

PROTECT

Your Cooling System



The two Superior® Water Conditioners shown have eliminated over \$25,000 in chemical cost each year since 1995.



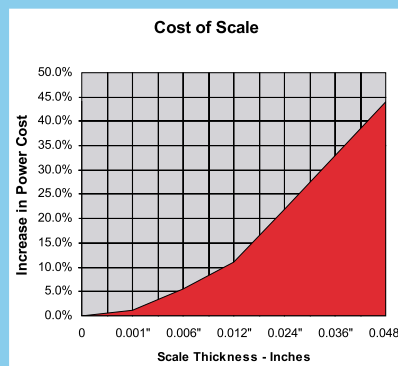
The Environmentalist Zero-Bleed® shown has saved over 7,750,000 gallons of water from going to the sewer each year since 1995.

Superior water treatment system on a 1,500 ton Marley Cooling Tower and Trane chillers.

from Lime Scale and Corrosion

With the ever increasing cost of energy, businesses cannot afford to operate equipment that is even slightly inefficient. With the installation of a Superior water treatment system, cooling towers and chillers will operate at a higher rate of efficiency by eliminating scale build-up. This non-chemical water treatment has proven over and over again to yield substantial savings in water, time, energy and money while employing user-friendly and environmentally safe methods of treating water.

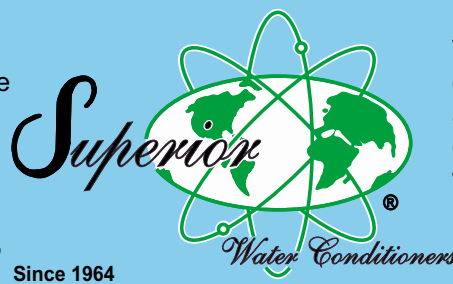
As water evaporates, minerals precipitate out and form a hard, brittle scale that collects in piping and on heat transfer surfaces. This insulating scale build-up causes reduced efficiency of equipment, as well as increased energy requirements, maintenance time and additional costs.



Optimum heat transfer coefficients, which enable maximum utilization of equipment, can only be assured when scale-free surfaces are maintained.

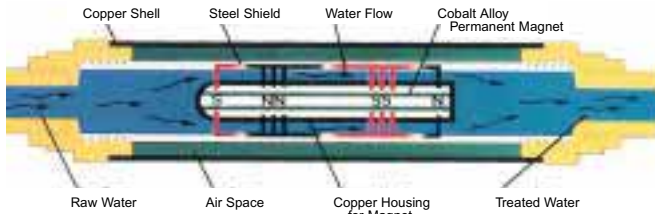
The Superior Water Conditioner® patented process controls the formation of scale deposition and corrosion without the use of hazardous and costly chemicals. Because no chemicals are used, discharged water is pollution-free, therefore non-hazardous to the environment.

With over 40 years of experience and ongoing research, Superior is known as one of today's leaders in the non-chemical water treatment industry and will continue to be on the cutting edge of magnetic technology for years to come.



Make the Most of Your Energy Dollars

Interior make-up of the Superior Water Conditioner®



Water passing through Superior's permanent alternating, reversing polarity magnetic fields causes the minerals to stay suspended in the water so they cannot form a hard, brittle scale.

Rather than the usual hard, crystalline structure that is formed by water-borne minerals, SUPERIORIZED® water keeps minerals in a soft, amorphous powder form. This amorphous powder deposits a thin film of aragonite talc on the inside of pipes and the water side of condensers which prevents free oxygen in the water (one of the most common causes of corrosion) from attacking the metal surfaces. Excessive solids settle to the bottom of the system in a soft, purgable form which is easily removed by bleed-off or connecting the drain line to the Environmentalist/ Zero-Bleed®.

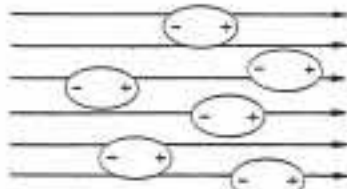
Environmentalist/Zero-Bleed®



Arrangement of polar molecules in the absence of and under the influence of a magnetic field.



Arrangement of polar molecules in the absence of a magnetic field.



Under the influence of a magnetic field.

Sizing and Installation

All water used in cooling towers, cooling systems and condensers must pass through the Superior Water Conditioner® in order to protect the equipment from scale and corrosion.

A Superior ACV-Model unit should be installed in the recirculating water line on the discharge side of the pump in a vertical position, sized according to the flow rate of the recirculating water. Another Superior unit (RT or SF Model) should be installed in the make-up water line, sized to treat 100% of the make-up water (includes evaporation loss, drift and bleed-off). See diagrams on opposite page for more details.

