



KN SERIES PLUS⁺ Condensing Boilers



Meeting the Demands
of Tomorrow's Market...
Today



KN SERIES PLUS+

The KN-Series Legacy

In today's commercial boiler market, efficiency, durability and the environment are everything. The KN-Series has stood the test of time and has outperformed the competition in all facets.

A staple in the condensing boiler market for over 15 years and over 26,000 installations the KN-Series uses the durability and heat retention capabilities of cast-iron heat exchangers with state-of-the-art air/fuel delivery systems and the HeatNet control platform to outpace the competition keeping KN at the head of the class.

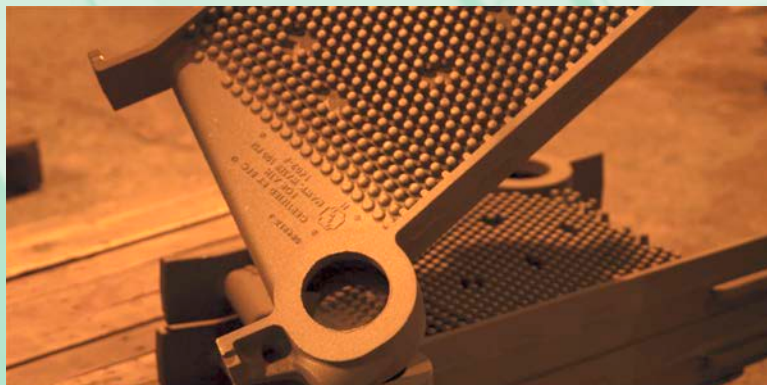
Rugged and long lasting, cast-iron is the ideal material for condensing boiler systems. KN-Series boilers are built to last the long haul and backed by the industry's best heat exchanger warranty. All heat exchangers carry a **25-Year** non-prorated warranty* covering materials and workmanship against failure due to condensate corrosion and thermal shock.

*See KN-Series written Warranty for specific requirements.

Facts:

- Industry's best 25-year heat exchanger warranty.
- KN-Series boilers have an installation base of over 26,000 units since its introduction.
- KN-Series boilers have not had one documented failure associated with corrosion.
- Cast-Iron boilers are an acceptable material for use in condensing boiler applications by ASHRAE.
- Cast-iron has been the material of choice in the boiler industry for over 150 years.

Cast-Iron Heat Exchangers:





American-Made

From raw materials to the state-of-the-art digital control system, the complete line of the KN-Series products is proudly manufactured in Boyertown, Pennsylvania. Utilizing decades of foundry and manufacturing expertise, the KN-Series boilers are cast, machined, assembled, and tested to the tightest standards possible – resulting in a finished product that is all-American in terms of innovation, reliability and craftsmanship.

The Best Just Got Better

The engineers at Mestek have taken the KN-Series and raised the bar even further with the KN-Series Plus.

Built off the foundation that made the KN-Series a market leader the KN-Series Plus incorporates all of the class leading features of the KN-Series with increased efficiencies making it not only the most durable boiler on the market but one of the most energy efficient.

The KN-Series Plus utilizes a newly designed hydrophobic coated finned stainless steel heat exchanger to work in concert with the existing high efficiency cast-iron heat exchanger resulting in the most versatile high performance boiler in the world.

By using finned stainless steel tubes the KN-Series Plus has increased heat transfer area to maximize efficiency in a very cost-effective manner all while keeping the same small footprint as the original KN-Series boiler!

