



AquaBalance™ Series 2 Condensing Gas Boilers

SUGGESTED SPECIFICATIONS

I. General Requirements

- A. Furnish and install _____ (qty.) packaged, modulating, sealed combustion, power-vented, high efficiency gas-fired boiler(s) with stainless steel water-tube heat exchangers that use outside air for combustion (direct vent).
- B. Install packaged boiler unit(s) according to manufacturer's installation instructions. All work to be done in a neat and workmanlike manner.
- C. _____ (quantity) Weil-McLain AquaBalance ____ MBH (size), packaged boiler(s) capable of burning natural or propane gas.
- D. Boiler(s) shall have an AHRI gross output at 100% fire rate of ____ MBH per boiler.
- E. Boiler(s) model AB-____ shall be 95.0% AFUE minimum DOE efficient as required by National Energy Conservation Act or ASHRAE 90.1.
- F. Boiler(s) shall have an independent laboratory rating of < 20 PPM for Oxides of Nitrogen (NOx) to meet the requirements of South Coast Air Quality Management District in Southern California and the requirements of Texas Commission on Environmental Quality.
- G. Boiler shall be capable of full modulation firing with a turn down of up to 10 to 1.
- H. Boiler(s) to conform to Section IV of the ASME Boiler and Pressure Vessel Code.
 - 1. Water-tube stainless steel heat exchanger to be fire tested and hydrostatically pressure tested at factory in accordance with ASME requirements.
 - 2. Maximum allowable working pressure 30 PSIG water as listed on the rating label.
 - 3. Boiler(s) and controls to comply with applicable regulations.
 - 4. Boiler(s) shall be fully factory packaged.

II. Product

- A. Acceptable boiler manufacturer(s) include(s)
 - 1. 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.
 - (b) Provide complete submittal including literature, manuals, wiring diagrams, fuel piping diagrams, and a list of similar installations. Any 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(s) primary heat exchanger:
 - (a) Water-tube 316L stainless steel heat exchanger.
- 2. Factory Assembled and Tested.
- 3. Boiler(s) main components:
 - (a) Boiler(s) shall be supplied with a gas valve designed with negative pressure regulation (fan venturi effect "pulls" gas through valve rather than gas pressure "pushing" gas through valve). Negative pressure regulation enables the boiler to operate in a safe condition at 3.5"W.C. inlet gas pressure. The inlet (natural or propane) gas pressure to the boiler gas valve should be a minimum of 3.5" 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.
 - (b) The burner shall be premix combustion type, made with stainless steel material to provide a wide range of modulating firing rates.
 - (c) The boiler shall be equipped with a variable speed blower system capable of modulating the boiler firing rate from 100% to 10%.
 - (d) The boiler shall be equipped with a device capable of controlling the air/fuel ratio through a 10 to 1 turndown ratio.
 - (e) The control system shall have an electronic display for boiler set-up, boiler status, and boiler diagnostics.
 - (f) Grundfos internal 3 speed circulator (combi version only).

C. Venting and Combustion Air

- 1. Boiler(s) must be capable of using outside air piped directly to boiler for combustion. Inlet and termination of these pipes must be connected to either through-the-roof or sidewall terminations as recommended by the manufacturer.
- 2. The boiler shall be direct vent using PVC, CPVC, PP or SS.

D. Boiler Trim

- 1. All electrical components to be of a high quality.
- 2. Water boiler(s) controls furnished:
 - (a) High limit temperature control with manual reset (194 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.
 - (d) Flue gas, outlet water temperature, and return water temperature sensors.

(e) Built-in freeze protection.

4. Boiler Control to be UL 353 Listed with:

(a) Outdoor reset connection.

(b) Flue gas, outlet water temperature, and return water temperature sensors.

(c) LCD display and 4 button interface.

E. Boiler Manuals

1. The boiler(s) shall be provided with complete instruction manuals, including:

(a) Boiler Installation Manual.

(b) User's Manual.