

# CON-SERV



Standard are the Obvious Con-Serv Qualities:

User Friendly ■ Quality Construction ■ Performance ■ Low Cost to Operate ■ Inexpensive to Purchase

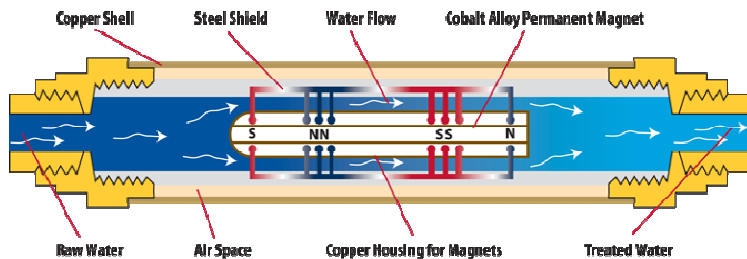
## MANUFACTURING

# Non-Chemical Water Conditioner



Welcome to the world of physical water treatment... For over 45 years, the Superior® magnetic water conditioner has applied the science of physics, rather than chemistry, to control lime scale deposits, corrosion, and other harmful effects of hard water in boilers, cooling towers, food service equipment, irrigation systems and over 400 other applications in the industrial, commercial and residential markets. Since Superior's chemical free water treatment process doesn't add or remove anything, purity is maintained; unlike salt using water softeners, which exchange sodium for calcium and magnesium in hard water.

Over 400,000 successful installations of Superior Water Conditioners® around the world have eliminated the disposal of trillions of gallons of chemically contaminated water to the environment. This non chemical permanent magnetic water treatment technology is perfect for green building projects, as it meets or exceeds government regulations and literally prevents pollution, offers sustainability, and can contribute to LEED credits. Other benefits include treatment cost reduction, health risk elimination, energy savings, and water conservation, to name a few.



Con-Serv Manufacturing has been installing physical conditioners on the Eliminator Series of Spot Free Rinse Systems for years. As a pre-treatment for RO systems, the precipitated suspended solids will be discharged to waste along with dissolved solids, rather than plating out on the membrane surface. In addition, the Physical Water Conditioner reduces surface tension of water, increasing its wetness or penetrability.

### Technology

Water subjected to change of temperature, pressure, and turbulence results in calcium and magnesium carbonates that deposit on heat transfer surfaces of water systems in the form of lime/scale. At the molecular level, the negatively and positively charged ions of these minerals bond tightly together forming calcite. These deposits act as an insulator and require more energy to heat or cool water.

As water passes through the Superior Water Conditioner's® treatment chamber, it is subjected to a series of reversing-polarity, permanent magnetic fields, which interrupts the natural scale forming by temporarily altering their ionic charge identity. The molecules are caused to act like ions of similar charges and repel one another. This leaves the molecules in a physical state of suspension known as aragonite (an amorphous mud-like or powdery form), which will flow through the system or drop to a low area within equipment so that it can easily be blown down or bled off.

**For further reference on physical conditioners see the Department of Energy study titled: DOE Research, "Non-Chemical Technologies for Scale and Hardness Control", DOE Report DOE/EE-0162, 1998**