

SCALE-BANTM

A NON-CHEMICAL WATER TREATMENT EQUIPMENT

CASE® has had a global presence in the industrial world for more than 25 years. CASE® established itself in the early 1990's and since then has been relentlessly working in the variable fields of Industrial Engineering Activities. CASE® has accomplished a high level of excellence in the manufacturing of the equipments and services provided by it. CASE® has its corporate office cum headquarters situated at National Capital Region, India.



CASE® offers a wide range of state-of-art-the technologies for Coal Gasifiers, Cooling Tower Solutions, Air Pollution Solutions, SCALE-BAN™- Non chemical online water scale preventor , Direct Reduced Iron and critical machinery for Steel Rolling Mills like HSS (High Speed Steel) Rolls, Block Mills, High Speed Finishing Mills etc. The organization aims to deliver globally, the best of quality products at the most economic rates within minimum lead times. "CASE® believes on 'Working for a Safer and a Cleaner Tomorrow'".

CASE® designs and manufactures products, which are specifically required for the purpose. The materials used are carefully selected to ensure the highest standards of performance and to guarantee the consistent quality. All products are subjected to rigorous quality control procedures prior to delivery. The relevant standard authorities and professional associations regularly assess our operative skill and competency.

Our aim is to provide the plant designer, constructor and operator with an efficient, reliable and economical facility. Our products are wholly approved and accepted by all the INDIAN GOVERNMENT ORGANIZATIONS.

CASE® has manufacturing unit situated at Bahadurgarh to cater to the client's needs all over India and abroad. Our works is equipped with the latest technological advancements required for processing and fabrication. These products are scrutinized through our stringent quality control cell, which ensures an excellent product quality.



CASE® is an ISO-9001:2015 certified company. CASE® is also member of the prestigious COOLING TECHNOLOGY institute, USA. which makes sure that we offer international technology at Indian rates.

CASE® has entered into many strategic partnerships with overseas companies for a number of different technologies. These partnerships are a result of our in-depth experience and the technical know-how which we possess. Understanding the importance of technological advancements has been the driving force for these partnerships. By synergizing technology and cost competitiveness, we have been successfully able to introduce many anew systems which have been extremely beneficial for the Indian Industry.

Welcome to CASE® Group and feel free to explore the world of Engineering experienced through the eyes of CASE®.

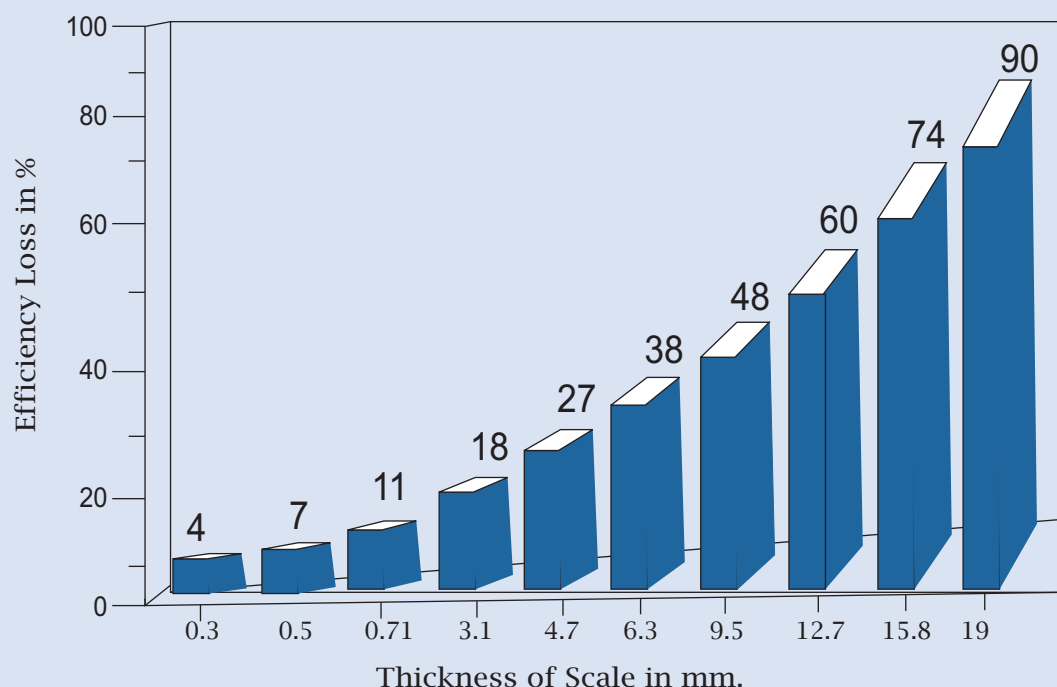
Water is nature's most wonderful, most abundant, and most useful compound. It is estimated that 2/3rd of human body constitutes of water. It also occupies a unique position in industries. It has a very important use as an engineering material in steam generation. Water is also used as a coolant in power and chemical plants.

