



Copper-Fin[®] Commercial Gas Water Heaters

Energy Efficient, Cost Effective Water Heaters



From 495,000 to 2,065,000 Btu/hr

Less Than 20 ppm NO_x

81% Thermal Efficiency

Indoor/Outdoor



**STACK
FRAME**

Copper-Fin[®]

Energy-Efficient, Cost Effective Water Heaters

Lochinvar first introduced Copper-Fin[®] technology to the water heater industry over 50 years ago. Since then, we've continued to refine and perfect it - adding advanced fan assisted combustion, hot surface ignition, a unique gasketless copper finned tube heat exchanger and highly efficient 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 water heaters can't provide. Plus, thanks to special insulating materials, Copper-Fin units require only 3" clearance from combustible walls. What's more, our Stack Frame allows you to install two units in the area normally required for one. This makes it easier to fit multiple Copper-Fin water heaters into cramped mechanical rooms. And you can even use a smaller diameter vent stack - up to 8" smaller than typically required for comparable atmospheric water heaters - so it saves money as well as valuable mechanical room space.

Unique Copper-Fin Heat Exchanger

The Lochinvar Copper-Fin water heater 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 so common in conventional water heaters, and the finned copper tubes allow maximum heat transfer efficiency. To create this special heat 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

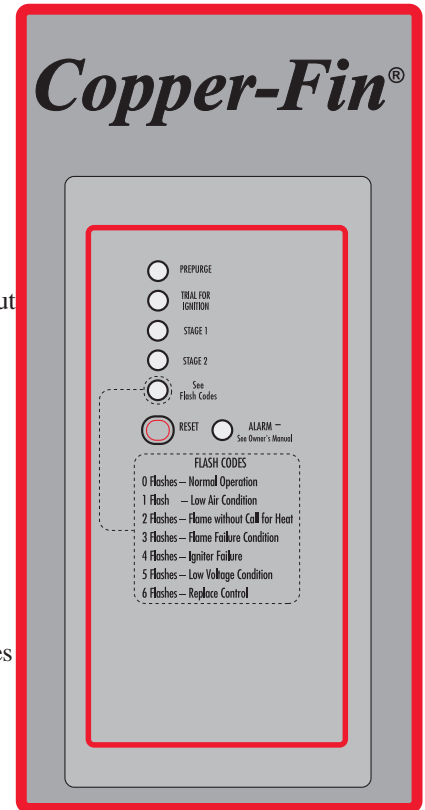
What's more, advanced casting processes allowed Lochinvar to develop a unique one-piece header system. This gasketless design provides enhanced reliability, improved durability and optimizes performance - but without the problems or failures so common to O-rings and gaskets.

Enhanced Performance and Serviceability

Our Copper-Fin models offer reliable operation, and feature a more service friendly design. The referenced gas valves are in the upper deck for easy access, and the electrical and BMS connections are positioned toward the front of the unit for easier service access.

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 diagnostic control pad provides 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.



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 20 ppm - corrected to 3% O₂.

And less NO_x means a cleaner environment.

Packaged to Meet Specific Requirements

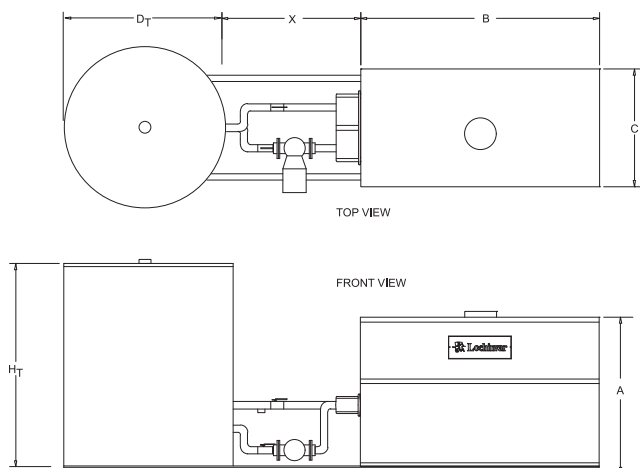
With Lochinvar, you can select the exact components to meet your needs. Use a Copper-Fin water heater with a small capacity Lock-Temp[®] storage tank for applications where demand is almost constant and little storage is needed. Or choose a large capacity tank for applications that require large volumes of water in a short period of time. Together, Copper-Fin water heaters and our Lock-Temp tanks give you the flexibility to precisely match storage demands and recovery requirements for almost any situation.

