

Linear Kinetic Cell

“Water Conditioning System”



ener-ATec[®]
INC.

Principles of Operation (How Does it Work?)

Water contains minerals of different types and concentrations, depending upon the substructure from which it is pumped. Water is a universal solvent, and therefore dissolves any material that it is in contact with at various rates, depending on the material. Minerals such as calcium, manganese, and iron are examples of minerals that are easily dissolved, and are normally present in water, regardless of the source.

Minerals behave like tiny magnets when exposed to the electromagnetic energy field. (Fig. 2) This energy is sufficient to align the dipoles, forming a molecular chain, (Fig. 2) and these minerals will no longer form scale.

The LKC System is an EFFECTIVE, PROVEN means of scale control for all types of commercial and industrial applications including cooling towers, boilers, air compressors, ice machines, heat exchangers, hot water heaters, etc.

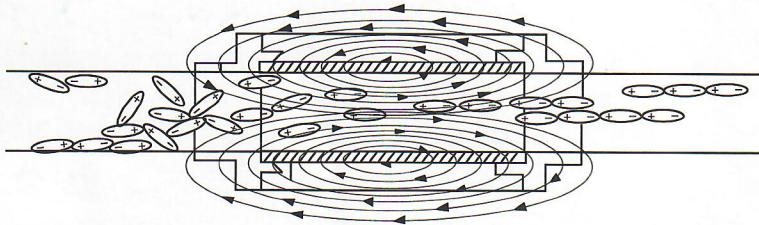
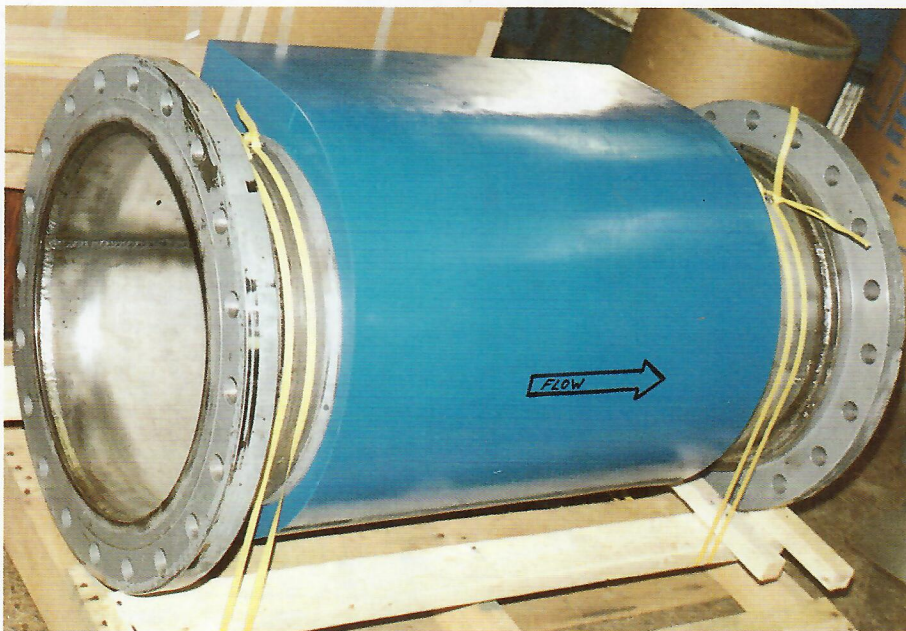


FIG. 1

FIG. 2

FIG. 3

- Fig. 1 The molecules as they appear at random and clinging to the sides under normal conditions in untreated water.
- Fig. 2 The path of the flux field. This force creates the proper energy to polarize the molecules within the water system.
- Fig. 3 The molecules after they have been treated with the Ener-Tec system. The internal forces orient the positive and negative poles in such a way as to produce a molecular chain.



Application: Process water in steel mill (20" line). This system is fabricated from 304 stainless steel, with welded flanges, and meets the explosion proof codes as required in the area of application.

