Lochinvar®
High Efficiency Water Heaters, Boilers and Pool Heaters

Water Heater Product Line Brochure

Lochinvar®

High Efficiency Water Heaters, Boilers and Pool Heaters

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Lochinvar®
High Efficiency Water Heaters, Boilers and Pool Heaters

The Innovator In Water Heating Technology

From the tiny 2 gallon Jr. Electric to the innovative Intelli-Fin, Lochinvar water heaters are noted for their range of features and application flexibility. Collectively, they represent the most complete product line in the industry, from a company with a long history of innovation and a reputation for excellence.

You'll find there's a Lochinvar product for any application imaginable—from standard residential units to the advanced Copper-Fin II with proportional firing. And with selection, comes opportunity.

In fact, the diversity and performance of our product line is surpassed only by its quality—in design, construction, and training. Lochinvar quality is reinforced by our world class manufacturing plant, commitment to research and development and unparalleled industry training available at Lochinvar University.

Quality, efficiency, features, service, and selection. For more than 85 years, these have been the hallmarks of Lochinvar products. Lochinvar... the innovator in water heating technology.

LOW NOx Certified PROTECTING OUR ENVIRONMENT

This ingot means a product has a NOx rating which exceeds the requirements of the South Coast Air Quality Management District and Texas National Resource Conservation Commission.

STACK FRAME

This ingot means the Multi-Stack Frame is available for use with that product. See page 45 & 46 for details.

This catalog is designed to provide a convenient, condensed overview of the entire Lochinvar water heater line.
For a complete list of features, specifications and technical data on a particular product, see your manufacturer's representative or contact Lochinvar.
Every Lochinvar product is designed and built to meet or exceed the fuel efficiency and safety standards of one or more of these agencies, wherever applicable.

DESIGN CERTIFIED · HW · CERTIFIED · AHRI MEMBER · NSF · c UL us

Contents

Armor® 150,000 to 800,000 Btu/hr Models

The Intelligent Approach to Water Heating

There are several tank-type commercial water heaters on the market with thermal efficiencies of 95% or higher. They all promise tremendous savings on operating costs compared to standard-efficiency units, but none of them truly measures up to the Lochinvar ARMOR™.

ARMOR is a fully condensing commercial gas water heater. Available in eight models with inputs ranging from 150,000 to 800,000 Btu/hr, the ARMOR achieves thermal efficiencies up to 98%.

ARMOR delivers long-lasting life-cycle efficiency surpassing any commercial unit in its class. When you look beyond the numbers you'll discover the many ways that ARMOR technology is in a class by itself!

Fully Modulating with 5:1 Turndown

ARMOR features advanced Negative Regulation (Neg/Reg) sealed combustion technology, permitting fan speed to constantly adjust the volume of fuel and air entering the burner. This ensures that ARMOR can safely and reliably operate with supply gas pressure as low as 4 inches water column.

ARMOR is equipped with fully modulating combustion with 5:1 turndown. This means ARMOR can fire as low as 20% of maximum input when water heating demand is lowest, and increase the firing rate up to 100% as demand increases. The result is better overall efficiency and less cycling, compared to all other tank-type units which are "on-off," which means they can only fire at 100% of maximum input.

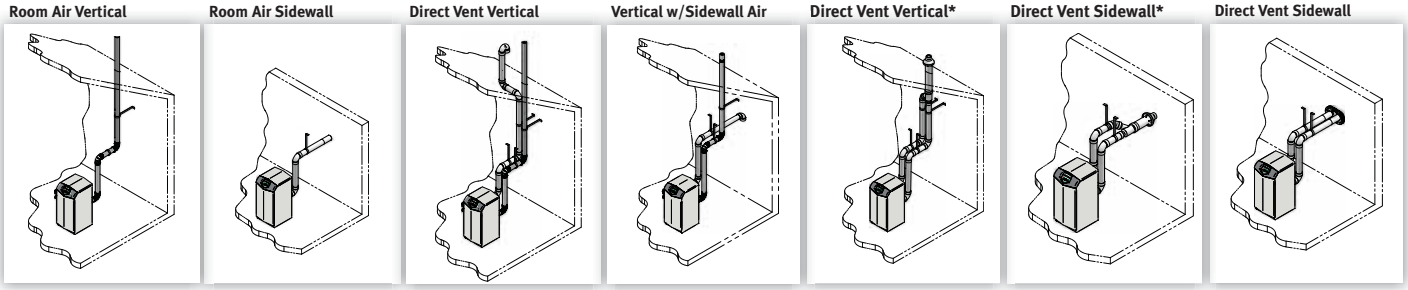
Stainless Steel Condensing Heat Exchanger

The ARMOR's stainless steel heat exchanger is built to ASME Section IV requirements. Its design provides superior resistance to corrosion caused by condensation from low entering water temperatures. Traditional commercial water heaters will fail early with low entering water temperatures; however, with the ARMOR the lower the supply water temperature the more efficiently it performs throughout the life of the heater.

SMART SYSTEM™ The Ultimate Water Heater Operating Control

- Easy to use – makes setup and service a breeze
- 2-line 16-character lcd display of setup, system status and diagnostic data in words, not codes
- Water heater pump control:
  - > Pump delay with freeze protection
  - > Pump exercise
- High-voltage terminal strip:
  - > 110 Vac input to water heater
  - > 110 Vac output to pump
- Low-voltage terminal strip with
- 22 points of connection
- Built-in cascading sequencer controls up to 8 Armor units without the added cost of a separate third-party sequencer
- Interface for optional smart system PC software for advanced setup and diagnostics

7 Venting Options - Easy, Flexible Installation and Service

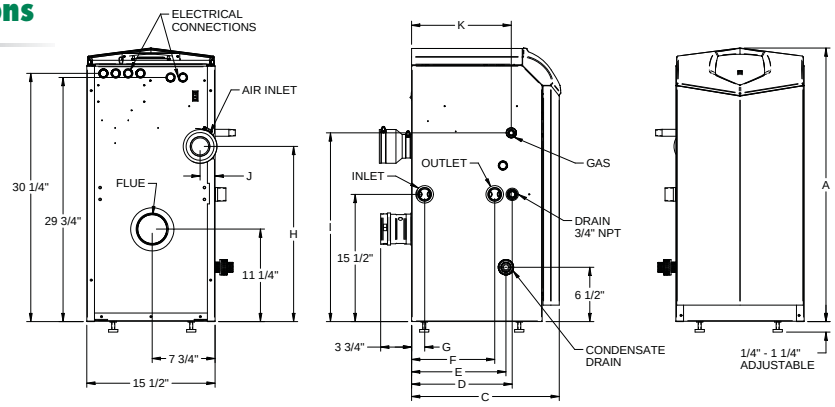


Optional Concentric Vent Kit Sold Separately

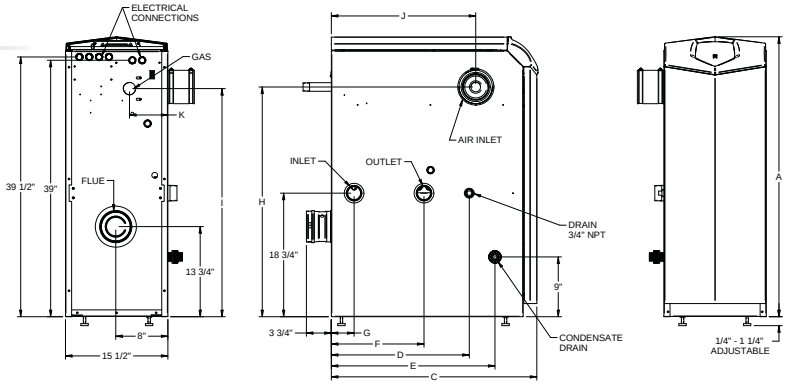
Armor® 150,000 to 800,000 Btu/hr Models

Dimensions & Specifications

Models 150-199



Models 285-800



Model Number	Btu/hr Input	GPH @ 100° Rise	A	C	D	E	F	G	H	I	J	K	Gas Conn.	Water Conn.	Air Inlet	Vent Size	Shipping Wt. (lbs.)
AWN150PM	150,000	174	33-1/4"	18"	12-1/4"	11-1/2"	10"	1-1/2"	21-1/4"	23"	1-3/4"	12"	1/2"	1-1/4"	3"	3"	165
AWN199PM	199,999	235	33-1/4"	22-1/4"	16-1/2"	15-3/4"	14-1/4"	5-1/4"	21-1/4"	23"	1-3/4"	16-1/4"	1/2"	1-1/4"	3"	3"	185
AWN285PM	285,000	339	42-1/2"	19-3/4"	12-3/4"	13-1/2"	6"	2"	34"	31"	11-3/4"	4-1/4"	3/4"	2"	4"	4"	235
AWN399PM	399,999	475	42-1/2"	27"	21"	20-3/4"	14"	3-1/2"	34"	34"	18-3/4"	2"	1"	2"	4"	4"	295
AWN500PM	500,000	594	42-1/2"	31-1/4"	21"	25"	14"	3-1/2"	35"	35"	22"	5-3/4"	1"	2"	4"	4"	335
AWN600PM	600,000	713	42-1/2"	36-1/4"	25"	21"	14"	3-1/2"	36"	32-3/4"	19-1/2"	5-1/2"	1-1/2"	2"	4"	4"	380
AWN700PM	700,000	832	42-1/2"	40-1/4"	29"	23"	17"	3-1/2"	36"	32-3/4"	23-1/2"	3-1/4"	1-1/2"	2"	4"	6"	461
AWN800PM	800,000	950	42-1/2"	45-1/4"	33-1/4"	23"	17"	3-1/2"	36"	32-3/4"	27-3/4"	3-1/4"	1-1/2"	2"	4"	6"	527

Standard Features

- **Up to 98% Thermal Efficiency**
- **Modulating Burner with 5:1 Turndown**
  - Direct-Spark Ignition
  - Low NOx Operation
  - Sealed Combustion
  - Low Gas Pressure Operation
- **Vertical & Horizontal Direct-Vent**
  - PVC, CPVC or SS Venting up to 100 Feet
  - PVC/CPVC Sidewall Vent Termination
- **Stainless Steel Heat Exchanger**
  - All Welded Construction, Gasketless Design
  - 160 psi Working Pressure
  - ASME Construction (AW 285-800)
- Natural to L.P. Conversion Kit
- All Bronze Circulating Pump
- On/Off Switch
- Flow Switch
- ASME Temperature & Pressure Relief Valve
- Temperature & Pressure Gauge (AW 500-800)
- Downstream Test Valves (AW 500-800)
- Adjustable Leveling Legs
- Tank Sensor
- Manual Reset High Limit
- Condensate Trap
- Zero Clearances to Combustible Material
- 5 Year Limited Warranty (See Warranty for Details)
- 1 Year Parts Warranty (See Warranty for Details)

Smart System Features

- **SMART SYSTEM Digital Operating Control**
- 2 line, 16 Character Display
- Dual Level Password Security
- Built in Cascading Sequencer for up to 8 Water Heaters
- Building Management System Integration with 0-10 VDC Input
- Low Water Flow Safety Control & Indication
- Inlet & Outlet Temperature Sensors & Readout
- Flue Temperature Sensor
- Water Heater Pump Control
- Pump Delay with Freeze Protection
- Pump Exercise
- Night Setback
- Time Clock
- Service Reminder
- **High Voltage Terminal Strip**
  - 120 VAC / 60 Hertz / 1 Phase Power Supply
  - Pump Control Contacts
- **Low Voltage Terminal Strip**
  - 24 VAC Auxiliary Device Relay
  - Auxiliary Proving Switch Contacts
  - Flow Switch Contacts
  - Alarm on Any Failure Contacts
  - Runtime Contacts
  - Tank Sensor Contacts
  - Cascade Contacts
  - 0-10 VDC BMS External Control Contact

Optional Equipment

- Adjustable High Limit w/ Manual Reset
- Alarm Bell
- Condensate Neutralization Kit
- High & Low Gas Pressure Switches (AW 500-800)
- Concentric Vent Kit (3" & 4" PVC/CPVC only)
- SMART SYSTEM PC Software
- Room Air Vent Kits
- Multi-Stack Frame

Firing Control Systems

- M9 Standard Construction
- M7 California Code (AW 285-800)
- M13 CSD1 / FM / GE Gap (AW 500-800)

Registered under U.S. Patent # 7,506,617

Shield ® 150,000 to 500,000 Btu/hr Models

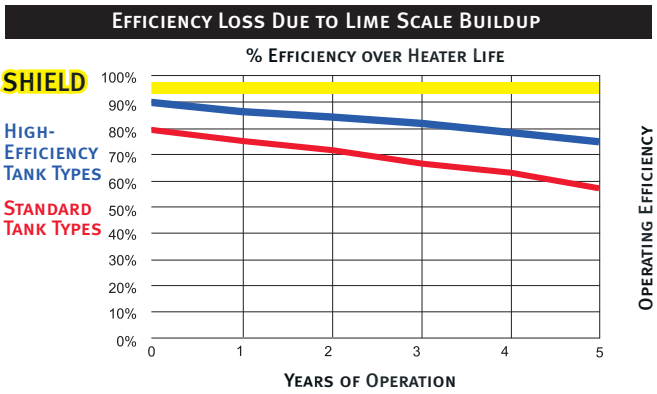
96 % Thermal Efficiency for Life

The SHIELD™ commercial water heater delivers best-in-class innovation from Lochinvar. It operates at 96% thermal efficiency, with inputs up to 500,000 Btu/hr, and provides a 100% effective defense against a water heater's worst enemy—lime scale buildup inside the tank.

SHIELD uses the industry's most advanced stainless steel heat transfer system. Sealed combustion technology delivers a quiet and environmentally friendly supply of heat to the system. Plus, with drawdown capacity as much as 15% higher than typical tank-type heaters, you get more usable hot water than any other competing models. The result is quiet, long-lasting green performance…life cycle efficiency that keeps saving money, year after year.

Long-Lasting Life Cycle Efficiency

High-efficiency tank-type water heaters have one thing that SHIELD does not, energy-robbing lime scale buildup. This insulates the water from the heat source, decreasing thermal efficiency, which increases operating costs. Additionally, the rate of scaling increases with temperature and usage. Just a ¼" of lime scale buildup will cause increased fuel consumption and raise operating costs as much as 25%. Lime scale buildup also requires periodic acid washes in the tank that will simply result in a shorter useful life of the equipment.



Because Shield has no flue tubes inside the tank, the impact of lime scale is eliminated, ensuring high efficiency and low operating costs throughout its life cycle. The chart below illustrates SHIELD's consistent "life cycle efficiency" compared to both standard and high-efficiency tank-type units which utilize flue tubes for heat transfer.

Fully Modulating Burner with 5:1 Turndown

SHIELD can fire as low as 20% of maximum input when water heating demand is lowest, and increase to 100% for peak-demand periods. This results in better overall efficiency and less cycling compared to "on-off" tank-type units that can only fire at 100%.

'Neg/Reg' Sealed Combustion Technology

SHIELD utilizes an advance combustion system which provides NOx ratings compatible with the most stringent air quality standards. Additionally, the NEG/REG sealed combustion technology allows the unit to operate with inlet gas pressure as low as 4 inches water column.

Advanced Electronic Control

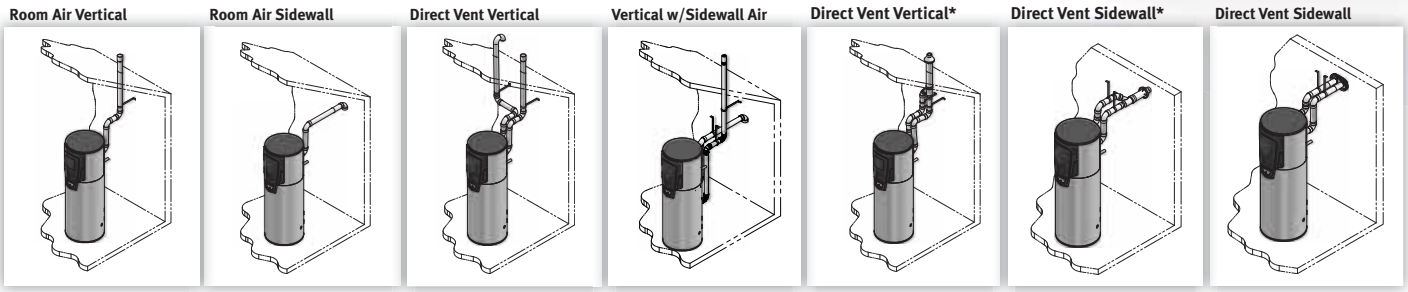
SMART CONTROL™

SHIELD features the ultimate water heater control which makes system setup, service and operation a breeze. A 2-line, 16-character backlit LCD display gives readouts of setup, system status and diagnostic information in words, not codes.

SMART CONTROL™ also includes:

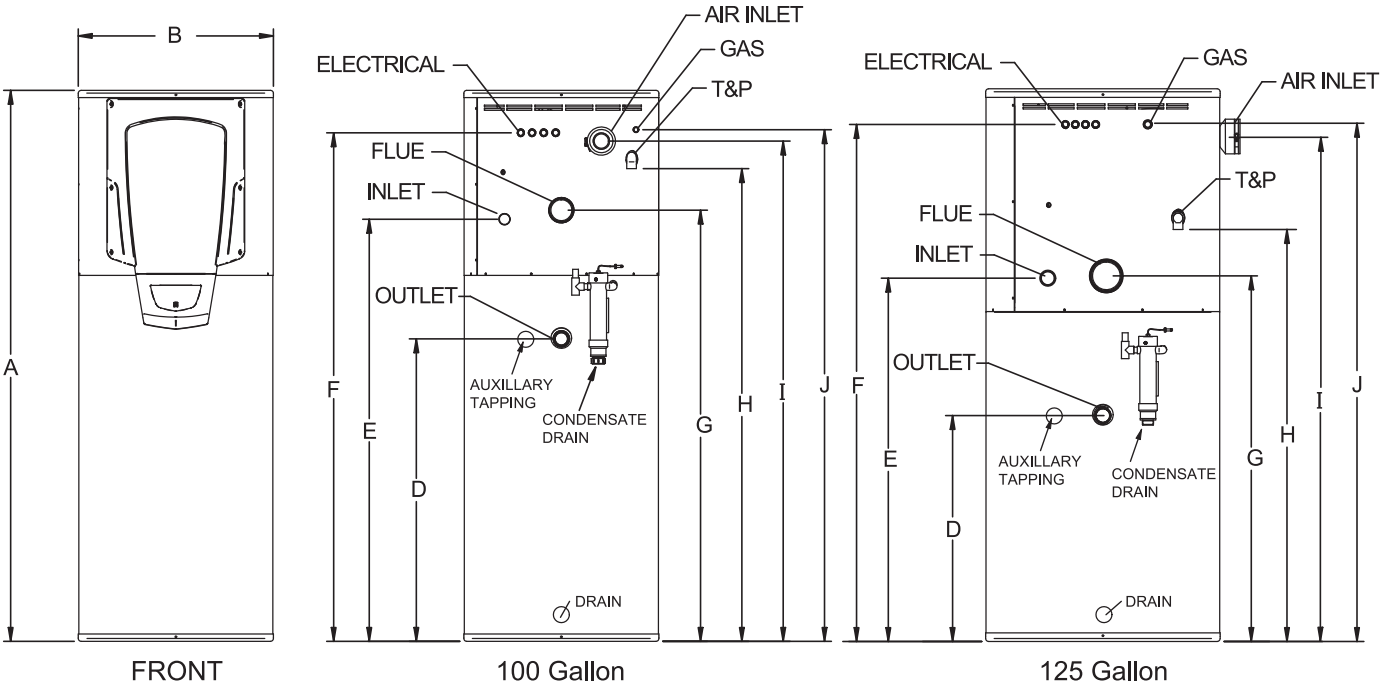
- > Night Setback
- > Time Clock
- > Alarm Contacts
- > Runtime Contacts
- > Service Mode
- > Last 10 Lock-Outs

7 Venting Options - Easy, Flexible Installation and Service



*Optional Concentric Vent Kit Sold Separately

Shield ® 150,000 to 500,000 Btu/hr Models



Model Number	Btu/hr Input	Capacity (Gal)	GPH @ 100° Rise	First Hour	A	B	D	E	F	G	H	I	J	Gas Conn.	Water Conn.	Air Inlet	Vent Size	Shipping Wt. (lbs.)
SNR150-100	150,000	93	175	249	80"	28"	44"	61-1/4"	73-3/4"	62-1/2"	68-3/4"	72-3/4"	74-1/4"	1/2"	1-1/2"	3"	3"	620
SNR200-100	199,999	93	233	307	80"	28"	44"	61-1/4"	73-3/4"	62-1/2"	68-3/4"	72-3/4"	74-1/4"	1/2"	1-1/2"	3"	3"	640
SNA285-125	285,000	125	332	432	80"	34"	32-3/4"	52-3/4"	75"	53"	59-3/4"	73-1/4"	70-1/2"	3/4"	2"	4"	4"	835
SNA400-125	399,999	125	465	565	80"	34"	32-3/4"	52-3/4"	75"	53"	59-3/4"	73-1/4"	73-1/4"	1"	2"	4"	4"	855
SNA500-125	500,000	125	582	682	80"	34"	32-3/4"	52-3/4"	75"	53"	59-3/4"	72"	75"	1"	2"	4"	4"	895

Change "N" to "L" for LP Gas. All information is subject to change.

Standard Features

- 96% Thermal Efficiency
- Modulating Burner with 5:1 Turndown
- Operates at Temperatures up to 180˚F for Sanitizing Applications
- Stainless Steel Heat Exchanger
- Glass-Lined Steel Tank
- 150 PSI Working Pressure
- ASME Tank Construction (SNA285–500)
- Zero Clearances to Combustible Material
- PVC, CPVC and Stainless Steel Venting up to 100 Equivalent Feet
- Direct-Vent Sealed Combustion
- Brass Drain Valve
- Rooftop and Sidewall Venting
- Sidewall Vent Terminal
- Room Air Venting up to 100 Equiv. Feet
- Advanced Electronic Control, with:
  - 2-Line, 16-Character LCD Display
  - Time Clock
  - Night Setback
  - Alarm Contacts
  - Runtime Contacts
  - Manual Reset High Limit
  - 3 Temperature Sensors
  - Flue Temperaure Sensor
- Low-NOx Operation
- Low Gas Pressure Operation
- Direct-Spark Ignition
- Certified for Installation on Combustible Floors
- ASME Temperature and Pressure Relief Valve
- 8-Foot Power Cord
- 3-Year Limited Warranty
- 1-Year Parts Warranty

Optional Equipment

- Alarm Bell
- Concentric Vent Kit
- Condensate Neutralization Kit
- Low Water Cutoff

Intelli-Fin® 1.5, 1.7 & 2.0 MBH Models

The Intelligent Approach to Water Heating

Our 1.5 million, 1.7 million, and 2 million-Btu/hr Intelli-Fin water heaters are whisper quiet. They are engineered to take advantage of the power of digital communications. That's a powerful advantage, because this capability, along with Lochinvar's engineering, means Intelli-Fin provides you with **the lowest total cost of water heater operation.**

Pushing the Upper Limits of Efficiency

Independent testing shows that Intelli-Fin reaches up to 97% thermal efficiency. That means for every energy dollar, 97 cents is converted into useable heat. To achieve this higher efficiency, Lochinvar utilizes a dual heat exchanger arrangement to create a heat trap. One heat exchanger surrounds the unit's burner, absorbing heat at the point of combustion. A second heat exchanger captures additional heat as the spent gases are extracted from the combustion chamber. The position of this second heat exchanger forces the products of combustion to flow over it's entire surface allowing the remaining heat to be absorbed and transferred to the water.

Intelligent Enough to Speak Your Language

Intelli-Fin is the first water heater designed to be compatible with LonWorks®, the interoperability language that is fast becoming the language standard for building management systems. To enhance this LonWorks performance Lochinvar has developed a new control, which provides a remarkable amount of information and the ability to customize equipment for a specific application. This control along with the Command Display allows local monitoring of 21 diagnostic points and adjustment of 6 operational characteristics. If remote system management is desired, all Intelli-Fin functionality can be accessed, reviewed and adjusted via a phone line and personal computer.

Adjust Output to Match Demand

Intelli-Fin utilizes variable frequency drive technology to control gas and air input to the burner, ensuring complete combustion and enabling infinitely proportional adjustment of Btu/hr output. In fact, Intelli-Fin can reduce output from 100% to 25% of rated capacity and efficiently provide heat at any fraction of the load in between. This variable combustion process combined with Lochinvar's new temperature control, accurate to with in 1°F, enables Intelli-Fin to track the heating load precisely.

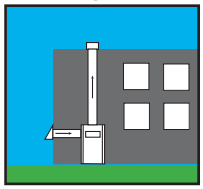
Flexibility in Water and Gas Supplies

Intelli-Fin can operate with a minimum inlet gas pressure as low as 4 inches of water column. This reduced input requirement prevents nuisance operational problems in areas of varying gas supply pressures. Additionally, the sophisticated heat transfer system of Intelli-Fin integrates dual heat exchangers with a full automatic pumped bypass. This design allows Intelli-Fin to operate with return water temperatures as low as 50°F, providing increased installation flexibility in applications such as heat pump, snow melting and radiant floor systems.

An Intelligent Use of Space

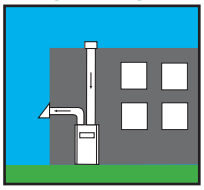
Intelli-Fin's chassis has been engineered so that it makes use of vertical rather than horizontal space. This allows the smaller footprint, but the unit is still so compact that it fits in spaces no higher than 80 inches. For even more convenience, Intelli-Fin offers several venting options. If your project demands high efficiency, Intelli-Fin delivers. In fact, it's virtually impossible to be any better.

Venting Options – Using Category IV approved venting material



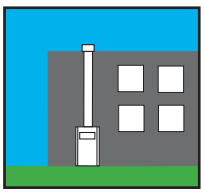
Intelli-Vent Vertical

Vents vertically up to 100 equivalent feet. Directly draws combustion air 100 equivalent feet from a side wall.



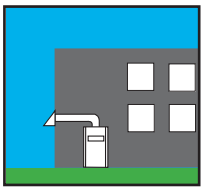
Intelli-Vent Horizontal

Vents horizontally up to 100 equivalent feet. Directly draws combustion air 100 equivalent feet from the roof top.



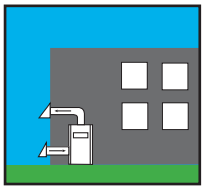
Vertical

Vents vertically using Category IV approved vent material.



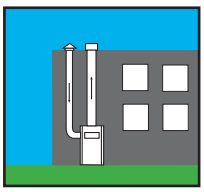
Sidewall

Vents horizontally up to 100 equivalent feet.



Direct Vent Horizontal

Vents horizontally up to 100 equivalent feet. Directly draws combustion air 100 equivalent feet from a side wall.

