CONQUEST™

Condensing Water Heater

UP TO 97% THERMAL EFFICIENCY AT FULL RATE FROM 40°F TO 140°F

TANK AND HEAT EXCHANGER MADE FROM AquaPLEX® ENGINEERED DUPLEX STAINLESS STEEL ALLOY

SEAMLESS VFD MODULATION REDUCES CYCLING AND IMPROVES EFFICIENCY UP TO 99% DURING LOW LOAD CONDITIONS

399 • 500 • 600
700 • 800 MBH INPUTS

130 GALLON TANK

EXTREMELY QUIET OPERATION

Featuring...

AquaPLEX®
ENGINEERED DUPLEX ALLOY

Requires no tank linings or heat exchanger linings.
Requires no anodes of any type.
10- year warranty.

Intertek
HLW
ASHRAE 90.1 - 2010 compliant
SCAQMD compliant

PVI®

Engineered Water Heating Solutions®

CONQUEST™

Condensing Water Heater

With a tank and heat exchanger constructed of AquaPLEX® duplex stainless steel alloy, the Conquest water heater combines an advanced fuel saving design with the extended product life long desired by the owners of condensing equipment.

Corrosion Resistance

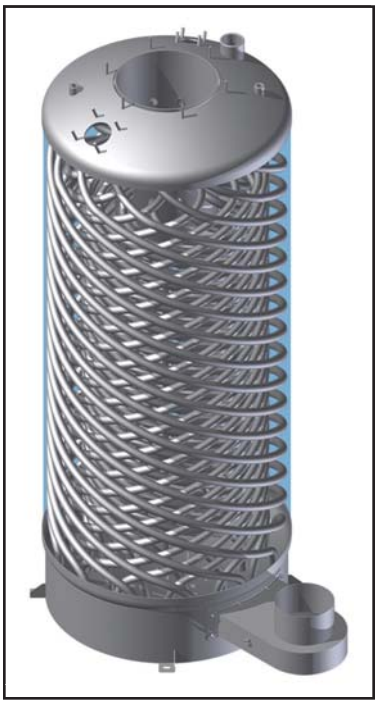
AquaPLEX® is inherently corrosion resistant and entirely eliminates the need for a tank lining and anodes. And unlike 316L stainless steel, AquaPLEX® is immune to chloride stress corrosion cracking, a known failure mode of 316L in potable water.

