

SPECIFICATION FOR DOMESTIC WATER HEATERS

Condensing, Gas-Fired Water Heaters with Nickel-Plated Storage Tanks

Furnish and install the following **POWER VT®** gas water heater(s) as manufactured by PVI INDUSTRIES, INC of Fort Worth, Texas.

Qty	Model Number	Btu/h Input	GPH Recovery 40° to _____°F	Storage Tank
_____	_____	_____	_____	_____ gallons
_____	_____	_____	_____	_____ gallons
_____	_____	_____	_____	_____ gallons

Efficiency

The water heater will operate at a thermal efficiency of 94% when tested to ANSI Z21.10.3. The water heater will comply with paragraph 7.2.4.4, the thermal efficiency and the standby loss requirements of ASHRAE 90.1-1999.

Pressure Vessel and Heating Surfaces

The water heater will be a vertical fire tube design that is constructed and stamped in accordance with Section IV, Part HLW of the ASME code. Both the storage and heating sections of the water heater will be National Board Registered for a working pressure of 150 psi and will be pressure tested at 1-1/2 times working pressure. The fireside of the heating surfaces will be of boiler-grade steel. The waterside of the heating tubes will be sealed in copper. The heating tubes will be rolled, beaded, and seal welded into the tube sheets. The combustion side of the tube sheet will be insulated by a layer of ceramic fiber that will protect the tube sheet from both thermal stresses and failure that can result from the accumulation of scale and precipitants.

Lining

The tank will be a plated with electroless nickel (EN). Plating will occur after the pressure vessel is completely fabricated and all welding is completed. The EN plating will be a high-phosphorus (10%) and nonporous composition suitable for submersion service (ASTM B733 standard may be used as a guideline). The finished lining will not require sacrificial anode rods. For additional protection against galvanic corrosion, which may occur within the potable water system, the EN plating may have a high-dielectric-strength polymer overcoat.

Burner and Venting

Combustion will be provided by an induced-draft power burner that can operate with as little as 4-1/2 inches water column of gas pressure. The water heater will be UL listed for use with plastic venting materials. The heater will be capable of directly venting inlet air rated @ 120 equivalent feet and exhaust rated as follows: 4" vent - 50 equivalent feet on 1 MBtu/h model, 100 equivalent feet for other inputs; 6" vent – 390 equivalent feet on 1Mbtu/h model, 500 equivalent feet for other inputs.

The burner will be equipped with a gas train meeting the specifications of:

UL (standard equipment)
 FM
 IRI
 Other _____

(continued)

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(continued)

Burner and Venting

Safety Controls

As a minimum, the heater will be equipped with the following:

- a solid-state flame safeguard with pre-purge, programmable post-purge, and flame status indicating lights
- two *immersion* operating thermostats
- an *immersion* temperature limiting device
- a stack temperature limiting device
- an ASME- or AGA-rated temperature and pressure relief valve
- and options as selected on form PV 6147

Warranty Summary

The burner and all heater parts will have a one-year warranty. Storage tank will have a **ten-year** warranty covering manufacturing or material defects, and/or the production of rusty water. Tank and heating surfaces will have a non-prorated, **three-year** warranty against failure due to scale buildup with no provisions for periodic cleaning for warranty coverage. If indicated here, the heater will also have a _____ first year or _____ long-life service policy, which will cover replacement labor and freight costs under certain conditions. This summary is not a warranty. Consult warranty and policies for full details. **Complete copies of all warranties and service policies, including all exclusions and conditions, will be presented to the owner as part of the submittal package.**

Finishing

The storage and heating sections will be completely factory packaged and plumbed, requiring only job site hookup to utilities, venting, and potable water inlet and outlet. The heater will be insulated to meet current ASHRAE standards, jacketed with powder-coated steel panels, and mounted on heavy-duty channel skids. The heater will fit properly in the space provided and installation will conform to all local, state, and national codes.

Start Up

Start up on the unit will be performed by factory trained and authorized personnel. A copy of the start up report will be provided to the owner.

Quality Certification • Safety and Performance Standards

The heater will be UL or CGA listed. The water heaters will be manufactured by a company that has achieved certification to the ISO 9001 International Quality System.

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