

**RECOMMENDED SPECIFICATIONS FOR PARKER STEAM BOILERS**  
**GAS, OIL OR COMBINATION GAS/OIL FIRED**

**A. STEAM BOILER**

1. **GENERAL:** The steam boiler shall be a Parker \_\_\_\_\_ H.P. Steam Boiler of the sectional bent water tube design as manufactured by Parker Boiler Co. The boiler shall be rated for \_\_\_\_\_ lbs. of steam per hour. Boiler shall be fired with \_\_\_\_\_ fuel(s). Input rating shall be \_\_\_\_\_ BTUH and it shall be furnished complete and assembled, factory fired and tested with controls and trim mounted and wired.
2. **CODES & STANDARDS:** The boiler shall be manufactured in accordance with the A.S.M.E. Power and Heating Boiler Codes, Sections I & IV and registered with the National Board of Boiler and Pressure Vessel Inspectors. MAWP, Safety Valve & Trim shall be furnished for \_\_\_\_\_ PSI Pressure\*. Minimum heating surface square feet.

All controls and trim shall be in compliance with UL Standards. Power Gas, Oil and Combination Gas/Oil Fired Boilers are furnished with a UL Listed Burner. The standard atmospheric natural gas fired steam boiler shall be furnished as an Underwriters' Laboratories, Inc. Listed Gas Fired Boiler Assembly and displays this symbol on the nameplate. Canadian, Propane, Outdoor and Low NOx models shall be C-ETL or ETL Listed Industrial and Commercial Gas Fired Packaged Boilers certified to Can1-3.1 and UL795.

3. **CONSTRUCTION:** The boiler shall be of the sectional bent water tube design, using natural thermal water circulation. The boiler shall be mounted on a heavy steel frame and enclosed in a heavy steel insulated cabinet with controls mounted. Each boiler to be factory fire tested and approved by the Manufacturer before shipment.

The steam drum shall be seamless steel with easy-to-remove inspection openings. Drum to have downcomer legs for recirculation and a mud trap at the bottom for blowdown and cleanout. The tubes shall be of the bent design to permit free expansion and contraction, furnished in sections, each replaceable by disconnecting unions. Tubes shall be Grade SA-53 steel, minimum 1-5/16" O.D. and wall thickness .133" welded to top and bottom headers with high tensile weld metal. Headers to have easy-to-remove tube inspection plugs with high temperature seal type gaskets. Tubing shall be staggered to provide a minimum 8-pass self-baffled heating surface.

The boiler cabinet shall consist of an inner and an outer liner of minimum 16-gauge steel insulated with a high temperature thermal fiber insulation minimum 1-1/2" thick. A minimum of two inspection doors shall be provided on the cabinet to provide accessibility to the drum, tubes, headers and burner. The cabinet shall be finished with an attractive baked enamel, heat resistant finish for long-life protection.

4. **CONTROLS & TRIM:** The boiler shall be furnished complete with controls and trim to provide safe, efficient operation. Standard Trim items furnished with the boiler shall include electronic flame safety with electric ignition, draft hood or barometric damper, safety valve(s), sight glass with drain, pressure gauge, column drain valve try cock, main blowoff valve(s) (and header blowoff valves on boilers 70 HP and larger).

All boilers over 15 HP and all power burners to be furnished with Fireye M Series or Honeywell RM7890 Electronic Flame Safeguard as a minimum. Programming Flame Safeguards where required, shall be Fireye E110 or Honeywell RM7895 Series Flame Monitor Controls. Furnish Pump Motor Starting Relay, operating pressure control, high limit pressure control with manual reset, water level control, primary low water cutoff and separate secondary low water cutoff with manual reset and built-in time delays for pump on/off and low water. The boiler shall be furnished with an enclosed boiler control panel with hinged door, door interlock switch (not on power fired), boiler controls switch, main burner switch and a circuit breaker for over-current protection. The Parker-Lite Sequence Indicator System with indicator lights shall be provided above 25 HP and on all power burners. Primary electrical service shall be \_\_\_\_\_ Volts, 60 Hertz, \_\_\_\_\_ Phase, with all boiler controls for 115 Volt operation.

