

**Reduce scale and protect  
your valuable equipment**



**BOILERS**

**COOLING  
TOWERS**



**HEAT  
EXCHANGERS**

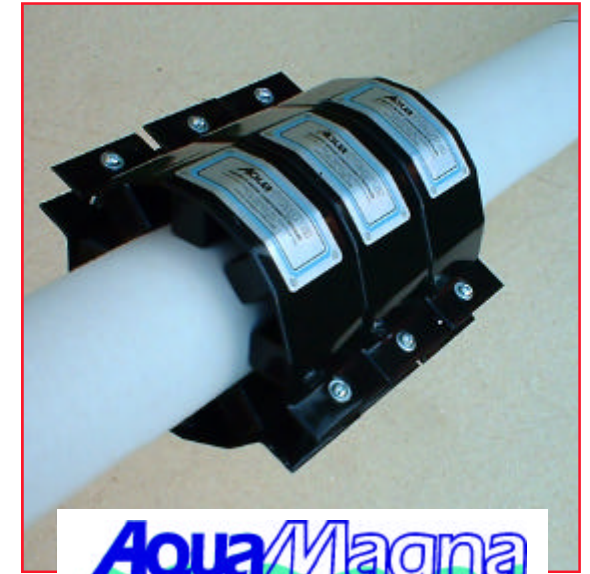
**SPRAY  
EQUIPMENT**



**DOMESTIC  
WATER**

# A Simple Solution

for  
**HARD WATER  
PROBLEMS**



**AquaMagna**  
MAGNETO WATER CONDITIONER & DESCALER

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MAGNETO WATER CONDITIONER & DESCALER

**MagnaTek International.**

Manufacturer of  
magnetic fluid conditioning systems for:  
• Water • Gas • Diesel • Natural Gas

**INDUSTRIAL • COMMERCIAL • RESIDENTIAL**

- **No salt**
- **No chemicals**
- **No maintenance**
- **No power to operate**

Manufacturer in Canada by:  
MagnaTek International

[www.magnatek.in](http://www.magnatek.in)

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## Simply clamp it on your water line:

- Prevents formation of scale build-up
- Removes existing scale
- Totally maintenance free
- Protects valuable equipment
- Saves energy with scale-free heat transfer
- Portable, easy to install  
(no plumbing or cutting of pipes)
- No electricity or maintenance to operate
- Never needs replacement  
(no moving parts to wear out)
- Saves money year after year.....  
**while protecting the environment**

## THE HARD WATER PROBLEM

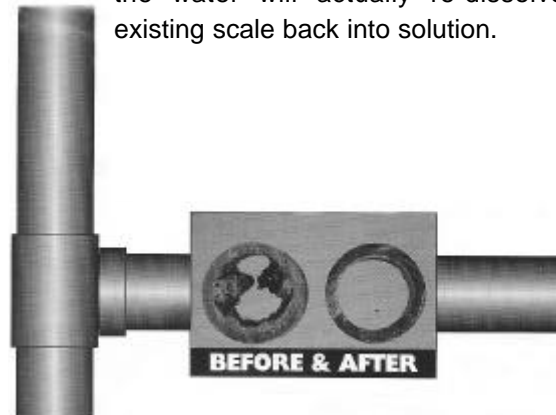
When hard water is heated or cooled, calcium / lime precipitates out of the water. Crystals from this precipitation are deposited in pipes and process equipment in the form of "**Scale**". Calcium and Magnesium salts primarily cause this Scale when the bicarbonate precipitates as calcium carbonate.

Scale build-up causes many serious problems to piping and related equipment in industrial, commercial, residential and agricultural applications. Scale problems greatly reduce operating efficiency and increase down-time.

## HOW DOES IT WORK

When a conductive fluid passes through a magnetic field, an electromotive force is induced through the fluid perpendicular to the direction of fluid flow and the flux field. The magnetic flux field further causes polar water molecules to be aligned along the flux or magnetomotive force vector, thus affecting the kinetics of crystallization of the minerals in the water. Random covalent bonding of the nucleation points of these scale forming molecular clusters is reduced and, therefore, these minerals stay in suspension. They are prevented from growing so large so as to precipitate out of solution and form "hard" scale on the walls of pipes and equipment. Instead, they form crystals of very low physical strength; a light powdery film forms rather than the hard scale from a tight lattice structure.

The kinetic energy to make it all happen comes from the motion of the water through the magnetic field. As the water flows past the powerful magnetic assembly, the molecules are aligned to a uniform directional field. Water regains it's solvency and will not allow the minerals to form crystals of scale. Further, the water will actually re-dissolve existing scale back into solution.



## BENEFITS ON WATER & SIMILAR FLUIDS

**Prevents Scale Formation:** When dissolved solids precipitate from the fluid, they form crystals of very low physical strength; a light powdery film forms rather than the hard scale from a tight lattice structure.

In the case of calcium carbonate, the crystal form becomes delicate aragonite rather than hard calcite. Both crystals have the same empirical formula, but their internal bonding and physical strengths are very different.

**Removes Existing Scale:** When the surfaced-charged particles are carried downstream into a scaled area, they collide with the scaled surfaces and progressively transfer their charge to the scale. This charge transfer interferes with the lattice bonding of the scale, converting it from a hard-as-rock material into a soft deposit with the consistency of peanut butter. This soft deposit is easily eroded by the passing fluid.

**Surface Tension and viscosity reduced:** Tests have shown that hard water, after magnetization, will have a lower "surface tension". This results in an immediate increase in flowability and water pressure, and it makes the water wetter.

MagnaTek systems accelerate reagent diffusion, making chemicals such as disinfectants, biocides, corrosion inhibitors, etc., more efficient and effective.

**Density & Solubility increased:** Immediate better (silky) feel and greater soapability when washing. And better taste because the magnetic effect de-gasifies water, meaning it releases gases such as chlorine and sulfur, thus making for better taste.

The magnetization of the water also re-attracts the mineral deposits from the surface of the pipes, as described in above, thus de-scaling the pipes, and locking the natural minerals into the water for healthy consumption.