

# Triton Series™ High Efficiency Boiler

---



# Triton Series™ High Efficiency Boiler

The new Atlas™ Triton Series™ boilers perform dependably and quietly, offering the most cost effective solutions for space heating and process hot water. Compact, modular design, high efficiency, low emissions, advanced controls, easy start-up and convenient operation make the Triton Series™ the clear choice for all your high efficiency needs.

Over the past several years, the Atlas™ product team has studied the marketplace, listened to the needs of end users, and sought valuable input from the field. That information, along with a hard look at where our overall product line stands in the industry led the team to develop the most advanced, most compact, and most economical near condensing modular boiler available.

The Atlas™ Triton Series™ boiler combines solid engineering and innovative design with all the quality and features you would expect from a company with a proud 100 year tradition of building safe, solid, high quality products. With thermal efficiencies of up to 86%, fully modulating up to 5:1 turndown, and a sealed combustion chamber, Triton Series™ boilers offer feature rich, high performance, low NOx operation with simple and convenient installation, operation and serviceability.

## Heat Exchanger & Combustion Design

The foundation of the Triton Series™ industry-leading design is the double row, high finned copper tube, 4-pass water tube heat exchanger. This configuration produces the greatest heating capacity in the most compact package in the industry, while maintaining very high efficiency ratings and NOx emissions of less than 9 ppm. The combustion chamber is tightly sealed to effectively maintain even heat transfer, increase efficiency, and reduce emissions.

Our custom, metal fiber burner is optimally sized and placed at the core of the double row of tubes to maximize even heat absorption and efficiency. Fueling the burner, the Triton implements a state-of-the-art, modulating premix valve and venturi system for trouble-free operation. This premium gas train is combined with a linkageless variable speed combustion blower control and speed feedback signal, assuring consistent low-fire light off as well as high-fire pre- and post-purge.



Venting options include single-wall (vertical only), double-wall (horizontal or vertical), and common venting.

## Advanced Premix Burner

Triton Series™ boilers utilize exclusive metal fiber burners that are custom designed for each model, optimizing the heat exchanger configuration and maximizing operational efficiency. The three-dimensional burner surface is composed of a special knitted iron-chromium alloy which optimizes heat transfer while maintaining a low surface temperature. This composition is highly elastic and flexible, which reduces stress and increases resistance to thermal expansion. The material structure is also exceptionally porous which prevents it from becoming clogged by contaminants. The result is an extremely reliable and robust, long lasting burner.

## Advanced Controls

Triton Series™ near condensing boilers feature Honeywell's advanced SOLA controls. SOLA provides the user with complete boiler status, configuration, history and diagnostics from a single, user-friendly interface. By integrating numerous functions into a single compact device, SOLA offers an increased range of programming functionality and at the same time reduces the need for excessive hardware and wiring, and minimizes installation time. Among the many programmable features are flame safeguard, pump control, hot water high limits, PID load control and operating controls, as well as lead-lag programming of up to 8 individual boilers. SOLA's advanced capabilities and numerous programming options allow you to increase efficiency, lower your costs and emissions, and reduce your environmental impact.

To further enhance user control, functionality and ease of operation, the Triton Series™ comes standard with the enhanced SOLA D'finity® Operator Interface display. This latest 7", high-resolution color LCD touch screen provides the user clear, quick and easy access to all of the system's features and capabilities, putting all of the SOLA controller's functions within easy reach of the operator.



## Smart Boiler Control System™



The proprietary Smart Boiler Control System™ from Ace is available as an option on the Triton Series™ to conveniently monitor your boiler's operation from a remote location. This unique, web-based system provides you 24/7 access to your boilers operational performance from any computer or smart phone with an internet connection.

A wealth of critical boiler information such as inlet/ outlet temperatures, stack temperatures, firing rates, cycle counts and much, much more can be easily accessed and analyzed, helping you get the most out of your boiler in terms of performance and safety, not to mention maximizing your own time management efficiency. For a detailed overview of the SBCS™ system please consult our SBCS™ factory brochure.

## Communication Gateway

Ace Heating also offers our multi-protocol communication gateway designed to support effortless integration between all our products and the end-user Building Controller / Energy Management Systems.

All three protocols are preloaded into the gateway from the factory. A dip switch is used to select the desired protocol by the end user. The protocol mapping program was designed to provide necessary control points for remote monitoring and control of all Ace products. A custom program option, to support customer selected control points is also available.



## Convenient Installation, Operation & Access

The Triton Series™ boiler's compact footprint provides easy access through standard doorways, and each model includes a pallet jack base for ease of movement and installation. This efficient, modular design also allows for simple and compact multi-unit lead-lag installations.

