



GWB84-IE

Gas-Fired Water Boiler - 60 Hz

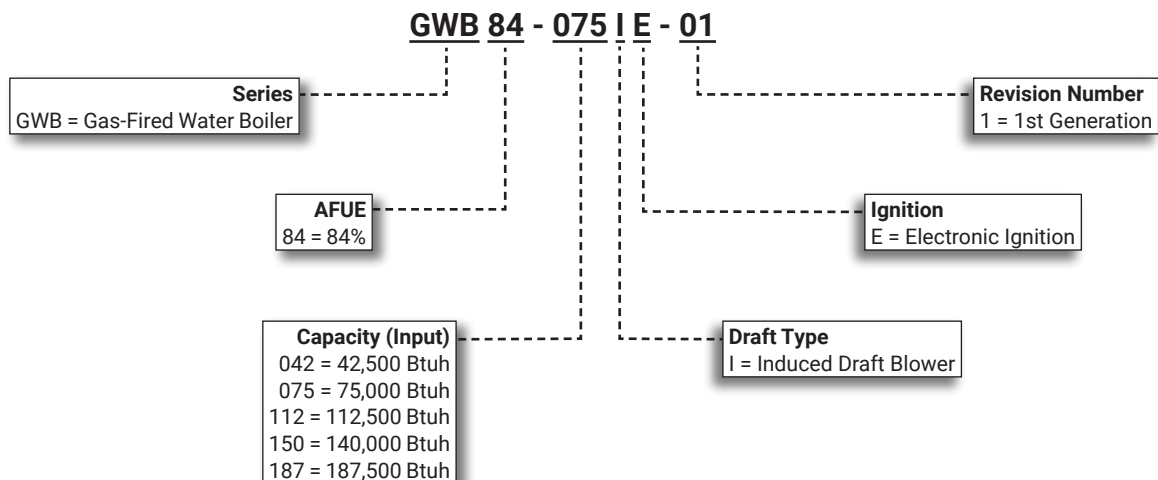
RESIDENTIAL PRODUCT SPECIFICATIONS

Bulletin No. 210927
January 2021



AFUE up to 84.4%
Heating Input – 42,500 to 187,500 Btuh

MODEL NUMBER IDENTIFICATION



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APPROVALS AND WARRANTY

APPROVALS

- AHRI Certified
- Annual Fuel Utilization Efficiencies based on US DOE test procedures and FTC labeling regulations
- Certified by CSA International
- 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 cast iron heating boilers

WARRANTY

- Heat Exchanger:
 - Limited twenty years in residential applications only
 - Limited one year in non-residential applications
- All other covered components:
 - Limited five-years in residential applications
 - Limited one year in non-residential installations

NOTE - Refer to Lennox Equipment Limited Warranty certificate included with unit for specific details.

FEATURES

APPLICATIONS

- Five models with heating inputs of 42,500 to 187,500 Btuh
- AFUE - Up to 84.4%
- Natural gas or LPG/Propane (LPG with optional conversion kit)
- Boiler applications include radiant floor heating, baseboard heating and zoned heating systems
- Compact size allows easy installation in a basement or utility room
- Shipped factory assembled with all controls installed and wired
- Each unit is factory test operated to ensure dependable performance

HEATING SYSTEM

Heat Exchanger

- Boiler sections and push nipples are constructed of long life cast iron
- Boiler sections and push nipples expand and contract together, providing positive watertight seal
- Boiler components are easily accessible for cleaning and servicing

Electronic Ignition

- Electronic spark igniter provides positive ignition of pilot burner on each operating cycle
- Pilot gas is ignited and burns during each running cycle of the boiler
- Main burners and pilot gas are extinguished during the off cycle
- Ignition system permits main gas valve to open only when the pilot burner is proven to be lit
- Pilot operation is fully automatic on demand for heat
- Should a loss of flame occur, the main valve closes, shutting down the unit

Automatic Gas Control

- Silent operating gas controls provide 100% safety shut off
- 24 volt redundant combination gas control valve combines automatic safety pilot, manual shut off option (On-Off), pilot filtration, automatic electric valve (dual) and gas pressure regulation into a compact combination control
- Dual valve design provides double assurance of 100% close off of gas to the pilot and main burners on each off cycle

FEATURES

HEATING SYSTEM (continued)

Titanium Burners

- Titanium composite burners resist corrosion and oxidation
- Slotted port design results in quiet, clean combustion
- Superior strength and longevity

