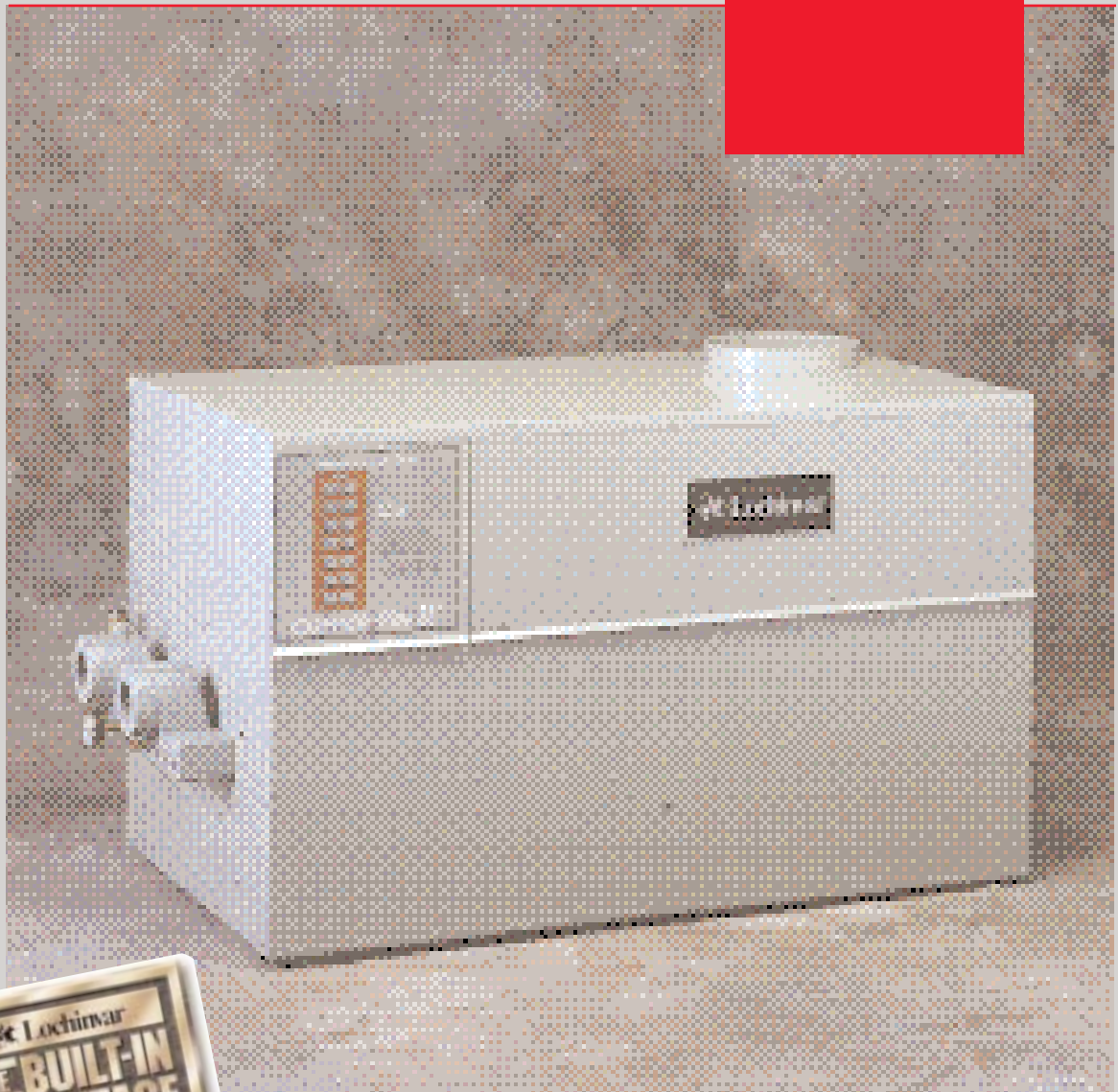




COPPER-FIN II®

Commercial
Gas Water
Heaters



From 300,000 to 2,070,000 BTUs

85% Thermal Efficiency

9.9 ppm NOx Rating

Category I Venting

Copper-Fin II® Gas Water Heaters— Smaller Yet Greater

Thermal efficiency is higher...while footprint and vents are smaller

Lochinvar's Copper-Fin II line of commercial water heaters gives you all the advantages of lime scale free, Copper-Fin technology, combined with the benefits of a sealed combustion system. And now we have enhanced our 400,000 through 750,000 BTU models with our revolutionary proportional firing technology. This proven innovation provides energy-saving performance and Lochinvar reliability. All Copper-Fin II models offer four major advantages: higher efficiency, a smaller footprint, smaller vents, and a wide variety of venting options.