Process water which is pumped in from Lake Michigan creates many problems in heat exchangers, pumps, water lines, etc. due to precipitation of minerals, (scale build-up).

Installation of the Linear Kinetic Cell has eliminated scaling, as well as periodic acid cleaning to maintain peak efficiency. Since no chemicals are used, the process water is returned to the lake without pretreatment.

LABOR: Chemical treatment requires continuous monitoring, adjusting feed, servicing of feed equipment, handling, and extensive water testing required to maintain proper water chemistry.

SAFETY: Safety is the most feared part of using chemical treatment in water systems. There have been cases of severely burned hands, arms, and faces of persons handling chemicals.

The LKC System requires no chemicals.

SPACE: The LKC System requires little room for installation since the entire cell is placed directly into the water line, requiring only electrical service.

CONTINUOUS TREATMENT: The LKC System operates automatically, 24 hours a day with no assistance.

NON-POLLUTING: The LKC System is non-polluting. All treatment is accomplished through Ener-Tec's induction.

EXPENDITURE: You can normally own an LKC System for less than it costs to operate a chemical system for one year.

INSTALLATION: Installation of the LKC System requires a minimum of time and labor. The average installation time is approximately one hour.

ENERGY SAVINGS: Tests have proven that we can save the customer as much as 75% in energy costs when installing the LKC System. Tests have proven that on condenser tubes, a scale build-up of 1/32" will cut the Chiller's efficiency by 25%.

O.E.M. Services

Ener-Tec, Inc. maintains a qualified Engineering staff experienced in assisting Original Equipment Manufacturers with their water problems. Design, prototype and testing is offered to determine the feasibility of the Linear Kinetic Cell use in conjunction with the O.E.M. equipment.

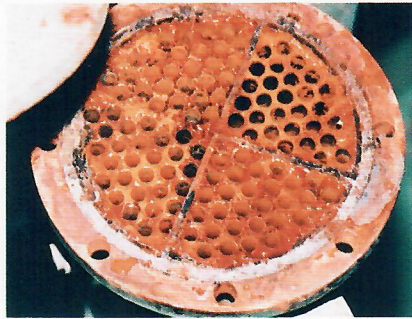


Photo #1 Before LKC

THIS MAJOR PLASTICS PRODUCER manufactures a wide variety of products, including high pressure reinforced tubing, with several manufacturing plants throughout the United States and several foreign countries.

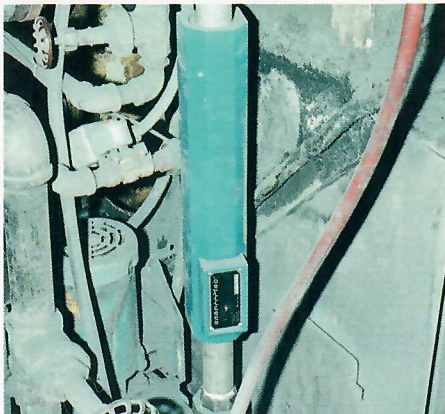
They were experiencing substantial buildup in their water cooled air compressors, process equipment, nozzels, etc. The primary concern was the heat exchangers (pictured) which had to be removed and cleaned periodically.



Photo #2 After LKC

PHOTOGRAPH NO. 1 clearly shows the amount and deposition of scale and iron deposited to the interior of the chiller. PHOTOGRAPH NO. 2 illustrates the condition of the chiller 60 days after the Linear Kinetic Cell was installed.

