

# COMMERCIAL GAS WATER HEATERS

*Copper-Fin<sup>®</sup>*

FROM 495,000 TO 2,065,000 BTU/HR

LESS THAN 20 PPM NOX

81% THERMAL EFFICIENCY

INDOOR/OUTDOOR



DESIGNED ★ ENGINEERED ★ ASSEMBLED  
**USA**

STACK  
FRAME

AUDI  
MEMBER

SP<sup>®</sup>  
LOW LEAD CONTENT

CERTIFIED

DESIGN  
CERTIFIED

ASME  
HLW



**Lochinvar<sup>®</sup>**  
HIGH EFFICIENCY BOILERS & WATER HEATERS

# 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.

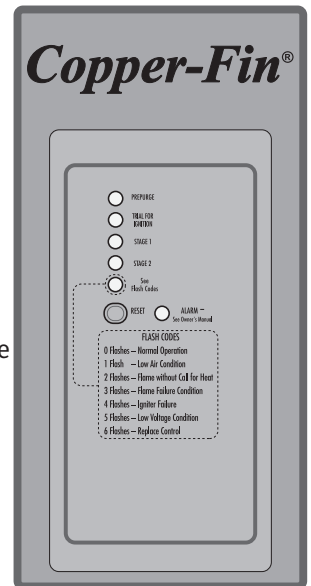
### ENHANCED PERFORMANCE AND SERVICEABILITY

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. 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 NOx emissions requirements.



An independent certification laboratory test gave us a rating of less than 20 ppm —corrected to 3% O<sub>2</sub>. And less NOx means a cleaner environment.

### PACKAGED TO MEET SPECIFIC REQUIREMENTS

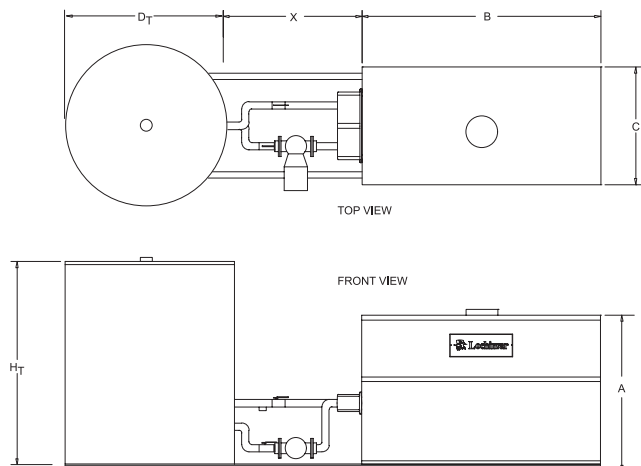
With Lochinvar, you can select the exact components to meet your needs. Use a Copper-Fin water heater with a small capacity Lock-Temp® storage tank for applications where demand is almost constant and little storage is needed. Or choose a large capacity tank for applications that require large volumes 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.