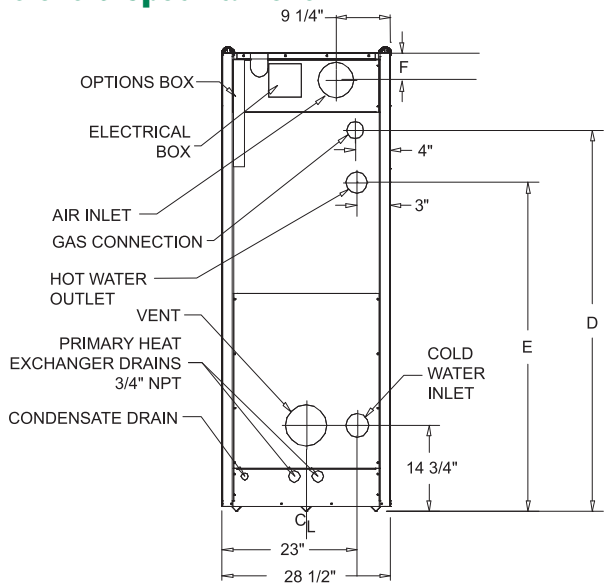


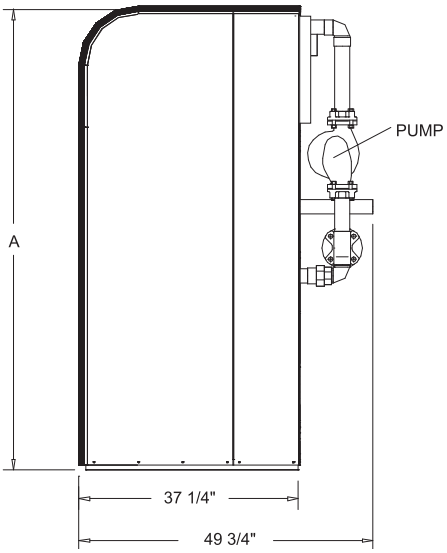
Direct Vent Vertical

Vents vertically up to 100 equivalent feet. Directly draws combustion air 100 equivalent feet from the roof top.

Intelli-Fin® 1.5, 1.7 & 2.0 MBH Models

Dimensions & Specifications





Model Number	Btu/hr Input	GPH @ 100°F Rise	A	D	E	F	Air Inlet Size	Vent Size	Shipping Weight
IWN1500	1,500,000	1,700	67-3/4″	52-3/4″	40-3/4″	4-1/2″	6″	6″	1,475
IWN1700	1,700,000	1,927	72-1/4″	57-1/4″	45-1/4″	4-1/2″	6″	7″	1,545
IWN2000	2,000,000	2,267	79″	64″	52″	6-1/2″	8″	8″	1,610

***Notes**: Change 'N' to 'L' for LP Gas Models. No deration on LP models. Performance data is based on manufacturer test results. All gas connections are 1 1/2" NPT. All water connections are 3".*

Standard Features

- Up to 97% Thermal Efficiency
- 4:1 Turndown
- LonMark Building Management System Compatibility
- Command Display - 21 Point Diagnostic Control (One per Job Site)
- Variable Frequency Drive
- Digital Temperature Control Accurate to 1ºF
- Alcromesh Burner with 5-Year Limited Warranty
- 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-Mounted and Wired
- Pump Delay
- Glass-Lined Water Surfaces
- Internal Stainless Steel Jacket
- Internal Corrosion Protection
- Low Gas Pressure Operation
- Zero Clearance to Combustible Materials
- Alarm Contacts on any Failure
- Contacts for Air Louver
- ASME Temperature & Pressure Relief Valve
- Down Stream Test Valve
- Adjustable High Limit w/ Manual Reset
- Manual Control Override
- Flow Switch
- Small Footprint
- Whisper Quiet Operation
- 24 Volt Circuit Breaker
- Freeze Protection
- Construction Air Filter
- 5 Year Limited Warranty on Heat Exchanger (See warranty for details)

Optional Equipment

- 4-20 mA VDC Signal
- Additional Command Display
- Alarm Bell
- Cupro-Nickel Heat Exchanger
- High Gas Pressure Switch
- Low Gas Pressure Switch
- Horizontal Air Intake Cap
- Horizontal Vent Cap
- Low Water Cut-Off
- Neutralization Kit

MONITORING

- ***Local Monitoring via Personal Computer***
  -includes serial LonTalk adapter & serial cable
- ***Remote Monitoring via Personal Computer***
  -includes serial LonTalk adapter, approved network modem and adapter cable

SEQUENCING

- ***Standard Sequencing Package:***
  First On/Last Off
  First On/First Off with Lead-Lag
- ***Custom Sequencing Package:***
  Efficiency Optimization
  Efficiency Optimization with Run Time Equalization
  First On/Last Off
  First On/First Off with Lead-Lag

Firing Control Systems

- M9 HSI (Standard)
- M7 California Code

Registered under U.S. Patent # 6,428,312, 6,619,951 & 6,694,926

Power-Fin® 500,000 - 2,000,000 Btu/hr Models

The Next Generation

The latest generation of Power-Fin continues to evolve, with new "Built-in Advantages" from Lochinvar Corporation®. These include expanded burner modulation and the advanced SMART SYSTEM™ operating control, including a built-in cascading sequencer for up to eight water heaters. Power-Fin water heaters can be installed with Lochinvar's advanced Lock-Temp® storage tanks, in a wide variety of combinations to meet system sizing requirements. "Factory packaged" water heater/storage tank systems can be built to your specifications, with all piping installed, and shipped on I-beam skids.

SMART SYSTEM™ Control

- Built-in cascading sequencer controls up to 8 units
- 2-line 16-character LCD readout of setup, system status and diagnostic data in words, not codes.
- Password security
- Pump control for operation of water heater pump
- Pump delay w/freeze protection
- Low NOx operation
- 0-10 Vdc BMS input for easy integration into Building Management Systems
- Optional smart system PC software for advanced setup and diagnostics

Infinite Modulation

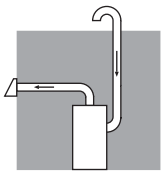
With thermal efficiencies up to 87%, Power-Fin water heaters feature infinitely modulating burner firing rates (turndown), precisely matching the firing rate to domestic water load requirements. The result is better overall efficiency and less cycling. Power-Fin water heaters may be specified as either 5:1 turndown (502 - 2001), 2:1 turndown (1501 - 2001), or ON/OFF (502 - 1302). With 5:1 turndown the burner fires as low as 20% of maximum input when demand is lowest and increases the firing rate up to 100% as demand increases. Models with 2:1 turndown modulate from 50% to 100% of maximum input.

Gasketless Heat Exchanger

The Power-Fin heat exchanger features an array of 20 or 24 copper-finned tubes surrounding the burner for maximum heat transfer. Lochinvar also pioneered the "gasketless" heat exchanger, which eliminates the use of O-rings and gaskets. Because of the time-proven reliability of this design, the Power-Fin heat exchanger is backed by a 5 year limited warranty.

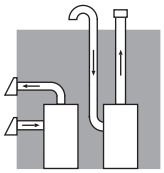
Venting Options

DirectAire Horizontal



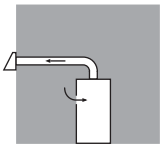
Vents horizontally up to 50 equivalent feet using Category IV vent materials. Draws combustion air up to 50 ft. from a different pressure zone.

Direct Venting



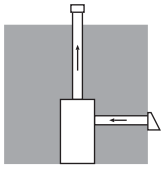
Horizontal or vertical venting up to 50 equivalent feet using Category IV vent materials. Draws combustion air from the same pressure zone. This option only available with 5:1 (M) firing code models.

Sidewall Venting



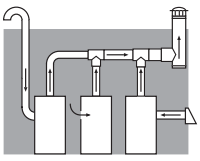
Horizontal venting up to 50 equivalent feet using Category IV vent materials. Draws combustion air from the room.

DirectAire Vertical



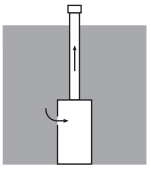
Vertical venting up to 50 equivalent feet using Category I or IV vent materials. Draws combustion air up to 50 ft. from a different pressure zone.

Common Venting



Vents multiple units vertically through one vent termination with Category II vent materials and draws combustion air from the room, roof or sidewall. Vent kit and Category IV to II conversion kit required.

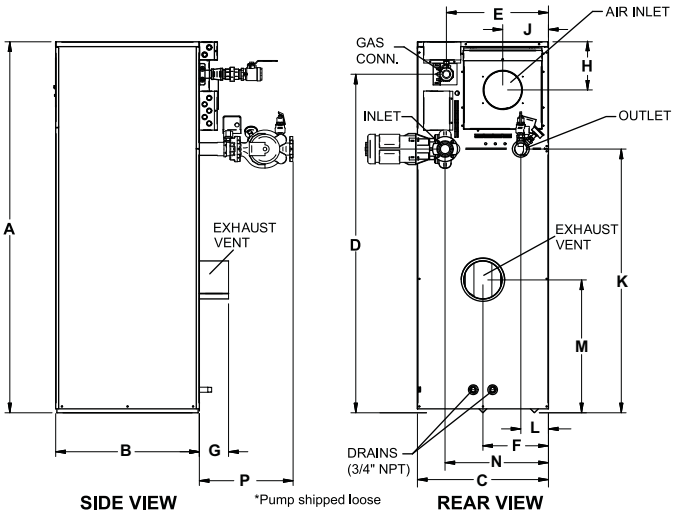
Vertical Vent



Vertical venting using Category I or Category IV vent materials. Draws combustion air from the room.

Power-Fin® 500,000 - 2,000,000 Btu/hr Models

Dimensions & Specifications



Model Number	Btu/Hr Input	GPH @ 100°F Rise F9	GPH @ 100°F Rise M9	A	B	C	D	E B9/F9	E M9	F	G	H	J
PFN0502PM	500,000	515	527	44-1/2″	28-1/2″	23-1/4″	34″	17-3/4″	19-1/2″	6-1/2″	6″	8″	7-3/4″
PFN0752PM	750,000	773	791	52″	28-1/2″	23-1/4″	41-1/2″	17-3/4″	19-1/2″	6-3/4″	6″	8″	7-3/4″
PFN1002PM	999,999	1,030	1,054	59-1/4″	28-1/2″	23-1/4″	48-3/4″	17-3/4″	19-1/2″	7-1/4″	6″	8″	7-3/4″
PFN1302PM	1,300,000	1,323	1,371	67-3/4″	28-1/2″	23-1/4″	57-1/4″	17-3/4″	19-1/2″	8-1/4″	6″	8″	7-3/4″
PFN1501PM	1,500,000	1,527	1,582	65-1/2″	29-3/4″	27-1/4″	58-3/4″	21″	21″	13-1/2″	8″	10″	9-1/2″
PFN1701PM	1,700,000	1,731	1,793	70″	29-3/4″	27-1/4″	63-1/4″	21″	21″	13-1/2″	8″	10″	9-1/2″
PFN2001PM	2,000,000	2,036	2,109	76-3/4″	29-3/4″	27-1/4″	70″	21″	21″	13-1/2″	8″	10″	9-1/2″

Model Number	K	L	M	N	P B9/F9	P M9	Gas Conn.	Air Inlet	Vent Sizes Cat I B9/F9	Vent Sizes Cat II M9	Cat IV M9	Wt. (lbs)
PFN0502PM	23″	11-1/2″	11-1/4″	17-1/2″	15-1/4″	15-1/4″	1″	5″	7″	7″	4″	571
PFN0752PM	30-1/2″	11-1/2″	11-1/4″	17-1/2″	15-1/4″	15-1/4″	1-1/4″	5″	9″	9″	5″	620
PFN1002PM	37-3/4″	11-1/2″	11-1/4″	17-1/2″	15-1/4″	15-1/4″	1-1/4″	6″	10″	10″	6″	669
PFN1302PM	46-1/4″	11-1/2″	19-1/2″	17-1/2″	15-1/4″	15-1/4″	1-1/4″	6″	12″	12″	8″	718
PFN1501PM	43-1/2″	5-3/4″	22-1/4″	21-1/2″	24-1/2″	19-1/2″	1-1/2″	6″	12″	8″	6″	1,115
PFN1701PM	48″	5-3/4″	25″	21-1/2″	24-1/2″	19-1/2″	1-1/2″	7″	14″	9″	7″	1,150
PFN2001PM	54-3/4″	5-3/4″	27-1/2″	21-1/2″	24-1/2″	19-1/2″	1-1/2″	8″	14″	10″	8″	2,045

Notes: Change 'N' to 'L' for LP Gas Model. No deration on LP models. Temperature rise calculations based on firing rate of 100% All water connections are 2-1/2"

Standard Features

- **Up to 87% Thermal Efficiency (M#)**
  - Modulating Burner with 5:1 Turndown
- **Up to 84% Thermal Efficiency (B#/F#)**
  - Modulating Burner with 2:1 Turndown (B#)
  - On/Off Burner (F#)
- **Fan Assisted Sealed Combustion**
  - Direct-Spark Ignition
  - Low NOx Operation
  - Low Gas Pressure Operation
- **Venting Flexibility**
  - Category I (B# & F#)
  - Category IV Venting (M#)
  - Optional Combined Venting Cat. II (M#)
- **ASME Copper-Finned Tube Heat Exchanger**
  - ASME Certified, "HLW" Stamped
  - 150 psi ASME T & P Relief Valve
  - Gasketless design
  - 160 psi working pressure
- On/Off Switch
- Adjustable High Limit w/ Manual Reset
- Flow Switch
- Low Air Pressure Switch
- Flue Temperature Sensor
- Downstream Test Cocks
- Combustion Air Filtration
- All Bronze Circulating Pump
- Zero Clearances to Combustible Material
- 1 Year Warranty on Parts
- 5 Year Limited Warranty (See Warranty for Details)

Smart System Features

- **SMART SYSTEM Operating Control**
  - 2 line, 16 Character Display
  - Dual Level Password Security
  - Built in Cascading Sequencer for up to 8 Water Heaters
  - Building Management System Integration with 0-10 VDC Input
  - Low Water Flow Safety Control & Indication
  - Inlet & Outlet Temperature Readout
  - Product Service Indicator
  - Freeze Protection
  - Service Reminder
  - Time Clock
- **Data Logging**
  - Hours Running, Space Heating
  - Hours Running, Domestic Hot Water
  - Ignition Attempts
  - Last 10 Lockouts
- **Programmable System Efficiency Optimizers**
  - Night Setback
  - Anti-Cycling
  - Outdoor Air Reset Curve
  - Ramp Delay
  - Boost Temperature & Time
- **Pump Control**
  - Domestic Hot Water Pump
- **High Voltage Terminal Strip**
  - 120 VAC/ 50-60 Hertz/ 1 Phase Power Supply
  - Pump Contacts with Pump Relays
- **Low Voltage Terminal Strip**
  - 24 VAC Auxiliary Device Relay
  - Auxiliary Proving Switch Contacts
  - Flow Switch Contacts
  - Alarm on Any Failure Contacts
  - Runtime Contacts
  - Cascade Contacts
  - 0-10 VDC BMS External Control Contact

Firing Control Systems

- M# Indicates 5:1 Turndown, Category IV
- B# Indicates 2:1 Turndown, Category I
- F# Indicates 100% On/Off Fire, Category I

- M9 Standard
- B9 or F9 Special Order, Factory Trimmed
- M7, B7 or F7 California Code

Optional Equipment

- Alarm Bell on Any Failure
- Copper-Nickel Heat Exchanger
- High & Low Gas Pressure Switches w/ Manual Reset
- Low Water Cutoff w/Manual Reset & Test
- SMART SYSTEM PC Software
- Vent Kits:
  - Horizontal Exhaust Cap
  - Horizontal Air Intake Cap
  - Horizontal Direct Vent Kit
  - Category IV to Category II Conversion Kit

Registered under U.S. Patent # 7,506,617

Copper-Fin II® 400,000 to 2,070,000 Btu/hr Models

Thermal Efficiency Is Higher... While Footprint And Vent Sizes Are Smaller

Lochinvar's Copper-Fin II® line of high efficiency commercial gas water heaters gives you all the advantages of lime scale-free, copper-finned tube heat exchanger technology plus the benefits of a sealed combustion system. Every Copper-Fin II model offers four major advantages: higher efficiency, smaller footprint, smaller vent diameters and a wide variety of venting options.

Outstanding Thermal Efficiency

Copper-Fin II water heaters offer a remarkably high 85% thermal efficiency. This means that 85¢ out of every fuel dollar goes into heating the water, dramatically reducing the operating cost of the equipment. Copper-Fin II achieves this efficiency through the combination of an advanced fan assisted combustion system and exclusive gasketless copper fin tube heat exchanger. A time tested and proven combination.

Proportional Firing

The Copper-Fin II's proportional firing lowers your energy costs and delivers more consistent water temperatures. 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, the sequencer 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 lowers performance gradually, turning off gas valves and reducing combustion air in direct proportion.

Meets The Toughest Air Quality Standards

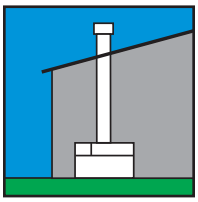
Because of our unique fan-assisted combustion process, the Copper-Fin II exceeds today's toughest NO_X emissions requirements. An independent certification laboratory test gave us a rating of less than 30 ppm — corrected to 3% O_2. And less NO_X means a cleaner environment.

Compact Design - For Installation Ease

The Copper-Fin II is compact enough to fit through standard 36" doorways with ease. Even our 2 million Btu/hr model is only 33-1/2" wide. This space-saving design frees up more space in the mechanical room. And our optional Multi-Stack™ frame lets you put two units in the footprint of just one

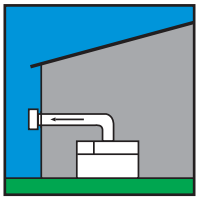
Venting Options

Conventional



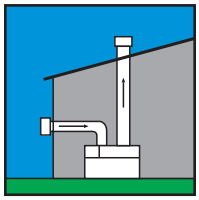
Vents into conventional flue or vent breaching using Type B double wall vent.

Sidewall (CF 401-751)



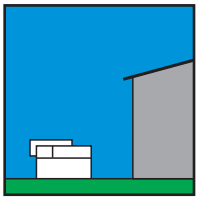
Draws fresh air from inside the room. Vents up to 50 equivalent feet directly through the outside wall without the need for a powered sidewall cap.

DirectAire Vertical w/ Sidewall Inlet



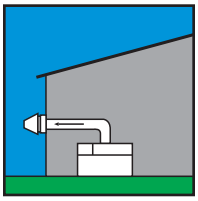
Draws fresh air from outside and vents through conventional vertical flue.

Outdoor



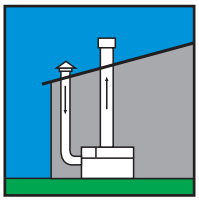
Requires optional outdoor vent cap. Use when indoor space is a problem or if outdoor location gives better access.

Powered Sidewall



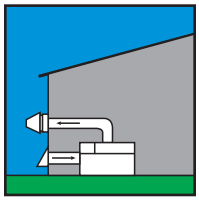
Vents directly through the outside wall using an optional powered sidewall cap. Ideal when a vent stack is not practical.

DirectAire Vertical



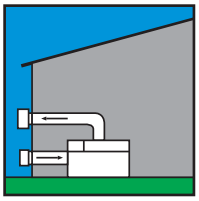
Draws fresh air from outside and vents through conventional vertical flue.

Power DirectAire Horizontal



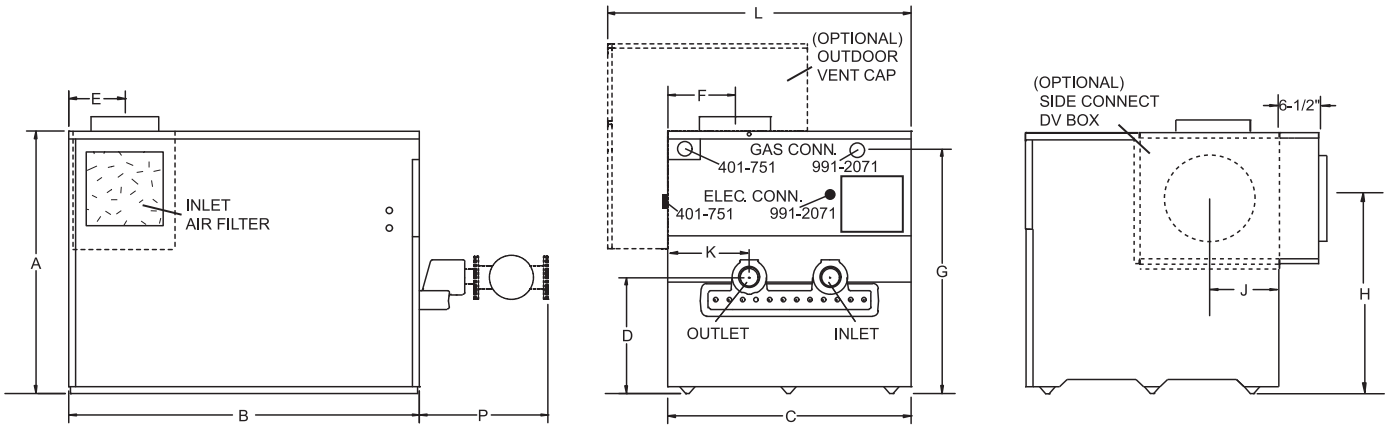
Draws fresh air from outside and vents through sidewall using optional powered vent cap.

Aire-Lock Direct Vent



Draws fresh air 50 equivalent feet from a sidewall. Vents horizontally up to 50 equivalent feet through the sidewall.

Copper-Fin II® 400,000 to 2,070,000 Btu/hr Models



Model Number	Btu/hr Input	GPH @ 100°F Rise	A	B	C	D	E	F	G	H	J	K	L	P	Vent Size	Air Inlet	Gas Conn	Shipping Weight
CFN401PM	399,999	412	31-1/2″	37-3/4″	22-1/4″	12-1/2″	7″	7″	29″	23-1/2″	8″	6-1/2″	30-3/4″	18-1/2″	6″	6″	1-1/4″	430
CFN501PM	500,000	515	31-1/2″	45-1/2″	22-1/4″	12-1/2″	7″	7″	29″	23-1/2″	8″	6-1/2″	30-3/4″	18-1/2″	6″	6″	1-1/4″	480
CFN651PM	650,000	670	31-1/2″	56-3/4″	22-1/4″	12-1/2″	8-1/2″	8-1/4″	29″	23-1/2″	8″	6-1/2″	30-3/4″	18-1/2″	8″	8″	1-1/4″	550
CFN751PM	750,000	773	31-1/2″	64″	22-1/4″	12-1/2″	8-1/2″	8-1/4″	29″	23-1/2″	8″	6-1/2″	30-3/4″	18-1/2″	8″	8″	1-1/4″	605
CFN0991PM	990,000	1,020	36″	48-1/4″	33-1/2″	15-3/4″	8″	9-1/4″	33-3/4″	27″	9-1/4″	9″	41-3/4″	20-1/2″	10″	10″	2″	930
CFN1261PM	1,260,000	1,298	36″	58-1/2″	33-1/2″	15-3/4″	9″	10-1/4″	33-3/4″	27″	9-1/4″	9″	41-3/4″	20-1/2″	12″	12″	2″	995
CFN1441PM	1,440,000	1,484	36″	68-3/4″	33-1/2″	15-3/4″	9″	10-1/4″	33-3/4″	27″	9-1/4″	9″	41-3/4″	20-1/2″	12″	12″	2″	1,130
CFN1801PM	1,800,000	1,855	36″	82-1/4″	33-1/2″	15-3/4″	10″	11-1/2″	33-3/4″	27″	9-1/4″	9″	41-3/4″	20-1/2″	14″	12″	2″	1,285
CFN2071PM	2,070,000	2,133	36″	92-1/2″	33-1/2″	15-3/4″	10″	11-1/2″	33-3/4″	27″	9-1/4″	9″	41-3/4″	20-1/2″	14″	12″	2″	1,400

Notes: *Change 'N' to 'L' for LP gas models. No deration on LP models.*
Water connections for models (CF 401-751) are 2" NPT on 6-1/2" centers. Water connections for models (CF 0991-2071) are 2-1/2" NPT on 11-1/4" centers.
Performance data is based on manufacturer test results.

Standard Features

- 85% Thermal Efficiency
- ASME Copper Finned Tube Heat Exchanger
- Gasketless Heat Exchanger Design
- Proportional Firing with up to 4 Stages of Operation
- Digital Operator Interface Panel
- Sealed Combustion Chamber
- Stainless Steel Burners
- Low NOx Operation Exceeds the most Stringent Air Quality Requirements
- 160 PSI Working Pressure
- All Bronze Circulating Pump
- Pump Delay
- Glass-Lined Water Surfaces
- Loch-Heat Ceramic Tile Combustion Chamber
- Hot Surface Ignition
- ASME Temperature & Pressure Relief Valve
- Inlet & Outlet Temperature Gauges
- Referenced Gas Valves
- Field Convertible Air Inlet Connection
- Adjustable High Limit w/ Manual Reset
- Combustion Air Filter
- Freeze Protection
- Complete System Redundancy
- Flow Switch
- 24 Volt Control System
- BMS Terminal Strip
- 5 Year Limited Warranty on Heat Exchanger (See warranty for details)

Optional Equipment

- Alarm Bell
- Contacts for Air Louvers
- Contacts on any Failure
- Cupro-Nickel Heat Exchanger
- High Gas Pressure Switch w/ Manual Reset
- Low Gas Pressure Switch w/ Manual Reset
- Low Water Cut-Off
- MP^2 Sequencer
- Multi-Stack Frame
- Combustible Floor Shield (CF 401-751)

Firing Controls

M9 Hot Surface Ignition with Electronic Supervision (Standard)
M7 California Code

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

Copper-Fin® 495,000 to 2,065,000 Btu/hr Models

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 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 boilers - so it saves money as well as valuable mechanical room space

STACK FRAME

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.

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% O_2. 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 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.

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 duel sight glasses (one on each end), you can easily monitor burner performance and flame characteristics throughout the entire combustion chamber.

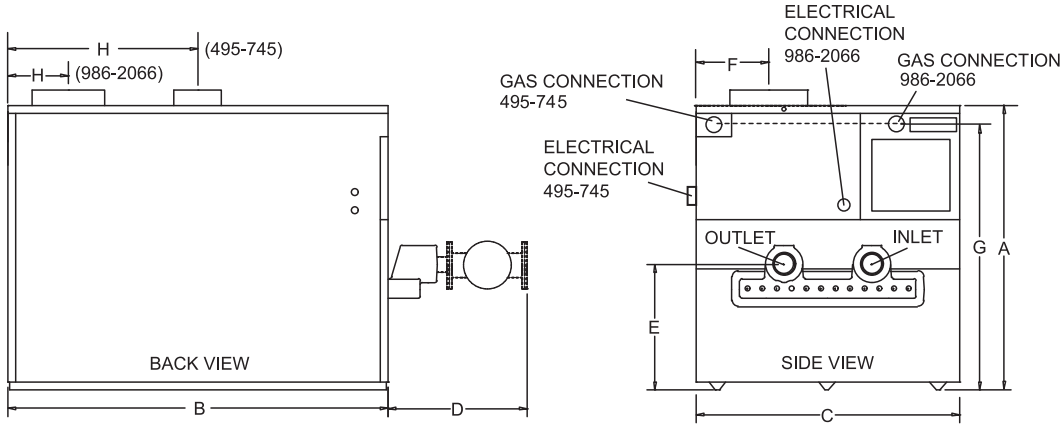
The operator interface panel provides electronic temperature control and comprehensive diagnostic status, without opening the control panel. Its user friendly design simplifies service while providing additional diagnostic information through a series of LEDs.