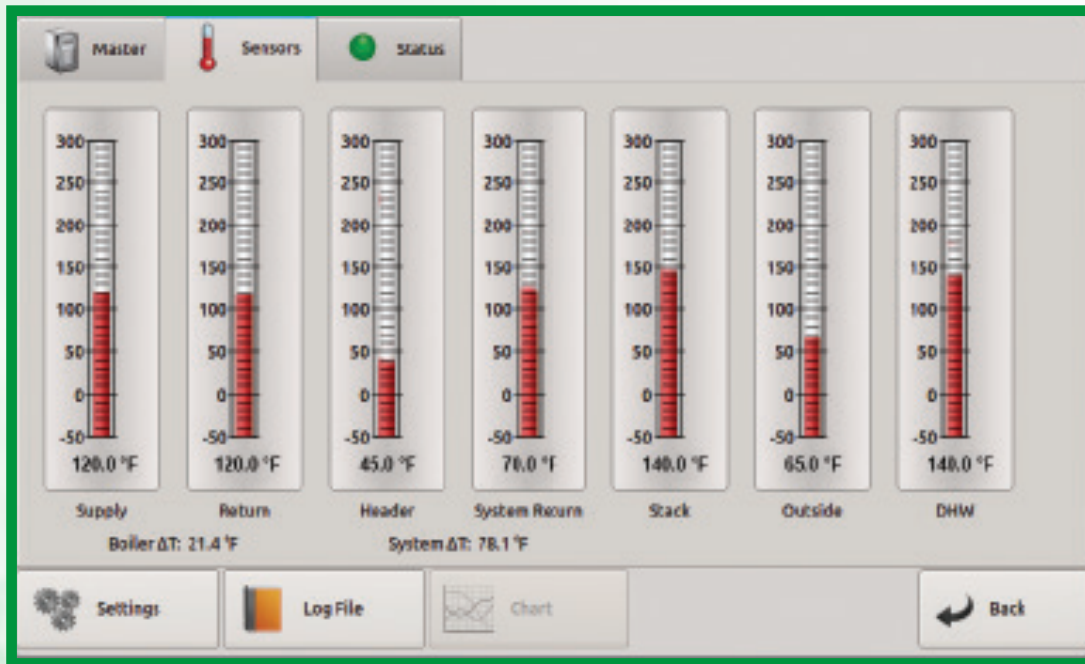
- Up to 4x more surface – Increased Efficiencies
- Hydrophobic coated stainless steel heat exchanger for increased corrosion resistance
- Full variable flow heat exchangers – No Cv penalties
- PVC & polypropylene approved venting
- Small footprint



Features and Benefits:

- Up to 99% efficient
- Cast-Iron/Hydrophobic Stainless Steel Heat Exchangers
- Variable Volume
- 25-Year Heat Exchanger Warranty
- Tru-flow Air/Fuel Delivery System
- Full Modulation
- 20 – 100° Delta T's
- Vent up to 100'
- Fits through standard doorway
- NG/LP/Dual Fuel
- HeatNet Control Platform
- 7" LCD Touch Screen Display
- HeatNet Online Monitoring (optional)

HeatNet[®] 3.0 & HeatNet Online Remote Monitoring



Every KN-Series boiler is integrated with Heatnet 3.0 - an innovative, digital Boiler Management System that provides consistency and feedback through digital communication. By continuously monitoring several system characteristics, HeatNet 3.0 modulates boiler-firing rates to maximize turndown ratios and maintain peak efficiency - no matter the load.

HeatNet 3.0 doesn't just benefit stand-alone KN-Series boilers; it is a valuable and cost-saving tool in operating a multi-boiler Master/Member network of up to 16 boilers. By functioning as a boiler management system, HeatNet 3.0 can incorporate a mixture of condensing boilers and non-condensing boilers to eliminate costly third-party, wall-mounted boiler control platforms.

- Digital touch screen programming
- Lead/lag cascade (16 units)
- Adaptive modulation
- Circular pump/VFD/valve control
- BMS integration
- Freeze protection and Delta T monitoring
- Hybrid/base lead capacity
- Priority boiler control
- Domestic hot water communication
- Web-based remote monitoring/dashboard
- Diagnostics and troubleshooting
- Set points
- Exclusive remote monitoring capability with HeatNet Online



HeatNet Online

HeatNet Online is the perfect alternative to expensive BMS programs. Built specifically for the KN-Series family of boilers HeatNet Online is the most cost effective solution to maximize the performance of your facilities investment.

A secure web-based remote monitoring control platform HeatNet Online continuously monitors, records and graphs input and output trending data for quick visualization of overall boiler system performance. HeatNet Online allows users to see live system performance 24/7/365 to insure peak efficiency while preventing costly failures by allowing proactive responses to systems potentially operating in unsafe conditions. Users can see system performance including but not limited to temperature settings, system cycles and overall boiler performance.

Save Money:

Running your boiler system at peak efficiency is not only important to your organization but it is critical for the environment. By having an easy to understand remote monitoring platform you can pinpoint problems and resolve issues quickly saving time and money while preventing critical system failures resulting in decreased downtime and premium performance.

Alerts & Security:

Custom email alerts are sent to pertinent personnel including the boiler applications team at Advanced Thermal Hydronics to aid in technical assistance when necessary.

HeatNet Online is a secure system using either a wired network or a wireless cellular network. Outbound data only is transmitted through HeatNet Online eliminating security risks. The team at Advanced Thermal Hydronics is available for consultation regarding any security questions to insure all of your IT department's policies and procedures stay protected.

Features & Benefits:

- 24/7/365 online boiler system monitoring
- Customized email notification
- Prevent boiler system failure/down time
- Increase boiler performance
- Remote access from any mobile device
- Secure outbound only data transmission
- Wired or wireless cellular network capable
- Communication with any operating system (IOS/Android/Windows)

Green Performance & Construction

In today's world, environmental preservation is of the utmost importance.

