

# PRODUCT SPECIFICATION

## CONTINUOUS BOILER BLOWDOWN HEAT RECOVERY SYSTEM

### HV SERIES, VERTICAL STYLE

1. General: The contractor shall furnish and install a Heat Recovery System, HV Series, model no. \_\_\_\_, as manufactured by Madden Manufacturing, Inc., Elkhart, IN. This equipment will be constructed in accordance with standards of the A.S.M.E. Code for Unfired Pressure Vessels Section VIII, Div 1 for 150 p.s.i.g. pressure.
2. The system will be capable of handling \_\_\_\_ lbs. of blowdown water per hour for a boiler operating at a pressure of up to \_\_\_\_ p.s.i.g.
3. The heat recovery system shall consist of:
  - a. A vertical flash tank with relief valve, gauge glass, hand hole, and pressure gauge. Tank will have (1 or 2) flow control manifold with (up to 6) NPT inlet connections. A 150 psi RF flanged flash steam vent connection will be provided. Tank will be designed to prevent sludge accumulation and sized to generate clean flash steam with a minimum steam volume of 1 cu. ft. for each cubic foot of flash steam generated per second at the maximum rated capacity.
  - b. Internal balanced pressure double seated drain valve, iron body with stainless steel trim.
  - c. Float controller with stainless steel float.
  - d. Vertical coil type heat exchanger, the welded steel vessel to be placed directly below the flash tank. The coil constructed with (copper tubing and bronze headers, or stainless steel tubing and headers), with a minimum surface area of \_\_\_\_ square feet. Feedwater inlet and outlet to be 150 psi RF flanged. Feedwater pressure drop to be less than 2 psi at a maximum flow rate of \_\_\_\_ GPM.
  - e. Thermometer gauge panel showing temperatures of feed water inlet, feed water outlet, and blowdown water to drain. Gauges to be liquid filled type.
  - f. High level alarm system with Magnetrol float switch and Malory Sonalert electronic alarm signal.
  - g. (Qty) Madden orifice meter for precise, adjustable blowdown flow control. Model no. \_\_\_\_\_.
  - h. The unit will be assembled on a 24" X 24" base ready for floor mounting.
4. The Contractor will furnish and install all related piping, fittings and valves to provide a complete system. This includes piping from feed water source to heat exchanger, piping from the heat exchanger to the feed water heater, piping to drain for blowdown water, and piping of the flash steam from the system. The Contractor will be responsible for installing the gauge glass, relief valve, and gauges at the job sight as well as the orifice meters and the high level alarm.