## Standard Features

- 4 - pass, double row high finned copper tube heat exchanger
- Up to 86% thermal efficiency
- Honeywell SOLA control and enhanced display
- Modulating pre-mix combustion system
- Up to 5:1 turndown
- < 9 ppm NO<sub>x</sub>
- Knit metal fiber high efficiency burner
- Custom cast iron, 1-pc. gasketless headers
- Heavy gauge steel cabinet with uv rated, powder coat finish
- Standard replaceable combustion air filter
- High efficiency, variable speed, spark proof blower motor
- Sealed combustion chamber
- Smart Boiler Control System™ ready
- Built-in lead-lag capability ( 8 units max. )
- Certified seismic design
- Range of available sizes
- ASME section IV H-stamped
- Factory warranty: ( 2 yr. parts/ 5 yr. burner/ 12 yr. HX. )
- Full carton packaging

## Available Options

- Control safety package includes: boiler status relay, SPDT fault relay, alarm bell with silencing circuit, remote enable/ disable relay
- Smart Boiler Control System™
- Communication gateway package
- Outdoor models
- High/ low gas pressure switch
- Extended warranty (7 yr. Burner/ 15 yr. Hx.)
- Quick ship program

## Control Specifications

- Flame safeguard controller with integrated operating, modulating & high limit safety controls
- Touchscreen operator interface panel to monitor boiler status, lockouts, alerts, flame signal, and control temperatures as well as configure boiler settings
- 4-20mA signal input for remote modulation
- Digital input for remote reset and time of day setback
- Modbus RS485 communication allows access to operating, safety and burner data
- Lockout and safety alerts history record contains up to 15 detailed snapshots of the system when lockout occurred
- PID load control system for central heat loop
- Interrupted pilot with spark ignition & air cooled UV scanner for monitoring pilot & main flame
- Two single element temperature sensors for inlet water and outdoor temperature
- Dual element safety limit (UL 353) temperature sensor for outlet water temperature
- Outdoor reset control with programmable heating curve
- Algorithm prioritization for burner demand (central heating and frost protection) and firing rate limit
- Programmable safety and boiler protection features for frost protection, slow start, delta-T limit, stack-T limit and boiler-T limit
- Pump control contacts for central heat & system pumps with purge
- Time control and frost protection (pump included as additional option)
- Three levels of password protection for end-user, installer/ service engineer and manufacturer
- Additional interlock terminals for pre-ignition, recycle and lockout interlocks

## Venting Options

- Single-wall: Vertical Only
- Double-wall direct vent: Vertical or Horizontal
- Common: Per National Fuel Gas Code Regulations





## High Efficiency Near Condensing Boilers

- 6 models ranging from .8MM to 4MM BTU
- Up to 86% thermal efficiency
- Up to 5:1 turndown
- Quadruple pass, double row, high finned copper finned heat exchanger
- Air cooled interrupted pilot w/ UV scanner
- Full modulation, consistent emissions with <9 ppm NOx and clean light off
- Small footprint
- Heavy 18 gauge steel cabinet with highest quality UV-rated powdercoated finish
- Flexible venting options

### Listings and Certifications:

- AHRI IBR Listing per BTS 2000
- CSA 4.9 / ANSI Z21.13
- ASME Section IV H-Stamped
- SCAQMD 1146.2
- CRN

SPECIFICATIONS	T-80	T-100	T-150	T-200
Input (BTU/ hr.)	800,000	1,000,000	1,500,000	2,000,000
Output (BTU/ hr.) <sup>1</sup>	688,000	860,000	1,290,000	1,720,000
Dimensions in inches (W x D x H)	31.5 x 32.5 x 60	31.5 x 32.5 x 60	31.5 x 32.5 x 68	31.5 x 32.5 x 77
Footprint (sq. ft.)	7.1	7.1	7.1	7.1
Recommended Flow Rate (gpm) <sup>2</sup>	34-69	43-85	65-129	85-172
Pressure Drop	TBD	TBD	TBD	TBD
Turndown <sup>1</sup>	5:1	5:1	5:1	5:1
NOx Emissions @ 3% O <sub>2</sub>	< 9 ppm			
Min. Inlet Water Temp. Required	130 F			
Sealed Combustion Chamber	YES			
Pre-mix Combustion	YES			
Vent Size (Intake / Exhaust)	8" / 6"	8" / 6"	8" / 8"	8" / 8"
Gas Connection Size	1"	1"	1"	1¼"
Water Connection Size	3"	3"	3"	3"
Gas Pressure Required	5-14" WC			
Firing Mode	Full Modulation			
Electrical Requirements	120V 60Hz 1Ph			
Amperage	10A	10A	10A	15A
Shipping Weight (lbs.)	1,261	1,261	1,370	1,480

<sup>1</sup> Based on 86% thermal efficiency. Actual efficiency may vary with operating conditions.

<sup>2</sup> Based on 20°F to 40°F delta T.

All dimensions are in inches, are approximate and subject to change. For weight critical application, consult factory.