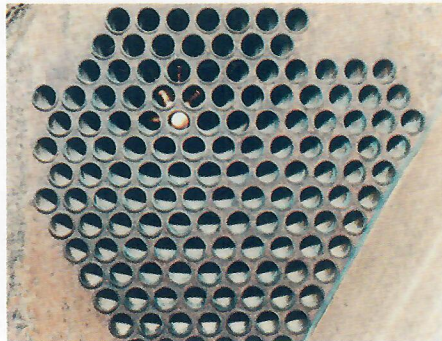
These photographs were taken by client and forwarded to Ener-Tec as positive proof that the system is performing as promised. **(Guaranteed) Additional units have been ordered and installed at this facility.**



Ener-Tec, Linear Kinetic Cell 1½" 304 stainless steel. Application: cooling tower.

A MICHIGAN BASED FOUNDRY is considered one of the most advanced foundries in the Midwest. As an effort to maintain a competitive situation, purchasing, engineering, and maintenance personnel keep abreast of new technology.

Prior to installing the Linear Kinetic Cells, foundry personnel were aware of the weekly maintenance and chemical cost involved to treat their process water. While evaluating the annual budget, cuts were to be made in various areas, including process. Purchasing was aware of the chemical cost and felt that this was prime area of concern, and the water treatment cost could be drastically reduced by installing the Ener-Tec equipment. Ener-Tec was called in to make a proposal for the cooling tower which chills the recirculating water to the Ajax furnace. This system was installed and a 90 day payback was experienced. Weekly maintenance on the tower has been eliminated, and additional units have been purchased for the Zurn air dryer and the water cooled air compressors.



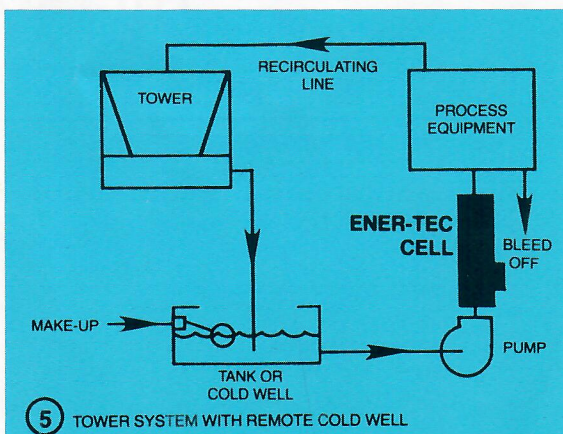
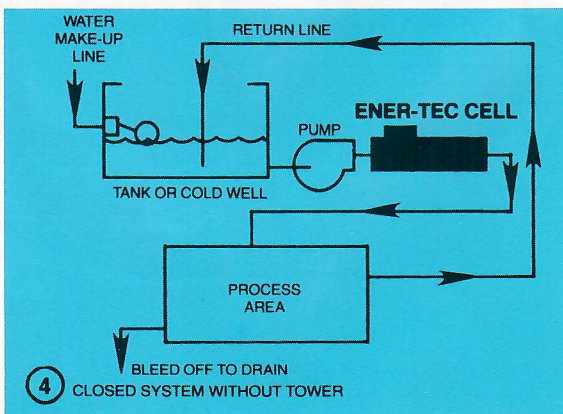
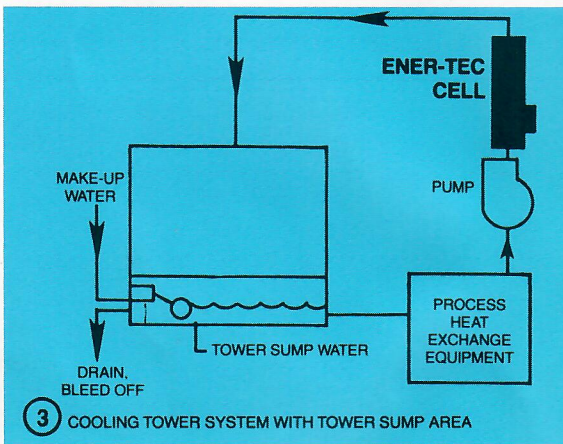
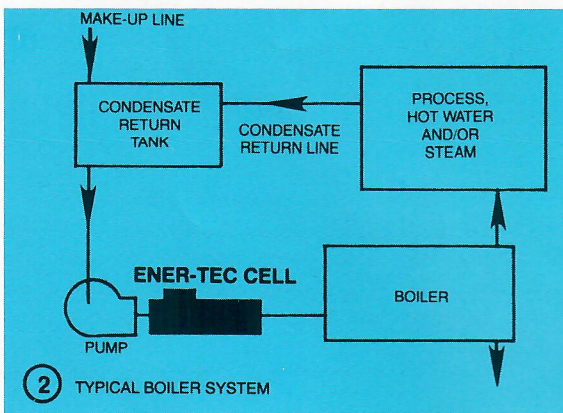
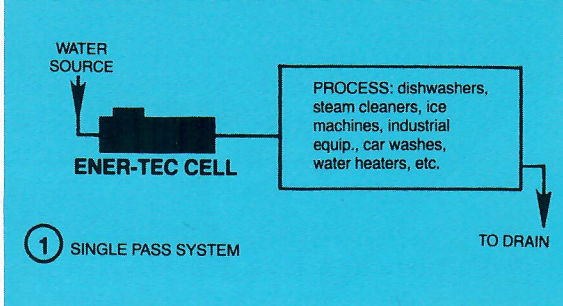
BIRMINGHAM, ALABAMA is the location of one of leading cancer research laboratories in the United States. Due to rigid tolerances on temperature and humidity within the laboratory, they must rely on the air conditioning equipment.