Water is very complex in nature. It contains a lot of impurities in dissolved & suspended form. The calcium & magnesium salts present in the water determines the hardness of water. It is this hardness of water which is of main concern for scale problems in industries

SCALE AND ITS EFFECT

INSULATING PROPERTIES OF SCALE:

Scale formation is a common phenomenon in any industry using water as a coolant or for steam generation. Scale has insulation properties, thus resulting in bad heat transfer (see graph). Apart from a drop in efficiency, the effect is overheating of machines, and frequent break downs because of equipment choking. The cleaning process is recurring and tedious and it reduces the life of the machines.



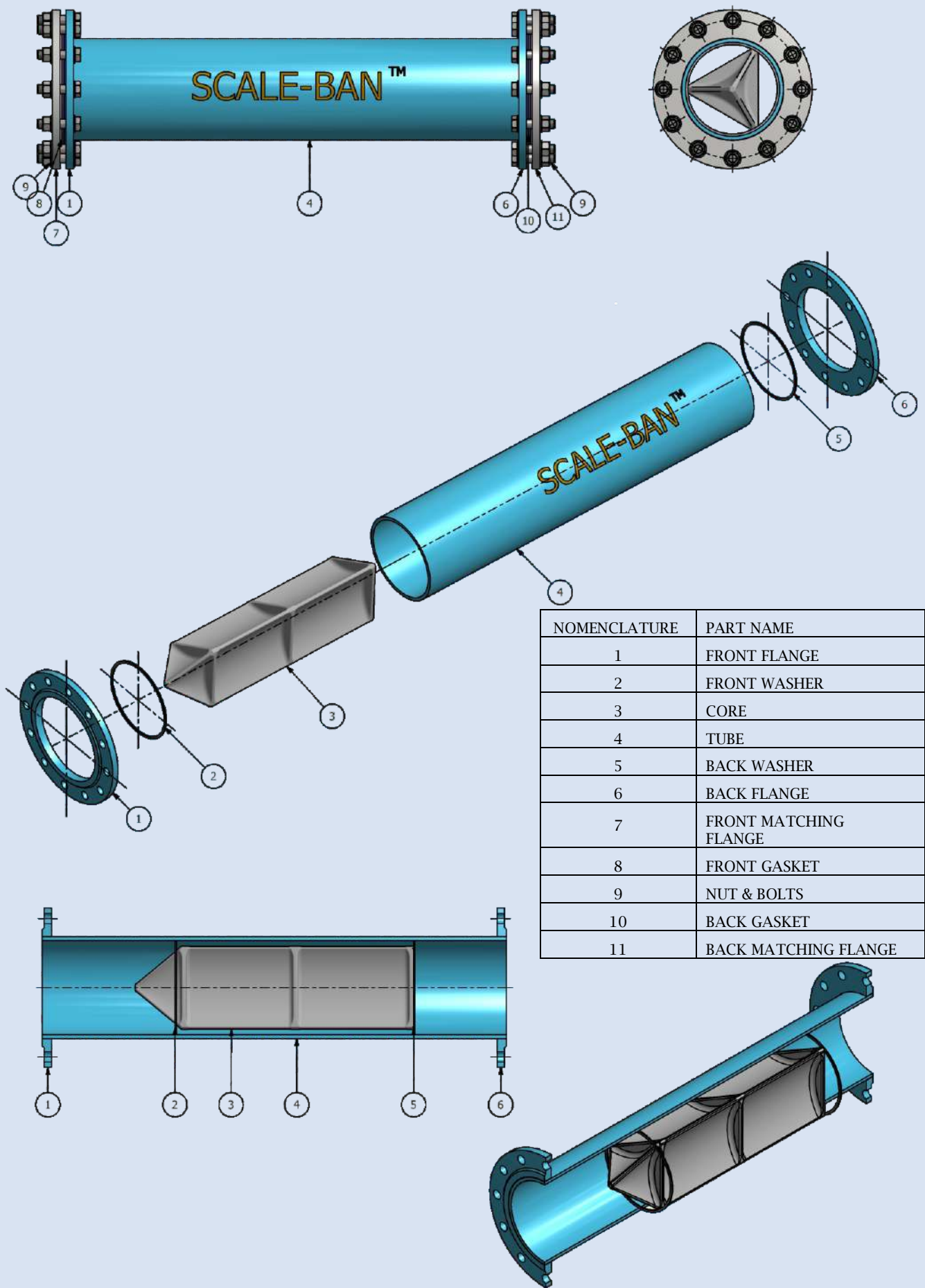
SCALE-BAN™ TREATMENT

SCALE-BAN™ is an innovative concept in the field of hard water scale problems. It comes in the shape of a pipe and can be easily installed in the present cooling water circuit. This On-line equipment does not require any energy for operation. It requires no regeneration or maintenance, resulting in Zero equipment down time and zero equipment deterioration.

