



# Residential / Commercial Gas Tankless Water Heaters

## Ultra Low-NOx Non-Condensing TANKLESS Water Heaters

Fully modulating, gas fired, tankless water heater with sealed combustion and power vented flue. Indoor and outdoor models available for residential and commercial applications. Supplies hot water to domestic hot water systems and can be used with water storage tanks, recirculation systems, and/or combined domestic & heating applications.

### FEATURES:

**FIELD CONVERTIBLE FROM NATURAL GAS TO PROPANE**

**COMPLIES WITH SCAQMD RULE 1146.2 AND OTHER AIR QUALITY MANAGEMENT DISTRICTS WITH SIMILAR NOX EMISSION REQUIREMENTS OF 14 NG/J OR 20 PPM**

**MAXIMUM FLOW RATES UP TO 10.0 GPM**

### Copper HEAT EXCHANGER

- 25x better heat transfer than stainless steel thus stabilizing outgoing water temperature quicker and reducing pressure drop across the heat exchanger

**INDOOR AND OUTDOOR MODELS AVAILABLE**

**OUTDOOR MODELS INCLUDE REMOTE CONTROL AS A STANDARD FEATURE**

**INDOOR MODELS INCLUDE A BUILT-IN TEMPERATURE CONTROLLER AND A FACTORY-INSTALLED POWER CORD AS STANDARD FEATURES**

**TK-510U-I AND TK-510U-E CAN BE USED IN BOTH RESIDENTIAL AND COMMERCIAL APPLICATIONS**

- Easy-Link up to 4 units (no additional parts or accessories needed)
- Multi-link up to 20 units

**COMPLIES WITH LEAD FREE STANDARDS**

### SAFETY FEATURES:

- Built-in Freeze Protection
- Manual Reset Hi Limit (Up to 194°F)
- Overheat Cutoff Fuse
- Inlet and Outlet Thermistors for Constant Temperature Monitoring
- Air Fuel Ratio Rod
- Flame Sensor

### VENTING AND COMBUSTION

- 4" Category III Stainless Steel
- 3" Combustion Air Intake
- 60' Max Length, 6 Elbows max (90° elbows = 5' equivalent length)
- Power Vent or Power Direct Vent
- Vertical or Horizontal Installation
- Electronic Ignition - No Pilot Light

### OPTIONAL ACCESSORIES

- Complete Line of Stainless Steel Venting
- Recess Box (outdoor models)
- Pipe Cover
- Isolation Valve Kit
- Backflow Preventer
- Concentric Termination Kits

### WARRANTY

- 1.5-year limited warranty on heat exchanger in residential applications
- 5-year limited warranty on heat exchanger in commercial applications
- 5-year limited warranty on all parts

### INDOOR MODELS

TK-110U-I, TK-310U-I, TK-510U-I



### OUTDOOR MODELS

TK-110U-E, TK-310U-E, TK-510U-E



(510U models only)

ANSI Z21.10.3



MODEL NUMBER	TYPE*	GAS CONSUMPTION INPUT		INLET GAS PRESSURE**		UEF	MAXIMUM GPM***
		MINIMUM BTU/H	MAXIMUM BTU/H	MINIMUM IN. W.C.	MAXIMUM IN. W.C.		
<b>INDOOR MODELS</b>							
TK-110U-I 200	Natural	15,000	140,000	4.0	10.5	0.81	6.6
TK-310U-I 200	Natural	15,000	190,000	4.0	10.5	0.81	8
TK-510U-I 200+	Natural	15,000	199,000	4.0	10.5	0.81	10
<b>OUTDOOR MODELS</b>							
TK-110U-E 200	Natural	15,000	140,000	4.0	10.5	0.81	6.6
TK-310U-E 200	Natural	15,000	190,000	4.0	10.5	0.81	8
TK-510U-E 200+	Natural	15,000	199,000	4.0	10.5	0.81	10

MODEL NUMBER	HOT/COLD CONNECTIONS	GAS CONNECTION	DIMENSIONS IN INCHES			APPROX SHIPPING WEIGHT (LBS)
			HEIGHT	WIDTH	DEPTH	
<b>INDOOR MODELS</b>						
TK-110U-I 200	3/4" NPT	3/4" NPT	20-1/2	13-3/4	10	39
TK-310U-I 200	3/4" NPT	3/4" NPT	20-1/2	13-3/4	10	39
TK-510U-I 200+	3/4" NPT	3/4" NPT	20-1/2	13-3/4	10	40
<b>OUTDOOR MODELS</b>						
TK-110U-E 200	3/4" NPT	3/4" NPT	20-1/2	13-3/4	9-1/2	39
TK-310U-E 200	3/4" NPT	3/4" NPT	20-1/2	13-3/4	9-1/2	39
TK-510U-E 200+	3/4" NPT	3/4" NPT	20-1/2	13-3/4	9-1/2	40

1.5-1.50 PSI water pressure. 40 PSI or above recommended for maximum flow.

