

# Series 3

Gas Fired, Natural Draft,  
Cast Iron Water Boiler

GAS BOILERS

## IQ control system

- Features Burnham IQ Control System™
- True Plug & Play Controls Utilizing Burnham IQ Option Cards;
  - Outdoor Reset (with Domestic Hot Water Priority)
  - Auxiliary High Limit
  - Low Water Cut-off
  - Optional LCD Touch Screen Display
- Improved Boiler Operation

- 84% AFUE
- Natural or LP gas
- Reliable Cast Iron Heat Exchanger
- Modern Design for Stylish Appearance and Efficient Operation
- Simple to Install and Service
- Ideal Replacement for Millions of Existing Boiler Installations
- 7 sizes, 70-280 MBH input



Limited  
Lifetime  
Warranty!

**GREATER ENERGY SAVINGS**

**Burnham**  
by  
**U.S. Boiler Company**

# Series 3™ Boiler

Gas-Fired, Natural Draft,  
Cast Iron Water Boiler



The Burnham Series 3 boiler features a proven, long-lasting, American-made cast iron heat engine, the ease & simplicity of atmospheric venting, an exclusive control system that provides features unrivaled by any boiler in the market, an 84% efficiency rating, and an attractive exterior which is equivalent or superior to the design of the most sophisticated condensing boilers.

## The “Easy Choice” Replacement Boiler

Why is the Series 3 the EASY CHOICE replacement boiler? Because we make it simple! The Series 3 has been designed to be a “drop in” replacement for existing atmospheric boilers. All boiler connections on the Series 3 are compatible with industry standard near boiler piping configurations. How do you vent the Series 3? Easy! In most cases, simply connecting the Series 3 to the home’s existing chimney is all that’s required\*.

Designed to handle the kind of high water volume systems present in many homes, the rugged G3 cast iron heat exchanger found in the Series 3 can easily operate with lower system return water temperatures than conventional cast iron boilers. Most cast iron boilers require a minimum of at least 140°F return water temperatures to prevent damage to the heat exchanger. The Series 3 has been designed to accept return water temperatures as low as 110°F without complicated piping or additional controls. This means that the boiler can operate safely and reliably at lower temperatures, maximizing efficiency and increasing the comfort of the heating system.

## The IQ Control System

If the G3 heat exchanger is the brawn of the Series 3 Boiler, the IQ Boiler Control System is the brains. The IQ Control System has been designed specifically for the next generation of high efficiency cast iron boilers. It simplifies boiler operating controls by combining all the typical boiler safety controls, including ignition, into one central control module. LED readouts clearly communicate system status updates, and The end result is a control system which is **simple to read, simple to set up, and simple to diagnose**.

The IQ Option Panel resides below the boiler control. The Option Panel permits the addition of features to the boiler by way of Burnham’s exclusive IQ Option Cards. These option cards allow the “plug-n-play” installation of such features as Outdoor Reset, Low Water Cutoff, and an auxiliary Aquastat. Thanks to the unique design of the IQ Option Panel, installation of these boiler control upgrades are extremely easy for the qualified technician to perform.

## Optional LCD Touch Screen Display

The IQ Touch Screen Display Kit offers the option of adding a state-of-the-art 3.5” multi-color LCD touch screen display to the Series 3 boiler. The display mounts in a special knock-out in the plastic hood above the front door of the boiler and communicates with the IQ Boiler Control and IQ Option Cards. All boiler settings, status and errors are displayed in full text on the bright backlit display. The display features easy-to-follow full-text explanations of all control settings, as well as help screens with comprehensive diagnostics and troubleshooting information. In the event of a boiler error or lock-out, the touch screen display turns red and flashes. The display connects to the IQ control through a simple plug-in connection.

\*Vent system MUST comply with NFPA-54 Venting Code and all applicable codes



# IQ control system

## IQ Boiler Control

Integrates aquastat, relay, and ignition functions into a single module. Mounted on hinged panel for ease of access.