Induced Draft Blower

- Heavy duty blower safely vents flue products
- Permanently lubricated motor
- Ball bearings
- Pressure switch prevents unit operation in case of flue blockage of flue outlet

Circulating Pump

- Constructed of cast iron
- Pump motor is impedance protected
- Motor and impeller is removeable as a single unit for servicing
- Pump is shipped separately for field installation

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
- Approved by ASME

Combination Temperature/Pressure Gauge

- Located in supply water line
- Gauge monitors system for safe and reliable operation

Brass Drain Valve

- 3/4 in. brass drain valve is furnished for field installation in drain outlet on side of cabinet
- See dimension drawing for location

Optional Accessories

Natural Gas to LPG/Propane Conversion Kit

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

LPG/Propane to Natural Gas Conversion Kit

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

VENTING

Blocked Vent Shutoff Sensor

- Pressure switch prevents unit operation in case of flue blockage

CONTROLS

Integrated Boiler Control Module

- Control module provides ignition sequence, flame monitoring and safety shutoff for intermittent pilot spark ignition heating system
- Also provides limit rated water temperature control in conjunction with a sensor
- Display LEDs - Three, seven segment LEDs display alpha-numeric information related to diagnostics as well as system operation and status
- Diagnostic codes are held in non-volatile memory, immune from power interruptions
- Should flame fail to ignite, control will initiate 5 re-attempts at ignition (6 total) before locking out unit operation for 60 minutes
- Watchguard type circuit automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance calls for service
- Installed internal to unit cabinet

Flame Rollout Switch

- Temperature sensitive fusible-link device is furnished and factory installed on the boiler base just outside of the burner box
- Fuse prevents unit operation in the event combustion products passageway through the flueway is reduced or blocked

Limit Sensor

- Factory installed immersion type limit sensor provides protection against abnormal operating conditions

Transformer

- 50VA transformer furnished for control module operation

Optional Accessories

Thermostat

- Thermostat is not furnished with unit
- Lennox Price Book for selection

CABINET

- Heavy gauge steel
- Thermosetting polyester paint finish
- Wrap-around fiberglass insulation on heat exchanger keeps cabinet surface temperatures low
- Hole for drain valve (furnished) is furnished on left side of cabinet
- Controls are factory installed internal to the unit cabinet
- Water supply and return connections are furnished on right side of cabinet
- Burner access panel is easily removed for servicing

SPECIFICATIONS

Model No.			GWB84-042IE	GWB84-075IE	GWB84-112IE	GWB84-150IE	GWB84-187IE	
Gas Heating Performance	Heating capacity input - Btuh		42,500	75,000	112,500	150,000	187,500	
	Heating capacity output - Btuh		36,000	63,000	94,000	125,000	155,000	
	¹ Net AHRI rating - Btuh		31,000	55,000	82,000	109,000	135,000	
	² AFUE		84.4%	84.0%	84.0%	84.0%	84.0%	
Boiler Data	Number of boiler sections		2	3	4	5	6	
	Net boiler heating surface - sq. ft.		4.61	8.17	11.73	15.29	18.85	
	Boiler capacity - U.S. gallons		1.75	3.00	4.25	5.50	6.75	
Connections in.	³ Flue Size diameter (round)	Conventional	4	4	4	4	4	
		Horizontal	3	3	3	3	4	
	Gas piping size I.P.S.	Natural gas	1/2	1/2	1/2	1/2	1/2	
		LPG/Propane	3/4	3/4	3/4	3/4	3/4	
	Water supply and return size		1-1/4 NPT	1-1/4 NPT	1-1/4 NPT	1-1/4 NPT	1-1/4 NPT	
	Drain connection size		3/4 NPT	3/4 NPT	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	225	265	322	370	431

¹ Net AHRI ratings indicate the amount of heat each boiler will produce under normal conditions and thermostatic control.

AHRI water ratings are based on an allowance of 1.15 in accordance with the factors shown in the Operations Manual of the AHRI Residential Boilers Certification Program.

Selection of boiler size should be based on "Net AHRI Rating" being equal to or greater than the calculated heat loss of the building.

² Heating Capacity and AFUE (Annual Fuel Utilization Efficiency) based on US DOE test procedures and FTC labeling regulations.

³ 3 in. to 4 in. adaptor furnished for flue connection to induced draft blower.

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.

OPTIONAL ACCESSORIES - ORDER SEPARATELY

See Lennox Price Book For Complete Listing of Additional Accessories

Catalog No.

