

## Typical Specification for HTP Elite Plus Boiler ®

*Models: ELP-110 /199 Btu / Hr*

## Guide Specification Sheet

**Elite Plus Boiler ®**

The Elite Plus Boiler®, manufactured by HTP, Inc., includes (2) models with inputs ranging from 110,000 Btu to 199,000 Btu. Model ELP- \_\_\_\_\_, having a modulation input range of \_\_\_\_\_ Btu / Hr., shall operate on either Natural or LP gas.

The boiler shall bear the ASME "H" Stamp with a working pressure of 160 PSI and shall be National Board Listed. The boiler shall be ETL Listed and exceed the latest minimum efficiency requirements of ASHRAE / 103 with an AFUE rating of up to 92.7%. The boiler shall be used in a closed loop pressurized system that shall require a properly sized thermal expansion tank to meet local codes.

The boiler cabinet shall be constructed of durable 18 gauge steel. The boiler heat exchanger shall be constructed of 316 L stainless steel, built and tested in accordance with the latest ANSI Z21.13 standard for the US and Canada. The complete heat exchanger assembly shall carry a 12 year limited warranty.

The boiler shall include a combination outlet fitting designed with multiple thread connections, oriented to simplify and allow connections for a Relief Valve, Temperature and Pressure Gauge, and Manual Reset High Limit - all in one fitting.

The boiler combustion system shall feature Gas Adaptive Technology (LP or Nat) built into the boiler control. This technology adapts the combustion system to many installation variables, including: fuel type, flue length, wind, altitude, and barometric pressure. The Gas Adaptive Technology system shall have a blower with a built-in mass flow sensor to measure and maintain the correct amount of air flowing into the combustion system, providing accurate, clean combustion while maintaining the boiler firing rate. The blower shall also have a high precision stepper motor to regulate the amount of gas flowing into the combustion system.

The combustion burner shall provide feedback to the control system through two thermocouples. The thermocouples measure the surface temperature of the burner and adjust the combustion air flow or gas regulation to assure highly accurate, efficient combustion. The combustion system shall provide a 10 to 1 turndown ratio.

The control is connected to a digital 4 line 20 character per line LCD display that provides boiler operation data. The display will show a fault code and narrative to aid in troubleshooting, and also provide a means for adjustment of the operating temperature ranging from 50 - 190°F and differential temperature ranging from 5 - 30°F. The control shall monitor outdoor temperature through an outdoor sensor and provide outdoor reset shutdown capability. The control shall feature a dry contact output to connect to an optional alarm monitoring device. To provide domestic hot water, an indirect fired water heater can be connected to the control which will automatically prioritize domestic hot water demands. The control shall also regulate up to (16) Elite Plus Boilers through a cascade system functioning as one boiler system. This allows for greater turndown ratios and systematic control to maximize efficiency.

The boiler will have a sealed combustion system, taking outside air for combustion and exhausting the flue gas with a ULC-636 CPVC connector for 3" PVC or CPVC. Total combined equivalent vent length, including fitting allowances for both intake and exhaust, shall not exceed 250 feet. The vent connections shall be located on the top of the boiler to allow for optional wall mounted installations.

**Horizontal Venting** shall be done as a balanced system only, 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 combined equivalent vent length. (Refer to boiler installation manual venting section for additional venting requirements.)

**CAUTION: Foam core pipe is NOT an approved material for exhaust piping.**

The combustion chamber will be designed to drain condensation to a collection container located at the back of the boiler. The condensate collection container will contain a float switch to monitor condensate flow and have a clean out for periodic maintenance.

The **BOILER** shall operate on either Natural or LP fuels at high altitudes up to 10,000 feet above sea level without additional parts or adjustments, or change in rated output of the boiler.

Maximum unit dimensions shall be: Length \_\_\_\_\_ 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 for all controls required in your jurisdiction.**