

UNDERWRITERS' LABORATORIES, INC.CODE REQUIREMENTS APPLICABLE TO ATMOSPHERIC NATURAL GAS FIRED PARKER BOILERS

UNDERWRITERS' LABORATORIES, INC.: Underwriters' Laboratories, Inc. (UL) was established in 1894 and is chartered as a not-for-profit independent organization testing for public safety. It maintains and operates laboratories for the examination and test of devices, appliances, systems and materials to determine their relation to life, fire and casualty hazards.

The UL Listing Mark on a product is recognized by jurisdictional authorities, architects, engineers, insurers, building inspectors and contractors as a symbol of safety. A product earns the UL Listing Mark by:

- A. **Submittal** - A manufacturer submits his product to UL to verify that it is designed to meet the recognized safety standards.
- B. **Testing** - UL determines by test and evaluation that the product design is safeguarded against electric shock, fire and casualty hazards. Complete tests are made on boilers for combustion, ignition, proper control supervision and operation, temperature, and many other items in accordance with UL Standard 795.
- C. **Identification** - The manufacturer certifies that his product meets all the UL requirements by displaying the UL symbol right on the product.
- D. **Factory Follow-Up** - UL conducts unannounced in-plant inspections to audit the use of its Mark on products conforming to UL's requirements.

