TURBOPOWER® 96

Condensing Water Heater

500 • 750 • 1000 • 1300 and 1600 MBH Models
250 to 1500 Gallon Tanks

15-YEAR FULL TANK WARRANTY
5-YEAR FULL HEAT EXCHANGER WARRANTY

UP TO 97.5% THERMAL EFFICIENCY AT FULL RATE FROM 40°F TO 140°F

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

TOUCH-SCREEN OPERATING CONTROL WITH PLAIN-TEXT DIAGNOSTICS

AquaPLEX®
ENGINEERED DUPLEX ALLOY

No tank linings. No anode rods.
Better than 304L and 316L in potable water.

Intertek
HLW

Intertek
NSF 372 lead-free

ASHRAE 90.1 compliant
SCAQMD compliant

PVI®
A WATTS Brand

TURBOPOWER® 96

Condensing Water Heater

TURBOPOWER 96 is a free-standing-storage water heater utilizing a 2-pass fire tube heat exchanger and a secondary economizer to achieve thermal efficiency as high as 97.5% at full firing rate. The primary heat exchanger mounts to the tank by a bolted flange, making it removable to allow the exchanger and tank to be fully accessed if needed. Based on the original 35-year-old, highly reliable, TURBOPOWER concept, the new heater incorporates unmatched corrosion technology, a proven combustion system and the latest in touch-screen, remotely accessible operating controls.

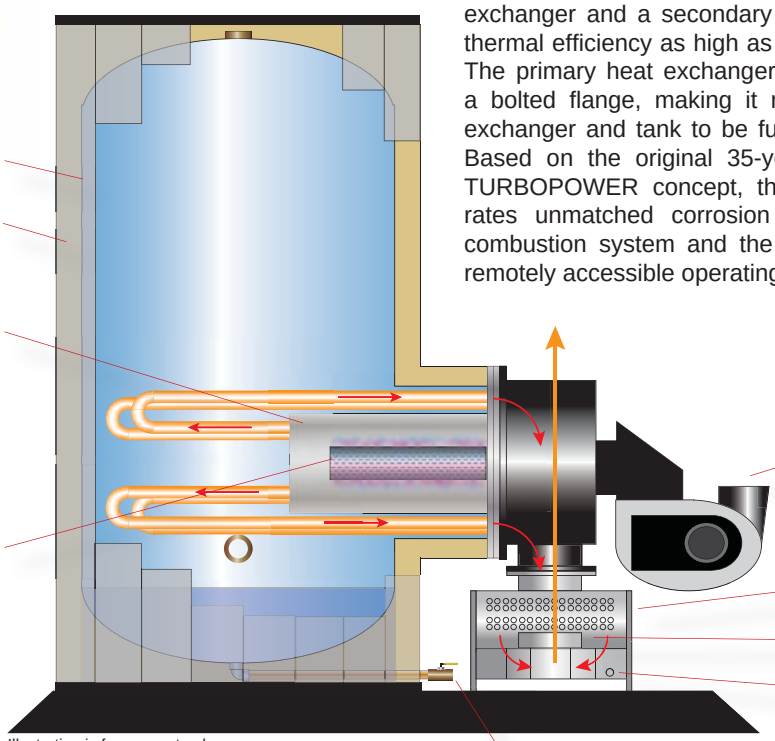
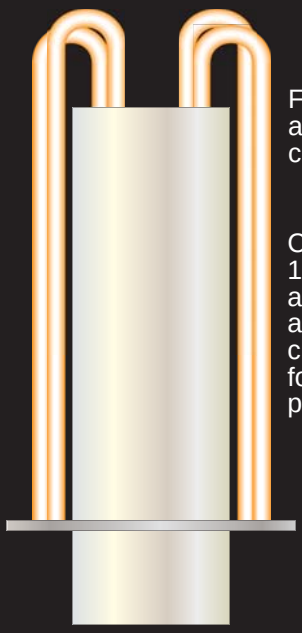


Illustration is for concept only and is not an engineering drawing.

Heat exchanger features AquaPLEX combustion chamber and tube sheets and copper fire tubes.

