



Remove Hardness and Disinfect Water

The principal of water softener and conditioning (scale remover) is not new, and it has been practiced since the middle of 20th century for many different industry applications.

Bayern® EMW (ElectroMagnetic Waves) Water Softener is a combination of an EMW Scale Remover and Water Ionizer in one system. It takes the advantages of those both technology and applies them with the application of 'Dynamic Mineral Acclimatization Forces'. The EMW Scale Remover using the electronic unit works by sending out *electromagnetic square wave* which changes physical and electric charge properties of forming calcium and magnesium molecules. This process has an influence on initial nucleation of calcium and magnesium so that those minerals are hard to attach to the surface of pipe materials anymore.

On the other hand, the ionizer electrodes emit small amount of metal ions into the water line. The cell electrodes are specifically designed with metal ions that depletes at a designated rate into water line. The disinfecting action is attributable to the positive charged of ions which form electrostatic bond with charged cell wall of microorganisms.

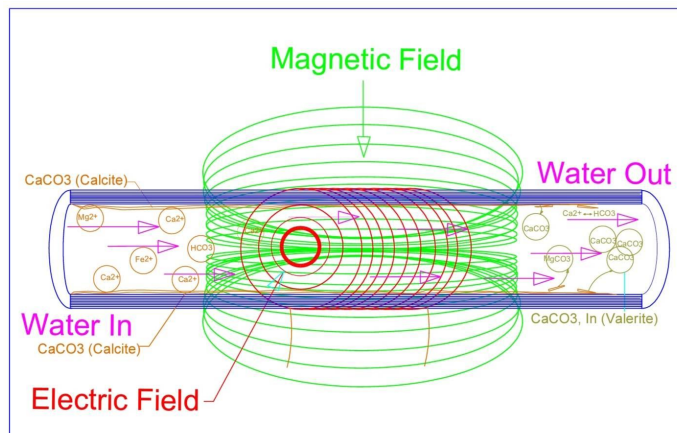


Features:

- Proprietary designed generator of electromagnetic square waves for scale removal and ionizer
- Efficient touch electronic controller
- Reverse Polarity Ions, simple and easy adjustment
- Robust electrode housing
- Installed on the existing filtration water system
- Input voltage: 220-240V/50hz 1 phase , IP64
- Water temp: 0~100 Degrees Celsius

This is the principal how water softener works:

The electronic unit induces a complex electromagnetic square waves which agitate the charged particles in the water. This has an influence on initial nucleation, resulting in smaller size and rounded shapes.



This treatment creates idiomorphic- scattered crystal with rotundas shapes which does not adhere to the inner pipe surface. The surface tension of the water is lessened, preventing new scale for forming while removing any existing scale.

How Bayern EMW Water Softener Works :

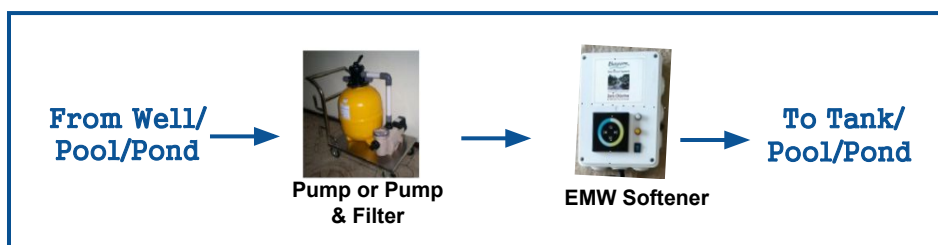
This **Water Softener** is a compact, combined system, and state-of-the-art electronic descaling system and ionizer that is installed on the incoming waterline going to the home, building or equipment it is servicing.

The electromagnetic square waves generated by the **EMW scale remover** prohibits any further built-up of scaling by preventing calcium and magnesium molecules to adhere to pipe surface and any other material. The **ionizer** helps the unit in disinfecting water and enhancing the performance of water softener. Then, it also increases the solubility of the water, and therefore the existing scale dissolves back into the water and gradually removed from the pipe surfaces.

