



ENGINEERING DATA

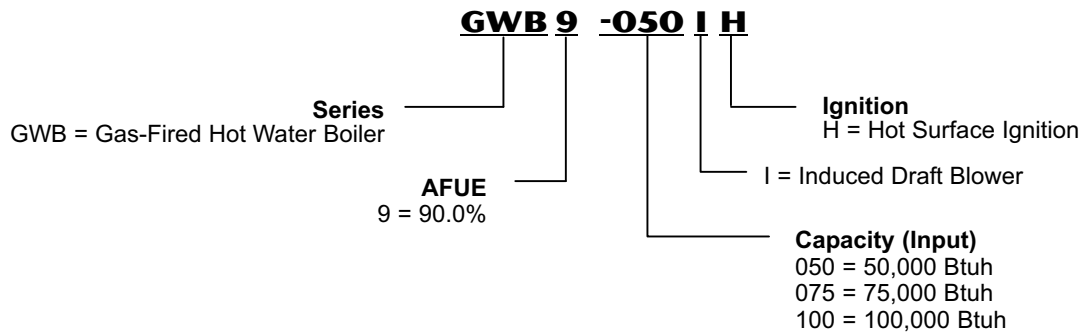
DAVE LENNOX SIGNATURE® COLLECTION
Gas-Fired, Hot Water Boiler

Bulletin No. 210267
September 2008
Supersedes August 1999



AFUE - 90%
Input - 50,000 to 100,000 Btuh

MODEL NUMBER IDENTIFICATION



FEATURES

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WARRANTY

Cast aluminum **boiler assembly** - **Limited fifteen year** warranty in residential applications only.

All other covered components - **Limited ten year** warranty in residential applications, one year in non-residential applications.

Refer to Lennox Equipment Limited Warranty certificate included with equipment for details.

FEATURES

APPROVALS

Low pressure, sectional cast aluminium boilers are design certified by CSA for use with natural gas or LPG/Propane. Annual Fuel Utilization Efficiencies are based on US DOE test procedures and FTC labeling regulations.

I=B=R ratings are certified in accordance with standards set by The Hydronics Institute.

Boiler heat exchanger assemblies are constructed and hydrostatically tested in accordance with American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section IV Standards for heating boilers.

APPLICATIONS

Heating input capacities of 50,000, 75,000 and 100,000 Btuh.

AFUE of 90.0%.

Hot surface ignition system.

Natural gas or LPG/Propane (LPG with optional conversion kit).

Boiler applications include radiant floor heating, baseboard heating and zoned heating systems. For use in closed hydronic heating system only.

Compact size allows easy installation in a basement or utility room.

All units are completely factory assembled with all controls installed and wired.

Each unit is factory test operated to ensure dependable performance.

HEATING SYSTEM

Cast Aluminum Boiler Assembly

Boiler sections and push nipples are constructed of long life cast aluminum.

Boiler sections and push nipples expand and contract together, providing positive watertight seal.

Boiler flue-ways are easily accessible for cleaning and servicing.

Hot Surface Ignition

Hot surface ignitor heats up to initiate combustion on each operating cycle.

Ignitor is located next to the burner through the gas/air mixer.

Main burners are extinguished during the off cycle.

Ignitor also proves main burner ignition by means of flame rectification.

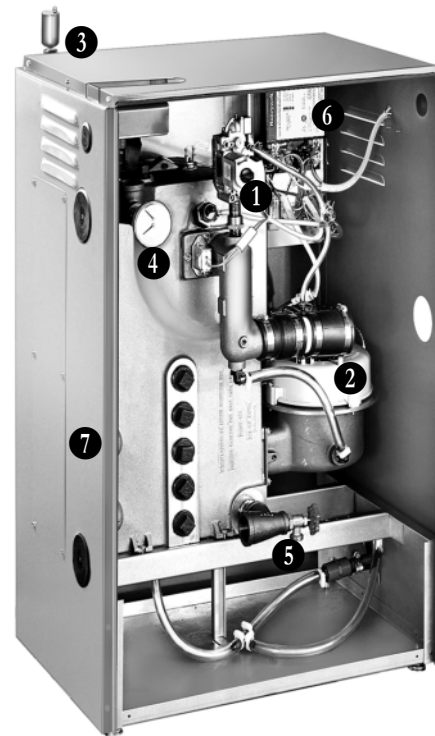
1 Automatic Gas Control

24 volt redundant combination gas control valve combines 100% safety shut-off, manual shut off valve (On-Off), automatic electric valve and gas pressure regulation into a compact combination control.