Copper-Fin® Package Systems

Note: Additional package systems are available.
Consult factory for dimensions and specifications.

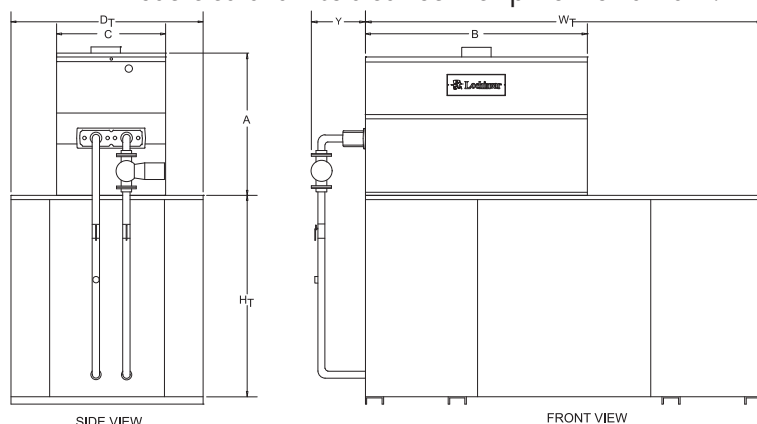
PS Configuration

CW 0497-2067 with a 119-504 gallon capacity Jacketed and Insulated Lock-Temp Vertical Tank.



PT Configuration

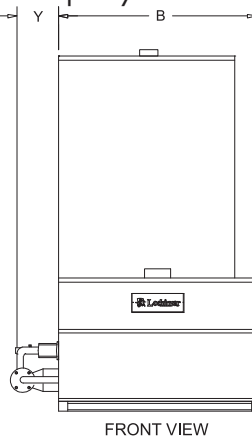
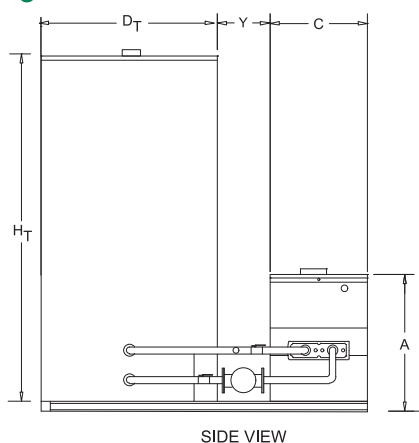
CW 0497-2067 with a 300 to 2500 gallon capacity Jacketed and Insulated Lock-Temp Horizontal Tank.



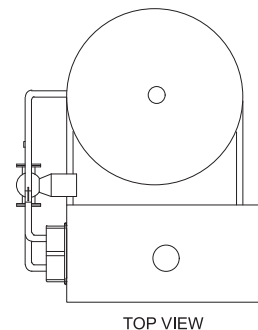
NOTE: Tank must be a larger diameter than the heater on PT configuration.

PU Configuration

CW 0497-2067 with a 119-504 gallon capacity Jacketed and Insulated Lock-Temp Vertical Tank.

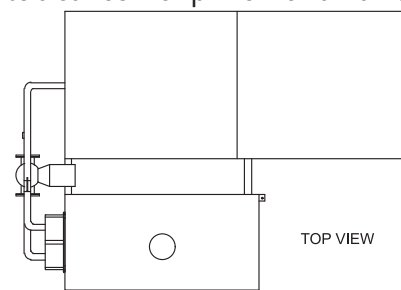
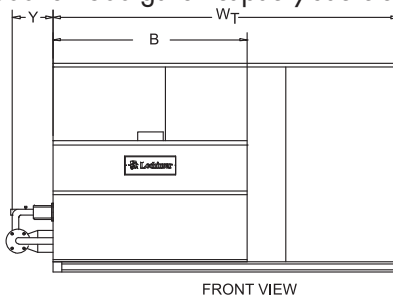
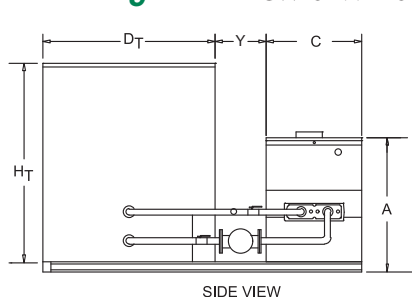


