



Steam Boiler Guidelines

Steam boilers are fragile but essential pieces of equipment commonly found in industry, but due to their operational nature precautions must be taken when installing any of Fluid Dynamics non-chemical water treatment systems.

Prior to installation on any steam boiler the following information **must** be obtained and verified by Fluid Dynamics before a recommendation can be made.

1) Water analysis: A raw water analysis must be obtained before installation can be considered. It is vital that the water analysis reflects the parameters of the water before it has been heated inside the boiler. This sample can be taken anywhere in the supply of make-up water to the boiler.

2) Current chemical load: Some chemicals can be used in collaboration with Fluid Dynamics treatment whilst others must not. The following details will be required on chemicals:

- List of all chemicals and their purpose of treatment.
- Frequency of dosing.
- Annual cost of chemical treatment (approx).

3) Boiler details: All boilers differ and we need the details of each boiler in order to qualify if it is suitable for Fluid Dynamics treatment. The following information is required:

- Steam production per hour/capacity.
- Operating pressure (bar or psi)

4) Condensate return: Amount of condensate returned to boiler

5) Frequency of current de-scaling

ONCE THIS INFORMATION HAS BEEN COLLECTED AND VERIFIED ONLY THEN CAN A RECOMMENDATION BE MADE AND THE FLUID DYNAMICS UNIT COMMISSIONED. FAILURE TO FOLLOW THESE GUIDELINES WILL VOID ANY CUSTOMER WARRANTIES.



Below are the guidelines which **MUST** be followed after installation has commenced on any steam boiler.

Boiler Installation Guidelines

- 1) Installation should only be carried out on low pressure boilers.
- 2) The Fluid Dynamics catalytic unit should be installed after pipe carrying the condensate return, if this is returned separately to the boiler a second unit will be required to protect this line (**treated water and untreated water cannot be mixed after treatment as this will cause a breakdown of treatment**).
- 3) Any softeners that are being used should continue to be used.
- 4) All chemical treatment should be stopped if the Fluid Dynamics catalytic unit and softener are working together.
- 5) The boiler should be examined and photographed before installation of the Fluid Dynamics catalytic unit.
- 6) After installation on scaled up boilers blow-down frequency should be doubled to remove existing deposits.
- 7) The boiler should be opened after one month, three months, six months and one year after installation to inspect the condition of the boiler for scale accumulation.
- 8) If there is a lot condensate return, it may be necessary to regularly change the Fluid Dynamics catalytic unit as it could become coated with Iron Oxide. In this case it is recommended that two Fluid Dynamics catalytic units be purchased to ensure continuous treatment.
- 9) If there is no treatment at present, a Fluid Dynamics catalytic unit may be installed, it will not make the problem any worse.
- 10) If chemicals alone are being added then:
 - a) Stop the addition of all filming agents immediately.
 - b) Cut back chemical dosage levels by 50% for the first month, if results are good cut it back by a further 50% for three months. If results are still good eliminate chemicals for the next six month period and re-inspect.

Installation should be after the boiler feed pump



It is imperative that these guidelines are followed stringently. Failure to do so will void the warranty of Fluid Dynamics catalytic units and may also cause boiler breakdown.

The following water analysis is required in order to assess the Fluid Dynamics catalytic unit compatibility.

<u>ELEMENT</u>	<u>RAW WATER</u>	<u>POST BOILER</u>
TOTAL ALKALINITY		
CHLORIDES		
SULPHITES		
TOT HARDNESS		
CA HARDNESS		
Ph		
CONDUCTIVITY		

