



**PRO-MRKT CORP**

*Silky-Soft Water in  
Campgrounds &  
on the Road . . . .*

**Owner's Manual**  
**Recreational**  
**Vehicle Model**

**Model: R1000**



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## Initial 90 day Schedule

Congratulations on your purchase of a Soo-Soft Digital Water Softening System. Shortly, you will begin to notice changes in your water, often with the first shower. Please take a few moments to read through this manual so that you can adjust your

usage of detergents, shampoos, and other changes that will occur. These changes will increase over the time that the vehicle is used.

The following table gives a brief overview of the changes that will occur. The rest of the manual will describe these issues in greater detail as well as list ways to resolve other typical water issues.

Device	What to do	When to do it	Results
Water Heater	Drain about 5 gallons of water from the water heater. Do this by opening the valve at the bottom and drain into bucket.	Once a month for when vehicle is in use for 90 days.	The first time, the water is very cloudy as sediment is cleaned out of the system. After 90 days, the water should be clear.
Washing Machines	Observe the final rinse cycle and reduce detergent until final rinse is clear of suds.	Check final rinse cycle during vehicle use.	Reduced laundry detergent and fabric softener usage for cleaner, softer clothes.
Dishwasher	Clean machine with a product such as Dishwasher Magic™ or jet dry dishwasher cleaner. Use Glass Magic™ for clean glassware. Use Cascade™ Clear Rinse or Liquid.	At start of 90 day period Re-check at end of 90day period.	As scale build-up is cleaned from the machine, detergent and rinse agents can often be reduced.
Coffee Maker	Clean with 2 cups of vinegar overnight and follow with 2 pots of clear water.	At start of period	Scale build-up is cleaned from the machine, improving taste.

# Initial Period

## Removal of Calcium Deposits

Shortly after installation, a noticeable change occurs in water quality. It feels and tastes softer than before. Less soap, laundry detergent, and shampoo are required. After approximately three weeks, more significant changes will take place. As the hard calcium is removed from the plumbing system, the The **Soo~Soft** benefits are realized.

Years of hard buildup are removed over this period of time. As the **Soo~Soft** unit begins to work in the system, this lime scale starts to come out in a gradual process. The more water that flows through the system during this period the faster these benefits occur.

During this time it is not unusual for the water to appear “cloudy” as the particles of hard calcium that are removed. As the plumbing system is cleaned of this hard form of calcium, it will leave a form as soft as talcum powder. This will be much easier to clean from all surfaces. The best cleaner is white vinegar. No harsh chemicals are required.

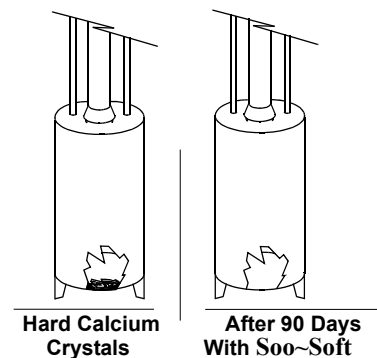
## Water Heaters

Water heaters operate more efficiently when not fouled by scale and sediment. Fuel consumption dramatically falls to levels comparable to those of new water heaters. The cost for operating a water heater with only 1/4 inch of lime scale can increase the energy costs 40%. Scale deposits will also shorten the life of the water heater. (Fig. 4)

As the existing hard calcium is converted into a soft sludge, it will accumulate in the bottom of the water heater. Remove this by draining a few gallons from the bottom of the unit every month. This water will often appear cloudy with calcium deposits being removed. Doing this will extend the life of your hot water heater as well as reduce the amount of energy required to heat the water.

It may even be necessary to turn the water heater thermostat to a cooler setting, after the 90 day period.

*Fig. 4, Water Heater Scale*



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## Washing Machines

With the **Soo~Soft** unit installed, washing machines will require less detergent. As the clothing is washed, the hard calcium deposits are removed from the clothes and they become softer.

