

Defining the Best in Home Heating

Burnham
Hydronics

CHG™

**Condensing
High Efficiency
Gas Water Boiler**



- Natural or LP Gas
- Water Only Boiler
- 94+% AFUE
ENERGY STAR® Certified



- Cast Aluminum Heat Engine
- Direct Vent Sealed Combustion
- 150 - 225 MBH (2 sizes)
- Fully Modulating Firing Rates
- Low NOx and CO Ratings

Defining the Best in Home Heating

 Here at Burnham we are passionate about our products and want to help insure your family's comfort with the security of the Burnham Hydronics name. When you select Burnham, you're buying more than just an appliance. Every product is crafted with the highest quality materials and components – by experts committed to delivering the absolute best performance. With Burnham products, you can count on the best craftsmanship, ingenuity, and customer service and support that the industry has to offer.

CHG "Condensing, High Efficiency, Gas" Boilers

Today's lifestyles have created ever increasing demands for abundant supplies of comfortable space heating including radiant heat, domestic hot water, and snow melting to keep walks and driveways clear – all with the best possible efficiencies available. A condensing boiler can help ensure that all of these needs are met.

Burnham now offers the best solution for these demanding needs with a ruggedly designed, cast aluminum, condensing boiler that has efficiency ratings exceeding 94+%. The CHG boiler will meet your family's heating needs and save you money in energy operating costs.

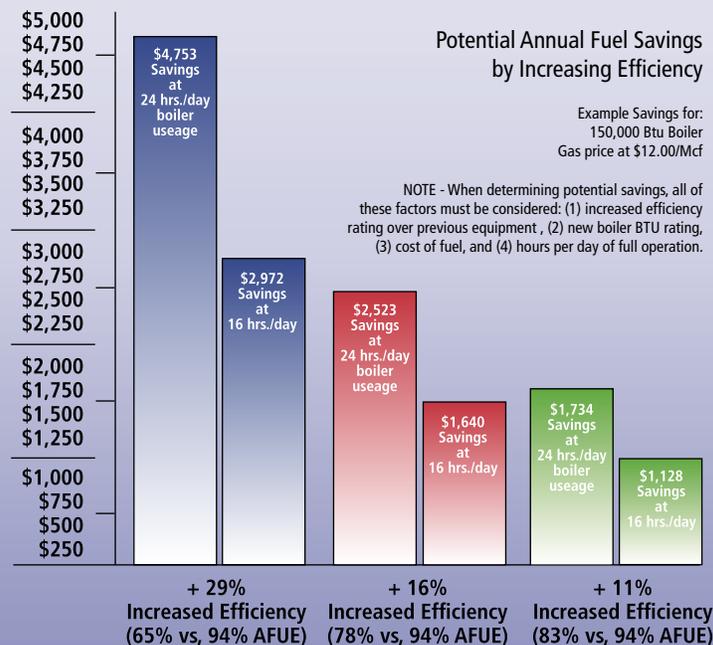
■ 94+% Efficiency



Burnham CHG condensing boilers achieve 94+% efficiency through our uniquely designed heat engines. These sectional, cast aluminum designs use the heat in the exhaust gases from the boiler's combustion process to preheat the water as it enters the boiler, thus capturing energy that otherwise would be lost.

■ Full Modulating Operation

Our CHG boilers are designed to automatically adjust the firing rate to match your home's heating needs. With up to a 5-to-1 turn down ratio, a CHG boiler will continuously adjust its output to more efficiently and effectively provide the right amount of heat which further helps conserve fuel and reduce heating costs.



What is a "condensing" boiler?

When a condensing boiler is working at its peak efficiency, the water vapor produced in the gas combustion process condenses back into water – hence the name "condensing" boiler. This condensation of exhaust gases releases the latent heat that is given off when water is vaporized. Together these two processes, condensation and vaporization, create the high efficiencies associated with Burnham's CHG condensing boilers.