Prior to installing the Ener-Tec water treatment system, chemicals were used exclusively in all cooling tower systems. Scaling created loss of efficiency, uneven temperature control, and required acid cleaning twice per season.

Based on previous experience with this particular cooling tower, the Ener-Tec Linear Kinetic Cell was expected to maintain a clean system. The photograph above illustrates the condition of the 480 Ton Carrier Chiller after a full year (364 days) of service. Note the reflection of light through the tubes, upper left.

The research lab has since installed additional Ener-Tec water treatment systems. They have been very well satisfied with the performance and reliability of the Linear Kinetic Cell as an effective means of scale control.

The initial capital expenditure on the eight inch unit illustrated above was approximately \$13,000.00 which represented ten months of chemical cost. Payback normally runs from 6 to 12 months.



ener-**▲▲**tec® inc.

COMPANY CAPABILITY:

Design, engineering, fabrication, start-up and service are within the firm's qualifications. From the expression of a special customer requirement, to seeing equipment function properly in their plant, is our mission and commitment. Automatic fabrication and assembly equipment allows delivery of a quality product with little or no lead time. Most orders are shipped the same day order is received. Quality control standards are met or exceeded in every system.

HISTORY:

Ener-Tec began its operation in the mid 1970's, manufacturing the Linear Kinetic Cell (R), primarily to the restaurant and small factory industry. Since that time is has grown and expanded its operation to be the leading manufacturer of non chemical water treatment systems, serving a diversified market. Through the latest state-of-the-art technology and reliable components, Ener-Tec customers have found specific means of improving the efficiency of their operations. Foundries, automobile manufacturers, steel mills, and breweries are examples of customers that utilize our technology.

WARRANTY AND GUARANTEE

Ener-Tec products carry a one (1) year performance guarantee. If the products do not perform to customers satisfaction, Ener-Tec, Inc. will refund the purchase price.

Ener-Tec products are guaranteed for a period of five (5) years from the date of purchase. Ener-Tec, Inc. will replace any part of, or the entire system if it becomes defective during this period.

Ener-Tec, Inc. has the right to void the warranty and guarantee if the equipment has been tampered with and/or not installed according to directions.



BEFORE



AFTER 60 DAYS

See Inside For Details

THE PROOF IS IN THE PERFORMANCE

DESIGNED AND MANUFACTURED BY:

ener-**▲▲**tec® inc.

ELECTROMAGNETIC DIVISION

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