



## **Copper-Fin<sup>®</sup> Commercial Gas Water Heaters**

**Energy Efficient, Cost Effective Water Heaters**



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

**Less Than 30 ppm NOx**

**81% Thermal Efficiency**

**Indoor/Outdoor**



**MULTI-  
STACK**

# Energy-Efficient, Cost-Effective Water Heaters

Lochinvar first introduced Copper-Fin® technology to the water heater 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 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 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 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.



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 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

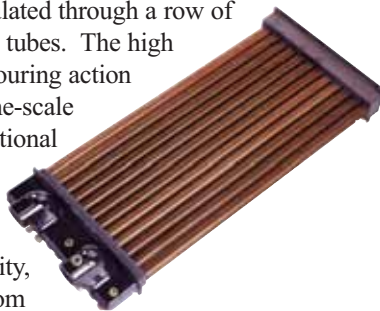


Because of our unique fan-assisted combustion process, the Copper-Fin

exceeds today's toughest NO<sub>x</sub> emissions requirements. An independent certification laboratory test gave us a rating of less than 30 ppm —corrected to 3% O<sub>2</sub>. And less NO<sub>x</sub> means a cleaner environment.

## 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 newly enhanced Copper-Fin models offer the same 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 EMS connections have all been repositioned toward the front of the unit for easier service access.

## 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.

## Packaged to Meet Specific Requirements

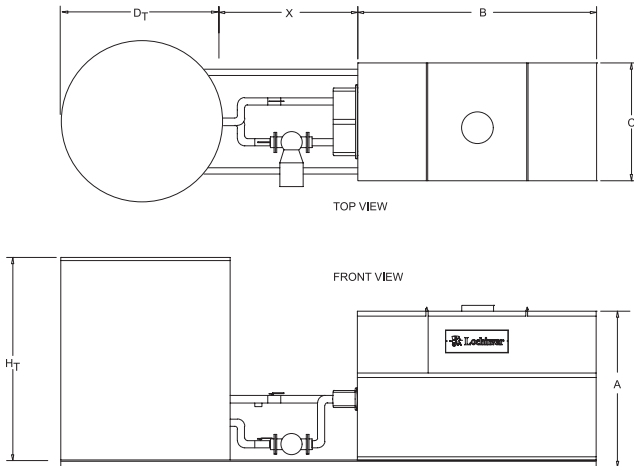
With Lochinvar, you can select the exact components to meet your needs. Use a Copper-Fin water heater with a small capacity Lock-Temp® storage tank for applications where demand is almost constant and little storage is needed. Or choose a large capacity tank for applications that require large volumes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

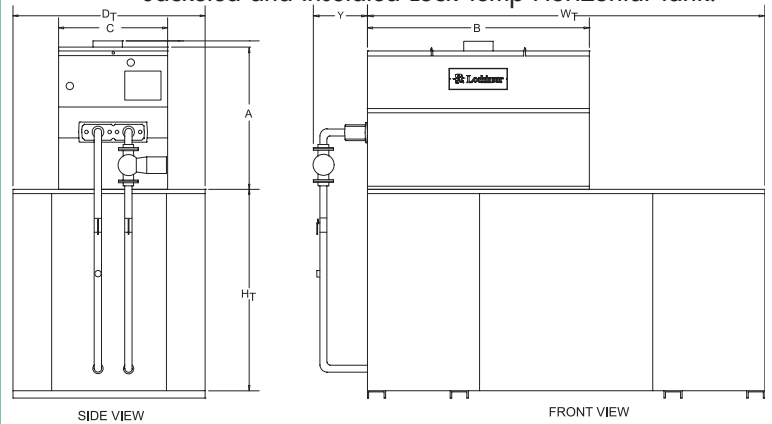
## PS Configuration

CW 0495-2066 with a 119-504 gallon capacity Jacketed and Insulated Lock-Temp Vertical Tank.



