

## XC BOILER BLOWDOWN SYSTEMS HEAT RECOVERY PRODUCT

## Automatic Continuous Blowdown Heat Recovery for Boiler Systems

## Features

- 1 to 6 boilers in the same recovery unit
- Typically recovers $90 \%$ of heat lost during blowdown
- Quick payback in energy savings
- Boiler pressure ratings from 35 to 250 psig (2.4 to 17.2 barg)


## Description

Sentry Model XC boiler blowdown systems provide the best performance of any heat recovery product available.

The XC is specifically designed to eliminate the twin hazards of blowdown systems: FLASH STEAM which destroys heat exchangers, valves and piping and OVERHEATED MAKEUP - which scales up the heat exchanger, and liberates dissolved gases which corrode the exchanger, piping and deaerator inlet.

All systems are completely pre-piped for a broad range of boiler(s) capacities and installation is simple. If you have a boiler pressure above 250 psig (17.2 barg) ask about our custom flash tank systems for pressures up to 900 psig ( 62 barg).

How It Works

1. The Automatic Proportional Control Valve uses a direct acting thermostatic tube working against an adjustable seat. The (cold) makeup water flows between the inner and outer tubes automatically regulating blowdown to be concurrent with and proportional to makeup flow. It also ensures that no blowdown occurs without proportional makeup flow. The (warm) blowdown water flows through the inner thermostatic tube.
2. The efficient counterflow heat exchanger comes completely piped as part of the system. The stainless steel tube bundle is specifically designed to withstand thermal shock, water hammer, abrasive materials and high water velocities. All units are ASME stamped.


| MODEL | $\begin{gathered} \text { MAX. \# } \\ \text { OF } \\ \text { BOILERS } \end{gathered}$ | DIMENSIONS (INCHES) - TOLERANCE IS $\pm 1 / 4^{\prime \prime}$ EXCEPT AS NOTED |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | A | B | C | D | E | F | G | H | $J$ | K | L | M |
| X43-CM | 3 | $53^{\prime \prime}$ | 18.38" | 18.5" | $28^{\prime \prime}$ | $7{ }^{\text {7 }}$ | $4 "$ | $7.5{ }^{\prime \prime}$ | $16.5{ }^{\prime \prime}$ | $9.31{ }^{\prime \prime}$ | $35.75{ }^{\prime \prime}$ | 33" | $4.5{ }^{\prime \prime}$ |
| X46-CM | 4 | 80" | 18.38" | 18.5" | 64" | 7" | $4 "$ | 7.5" | 38.5" | 23.31" | 62.62" | 60" | 4.5" |
| X66-CLM | 5 | 82.5" | 20.38" | 18.5" | 64" | $9.12^{\prime \prime}$ | $4{ }^{\prime \prime}$ | 8" | $38.5{ }^{\prime \prime}$ | 23.5" | 62.62" | 60" | $4.38{ }^{\prime \prime}$ |
| X69-CLM | 5 | 125.5" | 20.38" | 18.5" | 100" | $9.12{ }^{\prime \prime}$ | $4 "$ | 8" | 64.5" | 33.5" | 107.5" | 105" | $4.38{ }^{\prime \prime}$ |
| X89-CKM | 6 | 126" | 24.38 " | 18.5 " | 100" | 11.12" | 4" | 9.5" | 64.5 " | 32.31" | 104.5" | 96.5" | $4 "$ |


| MODEL | DIMENSIONS (INCHES) - TOLERANCE IS $\pm 1 / 4$ " EXCEPT AS NOTED |  |  |  |  |  |  |  | CONNECTIONS - FPT |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | N | P | R | S | T | V | W | X | 1 | 2 | 3 | 4 | 6 |
| X43-CM | 13.5" | 16.5" | 11.5" | 20.5" | $5{ }^{\prime \prime}$ | 27.06" | 15.5" | $5{ }^{\prime \prime}$ | 11/2 | 11/2 | 3/4 | 3/4 | 1/4 |
| X46-CM | 13.5" | 16.5" | 11.5" | 20.5" | $5{ }^{\prime \prime}$ | 56.06" | 15.5" | 7" | 11/2 | 11/2 | 3/4 | 3/4 | 1/4 |
| X66-CLM | 15.5" | 19.5" | 11.5" | 23.5" | 7.12" | 56.25" | 18" | 7" | 2 | 2 | 3/4 | 3/4 | 1/4 |
| X69-CLM | 15.5" | 19.5" | 11.5" | 23.5" | 7.12" | 92.25" | 18" | 7" | 2 | 2 | 3/4 | 3/4 | 1/4 |
| X89-CKM | 21" | $24.5{ }^{\prime \prime}$ | 11.5" | 29.87" | 9.12 " | 92.06" | 22.5 | $7{ }^{\text {7 }}$ | 3 | 3 | 3/4 | 1 | 1/4 |

## SPECIFICATIONS

Automatic Proportional Control Valve has a brass thermostatic tube; steel and ductile iron outer shell and connections; heat treated stainless steel seat and plunger; blowdown outlet thermometer. The Control has a manually adjustable set point range for makeup/blowdown ratios of $3 / 1$ to $50 / 1$.

Sample Cooler is a counterflow Sentry Model TRB4222 to discharge blowdown sample at maximum of $120^{\circ} \mathrm{F}$. Tube side is stainless steel, rated at 2000 psi/ $850^{\circ} \mathrm{F}$. Shell side is stainless steel, rated at $250 \mathrm{psi} / 450^{\circ}$. The shell can be removed without disconnecting piping. Cooler is equipped with isolation valves and inter-connecting piping.


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The Sampling Connection

Counterflow Heat Exchanger has (a) removable Utube bundle; 19 ga. 304 stainless steel tubes; U-bends 1.5 times thicker than tubes; rear supporting baffle, (b) steel shell side with anti-vibration hold down clamps, (c) ASME Boiler and Pressure Vessel Code stamping for 250 psig/ $400^{\circ} \mathrm{F}$ rating, (d) interconnecting piping of steel and stainless steel, and (e) supporting stands of steel.

Balancing Valves for each boiler are bronze 300 psi VPort with one bronze 250 psi strainer per valve.

Finish is blue Polyurethane enamel.

