



Residential Model Owners Manual

2005 PRO-MRKT Corp.

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After Installation

In approximately three weeks after the **Soo-Soft®** water softener is installed you will start to notice some of the changes that occur as a result of the hard calcium being removed from your plumbing system. By six weeks the changes become significant. The reason that this process is not immediate is due to the years of hard calcium that has been accumulating in your plumbing system.

This is especially true for systems that have previously had salt-based softener systems. These systems leave the lime scale in the pipes and faucets. As the unit begins to work in the system, this lime scale will start to come out in a gradual manner. The more water that flows through the system during this period the faster these benefits will occur.

During this time it is not unusual for the water to appear cloudy from the particles of hard calcium (Carbonate) that are being released from the system. As the system is cleaned of this harder form of calcium, it will gradually leave the softer form (Aragonite), which will be much easier to clean from surfaces. After a period of three months when the hard calcium is removed from the plumbing system, the benefits described below will generally reach their peak.

Understanding the Benefits

Sinks, toilets, bathtubs, and showers will become easier to clean up as hard calcium deposits lose their ability to stick to surfaces. Instead of hard surface crust that requires hard scrubbing and dangerous chemicals, all that will be left is a powdery aragonite that cleans up easily. If a large amount of scale already exists, it may be necessary to clean this off with conventional agents first. Removing existing hard deposits requires that water flow over these surfaces. Shower stalls, bathtubs, and similar surfaces generally do not receive constant water flow and will need to be cleaned first. After this is done, future clean up is easy.

The water is now a better absorbent of soap, dishwashing detergent, laundry products, as well as hair shampoos and conditioners which will now work more efficiently than with hard water. The difference in savings can be substantial. It is not unusual for those with well water to notice a difference of 50%. This can lead to large cost reductions in the dollars spent toward soaps and conditioners used by a typical family.

Calcium has been attaching itself to the inside of pipes, dishwashers, washing machines, hot water heaters, and faucets for years. As the **Soo-Soft®** water softener cleans and removes the scale from the plumbing system water will begin to flow easier through the pipes and the drains will take the scale away. Many homeowners will notice a gradual increase in water pressure and flow at the

faucets and showerhead. In commercial restaurant applications, steam tables, coffee makers, and icemakers will work better and require less periodic cleaning. These units will now last longer as the hard form of calcium is no longer clogging them

Hot Water Heater

As the existing hard calcium is converted into a soft sludge, this will accumulate in the bottom of the hot water heater. Remove this by draining a few gallons from the bottom of the unit every few weeks. This water will appear cloudy from the hard calcium that has been cleaned out of the water heater. This will make the water heater more efficient, thereby consuming less fuel. It may be necessary to turn down the thermostat on the water heater.

Washing Machine

The washing machine will require less detergent. Clothing will be brighter and whites whiter. As the clothing is washed, the hard calcium will be removed and the clothes will be softer. If you are using a fabric softener, you may be able to reduce the amount used after the hard calcium is removed from the plumbing system. This will improve over time. Examine the clothes at the end of the final rinse cycle. If there is any detergent left in the clothes, reduce the amount of detergent until clothes are free of soap at the end of the last rinse. You may notice that clothes last longer. This is an effect of the calcium being softened into its

aragonite form. Calcium in its original carbonate form is abrasive and wears out clothing faster in the wash.

Dishwasher

Any time that water is heated, the hard form of calcium is created. One of the places where it collects the most is the dishwasher. The pump, the lines and even the inside of the dishwasher are often loaded with old, hard lime scale.

Once the **Soo-Soft®** unit begins to do its job it will begin to dissolve this lime scale from both the dishwasher and the hot water pipe that feeds it. This process will take a maximum of 90 days and the pipes, hot water heater and dishwasher will be cleaned. This is assuming that the dishwasher is used on a regular basis so that water flows through it and dissolves the existing hard calcium. In the meantime while this process is occurring, the hard calcium that is being removed from the plumbing system will often collect on the dishes.

