

CONDENSERS, CHILLERS & PHE SYSTEMS

ETP & MEE PLANTS

BOILERS

COOLING TOWERS

WASHING DRUMS

CAMPUS, TOWNSHIPS & GARDENS



MAGNACAT

MICRO WATER CONDITIONER

Power of Influence



VS AQUA SOLUTIONS LLP



MAGNACAT
MICRO WATER CONDITIONER

NON-CHEMICAL TECHNOLOGY FOR SCALE & HARDNESS CONTROL

- ✦ No Replacement Of Spare Parts.
- ✦ No Electricity Required.
- ✦ No Tube Choking & Scale Formation.
- ✦ No O&M Cost.
- ✦ No Chemicals & Add-ons Required.
- ✦ No Corrosion.
- ✦ No Pollution.
- ✦ No Moving Parts.

VS AQUA SOLUTIONS LLP has been providing value to its customers by developing innovative micro water conditioners since 2011.

MAGNACAT is a combination of Magnetic & Catalytic Technology; designed to naturally keep the water soft and fit various aqueous delivery systems. **MAGNACAT** is a state of art technology offering simple & customer friendly water treatment solutions; replacing old laborious methods that causes loss of productivity with high recurring costs.

MAGNACAT is made of high-grade stainless steel and is an in-line equipment that utilizes a special group of ultra strong coated magnets & alloys that create ultra-fine oscillations & deliver high gauss rays directly into the water to be treated. Ergonomically designed; **MAGNACAT** also adapts to existing water lines of Commercial & Industrial Applications.



Scale & Hard Water Control Non-Chemical Technology

HOW DOES IT WORK?

HARD WATER refers to water containing a high concentration of Calcium, Magnesium & other such minerals; whereas **SOFT WATER** refers to water with low concentration levels.

RAIN WATER is soft by nature and does not contain any minerals. But, as it seeps through the ground, it passes through Soil & Rocks; and in that process, picks up minerals like Calcium, Magnesium & its compounds.

When water (or any fluid) flows through any medium (e.g. pipe); due to the friction between the flowing fluid and Fluid Contact Surface (FCS), the FCS gets positively charged. It attracts negatively charged oxides in water, which causes scaling by Calcium Carbonate, Magnesium Carbonate, Calcite, Calk, Limestone, etc.

The magnetic flux created by the magnetic rays and the natural galvanic reactions that occur between the ions and the catalytic core of the alloys reduces the electro-static charge and breaks down the molecular structure of the ions that make the water hard. High performance magnetic energy focused from **MAGNACAT** perpendicular to the flow of water, cuts the magnetic flux generated by the magnetic field.

It eventually does not allow the minerals to precipitate on the surface. Instead, they aggregate and form colloids which then freely flows through the water system. It happens because the pipe acts as a stator and the water that cuts the magnetic flux will act as a rotor. This effect will produce direct current in mini volts that will charge up Minerals from negative to positive.

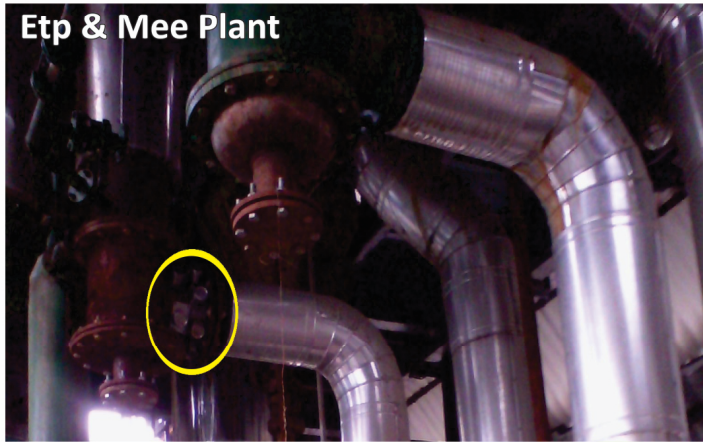
The above phenomena hence prevents any deposition of minerals (Scale) on the FCS.