If a fabric softeners are used, it may be necessary to reduce the amount used. 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 residue.

Towels, and other clothes come out of the dryer softer, and last longer because the hard calcium is removed. Hard calcium deposits are abrasive and will also wear out clothing in the wash.

## Dishwashers

Heated water produces hard calcium deposits in 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 work, it will dissolve this lime scale from the dishwasher and the pipes that feed it. In time, the pipes, water heater and dishwasher will be cleared.

Is important to use a dishwasher detergent that offers a clear rinse cycle such as Cascade Pure Rinse formula™. This will often eliminate the need for other rinse products. Avoid using the citrus scented or gel varieties of this product.

Use a product such as Glass Magic™ to aid in keeping glasses free from deposits. A cup of Vinegar added to the rinse can be also be used for cleaner glassware.

The dishwasher itself can be cleaned of hard calcium with a product such as Dishwasher Magic™ or Jet Dry™ dishwasher cleaner. This will help to speed up the process of hard calcium removal.

After the de-scaling the plumbing system, the amount used of these products can often 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 2 tablespoons of detergent and add more until the dishes are clean.

## Coffee Makers

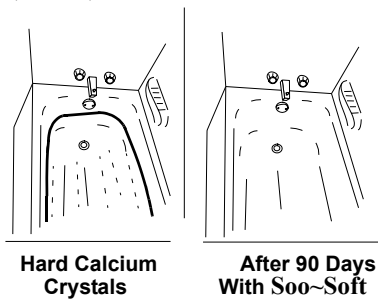
Coffee makers typically have a build-up of scale as a result of hard water. They can be de-scaled easily by putting 2 cups of vinegar through the system and allowing it to sit overnight. Following the vinegar, run at least 2 pots of plain water through the system to remove vinegar residue.

## New Recreational Vehicle

If the **Soo~Soft** unit is installed in a new vehicle, the de-scaling process is unnecessary. New appliances and other equipment have no scale accumulation.

# Benefits

## Sinks, Tubs, Showers and Toilets



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*Fig. 5, Fixture Stains*

Hard calcium deposit form in bathtubs, sinks, showers, and toilet bowls. In addition, the faucets and toilet mechanisms also collect hard calcium deposits and require early replacement because of these deposits.

With the Soo-Soft System, the hard deposits are dissolved. Deposits inside of toilets and faucets are also dissolved by the water that is created by the Soo-Soft system. This will allow these components to last longer.

Any new calcium is reduced to a fine powder that does not stick to surfaces. Stains can easily be wiped away using ordinary vinegar without resorting to harsh detergents or dangerous acids. (Fig. 5)

## Black Mold

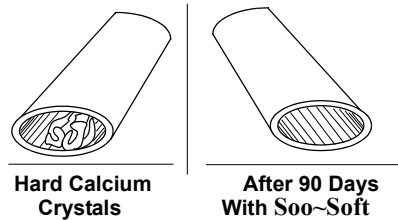
A black mold will often accompany calcium deposits that come with bacteria water that is derived from private wells. In some rural areas where the water is not treated by the municipality, it is also a very common condition.

This bacterial mold shows up as a black stain in the toilet bowl and on shower curtains inside of shower doors etc. The bacteria that cause black mold live, feed, and reproduce on the scale inside of pipes and in toilets. This is especially common with private well water. In most cases, black mold can greatly reduced and in some cases eliminated. Over time, the pipes are cleared of their deposits of hard lime scale. The bacteria require this hard scale in order to live and reproduce. If the mold is being cleaned from the toilets, shower curtains and other areas that they live on the remaining places that they have to reproduce are eliminated. Having no place to live and feed they will begin to die off. This may be difficult to eliminate completely in water that is derived from private or untreated municipal wells where the bacteria come from the underground water itself and are constantly being replenished.