■ The "Quiet" Boiler

Through its state-of-the-art design, packaging, and unique combustion process, a CHG boiler operates so quietly that you may not even "hear" it firing, but you can see its operating sequence with a digital display mounted on the top of the boiler.

■ 15-Year Limited Warranty

The aluminum heat engine in our CHG boilers is covered by a 15-year limited factory warranty. The purchase of an optional Burnham's Winter Warmth Assurance program for your CHG boiler can extend our True Blue Warranty protection to include parts and labor for the entire boiler for either 5 or 10 years.

■ Safety with Increased Efficiency

CHG boilers use a sealed combustion system that isolates the combustion process in the boiler from the air inside your home. This design helps save energy dollars by using outside air, rather than room air you've already paid to heat, and assures that exhaust gases go directly outside.

In addition, the CHG boilers are designed to keep your heating system running efficiently with Annual Fuel Utilization Efficiencies (AFUE) of 94+% which can save you hundreds of dollars on your annual heating bill.

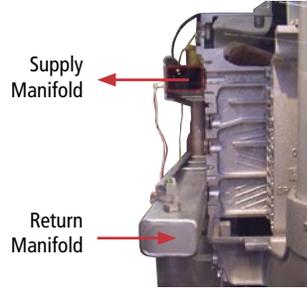
CHG Site Glass & Burner



The flame can be continuously modulated from an orange glow to a full blue flame.

The burner is located on the top of the heat engine forcing the heat down while the water flows upward. This allows the condensation to drain down and away from the boiler.

Cutaway view showing actual water flow path.

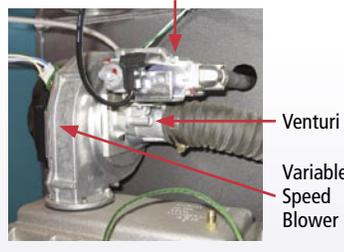


Boiler Operations

The CHG castings incorporate a multi-pass water flow with the return water entering the lower manifold and progressing upward to the supply manifold. This counterflow from bottom to top provides for maximum heat transfer while the serpentine pattern offers low pressure drop. Each section's water flow is independent with no port connections between sections. The supply and return manifolds are designed to balance the flow across all sections.



Negative regulated gas valve with factory set outlet pressure.



Premix Technology

CHG boilers utilize a pre-mix combustion assembly that includes a modulating gas valve, variable speed blower and a venturi to provide an optimal fuel/air mixture to a stainless steel mesh burner. Together these components accurately and efficiently help control the fully modulating combustion process which automatically adjusts the boiler's firing rate to match your heating needs.

Boiler Control Module & Outdoor Reset



The MCBA microprocessor control manages all boiler functions including supervising the combustion process and monitoring key operating functions. Included is a digital display that can provide detailed boiler information as well as be an invaluable service and troubleshooting tool.

The MCBA module stores set points for boiler and domestic hot water supply temperatures, and monitors supply and return water temperatures, flue gas temperature, the flame sensor, and the included outdoor reset. The boiler control module allows for continuous modulation (firing rates) by varying the combustion fan speed.

Domestic Hot Water

Abundant domestic hot water is available with a matching Alliance indirect-fired hot water heater. Select from several sizes to meet your specific needs. In addition, the CHG boiler control module is preset for domestic hot water priority and set point temperature.



CHG Venting

The CHG incorporates a sealed combustion system that uses outside air for combustion and the safe and proven AL29-4C stainless steel material for venting the exhaust. Both horizontal ("sidewall") and vertical ("through-the-roof") venting options are available.

Boiler Model	Horizontal Vent Max.	Vertical Vent Max.	Vent Diameter
CHG150	55 ft.	49.5 ft.	3 in.
CHG225	55 ft.	47 ft.	4 in.