This innovative product produces an oscillating electronic field using a unique and complex modulating frequency electromagnetic wave form that changes the physical shape, size and charge of the calcium and magnesium molecules causing the hard water and lime scale formation.

Lime scale will no longer form inside the pipes or equipment that comes in contact with the hard water. The surface tension of the water is lessened, preventing new scale for forming while removing any existing scale.

Installation For Well Water, Pool and Pond



MODEL	CAPACITY [M3/Hour]	POWER [Watt]	COIL WIRE	PIPE [In/Out]	IONIZER ELECTRODE
SR100	up to 10	36..0	2x 16AWGx 15Mtr	1.5"	BION-100
SR200	10 to 25	36.0	2x 16AWCx 25Mtr	2.0"	BION-200
SR400	25 to 40	60.0	4x 14AWGx 40Mtr	3.0"	BION-400
SR500	40 to 70	120.0	4x 14AWGx 40Mtr	4.0"	BION-400

**Specifications and dimensions subject to change without notice.*

Applications of EMW Water Softener

Residential Water Conditioner

It is a healthy approach of the water conditioner for your family and home. There is no salt, no chemical, no filter, minimized maintenance, and works on all types of pipe. Limescale deposits and soap scum are costly nuisances that can be eliminated with this water softener. With the water softener installed, appliances and fixtures that come in contact with hard water will operate much more efficiently and will have a prolonged life expectancy.

Prior to the installation water conditioner, homeowners had two basic options to control hard water issues: (1) Investing in a water softener using ion-exchange with salt. (2) Using hazardous chemicals continuously. The Bayern EMW Water Softener is an eco-friendly solution with salt-free, chemical-free and minimized maintenance, so that you can rest easy knowing it is safe for both the environment and your family.

Problem:



Hard water and lime scale deposits are the cause of:

- Damage to water appliances, such as pipe and filter
- Mineral buildup in shower heads, faucets & toilets
- Increasing water heating expenses
- Lacking of hot water and poor water pressure
- Increasing laundry machine energy consumption

Solution :

Bayern EMW Water Softener has been specifically designed to handle this dilemma with proactive and environmentally friendly alternative to the use of chemical scale build-up prevention or mechanically de-scaling.

Swimming Pool System

This EMW Water Softener can be used for swimming pool, decrease the use of chlorine and stabilize water pH . It also make the water feels soft for the skin and more safe for the swimmer.

This EMW Water Softener saves 50%-70% on overall chemical consumption for swimming pool



The water feels soft for the skin, no irritation to eyes, skin and hair. It makes the stainless steel staircases and fixtures shine again.



Hospitality Sector : Hotel, Resort and Villa



Scale deposits in the bathroom, laundry machine, water heater, and steam generator

Benefits experienced with EMW Softener do for your water:

- > Removes existing scale layers
- > Reduces scaling in water systems
- > Decreases corrosion on pipe system
- > Gives water a softer feeling
- > Reduction of chemicals and detergents
- > Improves the cleaning properties
- > Improves heat transfer
- > Inhibits the growth of bacteria
- > Saves energy when heating water

How does it work:

The external electromagnetic fields influence the calcium and magnesium crystal growth in water, resulting in rodent shapes and smaller crystals, up to 3 micron. The new shapes can not adhere to any surface as long as the water flows. The flowing water will remove old scale layers as no new layers are being formed.

Kitchen, laundry machine and bathrooms in your hotel or restaurant will see savings. In many hospitality situations, the consumption of water requires treatments and forms an important contribution to the total operational cost of the company. The hard water, scale deposits, causes not just about the costs for aggressive cleaning agents, but also a lot of extra labor.

The EMW Water Softener makes ugly limescale spots in a bathroom easy to clean. Also, shower heads and taps will remain free of limescale. The cleaning of professional equipments in the kitchen needs less frequently to be done; steam ovens do not get clogged and stainless steel interior remains shiny longer.

