



## **Suggested Specifications Utica Boilers Combi Condensing Boiler MAC-205**

### **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, weight, installation and start-up instructions, and furnished accessory information.
- 2.2 Shop Drawings: Submit manufacturer's 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 Direct Vent operation.
- 3.3 Boiler shall be a wall hung model.
- 3.4 Boiler shall be factory fire tested.
- 3.5 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, NRCAN.
- 5.2 Registered with Massachusetts Board, National Board BPVI.
- 5.3 Boiler shall be constructed in accordance with the American Society of Mechanical Engineers (ASME)
- 5.4 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 heat exchanger shall be rated for a maximum allowable working pressure of 50 psig. The boiler shall be equipped with a 30 psig relief valve.

### **6.0 System Requirements**

- 6.1 Central heat hydronic system pressure shall be no more than 30 psig and no less than 7.25 psig.
- 6.2 Domestic hot water hydronic system pressure shall be no more than 166 psig





## **7.0 Construction**

- 7.1 Boiler heat exchanger shall be constructed of Iron-Chromium stainless steel parallel tube, encased in a Noryl Resin housing.
- 7.2 Burner Components
  - 7.2.1 Gas valve shall be a modulating valve capable of firing from:
    - 205,000 BTU input down to 29,500 BTU input in Combi mode (7:1 turn down)
    - 164,000 BTU input down to 29,500 BTU input in Heat mode (5.5:1 turn down)
  - 7.2.2 Induced draft blower shall be variable speed and controlled by a PCB.
  - 7.2.3 Burners shall be constructed of Iron-Chromium stainless steel.
  - 7.2.4 Ignition system shall be direct spark with separate flame sensing rod.
  - 7.2.5 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.
  - 7.2.6 Boiler shall include an internal factory installed and wired Boiler Loop Pump and factory supplied primary secondary manifold with quick connections.

## **8.0 Control System**

- 8.1 Control system shall be PCB integral controller with an LCD digital display that also includes graphical interface.
- 8.2 Control is self-commissioning, automatically recognizing fuel type (Natural or LP gas).
- 8.3 Control continuously monitors flame signal and automatically adjust the gas valve during normal operation for optimum combustion and maximum efficiency.
- 8.4 Control will sense supply water temperature and adjust firing rate of the boiler to deliver amount of heat needed.
- 8.5 Control will sense and display supply water temperature and indicate by icon when boiler is in central heating or domestic water mode.
- 8.6 Control will have Braze Plate Pre-Heat function. Pre-Heat mode will maintain temperature of braze plate heat exchanger to speed DHW delivery.
- 8.7 Control can accept wired Outdoor Air sensor and have field adjustable reset curves.
- 8.8 Control displays error codes and diagnostic information.
- 8.9 Control can accept 0-10V input to manage heating set-point or heating power level.





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

- 9.1 The boiler shall be Direct Vent only, with materials compatible with those standards, and installed as per the manufacturer's written instruction, plan drawings and all applicable code authorities.
- 9.2 The flue gas exhaust shall connect directly to the boiler at the location labeled.

## **10.0 Electrical Connections**

- 10.1 Supply voltage 120 volts 60 HZ 12 amp minimum size circuit (15 amp recommended). Boiler shall have factory wired and installed cord with male plug end 3 feet long.
- 10.2 Boiler shall have Low voltage terminal strip with clearly marked connections.

## **11.0 Quality Assurance**

- 11.1 Warranty
  - 11.1.1 Boiler shall be supplied with written Manufacturer's Standard Warranty. Warranty is 10 years on Primary heat exchanger, one year on parts.
  - 11.1.2 Warranty is extended to 10 years on Primary heat exchanger, two years on parts plus two years on labor upon on-line warranty registration and completion of contractor registration.
- 11.2 Factory testing - boiler shall be factory test fired. A copy of the test data shall be provided on request.

## **12.0 Boiler Manuals**

- 12.1 The boiler shall be provided with a complete set of instructions as follows:
  - 12.1.1 Installation, Operation and Maintenance Manual (IOM) with Application Guide
  - 12.1.2 Repair Parts Manual
  - 12.1.3 User's Manual



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