During this period, it may be necessary to use a dishwashing detergent that offers a clear rinse cycle such as Cascade Pure Rinse formula. Avoid using the citrus scented or gel varieties of this product. It is possible to use a product such as Glass Magic® to aid in keeping glasses free from deposits. The dishwasher itself can be cleaned of calcium with a product such as Dishwasher Magic®. After the 90-day period of de-scaling the

plumbing system the amount of these products can be greatly reduced. It may be necessary to reduce the amount of detergent if you find a soap film that is left on the dishes. Try starting with 1 or 2 tablespoons of detergent and add more until the dishes are clean.

Mold and Fungus

A black mold often accompanies the calcium deposits that come with hard water. It shows up in the toilet bowl and often on shower curtains. This is especially common with well water. This will be greatly reduced or disappear completely in most cases. This is because the bacteria have to live on a bio-film that exists on the scale that is inside the pipes. As the pipes are cleaned, they have no place to feed. Shortly after that, the bio-film that supports them disappears as well. It may be necessary to clean these blackened areas first with conventional cleaners.

Water and Beverage Taste

Hard calcium in water makes for an abrasive taste to the water. The water will improve in taste as the system is rid of the excess hard calcium and the water becomes softer. Instead of the water having a hard or brackish taste, it becomes sweeter and smoother to the palette. Water that is used for cooking, coffee, tea, and other beverages will make them taste better.

Swimming Pool and Spa

For best results on a large swimming pool, a separate unit is recommended for the swimming pool itself. This will insure that the water that is being re-circulated in the pool is constantly being softened. In the case of a spa or whirlpool where the water is drained after each use this is not necessary.

In a swimming pool the additional unit should be installed in the recirculation loop of the pump and filter. Its best location is on the output of the pump. This will act to keep the pool water constantly soft and silky. The feeling of being sandblasted by hard water in the whirlpool will disappear.

As the water that becomes available to the pool becomes wetter, the amount of chemicals required to shock the water can be reduced. Chemicals can often be reduced up to 25%. The chlorine and other chemicals will have become more effective in killing the bacteria in the water.

The pH of the water will become more stable allowing for chemical balance in the pool to be maintained more easily.

Clean up required for tiled surfaces around the pool will become easier to clean as the scale on these surfaces is reduced to aragonite powder.

Plumbing System Benefits

Clogged Pipes

Plumbing repairs are expensive. Pipes, water heaters, pumps, and faucets that become clogged with calcium carbonate can cost thousands of dollars to replace over a period of a few years of hard water use. As lime scale builds up, water flow through pipes and faucets slows down. It is not unusual for plumbing and faucets to build up scale to the point that expensive replacement becomes necessary. The **Soo-Soft®** water softener can often be installed in residential and commercial applications that are clogged with hard calcium and after the de-scaling process, these pipes will be clear of calcium deposits and the replacement of pipes will often not be required.

In commercial applications the savings can be as much as ten fold over the cost of plumbing replacement. In restaurants that use reverse osmosis filters for soft drink dispensing it is not unusual for savings in excess of several thousands of dollars. Filters of all types will last longer without the hard form of calcium clogging them. Steam tables that required weekly cleaning now require none. Coffee machines that require constant maintenance are free from maintenance and last much longer. Ice machines last longer without being clogged by hard calcium deposits.

As the system is freed of hard calcium deposits, the required amount of energy to heat water is reduced. It is often necessary to reduce the thermostat setting on the water heater. In commercial applications the reduced obstruction in the pipes by the de-scaling process reduces the load that pumps have to carry. This results in further energy savings. The amount of energy required to operate the **Soo-Soft®** unit is only a few dollars per year. This in contrast to salt based systems whose cost often exceeds several hundred dollars per year. In commercial applications, these savings are much greater.

Septic Systems

Many municipalities are beginning to create legislation to limit the use of salt-based water softeners. The back flushing required for these systems affects the septic systems of both homes and municipalities. This salt pollution kills the bacteria necessary for the break down of biological waste. By contrast the **Soo-Soft®** system is completely environmentally friendly and presents no risk to septic systems.