## PT Configuration

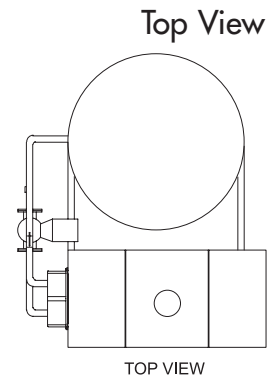
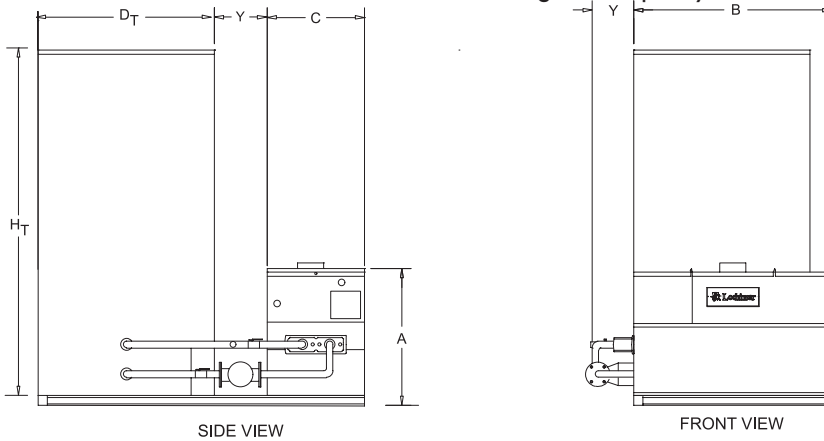
CW 0495-2066 with a 300 to 2500 gallon capacity Jacketed and Insulated Lock-Temp Horizontal Tank.



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

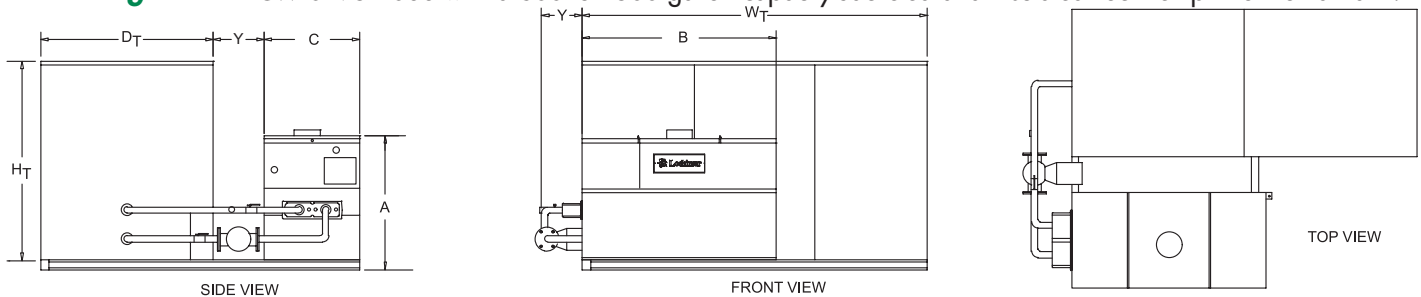
## PU Configuration

CW 0495-2066 with a 119-504 gallon capacity Jacketed and Insulated Lock-Temp Vertical Tank.



## PW Configuration

CW 0495-2066 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.

