



**RESIDENTIAL  
PRODUCT SPECIFICATIONS**

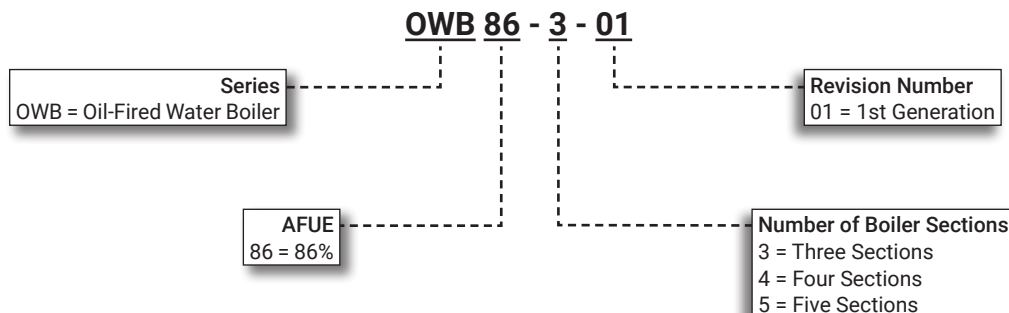
Bulletin No. 210928  
January 2021



**NOTE - OWB86 OIL BOILERS ARE NOT AVAILABLE IN CANADA!**

**AFUE up to 86.2%**  
**Heating Input – 112,000 to 217,000 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 for the U.S.
- 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

- Cast iron boiler assembly:
  - 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

- Three models with heating inputs of 112,000 to 217,000 Btuh
- AFUE - Up to 86.2%
- May be used in a wide variety of applications including radiant floor heating, baseboard heating and zoned heating systems
- Compact size allows easy installation in a basement or utility room
- Each unit factory test operated to ensure proper operation

### HEATING SYSTEM

#### **Beckett™ Flame-Retention AFG Oil Burner**

- Smooth operating, high-pressure atomizing type burner blends oil and air to attain maximum efficiency
- Heavy duty motor drives quiet operating blower wheel and fuel pump
- Air turbo injector directs combustion air for smooth ignition
- Flame retention head is designed to agitate and mix oil and air for complete combustion and highest efficiency

- 120VAC primary safety control and ceramic glazed electrodes which provide a safe continuous flame
- Factory installed cadmium sulfide cell flame detector and primary safety control that provides complete shutdown in case of flame failure
- All burner parts are easily removable for servicing
- Burner is U.L. listed, C.S.A. according to ANSI Standard 296
- Burner is factory installed and wired in the unit
- Nozzle is furnished and factory installed

**NOTE** - OWB86-4 model is shipped for higher 175k heating capacity operation.

140k nozzle is furnished with the unit for field changeout if lower heating capacity is required.

- Burner mounted swing door allows complete access to combustion chamber and burner end cone for set-up, maintenance and cleaning
- Eliminates complete burner removal
- Solenoid delay oil valve ensures positive fuel shut-off and eliminates "after-drip"
- Also provides improved burner operation, cleaner combustion and quiet operation

## FEATURES

### HEATING SYSTEM (continued)

#### Cast Iron Boiler Assembly

- Boiler sections and push nipples constructed of long life cast iron
- Boiler sections and push nipples expand and contract together, providing positive watertight seal
- Thermal pin design increases heat transfer efficiency
- Wet base design allows water circulation over complete heat exchanger surface for maximum heat transfer
- Boiler components are easily accessible for cleaning and servicing
- Target wall of combustion chamber is constructed of vacuum formed refractory ceramic fiber allowing maximum high temperatures for more complete combustion and higher efficiencies
- Peephole in the cast iron burner swing door allows flame inspection and overfire draft measurement
- Jacket attaches directly to cast iron heat exchanger for increased stability when handling product

#### Water 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 ready for field installation

#### Relief Valve

- Furnished as standard for field installation in rear of cabinet
- Valve provides for pressure relief of heating system in case of abnormal operating conditions
- Valve opens at 30 psig
- ASME approved