Filtration Life

In homes that use reverse osmosis or carbon block filters for drinking water, filters will tend to last longer. This is because the hard form of calcium is no longer clogging the filters. The much smaller aragonite form of calcium will simply pass

through the filters, greatly extending their life.

Lawn and Garden

Unlike salt based softening systems, which are harmful to lawn and plants, the **Soo-Soft®** water conditioner is beneficial to both plants and lawns.

The effect of the wetter water allows for nutrients to be better absorbed into the soil and hence into both plants and lawn. This is also true of fertilizers and other products used for lawn care. These may have to be reduced for a lawn or garden that is being frequently watered using the **Soo-Soft®** unit

The softer aragonite form of calcium is absorbed easier by the plants and adds to the nutritional content of the water. This will make it more difficult for lawn and plants to create calcium burning (brown tips).

You will notice a considerable improvement in your lawn and plant health with the **Soo-Soft®** unit installed. In commercial farming operations treated with magnetic water systems yields have often been increased by tons of grown product per acre.

Skin and Hair

A multi-billion dollar cosmetics industry that creates salves, lotions, and conditioners with often-toxic ingredients exists in order to create the illusion of healthy skin and hair. A very large portion of these dollars is spent to compensate for what are often the effects of lime-scale.

Our skin and hair are collectors, just like the tub and shower, for soap scum and residue. These are left behind due to high concentrations of hard calcium left in the hair follicles and pores of the skin.

Toxic residue breed bacteria held in place by left over soap scum leading to poor skin and hair health. This is because water with hard calcium in it is a poor solvent. The hair and skin cannot be rinsed clean of soap and moisturizing residues.

Moisturizers and other lotions can only *partially* compensate for hair and skin that has been encrusted over time with lime-scale.

Skin

Water that is high in hard calcium is very abrasive. It irritates the skin and scalp. The soap scum also creates the ideal place for bacteria to grow. This is which often leads to minor skin

irritations and can lead to other skin problems. Skin that feels itchy can be the result of hard calcium deposits and the incomplete rinsing of soapy residues.

These effects are especially noticeable when shaving. The skin feels irritable, as the effects of shaving have not been rinsed thoroughly. A residue has been left behind.

The simple experience of washing your hands and face after the Soo-Soft© unit has been installed will often be dramatic. A significant change in the “sandpaper” feel of skin will be experienced. This will be especially noticeable with water derived from wells.

Over time, as the Soo-Soft© cleans the plumbing system of hard calcium, this effect will improve. The skin will feel cleaner and smoother, as the pores of the skin are not being clogged by hard calcium. The benefits of the Soo-Soft© are more than just cosmetic as they influence the health of the skin itself.

These effects are in direct contrast to water softeners that use salt. Salt helps to bring up the oils that are in the skin that are there to protect it, creating a “slimy” feeling after washing.

Hair

Hair that is coated with lime-scale deposits is very hard to manage. It makes the hair curl and “frizz” in humid weather. This coating also does not allow hair conditioners to saturate the hair properly.

Long hair is very prone to breaking from the accumulation of hard calcium deposits. The hard scale left on the hair shaft has compromised the health of the hair and its ability to breathe. The result is often that a great deal of hair accumulates in the sink after shampooing.

As the Soo-Soft® unit creates water that is more soluble it will dissolve the calcium deposits in the hair over time. The hair will be cleaner, with a squeaky-clean feel to it. The hair will take on a silky-smooth character that is due to removal of the hard calcium deposits. The hair will also have better color due to the removal of the scale on the hair shaft. This will increase the transparency of the hair color.

Health and Dental

Our bodies need calcium, which is a critical mineral to perform countless cellular functions. The Soo-Soft® water softener breaks up the calcium so that our bodies can utilize it more easily and does not use salt. Traditional water softeners replace the calcium and magnesium with salt, a substance that doctors say we consume too much of. People whose doctors have recommended a low-salt diet can benefit greatly from use the Soo-Soft® conditioner in contrast to conventional salt-based softeners.

The term “hardness” has been incorrectly applied to the amount of calcium dissolved in the water. This obsolete from a chemical point of view. Calcium occurs in several forms and is necessary to support life. This is especially true in drinking water. Hardness is a factor in calcium carbonate at normal temperatures, not in calcium aragonite.