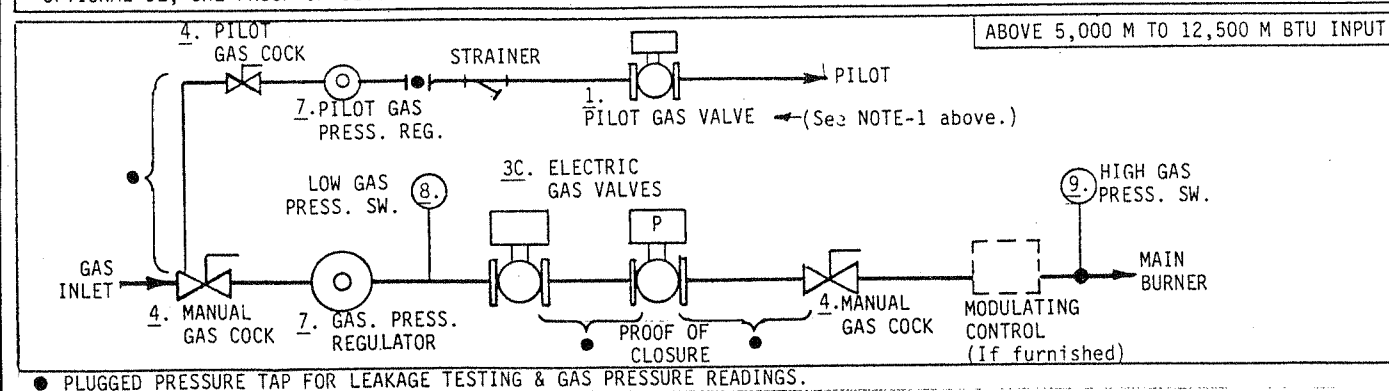
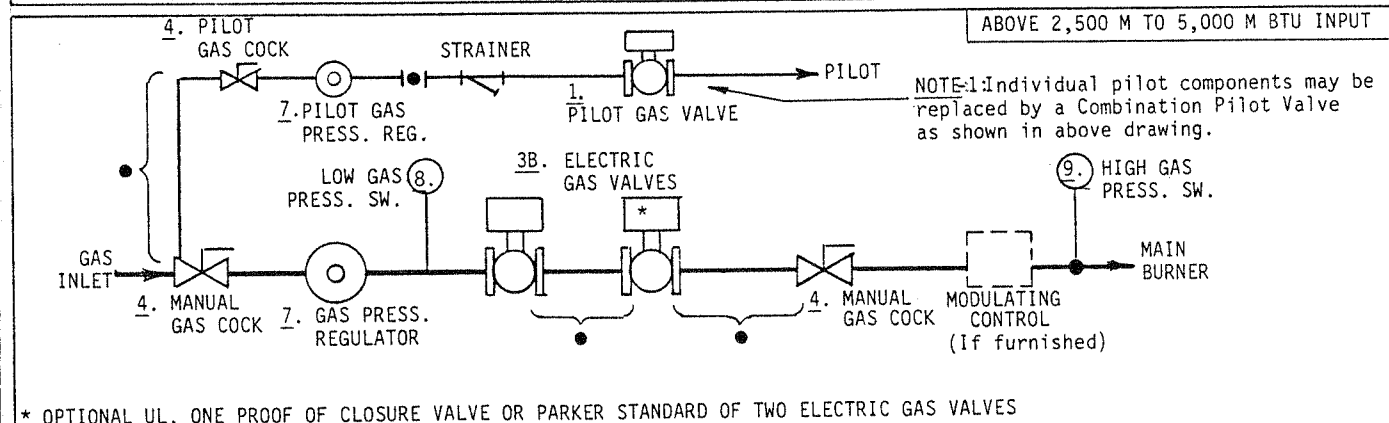
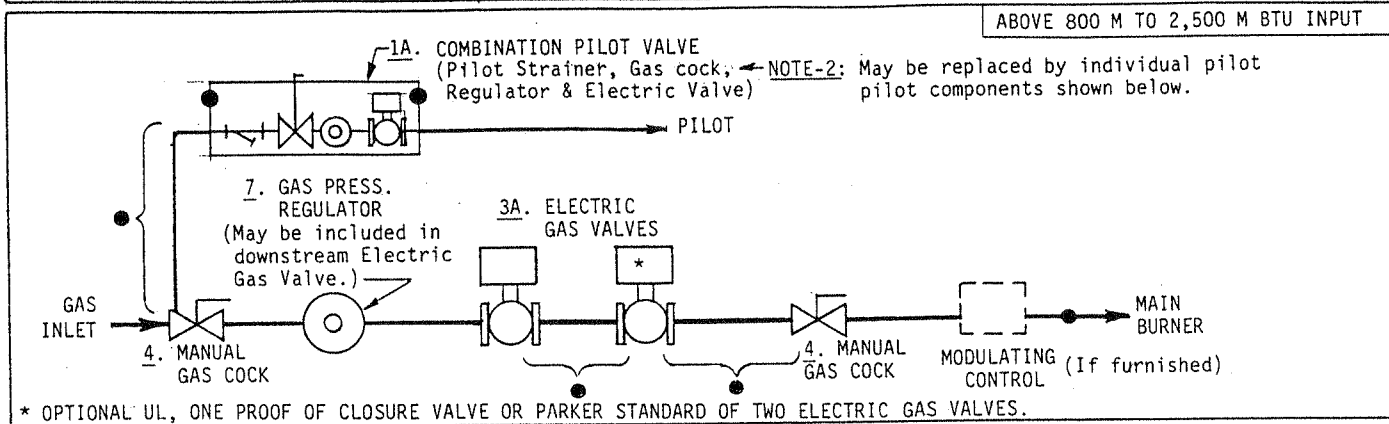
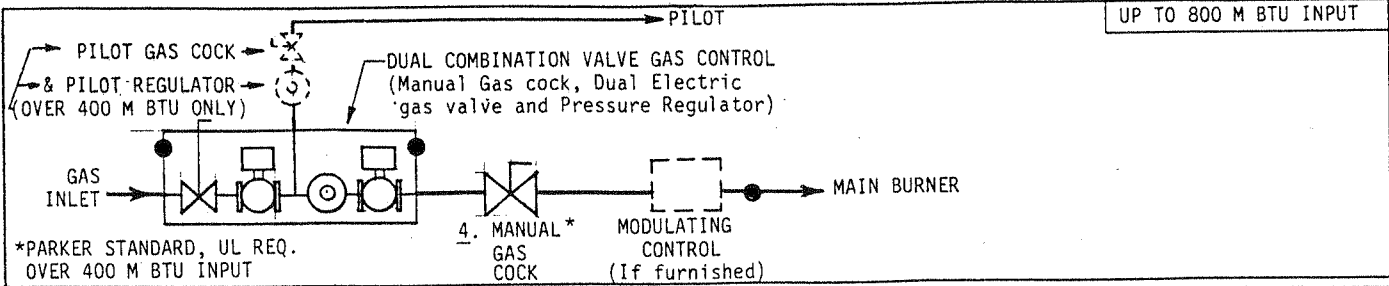
Parker Boilers have been tested under UL 795 which is a Standard for Safety - "Commercial Industrial Gas Heating Equipment". This Standard has detailed construction requirements and safety tests which must be passed before a product can be Listed. Parker Natural Gas Fired Boilers are Listed as complete Gas Fired Boiler Assemblies which means the UL Listing covers both the burner and boiler assembly.

UL publishes Product Directories with names of manufacturers who produce UL Listed products. These Directories are primarily for the use of federal agencies, state, county, municipal authorities, building inspectors and insurance rating bureaus. Boilers are included in the UL Product Directory titled "Gas and Oil Equipment List". UL also publishes 3X5 Listing Cards for each manufacturer showing his UL File Number (MP1937 for Parker Boilers), all of the listed models and the approved installation clearances to combustible construction. The model number, installation clearances and the UL Listing Label are located on the boiler proper or control panel door on Parker Boilers.