85% Thermal Efficiency

Copper-Fin II water heaters offer a remarkable 85% thermal efficiency. Thanks to a specially-designed, Lochinvar blower assembly, they deliver the ideal gas/air ratio to the high-grade stainless-steel burners. This precise system produces an extremely efficient, low profile flame that not only raises efficiency, but also lowers operation and maintenance costs.

The sealed combustion chamber virtually eliminates heat loss. This means that more of every energy dollar actually goes into heating water. It also means the jacket stays cooler, providing greater safety and requiring less clearance from combustible walls, 1" in some cases.

Higher efficiency also means a more compact design. Our Copper-Fin II units will fit almost anywhere, and with so many venting options to choose from, they can be installed in even the trickiest situations, including alcove installations!

9.9 ppm Nox Rating

Because of our unique fan-assisted combustion process, Copper-Fin II produces less NO_x. In fact, an independent certification laboratory test gave us a 9.9 ppm rating—corrected to 3% O₂. Less NO_x means a cleaner environment.



Multi-Stack Stand with CF501 and CF751.

A Space-Saving, Money-Saving Design

The entire Copper-Fin II product line offers you greater flexibility and ease of installation. These high efficiency units are also compact enough to fit through standard 36" doorways intact. Even our 2 million BTU model is only 33 1/2" wide.

The space-saving design of Copper-Fin II leaves more space in the mechanical room. Plus, the Copper-Fin II offers five indoor venting options, including Lochinvar's own power-assisted DirectAire® system. Or use them outside with the optional outdoor vent hood.

The sealed combustion chamber minimizes heat loss so dramatically that smaller units require only 1" clearance from combustible walls. And with the optional Multi-Stack™ stand you can put two units in the footprint normally required for one.

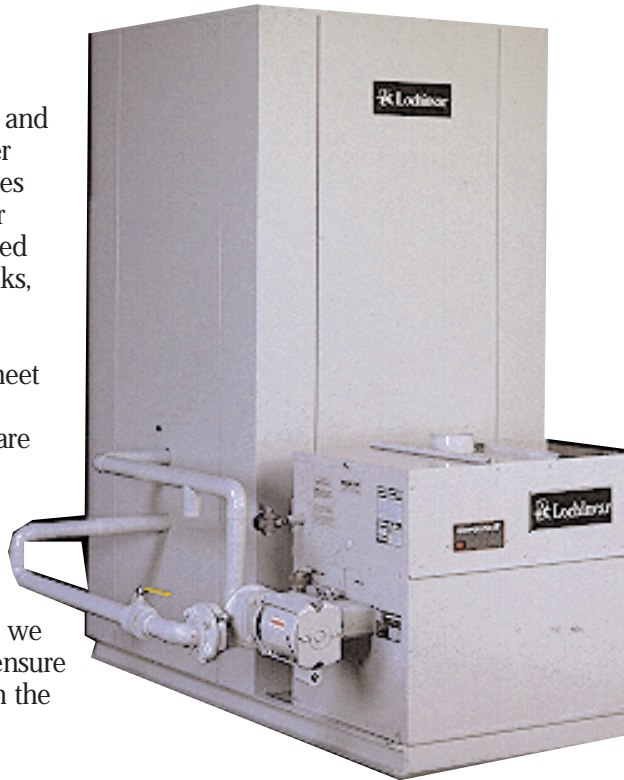
Making Installation Easier — For Less

High-efficiency, fan-assisted combustion means you can use a smaller diameter vent stack, up to 8" smaller than typically required — making installation less expensive and less time-consuming. So save energy, save space, and save on installation costs — with the Copper-Fin II.

Copper-Fin II® Packaged Systems

Select from multiple arrangements for storage and recovery to create a water heater that exactly matches your application with our Packaged Systems. Teamed with our Lock-Temp® tanks, Copper-Fin II provides the constant water temperature needed to meet load requirements.