## Supply Pipes

Plumbing maintenance is costly. Pipes, water heaters, pumps, and faucets that become clogged with hard calcium can be expensive to replace. As lime scale accumulates, water flow through pipes and faucets slows. Pipes that lay horizontally are particularly susceptible to particulate accumulation. (Fig. 3)

Fig. 3, Clogged Pipes



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in some plumbing systems, hard calcium deposits may collect at valves. As the water flows around these deposits, the pipes vibrate. In some cases the plumbing actually “howls” or “Knocks.” As the **Soo~Soft** water system changes these hard calcium deposits into soft calcium, which is then flushed away, the noise will often disappear.

## Filtration Life

The life expectancy of both reverse osmosis and carbon block filters is dependant on the amount of hard calcium in the water. The crystal forms of hard calcium deposits form inside of the filters and grow in size until the filter becomes clogged.

The particle size that is created by the Soo-Soft Digital Water Softener System is so small that it will pass through many filtration systems. These

particles are not capable of bonding to each other at normal temperatures and cannot clog the filter elements over time as hard calcium forms do.

The life expectancy of filters is greatly increased, this is especially true for reverse osmosis filters. In the case of carbon block filters, even though they may not be clogged, they should be replaced at recommended intervals. This is because of their ability to trap harmful bacteria is depleted over time. If not changed on a regular basis they can become breeding grounds for bacteria instead of a trap for them.

# Personal Benefits

Billions of dollars are spent every year on hair and skin products. By breaking down the hard calcium deposits, the Soo-Soft System promotes healthy hair and skin. A combination of soap and hard calcium leaves a film on the skin and hair which inhibits their health and softness.

## Softer- Healthier Hair

Long hair is especially prone to breaking from the accumulation of hard calcium deposits. The hard scale left on hair shafts also limits the hair's ability to breathe.

Hair that is coated with lime-scale deposits is very hard to manage. It often causes "frizzing" in humid weather. This hard coating also limits hair conditioners from penetrating into the hair shaft.

Soft water is a better solvent than hard water. Hard deposits in the hair are more soluble in soft water. Over time, hard deposits in the hair are dissolved and washed down the drain.

Hair is cleaner, softer, with a squeaky-clean feel to it. The hair takes on this silky-smooth character because the hard calcium deposits are gone. The hair also has better color because the milky scale on the hair shaft is stripped away.

## Skin

Hard water is especially noticeable when shaving. The skin feels irritable after shaving. With hard water, soap residue is left behind on the skin, creating further irritation.

The simple experience of washing hands and face changes dramatically. A change in the feel of skin is experienced. The skin feels smoother and softer.

Over time, as the Soo-Soft water clears hard calcium from the plumbing, water quality continues to improve. Skin feels cleaner and smoother, as the pores are unclogged. The benefits of soft water are more than just cosmetic. They influence the health of the skin itself.

Hard water is extremely abrasive. It irritates the skin and scalp. Skin often feels itchy. The soap scum leaves the ideal place for bacteria to grow. This often causes skin infections and can irritate existing skin problems.

## Minerals and Medical Considerations

People need calcium. It is a critical mineral in performing countless cellular functions. The Soo~Soft water softener breaks down the hard calcium into a form that is more easily absorbed into the body's cellular system. In contrast, the salt-type water softeners replace calcium and magnesium with salt. Physicians report that too much salt is being consumed by people today. A

individual on a low-salt diet can benefit greatly by the use of a Soo-Soft System as compared to a salt-based system.

The biological importance of calcium 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-type water softeners. Doctors have recommend that infants should not be given drinking water from a salt-type water softener.

According to the World Health Organization, Increased incidence of cardiovascular disease, colorectal cancer, kidney stones, (a lump of hard calcium,) stroke, and 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.

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 seems to have a calming effect on some people 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 its liquid form works quickly to calm the system.

Calcium that has been processed by the **Soo~Soft** Water Softener System is more biologically available. In its softer form it has the consistency of fine talcum powder. This form is six times more soluble in water than in the hard calcium form. As the human body is composed of over 90% water, the calcium absorption is increased dramatically.