RATINGS

Boiler Model	Maximum Input (MBH)	Minimum Input (MBH)	DOE Heating Capacity (MBH)	I=B=R Net Rating (MBH)	AFUE %
CHG150	150,000	30,000	135,000	117,000	93.10
CHG225	225,000	56,250	202,000	176,000	94.20

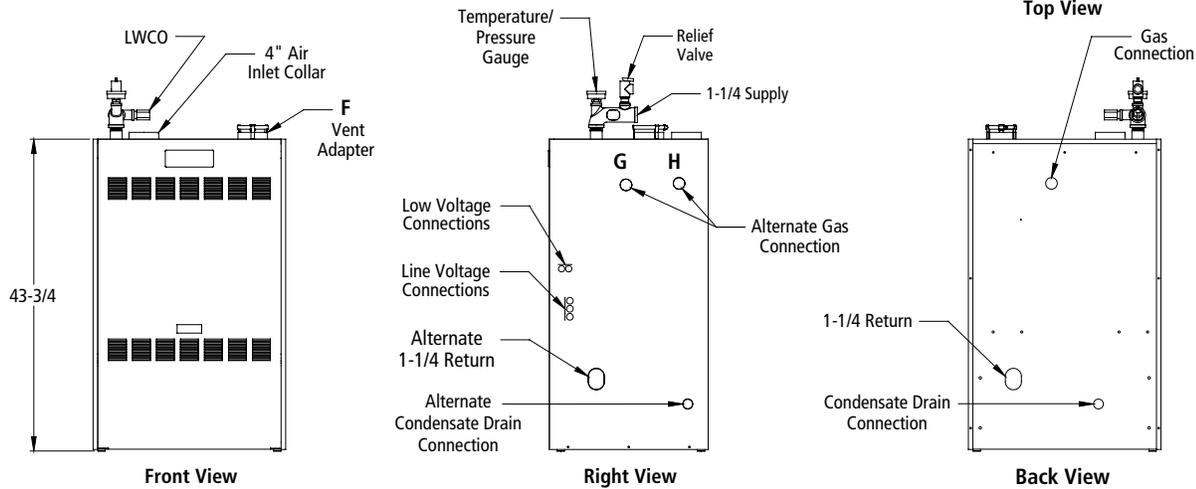
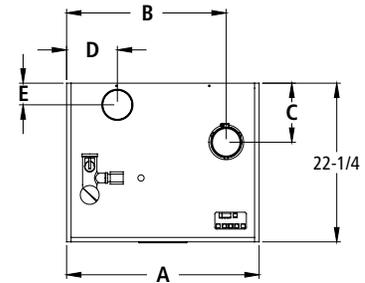
SPECIFICATIONS

Boiler Model	Vent Diameter (inches)	Air Inlet Diameter (inches)	Horizontal Venting		Vertical Venting		Water Volume (gal.)	Approx. Shipping Weight (lbs.)
			Maximum Vent Length (Equiv. Ft.)	Maximum Air Inlet Length (Equiv. Ft.)	Maximum Vent Length (Equiv. Ft.)	Maximum Air Inlet Length (Equiv. Ft.)		
CHG150	3	4	55	60	49.5	52	1.3	258
CHG225	4	4	55	60	47	52	1.1	323

DIMENSIONS

Boiler Model	'A'	'B'	'C'	'D'	'E'
CHG150	23-3/8	18-3/4	8-1/8	13	3-1/2
CHG225	27	22-3/8	8-1/4	7-1/8	3

* All dimensions in inches



STANDARD EQUIPMENT

- Deluxe Insulated Jacket
- Circulator - Shipped Loose
- Pressure Temperature Gauge
- Drain Valve
- MCBA Microprocessor Control w/ Outdoor Reset (standard)

- Digital Touchpad Display Panel
- Variable Speed Combustion Blower
- Negative Regulation Gas Valve
- Venturi
- Stainless Steel Mesh Burner
- Supply Water Temperature Sensor
- Return Water Temperature Sensor

- Flue Gas Temperature Sensor
- Flame Sensor
- Differential Pressure Switch
- High Limit
- LWCO and Transformer
- Condensate Trap
- Air Inlet Screen
- Safety Relief Valve



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Phone: 1-888-432-8887

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