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® 495,000 to 2,065,000 Btu/hr Models



Model Number	Btu/hr Input	GPH @ 100°F Rise	A	B	C	D	E	F	G	H	J	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″	9-1/2″	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″	16″	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″	16″	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″	18-1/4″	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″	20-1/4″	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″	20-1/4″	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″	22-1/4″	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″	22-1/4″	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
- Remote Tank Thermostat
- Glass-Lined Water Surfaces
- Redundant Gas Valves
- Loch-Heat Ceramic Tile Combustion Chamber
- Hot Surface Ignition
- ASME Temperature & Pressure Relief Valve
- Adjustable High Limit w/ Automatic Reset
- Inlet/Outlet Temperature Gauges
- Flow Switch
- 24 Volt Control System
- BMS Terminal Strip
- Freeze Protection
- 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
- Low Gas Pressure Switch w/ Manual Reset
- High Gas Pressure Switch w/ Manual Reset
- Low Water Cut-Off
- MP^2 Sequencer
- Multi-Stack Frame

Available Firing Systems

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

Venting Options

- Outdoor Vent Cap and Pump Cover
- Intelligent Venting Solutions

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

Efficiency+® 150,000 to 300,000 Btu/hr Models

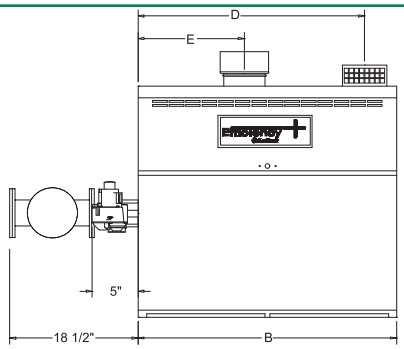
Efficiency+ delivers unsurpassed performance, reliability and energy savings - year after year. While most competitive models peak at 80% thermal efficiency, the Efficiency+ delivers a remarkable 85% thermal efficiency, which means that 85¢ out of each fuel dollar goes toward heating the water, and not up the flue! When you combine the outstanding thermal efficiency with the scale free operation of the copper-fin tube heat exchanger and the convenience and safety of direct venting you have a product that is simply the smartest choice in water heating.

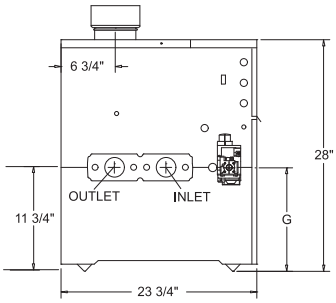
Moreover, when you package the Efficiency+ with a Lock-Temp storage tank, you get a system that provides high efficiency and high delivery. The EfficiencyPac is a powerful combination that lowers operating costs, provides high delivery rates, and offers longer equipment life than traditional tank type water heaters.

LOW NOx Certified

STACK FRAME

Dimensions & Specifications





Model Number	Btu/hr Input	GPH @ 100°F Rise	B	D	E	G	Vent Size*	Gas Conn.	Shipping Weight
EWN150PM	150,000	155	19-3/4″	16″	7-1/4″	11-3/4″	5″	3/4″	300
EWN200PM	199,999	206	23-3/4″	20″	9-1/4″	11-3/4″	5″	3/4″	315
EWN250PM	250,000	258	27-1/2″	23-3/4″	11″	11-3/4″	6″	3/4″	355
EWN300PM	300,000	309	31-1/4″	27-1/2″	13″	11-3/4″	6″	3/4″	360

Notes: *Change 'N' to 'L' for LP gas models.*
Air inlet equals vent diameter.
Performance data based on manufacturer test results.
Water connections for models (EW 150-300) are 2" NPT on 6-1/4" centers.
** Vent size is for conventional venting, venting options require 1" smaller vent diameter.*

Standard Features

- 85% Thermal Efficiency
- 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
- Automatic Reset High Limit
- Manual Reset High Limit
- Glass-Lined Water Surfaces
- Loch-Heat Ceramic Tile Combustion Chamber
- Hot Surface Ignition
- ASME Temperature & Pressure Relief Valve
- 24 Volt Control System
- 3 Year Limited Warranty on Heat Exchanger (See warranty for details)

Available Firing Systems

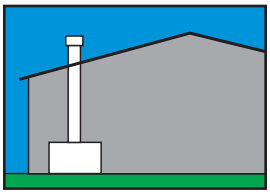
F9 Hot Surface Ignition with Electronic Supervision
F7 California Code

Optional Equipment

- Adjustable High Limit w/ Manual Reset
- Alarm Bell
- Contacts on any Failure
- Cupro-Nickel Heat Exchanger
- Flow Switch
- Low Water Cut-Off
- MP^2 Sequencer
- Multi-Stack Frame
- Outdoor Installation Kit

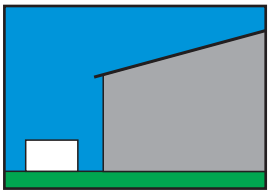
Registered under U.S. Patent No. 5,989,020

Venting Options

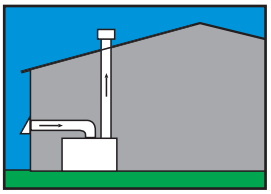


Conventional
Vents into conventional flue or vent breaching using Type B double wall vent.

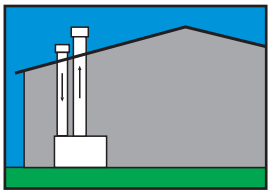
* Requires factory supplied vent kit.



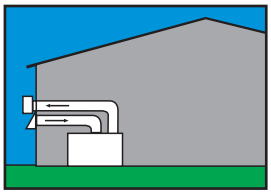
**** Outdoor***
Use when indoor space is a problem or if outdoor location gives better access.



**** E+ DirectAire Vent with Sidewall Inlet***
Draws fresh combustion air from an outside wall horizontally, and vents combustion by-products through a vertical flue.



Direct Vent Vertical
Draws fresh combustion air from outside, and vents combustion by-products through a vertical flue.



**** Direct Vent Horizontal***
Draws fresh combustion air from outside and vents combustion by-products through a side wall.

EfficiencyPac® Water Heater

When you depend on hot water to stay in business, you should expect your water heater to work "smarter," not harder! Traditional tank-type water heaters build up lime scale deposits when they heat water. This makes the water heater work harder, which leads to reduced efficiency, increased fuel costs, and shorter tank life. Lime scale build-up can cause a typical tank-type unit to fail in as few as 4–5 years. Sometimes less!

The Efficiency Pac from Lochinvar combines the high efficiency of an Efficiency+ (EW series) water heater with the durability of a Lock-Temp baffled storage tank to create a water heating system that performs at peak efficiency year after year.

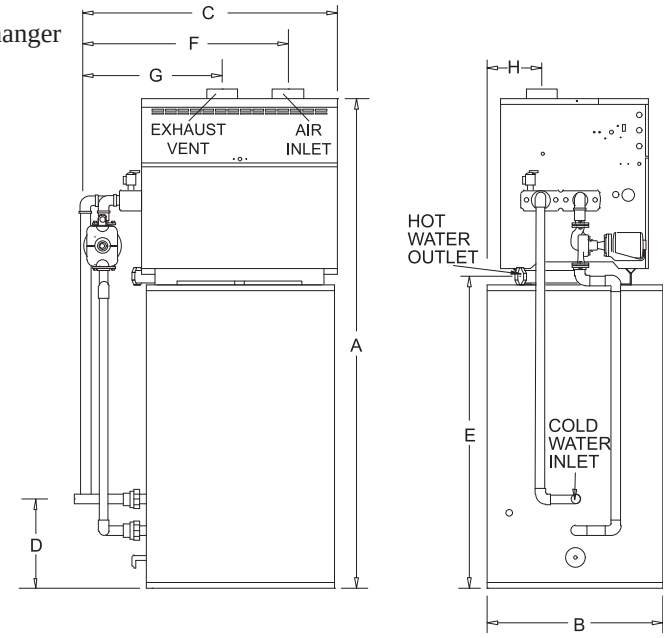
- **Thermal Efficiency** – the Efficiency Pac delivers a remarkable 85% thermal efficiency. Most tank-type units peak at 80%.
- **No Lime Scale Build-up** – the Efficiency Pac limits lime scale build-up with the scrubbing action of water flow through the solid copper-tube heat exchanger.
- **Unsurpassed Delivery** – the Lock-Temp storage tank employs a baffle that allows 80% tank draw down without a drop in temperature. When combined with an 85% efficient water heater, the results are a First Hour Delivery that can't be beat - 274 gallons for an EPN200-85.
- **Direct-Venting Convenience** – The Efficiency Pac can draw its combustion air directly from outdoors. This feature prevents contamination from airborne dirt particles and chemicals, while isolating the water heater from negative air pressures often found in restaurants and mechanical rooms.

Standard Features

- 85% Thermal Efficiency
- 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
- Manual Reset High Limit
- Automatic Reset High Limit
- Glass-Lined Water Surfaces
- Loch-Heat Ceramic Tile Combustion Chamber
- Hot Surface Ignition
- ASME Pressure Relief Valve (Heater)
- Foam Insulated, Glass-Lined Storage Tank
- 24 Volt Control System
- ASME Temperature & Pressure Relief Valve (Tank)
- Brass Drain Valve (Tank)
- 3 Year Limited Warranty on Heat Exchanger
- 5 Year Limited Warranty on Tank

Optional Equipment

- Adjustable High Limit w/ Manual Reset
- Alarm Bell
- Contacts on any Failure
- Cupro-Nickel Heat Exchanger
- Flow Switch
- Low Water Cut-Off



Model Number	Btu/hr Input	Gallon Capacity	GPH @ 100°F Rise	A	B	C	D	E	F	G	Vent Size	Shipping Weight
EPN150-085	150,000	85	155	78-1/2″	28″	38″	14-1/2″	50-1/4″	28″	19″	5″	735
EPN200-085	199,999	85	206	78-1/2″	28″	38″	14-1/2″	50-1/4″	32″	21″	5″	770
EPN200-100	199,999	100	206	75″	32″	43″	16-1/2″	47″	32″	21″	5″	895
EPN250-100	250,000	100	258	75″	32″	43″	16-1/2″	47″	35-1/2″	23″	6″	895
EPN300-100	300,000	100	309	75″	32″	43″	16-1/2″	47″	35-1/2″	25″	6″	930

Note: Change 'N' to 'L' for LP gas models. (no deration for LP).
Vent size denotes conventional vent. *Performance data is based on manufacturer test results.*

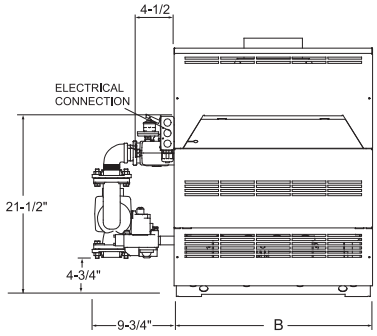
Note: Cold water inlet is 2" copper.
Hot water outlet is 1-1/2" copper.

Copper-Fin® 90,000 to 500,000 Btu/hr Models

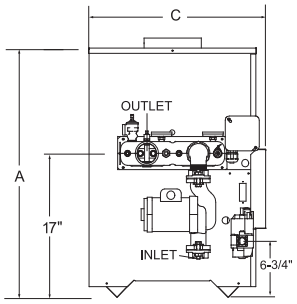
High efficiency Copper-Fin water heaters combine the benefits of a copper finned tube heat exchanger with the simplicity of atmospheric combustion to provide a durable, trouble-free design with quick and easy component removal for service simplicity.

And with the Lochinvar "Better Idea" system, you combine the highly efficient Copper-Fin water heater with a separate Lock-Temp storage tank and manifold piping. By separating the water heater and storage tank, stand-by losses are virtually eliminated and operating efficiency is enhanced.

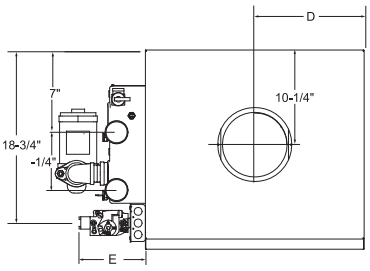
For additional flexibility, the Copper-Pak starts with a Lock-Temp storage tank and places a Copper-Fin water heater directly on top in a unique space saving design. The circulator pump and piping are all in place and the unit is ready to be installed as a single package.



Front View



Side View



Top View

Model Number	Btu/Hr Input	GPH @ 100°F Rise	A	B	C	D	E	Vent Size	Gas Conn.	Shipping Weight
CWN090PM	90,000	89	29-1/2"	15-1/2"	21-1/2"	7-3/4"	6-3/4"	5"	1/2"	175
CWN135PM	135,000	134	29-1/2"	19-1/2"	21-1/2"	9-3/4"	6-3/4"	6"	1/2"	195
CWN180PM	180,000	179	29-1/2"	23-1/2"	21-1/2"	11-3/4"	6-3/4"	7"	3/4"	220
CWN199PM	199,999	198	29-1/2"	26-1/2"	21-1/2"	13-1/4"	6-3/4"	7"	3/4"	230
CWN225PM	225,000	224	29-1/2"	26-1/2"	21-1/2"	13-1/4"	6-3/4"	7"	3/4"	235
CWN270PM	270,000	268	29-1/2"	29 1/2"	21 1/2"	14 3/4"	6-3/4"	8"	3/4"	240
CWN315PM	315,000	313	29-1/2"	32-1/2"	21-1/2"	16-1/4"	6-3/4"	8"	3/4"	250
CWN360PM	360,000	358	29-1/2"	35-1/2"	21-1/2"	17-3/4"	6-3/4"	9"	1"	270
CWN399PM	399,999	397	29-1/2"	44-1/2"	22"	22-1/4"	16-3/4"	10"	1"	340
CWN500PM	500,000	497	34-1/2"	52-1/2"	22"	26-1/4"	16-3/4"	10"	1"	365

Notes: *Change 'N' to 'L' to denote L.P. gas models*
Water connections are 2" NPT on 6-1/4" centers
Approved for indoor installation only

Electrical Requirements: 120 VAC / 2.5 AMP
Performance data based on manufacturer test results

Standard Features

- 82% Thermal Efficiency
- Built-In Draft Diverter
- Stainless Steel Burners
- ASME Copper Finned Tube Heat Exchanger
- 160 psi Working Pressure
- Gasketless Heat Exchanger Design
- All Bronze Circulating Pump
- Pump Delay/Freeze Protection
- Remote Tank Thermostat
- Glass-Lined Water Surfaces
- Loch-Heat Ceramic Tile Combustion Chamber
- ASME Temperature & Pressure Relief Valve
- Automatic Reset High Limit
- 24 Volt Control System
- CSA Design Certified for Installation on Combustible Floors
- Terminal Strip
- 3 Year Limited Warranty on Heat Exchanger

Optional Equipment

- Adjustable High Limit w/ Manual Reset
- Contacts on any Failure (CW 315-500)
- Contacts for Air Louvers (CW 315-500)
- Cupro-Nickel Heat Exchanger
- Flow Switch
- Low Water Cut-Off
- Multi-Stack Frame
- CPVC Vent Kit (CW 90-135)
- Better Idea Manifold KIt

Firing Controls

- F1 - Standing Pilot (Standard CW 90-270)
- F9 - Intermittent Spark Ignition (Standard CW 315-500)
- F13 - GE GAP/FM/IRI
- F7 - California Code (CW 225-500)

Copper-Pak® Water Heater

The Copper-Pak packs the high efficiency of the Copper-Fin water heater into a unique space-saving design. It's an excellent alternative to traditional tank-type water heaters. Shipped complete in one box, with all piping included and ready for installation.

Think of the Copper-Pak as two separate units stacked on top of each other–a highly efficient Copper-Fin (CW series) water heater and a dedicated hot water storage tank. By combining the two in one unique design, we've reduced the footprint. That makes it easier to install in place of conventional tank-type water heaters.

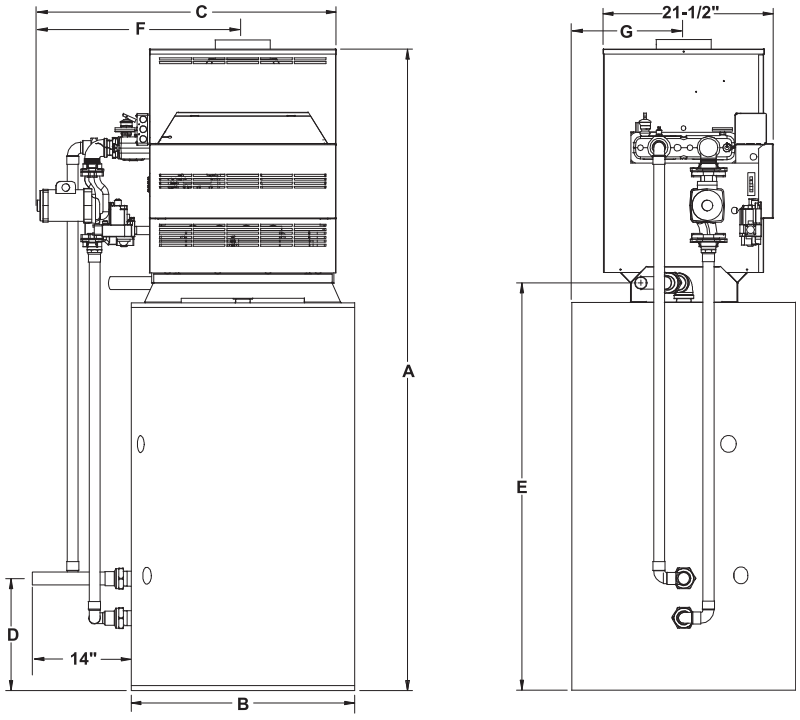
Plus, thanks to copper finned-tube technology, the Copper-Pak has efficiencies up to a remarkable 82% – far exceeding most tank type water heaters. In fact, our 85 gallon - 180,000 Btu/hr model performs as well as most 100 gallon - 200,000 Btu/hr tank-type water heaters. It produces just as much hot water, but at a much lower cost.

Standard Features

- 82% Thermal Efficiency
- Built-In Draft Diverter
- Stainless Steel Burners
- ASME Copper Finned Tube Heat Exchanger
- 160 psi Working Pressure
- Gasketless Heat Exchanger Design
- All Bronze Circulating Pump
- Pump Delay w/Freeze Protection
- Glass-Lined Water Surfaces
- Loch-Heat Ceramic Tile Combustion Chamber
- ASME Temperature & Pressure Relief Valve (Heater Only)
- Automatic Reset High Limit
- 24 Volt Control System
- Foam Insulated, Glass-Lined Storage Tank
- Brass Drain Valve (Tank Only)
- Terminal Strip
- 5 Year Limited Warranty on Tank
- 3 Year Limited Warranty on Heat Exchanger

Optional Equipment

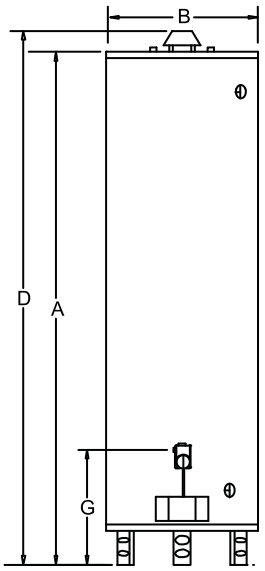
- Cupro-Nickel Heat Exchanger
- Flow Switch
- Low Water Cut-Off
- Adjustable High Limit w/ Manual Reset



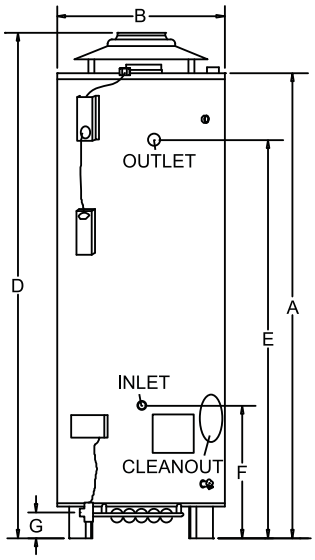
Model Number	Btu/hr Input	Gallon Capacity	GPH @ 100°F Rise	A	B	C	D	E	F	G	Vent Size	Gas Conn.	Shipping Weight
CPN180-85	180,000	85	179	80″	28″	35-1/2″	14 -1/4″	50-1/4 “	22-3/4″	14-1/4″	7″	3/4″	700
CPN199-85	199,999	85	198	80″	28″	38-1/2″	14-1/4″	50-1/4 “	25-1/4″	14-1/4″	7″	3/4″	710
CPN199-100	199,999	100	198	76-1/2″	32″	38-1/2″	16-1/4″	47″	25-1/4″	16″	7″	3/4″	815
CPN270-100	270,000	100	268	76-1/2″	32″	41-1/2″	16-1/4″	47″	26-3/4″	16″	8″	3/4″	850
CPN360-100	360,000	100	358	76-1/2″	32″	47-1/2″	16-1/4″	47″	29-3/4″	16″	9″	1″	880

Note: *Water connections are 1-1/2” copper on all models. Change “N to “L” for LP gas models. Performance data is based on manufacturer's test results.*

Charger Gas Models



65,000 - 85,000 Btu/hr



125,000 - 500,000 Btu/hr

Model Number	Tank Const.	Btu/hr Input	Gallon Cap.	GPH @ 100°F Rise	A	B	D	E	F	G	Vent Size	Gas Conn	Water Conn	Nipple Spread	Shipping Weight
LNR065-050*	STD	65,000	48	60	56-1/4″	22″	59-1/4″	–	–	13″	4″	1/2″	3/4″ T	11″	160
CNR076-075*	STD	76,000	75	74	59″	26″	62-1/4″	–	–	15″	4″	1/2″	1″ T	11″	247
CNR085-100*	STD	85,000	100	82	65-1/4″	28-1/4″	68-3/4″	–	–	15-1/2″	4″	1/2″	1-1/4″ T	16 ″	420
CNR125-075-DF9*	STD	125,000	75	121	65″	28-1/4″	72-1/4″	54-1/2″	34″	4-3/4″	5″	3/4″	1-1/2″ T/F	14-1/2″	520
CNR155-035-DF9*	STD	155,000	38	150	43″	28-1/4″	51″	34-3/2″	19-1/2″	4-3/4″	6″	3/4″	1-1/2″ T/F	19″	438
CNR160-075-DF9*	STD	160,000	75	155	65″	28-1/4″	72-1/4″	54-1/2″	34″	4-3/4″	6″	3/4″	1-1/2″ T/F	14-1/2″	520
CNR180-080-DF9	STD	180,000	80	175	64-1/2″	28-1/4″	72-1/2″	56″	19-1/2″	4-3/4″	6″	3/4″	1-1/2″ T/F	19″	540
CNR200-080-DF9•	STD	199,999	80	194	64-1/2″	28-1/4″	72-1/2″	56″	19-1/2″	4-3/4″	6″	3/4″	1-1/2″ T/F	19″	540
CNR199-100-DF9	STD	199,999	100	194	65″	30-1/4″	75″	56-1/2″	23-1/2″	4-1/2″	6″	3/4″	1-1/2″ T/F, 2″ B	23″	725
CNR200-100-DF9	STD	199,999	98	194	75-1/2″	28-1/4″	83-1/2″	67″	19-1/2″	4-3/4″	6″	3/4″	1-1/2″ T/F	19″	610
CNR250-100-DF9•	STD	250,000	98	242	75-1/2″	28-1/4″	83-1/2″	67″	19-1/2″	4-3/4″	6″	3/4″	1-1/2″ T/F	19″	610
CNR300-075-DF9	STD	300,000	75	291	64-1/2″	28-1/4″	73″	54-1/4″	29″	10-1/2″	7″	3/4″	1-1/2″ F	19″	590
CNR370-065-DF9	STD	370,000	65	359	64-1/2″	28-1/4″	73-1/2″	54-1/4″	29″	10-1/2″	8″	1″, 3/4″LP	1-1/2″ F	19″	665
CNR400-080-DF9•	STD	399,999	80	388	60″	30-1/4″	71-1/2″	51-1/2″	23-1/2″	10-1/2″	8″	1″, 3/4″LP	1-1/2″ F, 2″ B	23″	800
CNR500-080-DF9•	STD	505,000	80	496	60″	30-1/4″	69-1/2″	51-1/2″	23-1/2″	10-1/2″	10″	1″, 3/4″LP	1-1/2″ F, 2″ B	23″	800
CNA251-100-DF9•	ASME	250,000	98	242	75-1/2″	28-1/4″	83-1/2″	67″	19-1/2″	4-3/4″	6″	3/4″	1-1/2″ T/F	19″	690
CNA301-075-DF9	ASME	300,000	75	291	64-1/2″	28-1/4″	73″	54-1/4″	29″	10-1/2″	7″	3/4″	1-1/2″ F	19″	645
CNA371-065-DF9	ASME	370,000	65	359	64-1/2″	28-1/4″	73-1/2″	54-1/4″	29″	10-1/2″	8″	1″, 3/4″LP	1-1/2″ F	19″	720
CNA401-080-DF9•	ASME	399,999	80	388	60″	30-1/4″	71-1/2″	51-1/2″	23-1/2″	10-1/2″	8″	1″, 3/4″LP	1-1/2″ F, 2″ B	23″	835
CNA501-080-DF9•	ASME	505,000	80	496	60″	30-1/4″	69-1/2″	51-1/2″	23-1/2″	10-1/2″	10″	1″, 3/4″LP	1-1/2″ F, 2″ B	23″	835

*•Indicates LP Inputs * These models have one aquastat.*

Standard Equipment:

- **Multi-Flue Tank Design**—for increased efficiency and energy conservation
- **Durable Fused Glass Lining**—prolongs tank life
- **Non-CFC Foam Insulation**—up to 2” for max. heat retention and lower standby losses
- **Magnesium Tank Saver Anodes**—inhibit corrosion
- **150 psi Working Pressure**
- **ASME Temperature & Pressure Relief Valve**
- **Automatic Vent Damper**
- **Heavy Steel Jacket with Baked Enamel Finish**
- **Immersion Thermostat and Limit Controls**
- **Low Silhouette Draft Hood**
- **Cleanout—**permits easy access for cleaning
- **Standing Pilot** (65,000 76,000, and 85,000 Btu/hr models)
- **Spark Ignition with Supervised Pilot** (Models 125,000 Btu/hr and larger)
- **Approved for 180°F Operation**
- **Slide Out Burner Tray**—for easy servicing (125,000 Btu/hr and larger)
- **3 Year Limited Tank Warranty**
- **1 Year Limited Parts Warranty** (See warranty for details)

Optional Equipment:

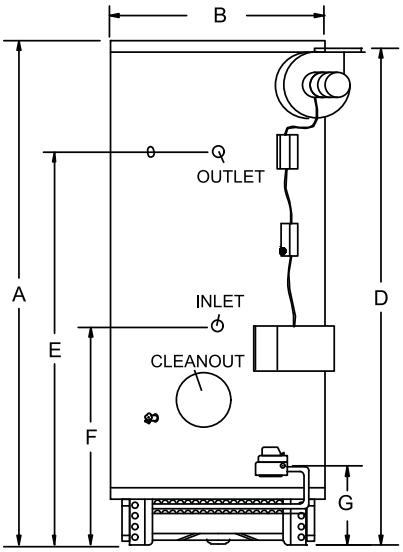
- Temperature and Pressure Gauge
- NSF Construction

LP Inputs

Model Number	Btu/hr Input	GPH @ 100°F Rise
CLR160-075-DF9	155,000	147
CLR200-080-DF9	190,000	184
CLR250-100-DF9	235,000	228
CLR400-080-DF9	375,000	364
CLR500-080-DF9	475,000	461
CLA251-100-DF9	235,000	228
CLA401-080-DF9	375,000	364
CLA501-080-DF9	475,000	461

Low NOx models are available. Consult factory.