Many forms of bacteria and algae live in water. They need to attach themselves to pipes and plumbing devices to feed and reproduce. As the scale is removed from these devices by the **Soo~Soft** system, their breeding ground is removed. After this is gone the bio film that supports these dangerous organisms also disappears.

## Dental Health

Calcium in its hard form collects on teeth both above and below the gums. The electrical charge present in conventional water helps bacteria and calculus (plaque) formation. Just as the pipes are de-scaled by the Soo~Soft Water Softener Systemize hard periodontal calculus can also be reduced with daily irrigation. Studies have shown a reduction in periodontal calculus (hard calcium) of up to 42% has been achieved with twice-daily irrigation using magnetically treated water.

# Technology

## Calcium

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 taste as “hard.” These hard crystals also irritate the skin when we bathe or shower and also coats the skin and hair.

The **Soo~Soft** device uses a revolutionary new technology that has forever changed the way we think about water hardness. This technology is very different from common salt-type water softening technology.

## The Soo~Soft Digital System

Just as an opera singer can break glass with her voice, the Soo~Soft Water Softener System cracks and splinters the hard calcium in water creating a soft form of calcium called aragonite. It then becomes soft and silky to both taste and feel.

Through the use of a modern high-speed computer the Soo~Soft System physically transforms the hard properties of water into softer, more healthy properties. It does this with high-power, variable-frequency electromagnetic energy.

These frequencies are driven into a coil that is wrapped around the incoming water pipe of the home. They continually break down the hard form of calcium into a much softer form called aragonite. This form is so small any soft that the water becomes both silky and soft.

**Soo~Soft does not** exchange sodium for calcium carbonate and magnesium. It **does not** remove valuable minerals from drinking water. It **does not** introduce harmful chemicals into the water. It **does not** require recharging and cycling time. It **does not** harm the environment. *Salt-type, ion exchange water softeners do all these things.*

With **Soo~Soft** technology, plumbing systems normally do not need alteration. Ordinarily, no special plumbing or electrical modifications are needed.

The system consists of a power module, a control box and a coil wrapped around the main supply pipe. (Fig. 1)

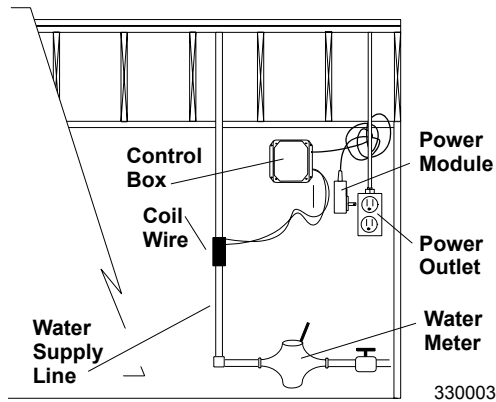


Fig. 1, Typical Soo~Soft Installation

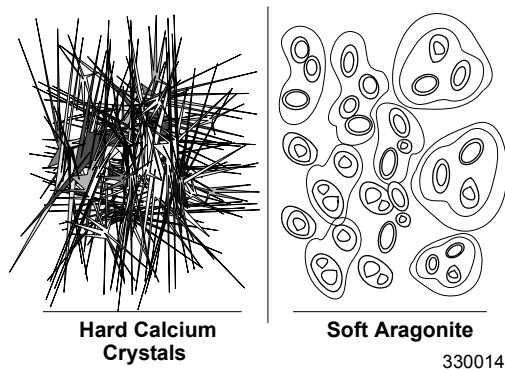


Fig. 2, Microscopic Representations

## Results

As the **Soo~Soft System** converts the hard calcium into a fine aragonite powder. (Fig. 2) more space becomes available between the minerals for water molecules. Healthy minerals are still in the water. Unhealthy sodium concentrations are not introduced into the drinking water supply. The softer minerals do not adhere to surfaces causing stains and other problems.