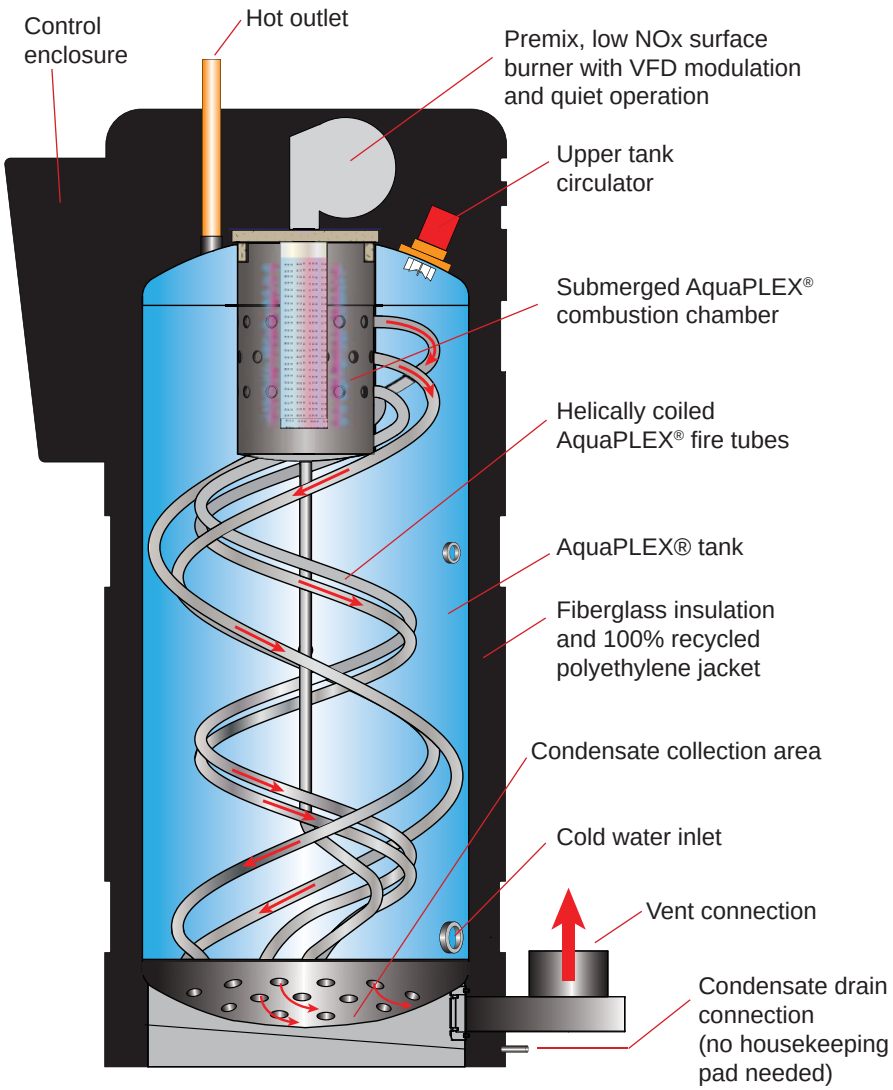
Condensing Efficiency

Efficiency is accomplished through a down-fired design beginning with a submerged combustion chamber and continuing through an array of helical fire tubes. Combustion gases are counter-flow to the direction of the potable water. This enables the coolest flue gases to contact the coldest water and raises low-fire efficiency to 99%.

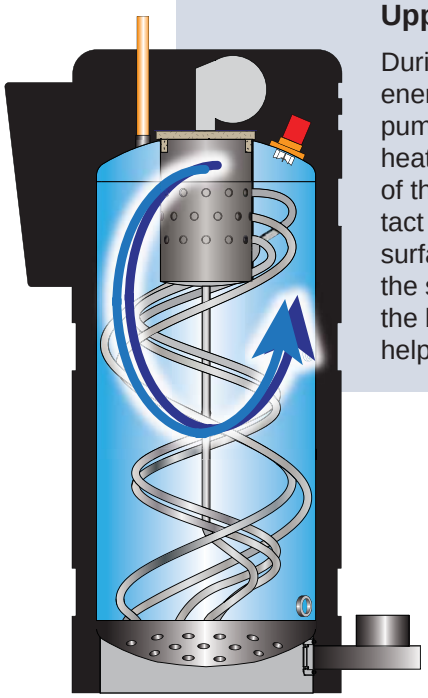
AquaPLEX® ENGINEERED DUPLEX ALLOY

The pressure vessel, fire tubes and combustion chamber in the Conquest water heater are fabricated from AquaPLEX® duplex alloy. AquaPLEX® combines the grain structures of both 300 and 400 series stainless steels for unequalled corrosion protection.