AquaPLEX® ENGINEERED DUPLEX ALLOY



Fire tubes are solid copper.

Chamber is 100% AquaPLEX and needs no additional cladding or coating for corrosion protection.

The TURBOPOWER 96 heat exchanger consists of front and rear tube sheets welded to a cylindrical combustion chamber. For ultimate precision, the duplex stainless steel assembly is welded by robot utilizing synergic pulse technology.

After the exchanger is welded, it is immersion pickle-passivated. The assembly is completed by mechanically expanding u-bend copper tubes into the front and rear tube sheets. The exchanger is then pressure tested at 225 psi and ASME stamped for 150 psi working pressure.

10-Year Heat Exchanger Warranty

A Tank Material So Good, that Linings are Not Required

AquaPLEX® - duplex stainless steel

The storage tank on TURBOPOWER 96 water heaters is fabricated entirely from AquaPLEX duplex stainless steel. This is a blended alloy of 300-series and 400-series stainless that captures the benefits of both materials.

The AquaPLEX tank is fully pickle-passivated after complete fabrication and is naturally immune to corrosion in potable water regardless of temperature. As a result, AquaPLEX requires no supplemental tank lining and no anode rods, whether sacrificial or impressed current. Because corrosion is not possible, there is simply nothing for an anode rod to do.

Compared to 316L or 304L stainless steel, AquaPLEX is better suited for use with potable water due to its resistance to chloride stress corrosion cracking which can affect 300-series stainless steels if dissolved salts are in the water supply. AquaPLEX is more resistant to chloride corrosion due to its duplex grain structure, a feature not found in 300-series stainless steels.

Comparison of AquaPLEX with Glass Tank Linings (porcelain enamel) and Thermosetting Epoxy Polymers

	Porosity	Anodes Required?	Suffers at High Temperature?	Complete Waterside Coverage and Protection	Standard Full Warranty
AquaPLEX	None	No	No	Yes	15 years
Glass Linings	Inherent	Yes	Yes, erodes	No. Exposure at the tank fittings and weld seams	3 or 5 years
Epoxy Polymers	Common	Yes	Yes, degrades	No. Exposure at the tank fittings	3 or 5 years

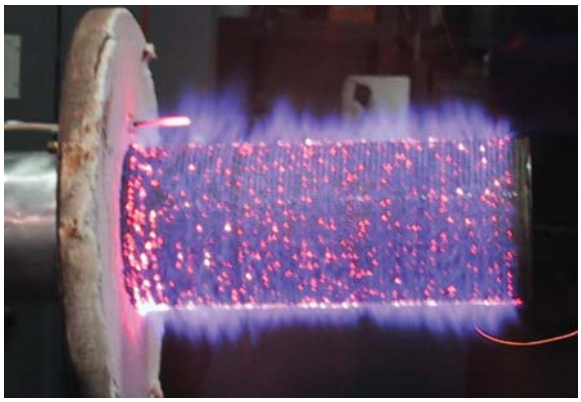
Corrosion-Proof Solid-Bronze Tank Fittings are Standard

The most obvious advantage of this design is an inherently corrosion-proof, non-ferrous fitting where other manufacturers use carbon steel fittings lined with glass or epoxy. Lined fittings provide only temporary corrosion protection as is evidenced by the requirement to use dielectric nipples when connecting their heaters to copper piping.

More than one-quarter million of these removable bronze fittings are in service!

Proven Combustion System

TURBOPOWER 96 combustion is provided by a negative pressure gas regulation system that automatically compensates for pressure variation to provide the proper air/gas mixture. The premix surface burner utilizes high-temperature, woven-metal-matrix and acheives NOx levels below 20 ppm at all inputs. The gas train components, the combustion control, blowers, operator interface and ignition system have been employed in hundreds of applications and have a proven track record of reliability.



