



Copper-Fin[®] Commercial Gas Boilers

Energy Efficient, Cost Effective Boilers

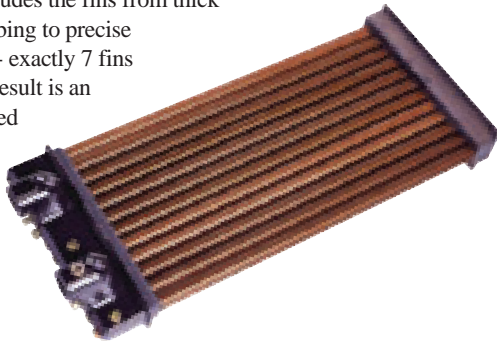
Lochinvar first introduced Copper-Fin technology to the boiler industry some 45 years ago. Since then, we've continued to refine and perfect it - adding advanced fan-assisted combustion, hot surface ignition, a unique gasketless Copper-Fin heat exchanger and space-age insulating materials.

Installation Flexibility and Cost-Savings

With compact sizes that use less floor space than ever before, all Copper-Fin units are narrow enough to fit through a standard 36" doorway – an advantage most commercial boilers can't provide. Plus, thanks to special insulating materials, Copper-Fin units require only 3" clearance from combustible walls. What's more, our Multi-Stack frame allows you to install two units in the area normally required for one. This makes it easier to fit multiple Copper-Fin boilers into cramped mechanical rooms. And you can even use a smaller diameter vent stack - up to 8" smaller than typically required for comparable atmospheric boilers - so it saves money as well as valuable mechanical room space.

Unique Copper-Fin Heat Exchanger

The Lochinvar Copper-Fin boiler design uses a two pass heat exchanger. Water is circulated through a row of highly-efficient, finned copper tubes. The high rate of water flow creates a scouring action that prevents sediment and lime-scale buildup, common in conventional boilers, and the finned copper tubes allow maximum heat transfer efficiency. To create this special heat transfer capability, Lochinvar extrudes the fins from thick wall copper tubing to precise specifications - exactly 7 fins per inch. The result is an integrally-finned tube with a heat transfer ratio 9 times greater than a plain copper tube.



Heavy-Duty Gasketless Design

What's more, advanced casting processes allowed Lochinvar to develop a unique one-piece header system. This gasketless design provides enhanced reliability, improved durability and optimum performance - without the problems or failures common with O-rings and gaskets.

Meets The Toughest Air Quality Standards

Because of our unique fan-assisted combustion process, the Copper-Fin exceeds today's toughest NO_x emissions requirements. An independent certification laboratory test gave us a rating of less than 30 ppm —corrected to 3% O₂. And less NO_x means a cleaner environment.



Enhanced to Provide Performance and Serviceability

Our newly enhanced Copper-Fin models offer the same reliable operation, and feature a more service friendly design. The down stream test valves and referenced gas valves are now in the upper deck for easier access, and the electrical and EMS connections have been repositioned toward the front of the unit for easier service and simpler installation.

The gas valves are referenced to the sealed combustion chamber to improve operational performance by monitoring the pressure in the sealed combustion chamber and adjusting gas flow to maintain the optimum air/fuel mixture. And the built-in air inlet filter reduces maintenance and improves performance by trapping dust and airborne particulates that can foul the burners and blowers. With dual sight glasses (one on each end), you can easily monitor burner performance and flame characteristics throughout the entire combustion chamber.

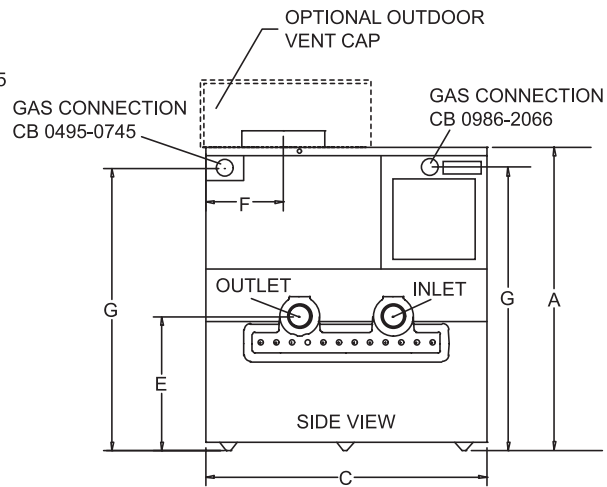
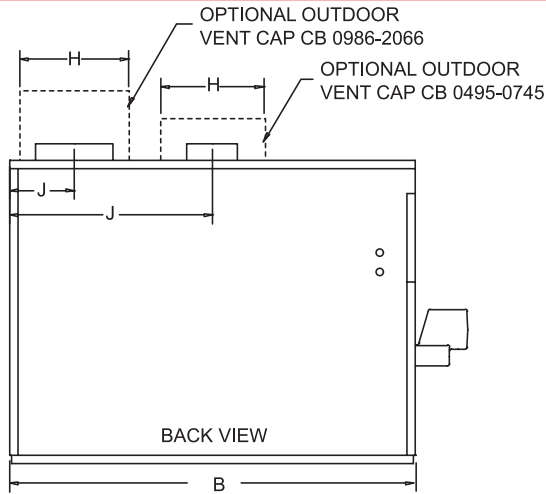
The operator interface panel provides two-stage electronic temperature control and comprehensive diagnostic status without opening the control panel. Its user friendly design simplifies service while providing additional diagnostic information through a series of LEDs.