Super Charger Gas Models



Super Charger

Model Number	Tank Const.	Btu/hr Input	Gallon Cap.	GPH @ 100°F Rise	A	B	D	E	F	G	Vent Size	Gas Conn	Water Conn	Shipping Weight
CNR625-065	STD	625,000	65	606	69-1/2″	28-1/4″	69″	54-1/4″	29″	10-1/2″	8″	1″, 3/4″ LP	1-1/2″ F	720
CNR725-080	STD	725,000	80	703	79-3/4″	28-1/4″	79-1/4″	64-1/4″	29″	10-1/2″	8″	1″, 3/4″ LP	1-1/2″ F	800
CNA626-065	ASME	625,000	65	606	69-1/2″	28-1/4″	69″	54-1/4″	29″	10-1/2″	8″	1″, 3/4″ LP	1-1/2″ F	775
CNA726-080	ASME	725,000	80	703	79-3/4″	28-1/4″	79-1/4″	64-1/4″	29″	10-1/2″	8″	1″, 3/4″ LP	1-1/2″ F	880

Notes: *Change "N" to "L" for LP gas models. Performance data is based on manufacturer test results.*

Standard Equipment:

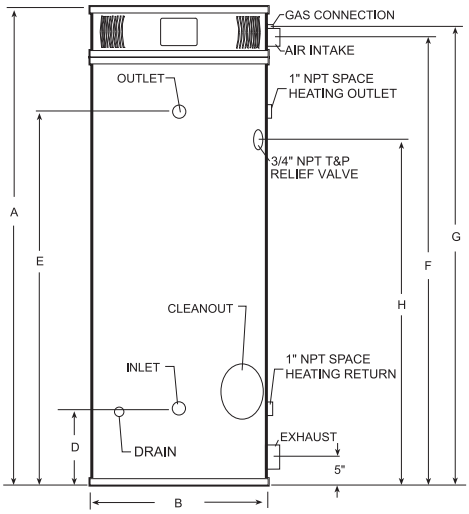
- **Multi-Flue Tank Design**—for increased efficiency and energy conservation
- **Durable Fused Glass Lining**—prolongs tank life
- **Non-CFC Foam Insulation**—up to 2" for max. heat retention and lower standby losses
- **Magnesium Tank Saver Anodes**—inhibit corrosion
- **150 psi Working Pressure**
- **ASME Temperature & Pressure Relief Valve**
- **Heavy Steel Jacket with Baked Enamel Finish**
- **Immersion Thermostat and Limit Controls**
- **Cleanout—**permits easy access for cleaning
- **Spark Ignition with Supervised Pilot**
- **Approved for 180°F Operation**
- **Slide Out Burner Tray**
- **Combustible Floor Approved**
- **Fan Induced Combustion System**
- **Simple 120 VAC Control Circuitry**
- **4-Second Main Gas Shutdown**
- **High Btu/hr Input/Recovery**
- **3 Year Limited Tank Warranty**
- **1 Year Limited Parts Warranty** (See warranty for details)

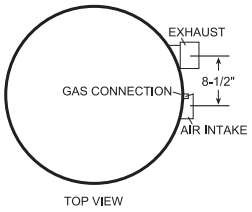
Optional Equipment:

- NSF Construction
- Temperature and Pressure Gauge

Low NOx models are available. Consult factory.

TurboCharger™ High Efficiency Gas Models





Model Number	Tank Const.	Btu/hr Input	Gal. Cap.	GPH @ 100°F Rise	A	B	D	E	F	G	H	Shipping Weight
TNR125-060	*STD	125,000	60	148	57″	28-1/4″	13″	42-1/2″	52-1/2″	53-1/2″	40″	570
TNR150-060	*STD	150,000	60	178	57″	28-1/4″	13″	42-1/2″	52-1/2″	53-1/2″	40″	570
TNR200-060	*STD	199,999	60	238	57″	28-1/4″	13″	42-1/2″	52-1/2″	53-1/2″	40″	570
TNR150-100	*STD	150,000	100	178	77-3/4″	28-1/4″	13″	62-1/2″	73-1/4″	74-3/4″	60″	900
TNR200-100	*STD	199,999	100	238	77-3/4″	28-1/4″	13″	62-1/2″	73-1/4″	74-3/4″	60″	900
TNR250-100	STD	250,000	100	297	77-3/4″	28-1/4″	13″	62-1/2″	73-1/4″	74-3/4″	60″	900
TNR300-100	STD	300,000	100	342	77-3/4″	28-1/4″	13″	62-1/2″	73-1/4″	74-3/4″	60″	900
TNR400-100	STD	399,999	100	446	77-3/4″	28-1/4″	13″	62-1/2″	73-1/4″	73-1/4″	60″	950
TNA251-100	ASME	250,000	100	297	77-3/4″	28-1/4″	13″	62-1/2″	73-1/4″	74-3/4″	60″	900
TNA301-100	ASME	300,000	100	342	77-3/4″	28-1/4″	13″	62-1/2″	73-1/4″	74-3/4″	60″	900
TNA401-100	ASME	399,999	100	446	77-3/4″	28-1/4″	13″	62-1/2″	73-1/4″	73-1/4″	60″	950

Notes: *ASME Construction available upon request. Consult factory for details.
Gas Connection is 3/4" NPT. (1" on 400 KBtu models)
Performance data is based on Manufacturer's test results.
Change N to L for LP gas models.
Water Connections are 1-1/2" NPT.

Standard Equipment

- **Up to 98% Thermal Efficiency** - Fully condensing design maximizes efficiency for lower operational cost.
- **Direct Vent / Sealed Combustion** - Draws all combustion air from outside and vents all byproducts outdoors.
- **Electronic Controls** - Electronic thermostat adjustable up to 180°F.
- **Premix Power Burner** - Fires into a submerged combustion chamber resulting in precise mixing of gas and air for optimum efficiency.
- **Submerged Combustion Chamber** - Reduces radiant heat loss and increases efficiency.
- **Triple Pass Flue System** - Unique triple bypass flue design, efficiently extracts available heat from the flue gases, increasing the rate of heat transfer.
- **Glass Lined Steel Tank** - Fused to the tank at 1600°F, the durable glass lining ensures lasting protection against rust and corrosion while providing clean, clear hot water.
- **Tank Saver Anodes** - Provides lasting protection from the effects of electrolytic corrosion.
- **Zero Clearance to Combustible Materials**
- **Non-CFC Foam Insulation** - Meets ASHRAE standby loss requirements.
- **Low NOx Operation Exceeds the most Stringent Air Quality Requirements**
- **Built-In Power Cord** - 6 feet in length for installation ease.
- **Handhole Cleanout** - Provides easy access for inspection and cleaning of the tank interior.
- **Dielectric Nipples** -Protects tank from corrosive action between dissimilar metals and reduce installed cost.
- **Brass Drain Valve**
- **ASME Temperature & Pressure Relief Valve**
- **3 Year Limited Tank Warranty**
- **1 Year Limited Parts Warranty**
  (See warranty for details)

Optional Equipment

- NSF Construction
- ASME Construction
- Concentric Vent Kit

Maximum Vent Lengths:

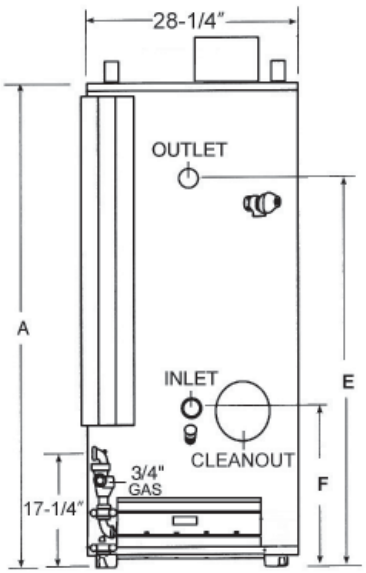
3" Vent (PVC or CPVC)

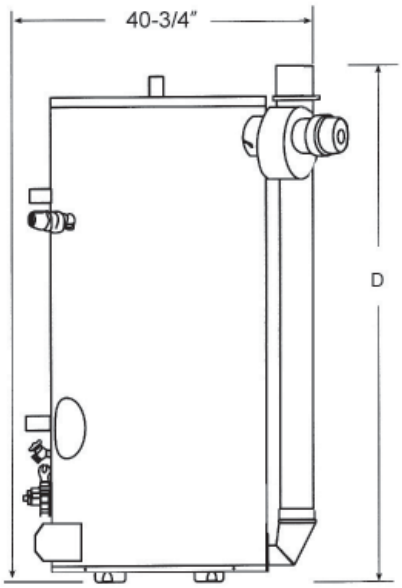
TNR125-060 = 120 Equivalent Ft.
TNR150-060 = 100 Equivalent Ft.
TNR200-060 = 80 Equivalent Ft.
TNR150-100 = 120 Equivalent Ft.
TNR200-100 = 100 Equivalent Ft.
TNR250-100 = 80 Equivalent Ft.
TNR300-100 = 60 Equivalent Ft.
TNR400-100 = 50 Equivalent Ft.

4" Vent (PVC or CPVC)

TNR125-060 = 170 Equivalent Ft.
TNR150-060 = 150 Equivalent Ft.
TNR200-060 = 130 Equivalent Ft.
TNR150-100 = 170 Equivalent Ft.
TNR200-100 = 150 Equivalent Ft.
TNR250-100 = 130 Equivalent Ft.
TNR300-100 = 110 Equivalent Ft.
TNR400-100 = 100 Equivalent Ft.

Charger Power DV Power Direct Vent Gas Models





Model Number	Tank Const.	Gal. Cap.	Btu/hr Input	GPH @ 100°F Rise	A	D	E	F	Vent Size	Water Connections Top	Front	Rear	Shipping Weight
PNR150-080	STD	80	150,000	145	63-1/2″	68-1/4″	51-1/4″	20-3/4″	3″	1-1/2″	1-1/2″	2″	645
PNR150-100	STD	100	150,000	145	72″	77-1/4″	60-1/4″	20-3/4″	3″	1-1/2″	1-1/2″	2″	735
PNR200-080	STD	80	199,999	194	63-1/2″	68-1/4″	51-1/4″	20-3/4″	3″	1-1/2″	1-1/2″	2″	645
PNR200-100	STD	100	199,999	194	72″	77-1/4″	60-1/4″	20-3/4″	3″	1-1/2″	1-1/2″	2″	735
PNR250-080	STD	80	250,000	242	63-1/2″	73″	51-1/4″	20-3/4″	4″	1-1/2″	1-1/2″	2″	645
PNR250-100	STD	100	250,000	242	72″	82″	60-1/4″	20-3/4″	4″	1-1/2″	1-1/2″	2″	735
PNA251-080	ASME	80	250,000	242	63-1/2″	73″	51-1/4″	20-3/4″	4″	1-1/2″	1-1/2″	2″	720
PNA251-100	ASME	100	250,000	242	72″	82″	60-1/4″	20-3/4″	4″	1-1/2″	1-1/2″	2″	815

Notes: Change 'N' to 'L' to denote LP models. Gas Connections are 3/4" NPT
115 Volt AC required

Standard Equipment

- **Independent PVC Venting** - The stand alone vent exhausts the byproducts of combustion and the separate air intake provides fresh combustion air to the unit. Vents up to 40 feet to an outside wall, with one 90 degree elbow, using 3" PVC or CPVC pipe. Vents up to 55 feet to an outside wall, with one 90 degree elbow, using 4" PVC or CPVC pipe.
- **Glass-Lined Steel Tank** - 300 PSI test pressure, 150 PSI working pressure.
- **Magnesium Tank Saver Anode** - Large diameter anode rod for longer tank life and greater protection.
- **Electronic Ignition** - Spark-to-pilot ignition system eliminates the need for a continuously burning pilot light, which saves energy, by providing pilot gas only when the system calls for heat.
- **Approved for Operation at 180°F Outlet Temperature.**
- **Temperature & Pressure Relief Valve** - Factory installed.
- **Cleanout** - Provides easy access.
- **Dielectric Fittings** - Factory installed and designed to provide additional protection for longer tank life.
- **Brass Drain Valve**
- **Automatic Induced-Draft Blower** - Provides balanced flue operation for direct vent applications.
- **Non-CFC Foam Insulation** - Meets ASHRAE standby loss requirements.
- **Warranty** - 3 year limited tank warranty. 1 year limited warranty on parts. (See warranty for details)

Optional Equipment

- ASME Tank Construction (250,000 BTU models only)
- NSF Construction
- Low NOx Construction

Low NOx models are available. Consult factory.

Custom Hi-Power® Vertical And Horizontal Models

VOLTAGE SCHEDULE	
J — 208V 1ø	Y — 380V 3ø
K — 208V 3ø	Z — 415V 3ø
A — 240V 1ø	X — 480V 3ø
B — 240V 3ø	N — 600V 3ø
W — 277V 1ø	

✱ = Voltage
kW = Kilowatt

Model	Max. KW	Gal. Cap.	A	B Inlet	C	D Outlet	Water Conn. (.lbs)		Shipping Weight
Vertical Round									
HV*kW-150	135	150	65-1/2″	32″	38-3/4″	7-3/4″	1-1/2″	1-1/2″	650
HV*kW-200	180	200	78″	32″	38-3/4″	7-3/4″	1-1/2 ″	1-1/2″	750
HV*kW-250	216	250	92″	34″	40-3/4″	19-1/2″	1-1/2 ″	1-1/2″	1,165
HV*kW-300	270	300	80″	40″	46-3/4″	21″	2″	2″	1,350
HV*kW-400	360	400	80″	46″	52-3/4″	22-1/2″	2″	2″	1,590
HV*kW-500	396	500	92″	46″	52-3/4″	22-1/2″	2″	2″	1,700
HV*kW-600	396	600	92″	52″	60-3/4″	24-1/2″	2-1/2″	2-1/2″	2,010
HV*kW-800	396	750	104″	52″	60-3/4″	24-1/2″	2-1/2″	2-1/2″	2,450
HV*kW-1000	396	950	128″	52″	60-3/4″	24-1/2″	2-1/2″	2-1/2″	3,160

NOTES: *Vertical Round models above 90 kW at 208V, 240V or 380V, and 162 kW at 415V, 480V, or 600V exceed the capacity of a single control box and may require multiple control panels. Consult the factory for specific details and optional construction.*
Vertical Square construction is available as an option for models that exceed the listed kW limits.
Control panel height on Vertical Round models may exceed tank height – consult factory for specific heights on models with inputs above 72 kW.

Vertical Square									
HV*kW-1250	900	1,250	132-1/2″	64-1/2″	64-1/2″	23-1/4″	3″	3″	3,560
HV*kW-1500	900	1,500	128-1/2″	70-1/2″	70-1/2″	25-1/4″	3″	3″	4,120
HV*kW-2000	900	2,000	140-1/2″	76-1/2″	76-1/2″	27-1/4″	3″	3″	4,350
HV*kW-2500	900	2,500	146-1/2″	82-1/2″	82-1/2″	29″	3″	3″	5,750
Horizontal Square									
HH*kW-150	135	150	37″	68-1/2″	34-1/4″	12″	2″	2″	1,180
HH*kW-200	180	200	37″	78″	34-1/4″	12″	2″	2″	1,370
HH*kW-250	225	250	39″	90-1/4″	36-1/4″	13″	2″	2″	1,450
HH*kW-300	270	300	45″	78-1/4″	42-1/4″	14-3/4″	2″	2″	1,530
HH*kW-400	360	400	52″	78-1/4″	48-1/4″	16″	2″	2″	1,750
HH*kW-500	450	500	52″	90-3/4″	48-1/4″	16″	2″	2″	1,860
HH*kW-600	540	600	58″	90-3/4″	54-1/4″	13-1/2″	2-1/2″	2″	2,340
HH*kW-800	720	750	58″	102-1/4″	54-1/4″	13-1/2″	2-1/2″	2″	2,850
HH*kW-1000	900	950	58″	126-1/4″	54-1/4″	13-1/2″	2-1/2″	2″	3,040
HH*kW-1250	900	1,250	64″	130-1/4″	60-1/4″	15″	3″	3″	3,750
HH*kW-1500	900	1,500	70″	126-1/4″	66-1/4″	16″	3″	3″	4,340
HH*kW-2000	900	2,000	76″	137-1/4″	72-1/4″	17-1/2″	3″	3″	4,580
HH*kW-2500	900	2,500	82″	144-1/4″	78-1/4″	16-1/2″	3″	3″	6,060

Custom Hi-Power® Commercial Electric Models

Standard Features

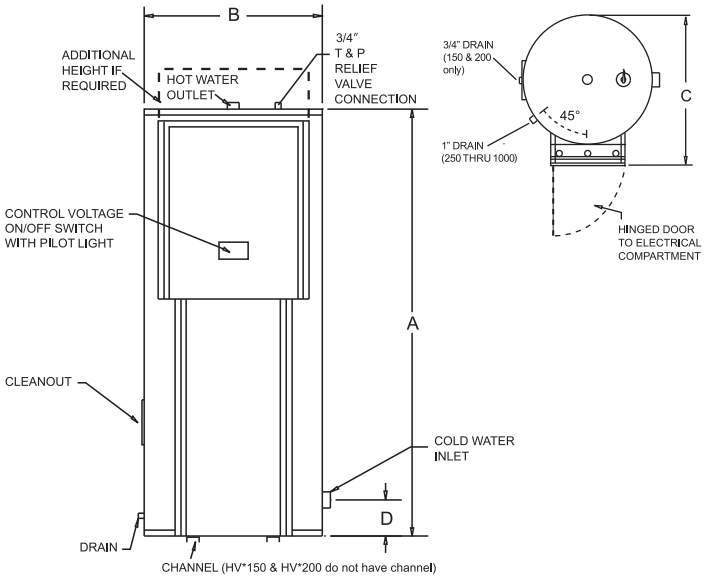
- Glass Lined Steel Tank
- Incoloy Heating Elements
- Internal Fusing (above 120 amps)
- Enamel Finished Galvanized Steel Jacket
- Magnesium Tank Saver Anodes
- Immersion Thermostat
- Manual Reset High Limit
- Full Length Hinged Doors with Key Lock
- Terminal Block Connections
- ASME Temperature and Pressure Relief Valve (Supplied, not installed)
- Channel Iron Skid Base (except 150 & 200 gallon round or larger)
- Approved for 180°F Temperature Operation
- ASME Construction and National Board Listed
- All models meet or exceed ASHRAE energy efficiency standards
- 125 psi Working Pressure
- Handhole or Cleanout
- UL Listed (U.S. & Canada)
- Safety Drain Pan (Square Models)
- Control Voltage on/off Switch w/ Pilot Light
- 3 Year Limited Tank Warranty
- 1 Year Limited Parts Warranty

Optional Equipment

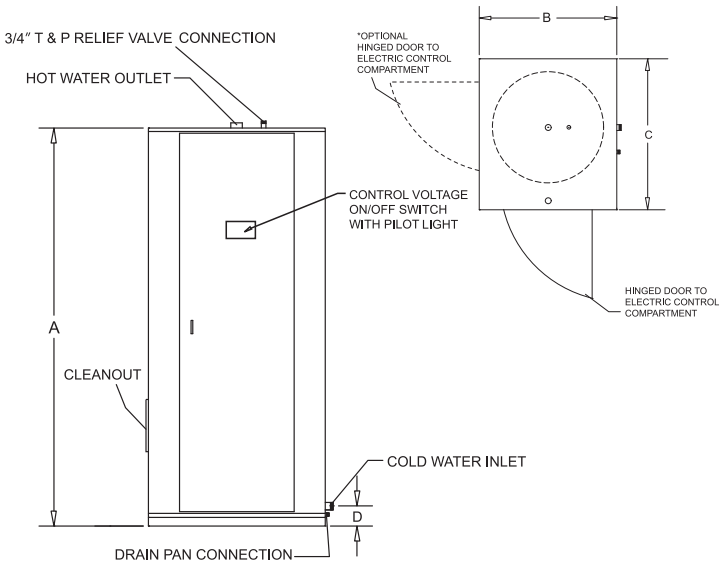
- Low Water Cut-Off
- Pilot Lights
- Manual Limiting Switches
- Alarm Bell
- Shunt Trip Disconnect*
- Low or High Water Pressure Switch
- Lifting Lugs
- Time Clock (7 day or 24 hour)
- Safety Door Interlock
- BMS Enable/Disable Contacts
- Temperature and Pressure Gauges
- Manway
- 150 psi or 160 psi Working Pressure
- Electronic Step Controller
- Seismic attachment points (Must have seismic zone or city and state of install)

**Field Installed*

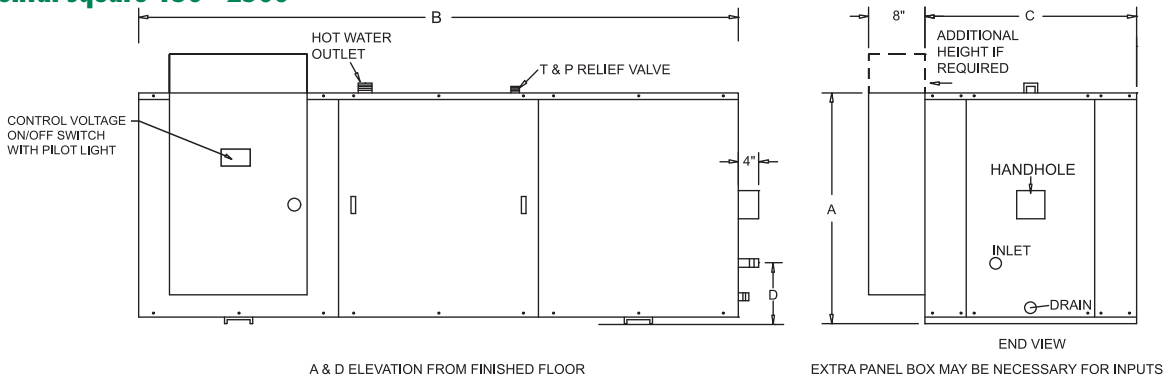
Vertical Round 150-1000



Vertical Square 1250-2500



Horizontal Square 150 - 2500



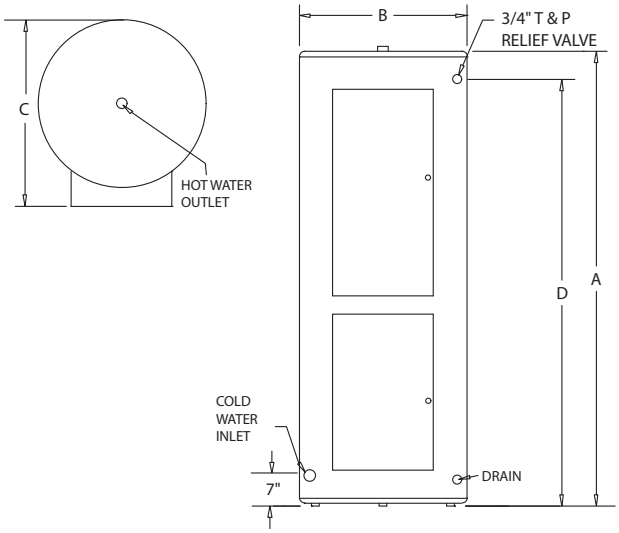
A & D ELEVATION FROM FINISHED FLOOR

EXTRA PANEL BOX MAY BE NECESSARY FOR INPUTS

Standard Hi-Power® Electric Models

Standard Features

- Heavy Duty Glass-Lined Tank
- Magnesium Tank Saver Anode
- Low Watt Density Element
- High Limit Cut-Off
- Internal Fusing
- Approved for 180°F Operation (Immersion models)
- Factory-Installed Temperature and Pressure Relief Valve
- Two Temperature Operation Available
- Full 3" Foam Insulation
- Hinged Door Access
- Two Thermostat Control Types
- U.L. Listed
- 3 Year Limited Tank Warranty
- 1 Year Limited Parts Warranty (See warranty for details)



Model Number	KW	Gallon Capacity	GPH @ 100°F Rise	Number of Elements	A	B	C	D	Shipping Weight
HS*09-052	9	50	37	3	47-3/4"	24"	30-1/2"	41"	270
HS*12-052	12	50	50	3	47-3/4"	24"	30-1/2"	41"	270
HS*15-052	15	50	62	3	47-3/4"	24"	30-1/2"	41"	270
HS*18-052	18	50	74	3	47-3/4"	24"	30-1/2"	41"	270
HS*24-052	24	50	99	6	47-3/4"	24"	30-1/2"	41"	270
HS*27-052	27	50	112	6	47-3/4"	24"	30-1/2"	41"	270
HS*30-052	30	50	124	6	47-3/4"	24"	30-1/2"	41"	270
HS*36-052	36	50	149	6	47-3/4"	24"	30-1/2"	41"	270
HS*09-082	9	80	37	3	60-1/4"	26"	32-1/2"	52-1/2"	335
HS*12-082	12	80	50	3	60-1/4"	26"	32-1/2"	52-1/2"	335
HS*15-082	15	80	62	3	60-1/4"	26"	32-1/2"	52-1/2"	335
HS*18-082	18	80	74	3	60-1/4"	26"	32-1/2"	52-1/2"	335
HS*24-082	24	80	99	6	60-1/4"	26"	32-1/2"	52-1/2"	335
HS*27-082	27	80	112	6	60-1/4"	26"	32-1/2"	52-1/2"	335
HS*30-082	30	80	124	6	60-1/4"	26"	32-1/2"	52-1/2"	335
HS*36-082	36	80	149	6	60-1/4"	26"	32-1/2"	52-1/2"	335
HS*45-082	45	80	186	9	60-1/4"	26"	32-1/2"	52-1/2"	335
HS*54-082	54	80	223	9	60-1/4"	26"	32-1/2"	52-1/2"	335
HS*09-120	9	119	37	3	64-1/2"	30-1/4"	37-1/4"	55"	430
HS*12-120	12	119	50	3	64-1/2"	30-1/4"	37-1/4"	55"	430
HS*15-120	15	119	62	3	64-1/2"	30-1/4"	37-1/4"	55"	430
HS*18-120	18	119	74	3	64-1/2"	30-1/4"	37-1/4"	55"	430
HS*24-120	24	119	99	6	64-1/4"	30-1/4"	37-1/4"	55"	430
HS*27-120	27	119	112	6	64-1/2"	30-1/4"	37-1/4"	55"	430
HS*30-120	30	119	124	6	64-1/2"	30-1/4"	37-1/4"	55"	430
HS*36-120	36	119	149	6	64-1/2"	30-1/4"	37-1/4"	55"	430
HS*45-120	45	119	186	9	64-1/4"	30-1/4"	37-1/4"	55"	430
HS*54-120	54	119	223	9	64-1/2"	30-1/4"	37-1/4"	55"	430