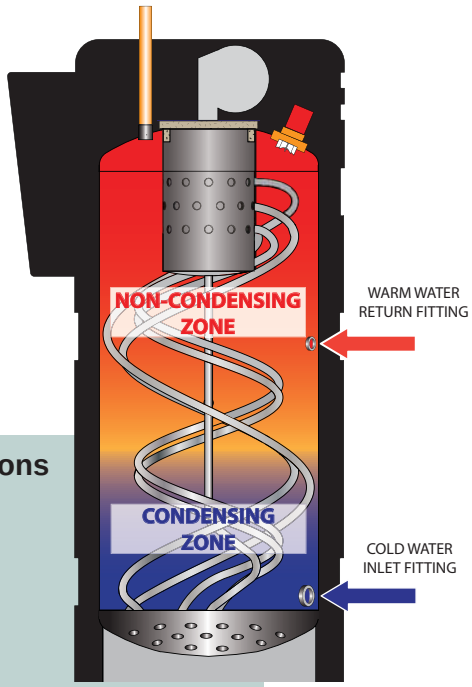


DESIGNED TO MAINTAIN HIGH EFFICIENCY ON THE INSTALLATION



Upper Tank Circulator

During burner operation, Conquest energizes an integral circulating pump that forces water across the heating surfaces in the hottest part of the tank. More aggressive contact between the water and heating surfaces improves efficiency and the scouring action helps to reduce the buildup of scale. Circulation also helps to equalize tank temperature.

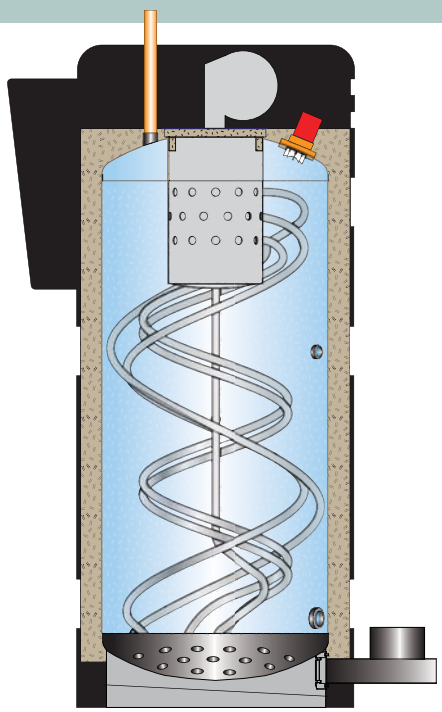


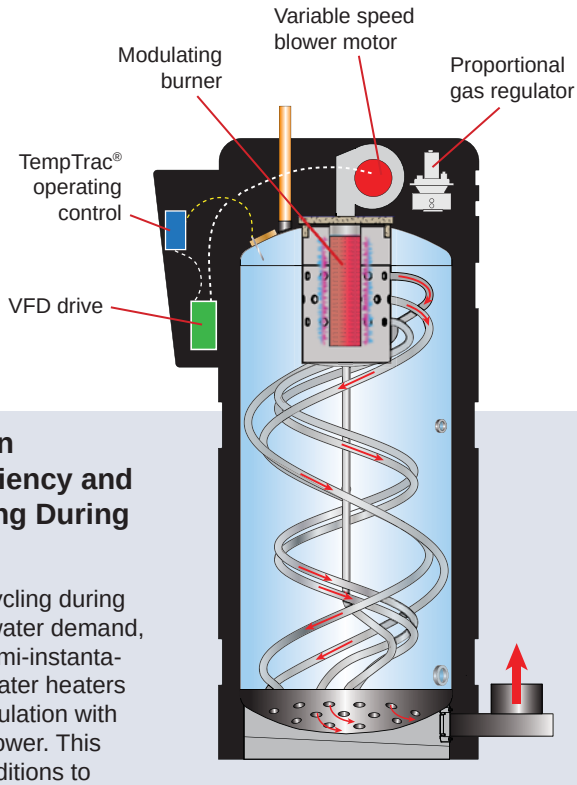
Both Warm and Cold Tank Connections

Constant circulation of hot water into the cold fitting on a condensing water heater lowers the efficiency. Conquest provides a dedicated fitting for connection to building return loops or side-arm tanks, maintaining two distinct temperature zones and allowing only the coldest water to enter the lower condensing zone of the water heater.

Low Standby Losses

Fiberglass insulation and a relatively small tank size reduce standby losses to levels 50% to 60% below ASHRAE 90.1 limits. Standby loss equates to an annual cost of about $40; less than the cost to run a small pump.





VFD Modulation Increases Efficiency and Reduces Cycling During Low Demand

To reduce burner cycling during periods of low hot water demand, the higher input (semi-instantaneous) Conquest water heaters employ burner modulation with a variable speed blower. This allows low flow conditions to be met with continuous, low BTU input and without short-cycling. The reduction in energy input also improves thermal efficiency up to 99%.