#### Brass Drain Valve

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

### Optional Accessories

#### Tankless Hot Water Coil

- Tankless water heater coil supplies a moderate amount of instantaneous hot water for kitchen, bath and laundry usage
- Low limit control is furnished for field installation on tankless coil control well to maximize hot water heating performance for instantaneous heating
- Raised coil port extends through jacket to allow easy servicing and inspection of tankless coil without removing panels
- Water line connections are furnished on side of boiler cabinet
- See dimension drawing

### VENTING

#### Barometric Draft Control

- Furnished as standard equipment for field installation in flue pipe

#### Flue Brush

- Furnished with unit for cleaning flue passageways

### CONTROLS

#### Advanced Burner Control



- 120 VAC primary safety control
- Controls the oil burner motor and igniter
- Control features:
- Welded Relay Protection
- Limited Reset and Limited Recycle
- Reset Button - Resets burner if a restricted lockout is present
- 3 Status Lights for System Monitoring and Diagnostics
  - **Yellow** - Pump Prime Mode
  - **Green** - Flame sensing (flashing = 60 second recycle)
  - **Red** - Restricted Lockout (flashing = Soft lockout) "Strike three" lockout protection to avoid nuisance calls
- Valve-On Delay / Motor-Off Delay
- 15 Second Lockout Time
- Interrupted or Intermittent Duty Ignition
- Technician Pump Priming Mode
- Disable Function

#### Combination Temperature/Pressure Gauge

- Located on top of unit cabinet
- Monitors system for safe and reliable operation

### Optional Accessories

#### Thermostat

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

### CABINET

- Heavy gauge steel
- Thermosetting polyester paint finish
- Fully insulated with fiberglass insulation to keep cabinet surface temperatures low
- Top and front cabinet access allows easy cleaning and servicing of unit

## SPECIFICATIONS

Model No.		OWB86-3	OWB86-4		OWB86-5
Oil Heating Performance	<sup>1</sup> Burner input - U.S. gallons oil/hour	0.80	<sup>5</sup> 1.00	1.25	1.55
	Input - mBtuh	112	<sup>5</sup> 140	175	217
	<sup>2</sup> Heating Capacity - mBtuh	98	<sup>5</sup> 122	152	189
	<sup>3</sup> Net AHRI Rating - mBtuh	85	<sup>5</sup> 106	132	164
	<sup>4</sup> AFUE	86.0%	<sup>5</sup> 86.2%	86.0%	86.0%
Boiler	Number of boiler sections	3	4		5
	Net boiler heating surface - sq. ft.	18.54	25.16		31.78
	Boiler capacity - U.S. gallons	9.6	11.6		13.7
Oil Burner Pump	Factory setting	1 stage (150 psi)	1 stage (155 psi)		1 stage (155 psi)
Connections in.	Oil piping size N.P.T.	1/4	1/4		1/4
	Flue size diameter	6	6		6
	Water supply size N.P.T.	1-1/4	1-1/4		1-1/4
	Water return size N.P.T.	1-1/4	1-1/4		1-1/4
	Drain connection size N.P.T.	3/4	3/4		3/4
Shipping Data - lbs. (1 package)		483	554		627
Electrical characteristics		120 volts - 60 hertz - 1 phase (less than 12 amps)			

<sup>1</sup> Based on 140,000 Btuh per gallon.

<sup>2</sup> Heating capacity based on 13% CO<sub>2</sub> with 0.02 in. w.g. draft over fire and #1 smoke or less.

<sup>3</sup> 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.

<sup>4</sup> Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and FTC labeling regulations.

<sup>5</sup> With furnished 140k nozzle.

