

Part 1 General Requirements

- .1 Furnish and install Two (2) low pressure, natural draft, cast iron sectional boilers.
- .2 Install boiler unit(s) in compliance with manufacturer's installation instructions.
- .3 All work must be done in a neat and workmanlike manner.
- .4 New low pressure steam boiler(s) will be capable of burning natural gas with a minimum of 7" w.c. inlet pressure.
- .5 Boilers shall be low pressure steam.
- .6 Boiler assembly:
 - .1 Field Assembled Boiler(s) to have cast iron sections, controls, and jacket packed separately and assembled at the job site.
- .7 Boilers shall have an AHRI gross output(s) at 100% firing rate between 730 and 820 MBH per boiler.
- .8 New boilers shall be installed on existing 70"x48" boiler service pads.
- .9 Boiler(s) shall be manufactured to conform to Section IV of the ASME Boiler and Pressure Vessel Code.
 - .1 Individual sections and section assembly shall undergo hydrostatic pressure test at factory in accordance with ASME requirements.
 - .2 Steam boiler maximum allowable working pressure shall be 15 PSIG.
- .10 Boiler(s) shall be warranted that the boiler(s) shall 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.
- .11 Regulatory requirements:
 - .1 Boiler(s) and controls shall comply with applicable regulations and the following special code requirements:
 - (x) ASME CSD-1
- .12 Submittals
 - .1 Submit shop drawings and product data.

- .2 Submittal packet to include boiler descriptive literature, installation instructions, operating instructions, and maintenance instructions.

Part 2 Products

- .1 Acceptable boiler manufacturer(s) include(s):
 - .1 Weil-McLain, LGB-8-s.
 - .2 Other manufacturer must comply with specifying engineer's requirements, including:
 1. Full intent of these specifications, and
 2. Provide complete submittal including literature, wiring diagrams, fuel piping diagrams, and a list of similar installations.
- .2 Boiler construction
 - .1 Boiler sections
 - .1 To be field assembled (factory assembled for "P" and "A" boiler(s) with short draw rods between each adjacent section and sealed with sealing rope to assure a permanent gas-tight seal while allowing for expansion and contraction of the sections.
 - .2 Sealing rope shall be visible when the sections are assembled, allowing for visual inspection for proper gas-tight seal.
 - .3 Sealed watertight by elastomer sealing rings, not cast iron nipples. Each port opening is machined to mate with sealing ring between sections.
 - .4 Provided with sufficient tapings to install required controls.
 - .2 Boiler(s)
 - .1 Provided with cast-in air elimination to separate air from circulating water.
 - .2 Designed with a low silhouette and horizontal draft hood to provide maximum headroom.
 - .3 Designed to allow system supply and return piping from either the right- or left-hand side.
 - .4 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.
- .3 Boiler foundation(s)

- .1 Installer shall construct required level concrete foundation(s) and support(s) where the boiler room floor is uneven or will not support the weight of the boiler(s) or where the boiler room may experience flooding
- .4 Electronic Control System
 - .1 The boiler(s) shall be furnished with (an) electronic control system(s) with factory pre-wired control panel for each base assembly.
 - .2 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.
 - .3 The electronic control system(s) shall provide nominal fifteen (15) second flame response timing. The electronic control system(s) shall incorporate a manual reset lockout function in the event of either two (2) consecutive pilot flame failures or a single main flame failure. In the event of a lockout condition, the electronic control system(s) shall illuminate a red indicator light.
 - .4 The electronic control system(s) shall include contacts rated for 15 amps at 250 VAC for a remote alarm.
 - .5 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.
- .5 Boiler trim
 - .1 All electrical components to be of high quality and bear the UL label.
 - .2 Electrical wiring to utilize a labeled and color-coded wiring harness to help assure correct wiring.
 - .3 Steam boiler(s) standard controls furnished:
 - .1 High pressure limit control. (15 PSI maximum allowable steam pressure)
 - .2 Additional high pressure limit control with manual reset. (15 PSI maximum allowable steam pressure)
 - .3 Operating pressure limit control.
 - .4 Low water cut-off (LWCO). LWCO shall be float-mechanism type capable of shutting down the boiler in event of a low water situation.

- .5 Additional low water cut-off (LWCO) with manual reset. LWCO shall be electrode type capable of shutting down the boiler in event of a low water situation.
- .6 Steam compound pressure-vacuum gauge. Dial clearly marked and easy to read.
- .7 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.
- .8 Gauge glass with gauge cocks and guards.
- .9 Transformer rated for 75VA.
- .10 Low water cut-off (LWCO) and pump control.
 - .1 LWCO with pump control must be specified when order is placed.
 - .2 LWCO with pump control shall be float mechanism type capable of shutting down the boiler in event of a low water situation.
 - .3 LWCO with pump control shall have a minimum full load pump circuit rating of 7 amperes at 120 VAC.
 - .4 LWCO with pump control shall have a set of alarm contacts with a minimum rating of 1 ampere at 120 VAC.

- .6 Optional Components
 - .1 The boiler(s) shall be able to be provided with an optional electronic flame failure alarm panel.
 - .1 Panel(s) shall be pre-wired from factory, include a lockable door, and shall be able to be mounted directly to the boiler(s).
 - .2 Panel(s) shall have indicator lights for the following conditions: Call for Heat; Pilot Proven; Main Flame Proven; and Flame Failure. Furthermore, the panel(s) shall have an audible alarm for a flame failure condition.
 - .2 The boiler(s) shall be able to be provided with up to two optional inspection openings on each section.
 - .1 Inspection opening(s) shall be 1½” in diameter and shall be provided with brass plugs.

- .3 The boiler(s) shall be able to be fired in a “**Low-High Low**” mode of operation.
 - .1 Low-High Low controls must be specified when order is placed.
- .7 Boiler Manuals
 - .1 The boiler(s) shall be provided with complete instruction manuals, including:
 - .1 Boiler Installation Manual
 - .2 Gas Control Supplement
 - .3 User’s Information Manual