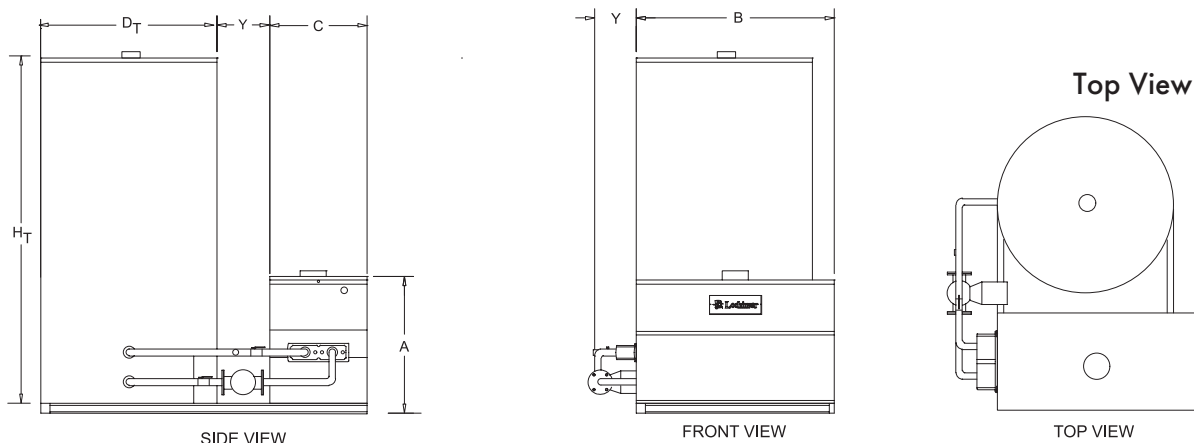
## PS CONFIGURATION

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



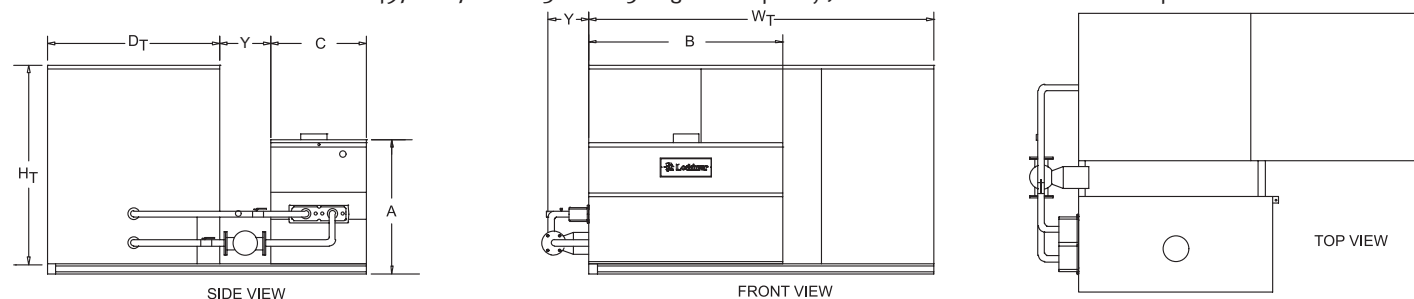
## PU CONFIGURATION

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



## 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 <sub>T</sub>	D <sub>T</sub>	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"

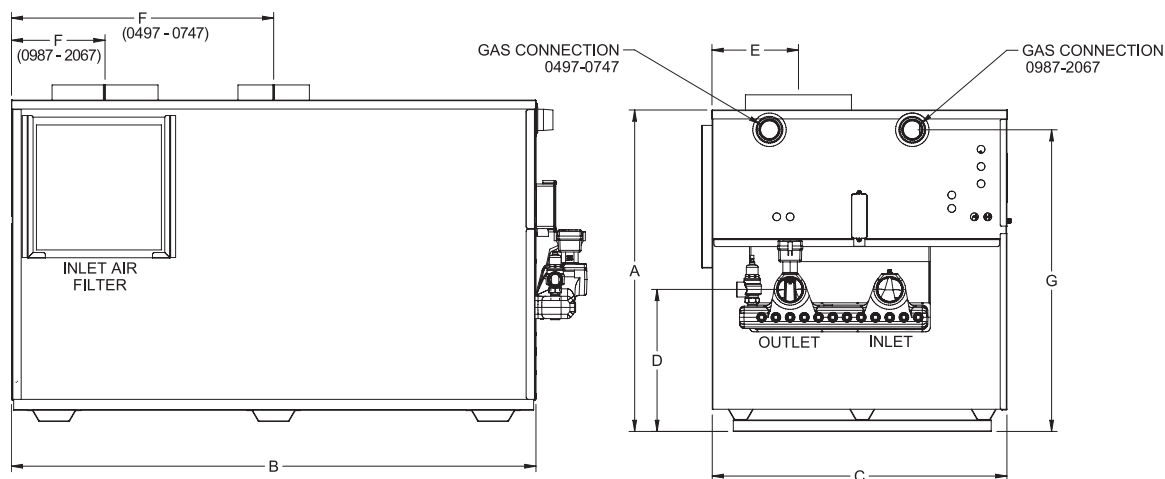
Note: For Heater Dimensions "A", "B", "C" Consult Dimensions and Specifications Table on Back Page.

Horizontal Square Jacketed Tank Dimensions				
Gallons	H <sub>T</sub>	W <sub>T</sub>	D <sub>T</sub>	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<sub>T</sub> 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	Vent Size	Gas Conn.	Shipping Wt.
CWN0497PM	495,000	486	31-1/2"	45-1/4"	22-1/4"	12-1/2"	8-1/2"	22-3/4"	29-1/2"	6"	1-1/4"	464
CWN0647PM	645,000	633	31-1/2"	56-3/4"	22-1/4"	12-1/2"	8-1/2"	28-1/2"	29-1/2"	8"	1-1/4"	537
CWN0747PM	745,000	731	31-1/2"	64"	22-1/4"	12-1/2"	8-1/2"	32"	29-1/2"	8"	1-1/4"	570
CWN0987PM	985,000	967	36"	48-1/4"	33-1/2"	15-3/4"	8-1/2"	8-1/2"	33-1/4"	10"	1-1/4"	727
CWN1257PM	1,255,000	1,232	36"	58-1/2"	33-1/2"	15-3/4"	10-1/2"	10-1/2"	33-1/4"	12"	2"	927
CWN1437PM	1,435,000	1,409	36"	68-3/4"	33-1/2"	15-3/4"	10-1/2"	10-1/2"	33-1/4"	12"	2"	1,027
CWN1797PM	1,795,000	1,762	36"	82-1/4"	33-1/2"	15-3/4"	11"	11"	33-1/4"	14"	2"	1,051
CWN2067PM	2,065,000	2,027	36"	92-1/2"	33-1/2"	15-3/4"	11"	11"	33-1/4"	14"	2"	1,152

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  
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 on Any Failure  
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

F9 HSI (Standard)  
F7 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	F9
MODEL	FUEL TYPE	Btu/hr 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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For technical information call 800-722-2101. Lochinvar LLC reserves the right to make product changes or improvements without prior notice. Dimensions are approximate and should not be used for construction purposes.