Liquid-Vapor Separation in Steam Generating Systems

**Size Range:** 1,000 lbs/hr to 50,000 lbs/hr nominal steam rate

These horizontal steam separators were designed specifically for use with Maxim heat recovery equipment and usage on reciprocating engines and gas turbines.

**Functions**

- Separates liquid and vapor entering the HSS
- Serves as a liquid reservoir and liquid level control point for the system
- Serves as a trap and blow down point for sludge and other contaminants circulated in the system
- Mounts safety valves, level alarm switches, pressure gauges and other devices for protection of the system

First stage separation is accomplished by an impact plate which provides constant steam quality regardless of water velocity and allows major nozzles to be located on the centerline of the vessel. Additional baffling and surface control plates minimize frothing and liquid carryover. Standard configurations give a minimum steam quality of 98%. With optional mesh type mist eliminators, solids carry over is limited to 1 part per million from liquid concentrations as high as 2,000 parts per million.

**Standard Trim Components**

- Liquid level controller
- Safety valve
- Visual liquid level gauge
- Surface blow-off valve
- Automatic air venting
- Liquid drain valve
- Pressure indicator
- High liquid level indicator
- Low liquid level indicator

**Applications:**
- Hospitals
- Schools
- Office buildings
- Shopping centers
- Offshore platforms
- Oil & Gas production facilities
- Industrial plants
- Marine

**Code Compliance:**

The Maxim HSS heat recovery unit is designed and fabricated in compliance with Section VIII or Section I, Division I, ASME Code.
• Design pressure: 165 psi
• Design temperature: -20 to 500 °F
• Operating pressure range: 10 to 150 psig
• Maximum safety valve settings: 165 psig
• Tolerance on all dimensions ± ¼" unless otherwise specified
• Dimensions not guaranteed unless certified
• Connections 3" and larger are flanged ANSI 150# RF unless otherwise specified
• Flange bolt holes straddle centerlines
• Exterior painted with (1) shop coat high temperature black
• Control items may be removed for shipment
• Responsibility for installation is assumed by purchaser
• Vessel must be insulated for heat retention

CONTROLS:
1. Level controller (pneumatic modulating)
2. Air actuated feed water valve (not shown) mounts by others
3. Level alarm sensor; relay panel (not shown) mounts by others
4. Water gauge
5. Pressure gauge
6. Manual air vent valve
7. Isolation valve
8. Drain valve
9. Safety valve(s)
10. Automatic air vent
11. Surface blowoff valve
12. Bottom blowdown valve
13. Feed stop valve
14. Feed check valve
15. Isolation valve

OPTIONS:
• Thermal insulation
• Feed valve block and bypass manifold
• Other support arrangements