All packaged systems are pre-engineered and pre-assembled complete with all piping to meet your specific application. And like every Lochinvar product, we thoroughly test them to ensure proper performance from the moment they're installed.



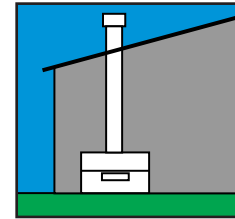
Copper-Fin II Packaged System
CFNO300PM and a 318 Gallon Tank PU Configuration.

Vent Cost Savings

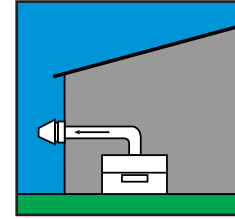
INPUT	CONVENTIONAL VENT SIZE	COPPER-FIN II VENT SIZE	\$ SAVINGS*
300,000	8"	5"	\$ 253.00
400,000	10"	6"	\$ 657.00
500,000	10"	6"	\$ 657.00
650,000	12"	8"	\$ 731.00
750,000	14"	8"	\$ 1,450.00
990,000	16"	10"	\$ 1,790.00
1,260,000	16"	12"	\$ 1,463.00
1,440,000	18"	12"	\$ 2,432.00
1,800,000	20"	14"	\$ 3,526.00
2,070,000	22"	14"	\$ 3,738.00

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

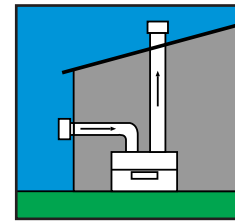
Venting Options



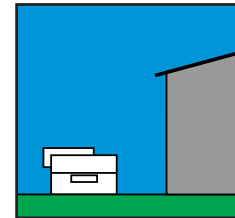
Conventional
Vents into conventional flue or vent breaching using Type B double-wall vent.



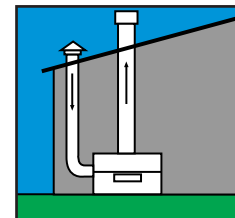
Side Wall
Vents directly through the outside wall using the optional powered side wall cap. Ideal when a vent stack is not practical.



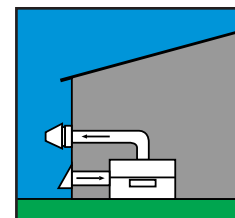
DirectAire® Horizontal/Ventilating
Draws fresh combustion air from an outside wall horizontally, and vents combustion by-products through a vertical flue.



Outdoor
Requires an optional outdoor vent cap. Use when indoor space is a problem or if outdoor location gives better access.



DirectAire® Vertical
Draws fresh combustion air from outside, and vents combustion by-products through conventional vertical flue.



DirectAire® Horizontal
Again, draws fresh combustion air from outside, then vents by-products through side wall using optional powered vent cap.

HEATER #	W _H	L _H	H _H	VERTICAL TANK DIMENSIONS				HORIZONTAL TANK DIMENSIONS			
				TANK SIZE	W _T	L _T	H _T	TANK SIZE	W _T	L _T	H _T
CFNO300 PM	22 1/4"	30 1/4"	31 3/8"	220	38 5/8"	34 1/8"	84"	300	42 1/4"	78 1/8"	48 1/2"
CFNO401 PM	22 1/4"	37 5/8"	31 3/8"	318	42 3/8"	42 3/8"	84"	400	42 1/4"	102 1/8"	48 1/2"
CFNO501 PM	22 1/4"	45 3/8"	31 3/8"	432	48 3/8"	48 3/8"	84"	500	48 1/4"	90 5/8"	54 1/2"
CFNO651 PM	22 1/4"	56 3/4"	31 3/8"	504	48 3/8"	48 3/8"	96"	600	48 1/4"	114 1/8"	54 1/2"
CFNO751 PM	22 1/4"	64"	38 1/8"					700	48 1/4"	130 1/8"	54 1/2"
CFNO990 PM	33 1/2"	48 3/8"	38 1/8"					800	54 1/4"	124 1/8"	60 1/2"
CFN1260 PM	33 1/2"	58 1/2"	38 1/8"					1000	54 1/4"	138 1/8"	60 1/2"
CFN1440 PM	33 1/2"	68 3/8"	38 1/8"					1250	60 1/4"	130 1/8"	66 1/2"
CFN1800 PM	33 1/2"	82 1/8"	38 1/8"					1500	66 1/4"	126 1/8"	75 1/2"
CFN2070 PM	33 1/2"	92 3/4"	38 1/8"					2000	72 1/4"	138 1/8"	78 1/2"
								2500	78 1/4"	144 1/8"	84 1/2"