Since the **Soo~Soft** system does not introduce harmful substances into the water, it is very safe. Since it does not remove any substances, the water remains rich in healthy minerals.

At the point where the water takes on this smooth consistency it no longer irritates our skin and mouth. Water tastes smoother 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 all surfaces. The clothes are 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, deposits that are built up on sinks and shower heads are also eliminated while previously clogged plumbing flows more freely as the system is rid of these long and hard calcium crystals. This reduces the potential for expensive plumbing repairs. Water filters of all types last longer because the large calcium crystals are not clogging them.

# Water Quality

The water derived from a large municipality is usually treated for bacteria, and monitored on a regular basis for purity and safety. Water taken from a private well (often in campgrounds) do not have these benefits.

## Iron Bacteria In Well Water

One of the most common complaints from water that taken from some wells is bacterial iron or “rust.” This iron mixes with the hard calcium and causes it to stick to all surfaces. Toilet bowls, sinks, coffee makers and dishes all can become encrusted with iron/calcium deposits. The Soo-Soft Digital Water Softening System will break down the calcium deposits, making it easier to clean but will not kill the iron bacteria.

## Iron Filters

An alternative method for removing bacterial iron is to use an iron filter that uses “green” filtering agents (potassium permanganate.) This will also act as a filter for other particles in the water.

## Sediments in Water

Some forms of iron in water are actually iron sediments. These can be filtered using a charcoal block filter. (See Filters Below for Installation)

## Filters for Pure Water

The two primary types of pure water filters are Carbon Block and Reverse Osmosis Filters. Both act to remove sediments from the water.

The carbon block filter is also used to remove the many types of harmful bacteria from the water such as Cryptosporidium and Giardia Cysts. In addition it helps to remove sulfides, (rotten egg smell) and chlorine. These will act to make water taste better.

# Recreational Vehicle Model R1000 Specifications

<u>Dimensions</u>	
Control Box	4-5/8 in X 5-3/4 in X 2-1/4 in
Power Requirements	12-16 volts DC Power Cord: 6 ft.
Coil Wire	60 ft., 18 AWG

<u>Electrical</u>	
Control Box	Input: 12-16 VDC @ 300ma Output: 4 Amps @ 1-12 kHz

<u>Temperature</u>	
Control Box	-20 to 140° F = 0° (128.9° C to 48.9° C)

<u>Pipe Size</u>	
Max. Supply Pipe Size	1 Inch Dia.
Max. Flow	30 gpm

# Warranty Information

## 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, Lightning 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.

Meaning	Occurs	LED Pattern
Normal Operation	Continuous Blue Fading	
Checking Coil	Red & Green when Starting up	
Coil not Connected	Continuous Green	
Copper Pipe Detected	Once after Checking of Coil	
PVC Pipe Detected	Once after Checking of Coil	
Waiting for Coil (on power-up)	Until coil connected (Repeat ~2.4S)	
Coil Disconnected (during operation)	Until coil re-connected (Repeat ~2.4S)	
Coil is too long and must be shortened	Signal too weak (Repeat ~2.4S)	
Unit is Overheated- unplug and reconnect power	Until Power Cycled (Repeat ~2.4S)	
Coil Shorted or Output Overload	Continuous until fault is corrected	
Computer is faulty-Return to Factory	Continuous	

**Table 0-1 LED Indicator Flash Pattern**

The Soo-Soft Digital Water Softening System has a built in computer that creates the signals for softening the water and controls the system. On initial start up, the computer inside the Soo-Soft unit will analyze the coil that has been wrapped around the water pipe. It checks to see that the coil is connected to the unit and that it has been wound to the correct length.

If the light on the unit does not start fading in a blue color within 15 seconds after being powered up, consult the chart above.

If there is no light at all the polarity of the wiring is incorrect. Reverse the wires on the unit and power it up again. The light system should now be working.

