SPECIFICATION FOR DOMESTIC WATER HEATERS

Semi-instantaneous, U-tube, Hot Water Generators with Nickel-Plated Shell And Steam as the Energy Source

Furnish and install the following **QuickDraw**® water heater(s) as manufactured by PVI Industries, L.L.C. of Fort Worth, Texas.

Qty	Model Number	GPM Recovery 40° to _____°F	Inlet Steam Pressure (psi)
____	_____	_____	_____
____	_____	_____	_____
____	_____	_____	_____

Pressure Vessel and Heating Surfaces

The water heater will be constructed and stamped in accordance with Section IV, Part HLW of the ASME code. 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. All tank connections will be nonferrous.

The heat exchanger will be a _____ single-wall or ____ double-wall (atmospherically vented), copper u-tube bundle with nonferrous waterside tube sheet, baffles, and tie rods. Heat exchanger will be constructed to ASME code and rated for 150 psi and 300°F service.

Tank 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 electroless nickel plating may have a high-dielectric-strength polymer overcoat.

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(continued)

Outlet Water Temperature Controls

Inlet steam through the heat exchanger will be controlled by one or more on/off, solenoid valves that respond to an immersion thermostat. Solenoid valve(s) will fail closed to prevent a runaway situation in the event of a power interruption. The solenoid valve(s) offer a "built-in" solenoid shutoff for the inlet steam in the event of an over-temperature situation. The semi-instantaneous heater will contain enough stored water to act as a temperature buffer and will enable control of outlet water temperature to within 5°F of thermostat setting without the need for a continuously running integral circulating pump or a modulating steam valve connected to a feed-forward blending system. An over-temperature tank purge valve will not be required as standard equipment to correct for temperature swings.

The heat exchanger will be sized to obtain the required domestic water temperature and flow through the significant latent energy in steam that is released as it condenses. The heater will not need to sub-cool condensate. For maximum boiler system efficiency, condensate will return at above 200°F, eliminating the need to reheat condensate prior to re-introducing it into the boiler.

Safety Controls

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

- automatic solenoid shutoff of inlet steam line
- an *immersion* operating thermostat
- an *immersion* temperature limiting device
- an ASME- or AGA-rated temperature and pressure relief valve

If selected, the water heater will be equipped with the following optional equipment.

____ manual-reset , temperature limiting device

____ double-solenoid, over-temperature system with tank purge valve

____ a pressure differential, tube wall breach detection and shutdown system

Warranty Summary

Heat exchanger will have a ___ one-year ____ three-year warranty. All other 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. 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.**

(continued)

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(continued)

Finishing

The water heater will be completely factory packaged, requiring only job site hookup to utilities and domestic water piping. The heater will be insulated to meet current ASHRAE standards, jacketed in steel panels with an industrial finish, and mounted on heavy-duty stand. The heater will fit properly in the space provided and installation will conform to all local, state, and national codes. For a list of selected optional equipment, see form PV 6350 or PV 6357.

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

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