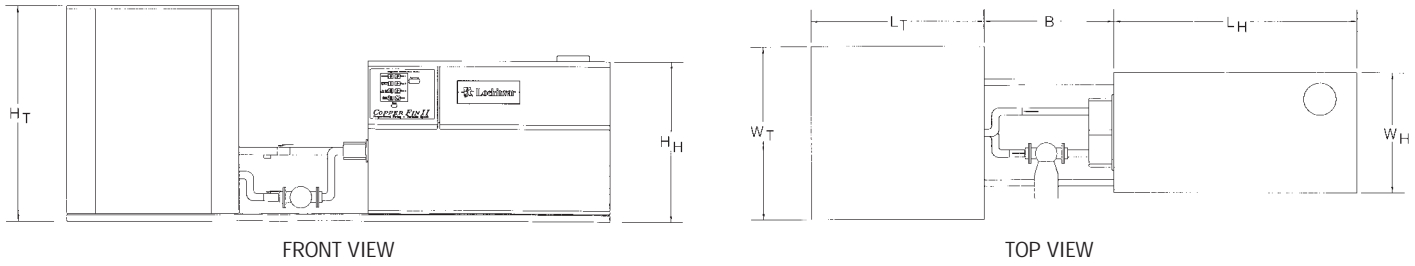
SPECIAL DIMENSIONS		
A	B*	C
12"	12"	35"

*B is for conventional venting only.
For DirectAire® venting please consult factory.

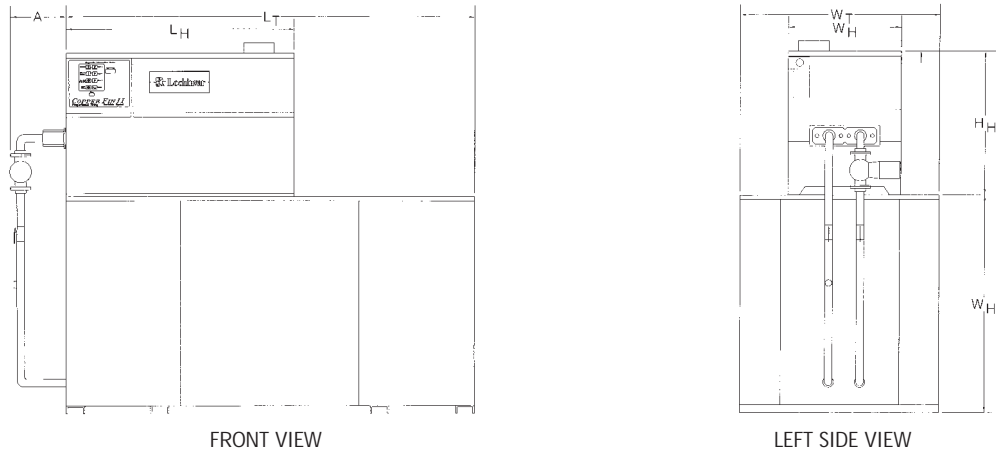
For total package system dimensions, add appropriate dimension from each chart above.

Copper-Fin II Package System Configurations and Dimensions Refer to dimensions on previous page.

