

**Typical Specification for the
HTP Elite Fire Tube Combi Boiler**
Model: EFTC-140W

Guide Specification Sheet
Elite Fire Tube Combi Boiler

The Elite Fire Tube Combi Boiler, by HTP, Inc., has an input ranging from 28,000 to 140,000 Btu/Hr. Model EFTC-140W shall operate on either Natural or LP gas.

The combi boiler shall be National Board Listed and bear the ASME "H" Stamp with a rating pressure of 80 PSI. The combi boiler shall have bottom mounted central heating supply and return, domestic hot water inlet and outlet, and gas connections. The combi boiler shall be used in a closed loop pressurized system and require a properly sized thermal expansion tank to meet local codes. The combi boiler shall be ETL Listed and exceed the latest minimum efficiency requirements of ASHRAE 103 with an AFUE rating up to 94%.

The combi boiler heat exchanger shall be constructed of 316 stainless steel and use a qualified laser welding process to ensure weld quality. The heat exchanger shall be passivated after welding to resist surface corrosion. The heat exchanger shall be of vertical fire tube design, with aluminum fins inside the stainless steel vertical tubes to improve heat transfer rate. This fire tube design provides optimal condensation drainage and produces self-cleaning action inside the combi boiler. The combi 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 use warranty.

The boiler jacket shall be constructed with a heavy gauge steel jacket assembly, with built-in support brackets for wall-mounting. The sealed combi boiler cabinet shall provide a control compartment to assure reliable operation and eliminate the potential for excessive moisture on electronic components.

The combi boiler shall be equipped with a combustion mounting plate mounted vertically to provide easy access to the combustion system components. The burner is constructed of high temperature ceramic fiber, which provides operating reliability through the modulation range of the combi boiler. 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 mirror eases flame monitoring during operation.

The combi 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 combi boiler shall feature a multi-function display that provides combi boiler operation information, as well as programming and monitoring capabilities. The control allows the installer to navigate through combi boiler programming parameters and monitor operation, and push buttons and a dial to confirm or change system parameters. If the control senses a problem, it will display an error code to aid in troubleshooting.

The control shall monitor outdoor temperature through an outdoor sensor, provide outdoor reset to increase combi boiler efficiency, and disable operation based on a programmed outdoor temperature. The control shall have a 0 – 10 volt input to automatically change combi boiler central heating set point temperature. To provide domestic hot water, an internal indirect fired water heater is provided to automatically prioritize domestic hot water demands. The indirect water heater shall have an electronic mixing valve on the outlet pipes to ensure accurate temperature control. The internal indirect water heater and associated DHW components contacted by consumable water contain less than 0.25% lead by weight, as required by the Safe Drinking Water Act, Section 1417.

The combi boiler shall be equipped with a field connection board for wiring low voltage outputs. The low voltage connection shall provide inputs for thermostat, outdoor sensor, and 0 – 10 volt input. The combi boiler will also have one internal pump and 3 way valve to ensure proper water flow through the heater exchangers.

The combi boiler will have a sealed combustion system, with separate, sealed ULC-636 PVC, CPVC, Polypropylene, or Stainless Steel pipes taking outside air for combustion and exhausting flue gasses.

The combi boiler's total combined equivalent vent length, including fitting allowances for both intake and exhaust, shall not exceed 100 total equivalent feet in 3 inch vent pipe, or 50 feet in 2 inch vent pipe. The vent connections shall be located on the top of the combi 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 combi boiler's combined equivalent length. (Refer to combi 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 combi boiler installation manual venting section for additional venting requirements.

The combi 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 combi boiler will operate based on its designed parameters before shipping. Complete operating and installation instructions shall be furnished with every combi boiler as packaged by the manufacturer for shipping.

The combi boiler shall operate at altitudes up to 4,500 feet above sea level without additional parts or adjustments.

Maximum unit dimensions shall be: Depth: 15.5 inches, Width: 17.25 inches and Height: 34 inches.
Maximum unit weight shall be 110 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.

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