

HURST "HYBRID" BOILER

The heart of this solid fuel boiler system is the Hurst "Hybrid" boiler. The boiler's function is to reclaim the heat from the burning fuel and produce high-pressure, high-quality steam, efficiently.

The boiler is constructed with a watertube radiant section and a firetube convection section, thus the name "Hybrid". The boiler is constructed in strict accordance with the A.S.M.E. Code for the design pressure stamped on the boiler shell.

The front water tube section of the boiler forms the top section of the combustion chamber. The water tubes efficiently absorb the radiant heat and reduce maintenance requirements, compared with a total refractory furnace.

The gasses produced by the burning fuel are pulled into the convection tubes, through the boiler twice, via the rear turnaround chamber, to the front smoke box located above the water tube section. The turnaround chamber is internally insulated to reduce heat loss. Rear doors provide access for tube service.

The entire exterior of the pressure vessel is insulated with 2" of mineral wool or fiberglass insulation and covered with a 22 gauge galvanized steel jacket.

The main steam nozzle is flanged, located on the top centerline of the boiler. Other outlets on the top centerline include:

- 1) The safety valve connections.
- 2) Manway.
- 3) Water level and pressure control connections.
- 4) Surface blowdown connections.
- 5) Chemical injection.
- 6) Spare (depending on the size of the unit).

Boiler openings for inspection and cleaning are provided in each watertube header and in the bottom of the boiler drum.

Blowdown connections are provided in each watertube, 2 in the boiler drum (depending on the size of the unit).

The water tubes are welded into the headers. The fire tubes in the boiler drum extend through the tube sheets and are expanded, then welded, or beaded to form a seal.

When used, soot blowers are fitted within the rear smoke box turnaround of the boiler.