SELECTED STANDARD EQUIPMENT and FEATURES

- 97.5% thermal efficiency at full fire from 40°F to 140°F
- < 20 ppm NOx, SCAQMD listed
- Equipped for direct combustion air connection
- Vents through PVC, CPVC or Polypropylene
- 25-year warranty for tank (15 years full, 10 years prorated) and 10 year warranty on heat exchanger (5 years full, 5 years prorated)

PRESSURE VESSEL and HEAT EXCHANGER

- AquaPLEX® tank (unlined duplex alloy)
- AquaPLEX® combustion chamber with copper fire tubes
- Stainless steel economizer
- Factory-assembled piping between tank and economizer including bronze pump, y-strainer, flow switch, and copper and bronze fittings (Viega Propress)
- Temperature and pressure relief valve
- Fiberglass insulation
- Coated steel jacket panels
- Bottom drain valve

BURNER, OPERATING and SAFETY CONTROLS

- Pre-mix surface burner and proportional gas/air control
- Electronic operating system with integrated ignition and operating controls
  - Programmable electronic operator with digital temperature readouts, adjustable from 70°F to 180°F
  - Touch-screen interface with plain text status and fault indication with fault history
  - Alarm with remote contacts
  - Manual-reset temperature limiting device
  - Modbus RTU connectable (RS-485)
- Electronic low-water cutoff with test switch
- Relay and proving contact for air louvers

CODES and STANDARDS

- ASME HLW stamped for 150 psi
- Intertek /ETL listed to ANSI Z21.10.3/CSA 4.3
- Intertek /ELT listed for PVC, CPVC, Polypropylene or AL294C stainless steel vent material and zero-clearance installation
- NSF/ANSI 372 compliant
- ASHRAE 90.1 compliant

Touch-Screen Operating Control

The TURBOPOWER 96 electronic operating control provides a plain-text user interface that indicates heater status, modulation rate, operating parameters, and fault status. The control is embedded with Modbus protocol for a serial connection to a building automation system. Gateways are available for BACnet and LonWorks.

The control includes a 15-event fault history that tracks operating safeties and hardware /software points for speed and accuracy in troubleshooting.

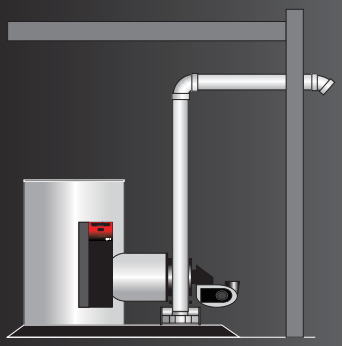
Multiple Positive-Pressure Venting Options

TURBOPOWER 96 is a category IV vented product listed for PVC, CPVC and Polypropylene materials.

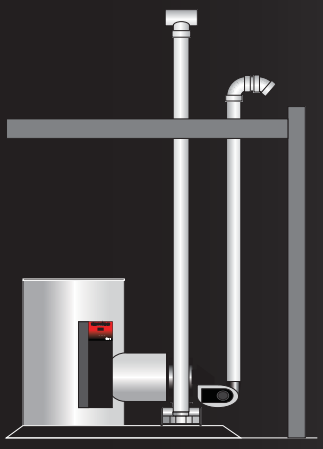
In addition, combined venting is available when designed by experienced venting engineers.

