

# **General Requirements**

1. Furnish and install ( ) low pressure, induced natural draft, cast iron sectional boiler(s) with minimum 81.0% thermal efficiency (steam) and 84.0% thermal efficiency (water).

## Install boiler(s) in compliance with manufacturer’s installation instructions.

1. Weil-McLain \_\_\_ (qty) ( ) P or ( ) A (check one for Packaged or Assembled, leave blank for Field-Assembled) LGB - \_\_\_\_ (size) boiler(s) capable of burning natural gas with a minimum of 5.5” w.c. inlet pressure. Note: “P” and “A” units available for sizes LGB 4R-14 models only.
2. Boiler assembly:
3. Packaged “P” LGB 4R-14 models to be factory assembled, wired, and fire tested with jacket and controls to be shipped ready for field installation.
4. Assembled block “A” 4R-14 models to ship with factory assembled sections. Boiler jacket and controls to be packed separately for job site assembly.
5. Field-assembled “Knock down” boilers to have cast iron sections, controls and jacket packed separately for job site assembly.
6. Boiler(s) to be ( ) steam or ( ) water (check one).
7. Boilers shall have an AHRI gross output(s) at 100% firing rate \_\_\_\_ MBH per boiler.
8. Boilers shall be manufactured to conform to Section IV of the ASME Boiler and Pressure Vessel Code.
9. Individual sections and section assembly shall undergo hydrostatic pressure test at factory in accordance with ASME requirements.
10. Water boiler maximum allowable working pressure shall be ( ) 50 (standard) or ( ) 80 (optional) (check one) PSIG and cast as part of section with ASME symbol (optional 80 PSIG sections shall be stamped as such on the section).
11. Steam boiler maximum allowable working pressure shall be 15 PSIG.
12. Boiler(s) shall be warranted to be free from defects in material and workmanship for one year from date of installation and that the cast iron sections shall be free from defects in material and workmanship defects for ten years from the date of installation. A copy of the manufacturer’s warrantee shall be provided in writing with the submittal paperwork.
13. Regulatory requirements:
14. Boiler(s) and controls shall comply with applicable regulations and the following special code requirements: (check as applicable)

( ) None (standard boiler)

( ) ASME CSD-1 (Not applicable for LGB 4 & LGB 4R models

( ) Factory Mutual (F.M.)

( ) Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Submittals
2. Submit shop drawings and product data.
3. Submittal packet to include boiler descriptive literature, installation instructions, operating instructions, and maintenance instructions.

# **Product**

1. Acceptable boiler manufacturer(s) include(s):
2. Weil-McLain only, as specified in Part 1, Paragraph C.
3. Other manufacturer(s) or other Weil-McLain boiler(s) must comply with specifying engineer’s requirements, including:

## Full intent of these specifications and

## Provide complete submittal including literature, wiring diagrams, fuel piping diagrams, and a list of similar installations.

## Submittal to be presented to specifying engineer at least seven working days for approval before bid opening. Substitutions are not permitted after contract is awarded.

1. Boiler Construction
2. Boiler sections

## To be field assembled (factory assembled for “P” and “A” configurations) with short draw rods and sealing rope between each adjacent section to ensure permanent, gas-tight seals while allowing for expansion and contraction of the sections.

## Sealing rope shall be visible when the sections are assembled, allowing for visual inspection for proper, gas-tight seal.

## Sealed watertight by elastomer sealing rings, not cast iron nipples. Each port opening is machined to completely capture sealing ring between sections.

## Provided with sufficient tappings to install required controls.

1. Boiler(s)

## Provided with cast-in air elimination to separate air from circulating water.

## Designed with a low silhouette to provide maximum headroom.

## Supply and return piping designed to allow installation from right or left-hand side.

## Shipped with insulated heavy gauge steel jacket(s) with durable powdered paint enamel finish. Jacket designed to be installed after connecting supply and return piping.

1. Boiler Foundation(s)
2. Installer to construct needed support and level concrete foundation(s) where boiler room floor is uneven or will not support the weight of the boiler(s) or where the boiler room may experience flooding.
3. Control System
4. The boiler(s) shall be furnished with (an) electronic control system(s) with factory pre-wired control panel for each base assembly.
5. LGB 4R-5 Only: The electronic control system(s) shall incorporate pilot valve, main valve, intermittent electronic pilot ignition, and pilot flame sensing operations in a single control module. Includes low-high-low operation (steam boiler requires additional fire rate steam pressure control).
6. LGB 6-20 Only: The electronic control system(s) shall incorporate pilot proving and main flame proving control modules to provide intermittent electronic pilot ignition with proven low-fire-start, high-fire-run mode of operation. Includes low-high-low operation (steam boiler requires additional fire rate steam pressure control).
7. The electronic control system(s) shall provide nominal fifteen (15) second flame response timing with five (5) minute lockout in the event the pilot flame is not proven.
8. The electronic control system(s) safety pilot burner for each boiler-base assembly shall be intermittent burning and electrically ignited. The safety pilot burner and main burner flames shall be electronically supervised by flame rectification.
9. Boiler trim
10. All electrical components to be of high quality and bear the UL label.
11. Electrical wiring to utilize a labeled and color-coded wiring harness to help assure correct wiring.
12. Water boiler(s) standard controls furnished:

* LGB 4R-20 only: Combination high and operating temperature limit control. (240 degrees F maximum allowable water temperature) Operating limit shall have adjustable on differential as well as low-high-low operation differential.
* Combination pressure-temperature gauge. Dial clearly marked and easy to read.
* A.S.M.E. certified pressure relief valve, set to relieve at 30 PSIG. Side outlet discharge type; installer to pipe outlet to floor drain or near floor. Optional relief valves shall be available with set point up to and including maximum allowable pressure. Optional relief valve to be specified when ordered.
* Transformer rated for 75VA.
* “P” units only: Low water cut-off (LWCO). LWCO shall be electrode type capable of shutting down the boiler in event of a low water situation.

1. Steam boiler(s) standard controls furnished:

* High pressure limit control. (15 PSI maximum allowable steam pressure)
* Operating pressure limit control.
* Steam compound pressure-vacuum gauge. Dial clearly marked and easy to read.
* A.S.M.E. certified pressure relief valve, set to relieve at 15 PSIG. Side outlet discharge type; installer to pipe outlet to floor drain or near floor.
* Low water cut-off (LWCO). LWCO shall be float-mechanism type capable of shutting down the boiler in event of a low water situation.
* Gauge glass with gauge cocks and guards.
* Transformer rated for 75VA.

1. Control Features
2. Two line, 16-character backlit LCD screen providing English text on boiler status, operating temperature, and fault condition for advanced diagnostics.
3. Complete system is factory wired with clearly identified field wiring terminal blocks mounted inside the boiler.
4. Include proven pilot.
5. Include proven main flame.
6. Alarm contact terminals for the following faults: flame failure, operating limit, high limit, low water cut off, limit chain, etc. (Depending on steam or water configuration).
7. Includes factory plug and play harnesses with clearly labeled field wiring terminal blocks.