\*Field gas convertible from natural gas to propane. Conversion kit is included with the heater.

\*\*For Propane, minimum inlet gas pressure is 8.0 in W.C. and maximum inlet gas pressure is 14.0 in W.C.

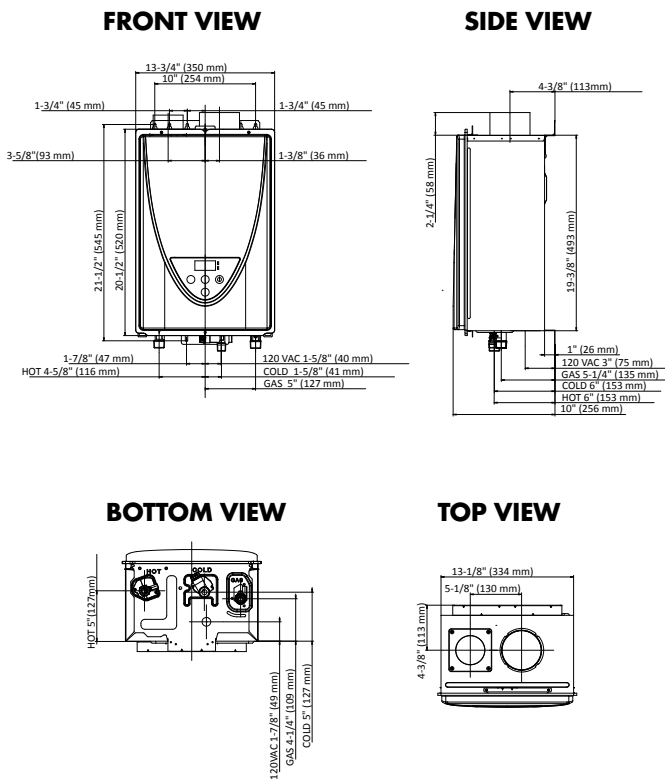
\*\*\*Current numbers based on factory testing; 0.5 GPM required for activation; 0.4 GPM required for continuous fire after initial ignition.

+Suitable for commercial application.

Indoor models are certified from sea level to 10,100 ft. elevation. Outdoor models are certified from sea level to 6,000 ft. elevation.

