

MODEL TP-W TWO PASS IMMERSION FIRED HOT WATER BOILER
SUGGESTED SPECIFICATION

PART 1 – GENERAL

- A. Furnish and install _____ (qty) Sellers Engineering Co Model TP-____-W hot water boiler(s).
- B. Boiler(s) shall have an output of _____ Btu/hour (____ boiler horsepower) at the nozzle when fired with (natural, propane) gas _____ Btu/cu. ft. with a minimum pressure of _____ (INWC, PSI.)

PART 2 – PRODUCTS

2.1 Packaged Gas Fired Hot Water Boilers

- A. Boilers shall be constructed in accordance with 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. Boilers shall be of the two-pass immersion fired design.
- D. Boiler overall dimensions shall not exceed _____" long by _____" wide.
- E. The firing tubes shall be located in the lower half of the boiler shell and the second pass of tubes shall be located above the firing tubes and shall be furnished with stainless steel ENERGY X-TRACTORS to attain high heat transfer and high efficiency. The burner assembly shall be hinged and the rear turnbox door davited to provide easy access to all tubes and other heating surfaces. Ligaments between the tubes shall not be less than 1".
- F. A minimum of three (3) handholes shall be provided. A manhole shall be provided on boiler with shells over 60" diameter.
- G. Boiler shall be constructed without the use of refractories.
- H. Underwriters' Laboratories shall approve the boiler and all components as a unit.
- I. Boiler shall be mounted on a heavy, structural steel skid base, which does not extend beyond the pressure vessel to provide minimal footprint.
- J. Lifting eyes shall be provided to facilitate rigging.
- K. The boiler shall be insulated with 2" of fiberglass and covered with a steel jacket. A precast hardtop walkway shall be furnished to allow personnel to walk on top of the boiler without denting steel jacket. Steel ladder support rails shall be installed under the jacket.
- L. (Optional): Provide forced internal circulation pump rated _____ GPM at 35 FT.

2.2 Hot Water Boiler Trim

- A. Probe type low water cutoff

- B. Pressure gauge
- C. Temperature gauge
- D. Operating temperature control
- E. High limit temperature control with manual reset
- F. Pressure relief valve sized in accordance with the ASME Code.

2.3 Burner

- A. The burner assembly shall be a forced draft, Premix type with an individual burner nozzle firing into each firing tube. The burner assembly shall include the following:
 - 1. Premix type gas-air burner assembly.
 - 2. Forced draft combustion air blower.
 - 3. Air pressure proving switch.
 - 4. High-low gas pressure on 60 HP and larger.
 - 5. Main and pilot gas valves and regulators.
 - 6. Ignition transformer with electrodes.
 - 7. Flame monitoring flame rod.
 - 8. Flame observation ports.
 - 9. Control panel, including: Honeywell RM7800 combustion control, motor starter, control switches, 500 VA control circuit transformer, and six indicator lights.
 - 10. The burner and controls shall conform to the requirements of UL (FM, IRI) and CSD-1.

2.4 Warranty

- A. The pressure vessel shall carry a five (5) year warranty against thermal shock damage providing inlet and outlet water temperature differentials do not exceed 100 °F. This warranty shall cover 100% of labor and material required to repair thermal shock damage such as loosened tubes, cracked ligaments or welds.
- B. All boiler 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 boiler shall be warranted for twenty (20) years from the date of startup. Warranty shall cover 100% of the cost of repair or replacement.
- D. The boiler shall be guaranteed to operate at a minimum fuel-to-water efficiency of 80%.

PART 3 – EXECUTION

3.1 Shop Tests

- A. The boiler 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.

3.2 Startup Service

- A. Furnish the services of a factory-authorized technician to perform initial startup and adjustment of the boiler, burner and controls.
- B. Provide a minimum of four (4) hours of operator training. Operators shall receive instruction in the operation and maintenance of the boiler, burner and all controls.

- C. Complete the manufacturer's approved startup report and submit one copy each to the owner's representative and the boiler manufacturer.