We take this very serious here at ATH and the entire KN-Series line exemplifies our dedication to quality products, performance and the environment.

The choice for all of today's GREEN initiatives including LEED projects, the KN-Series Plus meets and exceeds all Federal and State requirements for efficiency and emissions.

Not only does the KN-Series Plus burn clean it is also manufactured using over 90% post-consumer recycled materials in the primary heat exchanger making them environmentally sustainable and recyclable themselves.

Certified Performance

KN-Series Plus boilers meet or exceed all Federal and State requirements for thermal efficiency and rebate incentives. Units are AHRI Certified at up to +96% with maximum efficiencies of 99% and low NOx certified with a reduced carbon footprint.

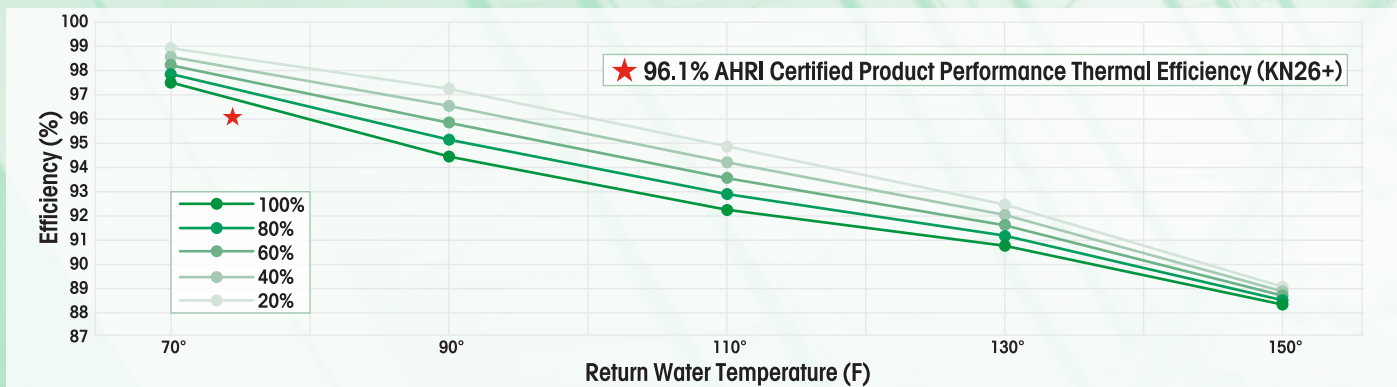
- +96% AHRI Certified Efficiency
- 99% Maximum Efficiency
- Low NOx & CO2 (SCAQMD Stds)

Post-Consumer Recycled Content Used:

- 90% Cast-Iron Heat Exchanger
- 80% Complete Boiler Assembly
- 40% Plastic Componentry