## OPTIONAL ACCESSORIES - ORDER SEPARATELY

See Lennox Price Book For Complete Listing of Additional Accessories

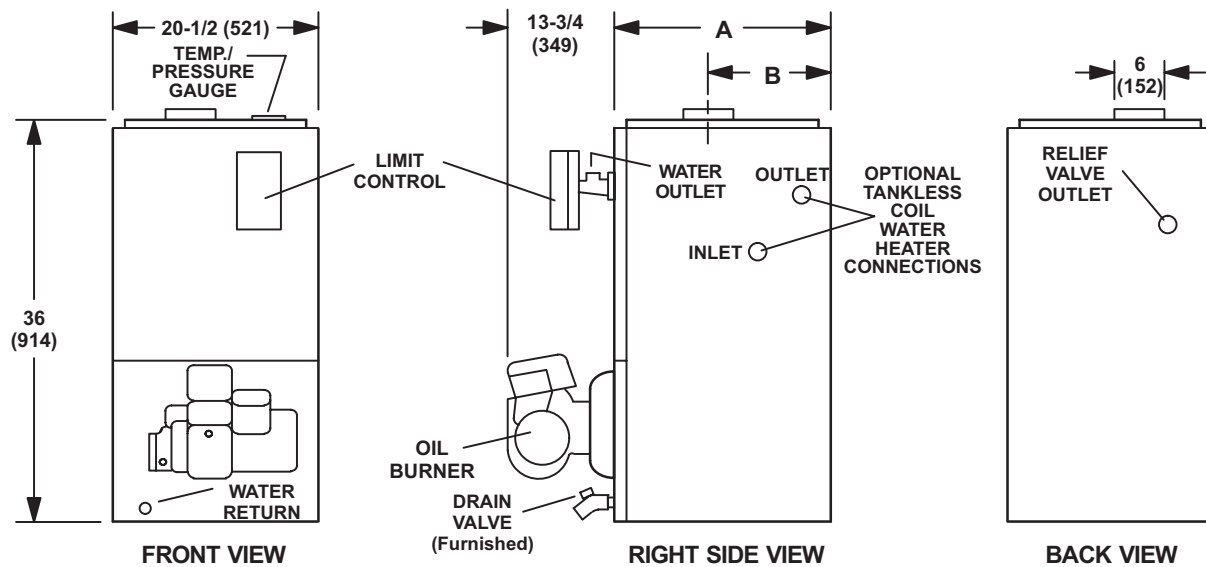
Model No.		OWB86-3	OWB86-4		OWB86-5
WATER HEATING/STORAGE					
<sup>1</sup> Tankless Water Heater		27M20	27M20		27M20
	<sup>2</sup> Burner input - U.S. gallons oil/hour	0.80	<sup>3</sup> 1.00	1.25	1.55
	Tankless rating - U.S. gallons/min	3.05	<sup>3</sup> 3.25	3.50	3.80
	Water supply/return size N.P.T.	1/2			
Indirect Water Heater - 316L Stainless Steel Tank/Coil		40 US gallons	20X33		
		60 US gallons	20X34		
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			
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			

<sup>1</sup> Water heated from 40°F to 140°F with 200°F boiler water temperature, intermittent draw.

<sup>2</sup> Based on 140,000 Btuh per gallon.

<sup>3</sup> With furnished 140k nozzle.

## DIMENSIONS



Model No.	A		B	
	in.	mm	in.	mm
OWB86-3	14-1/2	368	8	203
OWB86-4	17-3/4	451	9-5/8	244
OWB86-5	21	533	11-1/2	292