GAS HEAT ACCESSORIES

Natural Gas to LPG/Propane Kit (all models)	72M81
LPG/Propane to Natural Gas Kit (all models)	54L58

PLUMBING

Automatic Air Vent Valve (3/4 in. sweat)	29K49
Automatic Air Vent Valve (1 in. sweat)	29K50
Air Eliminator (1 in. sweat)	X6447
Air Eliminator (1-1/4 in. sweat)	X6449
Boiler Trim Kit w/ Check Valve, 1 in. NPT Air Eliminator, 4.4 Gal. Expansion Tank	X6524
Boiler Trim Kit w/ Check Valve, 1-1/4 in. NPT Air Eliminator, 4.4 Gal. Expansion Tank	X6525
Flow Check Valve (3/4 in.)	78Y08
Water Mixing Valve (3/4 in.)	99L99
Water Mixing Valve (1 in.)	10M00

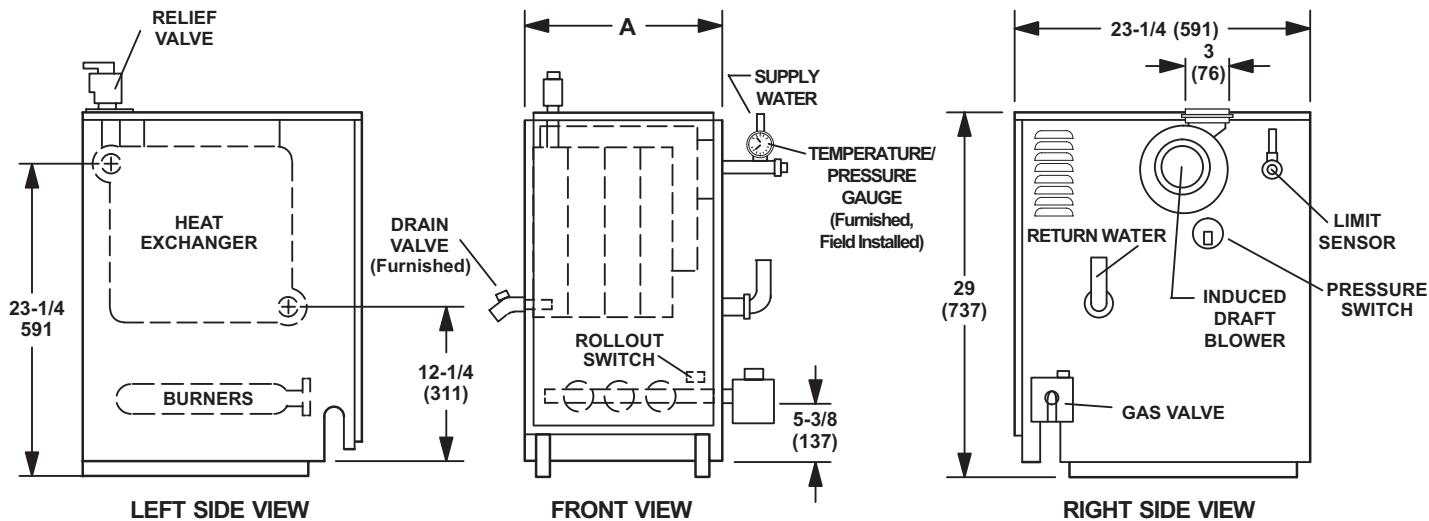
WATER HEATING/STORAGE

Indirect Water Heater - 316L Stainless Steel Tank/Coil	40 US gallons	20X33
	60 US gallons	20X34

ZONING

Boiler Reset Control - Used with Zone Pump Control - Boiler and Outdoor Sensors furnished	X2965
Zone Pump Control - Four Zones (expandable to 15 zones with Expansion Module)	20X37
Zone Pump Control - Six Zones (expandable to 15 zones with Expansion Module)	20X38
Boiler Control Expansion Module (One Zone with 18 in. cable)	20X35
Boiler Control Expansion Module (Four Zones with 18 in. cable)	20X36
Zone Valve Control - Four Zones with Priority	20X39
Zone Valve Control - Six Zones with Priority	20X40
Zone Valve (3/4 in.)	78Y03
Zone Valve (1 in.)	78Y04
Zone Valve (1-1/4 in.)	78Y05

DIMENSIONS



NOTE - Pump is shipped separately with unit for field installation.

