prestige
Fully Condensing
Water Boiler

Triangl

Suggested Spec
Prestige SOLO 175

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/08/14

General Requirements

A. Furnish and install _____ (qty) completely assembled, modulating, sealed combustion, high efficiency, gas-fired boiler(s) with a stainless steel, fire tube heat exchanger.

B. Installation of the boiler(s) shall be according to manufacturer's installation instructions and all work shall be completed in a neat and workmanship like manner.

C. The boiler(s) shall be a Triangle Tube Prestige SOLO 175 having a modulating input rating of 170,000 BTUH, an output of 154,000 BTUH on Natural or Propane Gas.

D. The boiler(s) shall operate at a minimum Annual Fuel Utilization Efficiency of 95% and shall comply with the energy efficiency requirements of ASHRAE 90.1, latest edition and the minimum efficiency requirements of ASHRAE 103, latest edition.

E. The boiler(s) AFUE efficiency shall be verified through a third party testing agency under the guidance of the Hydronics Institute Division of AHRI and listed in the AHRI Certification Directory.

F. The boiler(s) shall be capable of full modulation, with a turn down of 4 to 1.

G. The heat exchanger shall contain a water volume of 4.6 gallons and have a pressure loss of 3ft at a volume flow rate of 15 gpm.

H. The boiler(s) shall be assembled by an ISO 9001 registered company and the heat exchanger shall bear the ASME "H" stamp according to Section IV of the ASME Boiler and Pressure Vessel Code.

    1. The stainless steel heat exchanger of the boiler(s) is to be hydrostatically pressure tested at the factory in accordance with ASME requirements.

    2. The maximum allowable working pressure is 30 psig water as listed on the ASME rating plate.

    3. The heat exchanger shall be registered with the National Board and contain a registry number and stamp on the ASME rating plate.

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I. The boiler(s) shall meet the following regulatory requirements:

1. The boiler(s) shall be ITS / ETL certified and listed to ANSI Z21.13/CS/ test standards for U.S. and Canada.

2. Boiler(s) shall meet or exceed the SCAQMD (South Coast Air Quality Management District of California) Low NOx emission requirement of 14 NG/J.

3. The boiler(s) shall meet Department of Energy guidelines for Energy Star energy efficiency and be listed as such.

Product Specifications

A. Boiler Construction

1. The heat exchanger shall be a fire tube design constructed with 439 grade stainless steel to provide resistance to corrosion at elevated temperatures.

2. The heat exchanger body shall be of welded construction and shall not contain any banding materials, bolts, gaskets or O-rings in the construction.

3. The heat exchanger shall be of a counter flow / vertical design to assure that sediment and any potential lime that may form will fall to the bottom away from the tube sheet.

4. The boiler combustion chamber shall be sealed and located at the top of the heat exchanger.

5. The boiler(s) flue ways shall be of a vertical design that allows condensate to “wash down” the flue surface preventing potential combustion residue from adhering to the flue ways.

6. The boiler(s) shall be supplied with a gas valve designed for negative pressure regulation.

7. The gas valve on the boiler(s) shall operate with an inlet gas pressure of a minimum 5” w.c to a maximum of 13” w.c and shall be independent of the type of gas (natural or propane). If the inlet gas pressure exceeds the maximum allowable 13” w.c. a 100% lock-up type gas pressure regulator, properly sized, must be installed in the gas supply piping and adjust as to prevent an inlet gas pressure in excess of 13” w.c.

8. The burner shall be a premix combustion type system, made with a burner head constructed of stainless material and able to provide a wide range of modulating firing rates.

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9. The boiler(s) shall be equipped with a variable speed blower system t the fuel/air mixture to provide modulating boiler firing rates for maxir

10. The boiler(s) shall be constructed with a heavy gauge steel jacket ass both sides.

11. The boiler control shall have an electronic graphical display for boiler set-up, boiler status and boiler diagnostics.