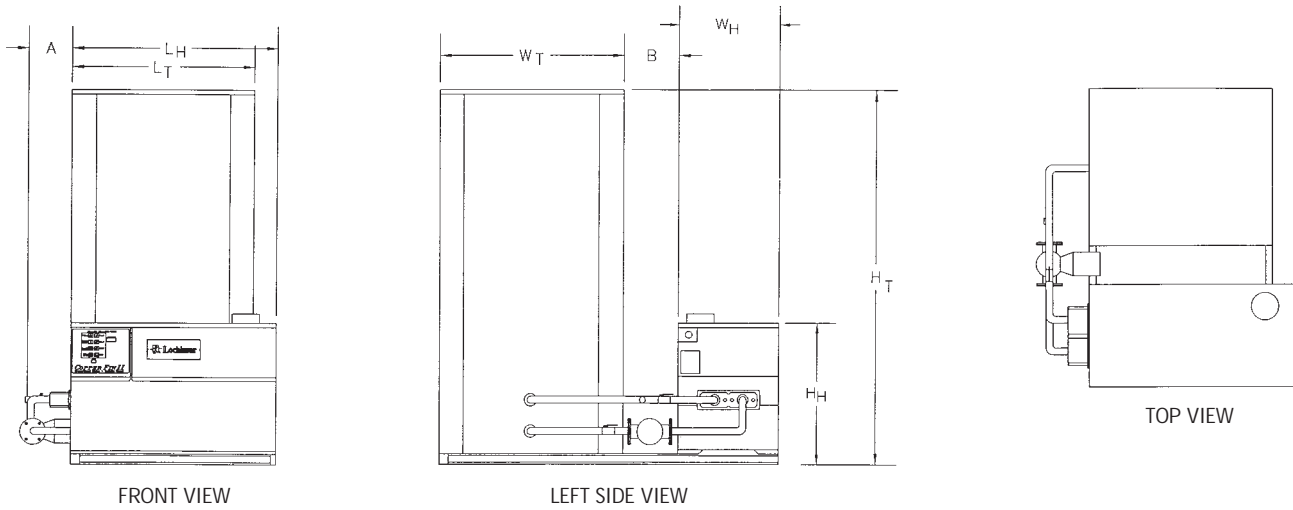
PS Configuration CF 300-2070PM with a 119-504 gallon capacity Jacketed and Insulated Lock-Temp Vertical Storage Tank.



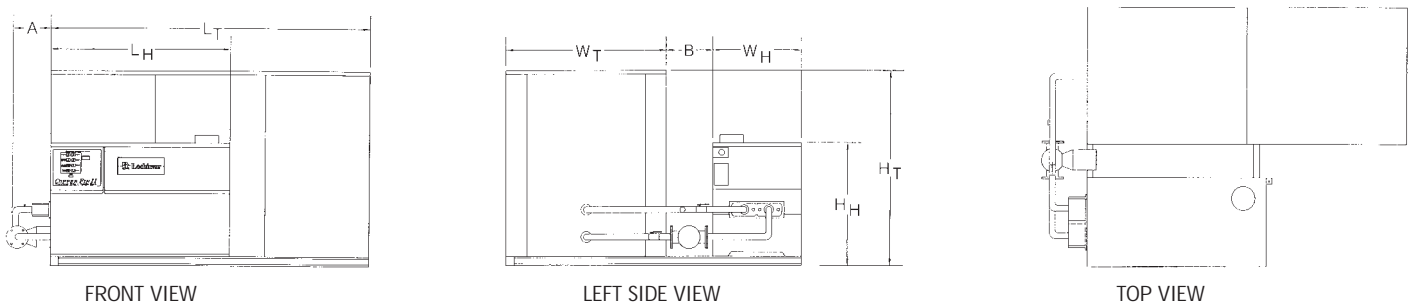
PT Configuration CF 300-2070PM with a 300-2500 gallon capacity Jacketed and Insulated Lock-Temp Horizontal Storage Tank.



PU Configuration CF 300-2070PM with a 119-504 gallon capacity Jacketed and Insulated Lock-Temp Vertical Storage Tank.