Top View



PW Configuration

CW 0497-2067 with a 300 to 2500 gallon capacity Jacketed and Insulated Lock-Temp® Horizontal Tank.



| Vertical Round Jacketed Tank Dimensions | | | |
|---|---------|-------|--------|
| Gallon | H_T | D_T | Weight |
| 119 | 62-1/2" | 28" | 345 |
| 200 | 77-1/4" | 32" | 600 |
| 257 | 91" | 34" | 1108 |
| 318 | 80" | 40" | 1290 |
| 432 | 80" | 46" | 1,512 |
| 504 | 92" | 46" | 1,623 |

| Piping Dimensions | |
|-------------------|-----|
| X | Y |
| 42" | 12" |

Note: For Heater Dimensions "A", "B", "C" Consult Dimensions and Specifications Table on Back Page.

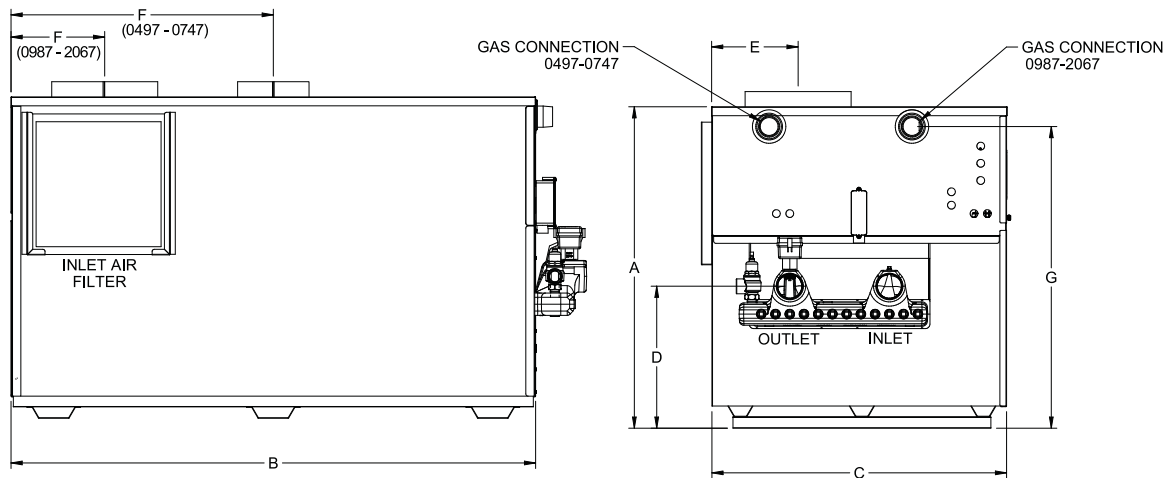
| Horizontal Square Jacketed Tank Dimensions | | | | |
|--|---------|----------|---------|--------|
| Gallons | H_T | W_T | D_T | Weight |
| 300 | 48-1/2" | 78-1/4" | 42-1/4" | 1,610 |
| 400 | 55-1/2" | 78-1/4" | 48-1/4" | 1,840 |
| 500 | 55-1/2" | 90-3/4" | 48-1/4" | 1,950 |
| 600 | 61-1/2" | 90-3/4" | 54-1/4" | 2,460 |
| 800 | 61-1/2" | 102-1/4" | 54-1/4" | 3,000 |
| 1,000 | 61-1/2" | 126-1/4" | 54-1/4" | 3,200 |
| 1,250 | 67-1/2" | 130-1/4" | 60-1/4" | 3,940 |
| 1,500 | 73-1/2" | 126-1/4" | 66-1/4" | 4,560 |
| 2,000 | 79-1/2" | 137-1/4" | 72-1/4" | 4,810 |
| 2,500 | 85-1/2" | 144-1/4" | 78-1/4" | 6,370 |

NOTE: If overall dimensions are critical consult factory.