12. The condensate pan, internal flue pipe, and vent/air connections shall be constructed of polypropylene.

B. Boiler Controls and Trim

1. All electrical components shall be of the highest quality manufacture and bear a CSA, UL, or UL recognized label.

2. Supply voltage shall be 120 volt / 60 hertz / single phase.

3. Pressure gauge dial that is clearly marked and easy to read.

4. ASME certified pressure relief valve, set to relieve at 30 psig.

5. Low water protection.

6. The boiler(s) shall be furnished with the “TriMax” Control System which provides:

   a) High limit temperature control of 200°F.

   b) Operating temperature limit of 60°F to 194°F.

   c) Flue gas, supply and return water temperature sensors.

   d) Outdoor sensor to provide Outdoor Reset Control.

   e) Optional freeze protection feature.

   f) Optional Domestic Hot Water priority and optional Domestic Hot Water priority timeout feature.

   g) Capability to control up to 4 circulators.

   h) Modbus interface for integration into BMS systems.

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i) Capability to accept a 0-10 VDC input signal for external modu

j) Integrated cascade control for up to 6 Prestige boilers.

k) Two space heating call inputs with independent outdoor reset curves.

l) EZ set up feature allows the installer to quickly and easily adjust boiler settings.

m) Graphical display shall have an icon based menu system and use plain text so that error code charts are unnecessary.

C. Venting and Combustion Air

1. The boiler shall be vented with one of the following configurations:

   a) **Direct Vent Sidewall** system with a horizontal sidewall termination of both the vent and combustion air pipes. The vent and combustion air pipes are not required to terminate on the same outside wall.

   b) **Direct Vent Vertical** system with a vertical roof top termination of both the vent and combustion air pipes.

   c) **Direct Vent Vertical with Sidewall Air** system with a vertical roof top termination of the vent pipe and combustion air being drawn horizontally from a sidewall.

   d) **Sidewall Vent with Room Air** system with a horizontal sidewall termination of the vent pipe and the combustion air is drawn from the surrounding area in which the boiler is installed. If the room in which the boiler is installed in is less than 85 cubic feet in volume per boiler, combustion air must be supplied into the room per the National Fuel Gas Code NFPA 54, latest edition.

   e) **Vertical Vent with Room Air** system with a vertical roof top termination of the vent and the combustion air is drawn from the surrounding area in which the boiler is installed. If the room in which the boiler is installed in is less than 85 cubic feet in volume per boiler, combustion air must be supplied into the room per the National Fuel Gas Code NFPA 54, latest edition.

2. The boiler's total equivalent vent pipe length shall not exceed 100 feet when using 3 or 4 inch pipe.

3. The boiler's total equivalent combustion air pipe length shall not exceed 100 feet when using 3 or 4 inch pipe.

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4. The 3” or 4” vent pipe shall be PVC, CPVC, Polypropylene (PP), or Steel. PVC or CPVC of Foam Core construction is not an approved piping.

5. The 3” or 4” combustion air pipe shall be PVC, CPVC, Polypropylene (PP), Galvanized or Stainless Steel.

D. Boiler Manuals

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

   a) Boiler Installation and Maintenance Manual.

   b) PVC, CPVC, PP & SS Vent Supplement.

   c) User’s Guide.

   d) Control Supplement.

Warranty

A. The boiler heat exchanger shall carry a ten (10) year limited warranty.

B. The blower and control module shall carry a two (2) year warranty.

C. The parts used in the assembly of the boiler shall carry a one (1) year warranty.

Performance Specifications

Boiler Model	Fuel	Input Modulation MBH	AFUE	DOE Heating Capacity MBH	Net I=B=R MBH	Water Volume Gal.
Solo 175	Natural or Propane Gas	50 to 170	95%	154	134	4.6

Connections/Dimensions/Data

Supply / Return Connections	Gas Connection	Vent & Air Connections	Dimensions	Weight (Empty)	Electrical Requirements
1 1/4”	3/4”	3”	16” x 20” x 35 ½”	131 Lbs	120VAC 60Hz 8A Full Load