Model No.	A	
	in.	mm
GWB84-042IE	11	279
GWB84-075IE	14-1/4	362
GWB84-112IE	17-1/2	445
GWB84-150IE	20-3/4	527
GWB84-187IE	24	610

INSTALLATION CLEARANCES

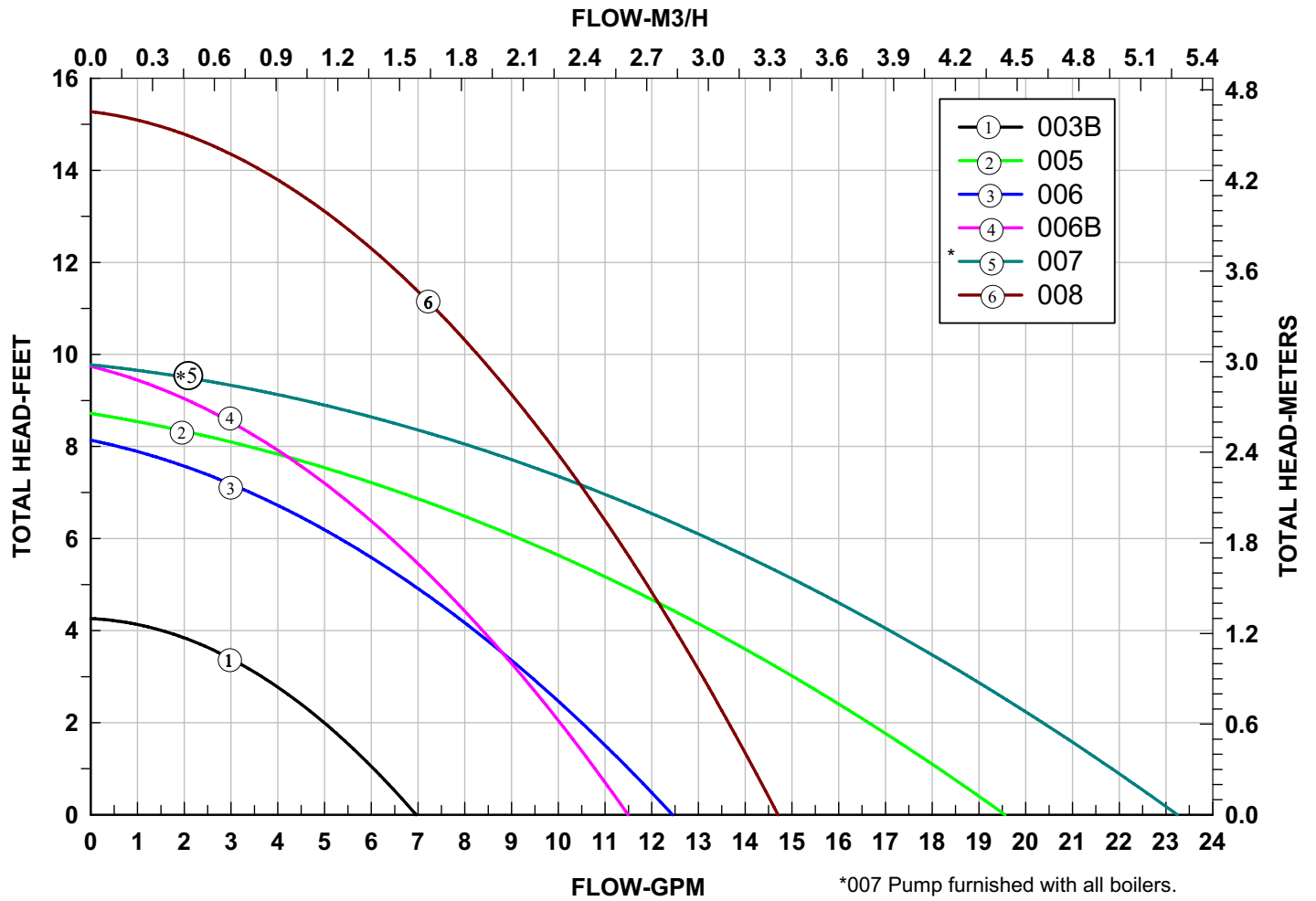
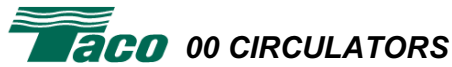
Side		6 (152)
Side (Gas Supply/Control Side)		8 (203)
Rear		6 (152)
Top		6 (152)
Service Clearance (Front)		18 (457)
¹ Floor		Non-Combustible
Flue Pipe	Vertical	6 (152)
	Horizontal	6 (152)

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.

¹ Clearance for installation on combustible floor if combustible flooring base (field supplied) is installed between the boiler and the combustible floor.

CIRCULATING PUMP FLOW RATE





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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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