

Model: _____ **HP:** _____
Design Pressure: _____ **Fuel:** _____
Operating Pressure: _____
Built to ASME Section: _____
Burner Make: _____
Burner Model: _____
Voltage: _____ / _____ / _____
Gas Supply Pressure: _____
No. _____ Fuel Oil at _____ psig



TM

Section 1. General Description and Boiler Design.

Contractor shall furnish and install a Natural Gas Fired Fully Condensing Forced Draft Hot Water Boiler, Williams & Davis Series 3000C.

Each unit shall be forced draft combustion type complete with boiler fittings and automatic linkageless controls. The boiler (with all wiring) shall be factory assembled as a self contained unit. Each boiler shall be neatly finished, thoroughly tested and properly packaged for shipping. Boiler design and construction shall be in accordance with Section IV of the ASME Code for hot water heating boilers with maximum water working pressure of 60 or 160 PSI. Boiler shall also comply with CSD-1 Code requirements and Z21.13.

The Boiler shall have no minimum flow requirements or minimum return water temperature requirements. The boiler shall be Firetube design.

The condensing section of the exhaust pipes shall be constructed of Duplex SS (2205) Sch. 40 Pipe or equal. The vessel shell shall be SA-53B ERW pipe or SA-516 Grade 70 plate. The heads shall be SA-516 Grade 70 plate. The pressure vessel shall be fully insulated with 2" of high temperature insulation. Adequate openings shall be provided for water side inspection and clean out.

The 3000C Series is to have a maximum width of _____ inches, and a maximum height of _____ inches. The boiler is able to be maneuvered through a 36" doorway and/or specifically designed to be field erected. Without field welding

Section 2. Boiler Size and Ratings

Each boiler shall be able to produce an output of _____ BTU/Hr. on high fire and an output of _____ BTU/Hr. on low fire. The return water temperature under those conditions shall be _____ degrees F with a flue gas temperature of _____ degrees F. The efficiency shall be _____%

Section 3. Boiler Flue Venting

The boiler will require a stack utilizing AL-29-4C or 316-L SS. The boiler can draw combustion air from in the room or ducted outside using PVC schedule 40 or equivalent.

Section 4. Boiler Fittings

- A. Temperature and pressure gauge shall be provided with the boiler.

Section 5. Boiler Trim

- A. Safety valves will be fitted in accordance of the requirement of the ASME code. 30, 60, 120, 160 psi
- B. Operating Temperature Controller for automatic start and stop.
- C. High Temperature Controller (manual reset).
- D. One Low Water Cutoff Probe in boiler shell.
- E. Air Safety Switch to prevent operation until sufficient prepurge air is assured.
- F. IF Scanner to prove combustion.

Section 6. Burner

The burner shall be natural gas and or combination natural gas & No. 2 oil model _____.
Each burner shall be capable of burning _____ CFH of _____ BTU/Cu. Ft. (natural) (propane) (other) _____ gas, with a specific gravity of _____. Gas pressure applied to the burner gas train supply connection shall be a minimum of _____ (in. w.c.) (PSIG) at full high rate and a maximum of _____ (in. w.c.) (PSIG) at static conditions. Each burner shall be capable of burning _____ GPH of (No. 1, 2 fuel oil) (kerosene) (diesel) or _____ fuels with a rating of 135,000 BTU/GAL.

The burner shall be fully matched to the furnace to ensure complete combustion of fuel in the furnace. The burner shall be a modulating type and have digital microprocessor controls with 5:1 turndown.

Burner controls are to be included.
PID Type Operating temperature control for automatic start and stop of the burner. High temperature switch with manual reset. Two (2) low water cut off probes to cause shutdown of the burner when water drops to a minimum safe level.

The second low level to require a manual reset.
An air safety switch to prevent burner operation until sufficient combustion air is assured shall be installed.
A combustion supervision control. The burner motor shall be complete with thermal overload protection.

Section 7. Ignition System

1. The burner ignition system, which will light either the main gas or oil flame, shall utilize (natural) (propane) gas as the fuel source. The gas pilot system components shall include spark ignited pilot assembly, 6000 Volt ignition transformer, pilot solenoid valve, pilot gas pressure regulator and manual gas shutoff cock. The flame proving system shall incorporate an Ultra-Violet flame detector, which will monitor both the pilot and main flames. The pilot assembly shall fit within the confines of the blast tube - avoiding special burner front plate pilot cut outs.

Section 8. Tests

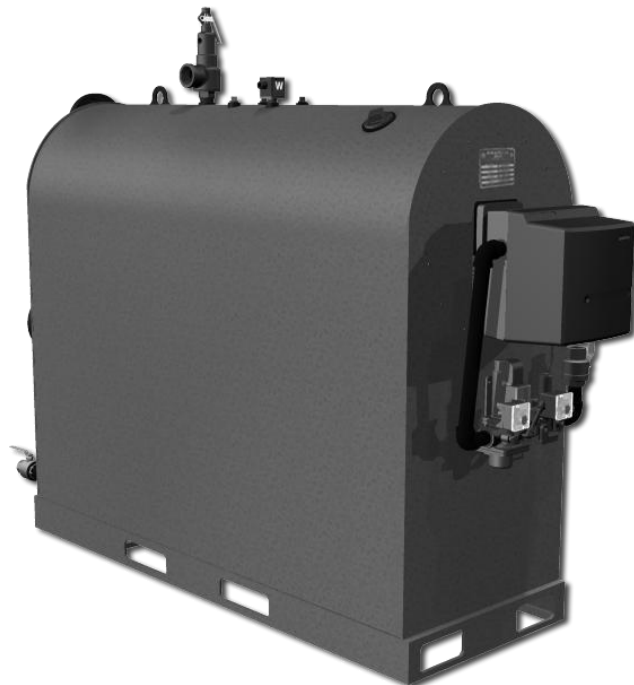
Each boiler shall be hydrostatically tested to a minimum of 1.5 times the maximum design pressure in accordance with ASME Code.

Section 9. Manuals

Instruction for the installation, operation and maintenance of the boiler, operating and maintenance manuals for each sub component shall be contained within a single manual provided by the boiler manufacturer. A wiring diagram shall be affixed to the inside of the control panel cover.

Section 10. Warranty

The boiler pressure vessel shall be guaranteed against thermal shock for 10 years when utilized in a closed loop hydronic heating system with a differential of 170 Degrees F or less and 7 year warranty against flue gas corrosion.



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