

## Water Treatment



ENERGY SOLUTIONS WORLDWIDE

BIB Cochran Limited have an international reputation in providing quality steam and hot water boilers and associated technology.

In order to maintain the boiler's performance and integrity a good quality operation and maintenance regime is essential. A key component of this regime is water treatment.

The exact need for water treatment is dependant upon the source of water, the chemical and physical condition of the water, the duty of the boiler, and the utilisation of the steam.

BIB Cochran have an established team of water treatment specialists to advise clients on appropriate equipment packages and the on-going chemical regime necessary to ensure the safe, reliable and economic operation of the boiler house.

The Objectives of the Water Treatment Division of BIB Cochran are always the same, to provide:

- Safe
- Reliable
- Economic

systems for the treatment of the water

BIB Cochran Range of water treatment products include:

### Filters

### Water Softeners



- Simplex
- Duplex

### Reverse Osmosis Systems



### Chemical Dosing



- Pumps
- Tanks

### Chemicals

- Oxygen Scavengers
- Dispersants
- Alkalinity Builder
- Condensation Treatments

### Service

# Water Treatment

The solutions proposed will use appropriate combinations of the following:

## Filters

Sometimes it is necessary to remove suspended solids, iron or manganese from the source water. This is to prevent damage and fouling to other water treatment equipment and to ensure that there are no suspended solids to cause blockages in the feed tank and feed lines.

## Water Softeners

Water softeners are available in Simplex or Duplex units and are simple to operate and maintain. These are the most common treatment technology to be found in the boiler house.

Water softeners reduce the hardness of water and reduce the formation of hard deposits, known as scale, forming on the heat exchange elements. These deposits reduce the efficiency of boiler plant due to their insulating effect, increase the energy costs and can ultimately cause premature failure of the equipment.

Installing a water softener system in conjunction with a suitable chemical dosing regime, ensures that the feed water for the boiler will not cause scale formation and will allow for safe operation and maximum heat transfer efficiency by maintaining a clean boiler and furnace tubes.

Water Softeners work by a process known as ion exchange. Hard water passes through a exchange resin column inside a pressure vessel. Calcium and magnesium ions are removed from the solution by the resin and exchanged for sodium ions.

When the resin is almost exhausted the softener starts the regeneration process. A timer or volume control starts this process where the softener draws a solution of common salt (brine) through the column of resin which releases the captured Ca and Mg ions and exchanges them for sodium ions. The regeneration water is flushed to drain and does not enter the service line.

## Chemical Dosing

In conjunction with the water softening process a successful water treatment programme requires accurate chemical dosing. BIB Cochran can offer an extensive range of reliable, accurate dosing equipment which allows automated and precise chemical addition ensuring maximum operating efficiency.

Chemicals include: Oxygen scavengers, dispersants, alkalinity builders and condensate treatment.

The selection of the product depends on the boiler conditions and steam applications. The oxygen scavenger can be formulated into a single drum product in combination with dispersants and alkalinity builders for ease of use in large or small systems.

BIB Cochran provide a full range of boiler water treatment chemicals from single activities through to formulated compounds. We can provide a package of chemicals and equipment designed to meet your particular needs.

## Reverse Osmosis (RO)

This technology is rapidly becoming the benchmark technology for boiler pre-water treatment.

This system uses a medium pressure pump to force the water through a membrane system which separates the minerals (ionic species, macro-molecules, suspended solids and dissolved solids) from the feed water.

The advantages of this technology are that the reduction of TDS enables a much reduced rate of boiler blowdown to be achieved, saving water, boiler chemical treatment and most importantly - ENERGY.

In our experience, systems that utilise a RO plant can achieve payback in 12-18 months from installation, even earlier for steam systems operating without low condensate return.

## Service

Water conditions can change with the seasons, equipment performance and boiler operations. To maintain correct and optimum conditions it is necessary to make routine and regular checks. BIB Cochran provide training for your staff, test kits, log sheets and our own technical service engineers to ensure that problems are identified early and corrective action taken to ensure safe, reliable and economic operation of your boiler system.

**Contact our Technical Sales Team  
for specific applications**



<b>BIB Cochran Limited</b> Newbie Works, Annan, Dumfries & Galloway, Scotland, UK DG12 5QU	<b>BIB Cochran Limited</b> First Floor, 105 Sadler Road Doddington Road Lincoln, UK LN6 3RS
---	--

Tel: +44 (0) 1461 202111

Fax: +44(0) 1461 205511

Email: [enquiries@bibcochran.com](mailto:enquiries@bibcochran.com)

[www.bibcochran.com](http://www.bibcochran.com)

**A BIB Group Plc Company**

Whilst this information is given in good faith no warranty or representation is given concerning such information which must not be taken as establishing any contractual or other commitment binding upon BIB Cochran Limited or any of its subsidiary associated companies.