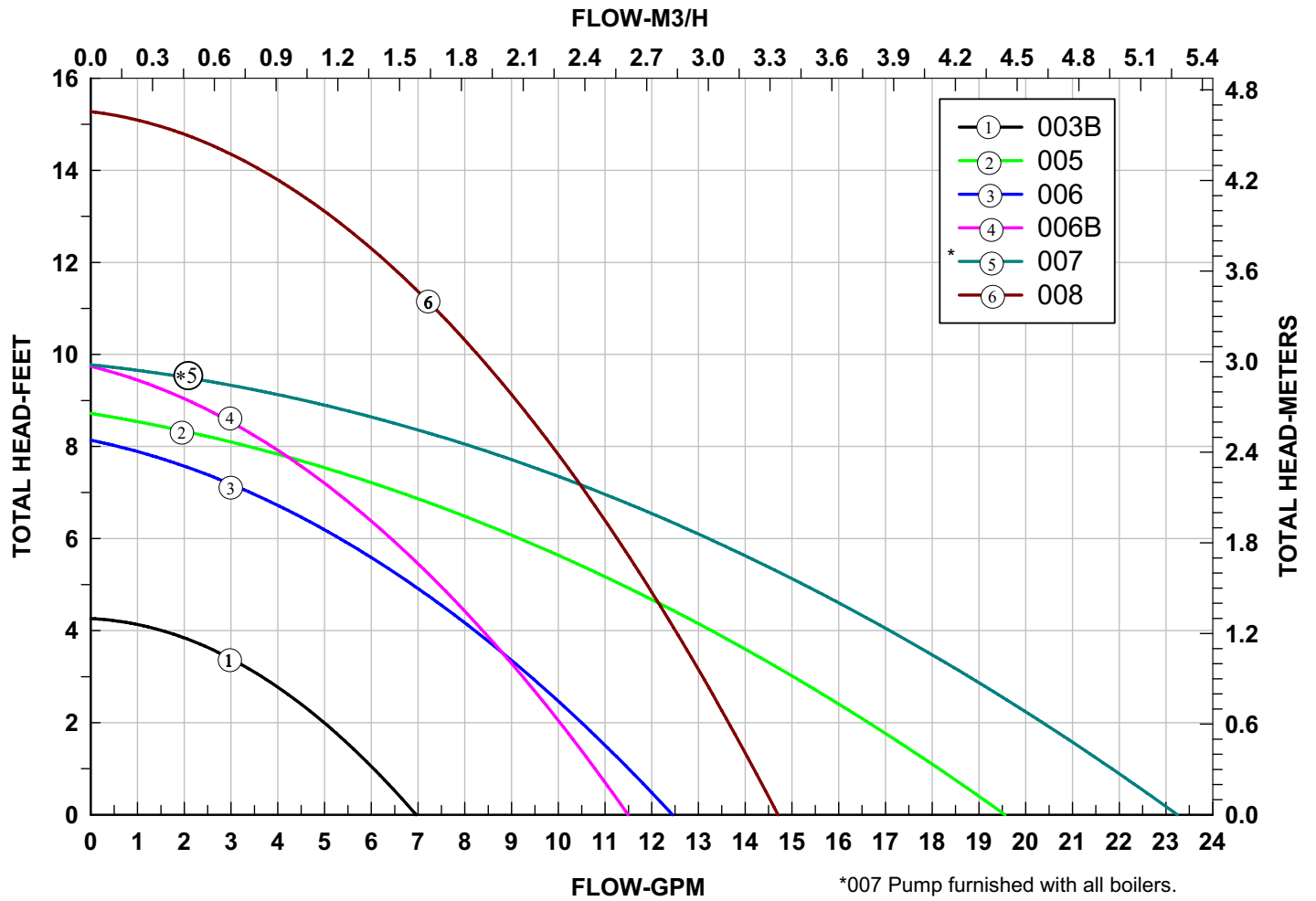
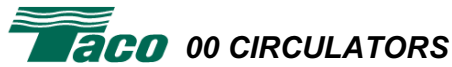
## INSTALLATION CLEARANCES

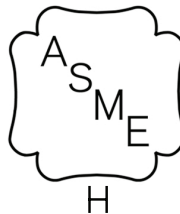
Left Side	6 inches (152 mm)
Right Side	24 inches (610 mm)
Rear	6 inches (152 mm)
Top	6 inches (152 mm)
Top (Service)	24 inches (610 mm)
Front	24 inches (610 mm)
Front (Service)	24 inches (610 mm)
<sup>1</sup> Floor	<sup>1</sup> Non-Combustible
Flue Pipe to Combustible	9 inches (229 mm)

NOTE - Fresh air for combustion and ventilation must be provided in accordance with NFPA-31 "Standard for the Installation of Oil-Burning Equipment" or applicable provisions of local building codes..

<sup>1</sup> Boiler is permitted to be placed on combustible floor provided the floor under the boiler is protected in accordance with the requirements of accepted building code practice and approved by the Authority Having Jurisdiction. In the absence of local codes, follow NFPA-31 "Standard for the Installation of Oil-Burning Equipment".

# 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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