MADE IN INDIA

RENN® INDUSTRIES

ELECTRONIC WATER SOFTENER

It's for Health, It's for Life!

Model: ES400

USER MANUAL

Working Principle

Electronic water softener device works on the basis of special electromagnetic impulses which change the crystallization process of the calcium and magnesium particles in hard water. It results in particles getting disturbed and loose to their ability to stick the surface. The disturbed particles calcium and magnesium dissolve and revolves in close water system by itself.

Remove deposited scale and increase the effectiveness and reduced operating costs of cooling towers. Using expensive chemicals such as chlorine, phosphates and acids is the traditional way to eliminate the scale problem.

Renn - ES400 provides you with an eco-friendly water treatment system which protects your water pipes and equipment against scale and rust. The method is based on the patented Renn-ES400-Impulse-Technology and treats your water without applying any chemicals or salt.

Our product for water treatment system is the eco-friendly and chemical-free alternative.

The electronics device changes the balance between the scaling process and natural resolving process. Mono-crystals can no longer form deposits; therefore the scale build-up process is reduced.

The natural scale resolving process now needs only to deal with existing deposits and can effectively combat them. Thus scale is removed faster than it forms. The natural surplus of carbonic acid dissolves the scale from the scale. Gradually and carefully, the deposits in the pipes are cleaned out.

Models for all size of pipe diameter

Renn-ES is a customized solution for your individual needs. The various product lines of Renn-ES solve problems in residential, commercial and industrial applications.

Scale and Rust Problem

The water we use in our private houses as well as in commercial and industrial facilities contains dissolved scale consisting of calcium and magnesium. When exposed to a temperature increase or change of pressure, the calcium crystallizes and builds incrustations. These hard scale deposits appear often in places where water is heated, swirls around or leaves the pipes.

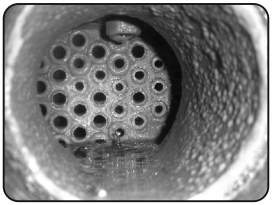
Pipe with scale deposits

The longer you wait to take action against these problems, the more damages and costly repairs will arise. Soon you will have to replace the whole piping system and buy new equipment.

Heat Exchanger & Heating Element

Scale deposits on the inside of pipes, on heating elements or on expensive machinery create many scaling problems.

Heating Element Coil



Heat Exchanger Tubes

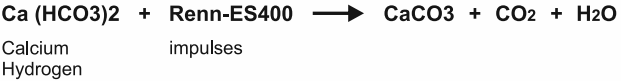
Key Benefits

- **Renn-ES400 stops scaling in pipes and appliances**

  Without the Renn-ES400 water treatment, scale particles in the water from sticky crystals that then build solid scale deposits. The Renn - ES - Impulse - Technology modifies the crystallization of calcium and magnesium using the natural process of electrophoresis. The crystals become smoother and rod-shaped and can no longer attach to each other. The more rod-shaped crystals that are created, the stronger the positive effect of scale-prevention. Scale is now washed away in the water as a fine powder.

- **Renn-ES400 gently sanitizes the piping system**

  The Renn-ES400 water treatment changes the balance between the scaling process and natural resolving process. Mono-crystals can no longer form deposits; therefore the scale build-up process is reduced. The natural scale resolving process now needs only to deal with existing deposits and can effectively combat them. Thus scale is removed faster than it forms. The natural surplus of carbonic acid dissolves the scale from the scale. Gradually and carefully, the deposits in the pipes are cleaned out.



- **Renn-ES400 protects against rust damage and Perforation**

  Copper and/or iron oxidation occurs in all metal pipes through contact with hard water. These oxides seriously affect the pipe surfaces and often lead to corrosion.

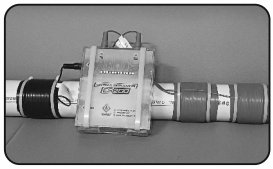
  The Renn-ES-Impulse-Technology generates an electrophoresis - effect which produces a protective metal-carbonate layer. According to the material of the pipe, this layer consists of copper carbonate, iron carbonate or zinc carbonate and settles on all shiny metal surfaces. It protects the pipe from harmful substances which could lead to corrosion.

