

MODEL BT WATER HEATER
SUGGESTED SPECIFICATION

PART 1 – GENERAL

- A. Furnish and install _____ (qty) Sellers Engineering CO Model BT-____ - ____ Immersion Water Heater(s)
- B. Each water heater shall have a storage capacity of _____ gallons and an hourly recovery rate of _____ gallons over a 100 °F temperature rise.

PART 2 – PRODUCTS

2.1 – Packaged Gas Fired Water Heaters

- A. Water heater shall be built to the requirements of the ASME Boiler and Pressure Vessel Code Section IV for a maximum allowable working pressure of ____ PSI and shall be registered with the National Board of Boiler and Pressure Vessel Inspectors.
- B. Electrical power available will be _____ Volts, _____ Hertz, _____ Phase
- C. Water heaters shall be factory assembled and wired to require only supply, return, drain, fuel, vent and electrical connections.
- D. The immersion firing tubes shall be pressure vessel quality steel on the fireside and seamless copper clad on the waterside. The copper cladding shall be a minimum of .028" thick and shall be seamless. The tubes shall be rolled and beaded into 3/4" thick (minimum) tube-sheets. Ligaments between tubes shall be not less than one (1) inch.
- E. A minimum of five (5) hand-hole assemblies shall be provided in the pressure vessel. Provide an 11 " x 15" manhole for shells over 60" diameter.
- F. The bottom of the heater where scale falls shall not be subject to heat from flame or hot flue gasses.
- G. The water heater shall be equipped with an unobstructed, hinged relief door with a minimum area of 14 square inches for each cubic foot of internal volume of all flue passages from the burners to the flue gas outlet. The relief door shall be located at the rear of the heater.
- H. The heater and all components shall be approved as a unit by the Underwriters' Laboratory.
- I. Lifting eyes shall be provided to facilitate rigging.

2.1 Water Trim

- A. Operating and high limit temperature controls.
- B. Temperature gauge, 4-1/2" dial type.
- C. Combination temperature and pressure relief valve.
- D. Probe type low water cutoff with manual reset

2.2 Burner

- A. Burner and burner components shall be mounted on an easily opened hinged door. The one burner door shall also provide clear access to all fireside burner parts including tube sheets and tubes. The burner assembly shall include the following:
 - 1. Forced draft combustion air blower.
 - 2. Air gas mixer.

3. One burner nozzle for each fire tube.
4. Pilot burner assembly.
5. Control panel including:
 - a. Solid state flame safeguard with digital readout
 - b. Motor starter
 - c. On-Off switch and Manual-Automatic Switch
 - d. Control transformer
 - e. Six (6) indicating lights.
 - f. Air louver initiation and proving circuit in pre-ignition interlocks
 - g. Remote alarm contacts for all alarm conditions
 - h. Remote enabling circuit
6. Main arid pilot gas valves and regulators.
7. Ignition transformer with electrode.
8. Flame proving electrode.
9. Air proving switch.
10. High and low gas pressure switches
11. Flame observation ports.
12. The burner and controls shall conform to the requirements of UL (FM) (IRI) and CSD-1.

2.3 Warranty

- A. The manufacturer's warranty shall cover either a replacement shell or 100% of the repair costs for 5 years and 40% of the shell or repair cost for the balance of ten years.
- B. All pressure vessel and burner components shall carry a 5-year warranty against defects. Warranty shall cover 100 % of labor and material required to repair or replace any parts that fail due to defects or wear and tear during the 5-year warranty period.
- C. Any refractory used in the construction of the water heater shall be warranted for twenty (20) years from the date of startup. Warranty shall cover 100% of the cost of repair or replacement.

2.4 Guarantee

- A. The heater shall be guaranteed to operate at a minimum fuel-to-water efficiency of 82%.

PART 3 – OPTIONS:

3.1 Heat Exchanger

- A. Optional insertion type heat exchangers (to provide hot water for HVAC or other non-potable applications) shall be mounted in the heater shell. Heat exchanger package shall include temperature controller, control valve, heat exchanger with copper tubes, bronze baffles and non-ferrous shell lining, ASME relief valve and thermometer with 3" dial.

Heat exchanger package shall be to supply ____ GPM at ____ °F.

3.2. Heating Coil

- A. Optional insertion type heating coil shall be mounted in the heater shell. Coil shall be rated to supply ____ Btu/Hr to the water heater. Flow rate through the coil shall be ____ PPH of steam at ____ PSIG (____ GPH hot water at ____ °F.)

Heating coil package shall include pneumatic steam (hot water) flow control valve with controller (optional - self contained steam flow control valve), steam inlet strainer, trapped condensate drain, heat exchanger with copper tubes, bronze baffles and non-ferrous shell lining, steam pressure gauge, vacuum breaker and forced circulation pump with isolation and flow control valves.

PART 4 – EXECUTION

4.1 Shop Tests

- A. The water heater shall be completely assembled, wired and tested at the factory. A factory fire and efficiency test report shall be provided to the owner. Owner, engineer or purchaser shall be allowed to witness test, if desired.

4.2 Startup Service

- A. Furnish the services of a factory-authorized technician to perform initial startup and adjustment of the water heater, burner and controls.
- C. Complete the manufacturer's approved startup report and submit one copy each to the owner's representative and the water heater manufacturer.