Burner

Inshot burner provides efficient, trouble-free operation.

Burner venturi mixes air and gas in correct proportion for proper combustion.



2 Induced Draft Blower

Heavy-duty blower safely vents flue products. Differential pressure switch prevents unit operation in case of flue blockage of intake or exhaust air. Pressure switch controlled by Integrated Boiler Control (IBC) for a pre-purge and a post purge cycle. Pressure switch proves blower operation before allowing gas valve to open. After five minutes of lack of adequate differential pressure, the IBC will lockout. Blower operates only during heating cycle.

Circulating Pump

Furnished standard for field installation at the installer's preferred location. Bronze isolation ball type valves on inlet and outlet of pump eliminate need to drain system if pump servicing is required.

3 Relief Valve

Furnished as standard for field installation in top of cabinet. Valve provides for pressure relief of heating system in case of abnormal operating conditions. Valve opens at 30 psig and is approved by ASME.

4 Combination Temperature/Pressure Gauge

Located on front of unit cabinet. Gauge monitors system for safe and reliable operation.

5 Brass Drain Valve

3/4 in. brass drain valve is furnished for field installation in the first boiler section.

OPTIONS

LPG/Propane Conversion Kit

Required for field changeover from natural gas to LPG/Propane.

Kits available for standard and high altitude operation. See Specifications table.

FEATURES

VENTING

Intake/Exhaust Piping

2 or 3 in. PVC pipe used for both intake and exhaust air. 2 in. connection from unit but may be transitioned to 3 in. PVC in a vertical run.

Exhaust tee shipped with unit for field installation.

CPVC pipe **MUST** be used in the first five feet of the exhaust piping. Unit ships with 5 ft. of 2 in. CPVC pipe and one 2 in. CPVC coupling.

See Intake And Exhaust Pipe Venting Table.

Vent Temperature Safety Switch

Temperature safety switch prevents unit operation in case of high temperature of discharge flue gases.

Sensor is furnished as standard and factory installed on the induced draft blower outlet port.

Automatic reset.

CONTROLS

6 Integrated Boiler Control (IBC)

Provides control of a high-efficiency, residential gas boiler with a combustion air blower and a combination hot surface igniter/flame sensor. Not for use with vent damper.

Provides sequencing of ignition and burner operation and two additional trials for ignition if initial trial is unsuccessful.

Terminal board for all electrical connections.

Control of circulator pump and combustion blower motors. Monitoring of Aquastat and auxiliary limits to ensure proper water temperature and of the air proving switch to ensure proper sequencing of combustion air before the ignition sequence starts.

Continued circulator pump operation during lockout with thermostat call for heat.

Four LED lights indicate operating mode and help identify the source during troubleshooting.

Casting Temperature Safety Switch

Protects the boiler in case of lack or loss of water.

Installed in the top of the boiler section, the switch will turn off the power to the Integrated Boiler Control when the temperature reaches setpoint, 300°F.

Manual reset. Verify that the boiler is properly filled before resetting.

Aquastat Limit Control

Factory installed, immersion-type limit control gives protection against abnormal operating conditions.

Limit control is factory set at 100°F, field adjustable from 100°F to 200°F.

5 - 30°F adjustable differential for flexible operation.

Automatic reset.

Flame Rollout Switch

Manual reset.

Prevents unit operation in the event combustion air products passage through the flueway is reduced or blocked.

OPTIONS

Thermostat

See Thermostat bulletins in Controls section and Lennox Price Book for a complete list of thermostats.

CABINET

7 Constructed of heavy gauge steel with a baked-on enamel paint finish.

Fuel and flue connections are furnished on right side of cabinet, other locations are available.

Water supply and return connections are furnished on top of cabinet, other locations are available.

Front access panel is easily removed for servicing.