The theory of working of SCALE-BAN™ is very simple. It makes the use of flow and chemical characteristics of water and precipitates out hardness causing salts of very small size as the water flows through SCALE-BAN™.

These salts are suspended in water because of being very light in weight and the turbulent flow of water. Thus, once the precipitation causing salts are precipitated and suspended in water, further precipitation because of temperature variation is not possible. The result is a totally scale free system.

SCALE-BAN™ CROSS-SECTION



MODEL SELECTION

MODEL	Internal Diameter (Inch)	Internal Diameter (mm)	Minimum Flow (m ³ /hr.)	Maximum Flow (m ³ /hr.)	Length (MM)
SBA-01	3/8 "	10	0.5	1.1	300
SBA-02	1/2 "	15	1.0	1.7	
SBB-01	3/4 "	20	1.6	3.4	
SBB-02	1 "	25	3.0	5.7	
SBC-01	1 ¼ "	32	4.5	9.1	600
SBC-02	1 ½ "	40	6.8	13.6	
SBC-03	2 "	50	12.0	22.7	
SBD-01	2 ½ "	65	18.2	35.2	1000
SBD-02	3 "	80	26.1	50.0	
SBD-03	4 "	100	47.7	90.8	
SBD-04	5 "	125	84	148	
SBE-01	6 "	150	132	210	
SBE-02	8 "	200	199	375	
SBE-03	10 "	250	352	591	
SBE-04	12 "	300	555	840	
SBE-05	14 "	350	820	1170	
SBE-06	16 "	400	1020	1535	
SBE-07	18 "	450	1410	1930	
SBE-08	20 "	500	1770	2385	
SBE-09	22 "	550	2270	2905	
SBE-10	24 "	600	2500	3475	
SBF-01	26 "	650	2930	4080	1500
SBF-02	28 "	700	3400	4730	
SBF-03	30 "	750	3905	5430	
SBF-04	32 "	800	4440	6180	
SBF-05	34 "	850	5015	6975	
SBF-06	36 "	900	5620	7820	
SBF-07	38 "	950	6265	8710	
SBF-08	40 "	1000	6940	9655	
SBF-09	42 "	1050	7650	10640	

Models available for higher flow rate on request.

Above Length is standard length. Length may vary in special cases.

SCALE-BAN™ is supplied in flanged or screwed end connections.

SCALE-BAN™ is designed as per the minimum flow rates in the equipment so that the necessary turbulence is obtained.

ADVANTAGES OF SCALE-BAN™

PREVENTION OF SCALE

Due to its unique ability to precipitate dissolved solids into a colloidal suspension, scale tends to build up on these seed crystals rather than on the heat transfer areas thereby preventing the deposition of scale on the heat transfer areas.

REMOVAL OF EXISTING SCALE

The reduction of the free Calcium and Magnesium from solution by the formation of these calcium carbonate and magnesium carbonate crystals, and the solubility being constant, the water can dissolve more salts, which it tends to pick up from the existing scale in the system thereby desalting scaled up systems, under ideal conditions. However, as the solubility is affected by the changes in pH, temperature and pressure, the SCALE-BAN™ will descale only in ideal conditions of above parameters and hence it is not marketed as a scale remover but as a scale preventor.

ELIMINATES RECURRING COSTS OF EXPENSIVE CHEMICALS, REGENERATIVE SALTS, RESINS & ELECTRICITY

The Scale-Ban™ has no recurring costs associated with Chemical Dosing or water Softening, as no chemicals, regenerative salts or resin are used.

CHEMICAL COMPOSITION OF THE WATER DOES NOT CHANGE

Scale-Ban™ does not change the composition of the water but instead changes the dissolved state to a suspended state thereby preventing scale build up. The Chemistry of the water being the same it can be used in the process itself, for example in beer making.

NO CORROSION RISK

Water softeners necessitate the use of corrosion inhibitors, as the water tends to be corrosive. Similarly, Chemical Dosing reduces the pH of the water hereby increasing the risk of corrosion. SCALE-BAN™ on the other hand, has the unique advantage of preventing without increasing the risk of corrosion.