Salt-water softening systems remove both calcium and magnesium from the water and replace it with salt. When these two minerals are removed from the water, one of the largest sources in the human diet is gone. The biological importance of these two minerals for human health cannot be over emphasized. The American Heart Association has reported that heart attacks and strokes are associated with water that is either naturally soft, (low calcium and magnesium content) or has had

the calcium and magnesium removed by salt based water softeners. Doctors recommend that infants should never be fed water from a salt-based water softener.

Increased incidence of cardiovascular disease, colorectal cancer, kidney stones, (simply a lump of hard calcium carbonate), stroke, vascular disease as well as other neural diseases such as Alzheimer's and Parkinson's disease have been linked to low levels of calcium and magnesium. Higher risks for cardiovascular disease are reported across the world for drinking water, which is low in levels of calcium and magnesium. (World Health Organization)

Both calcium and magnesium bind to the same sites as many toxic elements such as lead and cadmium. When the calcium and magnesium fills these locations, the sites no longer absorb the lead and cadmium, and their toxic effects on the body are greatly reduced.

Calcium is a calming mineral to the body and decreases neural and muscular excitability as well as coronary hypertension. This is the reason a glass of warm milk often works for many individuals as a sleep aid. The calcium in a liquid form works quickly to calm the system.

Calcium that has been processed by the **Soo-Soft®** water softener is more biologically available. In its aragonite form it has the consistency of fine talcum powder. This form is six

times more soluble in water than in the normal carbonate form. As the human body is composed of over 90% water, the calcium absorption is increased dramatically.

At another health level, many forms of bacteria and algae exist in our water. They need to attach themselves to pipes and plumbing devices in order to feed and reproduce. As the scale is removed from these devices by the **Soo-Soft®** conditioner, their feeding ground is removed. After this is gone the bio film that supports these dangerous bacteria also disappears.

Just as calcium forms in the plumbing system of the house and collects on the inside of pipes, calcium in its hard form collects on teeth both above and below the gums. The electrical charge present in conventional water helps in bacteria and calculus (plaque) formation. Just as the pipes are de-scaled by the **Soo-Soft®** water softener, periodontal calculus can also be reduced with daily irrigation. A reduction in periodontal calculus (hard calcium) of up to 42% has been achieved with twice-daily irrigation using magnetically treated water.

A Brief Description

Calcium is a normal part of water all around the world. It enters the water from the calcium deposits left by rocks composed of sea and land animals. As the water moves through the rocks in underground rivers and streams it picks up calcium and is absorbed into the water. This dissolved calcium builds up in the water until it reaches a point where the water becomes saturated with it. In time it then begins to form solid crystals that grow longer and longer and begin to stick together. These crystals are abrasive and we then experience the water as hard. These hard crystals irritate the skin when we bathe or shower and the water tastes harsh in our mouth when we drink it.

Just as an opera singer can break glass with her voice, the Soo-Soft® water softener cracks and splinters the hard calcium in water. It then becomes soft and silky. It does this through the use of a computer that creates multiple groups of high frequencies, which are driven into a coil that is wrapped around the incoming water pipe for the home. These frequencies continually break down the hard form of calcium into a much softer form until it reaches a consistency so fine that the water becomes silky and soft. It does this without the use of salt or other harmful chemicals.

At the point where the water takes on this smooth consistency it no longer irritates our skin and mouth. Water tastes better as does coffee, tea, and other beverages that are made with it. Soaps

and detergents lather up a great deal more and the amount used in cleaning dishes and laundry must be reduced considerably. Sinks and showers become easier to clean, as the softer calcium no longer sticks to surfaces. Clothes are cleaner and softer because the hard calcium crystals are not there to set the stains or to make clothing abrasive. Hard calcium deposits no longer build up on dishes and glassware. Over time, build up on sinks and showerheads are also eliminated while previously clogged plumbing flows more freely as the system is rid of these long and hard calcium crystals. Water filters of all types last longer because the large calcium crystals are not clogging them.

