High Pressure (HPR) Condensate Return System

Industrial Steam’s HPR is specifically designed for the corrugating industry:
• Best for Multiple Sources of High Pressure Condensate
• HPR Typically Operates at 90 PSI (315°F)

Industrial Steam High Pressure Return Systems Lower Carbon Emissions by an Average of 1,200 Tons a Year

industrialsteam.com
**High Pressure (HPR) Condensate Return System**

**SEQUENCE OF OPERATION:**
Steam from the boilers is supplied to all of the corrugators. Steam in the corrugators gives up its latent heat of evaporation, and possibly a small amount of sensible heat. Resultant liquid flows by gravity to the steam traps. As the traps cycle, high temperature condensate flows to the High Pressure Condensate (HPR) receiver. Pressure in the HPR is maintained slightly below the lowest steam user in the system to facilitate the flow of condensate from the steam traps to the HPR.

When steam is generated in the boiler, the carbonates decompose and produce CO2 gas which is non-condensable. These gases are mixed with steam and enter the corrugator heating units. Since they build up and plate-out on the heating surfaces, the gases must be continuously removed to maintain maximum heat transfer in the corrugator. This is accomplished by the continual removal of steam and CO2 through the gas purge line to the pressurized feedwater system. The flow of steam from the HPR to the deaerator is controlled by a modulating control valve. The improved heat transfer will result in an increased production of up to 10%.

Makeup water and all other condensate from the steam system are collected in the pressurized deaerator. The modulating level control on the HPR maintains a constant level with feedwater from the deaerator. Non-condensable gases are vented into the atmosphere.

**Components and Sizing**

- **Customer Engineered Packaged System**
  - Small foot print
  - Minimal installation costs
  - Single source responsibility

- **Electronic Instrumentation**
  - HART compatible transmitters
  - Modulating level and pressure controls
  - Variable frequency drives (optional)

- **Energy Savings/Efficiency**
  - Reduce vent loss
  - Increase corrugator heat transfer
  - Reduce carbon emissions
  - Increase boiler efficiency

- **Quality Components**
  - 300# flanged steel valves
  - Pneumatic actuators
  - Rugged Nema 4x transmitters
  - Schedule 80 piping
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Additional Industrial Products

Steam Flow
.005 cc/Liter Pressurized Recycling Deaerators

Spray Flow I I
.005 cc/Liter Atmospheric Recycling Deaerators

Jet Spray
.005 cc/Liter Spray Type Pressurized Deaerators

Blowdown Heat Recovery Systems,
Blowdown Separators

Have questions or need help specifying this equipment? Email: engineering@industrialsteam.com
Need help with an existing system or parts? Email: techsupport@industrialsteam.com
Looking for a local representative? Email: sales@industrialsteam.com
Literature available for download at industrialsteam.com

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