## IQ Option Panel

Accepts optional IQ Option Cards for simple "plug & play" installation of:

- Outdoor Reset
- Low Water Cutoff
- Aquastat



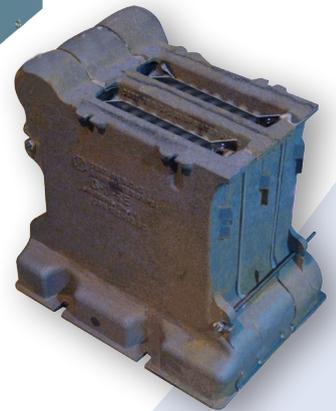
## Integral Draft Diverter

Reduces installed boiler height up to 19", allowing a broader range of installations. Includes a built-in, factory wired, integrated spill switch.



## Proven G3 Heat Exchanger

Made of specially formulated BC25-HSi high silicon grey iron, this heat exchanger has been precision formed to create turbulent water flow throughout all areas of the heat exchanger, eliminating hot and cold spots, and maximizing heat transfer.



## Step Opening Gas Valve

This type of gas valve enables the boiler to light on low fire. Once a flame is established, the valve gently opens to full fire safely and smoothly. This provides quiet ignition and promotes long boiler life.

## G3 Base

Featuring heavy gauge steel construction, this base provides unmatched stability and safety through its wrap-around design. The design also provides a tighter seal with fewer joints. Thick insulating plates direct the heat from the burner tubes upward into the heat exchanger, helping to fully utilize every BTU possible from the combustion process.

## Attractive, Modern, Insulated, Powder Coated Steel Jacket

Tough powder coated steel jacket designed for durability and great appearance. Jacket is lined with thick insulation, and has an additional layer of insulation at the base of the boiler.



# Ratings



| Model Number* | Input (MBH) | DOE Heating Capacity (MBH) | I=B=R Water Ratings (MBH) | AFUE% | Electrical Requirements** |
|---------------|-------------|----------------------------|---------------------------|-------|---------------------------|
| 303           | 70          | 59                         | 51                        | 84.0  | <2 Amps                   |
| 304           | 105         | 88                         | 77                        | 84.0  | <2 Amps                   |
| 305           | 140         | 118                        | 102                       | 84.0  | <2 Amps                   |
| 306           | 175         | 147                        | 128                       | 84.0  | <2 Amps                   |
| 307           | 210         | 176                        | 153                       | 84.0  | <2 Amps                   |
| 308           | 245         | 206                        | 179                       | 84.0  | <2 Amps                   |
| 309           | 280         | 235                        | 205                       | 84.0  | <2 Amps                   |