Maintenance Procedures

At the time of installation, all water should be drained from the system and refilled with SUPERIORIZED® water. If the system cannot be drained, increase bleed-off (or send the sump water to Environmentalist/Zero-Bleed®). The SUPERIORIZED® water will then loosen and gradually dissolve any existing scale or corrosion build-up in the system.

A Proven Product

*ASHRAE sponsored Research Project 1155 clearly demonstrates the benefits and efficiency of physical water treatment in controlling calcium scale accumulations in recirculating open cooling water systems.

The report also concludes that best results were obtained when permanent, alternating, reversing polarity magnetic fields were used in the recirculating line of the cooling tower and that mineral fouling can be substantially reduced in heat transfer equipment (chiller/condenser) applications with substantial energy and water savings. Magnetically treated water also showed an 8% reduction in the surface tension.

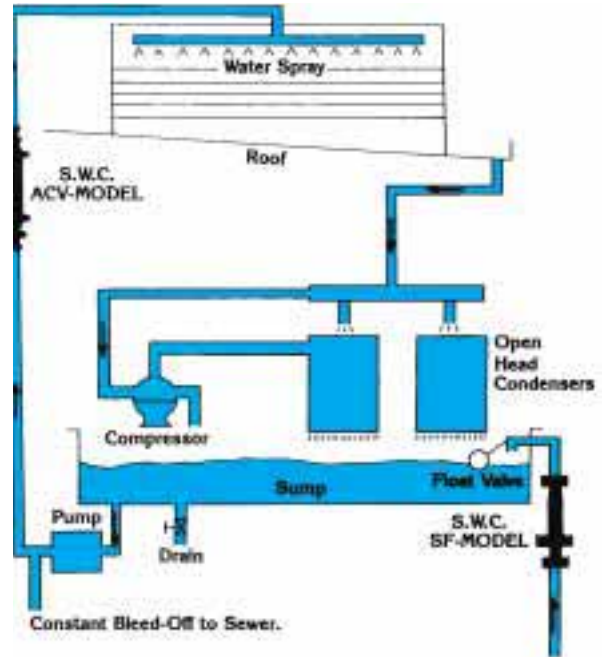
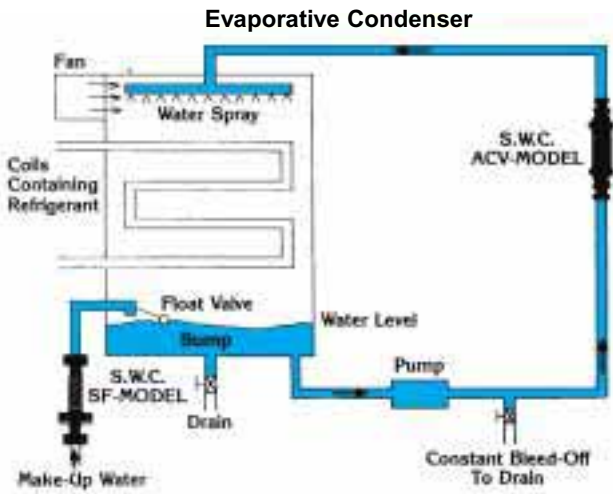
*ASHRAE copyright notice:
Copyright 2003, American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc. Reprinted by permission from ASHRAE Transactions 2003, Volume 109, Part 1. The paper may not be copied nor distributed in either paper or digital form without ASHRAE's permission.



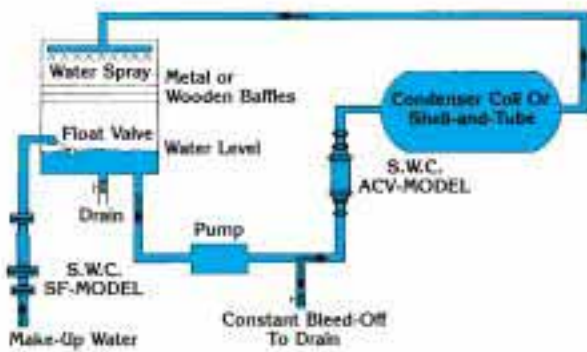
Non-Chemical -- Non-Polluting --

Installations

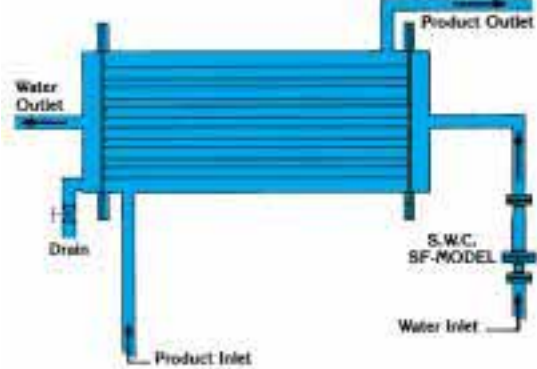
Large Volume Refrigeration System i.e., Commercial Ice Manufacturing Equipment



