

**RECOMMENDED SPECIFICATIONS FOR PARKER DIRECT FIRED HOT WATER BOILERS**  
**GAS - OIL OR COMBINATION GAS/OIL FIRED**

**HOT WATER BOILER:**

1. **GENERAL:** The Hot Water Boiler shall be a Parker Model \_\_\_\_\_ of the flexible, bent steel water tube design as manufactured by Parker Boiler Co. The 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 ASME Power and Heating Boiler Codes, Sections I & IV and registered with the National Board of Boiler and Pressure Vessel Inspectors for 125 PSI MAWP. Safety Relief Valve & Trim shall be furnished for \_\_\_\_PSI Pressure\*. Operating Temperature Controls shall be furnished for  240°F or  350°F. 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 hot water 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 bent water tube design with tubes Grade SA-53 steel minimum 1-5/16" O.D. and wall thickness minimum .133" welded to top and bottom headers with high tensile weld metal. End of headers to have accessible inspection openings. Tubing shall be staggered to provide a minimum of 8 pass self-baffled heating surface and designed with downcomers to provide internal self-circulation. The tubes shall be of the bent design to permit free expansion and contraction. The boiler shall be mounted on a steel frame and enclosed in a heavy steel cabinet with controls mounted. 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. 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 relief valve, temperature and pressure gauge, operating temperature control, manual reset high limit temperature control and Warrick probe type manual reset low water cutoff with test and reset buttons. The boiler shall be furnished with an enclosed boiler control panel with hinged door, boiler controls and main burner switch, and fuse for over-current protection. The Parker-Lite Sequence Indicator System with indicating lights shall be provided on boilers over 2.5 million BTUH and all power burners. Primary electrical service shall be 115 Volts for atmospheric burners and power burners 1/2 H.P. or less. Larger power burners shall be 230/460 Volts. All boiler controls shall be 115 Volts with transformer (if required). All boilers over 800,000 BTUH 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 Flame Monitor Controls.

\* On hot water boilers the maximum operating pressure should be at least 25% (and 10 PSI minimum) below safety relief valve setting.

**CONTROLS & TRIM OPTIONS:**

- A. California Code Trim
- B. Factory Mutual Trim (FM)
- C. Parker Lite Sequence Indicator System.
- D. All limit alarm 4" bell.
- E. All limit alarm terminals (dry contacts).
- F. Anchor clips, 4 mounted and drilled.
- G. Weather protective cover.
- H. LPG firing (ETL Listed).
- I. Additional operating control with LCD Display of sensed temperature, set point and differential. Remote sensor & adjustable differential from minimum 1°F to Maximum 35°F.

- 5A. **ATMOSPHERIC NATURAL GAS FIRED BOILERS:** The boiler shall be listed by Underwriters' Laboratories and display the Listing Label as a complete Gas Fired Boiler Assembly. All controls and trim shall be in compliance with UL Standard 795. The gas manifold shall include dual electric gas valves, gas pressure regulator, a main shut off valve and a leak test cock above 400,000 BTU. The burner shall be multiple cast iron atmospheric up-shot self- aspirating burners with fixed orifice requiring no air adjustment, on-off firing. The burner shall be for standard natural gas 950 to 1150BTU content and rated at 4" W.C. pressure at burner. On boilers over 2.5 million BTUH provide primary motorized gas valve in addition to standard type and high and low manual reset gas pressure switches.
- 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 over 700,000 BTUH. 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 500,000 BTUH. (2) Main oil valves, oil pump, nozzles, blower, motor and control for automatic firing, 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 and controls for modulating or two-stage firing. 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 5A and 5C.
6. **START UP INSTRUCTION:** Provide Manufacturers Representative start-up, adjustment, calibration of equipment and instruction of operating personnel.