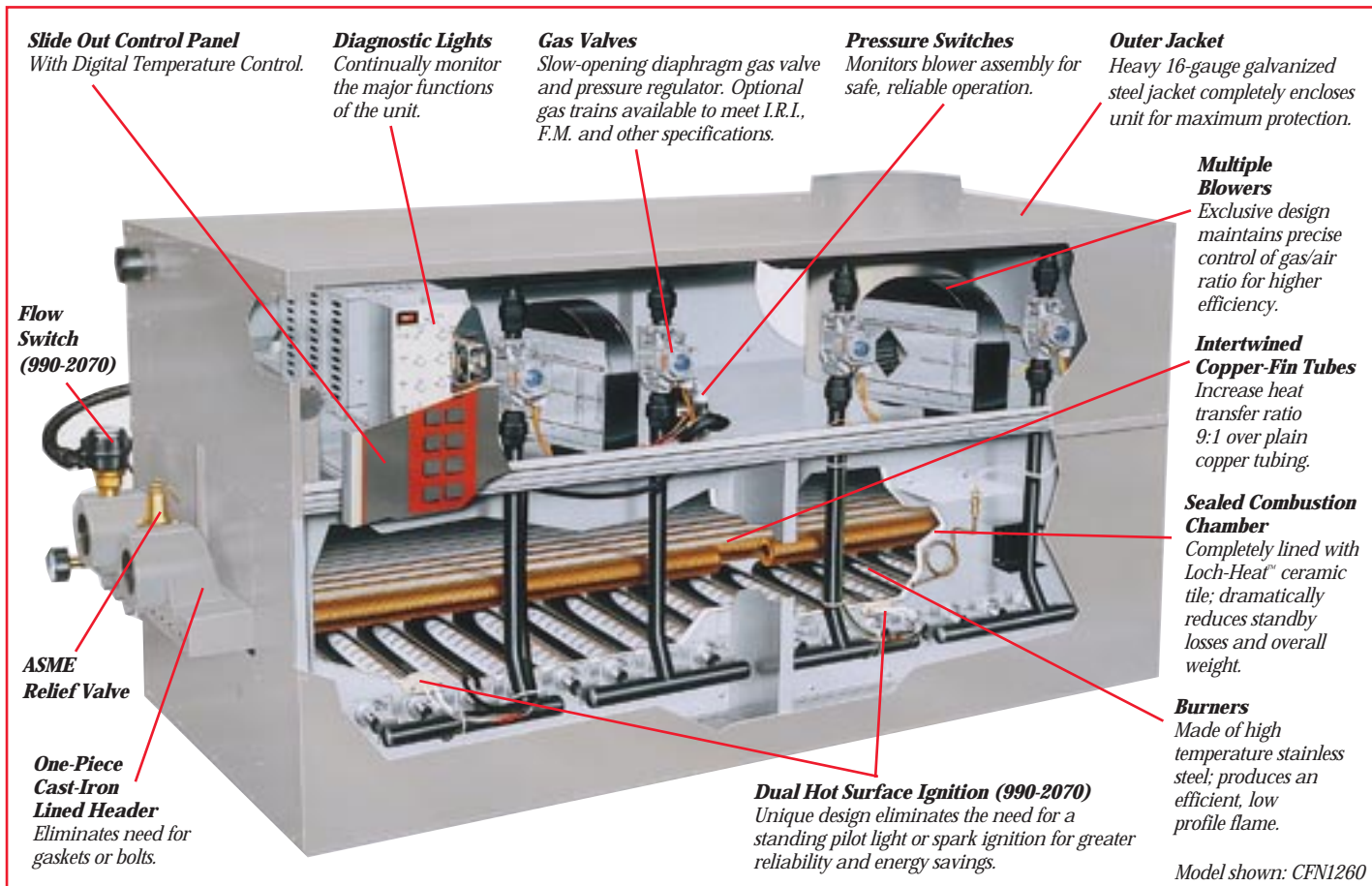


PW Configuration CF 300-2070 with a 300-2500 gallon capacity Jacketed and Insulated Lock-Temp Horizontal Storage Tank.



Copper-Fin II[®] 401-2070

Featuring Proportional Firing & Variable Speed



What Is Proportional Firing?

All Copper-Fin II commercial water heaters feature a sealed combustion chamber to minimize heat loss, and a power-assisted fan provides just the right amount of combustion air to ensure the best combustion. But now we've taken that one step further.

Our models 401-2070 not only maintain the ideal blend of gas and air for combustion, they do so in proportional amounts. They provide a measured response to the demand for heat—as much or as little as needed—while always maintaining the ideal gas/air ratio.

How It Works

Multiple gas valves supply gas to the burners in stages, and multiple blowers† maintain the proper airflow to ensure the most efficient combustion at each level of use. Our built-in sequencer controls each of these functions*. With digital accuracy, it carefully monitors the need for heat, and as demand increases or decreases, it automatically adjusts the blower output and gas valves.

