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UFT Fire Tube Boiler Specification Sheet

Models: UFT-80 / 100 / 120 / 140 / 175 / 199 – Floor (“F”) or Wall (“W”) Mount Models

The Universal Fire Tube (UFT) Boiler, by HTP, has an input ranging from _____ to _____ Btu/Hr. Model UFT-_____, shall operate on either Natural _____ or LP _____ gas. The boiler ships ready for floor (“F” model) or wall mounting (“W” model).

The boiler shall be National Board Listed and bear the ASME "H" Stamp with a working pressure of 30 PSI and shall have both top and bottom supply and return 1 ¼" NPT connections. The boiler shall be used in a closed loop pressurized system and require a properly sized thermal expansion tank to meet local codes. The boiler shall be ETL Listed and exceed the latest minimum efficiency requirements of ASHRAE 103 with an AFUE rating up to 96%.

The boiler heat exchanger shall be constructed of 316L stainless steel with a laser welded qualified welding process to ensure weld quality. The heat exchanger shall have aluminum fins inserted into the individual fire tube circuits to increase heat transfer capabilities. The heat exchanger shall be of vertical fire tube design, which provides optimal condensation drainage and produces self-cleaning action inside the boiler. The boiler is built and tested in accordance with the harmonized ANSI Z21.13 standard for the US and Canada. The complete heat exchanger assembly shall carry a ten (10) year limited residential warranty / five (5) year limited commercial warranty.

The boiler jacket shall be constructed with a heavy gauge steel jacket assembly, with built-in support brackets for wall-mounting (“W” models), or ready for floor mounting (“F” models). The appliance shall have bottom mounted central heating supply and return adapters on wall mounted models, left side mounted central heating supply and return adapters on floor models, domestic hot water inlet and outlet, and gas connections. **NOTE:** Piping adapters may be moved from the left to the right side of floor models to ease installation. The sealed boiler cabinet shall provide an additional sealed control compartment with vents to assure reliable operation and eliminate the potential for excessive moisture on electronic components.

The boiler shall be equipped with easy access to the combustion system components. The Combustion System shall be equipped with specialized mixer on the inlet of the blower to increase boiler turndown to 10 to 1 (with the exception of 175kBTU models, which shall have a turndown of 8.79 to 1). The burner is constructed of high temperature ceramic metal fiber, which provides operating reliability throughout the modulation range. The negative pressure regulation gas valve operates at low or high gas pressure with a range of 3.5" to 14" water column. An observation window eases flame monitoring during operation.

The boiler shall have an **integrated digital control system** that utilizes an algorithm to fully adjust firing rate while maintaining desired output temperature. Combustion gas and air are premixed prior to introduction to the burner through the gas valve and variable speed fan. The control uses pulse width modulation to send a command signal to the fan which adjusts the volume of combustion air and gas supplied to the burner. The boiler shall have optical flame monitoring to monitor flame quality.

The boiler shall feature an LCD display that provides system operation information as well as programming and monitoring capabilities. The control has push buttons to allow the installer to navigate through and change system parameters and monitor operation. The display assists in detecting fault and maintenance intervals, and also highlights the master boiler in cascade operation with multiple boilers. If the control senses a problem, the display will show a fault code and narrative to aid in troubleshooting.

The control shall monitor outdoor temperature through an outdoor sensor, provide outdoor reset to increase boiler efficiency, and disable operation based on a programmed outdoor temperature. The optional boost function can be programmed to temporarily override the outdoor reset target temperature to quickly heat a home or building that uses thermostat reset control. The boiler can be connected to an indirect fired water heater, and an indirect sensor connected to the control will automatically prioritize domestic hot water demands. The control is capable of integrated multiple boiler management (cascade system) and can regulate up to twenty (20) boilers with sequence options and rotation capability to assure equal run time and maximum efficiency. This allows for greater turndown ratios and provides system back-up capability. The control may also be connected to a 0 – 10 volt input from a building management system to control modulation rate or set point temperature to the system. The controller can also provide service reminders based on run time or time date.

The boiler shall be equipped with a field connection board for wiring line voltage and low voltage outputs. The line voltage connection shall provide outputs for a system pump, boiler pump, and domestic hot water pump. The low voltage connection shall provide inputs for a thermostat, indirect sensor, outdoor sensor, and BMS 0 – 10 volt input. The boiler shall have optional Molex connectors to accept optional safety devices, such as a UL 353 low water cut-off.

The boiler will have a sealed combustion system, with separate, sealed ULC-S636 PVC, CPVC, Polypropylene, or Stainless Steel pipes taking outside air for combustion and exhausting flue gasses to the outdoors.

The boiler's total combined equivalent vent length, including fitting allowances for both intake and exhaust, shall not exceed 100 feet in 3" inch pipe or 50 feet in 2" pipe. The vent connections shall be located on the top of the boiler.

Horizontal Venting shall be done as a balanced system only, thus requiring both intake and exhaust to terminate on the same side of the building.

Vertical Venting shall be done either as a balanced or unbalanced system. An unbalanced system shall ONLY be allowed when the exhaust is installed vertically and the intake horizontally. Both exhaust and intake must remain within the boiler's combined equivalent length. (Refer to boiler's installation manual venting section for additional venting requirements.)

CAUTION: Foam core pipe is NOT an approved material for either intake or exhaust piping.

Refer to boiler installation manual venting section for additional venting requirements.

The boiler shall be in compliance with the NOx emissions limit set forth in SCAQMD Rule 1146.2. The manufacturer shall verify proper operation of the burner, the combustion and control systems, as well as all related safety functions, to ensure the boiler will operate based on its designed parameters before shipping. Complete operating and installation instructions shall be furnished with every heater as packaged by the manufacturer for shipping.

The appliance shall operate at high elevations without additional parts. However, adjustments to the combustion system may be required at any elevation. See installation manual for combustion system setting details.

Maximum unit dimensions shall be: Depth inches, Width inches, and Height inches. Maximum unit Weight shall be pounds.

Note: Due to the variations in CSD-1 requirements from state to state, please consult with the factory to determine all controls required in your jurisdiction.

NOTE: HTP reserves the right to make product changes or updates without notice and will not be held liable for typographical errors in literature.