During periods when nominal demand is only a few gpm, the at-temperature storage capacity of the Conquest heater can meet the hot water requirement for 20 to 40 minutes before a burner cycle is needed.

Modbus Enabled Operating and Modulation Control

The TempTrac® electronic operating control allows the building's automation system to monitor and control the operation of the Conquest water heater through built-in Modbus RTU protocol. Network communicated points include operating set point (remotely adjustable), modulation rate and alarm status.

At the water heater, the control displays set point, sensed temperature, firing rate and alarm status. All parameters are fully programmable. Custom communication gateways are available for BacNet and Lonworks building automation systems.

Multiple Positive-Pressure Venting Options

Conquest is a category IV vented product listed for PVC and Polypropylene materials. Capable of sealed combustion with terminations in different pressure zones. Concentric venting is available on some sizes.

Conventional

Room air with sidewall vent

Sealed combustion with roof terminations

Sealed combustion with sidewall terminations

SELECTED STANDARD EQUIPMENT

- Up to 97% thermal efficiency at full fire from 40°F to 140°F
- Up to 99% thermal efficiency at low fire
- < 20 ppm NOx
- Equipped for direct combustion air connection
- Vents through PVC or Polypropylene
- 10-year warranty for tank and exchanger
- 10-year warranty against chloride cracking

PRESSURE VESSEL & HEAT EXCHANGER

- AquaPLEX® tank (unlined duplex alloy)
- AquaPLEX® combustion chamber and fire tubes, helically coiled, single-pass, 100% submerged
- Temperature and pressure relief valve
- Fiberglass insulation
- 100% recycled, polyethylene jacket
- Drain valve

BURNER, OPERATING and SAFETY CONTROLS

- Pre-mix surface burner with VFD modulation and proportional gas/air control (≥ 500 MBH)
- UL and FM compliant gas train
- Programmable electronic operating control with digital temperature display embedded with Modbus RTU protocol
- Visual indication of modulation rate
- Electronic ignition control with pre-purge
- Manual-reset high limit control
- Electronic low-water cutoff
- Audible and visual alarm on any failure with contacts for remote notification
- Relay and proving contact for air louvers

CODES & STANDARDS

- Intertek /ETL listed to U.S. and Canadian standards
- Intertek /ELT listed for PVC or Polypropylene venting material, NSF-5, zero-clearance installation and low-lead compliance.
- ASHRAE 90.1 compliant

OPTIONAL EQUIPMENT

- CSD-1 controls (500 to 800 MBH)
- LP gas operation
- Condensate neutralization system
- Modbus cable for network communication
- Bacnet or Lonworks protocol gateways

Conquest™ CONDENSING WATER HEATER

AquaPLEX® Storage Tank and Heat Exchanger (unlined duplex alloy) • 130 Gallon Tank

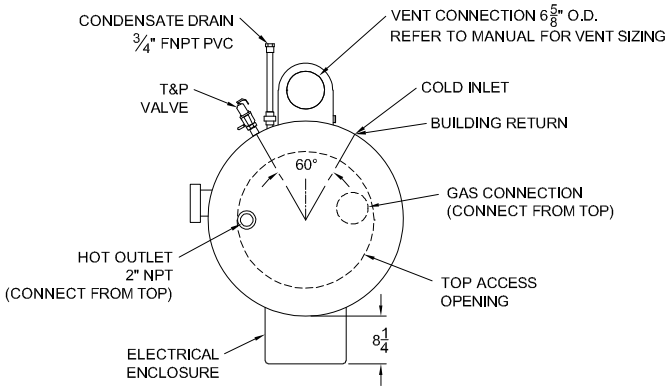
MODEL ▼	INPUT BTU	Modulating	RECOVERY GPH ①		GAS CONNECTION NPT	VENT DIAMETER (ETL listed for longer vents with larger dia.)	OPERATING Weight (lbs)
			40°F to 120°F	40°F to 140°F			
40 L 130A-GCL	399,000	No	575	460	3/4	4" @ 80 eq. ft.	1800
50 L 130A-GCML	500,000	Yes	720	576	1	6" @ 100 eq. ft.	
60 L 130A-GCML	600,000	Yes	864	691	1	6" @ 100 eq. ft.	
70 L 130A-GCML	700,000	Yes	998	798	1	6" @ 100 eq. ft.	
80 L 130A-GCML	800,000	Yes	1128	903	1	6" @ 100 eq. ft.	