As the demand is met, the system shuts down gradually, turning off gas valves and reducing combustion air in direct proportion. This allows the Copper-Fin II to maintain a virtually constant setting. In fact, it's accurate to within 1° Fahrenheit—a remarkable achievement for units of this capacity!

† Variable Speed Blower on Models 401-751.

*Featuring Digital Temperature Control (DTC).

Consistent Performance

Conventional water heaters achieve peak efficiency only when they're running at maximum capacity. When the demand for hot water is lower, the efficiency is lower, too. But our Copper-Fin II models with proportional firing not only offer more accurate temperature control, they consistently provide peak performance even while operating at lower inputs.

Plus, our Copper-Fin heat exchanger provides superior heat transfer. In fact, it's nine times more efficient than conventional copper tubing. And the high-velocity flow eliminates the lime scale build-up which can reduce the efficiency of other water heaters by as much as 40% in five years.

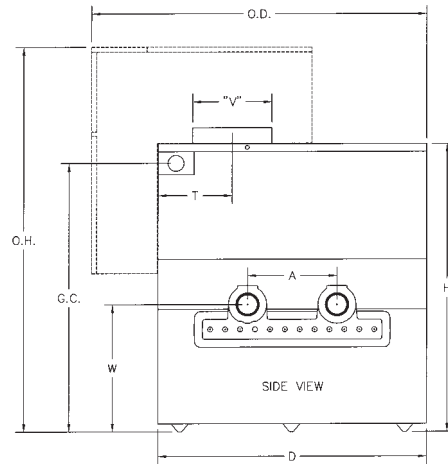
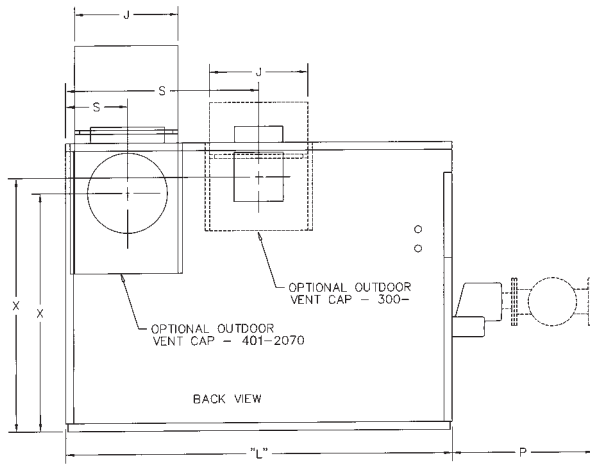
Total System Redundancy

Proportional firing also means unmatched reliability. In our larger 990-2070 models every major component has a back-up—multiple gas valves, multiple fans, even dual Hot Surface Ignition Systems—so downtime is virtually eliminated.

What's more, every unit is equipped with a comprehensive Diagnostic Information Center which alerts the operator if there is a problem and helps to isolate it quickly. The 401-2070 models also feature the industry's first slide-out control panel with plug-in components. A built-in circuit breaker eliminates fuses, too—making servicing fast and easy.