Notes: *S = Surface-Mounted Thermostat C = Immersion Thermostat w/ Contactors*
Change "S" to "C" for Immersion Thermostat model. *1-1/2" NPT Water Connections*

* = **Voltage** - *See voltage schedule*

AMPERAGE TABLE

	Single Phase			Three Phase		
KW	208V	240V	277V	208V	240V	480V
9	43	38	32	25	22	11
12	58	50	43	33	29	14
15	72	63	54	42	36	18
18	87	75	65	50	43	22
24	115	100	87	67	58	29
27	130	113	97	75	65	32
30	144	125	108	83	72	36
36	173	150	130	100	87	43
45	216	188	162	125	108	54
54	260	225	195	150	130	65

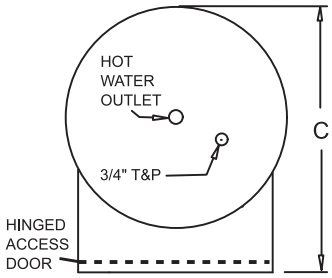
SURFACE MOUNTED THERMOSTAT VOLTAGE SCHEDULE

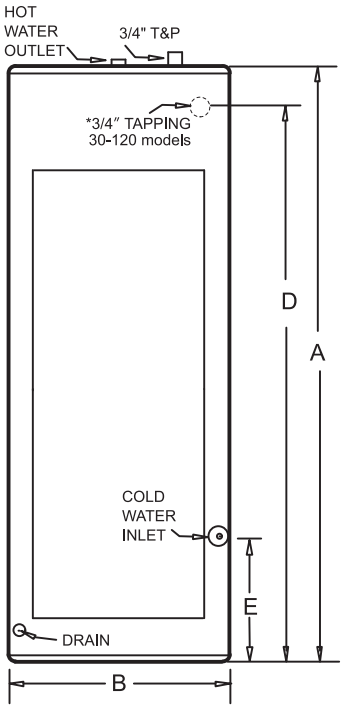
T — 208V 1ø or 3ø
P — 240V 1ø or 3ø
W — 277V 1ø
Y — 380V 3ø
Z — 415V 3ø
X — 480V 3ø

IMMERSION THERMOSTAT w/ CONTACTORS VOLTAGE SCHEDULE

J — 208V 1ø	W — 277V 1ø
K — 208V 3ø	Y — 380V 3ø
A — 240V 1ø	Z — 415V 3ø
B — 240V 3ø	X — 480V 3ø

Compact ASME Hi-Power *Electric Models*





VOLTAGE SCHEDULE	
J — 208V 1ø	W — 277V 1ø
K — 208V 3ø	Y — 380V 3ø
A — 240V 1ø	Z — 415V 3ø
B — 240V 3ø	X — 480V 3ø

Model Number	Max kW	Gal. Cap.	A	B	C	D	E	Water Conn.	Shipping Weight
HC*kW-06A	3	6	17-1/2″	16″	21″	N/A	6-1/4″	3/4″	83
HC*kW-12A	9	12	28″	16″	21″	N/A	6-1/4″	3/4″	118
HC*kW-20A	18	20	27-1/2″	20″	24-1/2″	N/A	6-1/4″	3/4″	145
HC*kW-30A	36	30	38″	20″	24-1/4″	N/A	6-1/4″	3/4″	180
HC*kW-40A	36	40	48-1/4″	20″	24-1/2″	N/A	6-1/4″	3/4″	220
HC*kW-50A	81	50	47-3/4″	24″	30-1/2″	41″	6″	1-1/2″	270
HC*kW-80A	81	80	60-1/4″	26″	30-1/2″	52-1/2″	6″	1-1/2″	335
HC*kW-120A	81	120	64-1/2″	30-1/4″	30-1/2″	55″	6″	1-1/2″	430

* = Voltage *see voltage schedule*

KW	GPH@ 100°F RISE	SINGLE PHASE 208V	SINGLE PHASE 240V	SINGLE PHASE 277V	THREE PHASE 208V	THREE PHASE 240V	THREE PHASE 480V
3	12	14	13	11	–	–	–
6	25	30	25	22	17	14	7
9	37	43	38	32	25	22	11
12	50	58	50	43	33	29	14
15	62	72	63	54	42	36	18
18	74	87	75	64	50	43	22
24	99	115	100	87	68	58	29
27	112	130	113	97	75	65	33
30	124	144	125	108	83	72	36
36	149	173	150	130	100	87	43
45	186	216	188	162	125	108	54
54	223	260	225	195	150	130	65
81	335	389	338	292	225	195	97

Note: *Models with an amp draw in excess of 120 amps require factory installed internal fusing.*

Standard Features

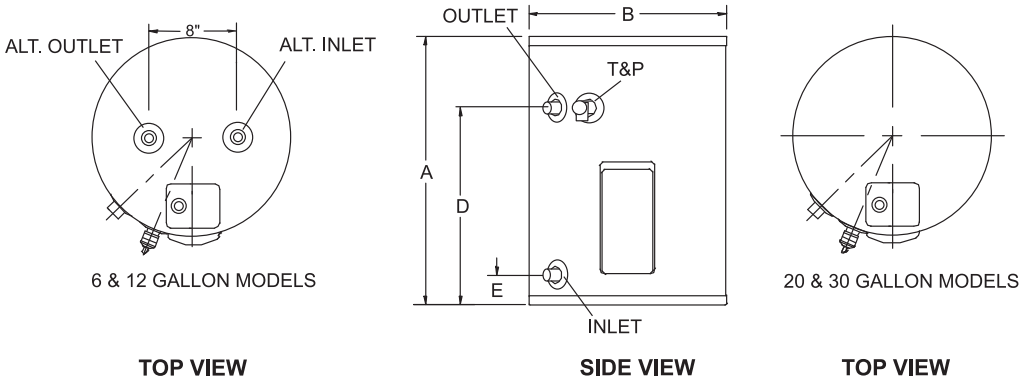
- **ASME Code Construction HLW**
- **Heavy-Duty Glass-Lined Tank**–150 psi working pressure.
- **Magnesium Tank Saver**–large diameter for longer tank life, greater protection.
- **Heating Element**–Low watt incoloy construction for long life.
- **Energy Cut-Off**–Shuts off electrical power should the water temperature in the tank exceeds 200°F.
- **Internal Fusing**–All elements and controls are fused in accordance with U.L. requirements.
- **Approved for 180°F outlet temperature**
- **Temperature and Pressure Relief Valve**–Included
- **Insulation**–Full 3”of foam insulation on the top and around the sides. Meets ASHRAE Energy Efficiency Standards.
- **Hinged Access Door**–Provides easy access to electrical controls.
- **Immersion Thermostats and Contactors**
- **Cleanout**–20 - 120 gallon models.
- **3 Year Limited Tank Warranty**
- **1 Year Limited Parts Warranty** (See warranty for details)

Optional Equipment

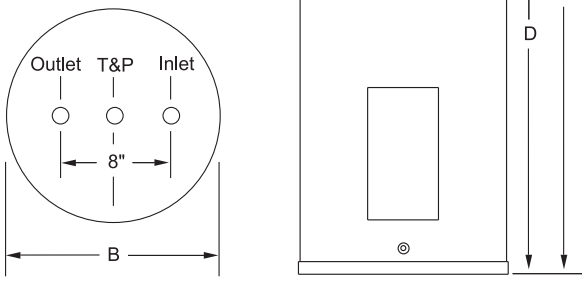
- **Low Water Cut-Off**
- **Safety Door Interlock**
- **High and/or Low Water Pressure Limit Switches**
- **Alarm Bell**
- **Temperature & Pressure Gauge**
- **Time Delay Step Sequences** (24 kW & Above)
- **NSF Construction**

Light Duty Commercial Electric Models

Junior models



Tall & Short models



Element Availability

INPUT (WATT)	VOLTAGE 208V	240V	277V	480V
E- 1500	Y	Y	Y	Y
F- 2000	Y	Y	Y	Y
G-2500	Y	Y	Y	Y
H-3000	Y	Y	Y	Y
J- 3500	Y	Y	Y	Y
L- 4000	Y	Y	Y	Y
K-4500	Y	Y	Y	Y
M-5000	Y	Y	Y	Y
P- 6000	Y	Y	Y	Y

***Notes**: Max. wattage Jr models 6 & 12 = 3000W*
Max wattage Jr. models 20 & 31 = 6000W

Wattage Limits w/ Simultaneous Operation

208V	-	10,000W (5,000W/5,000W)
240V	-	10,000W (5,000W/5,000W)
277V	-	12,000W (6,000W/6,000W)
480V	-	12,000W (6,000W/6,000W)

Voltage Schedule

J - 208V 1ø	W - 277V 1ø
K - 208V 3ø	Y - 380V 3ø
A - 240V 1ø	Z - 415V 3ø
B - 240V 3ø	V - 480V 1ø
X - 480V 3ø	

***Note**: Jr models available in 1ø and 480V 1ø only.*

Model Number	Gallon Capacity	A	B	D	E	Shipping Weight
Junior Models						
JRW006E	6	16-1/2″	14″	10-1/4″	3″	33
JRW012E	12	27-3/4″	14″	21-1/4″	3″	48
JRW020E	19	24-3/4″	18″	18-1/4″	3″	59
JRW031E	30	30″	22″	23-1/2″	4-1/2″	92
Tall Models						
LTX030KK	30	47″	18″	-	-	85
LTX040KK	40	47″	20″	-	-	103
LTX052KK-T	50	57-1/2″	20″	-	-	123
LTX052KK	50	46-1/2″	22″	-	-	130
LTX066KK	65	59-1/4″	22″	-	-	156
LTX082KK	80	59″	24″	-	-	183
LTX120KK	119	63-3/4″	28″	-	-	305
Short Models					-	
LSX030KK	30	29-3/4″	22″	24″	-	96
LSX040KK	40	31-3/4″	24″	24-1/4″	-	125
LSX050KK	47	31-3/4″	26″	24-1/4″	-	153

***Notes**:Water connections 3/4” NPT on all models.*
(LTX120 is standard with 1” water connections)
Standard wattage and voltage: 4500W/480V 3ø
Standard wattage and voltage Jr. models: 1500W/277V 1ø

Standard Features

- **Energy Saving Design**–All models meet the latest NAECA and ASHRAE Energy Efficiency Standards.
- **Glass–Lined Steel Tank**–300 psi test pressure, 150 psi working pressure.
- **Non-CFC Foam Insulation**–Surrounds the tank surface to minimize standby heat loss. Exceeds ASHRAE 90.1 standard.
- **Adjustable Thermostats**–Adjustable, accurate control provides easy means of selecting most desirable temperature.
- **Automatic Overheat Protection–**Provides automatic overheat safety control with manual reset high limit feature.
- **Magnesium Tank Saver Anode**–Large diameter magnesium anode prolongs tank life and inhibits corrosion.
- **Dip Tube**–Withstands temperatures of 400ºF.
- **ASME Temperature & Pressure Relief Valve**–Included
- **Warranty** – 3 year limited tank warranty.
  1 year limited parts warranty.
  (See warranty for details)

Explosion-Resistant Electric Models

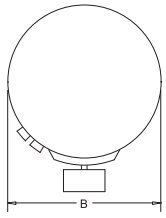
Standard Features

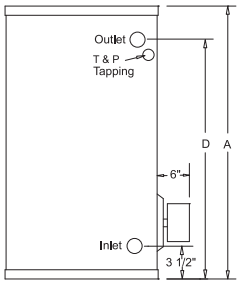
- **Energy Saving Design** - All models meet the latest NAECA and ASHRAE Energy Efficiency Standards.
- **Glass-Lined Steel Tank** - Fused to the tank at 1600°F to assure lasting protection against rust and corrosion while providing clean, clear hot water. 300 psi test pressure provides 150 psi working pressure.
- **Non-CFC Foam Insulation** - The polyurethane closed cell foam minimizes standby heat loss and maximizes heat retention.
- **Cold Water Inlet Tube** - withstands temperatures of 400ºF
- **High Quality Thermostats** - Adjustable, accurate control provides easy means of selecting most desired temperature.
- **Magnesium Tank Saver Anode** - Large diameter magnesium anode prolongs tank life and inhibits corrosion.
- **ASME Temperature & Pressure Relief Valve** - Included with all models.
- **Heat Traps** - Factory installed, minimizes heat loss through piping.
- **Dielectric Nipples** - Provides protection from corrosive action between dissimilar metals while reducing installed costs.
- **Warranty** - 3 year limited tank warranty.
  1 year limited parts warranty.
  (See warranty for details)

Explosion-Resistant Element

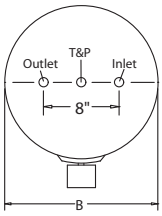
- **Thermostat Enclosure** - moisture-tight and explosion resistant.
- **Large Terminal Enclosure** - for easy access, cool terminations and simple installation.
- **Rugged High Conductivity Elements** - compacted MgO for maximum efficiency and durability
- **Complies with NEC**
  Class I (Groups C, D)
  Class II (Groups E,F,G)
  Class III
- **Complies with U.L. Standard 886**
- **Enclosure meets NEMA requirements** for hazardous atmosphere (consult factory for specific applications)

Junior Models



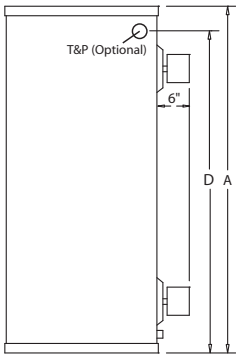


Tall & Short Models



Short Series Have Optional Side T & P Valve Tapping

Note: Diagram above depicts optional double element availability. (Short and Tall models only).



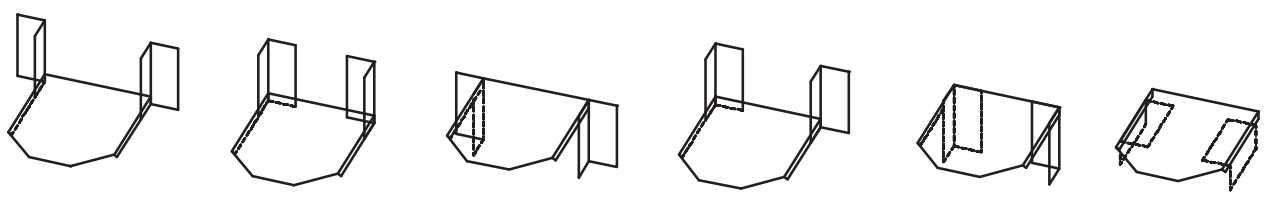
Model Number	Gallon Capacity	A	B	D	Shipping Weight
Junior Models					
RJC006E	6	16-1/2″	14″	10-1/4″	43
RJC012E	12	27-3/4″	14″	21-1/4″	58
RJC020E	19	24-3/4″	18″	18-1/4″	69
Tall Models					
RTA030K	30	47″	18″	–	95
RTA040K	40	47″	20″	–	113
RTA052K-T	50	57-1/2″	20″	–	133
RTA052K	50	46-1/2″	22″	–	140
RTA066K	65	59-1/4″	22″	–	166
RTA082K	80	59″	24″	–	193
RTA120K	119	63-3/4″	28″	–	315
Short Models					
RSA030K	30	29-3/4″	22″	24″	106
RSA040K	40	31-3/4″	24″	24-1/4″	135
RSA050K	50	31-3/4″	26″	24-1/4″	163

Notes: Water connections are 3/4" NPT on all models.
Standard for Short and Tall models: 4500 watts, 240V 1ø.
Junior models: 1500 watts, 120V 1ø.

VOLTAGE SCHEDULE
C – 120V 1ø
J – 208V 1ø
A – 240V 1ø
X – 480V 1ø

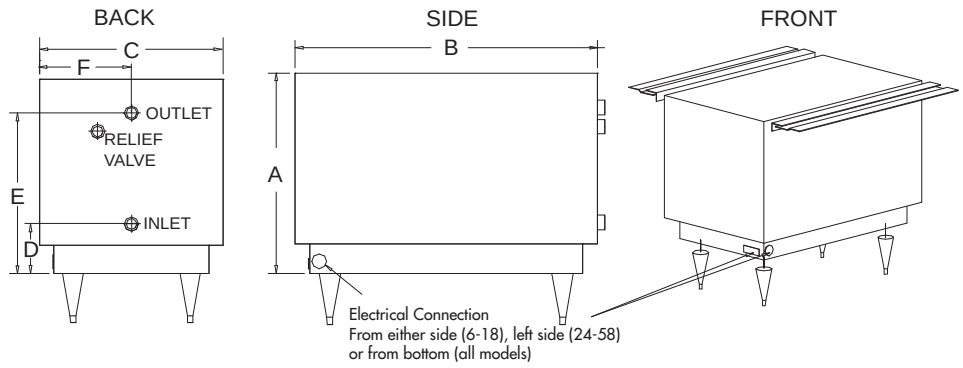
WATTAGE SCHEDULE
E – 1500
K – 4500
P – 6000

Six Way Shelf Mounting - For six and twelve gallon models only. (JKT 3004)



NO.1 NO.2 NO.3 NO.4 NO.5 NO.6

Space-Saver Electric Boosters



Model Number	kW	Recovery (GPH @) 40°F	70°F	Btu/hr Input	A	B	C	D	E	F	Weight
SB*006	6	62	35	20,478	13-3/4″	20-3/4″	13″	3-1/2″	11-1/2″	6-1/2″	118
SB*009	9	93	53	30,717	13-3/4″	20-3/4″	13″	3-1/2″	11-1/2″	6-1/2″	118
SB*012	12	124	71	40,956	13-3/4″	20-3/4″	13″	3-1/2″	11-1/2″	6-1/2″	118
SB*015	15	155	89	51,195	13-3/4″	20-3/4″	13″	3-1/2″	11-1/2″	6-1/2″	118
SB*018	18	186	106	61,434	13-3/4″	20-3/4″	13″	3-1/2″	11-1/2″	6-1/2″	118
SB*024	24	248	142	81,912	12″	24″	18″	2″	10″	8″	158
SB*030	30	310	177	102,390	12″	24″	18″	2″	10″	8″	158
SB*036	36	372	213	122,868	12″	24″	18″	2″	10″	8″	158
SB*045	45	465	266	153,585	12″	24″	18″	2″	10″	8″	158
SB*054	54	558	316	184,302	12″	24″	18″	2″	10″	8″	158
SB*058	58	600	343	198,128	12″	24″	18″	2″	10″	8″	158

***Notes:** * Indicates voltage. 6 and 9 kW models wired for 1ø or 3ø operation in 208 or 240 volt. Six (6) gallon capacity for all models. Outlets and inlets are 8″ center-to-center. Water connections are all 3/4″ NPT.*

Amperage Draw

Model No.	kW	Single Phase 208V	240V	Three Phase 208V	240V	480V
SB*006	6	29	25	25	22	11
SB*009	9	43	38	38	33	16
SB*012	12	58	50	33	29	14
SB*015	15	72	63	42	36	18
SB*018	18	83	72	48	42	21
SB*024	24	116	100	67	58	29
SB*030	30	144	125	83	72	36
SB*036	36	173	150	100	87	43
SB*045	45	216	188	125	109	54
SB*054	54	259	229	150	130	65
SB*058	58	279	242	161	141	71

* Indicates Voltage

Voltage Schedule

J – 208V	1ø
K – 208V	3ø
T – 208V	1ø or 3ø
A – 240V	1ø
B – 240V	3ø
P – 240V	1ø or 3ø
X – 480V	3ø

Sizing Guide

Dishwashing Machine	Classification	Booster Model No. 40° F Rise	Booster Model No. 70° F Rise
16″ x 16″ Single Tank (69 GPH)	Stationary Rack, Door	SB*009	SB*012
18″ x 18″ Single Tank (87 GPH)	Stationary Rack, Door	SB*009	SB*015
20″ x 20″ Single Tank (104 GPH)	Stationary Rack, Door	SB*012	SB*018
Multiple Tank (277 GPH)	Conveyor, Dishes inclined	SB*030	SB*054
Multiple Tank (347 GPH)	Conveyor, Dishes flat	SB*036	(2) SB*030
Single Tank (416 GPH)	Conveyor	SB*045	(2) SB*036

***Note:** Maximum water pressure 20 psi for proper operation.*

Standard Features

- **Adjustable Thermostat**—for operation at 180°F
- **Pilot Switch**—turns unit off when dishwasher is not in use for maximum energy savings
- **Under-Counter Design**—saves valuable floor space
- **Installation Flexibility**—use with standard 6" adjustable legs or under-counter, slide-out mounting (available upon request)
- **Wide Range of Capacities**—to meet the requirements of even the largest commercial dishwashers
- **Durable Cement-Lined, Steel Tank**—for longer life
- **Heavy Duty Construction**—pressure tested to 300 psi and approved for 150 psi working pressure
- **Low Watt Density Elements**—copper-sheathed, tin-coated design rated at 75 watts/in^2
- **Pilot Indicator Light and High Limit Control**—for safe, economical operation
- **Built-In Temperature-Pressure Gauge**
- **Pressure Reducing Valve with Bypass Check**
- **ASME Temperature and Pressure Relief Valve**
- **Stainless Steel Jacket**
- **Full Blanket of Insulation**
- **Magnesium Anode Rod**—inhibits corrosion
- **Instantaneous Response**—no temperature lag, no standby losses
- **Economical Operation**
- **Hinged Access Door**—for easy servicing and adjustment of electric controls
- **120 Volt Circuit Control**
- **Low Water Cut-Off**
- **3 Year Limited Tank Warranty**
- **1 Year Limited Parts Warranty** (See warranty for details)

Optional Equipment

- **Slide-Out Mounting Bracket for Under-Counter Installation**
- **Stainless Steel Legs**
- **3/4" Shock Absorber** (water hammer arrestor)

Lock-Temp® Round Jacketed Storage Tanks

500 Gallon Jacketed Tank.

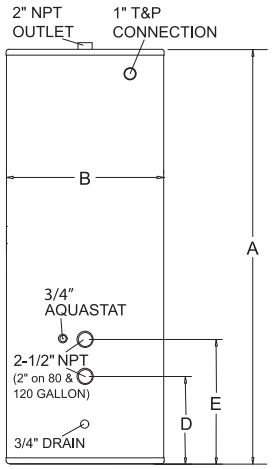
Standard Features

- **Energy Saving Performance** - meet the requirements of the latest ASHRAE Energy Efficiency Standards.
- **Five-Year Limited Warranty** - against tank failure resulting from defects in materials or workmanship.
- **Lock-Temp Baffle** - creates nearly perfect stratification.
- **Magnesium Anode** - provide additional protection against corrosion.
- **ASME Construction** - in accordance with ASME standards and labeled for 125 psi working pressure (standard) or 150 psi working pressure (optional). (RJS080 & RJS120 are non-ASME construction)
- **Galvanized Jacket** - Heavy gauge jacket is and finished in durable acrylic enamel combining attractive appearance with maximum protection.

Vertical Round Jacketed Glass Lined Tanks

Model Number	Gal. Cap.	A	B	D	E	Shipping Weight 125 psi	Shipping Weight 150 psi
RJS080	78	58-3/4″	24″	9-1/4″	14-1/4″	-	192
RJS120	119	62-1/2″	28″	9-1/2″	14-1/2″	-	345
RJA120	119	62-1/2″	28″	9-1/2″	14-1/2″	-	365
RJA175	175	67-1/4″	32″	11-1/4″	17-1/4″	-	525
RJA200	200	77-1/4″	32″	11-1/4″	17-1/4″	-	600

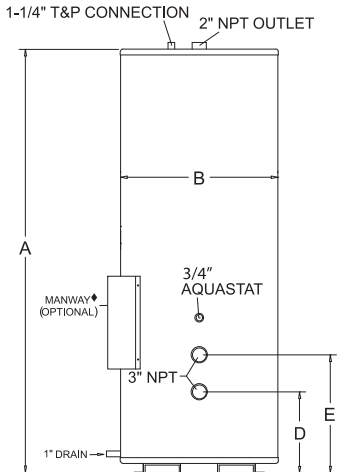
Glass Lined Only



Vertical Round Jacketed ASME Tanks

Model Number	Gal. Cap.	A	B	D	E	Shipping Weight 125 psi	Shipping Weight 150 psi
R*A0257	257	91″	34″	18″	26″	1,108	1,108
R*A0318	318	80″	40″	19-1/2″	27-1/2″	1,290	1,290
R*A0432	432	80″	46″	21″	29″	1,512	1,626
R*A0504	504	92″	46″	21″	29″	1,623	1,765
R*A0650	650	92″	52″	23-1/2″	31-1/2″	1,911	1,911
R*A0752	752	104″	52″	23-1/2″	31-1/2″	2,330	2,330
R*A0940	940	128″	52″	23-1/2″	31-1/2″	3,010	3,010

* Indicates tank lining.
G=Glass Lined C=Cement

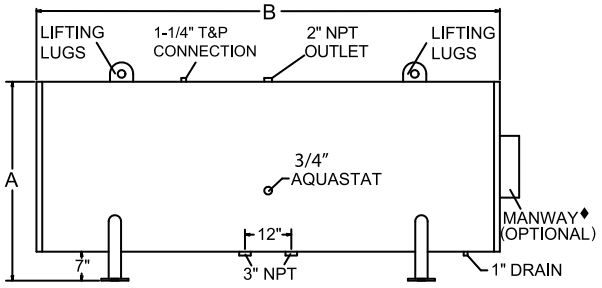


MANWAY IS STANDARD ON CEMENT TANKS.

Horizontal Round Jacketed ASME Tanks

Model Number	Gallon Capacity	A	B	Diameter	Shipping Weight 125 psi	Shipping Weight 150 psi
R*A0250H	250	41″	88″	34″	1,157	1,157
R*A0300H	300	47″	76″	40″	1,355	1,355
R*A0400H	400	53″	76″	46″	1,587	1,701
R*A0500H	500	53″	88″	46″	1,711	1,853
R*A0600H	600	59″	88″	52″	2,053	2,053
R*A0700H	700	59″	100″	52″	2,399	2,399
R*A1000H	1000	59″	124″	52″	3,114	3,114

* Indicates tank lining.
G=Glass Lined C=Cement



MANWAY IS STANDARD ON CEMENT TANKS.

Lock-Temp® Square Jacketed Storage Tanks

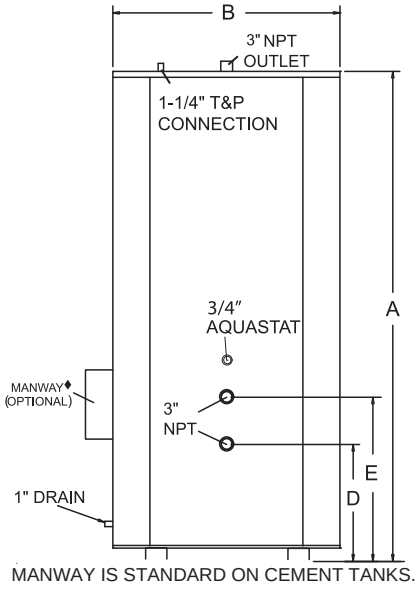
Standard Features

- **Energy Saving Performance** - meet the requirements of the latest ASHRAE Energy Efficiency Standards.
- **Five-Year Limited Warranty** - against tank failure resulting from defects in materials or workmanship.
- **Lock-Temp Baffle** - creates nearly perfect stratification.
- **Magnesium Anode** - provide additional protection against corrosion.
- **ASME Construction** - in accordance with ASME standards and labeled for 125 psi working pressure (standard) or 150 psi working pressure (optional).
- **Galvanized Jacket** - Heavy gauge jacket is and finished in durable acrylic enamel combining attractive appearance with maximum protection.
- **Built-In Safety Drain Pan System** - Sealed base assembly with 3/4" drain connection to protect against water damage from gasket or component leakage.
- **Channel Iron Skid** - Square jacket models furnished with skid for easy handling and installation.

