PARKER BOILER CO.

AUTOMATIC BLOWDOWN SYSTEM

I) System Description
II) System Installation Preview
III) Start Up & System Check
IV) Operation

I. SYSTEM DESCRIPTION

The Automatic Blowdown System consists of the following components: (1) Surface Blowdown Connection, (1) 3/4" Upstream Ball Valve, (2) 3/4" Forged Steel Unions (upstream and downstream), (1) Auto Blowdown Controller, Sensor and Cross, (1) 1/4" Sample Valve, Nipple & Cap, (2) 1 x 3/4" Forged Steel Bushings and (1) 1 x 1/4" Forged Steel Bushing, (1) 3/4" Throttling Valve, (1) 3/4" Motorized Ball Valve or Solenoid Valve, (1) 3/4" Downstream Ball Valve.

Piping and components must be connected to the boiler at a surface location per Installation Drawings, code requirements, and Automatic Controller Instructions. New boilers can be provided with connections specifically for continuous automatic or timed blowdown systems. For field retrofitting Parker recommends our surface connection assembly. Check with Local Inspector before beginning installation. Wiring must conform to NEC, Local Codes, Controller Instructions and Parker Instructions.

The system when installed and operated properly can only extend the periods required between full blowoffs. The Daily Boiler Blowoff Instructions, BD Series sheets, Bulletin 101-5 on Proper Operation and 1001-B on Boiler Maintenance and Water Treatment should be followed for the specific boiler. The time or the duration between full and partial blowoffs can be extended with this system as the TDS level can be monitored and controlled. To adjust the system a means of TDS measurement is required.

It is important that bottom blowoffs still be performed on the boiler on a regular basis to clean out sediment in the boiler. The system can extend the period of time between full blowoffs.

When the system is operating properly, the motorized ball or solenoid valve will be open a percentage of the time as controlled by the Automatic Unit. The proper size throttling valve must be installed and adjusted correctly so that the water level in the boiler does not continue to drop after the boiler feed pump is energized.

The benefits of an Automatic Surface Blowdown System should be 1) Reduced maintenance time, 2) Reduced chemical usage, 3) Possible reduced water usage due to minimization of full blowoffs and 4) More uniform chemical levels within the Boiler.

II. SYSTEM INSTALLATION

The system installation should conform with the Installation Diagrams, Automatic Controller Instructions and Wiring Diagrams (if provided). Piping should conform to drawing 103, 104, or 105 INST AUTO and Instructions. All electrical wiring should be in conformance with the National Electric Code and Automatic Controller Instructions. The blowoff piping should be in conformance with ASME/ANSI B 31.1 and Parker General Basic Installation Instructions GBI 101-5. The entire Installation must comply with all applicable Codes. Consult Local Inspection Jurisdiction.

The Controller should be located in a convenient accessible location somewhere close to the boiler, preferably on a wall nearby. If mounted on the boiler, it should be mounted with stand-offs so that it is not directly on the surface of the boiler cabinet.

The piping should connect into the blowoff line downstream of blowoff valves. The Automatic Valve should be located as close as possible to the connection on the boiler, but below the boiler water level.

Do not use galvanized, cast iron or copper for blowdown piping. Valves and fittings must be steam rated for "MAWP" plus 25% or _____PSI. For pressures over 100 PSI, threaded piping must be seamless steel equal to schedule 80 and all blowdown fittings must be forged steel.

A 3/4" Throttling Valve is installed downstream of the probe sensor to limit the amount of flow and to prevent rapid depletion of water in the boiler. The valve can be throttled and will need to be adjusted at Start Up.

III. START UP & SYSTEM CHECK

When unit is installed and all piping is complete, bring the boiler up to pressure with the boiler side valve closed. Check for leaks.

Slowly open manual valves and any automatic valves in line, check for leaks and correct. Check to be certain boiler secondary manual reset low water cutoff is functioning properly.

Adjust throttling valve (globe valve) in this blowdown line with manual valves full open and automatic valves or solenoid fully open.

With valves open, it should be insured that the water level in the drum does not dip below the level of the dip tube at the surface connection or out of sight in the sight glass. The rate of feedwater pumping must exceed the rate of blowdown through this surface blowdown piping.

Be certain no adverse or unsafe condition exists when the blowdown system is in operation or if the system were allowed to operate continuously. Check the blowoff tank discharge after continuous opening to insure the condition is safe. Follow adjustment of the Automatic Controller Unit. Refer to Manufacturers Instructions provided.

IV. OPERATION

Follow all operational advice as stated under the description Section I and in Controller Instructions.

NOTE: Full Blowoffs and internal inspections will still need to be performed.