Copper-Fin II Water Heater Dimensions & Specifications



MODEL NO	BTU INPUT	GPH@100° TEMP. RISE	GAS CONN.	WATER CONN.	A	D	O.D.	G.C.	H	O.H.	CAP J	L	P	VENT V*	W	S	T	X	WT.
CFN0300 PM	300,000	309	3/4"	2"	6 1/2"	22 1/4"	27 7/8"	21 13/16"	29 3/8"	35 3/16"	12 1/4"	30 1/4"	18 1/2"	5"	12 9/16"	15 1/8"	9 7/16"	25 5/16"	388
CFN0401 PM	399,999	412	1"	2"	6 1/2"	22 1/4"	27 3/4"	29"	31 1/2"	37 1/2"	10 1/8"	37 5/8"	18 1/2"	6"	12 9/16"	6"	7 3/8"	26 3/4"	410
CFN0501 PM	500,000	515	1"	2"	6 1/2"	22 1/4"	27 3/4"	29"	31 1/2"	37 1/2"	12 1/4"	45 3/8"	18 1/2"	6"	12 9/16"	6"	7 3/8"	26 3/4"	459
CFN0651 PM	650,000	670	1 1/4"	2"	6 1/2"	22 1/4"	27 3/4"	29"	31 1/2"	37 1/2"	15 9/16"	56 3/4"	18 1/2"	8"	12 9/16"	7"	8 3/8"	25 3/4"	555
CFN0751 PM	750,000	773	1 1/4"	2"	6 1/2"	22 1/4"	27 3/4"	29"	31 1/2"	37 1/2"	17 3/4"	64"	18 1/2"	8"	12 9/16"	7"	8 3/8"	25 3/4"	594
CFN0990 PM	990,000	1020	1 1/2"	2 1/2"	11 5/32"	33 1/2"	41 3/4"	33 13/16"	35 15/16"	48 1/16"	14"	48 3/16"	20 1/2"	10"	15 13/16"	8"	9 1/4"	29 11/16"	904
CFN1260 PM	1,260,000	1298	1 1/2"	2 1/2"	11 5/32"	33 1/2"	41 3/4"	33 13/16"	35 15/16"	48 1/16"	16"	58 1/2"	20 1/2"	12"	15 13/16"	9"	10 1/4"	28 11/16"	999
CFN1440 PM	1,440,000	1484	2"	2 1/2"	11 5/32"	33 1/2"	41 3/4"	33 13/16"	35 15/16"	48 1/16"	16"	68 5/8"	20 1/2"	12"	15 13/16"	9"	10 1/4"	28 11/16"	1092
CFN1800 PM	1,800,000	1855	2"	2 1/2"	11 5/32"	33 1/2"	41 3/4"	33 13/16"	35 15/16"	48 1/16"	18"	82 1/8"	20 1/2"	14"	15 13/16"	10"	11 1/2"	28 11/16"	1250
CFN2070 PM	2,070,000	2133	2"	2 1/2"	11 5/32"	33 1/2"	41 3/4"	33 13/16"	35 15/16"	48 1/16"	18"	92 3/8"	20 1/2"	14"	15 13/16"	10"	11 1/2"	28 11/16"	1355

*Air intake is the same as "V" dimension, except models 1800 and 2070, where it is 12".

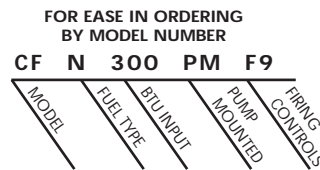
• Recovery based on actual heater performance at 85%. • Change 'N' to 'L' to denote L.P. model. No deration on L.P. models. • Pump pre-mounted on all PM models.

Standard Features

- 85% Thermal Efficiency
- Hot Surface Ignition
- Stainless Steel Burners
- Redundant Gas Valves
- Unique Gasketless Copper-Fin Heat Exchanger
- Loch-Heat™ Ceramic Tile Sealed Combustion Chamber
- ASME 160# W.P.
- 150# ASME Temperature and Pressure Relief Valve
- NOx Rating of 9.9 ppm
- 24v Controls
- Inlet/Outlet Temperature Gauge
- 180°F Operation
- Bronze Fitted Pump
- Air Pressure Switch
- 5-Year Warranty
- Fits Through Standard 36" Doorframe
- 1" Clearance To Combustibles (3" on 300 and 990-2070)
- Terminal Strip for E.M.S. Interface
- Diagnostic Control Panel

Additional Features (401-2070)

- Proportional Firing
- Category 1 Venting
- Dual Hot Surface Ignition Systems (990-2070 only)
- Multiple Blowers
- Built-In Sequencer
- Digital Temperature Control (DTC)
- Slide-Out Control Panel With Plug-In Components
- Flow Switch (990-2070 only)



This heater is 300,000 BTU natural gas Copper-Fin® water heater. It has F9 firing controls.

Optional Equipment

- Powered Vent Cap For Horizontal DirectAire® Venting (110v)
- Cupro Nickel Heat Exchanger
- Manual Reset High Limit
- Alarm Bell
- Flow Switch (300-751 Models)
- Low Water Cut-Off
- Mod-U-Pak™ Sequencer (See Accessories)
- All Bronze Pump
- Multi-Stack™ Stand (See Accessories)

Available Firing Systems

300	401-2070	
F9	M9	Electronic Control with Hot-Surface Ignition (Standard)
F13	M13	FM Approved*
F14	M14	IRI*
F7	M7	California Code

* Indoor only.
Patent Pending



The Built-In Advantage™