Vertical Square Jacketed ASME Tanks

Model Number	Gal. Cap.	A	B	D	E	Shipping Weight 125 psi	Shipping Weight 150 psi
TV*1250J	1250	132-1/2"	64-1/2"	29-1/4"	21-1/4"	4,660	5,000
TV*1500J	1500	128 1/2"	70-1/2"	31-3/4"	25-3/4"	6,200	6,637
TV*2000J	2000	140-1/2"	76-1/2"	33-1/2"	25-1/2"	7,400	7,910
TV*2500J	2500	146-1/2"	82-1/2"	35-1/4"	28"	9,000	9,632

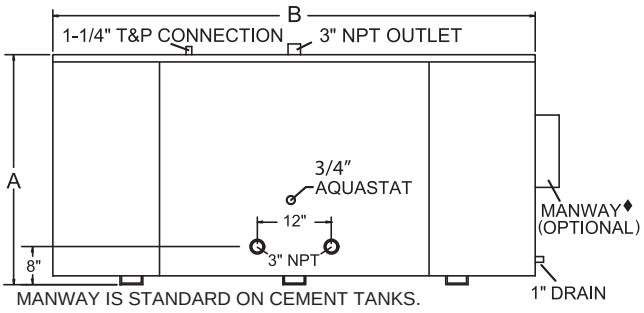
* Indicates tank lining.
G=Glass Lined C=Cement



Horizontal Square Jacketed ASME Tanks

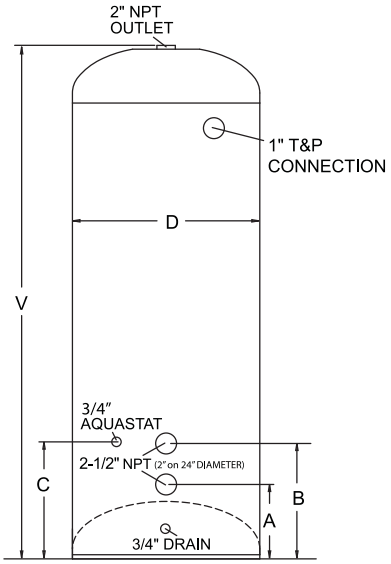
Model Number	Gallon Capacity	A	B	Depth	Shipping Weight 125 psi	Shipping Weight 150 psi
TH*1250J	1250	68-1/2"	130-1/4"	60-1/4"	5,126	5,466
TH*1500J	1500	77 1/2"	126-1/4"	66-1/4"	6,820	7,257
TH*2000J	2000	80-1/2"	138-1/4"	72-1/4"	8,140	8,650
TH*2500J	2500	86-1/2"	144-1/4"	78-1/4"	9,900	10,532

* Indicates tank lining.
G=Glass Lined C=Cement

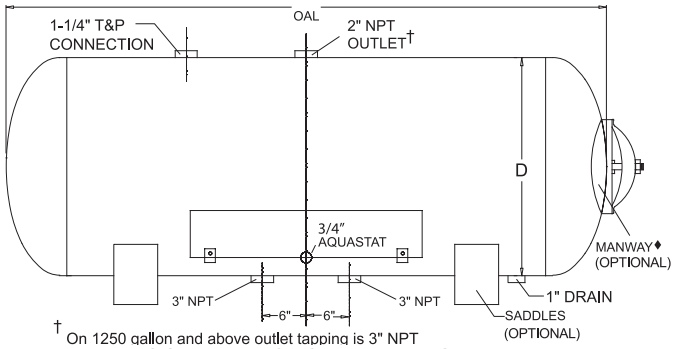


Lock-Temp® Bare Storage Tanks

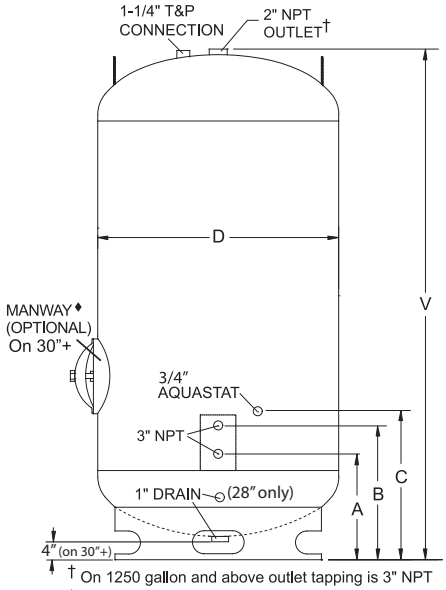
Gal. Cap.	Dimensions D Dia.	V Ht.	H Lgth.	Weights Glass-Lined 125 psi	150 psi	Cement Lined	Tappings A	B	C
118	24″	64″	-	368	368	-	13-1/2″	21-1/2″	29-1/2″
141	24″	76″	-	428	428	-	13-1/2″	21-1/2″	29-1/2″
188	24″	100″	-	556	556	-	13-1/2″	21-1/2″	29-1/2″
235	24″	124″	-	684	684	-	13-1/2″	21-1/2″	29-1/2″
175	28″	65″	-	353	353	-	11″	17″	16″
200	28″	76″	-	-	488	-	11″	17-1/2″	16″
147	30″	52″	48″	400	400	695	15-3/4″	23-3/4″	31-3/4″
184	30″	64″	60″	468	468	812	15-3/4″	23-3/4″	31-3/4″
220	30″	76″	72″	548	548	958	15-3/4″	23-3/4″	31-3/4″
257	30″	87″	83″	628	628	1,103	15-3/4″	23-3/4″	31-3/4″
294	30″	100″	96″	701	701	1,242	15-3/4″	23-3/4″	31-3/4″
367	30″	124″	120″	868	868	1,540	15-3/4″	23-3/4″	31-3/4″
265	36″	64″	60″	577	577	995	17-1/2″	25-1/2″	33-1/2″
318	36″	76″	72″	673	673	1,173	17-1/2″	25-1/2″	33-1/2″
370	36″	87″	83″	770	770	1,343	17-1/2″	25-1/2″	33-1/2″
423	36″	100″	96″	866	866	1,513	17-1/2″	25-1/2″	33-1/2″
528	36″	124″	120″	1,058	1,058	1,861	17-1/2″	25-1/2″	33-1/2″
432	42″	76″	72″	795	909	1,385	18-3/4″	26-3/4″	34-3/4″
504	42″	88″	84″	908	1,050	1,587	18-3/4″	26-3/4″	34-3/4″
576	42″	100″	96″	1,020	1,190	1,790	18-3/4″	26-3/4″	34-3/4″
720	42″	124″	120″	1,245	1,470	2,195	18-3/4″	26-3/4″	34-3/4″
864	42″	148″	144″	1,470	1,751	2,601	18-3/4″	26-3/4″	34-3/4″
1,008	42″	172″	168″	1,695	2,031	3,006	18-3/4″	26-3/4″	34-3/4″
658	48″	88″	84″	1,346	1,346	2,124	20-3/4″	28-3/4″	36-3/4″
752	48″	100″	96″	1,507	1,507	2,392	20-3/4″	28-3/4″	36-3/4″
940	48″	124″	120″	1,828	1,828	2,918	20-3/4″	28-3/4″	36-3/4″
1,128	48″	148″	144″	2,150	2,150	3,444	20-3/4″	28-3/4″	36-3/4″
1,315	48″	172″	168″	2,471	2,471	3,970	20-3/4″	28-3/4″	36-3/4″
1,503	48″	196″	192″	2,793	2,793	4,505	20-3/4″	28-3/4″	36-3/4″
951	54″	100″	96″	1,721	1,972	2,729	22-3/4″	30-3/4″	38-3/4″
1,189	54″	124″	120″	2,083	2,423	3,320	22-3/4″	30-3/4″	38-3/4″
1,427	54″	148″	144″	2,451	2,881	3,919	22-3/4″	30-3/4″	38-3/4″
1,665	54″	172″	168″	2,807	3,326	4,511	22-3/4″	30-3/4″	38-3/4″
1,903	54″	196″	192″	3,168	3,777	5,102	22-3/4″	30-3/4″	38-3/4″
2,141	54″	220″	216″	3,530	4,228	5,701	22-3/4″	30-3/4″	38-3/4″
1,469	60″	124″	120″	2,784	3,221	4,177	24-3/4″	32-3/4″	40-3/4″
1,763	60″	148″	144″	3,267	3,823	4,913	24-3/4″	32-3/4″	40-3/4″
2,056	60″	172″	168″	3,749	4,425	5,658	24-3/4″	32-3/4″	40-3/4″
2,350	60″	196″	192″	4,231	5,026	6,394	24-3/4″	32-3/4″	40-3/4″
2,644	60″	220″	216″	4,713	5,628	7,130	24-3/4″	32-3/4″	40-3/4″
2,115	72″	124″	120″	3,416	3,904	5,104	27-3/4″	35-3/4″	43-3/4″
2,538	72″	148″	144″	3,995	4,627	5,995	27-3/4″	35-3/4″	43-3/4″
2,961	72″	172″	168″	4,575	5,350	6,885	27-3/4″	35-3/4″	43-3/4″
3,384	72″	196″	192″	5,154	6,073	7,767	27-3/4″	35-3/4″	43-3/4″
3,807	72″	220″	216″	5,733	6,795	8,658	27-3/4″	35-3/4″	43-3/4″



24" DIAMETER TANKS



† On 1250 gallon and above outlet tapping is 3" NPT
MANWAY IS STANDARD ON CEMENT TANKS.

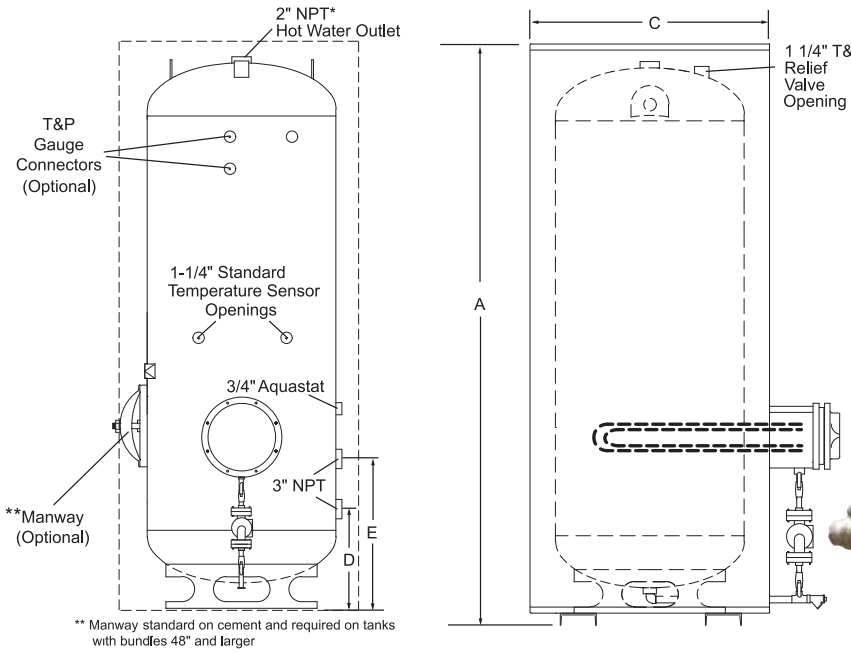


† On 1250 gallon and above outlet tapping is 3" NPT
♦ Manway is standard on cement lined tanks

28" DIAMETER AND LARGER TANKS

Hot Water Generators Water to Water & Steam to Water

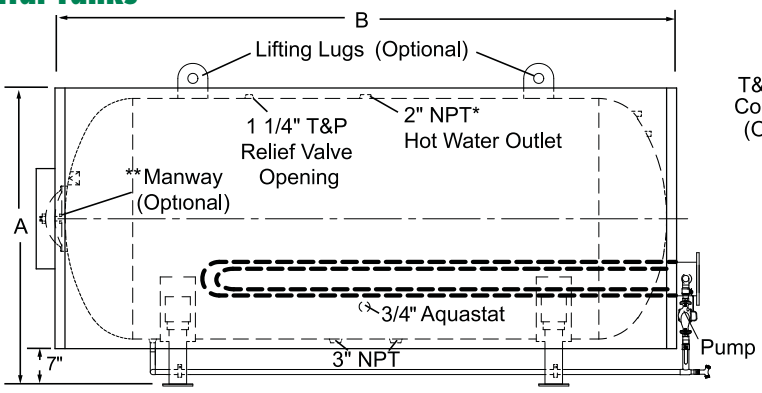
Vertical Tanks

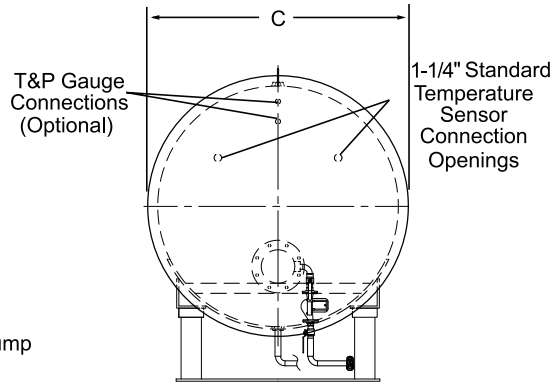


** Manway standard on cement and required on tanks with bundles 48" and larger

NOTE: *Unit shown with optional water-to-water control package*

Horizontal Tanks

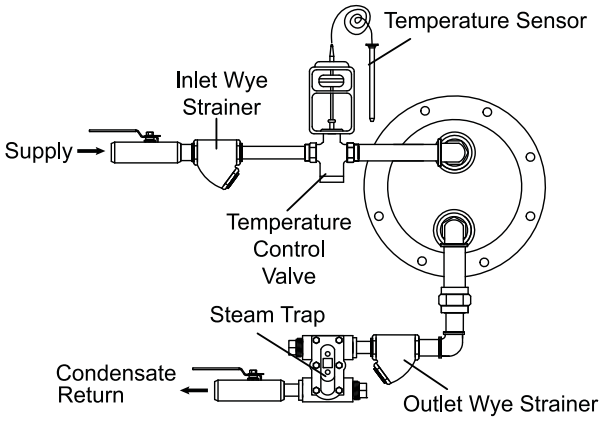




**Manway Standard on Cement, and required on tanks with bundles 48" and longer

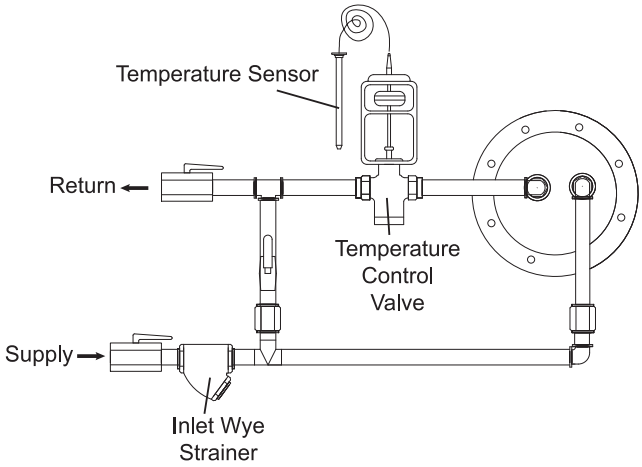
Side View End View

Steam to Water Optional Control Package



Left hand or right hand configurations available.

Water to Water Optional Control Package



Hot Water Generators Vertical and Horizontal Models

Vertical Tanks Round Jacketed

Model Number	Gallon Capacity	A	C	D	E	Maximum Coil Length	Shipping Weight
GV*0200JR	200	77-1/4″	32″	11-1/4″	17-1/4″	30″	600
GV*0257JR	257	92″	34″	18″	26″	36″	902
GV*0318JR	318	82″	40″	19-1/2″	27-1/2″	42″	993
GV*0432JR	432	82″	46″	21″	29″	48″	1269
GV*0504JR	504	92″	46″	21″	29″	48″	1373
GV*0650JR	650	93″	54-1/2″	23-1/2″	31-1/2″	54″	1966
GV*0752JR	752	105″	54-1/2″	23-1/2″	31-1/2″	54″	2030
GV*0940JR	940	129″	54-1/2″	23-1/2″	31-1/2″	54″	2376

** Indicates Tank Lining – G=Glass C=Cement*

Horizontal Tanks Round Jacketed

Model Number	Gallon Capacity	A	B	C	Maximum Coil Length	Minimum Coil Length	Shipping Weight
GH*250JR	250	41″	88″	34″	84″	54″	1,600
GH*300JR	300	47″	76″	40″	72″	48″	1,800
GH*400JR	400	53″	76″	46″	72″	48″	2,250
GH*500JR	500	53″	88″	46″	84″	54″	2,500
GH*600JR	600	59″	88″	52″	84″	54″	3,600
GH*700JR	700	59″	100″	52″	96″	66″	4,200
GH*1000JR	1000	59″	124″	52″	120″	78″	5,000

NOTE: *Manway required on tanks with tube bundles 48” and longer.*
** Indicates Tank Lining – G=Glass C=Cement*

Non-Jacketed Tanks

Model	Gallon Capacity	Length** (Height)	Diameter (Width)	D	E	Maximum Coil Length (Horizontal)	Minimum Coil Length (Horizontal)	Maximum Coil Length (Vertical)	Shipping Weight
GV*147	147	48″	30″	15 3/4″	23 3/4″	36″	30″	36″	400
GV*184	184	60″	30″	15 3/4″	23 3/4″	48″	42″	36″	468
GV*220	220	72″	30″	15 3/4″	23 3/4″	60″	48″	36″	548
GV*257	257	84″	30″	15 3/4″	23 3/4″	72″	54″	36″	628
GV*294	294	96″	30″	15 3/4″	23 3/4″	84″	66″	36″	701
GV*367	367	120″	30″	15 3/4″	23 3/4″	108″	78″	36″	868
GV*265	265	60″	36″	17 1/2″	25 1/2″	48″	42″	42″	577
GV*318	318	72″	36″	17 1/2″	25 1/2″	60″	48″	42″	673
GV*370	370	84″	36″	17 1/2″	25 1/2″	72″	54″	42″	770
GV*423	423	96″	36″	17 1/2″	25 1/2″	84″	66″	42″	866
GV*528	528	120″	36″	17 1/2″	25 1/2″	108″	78″	42″	1,058
GV*432	432	72″	42″	18 3/4″	26 3/4″	60″	48″	48″	909
GV*504	504	84″	42″	18 3/4″	26 3/4″	72″	54″	48″	1,050
GV*576	576	96″	42″	18 3/4″	26 3/4″	84″	66″	48″	1,190
GV*720	720	120″	42″	18 3/4″	26 3/4″	108″	78″	48″	1,470
GV*864	864	144″	42″	18 3/4″	26 3/4″	120″	96″	48″	1,751
GV*658	658	84″	48″	20 3/4″	28 3/4″	72″	54″	54″	1,346
GV*752	752	96″	48″	20 3/4″	28 3/4″	84″	66″	54″	1,507
GV*940	940	120″	48″	20 3/4″	28 3/4″	108″	78″	54″	1,828
GV*1128	1,128	144″	48″	20 3/4″	28 3/4″	120″	96″	54″	2,150
GV*951	951	96″	54″	22 3/4″	30 3/4″	84″	66″	60″	1,972
GV*1189	1,189	120″	54″	22 3/4″	30 3/4″	108″	78″	60″	2,423
GV*1427	1,427	144″	54″	22 3/4″	30 3/4″	120″	96″	60″	2,881
GV*1469	1,469	120″	60″	24 3/4″	32 3/4″	108″	78″	66″	3,221
GV*1763	1,763	144″	60″	24 3/4″	32 3/4″	120″	96″	66″	3,823
GV*2115	2,115	120″	72″	27 3/4″	35 3/4″	108″	78″	78″	3,904
GV*2538	2,538	144″	72″	27 3/4″	35 3/4″	120″	96″	78″	4,627

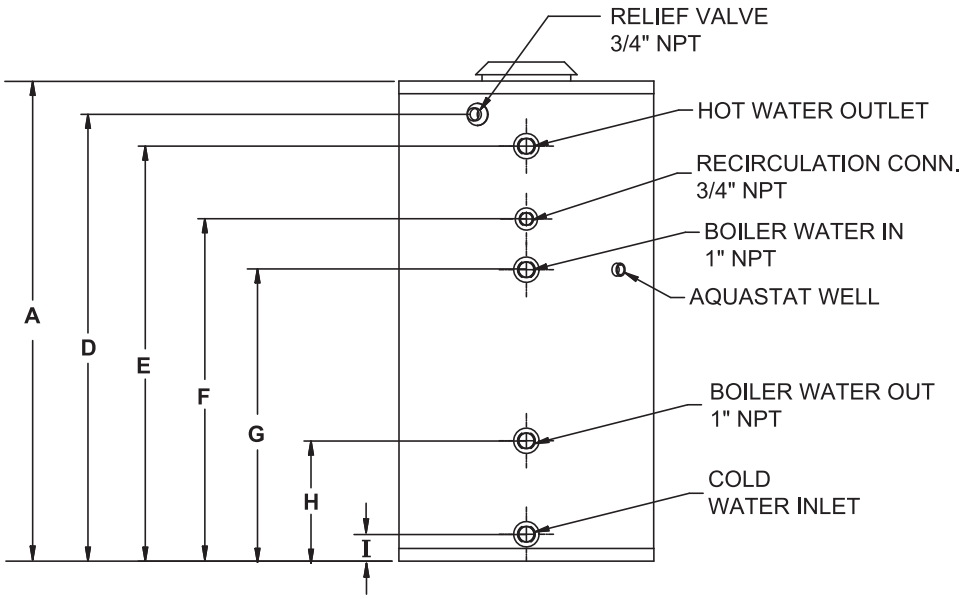
Note: *Change “V” to “H” for Horizontal Configuration*
** Indicates Tank Lining G= Glass C=Cement*
***Add 4” to Length (Height) for Vertical Configuration*

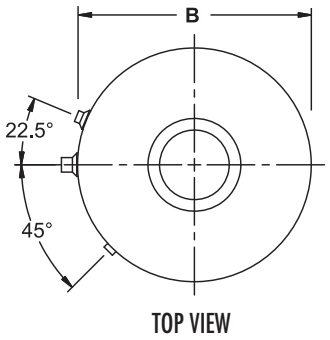
Squire™ Indirect Water Heater Models

The Squire uses the power and efficiency of the boiler that heats the home to generate domestic hot water for showers, dishwashing, clothes washing…any hot water demand required. The efficiency of the boiler used to heat the home can be as much as 20% higher than a direct-fired tank-type water heater. So why not use that efficiency to "indirectly" provide hot water for all domestic applications.

Standard Features

- **Durable Rustproof Jacket**
- **Large Capacity 444L Passivated Stainless Steel Tank**
- **High Output 304 Stainless Steel Heat Exchanger Coil**
- **5 Different Models and Sizes**
- **Maintenance-Free Operation**
- **Energy Efficient Operation**
- **Limited Lifetime Warranty**





TOP VIEW

Dimensions

Model	A	B	D	E	F	G	H	I	Domestic Water Conn.	Shipping Weight
SSS031	38-3/4″	20″	32-3/4″	32-3/4″	27″	22″	9-1/2″	2-1/4″	1″	60
SSS041	54-3/4″	20″	48″	48″	29-1/4″	25-1/4″	9-1/2″	2-1/4″	1″	80
SSS051	47-3/4″	24″	40-1/4″	39-3/4″	30″	26″	10″	2″	1″	105
SSS081	68-3/4″	24″	62-3/4″	59-1/2″	34-1/2″	29-1/2″	10-3/4″	2″	1-1/2″	205
SSS119	64-3/4″	29″	58-3/4″	52-1/2″	44-1/2″	40-3/4″	12-1/4″	2″	1-1/2″	220

Note: *Heat Exchanger connections are 1" male NPT*

Specifications

Model	Gallon Capacity	First Hour Rate (Gallons) 140°F	115°F	Max Coil Load BTU/hr	Flow Rate GPM	Pressure Drop Ft. Hd	Continuous Rate (GPH) 140°F	115°F
SSS031	27	154	204	99,000	4.6	0.8	132	183
SSS041	40	228	303	146,900	6.9	1.8	196	271
SSS051	52	238	313	146,900	6.9	1.8	196	271
SSS081	80	356	468	218,600	10.4	4.9	292	404
SSS119	117	485	636	293,700	13.6	11.5	392	542

Note: *Based on incoming cold water temperature of 50°F and boiler water temperature of 200°F.*

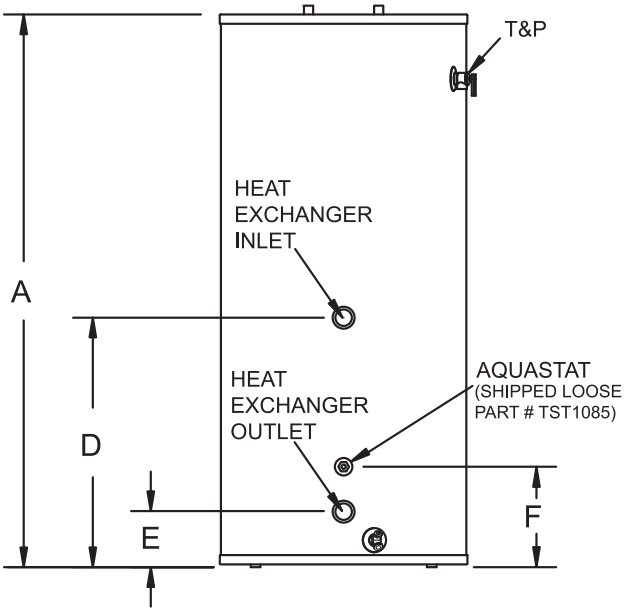
Energy Saver Indirect Models

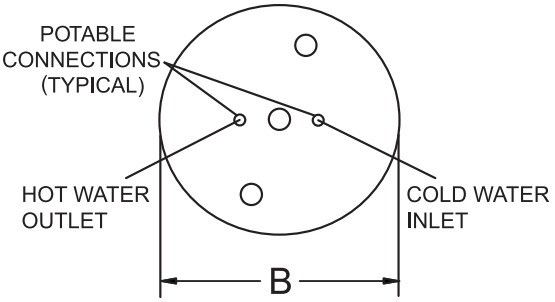
Make your money work for you! By choosing an Energy Saver Indirect Water Heater, the same energy spent to hydronically heat your home can heat your domestic hot water. The Energy Saver Indirect Water Heater is a smart answer to the question of how to keep your fuel costs down.