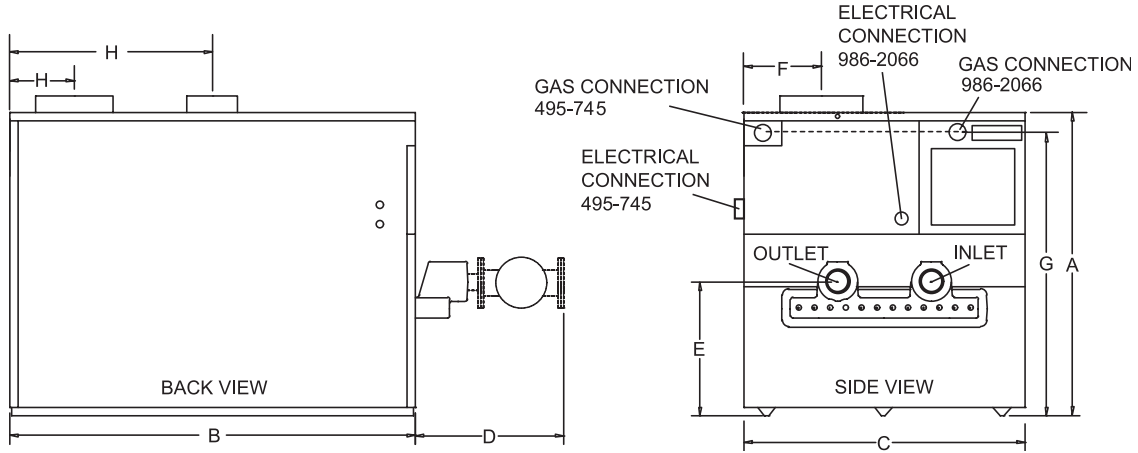
HORIZONTAL SQUARE JACKETED TANK DIMENSIONS				
Gallons	H <sub>T</sub>	W <sub>T</sub>	D <sub>T</sub>	Weight
300	50-1/2"	78-1/4"	42-1/4"	1,575
400	50-1/2"	102-1/4"	42-1/4"	1,978
500	56-1/2"	90-3/4"	48-1/4"	2,178
600	56-1/2"	114-1/4"	48-1/4"	2,520
700	56-1/2"	130-1/4"	48-1/4"	3,025
800	62-1/2"	124-1/4"	54-1/4"	3,159
1,000	62-1/2"	138-1/4"	54-1/4"	4,082
1,250	68-1/2"	130-1/4"	60-1/4"	5,466
1,500	77-1/2"	126-1/4"	66-1/4"	7,257
2,000	80-1/2"	138-1/4"	72-1/4"	8,650
2,500	86-1/2"	144-1/4"	78-1/4"	10,532

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	Btu/hr Input	GPH @ 100°F Rise	A	B	C	D	E	F	G	H	Vent Size	Gas Conn.	Shipping Weight
CWN0495PM	495,000	486	33-1/4"	45-1/4"	22-1/4"	18-1/2"	12-1/2"	9-1/2"	30-3/4"	22-3/4"	6"	1-1/4"	490
CWN0645PM	645,000	633	33-1/4"	56-3/4"	22-1/4"	18-1/2"	12-1/2"	9-1/2"	30-3/4"	22-1/4"	8"	1-1/4"	555
CWN0745PM	745,000	731	33-1/4"	64"	22-1/4"	18-1/2"	12-1/2"	9-1/2"	30-3/4"	31-1/4"	8"	1-1/4"	610
CWN0986PM	985,000	967	36"	48-1/4"	33-1/2"	20-1/2"	15-3/4"	9-1/2"	33-3/4"	9-1/2"	10"	2"	900
CWN1256PM	1,255,000	1,232	36"	58-1/2"	33-1/2"	20-1/2"	15-3/4"	10-1/2"	33-3/4"	10-1/2"	12"	2"	1,020
CWN1436PM	1,435,000	1,409	36"	68-3/4"	33-1/2"	20-1/2"	15-3/4"	10-1/2"	33-3/4"	10-1/2"	12"	2"	1,065
CWN1796PM	1,795,000	1,762	36"	82-1/4"	33-1/2"	20-1/2"	15-3/4"	11"	33-3/4"	11"	14"	2"	1,265
CWN2066PM	2,065,000	2,027	36"	92-1/2"	33-1/2"	20-1/2"	15-3/4"	11"	33-3/4"	11"	14"	2"	1,400

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

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

Performance data is based on manufacturer test results.

Water connections for models (CW 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
- 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
- Inlet/Outlet Temperature Gauges
- Flow Switch
- 24 Volt Control System

- BMS Terminal Strip
- Combustion Air Filter (CW 986-2066)
- 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
- Multi-Stack Frame
- MP2 Sequencer

## Available Firing Systems

- F9 HSI (Standard)
- F13 GE GAP/FM
- F7 California Code

## Venting

- Outdoor Vent Cap and Pump Cover
- Intelligent Venting Solutions

### FOR EASE IN ORDERING BY MODEL NUMBER

CW	N	0495	PM	F9
MODEL	FUEL TYPE	BURN 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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[www.Lochinvar.com](http://www.Lochinvar.com)