SPECIFICATIONS

Model No.		GWB9-050IH	GWB9-075IH	GWB9-100IH
Gas Heating Performance	Heating capacity input - Btuh	50,000	75,000	100,000
	Heating capacity output - Btuh	45,000	68,000	90,000
	¹ Net I=B=R rating - Btuh	39,000	59,000	78,000
	² AFUE	90%	90%	90%
Boiler Data	Number of boiler sections	2	2	2
	Boiler capacity	2.6 US gallons	2.6 US gallons	2.6 US gallons
Connections in.	³ Flue size connection diameter - round	2	2	2
	Gas piping size I.P.S.	1/2	1/2	1/2
	Water supply and return connection size	1-1/4 NPT	1-1/4 NPT	1-1/4 NPT
	Drain connection size	3/4 NPT	3/4 NPT	3/4 NPT
Electrical characteristics		120 volts - 60 hertz - 1 phase (less than 12 amps)		
Shipping Data	lbs. - 1 package	220	220	220
OPTIONAL ACCESSORIES				
LPG/Propane Conversion Kit	0 - 5,000 ft	59L85	59L86	57L95
	5,001 - 10,000 ft	59L85	30W22	57L95

See Lennox Price Book For Complete Listing of Optional Accessories (Expansion Tanks, Valves, Circulator Pumps, etc.)

¹ I=B=R ratings indicate the amount of equivalent direct radiation each boiler will produce under normal conditions and thermostatic control. Ratings based on an allowance of 1.15 in accordance with the factors shown on the I=B=R Standard as published by The Hydronics Institute. Selection of boiler size should be based on "Net I=B=R Rating" being equal to or greater than the calculated heat loss of the building.

² Annual Fuel Utilization Efficiency based on US DOE test procedures and FTC labeling regulations.

³ CPVC pipe **MUST** be used in the first five feet. Unit ships with 5 ft. of 2 in. CPVC pipe, one 2 in CPVC coupling and one exhaust tee.

HIGH ALTITUDE DERATE

CSA certified units for the U.S. must be derated when installed at an elevation of more than 2000 feet above sea level. If unit is installed at an altitude higher than 2000 feet, the unit must be derated 4% for every 1000 feet above sea level. Thus, at an altitude of 4000 feet, the unit would require a derate of 16%.

CSA certified units for Canada must be derated when installed at an elevation of more than 2000 feet above sea level. If unit is installed at an altitude higher than 2000 feet, the unit must be derated 10% for elevations between 2000 feet and 4500 feet above sea level.

NOTE — This is the only permissible derate for these units.

INTAKE / EXHAUST PIPE VENTING TABLE

Vent Pipe Diameter	Vent Length (ft.) with four, 90° elbows			
	GWB9-050-075		GWB9-100	
	Minimum	Maximum	Minimum	Maximum
2 in.	2	20	2	15
3 in.	20	100	15	80

