

APPENDIX 'G'

BLOWDOWN Steam Boilers

Blowdown

The purpose of boiler blowdown is to regulate the amount of total solids, dissolved and suspended, contained in the boiler water. Added feedwater carries dissolved solids that are left behind in the boiler as it is evaporated. Chemicals also add to the solids concentration. Since evaporation is continuous, the accumulation is also continuous. BLOWDOWN to waste a part of the concentrated water and replacing it with feedwater is the only way the total solids concentration can be held in check.

Failure to remove sediments and sludge accumulation may result in premature boiler failure such as cracked boiler plates, low water cutoff failures or pressure controller failure.

Failure to control dissolved and suspended solids in the boiler water may result in foaming and priming. This in turn results in a wetter steam and poor fuel economy.

Steam boilers used solely for heating and where practically all of the condensate is returned to the boiler, blowdown only as often as the concentration of solids require.

Steam boilers used for process steam requiring high quantities of make-up water should be blown down as required to maintain desired chemical concentration levels and to remove precipitated sediments.

Boilersmith Ltd. boilers are supplied with three types of blowdown connections; BOTTOM BLOWDOWN, LOW WATER CUTOFF/WATER COLUMN BLOWDOWN and SURFACE BLOWDOWN.

A) Bottom Blowdown and/or Drain

The bottom blowdown permits the removal of sediment and sludge accumulation from the bottom of the boiler.

If your boiler is supplied with two blowdown valves (a quick-opening and a slow-opening valve) always open the quick-opening valve first followed by the slow-opening valve. This reduces stress on the pipe and fittings.

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Blowdown of Steam Boilers

B) Low Water Cutoff and/or Water Column

All AF2, AF3 and CF3 Series firebox boilers are supplied with ball valves on the low-water cutoffs for blowdown purposes of these devices. In addition to removing sediment, blowing down while the burner is running ensures that the low water cutoff is functioning. The burner should shut off during the blowdown.

C) Surface Blowdown

Continuous blowdown allows dissolved and suspended solids to be removed continuously near the water surface. There are three types of Surface Blowdown.

Intermittent

Blowdown manually at a pre-determined time schedule and water testing schedule.

Continuous

Blowdown continuously while the boiler is steaming. A throttling valve is installed to permit a controlled flow to drain. The amount of flow is determined by periodic testing.

Automatic

A solenoid valve and flow control valve are installed. Based on conductivity or the amount of boiler feed water the solenoid valve is energized.