

## **Prestige SOLO 399 Boiler Specifications**

### **General Product Requirement**

Triangle Tube Prestige SOLO 399 or equivalent

- a) The boiler(s) should be package type, modulating, direct vented, high-efficiency, gas-fired with a stainless heat exchanger.
- b) The boiler(s) shall be installed according to the manufacturer's installation instructions having the installation work done in a neat and workmanlike manner.
- c) The boiler(s) shall be capable of firing natural or propane gas.
- d) The boiler(s) shall have a gross output of \_\_\_\_\_ MBH at 100% input firing based on the 1.15% allowance of the I=B=R rating of the Hydronic Institute.
- e) Boiler(s) shall have a minimum thermal efficiency of 95.1% based on the requirements established by the BTS-2000 testing standard.
- f) The boiler(s) shall consist of a burner system, which allows modulating firing with a turn down of at least 3.5 to 1.
- g) The boiler(s) shall be assembled / manufactured by an ISO 9001 register company in compliance with ANSI Z21.13, CSA 4.9 Gas Fired Low Pressure Steam and Hot Water Boilers standard.
- h) The boiler(s) shall be hydrostatic tested to 45 psig with a rating label stating a maximum working pressure of 30 psig.

### **Product Acceptance Requirements**

Acceptable boiler manufacturer(s) should include:

1. Triangle Tube only
2. Other manufacturer boiler(s) must comply with specifying engineer's requirements, including the following items:
  - a) Full intent of the specifications listed
  - b) Provide a submittal package complete with product literature, installation manuals, wiring and piping diagrams and references of other similar installations. The alternate boiler(s) must be wall mounted with similar input, size / footprint, piping configuration, clearance requirements and available stainless steel heat exchange surface area.
  - c) The submittal package must be presented to the engineer at least \_\_\_\_\_ business days before the bid opening date for approval. Substitution products will not be permitted after the contract is awarded.

## **Boiler Construction**

The boiler(s) construction shall consist of the following:

1. The boiler(s) shall contain a heat exchanger of stainless steel with a grade no less than 439 for the combustion chamber and flue ways.
2. The boiler(s) shall consist of the following main components:
  - a. A combustion chamber that is completely sealed and located at the top of the heat exchanger. This arrangement should promote a counter flow design in exchanging heat to the primary heating water.
  - b. The boiler(s) burner system shall consist of a gas valve design for negative pressure. The minimum inlet supply pressure for natural and propane firing applications is 5" w.c. with a maximum supply pressure of 14" w.c.
  - c. The burner system shall be a premix combustion type and consist of the following components:
    - i. The burner head shall be made of stainless steel.
    - ii. The burner system shall have a variable speed, 110V blower that permits the modulation of the firing rate of input.
    - iii. The burner system shall consist of a burner control module that is capable of providing a turn down ratio of 4 to 1 by controlling the required fuel / air mixture.
    - iv. The burner control module shall consist of an electronic display that is used for boiler setup, displays current boiler status and gives diagnostic error codes for troubleshooting and service.
  - d. The boiler must be capable of having outside air piped directly to the boiler for combustion.
  - e. The boiler shall be capable of direct vent in which the vent termination and combustion air inlet can be accomplished either through the roof vertically or through a sidewall horizontally.
3. The boiler shall be provided with the following trim controls:
  - a. High temperature operating limit of 194°F
  - b. Pressure gauge, mark in psi with markings that are clear and easy to read.
  - c. Pressure relief valve, certified by ASME and set to relief at 30 psi.
  - d. Temperature sensors that monitor the vent (flue gas) temperature, the primary supply and return temperatures.
  - e. A Low water Cutoff Device (LWCO) that activates if the primary system falls below 10 psi.
  - f. A control system that has built-in freeze protection for the boiler. The system shall provide boiler circulation and automatic firing of the burner if the primary system falls below 45°F
4. The boiler shall be provided with following documentations:
  - a. Boiler Installation Manual
  - b. User's Information Manual
  - c. Vent Supplement
  - d. Wall Mounting Bracket Kit Instructions
  - e. Warranty Card