However, if the Concentration of cycle is increased to a level that pH of water goes over recommended, some acid dosing may be required. This can be done by automatic dosing pump.

ELIMINATES RECURRING LABOR COST

SCALE-BAN™ is a fit-and- forget system and it does not require any labor or supervision for chemical addition or for regeneration salts as required for Chemical Dosing and water softener or DM plant.

REQUIRES NO MAINTENANCE LABOUR COSTS

SCALE-BAN™ has no moving parts and it requires no replacement or part maintenance at all.

SAVES FUEL CONSUMPTION

Scale reduce heat transfer efficiency resulting in increased energy use which can rise by almost 50% In AC systems, a 5 mm fouling of the condensers can result in an increase of power costs by over 30%. As the SCALE-BAN™ fitted online is constantly preventing the deposition of scale, thereby, saving valuable energy costs as compared to manual desalting systems, which requires desalting to be done periodically.

NO ENERGY CONSUMPTION

Unlike conventional water treatment systems, SCALE-BAN™ does not require any power or electrical inputs.

NO POLLUTION

Chemical Dosing and water Softening Systems necessitate the use of Chemical. Bleed is hazardous and comes in water pollution and hence have to be treated before the water is released into the underground water table. The SCALE-BAN™, on the other hand does not require the use of any chemicals. Bleed water can be used in toilets and gardening.

CAN HANDLE VARIABLE WATER QUALITIES

In conventional systems, chemical has to be adjusted to the water quality and hence the systems has to be closely monitored for variable water qualities. The SCALE-BAN™, on the other hand, is not effected, by variable water qualities and can handle water up to any hardness.

SAVES WATER

SCALE-BAN™ can be used with high TDS and high hardness. This feature enables SCALE-BAN™ when used in water circuit to go for high concentration of cycle (COC) thus resulting in phenomenon decrease of bleed of water, thus saving water.

This feature also enables user to add tail of RO plants to the makeup water of the cooling towers thus saving tremendous quantity of water and decreasing the load on Evaporators. This feature is in line with Government of India circulation to power plants to save water.

