

**Typical Specification for HTP  
Versa-Hydro Combined Hydronic Appliance  
PHE-130-55 / 130-80 / 130-119 / 199-55 / 199-80 / 199-119**

**Guide Specification Sheet**

**Versa-Hydro**

The Versa-Hydro Combined Hydronic Appliance shall be manufactured by HTP with identification of model number PHE - \_\_\_\_\_ and a modulation input range of \_\_\_\_\_ Btu/Hr. The Versa-Hydro Combined Hydronic Appliance shall operate on either \_\_\_\_\_ Natural or \_\_\_\_\_ LP gas.

The appliance tank shall be constructed of 316L stainless steel. The primary condensing heat exchanger shall be constructed of 90/10 cupronickel tube, 5" in diameter with a ¼" thick wall. The secondary heat exchanger shall be constructed of 800H stainless steel and 90/10 cupronickel. Tank insulation shall be water blown foam 2" thick in the side wall with a rating of R14.2, and 3" thick in the top with a rating of R21.3. Insulation shall be enclosed in a plastic jacket.

The appliance and all related gas piping shall be approved for zero clearance to any combustible surfaces. **DO NOT INSTALL THIS APPLIANCE DIRECTLY ON CARPETING.** All components shall be accessible and serviceable. All related hardware shall be constructed of stainless steel studs with brass nuts on the burner mounting flange for future serviceability. 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 unit shall be equipped with a pre-plumbed **Hydronic Heating Module** connected directly to the tank through dip tubes that draw hot water from the top of the tank and return cold water to the bottom. The heating module has a brazed plate exchanger which transfers energy from the storage tank into the central heating water which circulates through the other side of the brazed plate. The heating module is equipped with a modulating pump to control Btu input into the brazed plate and the outlet temperature feeding the heating circuits. **Total System Control** manages storage tank temperature and the modulating pump flow rate to optimize performance and increase overall efficiency. The **Outdoor Sensor** provides feedback to the control to adjust the central heating target set point to meet the system design. The hydronic heating module has isolation valves and flexible stainless lines, assuring that the brazed plate exchanger can be serviced or the assembly removed without decommissioning the entire heating system.

The **Versa-Hydro Solar** appliance design separates the solar heat exchanger in the bottom portion of the storage tank from the combustion heat exchanger and hydronic heating module on the top portion of the tank. Solar energy transfers from the bottom heat exchanger and rises to the top of the storage tank, optimizing solar energy transfer. If the energy delivered by the solar system is greater than the energy absorbed by the hydronic heating module or domestic hot water demand, **Total System Control** will not fire the burner until the storage tank target set point temperature is no longer being met, improving the operating cost and energy efficiency of the Versa-Hydro Solar.

The appliance shall be ETL listed and will exceed the minimum efficiency requirements of ASHRAE 90.1 b-2007. Solar models shall be SRCC listed for application in OG-300 certified systems. All appliances shall be approved in accordance with ANSI Z-21.10.3. All appliances will be supplied with a factory installed ASME rated temperature and pressure relief valve for the storage tank. The hydronic heating module shall be equipped with a temperature and pressure relief valve capable of handling the maximum rate. All appliances will be supplied with a factory installed low water cutoff, an upper hot water sensor, a lower cold water sensor, and a factory installed condensation trap assembly ready to connect to a field supplied condensation drain.

The appliance 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 appliance.

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 appliance combined equivalent length. (Refer to appliance 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 NO<sub>x</sub> emissions limit set forth in SCAQMD Rule 1146.2. The manufacturer shall verify proper operation of the burner, all controls and heat exchanger prior to shipping. Complete operating and installation instructions shall be furnished with every heater as packaged by the manufacturer for shipping.

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.

The manufacturer shall verify proper operation of the burner, all controls and heat exchanger prior to shipping.

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