Conventional

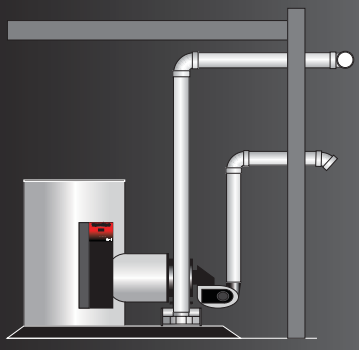
Room air with sidewall vent



Sealed combustion with roof terminations



Sealed combustion with sidewall terminations



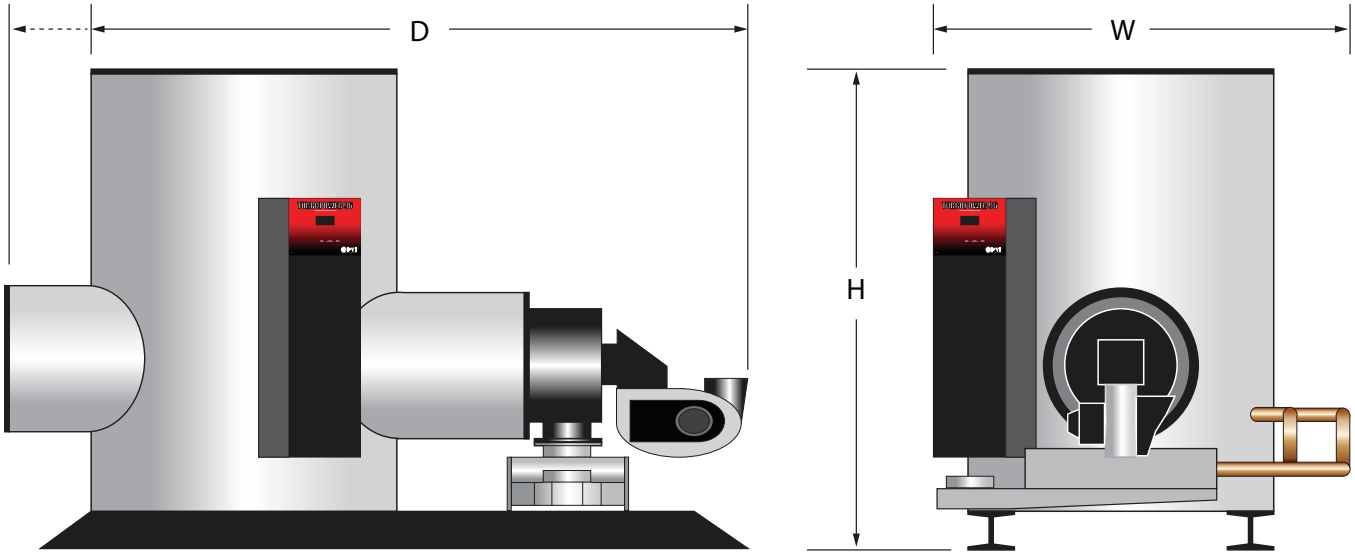
TURBOPOWER® 96

Condensing Water Heater

Rough-in Dimensions															
BTU Input (1000s)															
	500			750			1000			1300			1600		
Tank Size ▼	"W" Width	"D" Depth	"H" Height	"W" Width	"D" Depth	"H" Height	"W" Width	"D" Depth	"H" Height	"W" Width	"D" Depth	"H" Height	"W" Width	"D" Depth	"H" Height
250	64	86.5	67.5	64	93.5	67.5	64	93.5	67.5	64	120	67.5	64	120	67.5
300	64	86.5	80	64	93.5	80	64	93.5	80	64	120	80	64	120	80
400	64	86.5	91.5	64	93.5	91.5	64	93.5	91.5	64	120	91.5	64	120	91.5
500	64	97	82	64	98	82	64	98	82	64	119	82	64	119	82
600	64	97	94	64	98	94	64	98	94	64	119	94	64	119	94
750	71.5	107.5	86	71.5	108.5	86	71.5	108.5	86	71.5	129.5	86	71.5	129.5	86
900	71.5	107.5	98	71.5	108.5	98	71.5	108.5	98	71.5	129.5	98	71.5	129.5	98
1000	81	118	87	81	119	87	81	119	87	81	127.5	87	81	127.5	87
1250	81	118	99	81	119	99	81	119	99	81	127.5	99	81	127.5	99
1500	81	118	111	81	119	111	81	119	111	81	127.5	111	81	127.5	111

Input and Recovery			
Input Btu/h	GPH Recovery Rate (thermal efficiency)		Available Vertical SUPERTANK®
	70 to 140°F ①	40 to 140°F	
500,000	826 (96%)	587 (97.5%)	250 to 1500 gallons
750,000	1239 (96%)	881 (97.5%)	250 to 1500 gallons
1,000,000	1652 (96%)	1175 (97.5%)	250 to 1500 gallons
1,300,000	2148 (96%)	1527 (97.5%)	250 to 1500 gallons
1,600,000	2644 (96%)	1880 (97.5%)	250 to 1500 gallons

① Per DOE 10 CFR 431 testing requirements (ANSI Z21.10.3 @ 70°F to 140°F)



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