



# GV Boiler

## Suggested Specifications

### I. General Requirements

- A. Furnish and install \_\_\_\_\_ (qty) packaged, sealed combustion, power-vented, high efficiency gas-fired cast-iron sectional boiler(s) that can use outside air for combustion.
- B. Install packaged boiler unit(s) according to manufacturer's installation instructions. All work to be done in a neat and workmanlike manner.
- C. Weil-McLain \_\_\_\_\_ (qty) GV-\_\_\_\_\_ (size), packaged boiler(s) capable of burning (natural) (propane) gas.
- D. Boiler(s) shall have I=B=R Hydronics Institute gross output at 100% fire rate \_\_\_\_\_ MBH per boiler.
- E. Boiler(s) shall be 87% minimum DOE efficient as required by National Energy Conservation Act or ASHRAE 90.1.
- F. Boiler(s) shall be manufactured by ISO 9001 registered company to conform to Section IV of the ASME Boiler and Pressure Vessel Code.
  - 1. Individual sections (and section assembly) to be hydrostatically pressure tested at factory in accordance with ASME requirements.
  - 2. Maximum allowable working pressure 50 PSIG water cast as part of section with ASME symbol.
- G. Regulatory Requirements
  - 1. Boiler(s) shall meet or exceed the SCAQD (South Coast Air Quality District of California) Low Nox emission requirement of 40NG/J.
  - 2. Boiler(s) and controls to comply with applicable regulations.
  - 3. Boiler(s) shall meet U.S. Environmental Protection Agency and Department of Energy guidelines for "Energy Star" energy efficiency.

### II. Product

- A. Acceptable boiler manufacturer(s) include(s):



Weil-McLain  
500 Blaine Street  
Michigan City, IN 46360-2388  
<http://www.weil-mclain.com>

1. Weil-McLain only, as specified in Part I, Paragraph C.
2. Other manufacturer or other Weil-McLain boiler(s) must comply with specifying engineer's requirements, including:
  - (a) Full intent of these specifications, and
  - (b) Provide complete submittal including literature, manuals, and wiring diagrams, fuel piping diagrams, and list of similar installations. The alternate must be of similar size and footprint, piping configuration, clearance requirements and heating surface.
  - (c) Submittal presented to engineer at least seven working days before bid opening for approval. Substitutions are not permitted after contract is awarded.

## B. Boiler Construction

### 1. Boiler Sections

- Assembled with tie rods and sealed with high temperature silicone sealant to assure a permanent gas-tight seal.
- Sealed water-tight by elastomer sealing rings, not cast-iron nipples. Each port opening is machined to accept sealing ring between sections in order to assure uniform compression of the sealing rings and to protect the sealing rings from contaminants.
- Sections shall have wide waterways to reduce heat concentration and tendency for liming.

### 2. Boiler(s)

- The combustion chamber will be sealed and located at the top of the section which will be of counterflow design, to assure that sediment and any lime that might form will fall to the bottom, away from the crown sheet area.
- The burner shall be premix combustion type, a single burner with tight, efficient flame, located in a totally sealed combustion chamber.
- Electronic control module must be of integrated solid state technology utilizing LED's for sequence of operation and service diagnostics.
- Boiler(s) shall be supplied with a gas valve designed with negative pressure regulation (fan suction "pulls" gas through valve rather than gas pressure "pushing" gas through valve). This enables the boiler to operate in a safe condition at a derated output, even if the inlet gas pressure should drop to as low as 2 inches W.C. The inlet (natural) (propane) gas

pressure to the boiler gas valve should be a minimum of 4" W.C. and a maximum of 13" W.C. If inlet gas pressure exceeds 13" W.C., a 100% lock-up type gas pressure regulator of adequate size must be installed in gas supply piping and adjusted to prevent pressure in excess of 13" W.C.

C. Venting and Combustion Air

- Boiler(s) must be capable of using outside air piped directly to boiler, or inside boiler room air for combustion.
- The boiler shall be direct vent using AL29-4C<sup>®</sup> stainless.
- When using outside air piped directly to boiler for combustion, inlet and termination of these pipes must be connected to either through the roof or the sidewall termination kit supplied and recommended by the manufacturer.

D. Boiler Trim

1. All electrical components to be of high quality and third (3<sup>rd</sup>) party recognized.
2. Water boiler(s) controls furnished:
  - (a) High limit temperature control (220 degrees F maximum allowable boiler water temperature).
  - (b) Combination pressure-temperature gauge. Gauge dial clearly marked and easy to read.
  - (c) ASME certified pressure relief valve, set to relieve at 30 PSIG. Optional relief valve available up to and including maximum allowable working pressure.
  - (d) Section block temperature limit switch.

E. Boiler Manuals

1. The boiler(s) shall be provided with complete instruction manuals, including:
  - (a) Boiler Installation Manual
  - (b) User's Manual
  - (c) Gas Control Supplements
  - (d) Venting Supplements and Instructions