- Eco-friendly solution against scale & rust problems.
- No use of salt or chemicals.
- Suitable for pipe diameters from 4" up to 6".
- Fully cast in acrylic for optimal quality endurance.
- Maintenance-free.
- Minimal Power Consumption.
- Do-it-Yourself installation, Inexpensive installation without interruption of the production process.
- Works on every pipe material. iron, copper, stainless steel, galvanized iron, plastic, PVC, compound pipes in any material mixture.
- Reduction of scale deposits throughout the whole piping system.
- Less time and effort spent on repairs and maintenance at your home, e.g. water heaters, washing machines.
- Reduction of harmful bacteria and biofilm.
- Important minerals remain in the water.
- Gardening systems and sprinklers stay clean and last longer.
- Considerable savings on washing and cleaning agents.
- Savings due to more efficient use of energy for heating water.
- Maximum working life of commercial machinery and equipment.
- Reduction of maintenance on irrigation systems and water tapping
- Food and beverages keep their natural taste.
- Productivity increase due to the reduction of lime incrustations.
- Spend less on machinery maintenance.
- Fast amortization of acquisition costs.
- Easy cleaning and no need to apply acids in cooling towers.
- Maximum working life of expensive production equipment.

Applications

RENN®

DOMESTIC
- Residential Apartments
- Bunglows
- Farm Houses
- Swimming Pools
- Garden
- Solar Water System



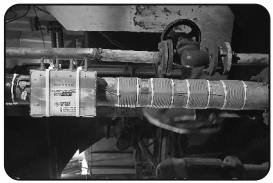
Residential Apartment

COMMERCIAL
- Hospitals
- Hotel Industry
- Commercial Building
- Theaters
- Shopping Malls
- Banquet Hall
- Air Ports
- Agricultural Farms
- Laundries
- Automobile Washing Center

Agricultural Farm

INDUSTRIAL
- Chemical Industry
- Pharmaceutical Industry
- Textile Industry
- Lumber Industry
- Refineries
- Sugar Industry
- Automobile Industry
- Rubber Production
- Injection Molding
- Printing Dying Mills
- Cooling Towers
- Heat Exchanger
- Shipping Industry
- Fisheries
- Dairy & Food Production
- Maritime and Cargo Industry
- Waste Water Treatment

Central AC Plant (PVR Cinema)



Boiler Plant (Dying Mill)

FAQs - Frequently asked questions

How do I choose the right model size?
Please check the pipe diameter in the area where you want to install Renn-ES. Then choose the unit that is designed for this size.

Do copper or synthetic pipes need a scale protection device at all?
Yes. Copper and plastic pipes are prone to calcifications, too. The smoother a surface is the longer it can resist the process of calcification, but once a first layer of scale has built up, the incrustation process proceeds just as fast as on any other surface.

Does the Renn-ES treatment have a softening effect on the water?
As the water treated by Renn-ES does not lose any minerals, such as calcium and Magnesium, the composition of the water remains unaltered. It feels noticeably softer, though. You are sure to feel this effect when showering or washing your hair. The treatment does not change the measured water hardness, but modifies the shape of its components.

How long does it take Renn-ES to descale the pipes?
Renn-ES removes scale and rust slowly without negatively affecting the pipes. The cleaning process takes about as long as it took the incrustations to develop.

Which pipe materials are the devices suitable for?
Renn-ES is suitable for all pipe materials: iron, copper, plastic, stainless steel, PVC, compound pipes, etc.

Which voltage range is the electronic plug-in power supply unit suitable for?
All Renn-ES power supply units are suitable for voltage ranges between 190 Volt - 240 Volt and 03 Hz - 50 Hz. They operate on 12 VDC.

What are the power costs of Renn-ES per year?
Renn-ES is completely maintenance-free. The cost of electric energy per year amounts to approx. Rs.400/- to Rs.500/-

Installation Instructions

Residential, Commercial & Industrial

- Put the two cable clips through the fixing holes at the top of the electronic Device. Now place the device onto the pipe. Use the cable clips to latch the Device to the pipe.
- Connect one of the impulse bands to the device and use another cable clip to latch it to the pipe.
- Wind the impulse bands around the pipe producing a coil. Make sure you wind the band tightly to the pipe and place the windings close to each other.
- Latch the end of the impulse band to the pipe using another cable clip. Now repeat the procedure with the second impulse band.
- First plug the connector into the side left in main jack of the device and then connect the power supply unit with an electrical outlet.
- The blue running lights will illuminate as soon as the device starts to operate. Renn-ES works from now on maintenance-free.

TECHNICAL SPECIFICATIONS:

Model	ES400
Pipe Diameter	100 - 150 mm
Max. Capacity	80 m3/hr
Input Voltage	190 - 240 VAC
Operating Voltage	12 VDC
Frequency range	3 - 50 kHz
Impulse bands	5 x 4.5 Mtr.
Measurements	185 x 130 x 35 mm
Required space	1200 mm

Manufactured by:

RENN® INDUSTRIES

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