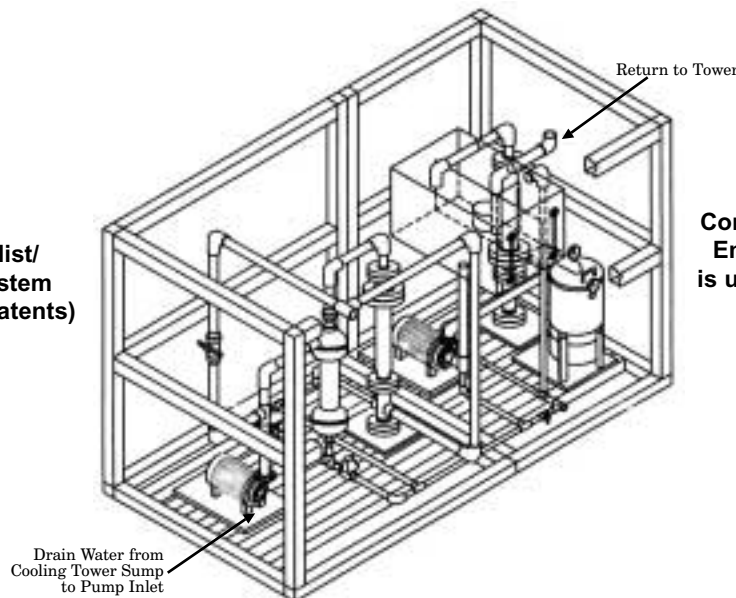
Atmospheric Cooling Tower



Condenser or Heat Exchanger



Environmentalist/
Zero-Bleed® System
(U.S. & Foreign Patents)



Constant bleed is not needed if Environmentalist/Zero-Bleed® is used pulling water from drain of sump and returned to cooling tower.

No Hazardous Material Reporting

Sizing Chart

FRESH WATER MAKE-UP

Tons	Superior Model
1-25	RT-500-K
26-50	RT-750-K
51-100	RT-1000-K
101-200	SF-1250-AK
201-350	SF-1500-AK
351-600	SF-2000-AK
601-900	SF-2500-AK
901-1400	SF-3000-AK
1401-2000	SF-4000-AK

Additional sizes available from the factory. Contact your local Superior representative for further details.

RECIRCULATING LINE

Capacity	Max. Pipe Size	Superior Model
20-80 G.P.M.	2	ACV-2-K
81-120 G.P.M.	2.5	ACV-2.5-K
121-180 G.P.M.	3	ACV-3-K
181-300 G.P.M.	4	ACV-4-K
301-500 G.P.M.	5	ACV-5-AK
501-650 G.P.M.	6	ACV-6-AK
651-900 G.P.M.	8	ACV-8-AK
901-1200 G.P.M.	10	ACV-10-AK
1201-2000 G.P.M.	12	ACV-12-AK
2001-3000 G.P.M.	14	ACV-14-AK
3001-3800 G.P.M.	16	ACV-16-AK
3801-5000 G.P.M.	18	ACV-18-AK
5001-6400 G.P.M.	20	ACV-20-AK
6401-8000 G.P.M.	24	ACV-24-AK

Sizing for ACV-Models on recirculating cooling lines is based on gallons per minute (G.P.M.).



ACV-14-K-10 Installed on a 1,000 ton Cooling Tower

Typical cooling systems being treated by Superior Systems



RT-1000-K, ACV-6-K, & CT-400-ZB Environmentalist/Zero-Bleed® on a Comfort Air Cooling Tower



300 G.P.M. Superior Scavenger System for Cooling Tower Sumps

In order to stay abreast of all changes and innovations in the industry, Superior and/or its engineers maintain(s) active membership in the following organizations:



SUPERIOR MANUFACTURING DIVISION

Magnatech Corporation

2015 South Calhoun, P.O. Box 13343, Fort Wayne, IN 46868-3343

Phone: (260)456-3596 Toll Free: (800)348-0999 Fax: (260)456-3598

E-mail: sales@superiorwaterconditioners.com Website: www.superiorwaterconditioners.com