control panel is on. You should verify this at least twice a year. The practical ramifications of HardnessMaster™ water treatment extend far beyond mere softening. The de-scaling action can have a huge energy cost reduction impact for residential, commercial and industrial property owners while reducing greenhouse gas emissions. For commercial or industrial models please contact our friendly customer service.



### Espresso Machines, electric kettles and other appliances where water does not circulate

HardnessMaster™ treated water will show a significant improvement in the scale condition of these appliances as compared with untreated water. However, if compared with salt softened water the results will not be as good, yet, health experts strongly discouraged to drink salt softened water for obvious health reasons.

### Dishwasher

If you use a dishwasher and replaced a salt-water softener, you may notice increased spotting. This situation will diminish to the residual level of calcium present in your water supply when the descaling is finished. Use of a liquid dishwasher detergent with a sheeting agent (JetDry™, Glass Magic™) is highly recommended.

### Bathroom Fixtures

You should notice that spots on chrome or stainless fixtures, the toilet bowl, tub, and glass shower stall come off easier with normal cleaning after the first several weeks of use. Another benefit of the HardnessMaster System is that the naturally present microorganisms causing black mold in the bath area will diminish and then disappear completely.

**One common problem** is existing scale buildup caused by back splashing on faucets and tub/shower enclosures. Since there is not direct water flow across these surfaces, unlike inside a pipe, the scale can be easily removed manually as it gets softer. After initial cleaning, there will be no new accumulations.

## TYPICAL USER EXPERIENCES

### Soft Water Feeling

The treated water is immediately altered and will start dissolving scale buildup in the pipes. The hard scale dissolves one particle at a time, so there are no problems with clogging filters or screens in the plumbing system. If you have never used a water softener before, you will experience a dramatic difference in the "feel" of the water. The water will have a softer feeling and you will notice that your hair is "squeaky clean" after a shampoo. You will experience that HardnessMaster™ treated water cleans better.

### Reverse Osmosis Systems

The HardnessMaster™ System will gradually clean up scale deposits clogging the Reverse Osmosis membrane resulting in longer lifetime and more efficient drinking water production.

### Replacing a Salt based Water Softener

If you have replaced a salt water softener, you may notice the water becoming harder as the scale begins dissolving. You may wonder, "What have I done here?" Do not worry. This is a consequence of de-scaling, and the condition will improve daily as the scale is removed. Your plumbing took years to get full of scale. However, it only takes a short time to clean it up. This period may be brief for a newer home, or take several months for older homes with low water usage. We recommend draining your water heater regularly to shorten the de-scaling process. (The suspended hardness and loosened scale tend to settle down at the bottom and should be removed by draining)



### **HARDNESSMASTER™ SATISFACTION GUARANTEE:**

This system comes with a 100% satisfaction guarantee for 6 months. If you're not completely satisfied with your system, call us within 6 months of delivery, and we'll give you a 100% refund. (See return policy for details via website, attached to invoice or please call Vitalus Customer Service.)

#### ***Disclaimer:***

Since our 6-month 100% satisfaction guarantee also includes a performance guarantee, **we respectfully require our customers to properly install and use the HardnessMaster™ for at least ninety (90) days before returns may be authorized.** This is to ensure customer satisfaction regarding the HardnessMaster™ water conditioning system performance, which often requires considerable de-scaling (i.e., gradual reduction of existing limescale buildup) from the piping system and water appliances (i.e., water heater, dishwasher, etc.). It is also important to understand that the HardnessMaster™ does not remove beneficial minerals such as calcium and magnesium from your source water, and, **it does not address iron related water conditions.**

The HardnessMaster™ system will prevent or highly reduce accumulation of scale in your pipes, faucets, showerheads, water heaters and other water appliances. If you are not satisfied with the results after SIX MONTHS of continuous use, take the following steps:

- Check that the green LED is illuminated,
- Check that signal coil is correctly wrapped and connected (see installation instructions for details).
- Check that the signal coil is not closer than 6 inch (15 cm) from any major steel/iron objects, motors and appliances.

This guarantee does not include the total elimination of scale in non-free flowing water systems such as steam generators and kettles.

In the unlikely event of HardnessMaster™ becoming unserviceable, i.e. the green light fails to illuminate, please contact Vitalus technical support for replacement, quoting date of purchase and serial number. This guarantee does not extend to any other electrical or water appliance or device that may be in use by the user of HardnessMaster™ and we accept no liability for the malfunction of any device other than HardnessMaster™, which has, either directly or indirectly been sold to the user. HardnessMaster™ does not affect the potability or the natural mineral content of the water, as there is nothing in contact with the water. Therefore, we accept no responsibility for water quality.

These guarantees shall only remain valid provided that the product is used for the precise purpose that it was designed and manufactured and provided that it is installed and in strict accordance with the appropriate instructions.

### **HARDNESSMASTER™ WARRANTY**

Because of the high-quality materials and workmanship that goes into every water filter or filtration system, we confidently extend the following industry-leading, warranty on these water filtration products:

\* 3-Year defect-free warranty on materials and workmanship

WARRANTY SERVICE IS AVAILABLE BY CALLING VITASALUS FOR A WRA NUMBER BEFORE RETURN. NUMBER MUST BE ON THE OUTSIDE OF POSTAGE PREPAID BOX, WITH PROOF OF PURCHASE.

(Note: There are no forms or warranty cards necessary from our customers as warranty registration is automatic and begins on the day our customers receive their product.)



## TECHNICAL SPECIFICATIONS

Supply voltage:	110-240V, 50/60 Hz
Power consumption:	6 Watt
Application Voltage:	12 V DC
Coil cable:	1 mm <sup>2</sup> /20AWG, Blue
Maximum Coil Temperature:	176 F (80 C)
Capable of driving:	2 coils double layer
Enclosure material:	Polysterol (Grey)
Maximum enclosure temperature:	149 °F (60 °C)
Minimum enclosure temperature:	14 °F (-10 °C)
Protection rate:	NEMA2 (IP54)
Weight packed:	13 ½ OZ ( 378 Gram)
Dimension packed (wxdxh):	8.3"x5"x1.9" 10mm x127mm x49mm

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