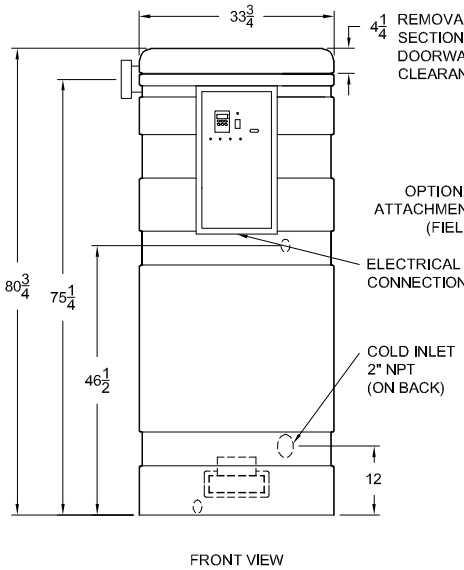
① Recovery efficiency based upon DOE 10 CFR 431.

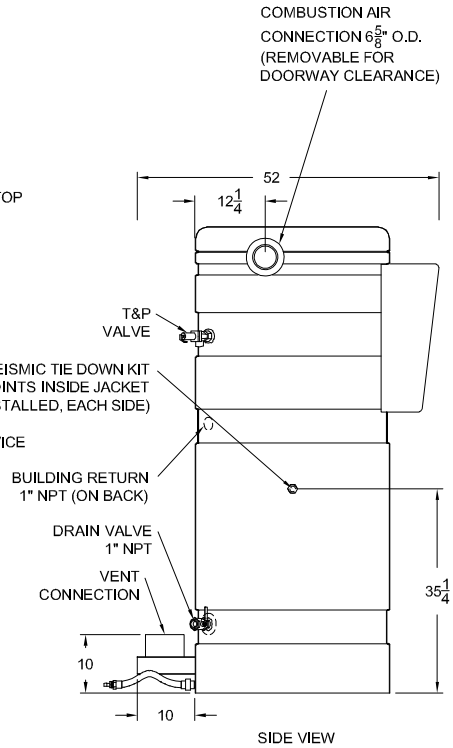
Dimensions are in inches unless otherwise indicated.

For standard and optional equipment, refer to form PV 8293.

Empty weight is 680 pounds and shipping weight is 980 pounds (all models)







Standard Electrical Service

120VAC, 1Ø, 60 Hz.
All models < 11 amps.

Venting

Use a Category IV PVC, CPVC or ETL, UL, ULC or CSA listed stainless steel or Polypropylene vent, minimum vent length 5 eq. feet, maximum vent length in equivalent feet varies by model number and vent diameter. Do not size vent based only upon connection diameter at the appliance. Refer to installation manual for sizing requirements.

Inlet Combustion Air

Up to100 eq. ft. using 6" PVC or galvanized vent pipe. Longer lengths, ETL listed with larger diameters, refer to Installation manual.

Gas Pressure - Natural

Minimum inlet flow pressure 3.5" W.C.
Maximum static pressure 14" W.C.
For LP gas, refer to installation manual.

Minimum Clearance from Combustibles

Zero clearance from sides and rear, 24" from front, 15" from top. Can be installed directly on a combustible floor.

Recommended Service Clearances

18" from all sides.

Emissions

All models < 20 ppm NOx.

Intertek Intertek LOW LEAD COMPLIANT HLW

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