AREAS OF APPLICATION	DOMESTIC	COMMERCIAL	INDUSTRIAL
	Bath Fittings Shower Panels Jacuzzi, Multi Shower Systems Water Closets/cisterns Water Geyser Washing Machine, Dish Washer Gardening, Fountains Water Sprinklers	Hotel & Restaurants Hospitals Coffee Shops, Bakery, Packaged Water Plants Cold Storage House Commercial Laundry Spa & Parlours Boiler Based Steamers	power generations units cooling tower heat exchanger textiles industries food processing industries water jet washing injection molding machines RO Plants



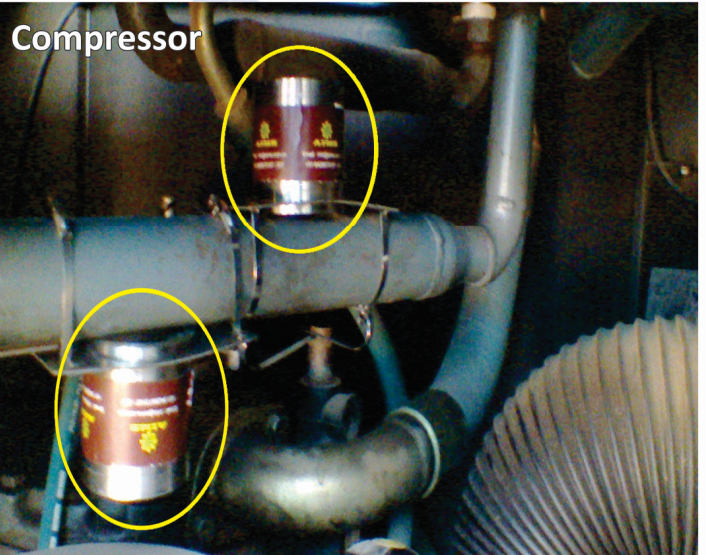


Etp & Mee Plant

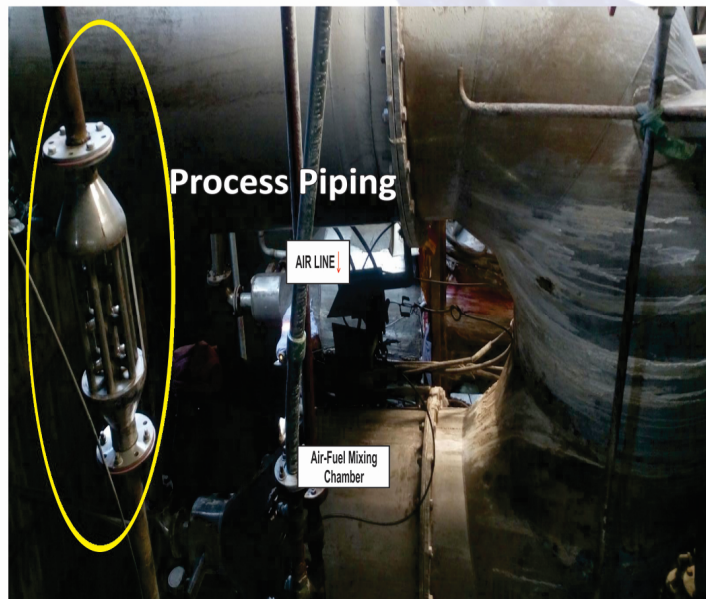


ETP & MEE PLANTS: They are used to convert wastewater into effluent by efficiently using the heat from steam to evaporate water in order to get a concentrated solution. Due to very high TDS effluent the dissolved solids get saturated and accumulated in calandria tubes. A set of **MAGNACAT** – (Descaler Solution) at the inlet of calandria in circulation line, will charge the dissolved minerals (up to 2-LAC TDS) in such way that the saturated minerals bonding in calandria tubes will loosen-up and reduce the frequency of tube choking in MEE plant.

COMPRESSORS: More the compressed air is cooled inside a compressor's inter-cooler and after-cooler; the compressor will become more energy-efficient and more water vapor will be condensed. In water-cooled compressors, due to hard water scaling in PHEs, the heat transfer cannot take place properly and hence decreases compressor efficiency. Our compact **MAGNACAT** design will fit inside the compressor body near PHE or cooling water system and charge the high pressure water before entering into the cooling system which will clean the existing scale build-up from plates and will also prevent further accumulation of scale. This will eventually improve compressor efficiency using the same hard water.



