

Anti-Corrosion Engineering Co., Inc.

117 West 54th Street
New York, N. Y.

Apparatus for Removing and Preventing Rust in Hot and Cold Water Systems

Free Dissolved Oxygen contained in all natural waters is usually the cause of internal corrosion of water supply systems in power plants and buildings. This leads to destruction of apparatus, leaks, dirty water and choked circulation. Salts in the water accelerate corrosion, but without oxygen these salts are inactive. The removal of the **DISSOLVED OXYGEN** removes the cause of rust.

Corrosion is prevented in power plants and buildings by Anti-Corrosion Engineering Co., equipment by removing the free dissolved oxygen from the raw water. Our process is called **DEACTIVATION**. This apparatus is made in three distinct types to fit various conditions, of which there are over 200 now in successful operation.

Deoxidizing Deactivators are used for larger residences, apartment houses, smaller hotels, smaller office buildings and certain types of factory buildings. This type removes the free dissolved oxygen from the raw water by passing it through a deactivator filled with a series of perforated plates of a special highly corrosive metal—Sufficient time of contact is allowed to fix the free dissolved oxygen by expending its corrosive activity upon these plates. The resulting rust is precipitated and ejected through blow-out openings. Usually the water is filtered after leaving the deactivator before going to the house service, in order to remove the colloidal rust. Proper coagulation is accomplished by the passage of the raw water through a special coagulant before it reaches the deactivating tank.

Deaerating Deactivators are used for the larger hotels, larger office buildings and institutions, such as hospitals, colleges, etc., where a steady supply of steam is available. The dissolved oxygen and other gases are eliminated from the raw water in this deactivator by heating the water to a boiling temperature under mechanical agitation. The natural expansion process

resulting from the agitation of the water at the boiling temperature sets free all dissolved gases. This apparatus acts both as a deactivator and heater and little or no additional reheating of the water is required to obtain the desired temperature for any service. This apparatus may be located either on the roof or in the basement of the building.

Both the deoxidizing-deactivator and the deaerating-deactivator are applied to hot water supply systems only and are sufficient to overcome the corrosion problems under most conditions, as corrosion is much more rapid at higher than at lower temperatures.

Vacuum Type Cold Water Deactivators are used wherever the cold water as well as the hot waters supply system have reached a serious condition through the action of rust in the piping and apparatus. In this apparatus the water from the source of supply is taken into the deactivator under a vacuum where it is mechanically agitated and broken up. The vacuum applied to this tank removes the gases leaving the water free from these agencies which cause corrosion. A removal pump takes the water from the deactivator and delivers it to the house pumps of the building. Both cold and hot water are then delivered under pump pressure to the cold and hot water systems of the building. Where a building is provided with a roof tank this acts as a reserve at any time the pressure pumps should be shut down.

The effect of the deactivation of the cold as well as the hot water supply is to gradually break down and remove the accumulated products of corrosion, restoring full circulation of water and protecting the piping against disintegration which is the cause of leaks.

Refer to the **GUIDE 1922**, for further details and apply to us for specifications, dimensions, weights, capacities, recommendations, etc.

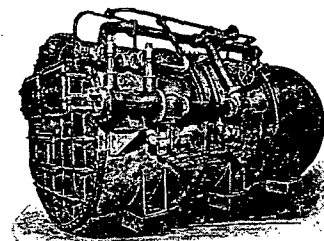
H. S. B. W.-Cochrane Corporation

Formerly Harrison Safety Boiler Works

3120 North 17th Street

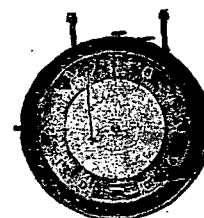
PHILADELPHIA, PA.

"COCHRANIZE THE HEATING SYSTEM"



The **Cochrane Deaerating Heater** expels oxygen and other gases from water and thereby prevents corrosion in hot water heating and service piping, economizers and boilers. The water is delivered at any temperature above 140 deg. Fahr., using only the amount of exhaust steam necessary to heat the water to the desired final temperature, no steam or heat being wasted. The steam can be expanded in a turbine or engine down to a vacuum corresponding to the temperature at which the deaerated water is delivered.

The **Cochrane Steam-Stack and Cut-Out Valve Heater and Receiver** for use with exhaust steam heating or drying systems, does the work of a heater and of the independent separator ordinarily installed in a by-pass around the heater. The combination occupies much less space than a heater with an independent separator in a by-pass, and saves the cost of installing the independent separator.



The **Cochrane Flow Meter** is a simple, reliable and accurate device for measuring water, steam or air flowing in pipes. There are no working parts in the pressure chambers and no stuffing boxes. The chart divisions are uniform. The pressure connections are included in the orifice plate, eliminating errors from faulty connections.

The **Cochrane Multiport Back-Pressure Valve** differs from the ordinary back-pressure valve in that a number of small discs are used instead of one large disc, thus reducing the size, weight and travel of the discs. Each disc has an independent dash pot and is held to its seat by an independent spring, the tension upon all the springs being adjusted by a hand-wheel inside the housing. The predetermined back pressure cannot be exceeded.

The **Cochrane Oil Separator**. Exhaust steam purified of oil by passing through a Cochrane Oil Separator is worth as much, pound for pound, as live steam at the same pressure for heating buildings, heating water, etc. The condensed returns will be free of oil.

The **Cochrane Multiport Drainer** removes condensate or drips from heating or drying coils, radiators, jackets, low-pressure steam and oil separators, etc. The balanced cylindrical valve has large ports, and large capacity with low operating pressure. It never leaves its seat, is self-cleaning and is always water-sealed. There are no stuffing boxes, packings, springs or links.