All package systems are skid mounted.

*Add 3" to tank H_T for I-Beam skid.

Copper-Fin® Commercial Gas Water Heaters Dimensions & Specifications



| Model Number | Input Max. Btu/hr | GPH @ 100°F Rise | A | B | C | D | E | F | G | Gas Conn. | Inlet Water Conn. | Outlet Water Conn. | Vent Size | Shipping Weight |
|--------------|-------------------|------------------|---------|---------|---------|---------|---------|---------|---------|-----------|-------------------|--------------------|-----------|-----------------|
| CWN0497PM | 495 | 486 | 31-1/2" | 45-1/4" | 22-1/4" | 12-1/2" | 9-1/2" | 22-3/4" | 29-1/2" | 1-1/4" | 2" | 2" | 6" | 490 |
| CWN0647PM | 645 | 633 | 31-1/2" | 56-3/4" | 22-1/4" | 12-1/2" | 9-1/2" | 28-1/2" | 29-1/2" | 1-1/4" | 2" | 2" | 8" | 555 |
| CWN0747PM | 745 | 731 | 31-1/2" | 64" | 22-1/4" | 12-1/2" | 9-1/2" | 32" | 29-1/2" | 1-1/4" | 2" | 2" | 8" | 610 |
| CWN0987PM | 985 | 967 | 36" | 48-1/4" | 33-1/2" | 15-3/4" | 8-1/2" | 8-1/2" | 33-1/4" | 2" | 2-1/2" | 2-1/2" | 10" | 900 |
| CWN1257PM | 1,255 | 1,232 | 36" | 58-1/2" | 33-1/2" | 15-3/4" | 9-1/2" | 10-1/2" | 33-1/4" | 2" | 2-1/2" | 2-1/2" | 12" | 1,020 |
| CWN1437PM | 1,435 | 1,409 | 36" | 68-3/4" | 33-1/2" | 15-3/4" | 10-1/2" | 10-1/2" | 33-1/4" | 2" | 2-1/2" | 2-1/2" | 12" | 1,065 |
| CWN1797PM | 1,795 | 1,762 | 36" | 82-1/4" | 33-1/2" | 15-3/4" | 11" | 11" | 33-1/4" | 2" | 2-1/2" | 2-1/2" | 14" | 1,265 |
| CWN2067PM | 2,065 | 2,027 | 36" | 92-1/2" | 33-1/2" | 15-3/4" | 11" | 11" | 33-1/4" | 2" | 2-1/2" | 2-1/2" | 14" | 1,400 |

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

Water connections for models (CW 0497-0747) are 2" NPT on 6-1/2" centers.

Performance data is based on manufacturer test results.

Water connections for models (CW 0987-2067) 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
- All Bronze Circulating Pump
- Pump Delay w/ Freeze Protection
- Remote Tank Thermostat
- Glass-Lined Water Surfaces
- Referenced Gas Valves
- Loch-Heat Ceramic Tile Combustion Chamber
- Hot Surface Ignition
- ASME Temperature & Pressure Relief Valve
- Adjustable High Limit w/ Manual Reset
- Flow Switch
- 24 Volt Control System

- BMS Terminal Strip
- Combustion Air Filter
- 5 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 and Low Gas Pressure Switch w/ Manual Reset
- Low Water Cut-Off
- Stack Frame
- MP2 Sequencer

Available Firing Systems

- M9 HSI (Standard)
- M7 California Code

Venting

- Outdoor Vent Cap and Pump Cover

Registered under U.S. Patent 5,989,020

FOR EASE IN ORDERING BY MODEL NUMBER

| CW | N | 0497 | PM | M9 |
|-------|-----------|--------------|--------------|-----------------|
| MODEL | FUEL TYPE | Burner INPUT | PUMP MOUNTED | FIRING CONTROLS |

This heater is 495,000 Btu/hr natural gas Copper-Fin water heater. It is pump mounted and has F9 firing controls.



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