The Energy Saver Indirect is an indirect-fired, potable water storage vessel. It accepts heat from an external heat source, such as a Solution or KNIGHT Heating Boiler. By sharing heat for two purposes, efficiency results.

Standard Features

- **Non-CFC Foam Insulation**
- **Glass-Lined Steel Tank**
- **Large Capacity Glass Lined Heat Exchanger Coil**
- **Aluminum Tank Saver Anode Rods**
- **Dielectric Nipples**
- **Adjustable Aquastat**
- **Temperature and Pressure Relief Valve**
- **Brass Drain Valve**
- **Warranty**





Model	Gal. Cap.	1st Hour Rating @140°F	1st Hour Rating @115°F	A	B	D	E	F	Shipping Weight
EGS030	30	204	313	33-3/4″	22″	27-1/2″	5-1/4″	11-1/2″	140
EGS040T	40	210	320	41-1/4″	22″	27-1/2″	5-1/4″	11-1/2″	176
EGS050T	50	217	326	46-1/4″	22″	27-1/2″	5-1/4″	11-1/2″	189
EGS065	60	223	333	59-1/4″	22″	27-1/2″	5-1/4″	11-1/2″	196
EGS080	75	234	343	59″	24″	27-1/2″	5-1/4″	11-1/2″	224
EGS120	116	261	370	62-1/2″	28-1/4″	28-1/4″	6-1/4″	11-1/2″	355

Notes: *All water connections are 3/4” NPT on 8” centers. Aquastat, relief valve, and drain valve connections are 3/4” NPT.*
All heat exchanger connections are 1” NPT.
All ratings are based on 180°F boiler water temperature, 50°F potable water inlet temperature and an approximate boiler output of 220,000 Btu/Hr.

Residential Electric Models

Tall & Short Models

Standard Features

- **All models meet or exceed the NAECA & ASHRAE Energy Efficiency Standards**
- **Non-CFC Foam Insulation** - reduces standby heat loss
- **Immersion Type Heating Elements** - tin-coated, copper sheath design for longer life in hard, aggressive water
- **Screw-In Element Mounting** - for easy replacement and service
- **Adjustable Thermostat and Automatic Overheat Safety Limit** - for accurate, easy control of water temperature and safe operation
- **Glass-lined Steel Tank** - fused to the interior of the tank to assure a long life providing clean, clear hot water
- **Magnesium Tank Saver Anode** - high capacity anode provides protection from the effects of electrolytic corrosion
- **Dielectric Nipples** - provides an extra measure of tank protection and piping convenience
- **Temperature & Pressure Relief Valve** - included
- **Heat Traps** - Factory installed, minimizes heat loss through piping.
- **Relief Valve Tapping** - top/center location for installation flexibility and convenience
- **Brass Drain Valve**
- **Warranty** - 6 or 10 year limited tank warranty
  Six year warranty on parts (See warranty for details)

Optional Features

- **Voltages Available**—120, 208, 240 volts

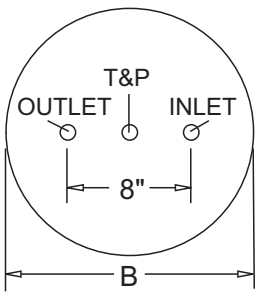
For 277, 380, 415 & 480 volts, and simultaneous thermostat operation see EX Special Electric Water Heaters

VOLTAGE SCHEDULE	
C – 120V	1ø
J – 208V	1ø
A – 240V	1ø

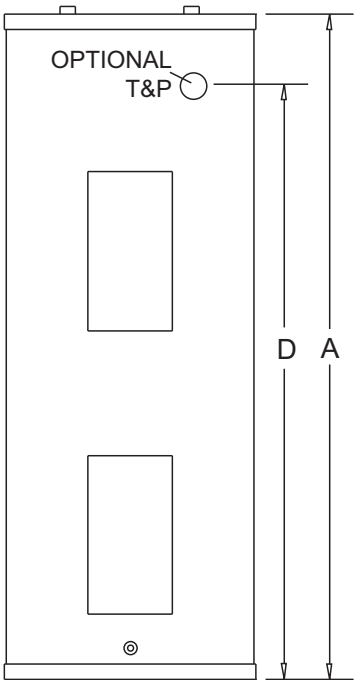
	RECOVERY RATE (GPH @ °F RISE)							
ELEMENT	WATTAGE	40	50	60	70	80	90	100
E	1500	16	12	10	9	8	7	6
F	2000	21	17	14	12	10	9	8
G	2500	26	21	17	15	13	11	10
H	3000	31	25	21	18	16	14	12
J	3500	36	29	24	21	18	16	14
L	4000	41	33	28	24	21	18	17
K	4500	47	37	31	27	23	21	19
M	5000	52	41	34	30	26	23	21
P	6000	62	50	41	35	31	28	25

Model Number	Gallon Capacity	Input Watts	1st Hr. (Gal.)	Energy Factor	A	B	D	Shipping Weight
Tall Models								
LTA030KK	30	4500	43	0.93	47″	18″	-	85
LTA040KK	40	4500	53	0.92	47″	20″	-	103
LTA052KK-T	50	4500	63	0.90	57-1/2″	20″	-	123
LTA052KK	50	4500	59	0.90	46-1/2″	22″	-	130
LTA066KK	65	4500	72	0.88	59-1/4″	22″	-	156
LTA082KK	80	4500	87	0.87	59″	24″	-	183
LTA120KK	119	4500	105	0.84	63-3/4″	28″	-	305
Short Models								
LSA030KK	30	4500	40	0.93	29-3/4″	22″	24″	96
LSA040KK	40	4500	47	0.92	31-3/4″	24″	24-1/2″	125
LSA050KK	47	4500	52	0.90	31-3/4″	26″	24-1/2″	153
High Efficiency Models								
LTA041KK	40	4500	53	0.93	48″	20″	-	109
LTA051KK	50	4500	63	0.93	47-1/2″	22″	-	136
LTA065KK	65	4500	72	0.91	61-1/4″	22″	-	162
LTA081KK	80	4500	87	0.91	60″	24″	-	189

Notes:
3/4” NPT water connections.
Change “L” to “X” for 10 year limited warranty model.
Standard Voltage and Wattage: 240v – 4500w.

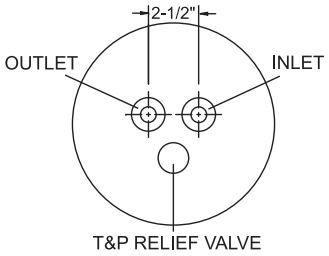


Short Series
Have Optional
Side T & P Valve
Tapping

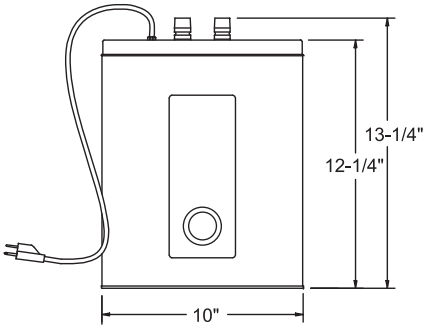


Junior Electric Models

2 gallon models

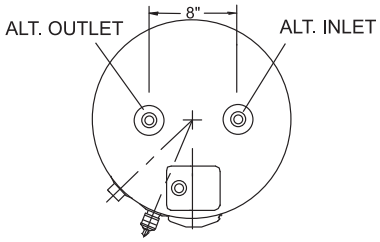


TOP VIEW



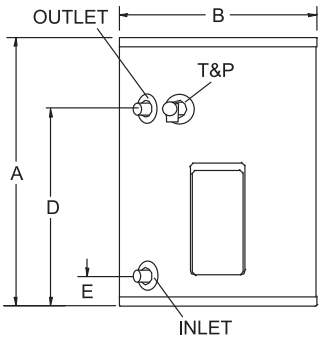
SIDE VIEW

6 - 30 gallon models

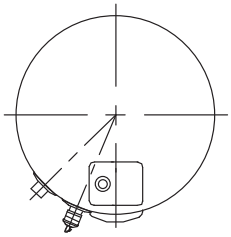


6 & 12 GALLON MODELS

TOP VIEW



SIDE VIEW



20 & 30 GALLON MODELS

TOP VIEW

Model Number	Gal. Cap.	A	B	D	E	Shipping Weight
JRC002E*	2	12-1/4″	10″	13-1/4″	13-1/4″	14
JRC006E	6	16-1/2″	14″	10-1/4″	3″	33
JRC012E	12	27-3/4″	14″	21-1/4″	3″	48
JRC020E	19	24-3/4″	18″	18-1/4″	3″	59
JRC031E	30	30″	22″	23-1/2″	4-1/2″	82

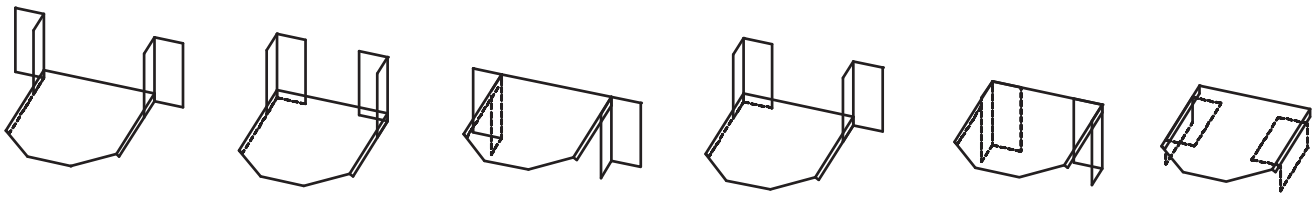
Notes: Standard wattage and voltage: 1500w / 120v. Water connections are 3/4" NPT.
Maximum wattage for 6 and 12 gallon is 3000w.
Maximum wattage for 19 and 30 gallon is 6000w.
** 2 gallon is available in 1500w / 120v only.*
For 277v 1ø and 480v 1ø, see Light Duty Commercial Electric Water Heaters

VOLTAGE SCHEDULE
C – 120V 1ø
J – 208V 1ø
A – 240V 1ø

WATTAGE SCHEDULE
E – 1500
F – 2000
G – 2500
H – 3000
J – 3500
L – 4000
K – 4500
M – 5000
P – 6000

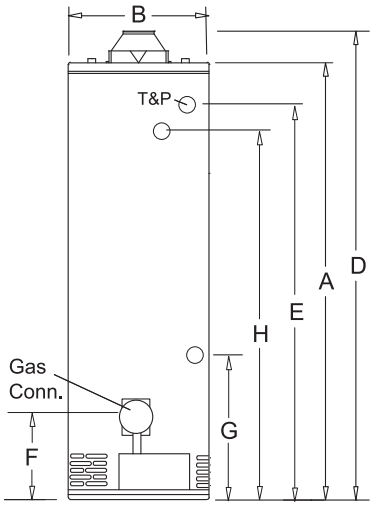
NOTE: Max wattage @120V is 3000W.

Six Way Shelf Mountings – *2, 6 and 12 Gallon Models Only. (Part number JKT 3004)*



NO.1 NO.2 NO.3 NO.4 NO.5 NO.6

Residential Gas Models



Model Number	Gal. Cap.	Natural Gas Input Btu/Hr	Natural Gas GPH @ 90°F Rise	LP Gas Input Btu/Hr	LP Gas GPH @ 90°F Rise	Energy Factor	A	B	D	E	F	G	H	I	Water Conn.	Vent Size	Ship. Wt.
Energy Saver Series - Short Models																	
LSN030G	30	30,000	31	26,000	27	0.61	45-3/4″	18″	48-1/2″	38-3/4″	13″	-	-	8″	3/4″	3″	100
LSN041G	40	40,000	41	38,000	39	0.59	47-1/4″	20″	50″	41″	13″	-	-	8″	3/4″	3″	128
Energy Saver Series - Tall Models																	
LTN030G	30	32,000	33	31,000	32	0.61	56-1/4″	16″	59-1/4″	49-3/4″	13″	-	-	8″	3/4″	3″	105
LTN040G	40	34,000	35	34,000	35	0.59	56-1/2″	18″	59-1/2″	50″	13″	-	-	8″	3/4″	3″	120
LTN041G	40	40,000	41	38,000	39	0.59	57-1/4″	18″	61″	50″	13″	-	-	8″	3/4″	3″	121
LTN050G	50	40,000	42	36,000	38	0.58	57″	20″	59-3/4″	50″	13″	-	-	8″	3/4″	3″	145
LTN065G†*	65	65,000	68	63,000	66	0.55	59-3/4″	24″	63″	53-1/2″	12-1/4″	13-1/2″	53-1/2″	11″	3/4″	4″	202
ETN076†	75	76,000	82	76,000	82	N/A	59″	24″	62-1/2″	51-3/4″	15″	16-1/2″	51-3/4″	11″	1″	4″	238
ETN100†*	100	85,000	92	88,000	95	N/A	65″	28-1/4″	68-3/4″	59-1/4″	15-3/4″	17-3/4″	50-3/4″	16″	1-1/4″	4″	420
High Input Models																	
LTN040G-4	40	50,000	53	48,000	50	0.59	57-1/2″	18″	60-3/4″	51-1/2″	13″	-	-	8″	3/4″	4″	127
LTN050G-4	50	50,000	53	48,000	50	0.58	56″	20″	58-1/2″	50″	13″	-	-	8″	3/4″	4″	150
LTN051G†*	48	65,000	67	61,000	63	0.58	56″	22″	59-1/4″	50″	13″	13-1/2″	50″	11″	3/4″	4″	164
High Efficiency Models																	
LTN030G-EF	30	32,000	34	31,000	33	0.62	56-1/4″	18″	58″	49-3/4″	13″	-	-	8″	3/4″	3″	114
LTN040G-EF	40	40,000	43	36,000	38	0.62	58-1/4″	20″	60″	51-1/2″	13″	-	-	8″	3/4″	3″	128
LTN050G-EF	50	40,000	43	36,000	38	0.62	58-1/4″	22″	60″	50″	13″	-	-	8″	3/4″	3″	157
Ultra Low NOx Series - 6 Year Limited Warranty																	
USN030G	30	30,000	31	-	-	0.61	45-1/2″	18″	48-1/2″	38-3/4″	11-3/4″	-	-	-	3/4″	3″	110
USN041G	40	40,000	42	-	-	0.59	47-1/2″	20″	50″	41″	11-3/4″	-	-	-	3/4″	3″	137
USN050G	48	40,000	42	-	-	0.58	47″	22″	49-3/4″	40-1/2″	11-3/4″	-	-	-	3/4″	3″	163
UTN030G	30	32,000	33	-	-	0.61	56-1/4″	16″	59-1/4″	49-3/4″	11-3/4″	-	-	-	3/4″	3″	113
UTN041G	40	40,000	42	-	-	0.59	57-1/4″	18″	61	50″	11-3/4″	-	-	-	3/4″	3″	137
UTN050G	50	40,000	42	-	-	0.58	56-3/4″	20″	59-3/4″	50″	11-3/4″	-	-	-	3/4″	3″	154
High-Efficiency Models Ultra Low NOx Series - 6 Year Limited Warranty																	
UTN030G-EF †	30	32,000	34	-	-	0.62	56-1/4″	18″	59-1/4″	49-3/4″	13″	-	-	-	3/4″	3″	123
UTN040G-EF †	40	40,000	43	-	-	0.62	56-1/2″	20″	59-1/2″	50″	13″	-	-	-	3/4″	3″	137
UTN050G-EF †	50	40,000	43	-	-	0.62	57″	22″	59-3/4″	50″	13″	-	-	-	3/4″	3″	160
High Input Models Ultra Low NOx Series - 6 Year Limited Warranty-																	
UTN040G-4	40	50,000	53	-	-	0.59	57-1/2″	18″	60-3/4″	51-1/2″	11-3/4″	-	-	-	3/4″	4″	137
UTN050G-4	50	50,000	53	-	-	0.59	56″	20″	58-1/2″	50″	11-3/4″	-	-	-	3/4″	4″	160

Notes: *"N" indicates Natural gas, replace "N" with "L" to indicate LP gas model.*

All gas connections are 1/2" NPT

† Indicates models equipped with side tappings for space heating applications.

** Indicates models with 2" of foam insulation (ETN076 has 1 1/4" insulation)*

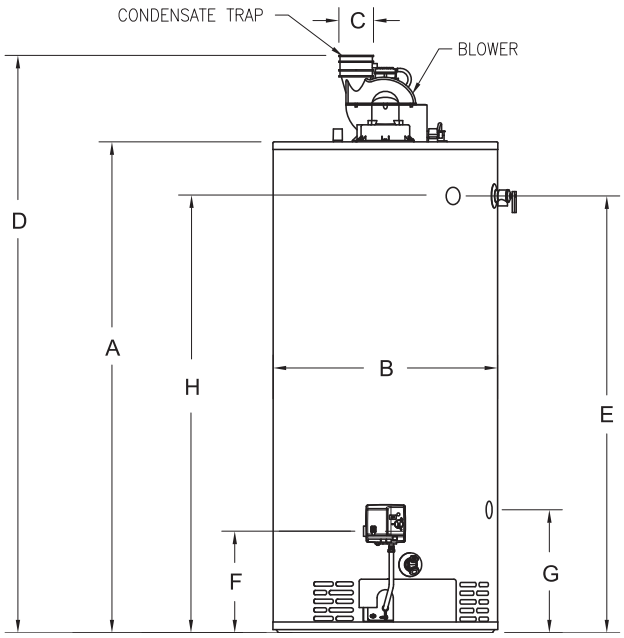
Models fired above 75,000 Btu/Hr are certified to ANSI Z21.10.3. and are not required to meet the NAECA or FVIR standard.

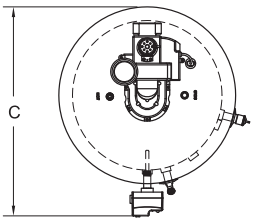
Performance data is based on manufacturer's test results.

Standard Features

- **All Models Meet or Exceed the NAECA & ASHRAE Energy Efficiency Standards**
- **Shield Combustion System**
- **Piezo Ignitor**
- **Sight Glass**
- **Temperature & Pressure Relief Valve**
- **Low NOx Burner**
- **Magnesium Tank Saver Anode**
- **Adjustable Thermostat**
- **Non-CFC Foam Insulation**
- **Heat Traps** (not avaialable ETN076 & ETN100)
- **Glass-Lined Steel Tank**
- **Dielectric Nipples**
- **Side Connections for Space Heating** (Select Models)
- **Brass Drain Valve**
- **Six or Ten Year Limited Tank Warranty**
- **Six Year Warranty on Parts**

Power-Vented FVIR Gas Models





TOP VIEW

Model Number	Gal. Cap.	EF	Natural Gas Btu/hr Input	Natural Gas GPH @ 90°F Rise	LP Gas Btu/hr Input	LP Gas GPH @ 90°F Rise	A	B	C	D	E	F	G	H	Vent Size	Ship. Wt.
LVN041G	40	0.62	40,000	43	38,000	41	46-1/2″	20″	25″	56-1/2″	40-1/2″	11-3/4″	-	-	2″	140
LVN051G	50	0.62	40,000	43	38,000	41	47-1/4″	22″	26-3/4″	57-1/2″	41″	11-3/4″	-	-	2″	165
LVN052G†*	48	0.65	67,000	70	60,000	65	56-1/2″	22″	26-3/4″	66″	50-1/4″	11-3/4″	13-1/2″	50-1/4″	3″	180
LVN065G†*	65	0.65	70,000	70	63,000	68	59-1/2″	24″	26-3/4″	69″	53-1/2″	11-3/4″	13-1/2″	53-1/2″	3″	185

Notes: *Replace "N" with "L" to indicate LP gas model*
† Indicates side tapping for space heating.
**Indicates models with 2" of polyurethane foam insulation.*
Performance data is based on manufacturer test results.
"L" prefix indicates 6 year tank warranty.
All water connections are 3/4" NPT.
All gas connections are 1/2".

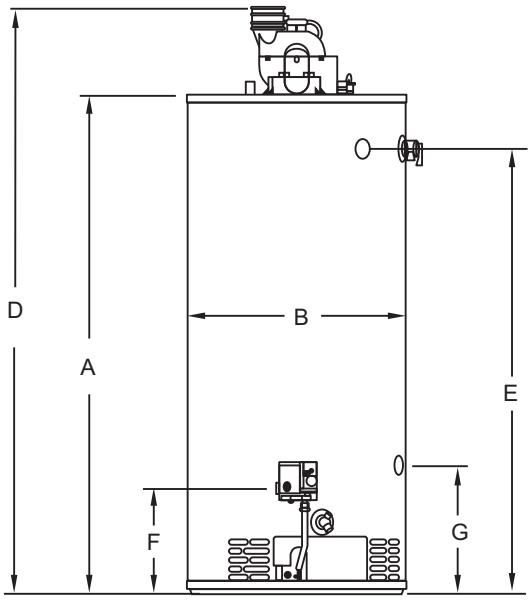
Standard Features

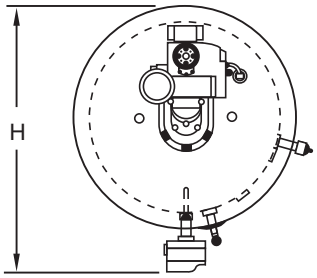
- **Shield Combustion System** - Corrosion resistant chamber redirects air through a stainless steel flame arrestor plate to prevent flame rollout and flammable vapor ignition. A resettable thermal switch shuts down the burner and pilot operation in the event of a flammable vapor ignition and also protects against lint, dust and oil buildup by shutting down when it detects significant air restriction.
- **Power Vented Exhaust System** - The 120 VAC blower fan exhausts the by-products of combustion directly to the outside the building through PVC style pipe, eliminating the need for conventional chimneys or roof penetrations.
- **Side Wall or Vertical Venting** - can be vented horizontally with 2", 3" or 4" PVC or CPVC vent pipe, depending on the model. *(See vent chart for max. vent lengths)*
- **Electronic Spark Ignition** - Eliminates nuisance pilot outages and saves fuel by eliminating the continuously burning pilot, while providing solid-state ignition.
- **Low NOx Burner** - This whisper quiet, 360° burner incorporates aluminized steel into its die-formed design. The large burner diameter transfers more heat, while providing clean and efficient combustion. Satisfies local codes and emissions standards.
- **Non-CFC Foam Insulation** - This non-CFC polyurethane closed cell foam minimizes standby losses and maximizes heat retention.
- **Glass-Lined Steel Tank** - The tank is automatically formed, rolled, and welded to ensure a continuous seam for the glass lining. The durable glass lining is fused to the interior of the tank at 1600°F to assure lasting protection against rust and corrosion while providing clean hot water.
- **Magnesium Tank Saver Anode** - High capacity anode rod provides protection from the effects of electrolytic corrosion.
- **Electronic Thermostat** - This accurate control provides an easy way to reset water temperature for best economy. Automatic over-heat safety device is standard. LED status indicator simplifies setup and adjustments.
- **Heat Trap Nipples** - Factory installed waterways reduce heat loss in piping, while providing piping convenience.
- **Side Connections for Space Heating** - select models are equipped with side tappings for space heating applications.
- **Temperature & Pressure Relief Valve**
- **Brass Drain Valve**
- **Warranty** - Six or Ten year limited tank warranty. Six year warranty on parts. (See warranty for details)

Max. Vent Length (Total equiv. feet)

	2″	3″	4″
LVN041G	50′	120′	-
LVN051G	50′	120′	-
LVN052G	-	60′	180′
LVN065G	-	60′	180′

Power-Vented Gas Models





Model Number	Gal. Cap.	Natural Gas Btu/hr Input	Natural Gas GPH @ 90°F Rise	LP Gas Btu/hr Input	LP Gas GPH @ 90°F Rise	A	B	D	E	F	G	H	Vent Size	Ship. Wt.
LVN076	75	76,000	82	75,100	82	59″	26″	68-1/2″	51-3/4″	14″	16-3/4″	31″	3″	246

Notes: *Replace "N" with "L" to indicate LP gas model*
. All gas connections are 1/2".
This model is certified to ANSI Z21.10.3
"L" prefix indicates 6 year tank warranty.
All water connections are 3/4" NPT.
This model is not required to meet the NAECA or FVIR standard.