\* On high pressure steam boilers the maximum operating pressure should be at least 10% (and 7 PSI Minimum) below safety valve setting. On 15 PSI low pressure boilers the maximum operating pressure should not exceed 11 PSI.

**CONTROLS & TRIM OPTIONS:**

- A. California Code Trim
- B. Factory Mutual Trim (FM)
- C. Penberthy Water Gauge 1RM6 Rated 350 PSI.
- D. Slow Opening Blow-Off Valve.
- E. Low Pressure (15 PSI) Trim and Controls. (Maximum Operating Pressure 11 PSI.)
- F. All limit alarm 4" Edwards Bell.
- G. All limit alarm terminals (dry contacts).
- H. Anchor clips, 4 mounted and drilled.
- I. Outdoor trim (ETL Listed).
- J. Low pressure night control.
- K. Propane firing (ETL Listed).
- L. Parker-Lite Indicator System (STD30-150 HP).

- 5A. ATMOSPHERIC NATURAL GAS FIRED BOILERS:** The boiler shall be listed and labeled and display the Listing Label as a complete Gas Fired Boiler Assembly. All controls and trim shall be in compliance with UL Standard 795, and shall include dual electric gas valves, gas pressure regulator and modulating or two stage burner control. The gas manifold shall include a main shut off valve and a leak test cock. The burner shall be multiple cast iron atmospheric up-shot self-aspirating burners with fixed orifice requiring no air adjustment. It must provide uniform heat distribution on all firing rates. The burner shall be for standard natural gas 950 to 1150 BTU content and rated at 4" W.C. pressure at burner. On boilers over 25 HP provide primary motorized gas valve in addition to standard type. On boilers over 50 HP provide electric modulation, high and low manual reset gas pressure switches, low water horn, dual pump control and dual starters.
- 5B. POWER GAS FIRED BOILERS:** The boiler shall be equipped with a gas burner which is listed by Underwriters' Laboratories and displays the Listing Label. All controls and trim shall be in compliance with UL Standard 795. The burner shall be suitable for use with natural gas. The burner shall be complete with electronic flame safeguard, blower, motor and controls with modulating or two-stage firing and shall include 7 light indicator system. A gas pilot of the premix type with electric ignition shall provide reliable ignition. Gas train components shall be similar to atmospheric natural gas.
- 5C. OIL FIRED BOILERS:** The boiler shall be equipped with an oil burner which is listed by Underwriters' Laboratories and displays the Listing Label. All controls and trim shall be in compliance with UL Standard 296. The burner shall be the high pressure atomizing type approved for operation with A.S.T.M. D396 Commercial No. 2 oil, and shall be complete with electronic flame safeguard with electric spark ignition. Furnish modulating or two stage firing over 12 HP. (2) Main oil valves, oil pump, nozzles, blower, motor, control for automatic firing and shall include 7 light indicator system, provided as standard.
- 5D. COMBINATION GAS/OIL FIRED BOILERS:** The boiler shall be equipped with a combination gas/oil burner which is listed by Underwriters' Laboratories and displays the Listing Label. All controls and trim shall be in compliance with UL Standards 296 and 795. The burner shall be suitable for use with either natural gas or oil, meeting standards of A.S.T.M. D396, Commercial No. 2 oil. Fuel change over shall be accomplished by a fuel selector switch. The burner shall be complete with electronic flame safeguard, oil pump, nozzles, blower, motor, 7 light indicator system and controls for modulating or two-stage firing on boilers over 12 HP. A gas pilot of the premix type with electric ignition shall provide reliable ignition of both the gas and oil flame. Gas and oil train components shall be as stated in 5B and 5C.
- 6. START UP INSTRUCTION:** Provide Manufacturers Representative start-up, adjustment, calibration of equipment and instruction of operating personnel.