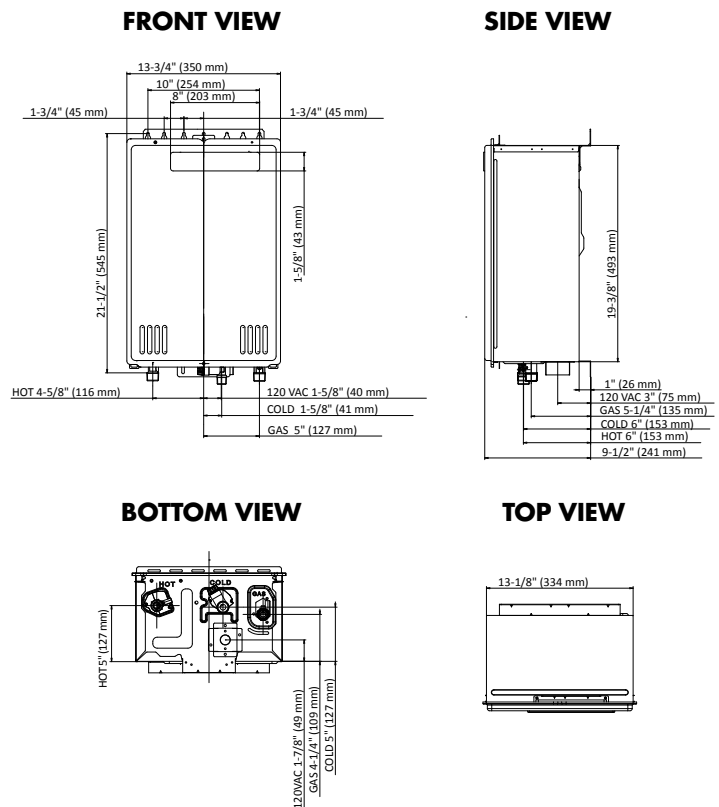
### INDOOR MODEL DIMENSIONS

**CLEARANCES:** TOP 12", BOTTOM 12", FRONT 4", BACK 1", SIDES 3"



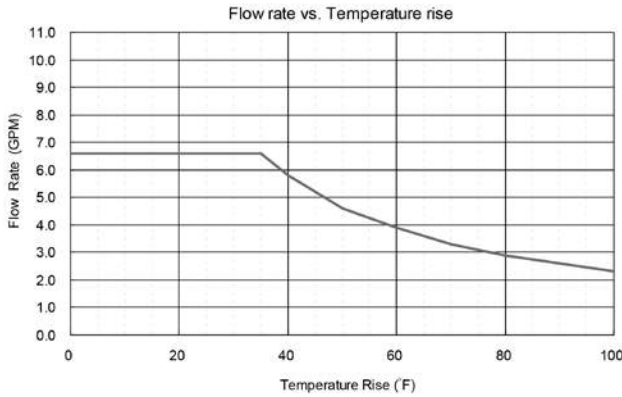
### OUTDOOR MODEL DIMENSIONS

**CLEARANCES:** TOP 36", BOTTOM 12", FRONT 24", BACK 1", SIDES 3"

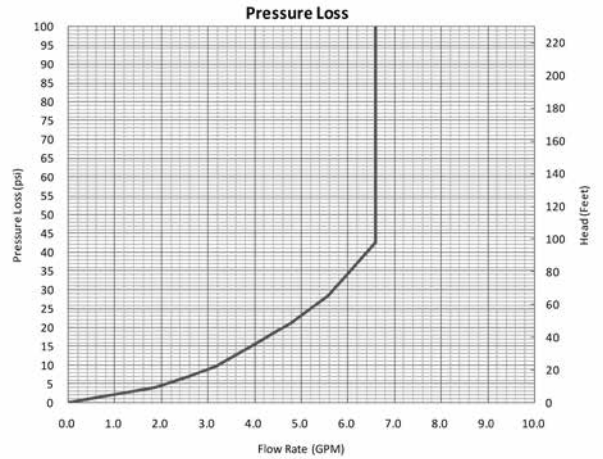


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## TK-110U MODELS

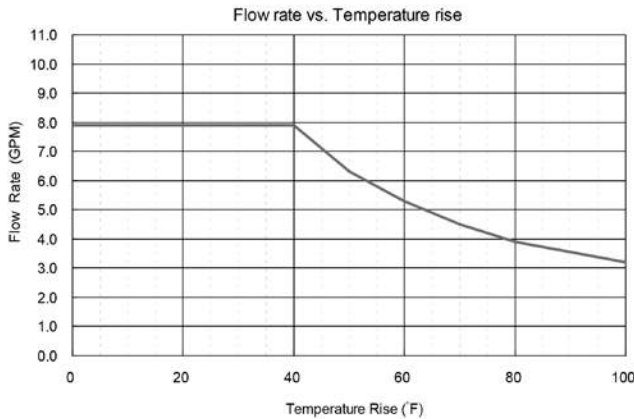


Maximum flow rate is limited to 6.6 GPM.

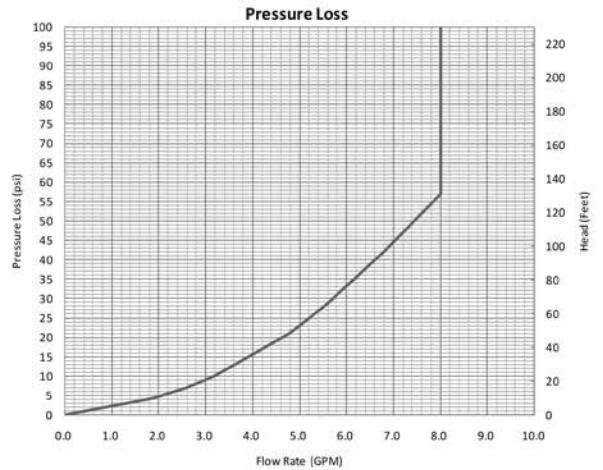


Flow rate is limited to 6.6 GPM.

## TK-310U MODELS

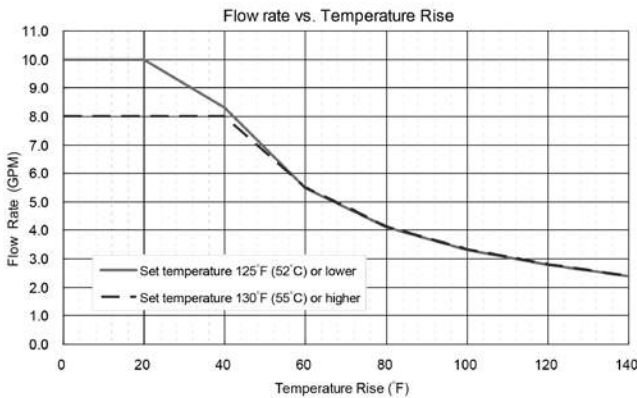


Flow rate is limited to 8.0 GPM.