Compressor



Process Piping

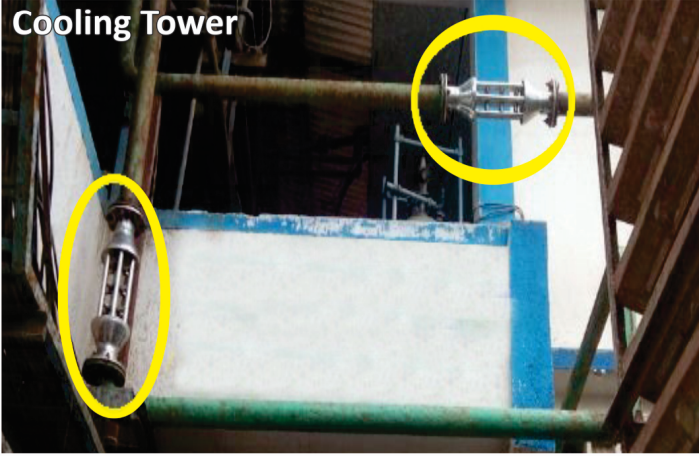
PROCESS PIPING: In pipe systems, generally cavitation occurs due to an increasing in pipe elevation and long routing of piping grids. Scaling is the most common type of fouling on pipe surface and is commonly associated with inverse solubility of salts such as calcium carbonate found in water. Salts become less solute as the temperature increases and thus deposit on the pipe surface. Such scale is difficult to remove mechanically and chemical cleaning may be required. **MAGNACAT** will give its best performance in such piping loops by energizing the water magnetically which will change the pole of water minerals so the possibility of accumulation of inverse soluble minerals will improve over all plant efficiency and reduce the piping, valve and plumbing cost of the plant.





MAGNACAT
MICRO WATER CONDITIONER

Cooling Tower

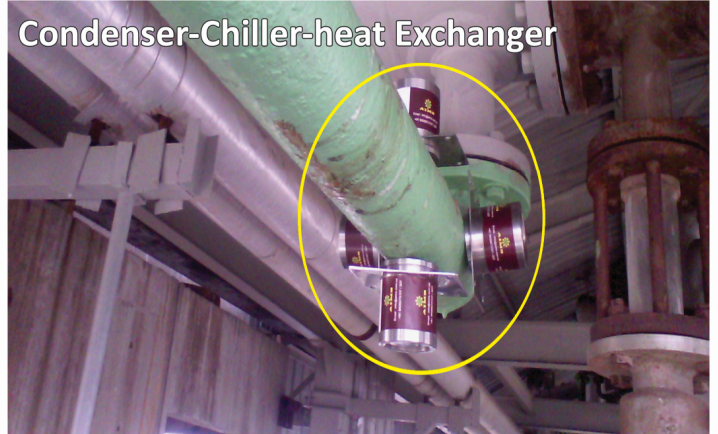


COOLING TOWERS: They are a closed water circulation system and scale build-up is very common because water is re-used. Water evaporates leaving behind impurities. Descaling is important because the buildup can result in less efficiency and eventually corrosion. **MAGNACAT** changes the charge of the water molecule. The surface tension of the water is decreased, which removes existing scale build up in spray nozzles and prevents new scale formation in the system.

CONDENSERS, CHILLERS & HEAT EXCHANGERS:

In such equipments; tube chocking frequency is maximum because of the heat transfer due to which regular cleaning and maintenance becomes must. The performance of these equipments is related to its heat transfer efficiency which may go down because of scale build-up in tubes. **MAGNACAT** prevents the scale build-up in tubes which controls the heat loss and hence improves efficiency.

Condenser-Chiller-heat Exchanger



Boiler & Washing Drum



BOILERS: It is one of the-most critical equipments in industrial plants, where preventions are taken to avoid scaling issues. The available amount of dissolved solids enters the boiler through water in form of soluble solids and is precipitated on the contact surface when the concentration level increases because of evaporation. Even after the use of soft water (RO & Softening chemicals); scaling issues have been observed. By implementing nominal modification of the route of boiler feed water system, the feed water will pass through additional RECIRCULATION system passing through our **MAGNACAT**, the same water will not allow scale to precipitate on the contact surface or the boiler tubes.



TREATMENT ENERGY-EFFICIENT FACTORY
 ASSISTANCE SEDIMENTATION MICROBIAL
 AGRICULTURE LIFE INDUSTRY WASTE CLEAN
 SCIENCE FARMS PRESERVATION SERVICE WATER RAIN HABITATION
 ASSURANCE FILTERATION GEOLOGY PURIFICATION
 POOL SAIL AQUA CARE NATURAL PLANT CLEAN
 UTILITY CARE SUSTAINABILITY ENROLMENT
 POLLUTION HEALTH GROUND WATER
 SECURITY MINERALS ENVIRONMENT
 TEXTURE



HARIYALI
 MICRO WATER CONDITIONER



MAGNACAT
 MICRO WATER CONDITIONER



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