

High Efficiency Gas Boilers and Water Heaters



Triangle Tube's Keystone Series Condensing Boilers and Water Heaters are designed for large residential and light commercial applications.

The stainless steel heat exchanger and burner provides high efficiency, low emissions, and high turndown to minimize short cycling. With maximum inputs of 850 MBH for boilers and 500 MBH for water heaters, the Keystone series can meet most needs with a single unit.

For larger requirements the advanced control allows units to be joined and function with parallel modulation for maximum efficiency.

Features

- » Condensing Boilers from 399 to 850 MBH
- » Condensing Water Heaters from 199 to 500 MBH
- » High Efficiency with Thermal Efficiencies up to 97%
- » Compact Footprint
- » Modulating with 5 to 1 Turndown
- » Advanced Cascade Capability
- » Building Automation System Interface
- » Meets 2012 SCAQMD NOx Emissions Requirements
- » LP Conversion Kit

500 - 850 MBH
Boilers are
CSD-1 Compliant
STANDARD

Technical Specifications



	Model	Connections Size (NPT)		Air Inlet Diameter	Vent Diameter	Dimensions D x W x H	Weight Lbs
		Water	Gas				
Water Heaters	KW 199	1 1/4"	1/2"	3"	3"	26"x 24 1/2" x 38"	246
	KW 285	2"	3/4"	4"	4"	26"x 24 1/2" x 38"	276
	KW 399	2"	3/4"	4"	4"	31"x 24 1/2" x 38"	346
	KW 500	2"	1"	4"	4"	31"x 24 1/2" x 38"	381
Boilers	KS 399	1 1/4"	3/4"	4 "	4"	31"x 24 1/2" x 38"	346
	KS 500	1 1/2"	1"	4 "	4"	37"x 24 1/2" x 38"	381
	KS 600	1 1/2"	1"	4 "	4"	38"x 24 1/2" x 38"	394
	KS 750	2"	1 1/2"	4 "	6"	51"x 24 1/2" x 38"	469
	KS 850	2"	1 1/2"	4 "	6"	55"x 24 1/2" x 38"	502

	Model	Input BTU/h	Output BTU/h	Thermal Efficiency %	Combustion Efficiency %
Water Heaters	KW 199	199,000	193,030	97.0	N/A
	KW 285	285,000	272,460	95.6	N/A
	KW 399	399,000	374,237	96.3	N/A
	KW 500	500,000	483,500	96.7	N/A
Boilers	KS 399	399,000	375,000	96.5	96.5
	KS 500	500,000	475,000	95.0	95.0
	KS 600	600,000	572,000	95.3	96.0
	KS 750	750,000	724,000	96.6	96.6
	KS 850	850,000	813,000	95.7	95.7

Standard Equipment & features

- Modulation down to 20% of full fire (5:1 turndown)
- Sealed combustion chamber
- Pre-mix stainless steel burner
- Burner site glass
- Low NOx system exceeds the most stringent regulations for air quality - 10 ppm NOx
- Horizontal or vertical direct vent
- Vent and air pipe lengths of up to 100 equivalent feet (each)
- Built-in condensate trap
- Vent temperature cutoff
- Direct spark ignition system
- Stainless steel heat exchanger with welded construction
- ASME "H" stamp
- 75 psi (517 kPa) ASME rated pressure relief valve for the KS 399, KS 500, KS 600, KS 750 and KS 850
- 125 psi ASME rated pressure relief valve (for the KW 199, KW 285, KW 399 and KW500)
- Water flow switch (KW 399 only)
- Temperature & pressure gauge
- Drain valve
- Multiple pump control for boiler pump, system pump and indirect domestic water pump, each with delay
- Electronic PID modulating control stages up to eight boilers
- Large user-interface and display
- Alarm output
- Accepts (4-20mA or 0-10V) modulation control
- Manual reset high limit
- Zero clearance to combustibles
- 10 year limited warranty (for the KS 399, KS 500, KS 600,KS 750 and KS 850) or 5 year limited warranty (for the KW 199, KW 285, KW 399 and KW 500)
- Floor-standing appliance
- All connections are on top of the unit
- Easy to service
- Works with BAS
- Water Heaters Meet AB1953 standard
- 500 - 850 Boilers are CSD-1 Compliant

Boiler Specific features

- Indirect water heater priority
- Sensor for indirect domestic water heater
- Outdoor reset
- Outdoor air temperature sensor



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