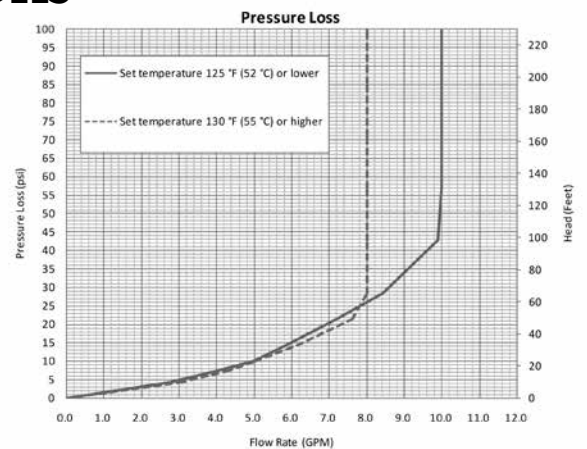


Flow rate is limited to 8.0 GPM.

## TK-510U MODELS



When the set temperature is 130 °F (55 °C) or higher, maximum flow rate is limited to 8.0 GPM.



When the set temperature is 125 °F (52 °C) or higher, maximum flow rate is limited to 8.0 GPM.



## Residential / Commercial Gas Tankless Water Heaters

### **SUGGESTED SPECIFICATIONS FOR THE TK-510U-I or TK-510U-E**

The fully modulating, on-demand, gas fired tankless water heater shall be Takagi Tankless Water Heater model TK-510U-I 200 or TK-510U-E 200, having a maximum input rating of 199,000 Btu/h and available in natural gas (NG). For use with propane (LP) gas, the heater shall be field converted using the factory supplied conversion kit. The conversion kit shall be supplied with the heater. The heater shall have  $\frac{3}{4}$  in. male NPT water and gas connections. The inlet gas supply pressures shall be 4.0 in. WC (min.) up to 10.5 in. WC (max) for NG and 8.0 in. WC (min) up to 14 in. WC (max) for LP. The heater shall be supplied with an integrated controller or a temperature remote, 100209924, that can be installed up to 400 ft. from the heater using 20 gauge (minimum) control wire. The integrated controller or temperature remote shall provide diagnostic information, fault history, and heater set temperature. The heater shall operate using 120 V / 60 Hz power source. The indoor heater will incorporate a factory installed power cord.

The indoor heater shall be vented with 4" diameter Category III vent pipe with a length not to exceed 60 ft. (equivalent), terminating horizontally or vertically. The indoor heater can be direct vented using 3" diameter intake air pipe. The intake pipe may use material such as PVC (solid core), ABS, aluminum, or Category III pipe and cannot exceed 60 ft. (equivalent) length. The outdoor heater shall be constructed with an integral exhaust vent on the front of the heater.

The water heater shall use a commercial grade copper alloy, fin tube heat exchanger with quick release brass or bronze waterways. The heater shall be controlled by an onboard solid-state printed circuit board which uses the following factory installed components: thermistors to monitor inlet and outlet water temperature; a flow sensor to measure flow rate; a flame sensor to monitor combustion; an Air-Fuel Ratio Rod to measure and adjust operation in order to maintain optimal combustion efficiency. The heater also consists of inline fusing and surge absorbers for electrical surge protection, an electronic spark igniter, aluminized stainless steel burners, a hi-limit temperature switch, modulating gas valve, an overheat cutoff fuse, ceramic heating blocks to protect the heat exchanger and water piping. The indoor heater shall incorporate auto-fire system for additional freeze protection.

The heater can manifold to Easy-Link up to 4 heaters to provide additional capacity. The Easy-Link controls shall be built onto the onboard solid-state printed circuit board and does not require external controls. The linking control wire shall be supplied with the heater. A Multi-Unit controller, 100112691, can manifold 5-20 heaters. The Easy-Link and Multi-Unit Controller shall modulate the system for the most efficient performance. The Easy-Link and Multi-Unit Controller shall rotate the priority heater every 12 hours of operation time or 100 starts for balanced duty/cycle operation.

The heater shall be design certified by CSA according to ANSI Z21.10.3, approved for sale in the United States, meets the energy efficiency requirements of the U. S. Department of Energy and ASHRAE 90.1, complies with SCAQMD Rule 1146.2 and other air quality districts with similar requirements for low NOx emissions of 14 ng/J or 20 ppm, and shall be Certified by NSF to NSF/ANSI Standard 5.