CONTROLS: Controls listed below are furnished on all Atmospheric Natural Gas Fired Parker Boilers to comply with UL Standard 795:

1. **FLAME SAFEGUARD SYSTEM:**
 - A. **Up to 2,500M BTU Input** - Electronic Flame Control (Honeywell S86-- or RM7890 or Fireye M Series) and electric pilot valve (in Combination Gas Control or separate Valve) provide electronic flame supervision, complete component check at each firing cycle and 100% shutoff of the spark ignited intermittent pilot.
 - B. **Above 2,500M BTU Input to 5,000M BTU Input (Off-On Firing)** - Fireye M Series or Honeywell RM7890 Electronic Flame Safeguard and electric pilot valve provide non-recycling electronic flame supervision, complete component check at each firing cycle and 100% shutoff of the spark ignited intermittent pilot.
 - C. **Above 2,500M BTU Input to 5,000M BTU Input (Modulating or Two Stage Firing)** - Fireye M Series or Honeywell RM7890 Electronic Flame Safeguard System and Electric Pilot Valve provide non-recycling electronic flame supervision, with electric ignition and interrupted pilot. Following a 10 second or less trial for ignition period, the pilot electric gas valve turns off and the flame safeguard senses main burner alone. An interrupted pilot is used where the pilot flame is spark ignited at the beginning of each starting sequence but burns for a limited time and is then shut off until the next call for heat.
 - D. **Above 5,000M BTU Input (All Types of Firing)** - Fireye E Series Electronic Flame Safeguard System and Electric Pilot Valve provide non-recycling electronic flame supervision, with electric ignition and interrupted pilot. Following a 10 second trial for ignition period, the pilot electric gas valve turns off and the flame safeguard senses main burner alone. An interrupted pilot is used where the pilot flame is spark ignited at the beginning of each starting sequence but burns for a limited time and is then shut off until the next call for heat.
2. **SAFETY LOCKOUT ALARM: NOT REQUIRED.**
3. **AUTOMATIC SAFETY SHUTOFF GAS VALVES:**
 - A. **Up to 2,500M BTU Input** - Two electric gas valves or one electric gas valve with proof of closure interlock. Two are standardly furnished on Parker Boilers. Both valves may be located in a single combination gas control.
 - B. **Above 2,500M to 5,000M BTU Input** - Two electric gas valves or one electric gas valve with proof of closure interlock. Two are standardly furnished on Parker Boilers.
 - C. **Above 5,000M to 12,500M BTU Input** - Two electric gas valves one of which incorporates a proof of closure interlock.
 - D. **Above 12,500M BTU Input** - Two electric gas valves one of which incorporates a proof of closure interlock plus a normally open vent valve.
4. **GAS COCKS:**
One is required to be installed upstream of all controls and a second gas cock is required to be installed downstream of the motorized electric gas valves to facilitate leakage testing of the valves.
5. **LOW WATER CUT-OFF:**
One is required to be factory installed and wired to immediately open a circuit to the fuel valves when a low water condition exists. The low water cut-off is manual reset.
6. **HIGH LIMIT AND OPERATING CONTROLS:** These controls provide shutdown when the pressure or temperature reaches the set point. The manual reset high limit is for excess pressure or temperature and cycles only if the operating control fails to function.
7. **GAS PRESSURE REGULATORS:** Main line gas pressure regulator required on all boilers. Regulator may be located in combination gas valve. A separate pilot line gas pressure regulator is required for boilers above 400M BTU Input. For boilers equipped with intermittent or interrupted pilots, during installation, separate gas pressure regulators without vent limiting devices must be vented outside to a safe point of discharge and are so marked.
8. & 9. **HIGH AND LOW GAS PRESSURE SWITCHES:** Required over 2,500M BTU Input, these switches provide fuel pressure supervision and are interlocked to accomplish non-recycling safety shutdown in the event of either high or low fuel gas pressures.
10. **PARKER-LITE SEQUENCE INDICATOR SYSTEM:** Not required but standardly furnished on steam boilers above 25 H.P. and hot water boilers above 2,500M BTU Input. This provides a visual indication of the stage of operation of the boiler. Lights for the following are provided: Control Power On, Water Level Safe, Limit Safe, Pilot On and Burner On.
11. **FLUE GAS SPILLAGE SWITCH:** Required on all gas fired models equipped with a double swing barometric damper. This switch is thermally actuated and provides protection from conditions that result when blocked flues or downdrafts occur. Should hot flue gas spill out of the draft control the switch will shut off the main burner within 60 seconds.

GAS TRAIN PIPING FOR UNDERWRITERS' LABORATORIES STANDARD 795



USED ON PARKER STEAM AND WATER BOILERS		PART NAME GAS TRAIN PIPING	
FOR GAS TRAIN PIPING FOR UL STANDARD 795			
DR.	MB	DATE	3B
PARKER BOILER CO.		SCALE NONE	
5930 BANDINI BLVD.		SUPERCEDES NO.	
LOS ANGELES, CALIF. 90040-2999		DWG. NO. 101-210 UL	
APPROVED			