



## **Suggested Specifications Dunkirk Copper Combi Boiler CCB-150**

### **1.0 General Requirements:**

- 1.1 Provide and Install Boiler(s) in accordance with the plan drawings, written specifications and contract documents.
- 1.2 All work shall be performed in a neat workmanship like manner compliant with all local code authorities.

### **2.0 Submittal**

- 2.1 Product Data: Submit manufacturer's technical product data, including rated capacities of selected model, weights (shipping, installed), installation and start-up instructions, and furnished accessory information.
- 2.2 Shop Drawings: Submit manufacturer's end assembly drawings indicating dimensions, connection locations, and clearance requirements.
- 2.3 Wiring Diagrams: Submit manufacturer's electrical requirements for the boiler including ladder type wiring diagrams for interlock and control wiring.

### **3.0 Boiler Requirements**

- 3.1 Boiler shall provide hot water for heating zones and shall include a built-in stainless steel brazed plate heat exchanger to provide potable domestic hot water at the stated rate.
- 3.2 Boiler shall be certified for Category I and Category III operation.
- 3.3 Boiler shall be a wall hung model. An optional floor mounting stand shall be available from the manufacturer. Boiler shall be factory fire tested.
- 3.4 Refer to all local codes and jurisdictional requirements for installation of field supplied anti-scald valve(s).

### **4.0 Acceptable Manufacturers**

- 4.1 Equivalent units and manufacturers must meet all performance criteria for all fuel options, and will be considered upon prior approval.

### **5.0 Certifications & Listings**

- 5.1 Boiler shall be certified by CSA, AHRI
- 5.2 Boiler shall be constructed in accordance with the American Society of Mechanical Engineers (ASME)
- 5.3 Boiler shall have an ASME H stamp that is applied to the heat exchanger. Each heat exchanger shall be independently reviewed by an ASME authorized inspector. The boiler shall be rated for a maximum allowable working pressure of 43.5 psig. The boiler shall be equipped with a 30 psig relief valve.

### **6.0 Construction**

- 6.1 Boiler heat exchanger shall be constructed of copper tube with copper fins, stainless steel support plates and be covered with a high temperature protective coating.
- 6.2 Burner Components
  - 6.2.1 Gas valve shall be a modulating valve capable of firing from 100% input firing rate to 33% input firing rate.





- 6.2.2 Inducer draft blower shall be variable speed and controlled by a PCB that uses an air pressure transducer to vary the induced draft blower speed.
- 6.2.3 Burners and manifold shall be constructed of stainless steel.
- 6.2.4 Ignition system shall be direct spark single rod flame sensing.
- 6.2.5 Boiler shall include an internal stainless steel brazed plate heat exchanger for potable hot water and an automatic 3 way diverting valve to allow Domestic Hot Water Priority operation.
- 6.2.6 Boiler shall include an internal pressure activated bypass loop to eliminate the need for primary secondary piping.
- 6.2.7 Boiler shall include an internal factory installed and wired circulator pump.
- 6.2.8 Boiler can connect directly to heating systems of 8ft. head or less without an external circulating pump.

## **7.0 Control System**

- 7.1 Control system shall be PCB integral controller with an LCD digital display that also includes graphical interface.
- Control will sense supply water temperature and adjust firing rate of the boiler to deliver amount of heat needed.
  - Control will sense and display supply water temperature and indicate by icon when boiler is in central heating or domestic water mode.
  - Control will have Economy/Comfort mode. Comfort mode will maintain brazed plate heat exchanger at between 104°F to 140°F to speed DHW delivery.
  - Control can accept wired Outdoor Air sensor and have field selectable reset curves.
  - Control shall continuously monitor boiler during operation and standby modes. Control shall operate in such a manner to receive input data from dual temperature sensor, air pressure transducer, and outdoor air temperature sensors when used to adjust modulation rate accordingly.
  - Control can power and accept input from field supplied LWCO device.

## **8.0 Combustion Air And Flue Vent Exhaust**

- 8.1 The boiler shall be either Category I or Category III vented with materials compatible with those standards, and installed as per the manufacturer's written instruction, plan drawings and all applicable code authorities.
- 8.2 The flue gas exhaust shall connect directly to the boiler at the location labeled.
- 8.3 For Category III applications boiler shall be capable of venting 65ft equivalent length in 3" stainless pipe.



## **9.0 Electrical Connections**

- 9.1 Supply voltage 120 volts 60 HZ 12 amp minimum size circuit. Boiler shall have factory wired and installed cord with male plug end 6 feet long.
- 9.2 Boiler shall have Low voltage terminal strips with clearly marked connections.

## **10.0 Quality Assurance**

- 10.1 Warranty – boiler shall be supplied with written manufacturer’s 10 year limited warranty on primary heat exchanger and 2 years on all other parts.
- 10.2 Factory testing – boiler shall be factory test fired.

## **11.0 Boiler Manuals**

- 11.1 The boiler shall be provided with a complete set of instructions as follows:
  - Installation and Operation Manual (IOM) that includes Repair Parts
  - User’s Manual