\* Add suffix "N" for natural gas, or suffix "P" for LP gas models

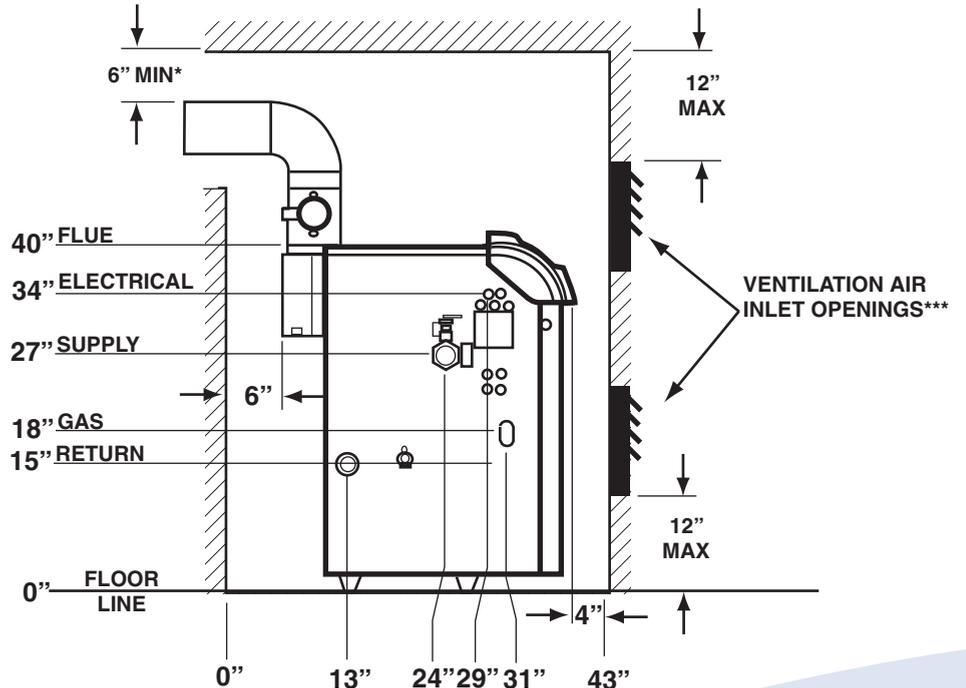
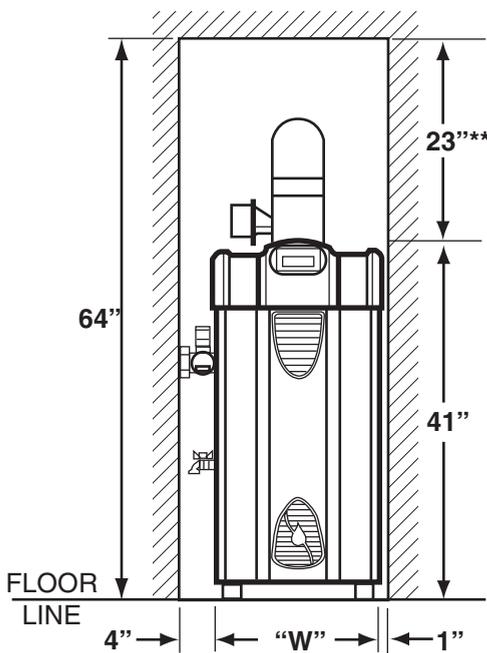
\*\*Requirement for controls only, add for amp draw of circulators.

All models certified for use from sea level to 10,000 feet in elevation. Outputs are reduced by 2% per 1,000 feet in elevations from 5,000 to 10,000 feet.

All Series 3 boilers are shipped with 30 psi relief valves, MAWP is 50 psi.

# Specifications

| Model Number | Dimensions (inches) |        |       | Connections (inches) |        |        |           |              | Water Content (gal.) | Approx. Shipping Wt. (lbs.) |
|--------------|---------------------|--------|-------|----------------------|--------|--------|-----------|--------------|----------------------|-----------------------------|
|              | Width               | Height | Depth | Vent                 | Supply | Return | Gas Valve | Relief Valve |                      |                             |
| 303          | 12-3/4"             | 41"    | 33"   | 4"                   | 1-1/4" | 1-1/4" | 1/2"      | 3/4"         | 2                    | 250                         |
| 304          | 15-1/2"             | 41"    | 33"   | 5"                   | 1-1/4" | 1-1/4" | 1/2"      | 3/4"         | 3                    | 300                         |
| 305          | 18-1/2"             | 41"    | 33"   | 6"                   | 1-1/4" | 1-1/4" | 1/2"      | 3/4"         | 4                    | 350                         |
| 306          | 21-1/2"             | 41"    | 33"   | 6"                   | 1-1/4" | 1-1/4" | 1/2"      | 3/4"         | 5                    | 410                         |
| 307          | 24-3/4"             | 41"    | 33"   | 7"                   | 1-1/4" | 1-1/4" | 3/4"      | 3/4"         | 6                    | 460                         |
| 308          | 24-3/4"             | 41"    | 33"   | 7"                   | 1-1/4" | 1-1/4" | 3/4"      | 3/4"         | 7                    | 510                         |
| 309          | 30-3/4"             | 41"    | 33"   | 8"                   | 1-1/4" | 1-1/4" | 3/4"      | 3/4"         | 8                    | 560                         |



**NOTES:**

- \* Minimal radial distance around vent pipe and breaching
- \*\* Add height required to maintain 6" clearance from all breaching components
- \*\*\* Area of each opening 1 sq. inch for each 1,000 BTUH input - with minimum of 100 sq. inches. Height of opening should be half the width.



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