VENTING NOTES

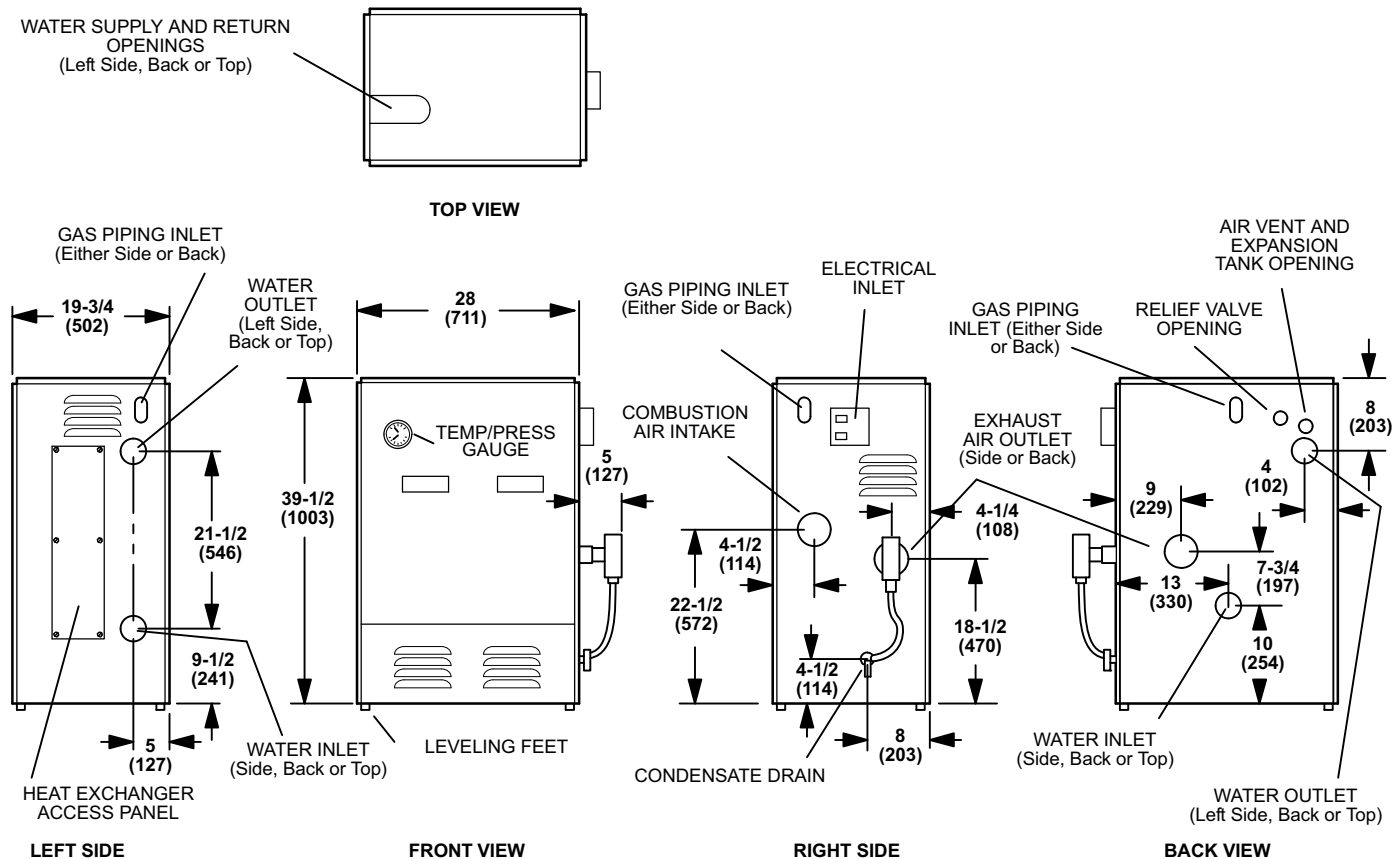
One 2 in. 90° elbow is equivalent to 1-1/2 feet of straight vent pipe.
 One 3 in. 90° elbow is equivalent to 3 feet of straight vent pipe.
 When adding additional elbows, reduce maximum vent length by the elbows' equivalent length.
 Vent pipe size change must occur in a vertical run.
 The first 5 ft. of vent pipe MUST be CPVC (shipped with boiler), any fittings used in the first 5 ft. must also be CPVC.

INSTALLATION CLEARANCES

Right Side	8 inches (203 mm)
Left Side	24 inches (914 mm)
Rear	6 inches (152 mm)
Top	8 inches (203 mm)
Service Clearance (Front)	24 inches (914 mm)
Floor	0
Flue Pipe - Intake/Exhaust	0
Hot Water Pipe, near Boiler	1 inch (25 mm)

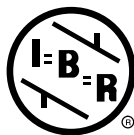
NOTE - Air for combustion must conform to the methods outlined in the National Fuel Gas Code (NFPA 54/ANSI-Z223.1) or the National Standard of Canada CAN/CSA-B149.1 "Natural Gas and Propane Installation Code".
 NOTE - In the U.S. flue sizing must conform to the methods outlined in the current National Fuel Gas Code (NFPA 54/ANSI-Z223.1) or applicable provisions of local building codes. In Canada flue sizing must conform to the methods outlined in National Standard of Canada CAN/CSA-B149.1.

DIMENSIONS - INCHES (MM)



REVISIONS

Sections	Description of Change
Specifications	New LPG Kits



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Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

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