In restaurant and cafe, coffee and tea machines need significantly less maintenance. Glasses and cups are more easier to clean. Furthermore, it limits limescale in your steam generator and water heater so that more energy would be saved here. The set temperature on hot water tanks will be reached faster, and heat transfer of central heating systems will be increased.



Commercial Building Applications

All commercial buildings can fall victim to hard water damage from limescale formation. Virtually any piping system or equipment that comes in contact with hard water is subject to corrosion and destruction. EMW Water Softener can solve these issues without the need of a water softener using ion-exchange with salt or extensive chemical use, and with almost no maintenance. Prior to the application of EMW Water Softener, there were two basic options to control hard water issues, continuously using hazardous chemicals, or investing in a water softener with resin beads and salt. In an era of environmental awareness, those traditional methods are simply “outdated.”

Commercial – Water Conditioner

Chemical-free alternative to toxic waste. It is without salt, no chemical, no filters, no maintenance, eco-friendly. A simple structure, scale loses its ability to stick on the pipe surface.

Problem :



The electronic unit induces a complex electromagnetic square waves which agitate the charged particles in the water. This has an influence on initial nucleation, resulting in smaller size and rounded shapes.

Solution :



Before

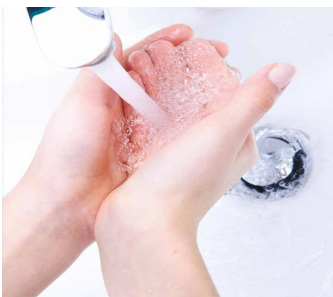
After



EMW Water Softener with/out Copper Ionizer

The Benefits of EMW Water Softener for Commercial Building:

- ✓ It replaces the water softener which using salt and ion exchange filter, to clean the water circulation system with environmentally friendly method.
- ✓ It needs no additional chemical for maintenance.
- ✓ It works with any existing water circulation system without changing its pipe and equipment.
- ✓ It is a genuinely green technology and safe for people





Industrial Applications

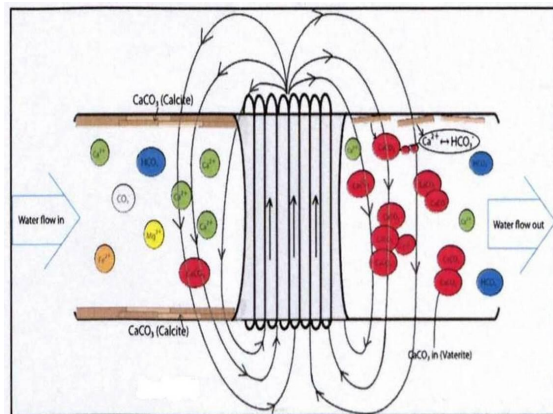
An optimal heat transfer is the most important point in every water-cooled process. Corrosion, scale and biofouling affect the heat transfer negatively. A variety of mineral deposits can foul the cooling tower circuit, and this situation may cause decreasing the efficiency in heat transfer. That is why EMW Water Softener is so important; It prevents corrosion and prohibits scaling in pipelines.

We have developed the scale and biofouling removal application using DMAF (Dynamic Mineral Acclimatization Forces) which sending electromagnetic square waves into the pipeline and process chamber of a cooling tower, where a total cleaning is performed during operation, without being corrosive and generating no waste.

In the case that the customer wants to soften the mineral contents of water too, a copper ionizer can be added to the scale remover so that the circulation system is working without any down time-disruption during operation.



EMW Water Softener with Copper Ionizer



The Benefits of EMW Water Softener for Industrial Applications:

- ✓ It significantly improves the efficiency of a cooling tower
- ✓ It avoids a corrosion, scaling and biofouling with no production stop.
- ✓ It can replace water softener, without using salt and ion exchange filter, to clean the water circulation system with environmentally friendly method.
- ✓ It works with any existing water circulation system without changing its pipes.
- ✓ It is a genuinely green technology and safe for people

Contact one of our commercial specialists to see how Bayern EMW Water Softener can improve your efficiency and help decreasing your operation costs.