KN-Series Plus Thermal Efficiency



KN-Series Plus Boiler Product Summary

| Boiler Ratings and Capacities | KN6+ | KN10+ | KN16+ | KN20+ | KN26+ | KN30+ | KN40+ |
|--|-------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Input BTU/HR | 600,000 | 1,000,000 | 1,600,000 | 2,000,000 | 2,600,000 | 3,000,000 | 4,000,000 |
| Output BTU/HR (High Fire) | 576,600 | 952,000 | 1,537,600 | 1,904,000 | 2,498,600 | 2,856,000 | 3,808,000 |
| AHRI Thermal Efficiency (%) | 96.1 | 95.2 | 96.1 | 95.2 | 96.1 | 95.2 | 95.2 |
| AHRI Combustion Efficiency (%) | 96.3 | 95.4 | 96.3 | 95.4 | 96.3 | 95.4 | 95.4 |
| Turn Down | 5:1 | 5:1 | 5:1 | 5:1 | 5:1 | 5:1 | 5:1 |
| Boiler HP | 17 | 28 | 46 | 57 | 75 | 85 | 114 |
| Fuel Type | NG/Prop | NG/Prop | NG/Prop | NG/Prop | NG/Prop | NG/Prop | NG/Prop |
| Category | CAT II/IV | CAT II/IV | CAT II/IV | CAT II/IV | CAT II/IV | CAT II/IV | CAT II/IV |
| Water Volume (gal) | 10.5 | 14.5 | 21 | 24.9 | 31.9 | 35.9 | 47.1 |
| Design Data - (Max working Press) | 100 psig | 100 psig | 100 psig | 100 psig | 100 psig | 100 psig | 100 psig |
| ASME Sect IV Fireside Htg Surface (sq-ft) | 248.5 | 261.8 | 433.5 | 446.7 | 542.4 | 555.7 | 694.3 |
| ASME Sect IV Waterside Htg Surface (sq-ft) | 30.95 | 45.17 | 72.91 | 87.13 | 111.7 | 125.9 | 165.9 |
| Cv GPM (1PSIG) | 62 | 100 | 140 | 161 | 222 | 246 | 271 |
| Electrical (Standard) | 120V - 1ph | 120V - 1ph | 230V - 1ph | 230V - 1ph | 230V - 3ph | 230V - 3ph | 230V - 3ph |
| Electrical (Optional - 3ph) | N/A | N/A | 208V-575V | 208-575V | 208-575V | 208-575V | 208-575V |
| Boiler FLA (amps) - Standard Voltage | 13.9 | 13.9 | 13.9 | 13.9 | 11.3 | 11.3 | 17 |
| Min. Gas Pressure (w.c.) | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Max. Gas Pressure (w.c.) | 14 | 14 | 14 | 14 | 14 | 14 | 14 |
| Boiler Temp Rise/Press Drop | KN6+ | KN10+ | KN16+ | KN20+ | KN26+ | KN30+ | KN40+ |
| Max. Flow Rate (gpm) @ 20 delta-t (f) | 57.7 | 95.2 | 153.8 | 190.5 | 250.0 | 285.7 | 381.0 |
| Min. Flow Rate (gpm) @ 100 delta-t (f) | 11.5 | 19.0 | 30.8 | 38.1 | 50.0 | 57.1 | 76.2 |
| 40 deg f - delta t (Flow Rate, gpm) | 28.8 | 47.6 | 76.9 | 95.2 | 125.0 | 142.9 | 190.5 |
| Pressure drop (ft-hd) | 0.50 | 0.52 | 0.70 | 0.81 | 0.73 | 0.78 | 1.14 |
| 60 deg f - delta t (Flow Rate, gpm) | 19.2 | 31.7 | 51.3 | 63.5 | 83.3 | 95.2 | 127.0 |
| Pressure drop (ft-hd) | 0.22 | 0.23 | 0.31 | 0.36 | 0.33 | 0.35 | 0.51 |
| 80 deg f - delta t (Flow Rate, gpm) | 14.4 | 23.8 | 38.5 | 47.6 | 62.5 | 71.4 | 95.2 |
| Pressure drop (ft-hd) | 0.12 | 0.13 | 0.17 | 0.20 | 0.18 | 0.19 | 0.28 |
| Max Vent (Equiv. ft) | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Max Combustion Air (Equiv. ft) | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Boiler Trim | KN6+ | KN10+ | KN16+ | KN20+ | KN26+ | KN30+ | KN40+ |
| Number of Relief Valves | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Relief Valve Pressure Rating (PSI) | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Inlet Water Connection (in) | 3 | 3 | 3 | 3 | 4 | 4 | 4 |
| Outlet Water Connection (in) | 3 | 3 | 3 | 3 | 4 | 4 | 4 |
| Gas Connection (in) | 1 | 1 | 1 1/2 | 1 1/2 | 1 1/2 | 1 1/2 | 2 |
| Vent Outlet Connection (in) | 5 | 5 | 6 | 6 | 8 | 8 | 10 |
| Standard Vent Material | SS | SS | SS | SS | SS | SS | SS |
| Optional Non Metallic Vent Material | PVC/PP | PVC/PP | PVC/PP | PVC/PP | PVC/PP | PVC/PP | PVC/PP |
| Combustion Air Connection | 6 | 6 | 8 | 8 | 8 | 8 | 12 |
| Dimensions | KN6+ | KN10+ | KN16+ | KN20+ | KN26+ | KN30+ | KN40+ |
| Height (in) | 74 5/8 | 74 5/8 | 74 5/8 | 74 15/32 | 74 15/32 | 74 15/32 | 73 9/16 |
| Width (in) | 32 1/8 | 32 1/8 | 33 1/16 | 33 | 33 | 33 | 33 5/16 |
| Depth (in) | 68 7/16 | 75 23/32 | 86 15/32 | 93 19/32 | 111 3/8 | 118 3/4 | 139 1/2 |
| Operating Weight (lbs.) | 1485/674 | 1850/839 | 2690/1220 | 3040/1379 | 3840/1742 | 4250/1928 | 5120/2322 |
| Shipping Weight (lbs.) | 1400 | 1750 | 2520 | 2840 | 3580 | 3960 | 4735 |
| Clearance Service/Combustible | KN6+ | KN10+ | KN16+ | KN20+ | KN26+ | KN30+ | KN40+ |
| Front (in) | 36/6 | 36/6 | 36/6 | 36/6 | 36/6 | 36/6 | 36/6 |
| Rear (in) | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 |
| Right Side (in) | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 |
| Left Side (in) | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 |
| Top (in) | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 | 24/6 |



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