

**Typical Specification for HTP
Phoenix® Gas-Fired Water Heaters
Models: PH-100/130/160/199 Btu /Hr**

Guide Specification Sheet

**Phoenix® Gas-Fired
Water Heaters**

The Phoenix® Gas-Fired Water Heater shall be manufactured by HTP with an identification of model number PH- _____ and a modulation input range of _____ Btu/Hr. The Phoenix® Gas-Fired Water Heater shall operate on either Natural or LP gas.

The heater tank shall be constructed of 316L stainless steel. The primary condensing heat exchanger shall be constructed of 90/10 cupronickel. The secondary heat exchanger shall be constructed of 800H stainless steel and 90/10 cupronickel. Solar models shall have an additional heat exchanger on the bottom of the tank to connect to a solar system.

Tank insulation shall be 2” thick water blown foam. Insulation shall be enclosed in a plastic jacket. All components shall be located on the front of the heater for easy service access. All related hardware shall be constructed of stainless steel studs with brass nuts. All water connection nipples shall be constructed of stainless steel and attached to the side of the tank. The top and bottom of the tank shall be smooth.

The heaters shall be ETL listed and will exceed the minimum efficiency requirements of ASHRAE 90.1b-1992. All heaters shall be approved in accordance with ANSI Z 21.10.3. All heaters will be supplied with a factory installed ASME rated temperature and pressure relief valve, a low water cutoff, a high temperature switch, an upper hot water sensor, a lower cold water sensor, and a condensate trap assembly ready for easy connection to a field supplied condensate drain.

The heater shall have an integrated digital controller device with integral diagnostics, LED fault and temperature settings for establishing set point and temperature differential. Ignition shall be direct spark and take place at a speed pre-set for the burner blower. The control shall utilize an algorithm to fully adjust the burner modulating firing rate while maintaining the desired temperature. The pre-mix stainless steel burner uses a 120 volt motor with pulse wave modulation control to change the fan speed, thus the combustion air volume of fuel and air through the burner to establish a continuous BTU input range equal to the water heating set point requirement. The digital LED control display shall provide means, via push buttons, for adjustments of operating temperatures, differential adjustment, ECO reset, service mode, and real time status mode. In addition, there shall be provided a computer connection for history, including all fault codes and hours of operation above 50% input, below 50% input, as well as real time status reporting of all operations. The burner assembly shall be mounted so as to be easily removed as an integral unit for ease of service.

The heater combustion system can be designed for either two pipe (intake and exhaust) closed combustion, or a single pipe system taking mechanical room air and piping exhaust outside. Schedule 40 or 80 PVC or stainless steel piping materials are approved for venting applications (see installation manual for further venting details). (**NOTE: Foam core pipe is not an approved exhaust venting material.**) The vent connections (intake and exhaust) shall be located on the bottom of the heater.

Appliance venting can be installed using several different methods, including:

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 heater’s combined equivalent length. (Refer to heater installation manual

venting section for additional venting requirements.)

Indoor Combustion Venting from a Confined or Unconfined Space – Where the exhaust runs vertically and combustion air is drawn either from the mechanical room or from outdoors.

The total combined length of exhaust and intake vents cannot exceed 85 combined feet for 2” venting or 200 combined feet for 3” venting. Adequate combustion air must be supplied when drawing air from the mechanical room. Avoid the room contaminates listed in the installation manual. (Refer to appliance installation manual venting section for additional venting requirements.)

The heater shall be in compliance with the NOx emissions limit set forth in SCAQMD Rule 1146.2. The heater shall be factory assembled, test-fired for correct BTU input, and adjusted for proper combustion parameters. Complete operating and installation instructions shall be furnished with every heater as packaged by the manufacturer for shipping.

The heater shall operate at altitudes up to 4500 feet above sea level without additional parts or adjustment.

The surfaces of these products contacted by consumable water contain less than 0.25% lead by weight, as required by the Safe Drinking Water Act, Section 1417.

Maximum unit dimensions shall be length _____ inches, width _____ inches and height _____ inches. Maximum unit weight shall be _____ pounds.

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