A Technical Description

Contrary to what is a popular opinion, it is not calcium itself that makes the water hard. It is the form that the calcium exists in that determines whether water will be experienced as hard or soft. Calcium exists in many forms, but there are only two forms of calcium that are important in understanding water hardness.

Calcium Carbonate is the most common form of lime scale. It comes out of the water and creates scale that clings to all surfaces, including pipes, hot water heaters, pots, toilet bowls, etc. This effect is even greater when hot water is involved. It is the mineral that gives the greatest effect in water that is labeled “hard”.

Calcium Aragonite does not form into crystals except under very high heat. (750 degrees) When it comes out of the water, it forms a fine powdery dust that is easily wiped away. Most often, it does so without the use of soap. Its texture is so fine that it presents none of the nuisance normally associated with calcium in the carbonate form.

The Soo-Soft® water softener disrupts the bond that holds Calcium Carbonate to the water molecules and disrupts the physical “glue” that holds the hard calcium to the water molecules. This creates a situation where the primary form of calcium that can be released from the water is the softer Aragonite form.

Water that is loaded with the hard form calcium is much like a gumball machine full of gum. There is no room for anything more. Now imagine the same gumball machine full of baseballs. There is more space available. The Soo-Soft® water softener leaves the water with more spaces between molecular clusters, which allow the water to better absorb soap, shampoo, and other conditioners.

This gives the water a feeling of being “wetter”. Skin feels cleaner without the slimy feel of conventional salt-based softening systems. Newly washed hair will be softer and have a “squeaky-clean” feeling. Newly washed skin has a softer and smoother feel. In colder climates, the dry itchy feeling will often disappear. Those with skin problems will notice a significant improvement. Even teeth begin to have a cleaner feel to them as the hard form of calcium is removed. Shaving becomes smoother with less feeling of abrasion to the skin.

Wetter Water

The Soo-Soft® water softener creates water with lowered surface tension. This is experienced as water that feels “wetter.” The more powerful detergents include wetting agents with their detergent in order to accomplish their high-powered cleaning. These wetting agents leave more room for the soap to lather. This is why they clean and lather better.

As the calcium re-forms in the water into the Aragonite form it also forms more space between the clusters of water molecules that contain the calcium. The extra space is what allows the **Soo-Soft**® water softener to clean the existing scale from the pipes. The water that has been treated by the **Soo-Soft**® unit is a better solvent so it breaks down the existing hard calcium and allows it to be flushed into the drains. Once this is done, the plumbing system allows water to flow better and detergents work even better than before.

For more information as well as government and university studies please visit our website at:
www.soo-soft.com

Product Specifications

Residential Model # R1000

Dimensions:

Height: 2.2 inches

Length: 4.7 inches

Width: 3.7 inches

Input power: 16volt AC @ 1100 milliamps

Output power to coil: 4000 milliamps

Maximum pipe size: 1 inch

Frequency range: 1000 to 12000 cycles per second

Temperature range: -20-120 *f*

Money Back Guarantee

For a period of six months following the purchase of the **Soo-Soft®** Water softener you may return for all full refund of the purchase price with the exception of freight charges. We ask that you have had it installed and working for a period of three months for it to have reached its maximum effectiveness before returning the product.

5 Year Warranty

If your **Soo-Soft®** water softener becomes defective within the period of five years. After purchase date we will at our option repair or replace the unit at no charge to you with the exception of freight charges.

For all returns, proof of purchase must accompany the product. Ship the Product to us at 208 N. Main St. Burlington, WI. 53105. Please include check or money order for \$5 to cover shipping and handling costs per unit.

During this period we will only cover the repair or replacement cost of the unit. This warranty does not cover defects resulting from accidents, acts of God, Lightening strikes, electrical power surges, brownouts, water damage, fire flood or use for any other purpose than that described in our literature.

This warranty is the only one for our products. It sets forth all our responsibilities; there are no warranties that extend beyond the description above.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion of incidental or consequential damages, so the above exclusions or limitations may not apply to you.

State Law Rights: This warranty gives you specific legal rights you may have other rights, which vary from state to state.