COMMON APPLICATIONS

A.C PLANTS

CHEMICAL REACTORS

CHILLING PLANTS

AIR WASHERS

GENERATORS SETS

COMPRESSOR INTERCOOLERS

INDUCTION FURNACE

INJECTION MOULDING MACHINES

BOTTLE WASHERS

ELECTRIC FURNACE

HEAT EXCHANGERS

LOW PRESSURE FIRE TUBE BOILERS

POWER PLANTS

SUGAR PLANTS

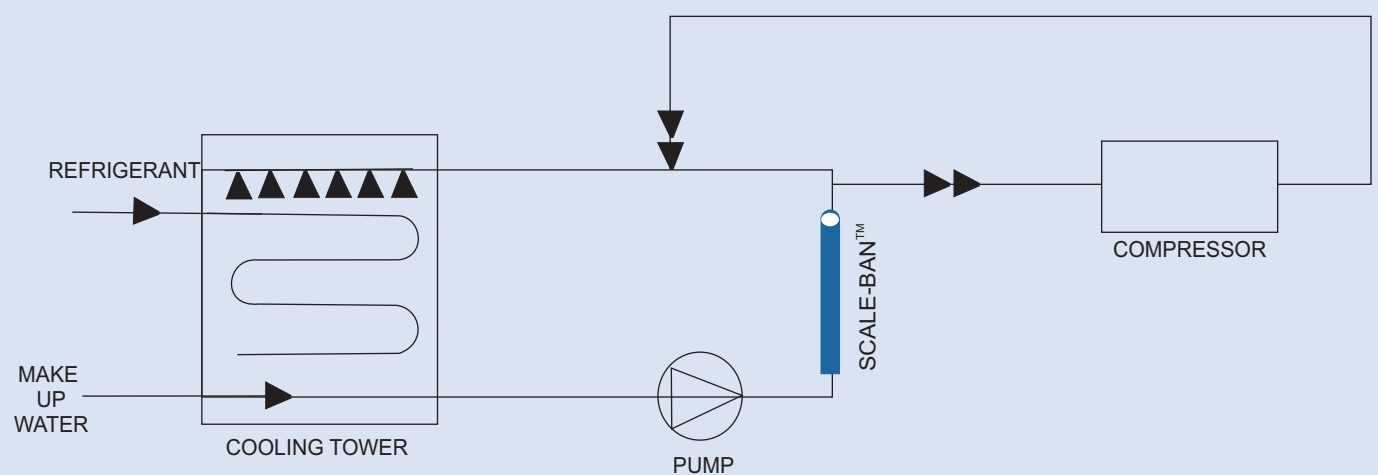
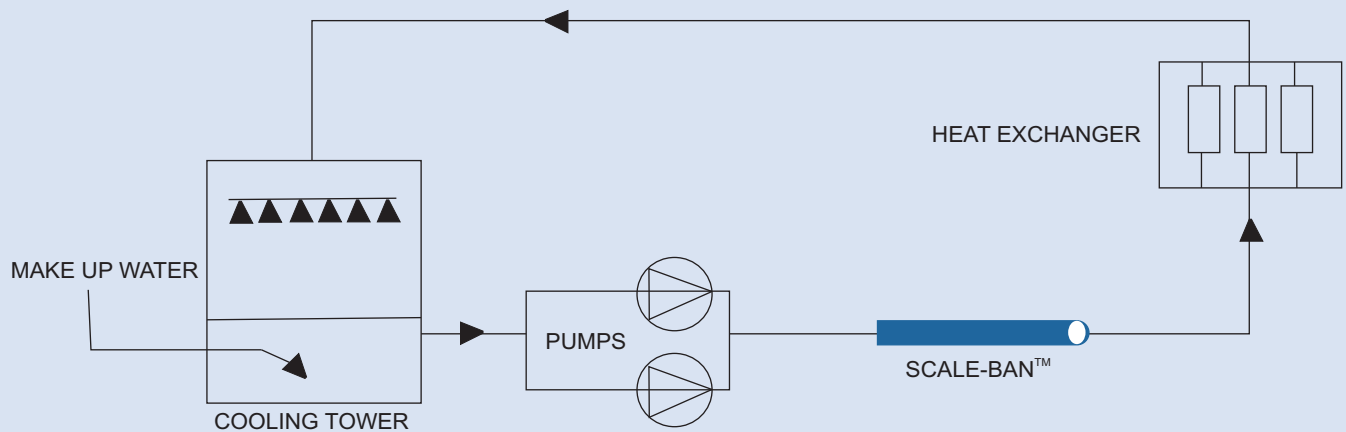
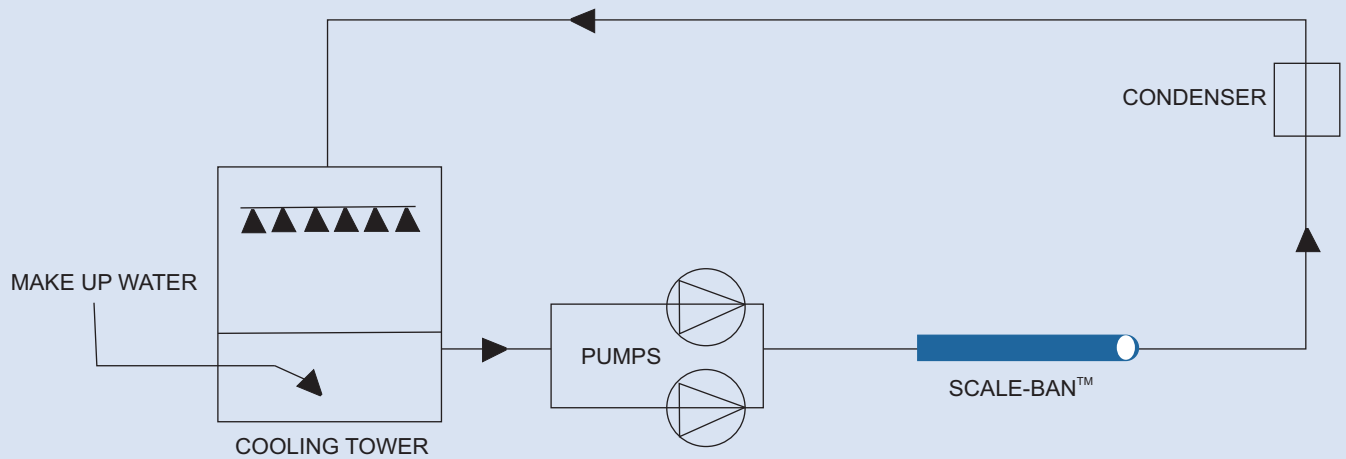
REFINERY

FERTILIZER PLANTS

ALL TYPE OF HEAT EXCHANGERS

INSTALLATION

SCALE-BAN™ is installed after the pumps and before the heat transfer areas. There should not be any static tank or other zero velocity zone between SCALE-BAN™ and machine to be protected. The customers are however requested to consult the manufacture or their authorized dealers/ agents before installation.





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