Vent Cost-Savings

| Btu/hr INPUT | CONVENTIONAL VENT SIZE | COPPER-FIN VENT SIZE | \$ SAVINGS* |
|--------------|------------------------|----------------------|-------------|
| 495,000 | 10" | 6" | \$ 657 |
| 645,000 | 12" | 8" | \$ 731 |
| 745,000 | 14" | 8" | \$ 1,450 |
| 985,000 | 16" | 10" | \$ 1,790 |
| 1,225,000 | 16" | 12" | \$ 1,463 |
| 1,435,000 | 18" | 12" | \$ 2,432 |
| 1,795,000 | 20" | 14" | \$ 3,526 |
| 2,065,000 | 22" | 14" | \$ 3,738 |

*Comparison based on 25' vent system using Type "B" double wall vent material, storm collar and vent cap.

Copper-Fin® Boiler Dimensions & Specifications



| Model Number | Btu/hr Input | Btu/hr Output | A | B | C | E | F | G | H | J | Vent Size | Gas Conn. | Shipping Weight |
|--------------|--------------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|-----------|-----------------|
| CBN0495 | 495,000 | 400,950 | 33-1/4" | 45-1/4" | 22-1/4" | 12-1/2" | 9-1/2" | 30-3/4" | 9-1/2" | 22-3/4" | 6" | 1-1/4" | 440 |
| CBN0645 | 645,000 | 522,450 | 33-1/4" | 56-3/4" | 22-1/4" | 12-1/2" | 9-1/2" | 30-3/4" | 16" | 22-1/4" | 8" | 1-1/4" | 510 |
| CBN0745 | 745,000 | 603,450 | 33-1/4" | 64" | 22-1/4" | 12-1/2" | 9-1/2" | 30-3/4" | 16" | 31-1/4" | 8" | 1-1/4" | 550 |
| CBN0986 | 985,000 | 797,850 | 36" | 48-1/4" | 33-1/2" | 15-3/4" | 9-1/2" | 33-3/4" | 18-1/4" | 9-1/2" | 10" | 2" | 845 |
| CBN1256 | 1,255,000 | 1,016,550 | 36" | 58-1/2" | 33-1/2" | 15-3/4" | 10-1/2" | 33-3/4" | 20-1/4" | 10-1/2" | 12" | 2" | 905 |
| CBN1436 | 1,435,000 | 1,162,350 | 36" | 68-3/4" | 33-1/2" | 15-3/4" | 10-1/2" | 33-3/4" | 20-1/4" | 10-1/2" | 12" | 2" | 1,050 |
| CBN1796 | 1,795,000 | 1,453,950 | 36" | 82-1/4" | 33-1/2" | 15-3/4" | 11" | 33-3/4" | 22-1/4" | 11" | 14" | 2" | 1,193 |
| CBN2066 | 2,065,000 | 1,672,650 | 36" | 92-1/2" | 33-1/2" | 15-3/4" | 11" | 33-3/4" | 22-1/4" | 11" | 14" | 2" | 1,350 |

Change 'N' to 'L' for LP gas models.

Water connections for models (CB 0495-0745) are 2" NPT on 6-1/2" centers.

Performance data is based on manufacturer test results.

Water connections for models (CB 0986-2066) are 2-1/2" NPT on 11-1/4" centers.

Standard Features

- 81% Thermal Efficiency
- Electronic Temperature Control
- Fan Assisted Combustion
- Sealed Combustion Chamber
- Stainless Steel Burners
- Low NOx Operation Exceeds the most Stringent Air Quality Requirements
- ASME Copper Finned Tube Heat Exchanger
- 160 psi Working Pressure
- Gasketless Heat Exchanger Design
- Pump Relay w/ Delay
- Down Stream Test Valve
- Redundant Gas Valves
- Loch-Heat Ceramic Tile Combustion Chamber
- Hot Surface Ignition
- Adjustable High Limit w/ Manual Reset
- ASME Pressure Relief Valve
- Temperature & Pressure Gauges
- Flow Switch
- 24 Volt Control System
- BMS Terminal Strip

Standard Features Cont.

- Combustion Air Filter
- Freeze Protection
- 10 Year Limited Warranty on Heat Exchanger (See warranty for details)

Optional Equipment

- Alarm Bell
- Contacts on any Failure
- Contacts for Air Louvers
- Cupro-Nickel Heat Exchanger
- High or Low Gas Pressure Switch w/ Manual Reset
- Indoor/Outdoor Reset Control
- Low Water Cut-Off
- Multi-Stack Frame
- Solenoid Gas Valve

Mod-U-Pak Sequencer

- 2-6 Stage
- 7-10 Stage
- 11-15 Stage
- Indoor/Outdoor Reset

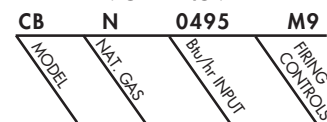
Available Firing Systems

- M9 HSI - 2 Stage (Standard)
- M13 Factory Mutual (FM) - 2 Stage
- M14 IRI Controls - 2 Stage
- M7 California Code - 2 Stage

Venting

- Outdoor Vent Cap
- Intelligent Venting Solutions

FOR EASE IN ORDERING BY MODEL NUMBER



This boiler is a 495,000 Btu/hr, natural gas Copper-Fin. It has M9 firing controls



Lochinvar®
High Efficiency Water Heaters, Boilers and Pool Heaters



Lochinvar Corporation • 300 Maddox Simpson Pkwy • Lebanon, TN 37090 • 615-889-8900 / Fax: 615-547-1000

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