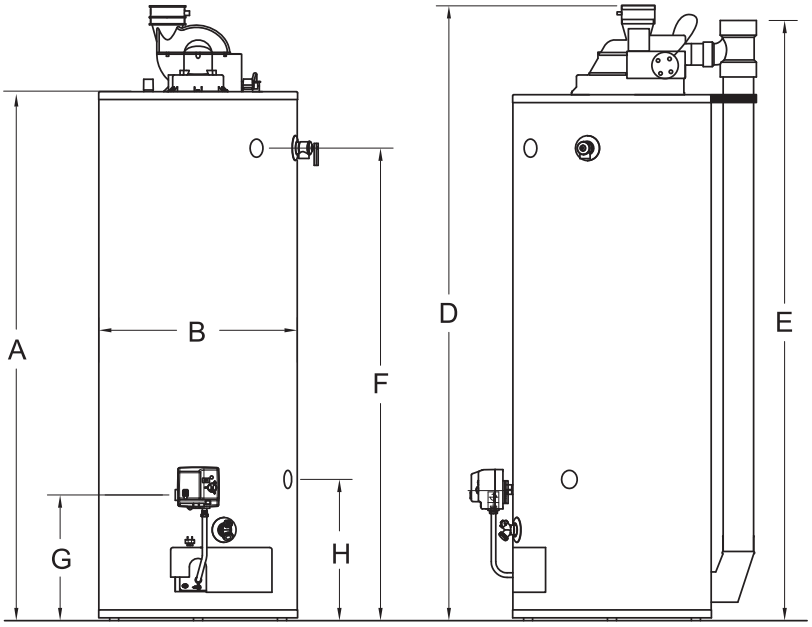
Standard Features

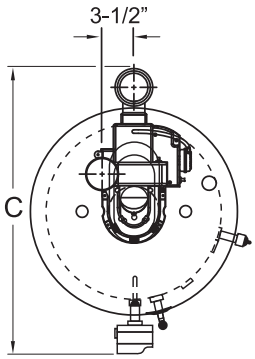
- **Power Vented Exhaust System** - The 120 VAC blower fan exhausts the by-products of combustion directly to the outside the building through PVC style pipe, eliminating the need for conventional chimneys or roof penetrations.
- **Side Wall Venting** - can be vented horizontally with 3" or 4" PVC or CPVC vent pipe, depending on the model. *(See vent chart for max. vent lengths)*
- **Vertical Venting** - can be vented vertically with 3" or 4" PVC or CPVC vent pipe, depending on the model. *(See vent chart for max. vent lengths)*
- **Electronic Spark Ignition** - Eliminates nuisance pilot outages and saves fuel by eliminating the continuously burning pilot, while providing solid-state ignition.
- **Low NOx Burner** - This whisper quiet, 360° burner incorporates aluminized steel into its die-formed design. The large burner diameter transfers more heat, while providing clean and efficient combustion. Satisfies local codes and emissions standards.
- **Non-CFC Foam Insulation** - Improved formulation provides uniform tank coverage with a thick blanket of insulating foam. This non-CFC polyurethane closed cell foam minimizes standby losses and maximizes heat retention.
- **Glass-Lined Steel Tank** - The tank is automatically formed, rolled, and welded to ensure a continuous seam for the glass lining. The durable glass lining is fused to the interior of the tank at 1600°F to assure lasting protection against rust and corrosion while providing clean hot water.
- **Magnesium Tank Saver Anode** - High capacity anode rod provides protection from the effects of electrolytic corrosion.
- **Adjustable Thermostat** - This accurate control provides an easy way to reset water temperature for best economy. Automatic over-heat safety device is standard.
- **Dielectric Nipples** - Factory installed waterways protect the tank from the corrosive action between dissimilar metals, while providing piping convenience.
- **Side Connections for Space Heating** - models are equipped with side tappings for space heating applications.
- **Temperature & Pressure Relief Valve**
- **Brass Drain Valve**
- **Warranty** - Six or Ten year limited tank warranty. Six year warranty on parts. (See warranty for details)

Max. Vent Length total equiv. feet

	Horizontal 3″	Horizontal 4″	Vertical 3″	Vertical 4″
LVN076	60′	180′	60′	180′

Power Direct Vent Gas Models





Model Number	Gal. Cap.	Natural Gas Btu/hr Input	Natural Gas GPH @ 90°F Rise	LP Gas Btu/hr Input	LP Gas GPH @ 90°F Rise	1st Hour	Energy Factor	A	B	C	D	E	F	G	H	Vent Size	Ship. Wt.
PRN050G	48	60,000	65	60,000	65	100	0.60	58-34"	22"	30-1/2"	68-1/2"	67"	52-1/4"	14"	15-3/4"	3"	196
PRN065G	65	65,000	70	60,000	65	114	0.59	62"	24"	33-1/4"	71-1/2"	69"	55-3/4"	13-3/4"	15-3/4"	3"	230
PRN075G	75	70,000	75	70,000	75	132	0.58	59"	26"	35-1/2"	69-1/2"	68-1/2"	51-3/4"	13-3/4"	16-3/4"	3"	262

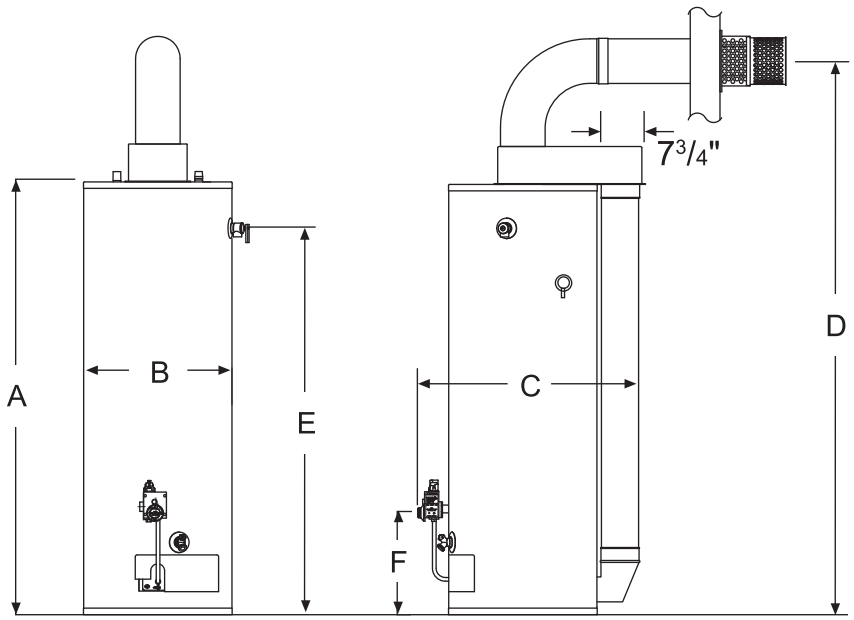
***Notes**: "P" prefix indicates 6 year tank warranty. Replace "P" with "S" for 10 year tank warranty.*
All LP heaters are equipped with a cast iron burner. Replace "N" with "L" to indicate LP gas model.
** indicates models with 2" of polyurethane foam insulation.*
All gas connections are 1/2".
All water connections are 3/4" NPT on 11" centers.

110 VAC, 60 HZ, 2.1 AMP is required for power venting.
Maximum Horizontal & Vertical Vent Length is 25 feet (40 equivalent feet, with 3 - 90º elbows), when using 3" pipe.
Maximum Horizontal & Vertical Vent Length is 60 feet (75 equivalent feet, with 3 - 90º elbows), when using 4" pipe.

Standard Features

- **Power Direct Venting System** - This 2-pipe closed combustion system utilizes a stand alone vent to exhaust the byproducts of combustion, and a separate air intake to provide fresh combustion air to the unit. Vents up to 25 feet to an outside wall, using 3" PVC or CPVC pipe. Vents up to 60 feet to an outside wall, using 4" PVC or CPVC pipe.
- **Electronic Spark Ignition** - Eliminates nuisance pilot outages and saves fuel by eliminating the continuously burning pilot while providing reliable solid state ignition.
- **Low NOx Burner** - This whisper quiet, 360° burner incorporates aluminized steel into its die-formed design. The large burner diameter transfers more heat, while providing clean and efficient combustion. Satisfies local codes and emission standards.
- **Non-CFC Foam Insulation** - Improved formulation provides uniform tank coverage with a thick blanket of insulating foam. This non-CFC polyurethane closed cell foam minimizes standby losses and maximizes heat retention.
- **Glass-Lined Steel Tank** - The durable glass lining assures lasting protection against rust and corrosion while providing clean, clear hot water. This tank is automatically formed, rolled, and welded to assure a continuous seam for the glass lining. Each tank is triple-tested to ensure quality.
- **Heat Traps** - Factory installed, minimizes heat loss through piping.
- **Adjustable Thermostat** - This accurate control provides an easy way to reset water temperature for best economy. Automatic over-heat safety device is standard.
- **Dielectric Nipples** - Factory installed waterways protect the tank from corrosive action between dissimilar metals, while providing piping convenience.
- **Side Tappings**- Provided for space heating applications.
- **Six Foot Power Cord** - Included for installation ease.
- **Temperature & Pressure Relief Valve** - Included.
- **Brass Drain Valve**
- **Warranty** - Six or ten year limited tank warranty. Six year warranty on parts. (See warranty for details)

Balanced Flue Gas Models



Model Number	Gal. Cap.	Natural Gas Btu/hr Input	Natural Gas GPH @ 90°F Rise	LP Gas Input Btu/hr	LP Gas GPH @ 90°F Rise	A	B	C	D	E	F	Vent Size*	Ship. Wt.
LBN040G	40	38,000	41	36,000	39	49-1/4″	20″	31-1/4″	63-1/4″	43-1/2″	15″	3″/5″	169
LBN050G	50	42,000	45	40,000	43	58-3/4″	20″	31″	72-1/4″	52-1/4″	15″	3″/5″	186

Notes: *Replace "N" with "L" for LP gas models.*
All LP models are equipped with a cast iron burner
**External air intake is 5" diameter.*
Performance data is based on manufacturer test results.
"L" prefix indicates 6 year tank warranty
**Internal exhaust vent is 3" diameter All gas connections are 1/2".*
All water connections are 3/4" NPT.

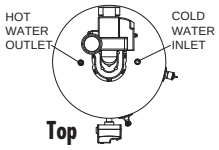
Standard Features

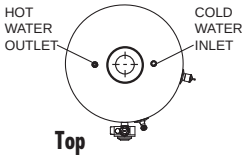
- **Sealed Combustion / Direct Vent System** - The co-axial vent rotates 360° providing installation flexibility. The concentric vent system draws all combustion air from outside the building through the outer pipe and exhausts the by-products of combustion through the inner pipe, of the two-pipe system, directly outdoors.
- **Piezo Ignitor** - provides easy pilot ignition with the push of a button.
- **Low NOx Burner** - This whisper quiet, 360° burner incorporates aluminized steel into its die-formed design. The large burner diameter transfers more heat, while providing clean and efficient combustion. Satisfies local codes and emissions standards.
- **Non-CFC Foam Insulation** - Improved formulation provides uniform tank coverage with a thick blanket of insulating foam. This non-CFC polyurethane closed cell foam minimizes standby losses and maximizes heat retention.
- **Glass-Lined Steel Tank** - The tank is automatically formed, rolled, and welded to ensure a continuous seam for the glass lining. The durable glass lining is fused to the interior of the tank at 1600°F to assure lasting protection against rust and corrosion while providing clean, clear hot water.
- **Magnesium Tank Saver Anode** - High capacity anode rod provides protection from the effects of electrolytic corrosion.
- **HeatTraps**-Factoryinstalled,minimizesheatlossthroughpiping.
- **Adjustable Thermostat** - This accurate control provides an easy way to reset water temperature for best economy. Automatic over-heat safety device is standard.
- **Dielectric Nipples** - Factory installed waterways protect the tank from the corrosive action between dissimilar metals, while providing piping convenience.
- **Temperature & Pressure Relief Valve** - Included.
- **Brass Drain Valve**
- **Warranty** - *Six year limited tank warranty. Six year warranty on parts. (See warranty for details)
**Ten year limited warranty upgrade available*

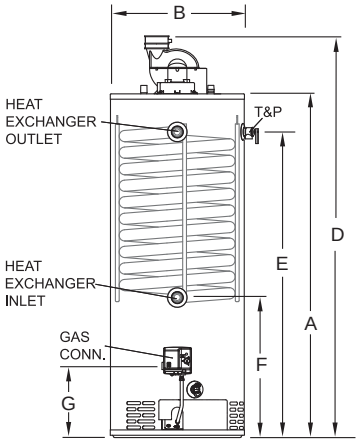
Optional Equipment

Vent Kits	Part Number
4-8 FT Extension	DRH1145
4-3/4" - 5-11/16" Extension	DRH1148
6-1/2" - 9-3/16" Extension	DRH1149
14" - 24" Extension	DRH1150

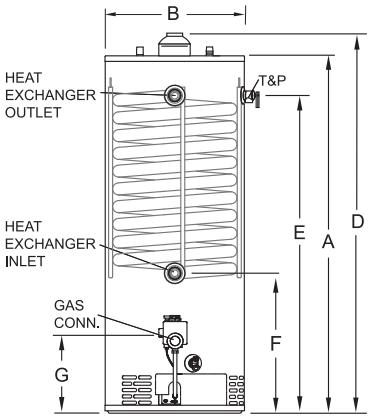
Double Duty Gas Models







Power Vented



Atmospheric

XPN075

XDN051G

Model Number	Gal. Cap.	Btu/hr Input	GPH @ 90°F Rise	AFUE	Space Heating (Btu/Hr)	A	B	D	E	F	G	Vent Size	Shipping Weight
Atmospheric Models													
XDN051G*	45	65,000	70	80.0	55,000	56-1/2″	22″	59-1/4″	50″	28″	13″	4″	238
XDL051G (LP)*	45	61,000	66	80.0	54,000	56-1/2″	22″	59-1/4″	50″	28″	13″	4″	238
XDN075	72	76,000	81	82.0	55,000	60-1/2″	26″	63-3/4″	53″	31″	16″	4″	328
XDL075 (LP)	72	76,000	81	82.0	54,000	60-1/2″	26″	63-3/4″	53″	31″	16″	4″	328
Power Vented Models													
XPN051G*	45	67,000	72	82.0	55,000	56-1/2″	22″	66″	50″	28″	11-3/4″	3″	245
XPL051G (LP)*	45	60,000	65	82.0	54,000	56-1/2″	22″	66″	50″	28″	11-3/4″	3″	245
XPN075	72	76,000	82	82.0	55,000	59″	26″	68-1/2″	51-3/4″	29-1/2″	13-3/4″	3″	301
XPL075 (LP)	72	75,500	81	82.0	54,000	60-1/4″	26″	69-3/4″	53″	31″	15″	3″	335

Notes: ***All water connections are 3/4” NPT***
All gas connections are 1/2” NPT.
Performance data is based on manufacturer’s test results.
**** Indicates models equipped with Shield Combustion System.***
110 VAC 60 HRZ 2.1 AMPS required for Power Vented models.
Models fired above 75,000 Btu/Hr are certified to ANSI Z21.10.3 and are not required to meet the NAECA or FVIR standard.

Standard Features

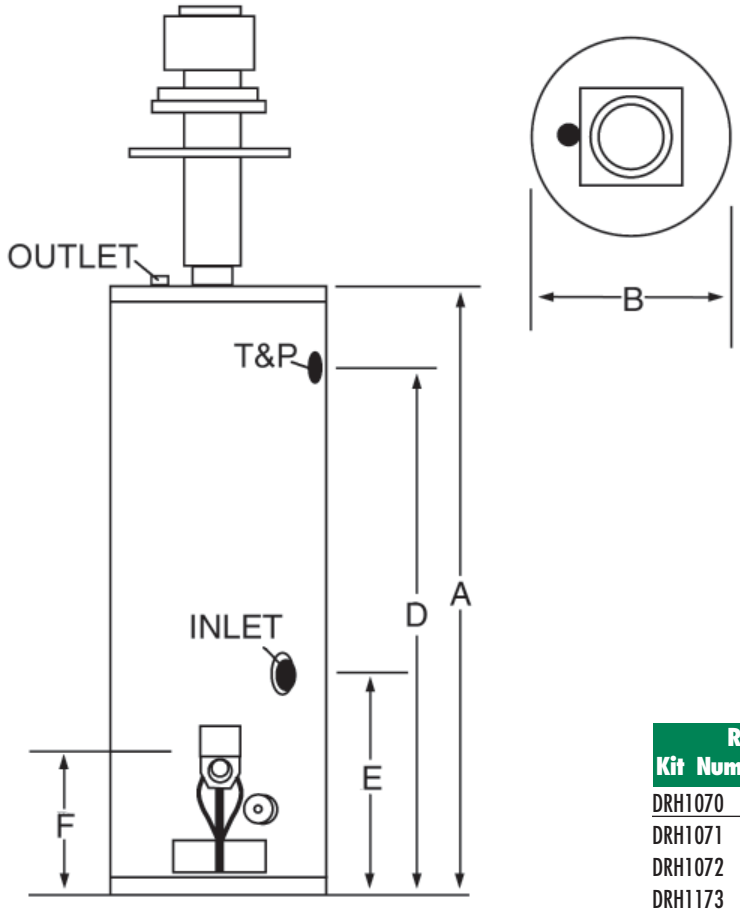
- Domestic Hot Water & Space Heating
- Non CFC Foam Insulation
- High First Hour Delivery
- Double Wall, Glass Coated Heat Exchanger
- Heavy-Gauge, Glass-Lined Steel Tank
- Magnesium Tank Saver Anode
- Factory Installed Dielectric Nipples
- Brass Drain Valve
- T&P Relief Valve Factory Supplied
- 10 Year Limited Tank Warranty
- 6 Year Limited Warranty on Parts
  (See Warranty for Details)

Additional Features for Power Vented Models:

- Vertical or Sidewall Venting
- Vents up to 60 equivalent feet. with 3” PVC
- Vents up to 180 equivalent feet. with 4” PVC

NOTE: 90° elbows = 5 eq. ft.

Manufactured Home Gas Models



Roof Jack Kits	
Kit Number	Dimensions
DRH1070	12″
DRH1071	18″– 32″
DRH1072	32″– 60″
DRH1173	48″– 95″

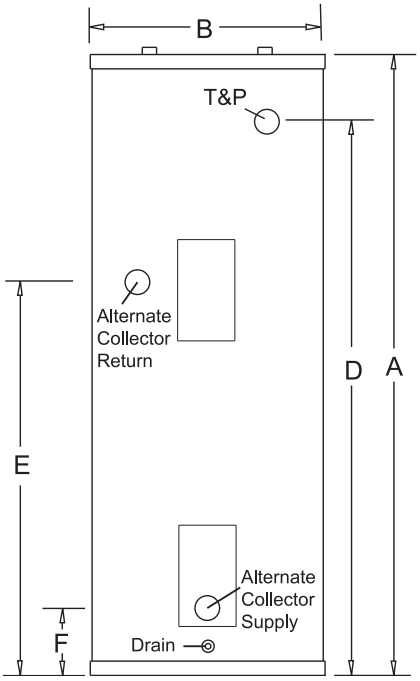
Model Number	Gal. Cap.	Btu/hr Input	GPH @ 90°F Rise	A	B	D	E	F	Vent Size	Shipping Weight
MDN030G	30	30,000	31	57-1/2″	16″	50″	22-1/2″	13-3/4″	3″	111
MDN040G	40	30,000	31	58″	18″	50″	22-1/2″	13-3/4″	3″	131

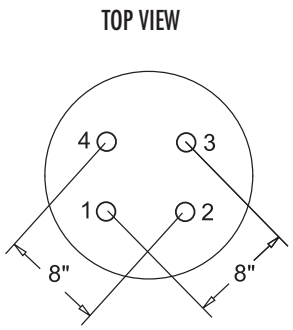
Notes: *"M" prefix indicates 6 year tank warranty*
Replace "M" with "S" for 10 year tank warranty.
Field Convertible from Natural Gas to LP gas.
Three year limited warranty on all models when installed in a commercial application.
All gas connections are 1/2".
All water connections are 3/4" NPT.
Performance data is based on manufacturer test results.

Standard Features:

- Low NOx Burner
- Non-CFC Foam Insulation
- Natural Gas to LP Gas Conversion Kit
- Adjustable Thermostat
- Glass-Lined Steel Tank
- Magnesium Tank Saver Anode
- Factory Installed Dielectric Nipples
- Temperature & Pressure Relief Valve
- Brass Drain Valve
- Warranty

Solar Models





#1 – 3/4" Pump Suction
#2 – 3/4" Cold Inlet
#3 – 3/4" Collector Return
#4 – 3/4" Hot Outlet

Model Number	Gal. Cap.	A	B	D	Alt. Coll. Return E	Alt. Coll. Supply F	Ship Weight
FTA066K	65	59"	22"	52-1/2"	–	–	165
FTA082K*	80	59"	24"	52-1/2"	38"	8"	210
FTA120K*	119	62-3/4"	28"	56"	38-1/4"	8"	310

Notes: **Models feature alternate collector supply and return connections.*

Standard Features

- **Foam Insulation**
- **Glass-Lined Steel Tank**
- **Magnesium Tank Saver Anode**
- **Dielectric Nipples**
- **Side Relief Valve Tapping**
- **Pre-Wired Tank Sensor Lead**
- **Heating Element**
- **Certified at 300 psi Test Pressure**
- **Brass Drain Valve**
- **Warranty**

Multi-Stack Frame

Pre-Assembled Heavy Duty Factory Welded Construction

STACK FRAME

Two Lochinvar 990,000 Btu/hr Copper-Fin II® water heaters stacked for a total capacity of almost 2 million Btu/hr.

Another Innovation from Lochinvar

Lochinvar's Copper-Fin technology not only makes our water heaters and boilers more efficient, it means they also have a smaller footprint. So they save space as well as operating costs.

And now there is a way to get greater flexibility and reliability, save even more space, and get a system that is perfectly matched to a facility — thanks to the Multi-Stack System from Lochinvar.

Match Load and Capacity

With this versatile stand, you can stack almost any combination of our Copper-Fin, Copper-Fin II, and Efficiency+ water heaters and boilers. So you can achieve the perfect Btu/hr capacity for each application.

For example, a facility needs a Copper-Fin II water heater with a total capacity of 1.6 million Btu/hr. Instead of installing an oversized 1801 unit or a smaller 1441 model, now you can combine two units — 991 and 651 models — to exactly match the facility's needs.

Plus, the total footprint of this combined system is just over 10 inches wider than the 651 unit alone, making it smaller than either the 1801 or 1441 model. All thanks to the Lochinvar Multi-Stack Frame.

Added System Benefits

This modular design provides two other important benefits. First, it allows for system turndown for greater efficiency when demand is lower. And second, it ensures against system failure by utilizing two independent but complementary units.

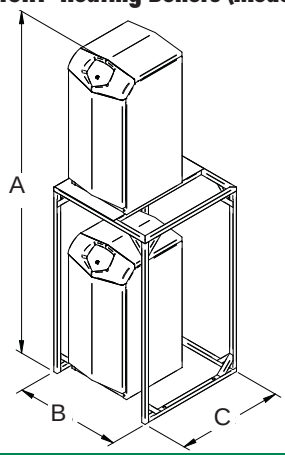
For indoor residential and light commercial needs or commercial applications up to 4 million Btu/hr, the Multi-Stack Frame gives greater flexibility without a significant increase in stack size or overall system dimensions.

Once you have determined a facility's requirements and the exact models needed, utilize the charts provided to calculate total system dimensions.

Note: Indoor Installation Only

Multi-Stack Frame

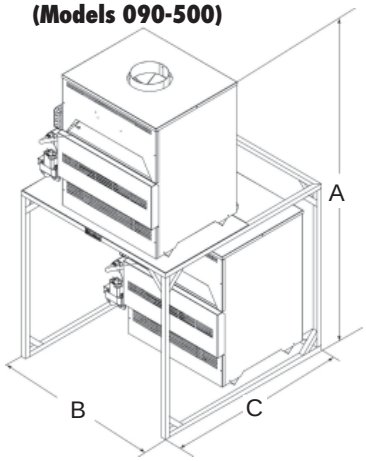
ARMOR® Water Heaters (Models 150-800)/ KNIGHT® Heating Boilers (Models 080-800)



MODEL #	PART #	A*	B**	C	Wt. (.lbs)
AW 150-199	MSF3043	90-1/2″	26″	26″	60
AW 285-500	MSF3044	109″	26″	34″	72
AW 600-800	MSF30002	109″	26″	43″	94
KB 080-210	MSF3043	90-1/2″	26″	26″	60
KB 285-500	MSF3044	109″	26″	34″	72
KB 600-800	MSF30002	109″	26″	43″	94

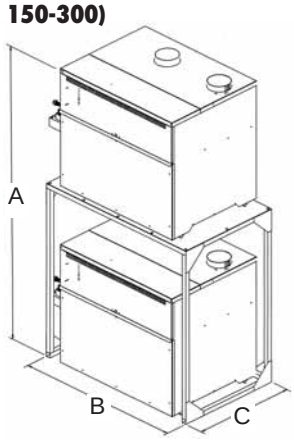
***Note**: Heater height is 33-1/4" KB 80-120 and AW 150-199 models. Heater height is 42-1/2" KB 285-800 and AW 285-800 models.*

Copper-Fin® Water Heaters (Models 090-500)



MODEL #	PART #	A*	B**	C
CW 090	MSF 3034	65-1/2″	36″	39″
CW 135	MSF 3034	65-1/2″	36″	39″
CW 180	MSF 3034	65-1/2″	36″	39″
CW 199	MSF 3035	65-1/2″	48″	39″
CW 225	MSF 3035	65-1/2″	48″	39″
CW 270	MSF 3035	65-1/2″	48″	39″
CW 315	MSF 3035	65-1/2″	48″	39″
CW 360	MSF 3035	65-1/2″	48″	39″
CW 399	MSF 3036	65-1/2″	65″	39″
CW 500	MSF 3036	70-1/2″	65″	39″

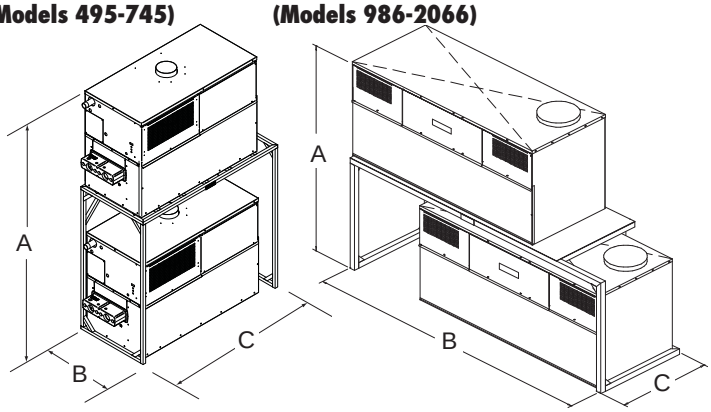
Efficiency+® Water Heaters (Models 150-300)



MODEL #	PART #	A*	B**	C
EW 150	MSF3021	71-1/4″	37″	24″
EW 200	MSF3021	71-1/4″	37″	24″
EW 250	MSF3021	71-1/4″	37″	24″
EW 300	MSF3021	71-1/4″	37″	24″

***Note**: Heater height is 28" on all models.*

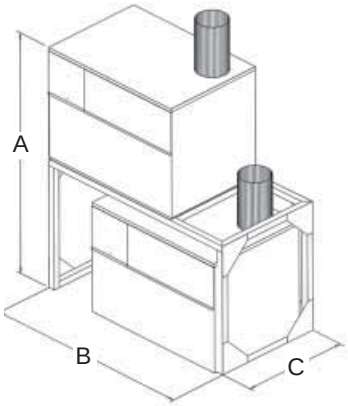
Copper-Fin® Water Heaters (Models 495-745) (Models 986-2066)



MODEL #	PART #	A*	B**	C
CW 495	MSF3002	81-1/2″	51″	24-1/2″
CW 645	MSF3003	84-1/2″	70″	26″
CW 745	MSF3003	84-1/2″	70″	26″
CW 986	MSF3007	80″	68 ″	36″
CW1256	MSF3008	80″	88″	36″
CW1436	MSF3008	80″	88″	36″
CW1796	MSF3009	80″	114″	36″
CW 2066	MSF3009	80″	114″	36″

***Note**: Heater Height is 33-1/4" (495-745) & 36" (986-2066)*

Copper-Fin II® Water Heaters



MODEL #	PART #	A*	B**	C
CF 0401	MSF3022	67-1/2″	59″	24-1/2″
CF 0501	MSF3022	67-1/2″	59″	24-1/2″
CF 0651	MSF3023	67-1/2″	80″	24-1/2″
CF 0751	MSF3023	67-1/2″	80″	24-1/2″
CF 0991	MSF3007	80″	68″	36″
CF 1261	MSF3008	80″	88″	36″
CF 1441	MSF3008	80″	88″	36″
CF 1801	MSF3009	80″	114″	36″
CF 2071	MSF3009	80″	114″	36″

***Note**: Heater height is 31-1/2" (401-751) & 36" (991-2071)*

** To vent connection*
*** Allow space for plumbing connections*

NOTES

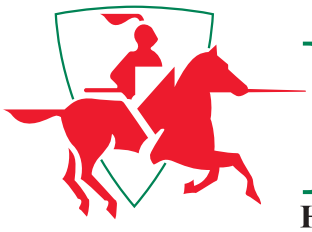
We hope this catalog displaying our water heater products has helped you find what you're looking for. And we'd like to remind you that Lochinvar is much more than a Water Heater manufacturer.

Lochinvar Corporation also manufactures a complete line of high efficiency Boilers, Pool Heaters and ASME Storage Vessels. Simply stated, we have a product for every application. Whether it's residential, commercial or industrial using gas, electric, steam or solar, we have a product to meet your needs. And when it's time to select the right product for your application, we have a staff of highly trained professionals ready to assist you. So look to Lochinvar's quality products and expert support for all your water heating needs!

Thank you for considering Lochinvar and taking a moment to review our line of high efficiency water heaters.

Lochinvar®
High Efficiency Water Heaters, Boilers and Pool Heaters

www.Lochinvar.com



Lochinvar®

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