



FEATURING:

BRADFORD WHITE
ICON
System™
& Accessory
Packages


BRADFORD WHITE®
WATER HEATERS



Built to be the Best™

F U L L L I N E P O C K E T C A T A L O G

General Information

1. All Gas Water Heaters are design certified by CSA International (formerly AGA and CGA) in accordance with ANSI Z21.10.1 or 10.3 (latest addition). Closed Combustion Manufactured Home Water Heaters, are listed by Underwriters Laboratories.
2. All Electric Water Heaters are listed by Underwriters Laboratories.
3. All **Residential Storage Models** meet or exceed efficiency requirements of the Department of Energy. ASHRAE standard 90.1b (current standard) and the National Appliance Energy Conservation Act of 1987, recent amendment effective January 20, 2004 which supercedes all state and local efficiency requirements.
4. All Tank Type Water Heaters are certified at 300 PSI test pressure and 150 PSI working pressure (except where noted).
5. All Residential and Light Duty Water Connections are $\frac{3}{4}$ " NPT on 8" centers (except where noted).
6. All Residential and Light Duty Gas Models have $\frac{1}{2}$ " NPT Gas Connections (except where noted).
7. All Residential Water Heaters come with a T&P Relief Valve included (except where noted).
8. MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,954,492; 5,761,379; 5,943,984; 5,081,696; 5,988,117; 6,142,216; 5,199,385; 5,574,822; 5,372,185; 5,485,879; 5,277,171; (B1)5,341,770; 5,660,165; 5,596,952; 5,682,666; 4,904,428; 5,023,031; 5,000,893; 4,669,448; 4,829,983; 4,808,356; 5,115,767; 5,092,519; 5,052,346; 4,416,222; 4,628,184; 4,861,968; 4,672,919; Re. 34,534; 7,270,087 B2. OTHER U.S. AND FOREIGN PATENT APPLICATIONS PENDING. CURRENT CANADIAN PATENTS: 1,272,914; 1,280,043; 1,289,832; 2,045,862; 2,112,515; 2,108,186; 2,107,012; 2,092,105; 2,409,271.
9. Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.



CSA
International



Underwriters
Laboratories



National
Sanitation
Foundation



American Society
of Mechanical
Engineers



National Board of
Boiler and Pressure
Vessel Inspectors



Hydronics
Institute

Total Performance. **Hydrojet**[®]

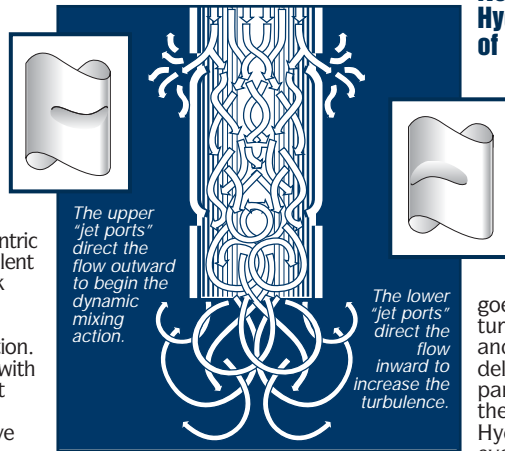
High Efficiency, High Deliverability, Highly Effective Self-Cleaning System From Bradford White.

A clean tank is just the beginning.

Bradford White's **Hydrojet Total Performance System** gives the plumbing trade a strong technological advantage. It applies the laws of physics and augments the power of flowing water to create a new level of top performance. *And, it's standard equipment on all Bradford White top connect residential water heaters.**

The Hydro-dynamic achievement of turbulent action.

The Hydrojet delivery tube, with a series of concentric "jet ports", creates an incredible amount of turbulent action inside the tank. Water flowing into the tank encounters a series of up to 30 flow altering "jet ports". Set at precise space intervals, these ports redirect the flow to create the dynamic mixing action. Unlike a conventional dip tube where water exits with a weak diffusing action, water exiting the Hydrojet system is in complete turbulence. This design is exceptionally efficient, measured to be three to five times better than an ordinary dip tube.



The upper "jet ports" direct the flow outward to begin the dynamic mixing action.

The lower "jet ports" direct the flow inward to increase the turbulence.

Not simply a device to boost performance, the Hydrojet system lengthens the operating life of a water heater.

A common cause of premature tank failure and reduced energy efficiency in all water heaters is sediment build-up. The detrimental effects of this universal problem are interference in heat transfer, lower tank capacity, corrosion, early parts failure and an annoying rumbling noise. The result of all this is a water heater that must work much harder and consume much more energy.

Take sediment for a ride.

When the **Hydrojet Total Performance System** goes to work, sediment has no place to hide. The turbulent action puts dissolved solids such as lime and other minerals into suspension when water is delivered into the tank. Whenever water is drawn, particles are prevented from settling to the bottom of the tank or building up on interior surfaces. The Hydrojet system cleans the tank of harmful deposits every time there's a call for hot water.

The bonus is a surprising increase in deliverability.

Smooth and efficient operation during continual use and in the first hour provide increased volumes of hot water no matter what the capacity of the tank. For instance, the first hour delivery for our Energy Saver, 40 gallon residential gas water heater was 66.6 gallons. But now, equipped with the Hydrojet system, that same unit delivers 75 gallons – more than a 10% increase! That translates into more hot water for the money.

**Not available on utility, tabletop, wall hung or side connect models.*

Hydrojet System Technical Highlights

1. The Hydrojet system works by creating a strong turbulence in the flow of water as it enters the tank through a technologically advanced delivery tube. Unlike an ordinary, open-ended dip tube, the Hydrojet delivery tube harnesses the force of incoming water to create “turbulent action,” a catalyst for better mixing throughout the tank.

2. Incoming water first encounters a series of deflectors called jet ports that force water out of the tube and into the tank to begin a dynamic mixing action. A second set of jet ports then redirects the flow inward causing counter-rotation and increased pressure fluctuation inside the delivery tube. This completes the creation of the desired turbulent action.

3. Heating efficiency is greatly increased because of better mixing of incoming water with stored water. More evenly mixed water allows the water heater to run less frequently, providing a longer operating life for the unit.

4. Better mixing throughout the tank caused by “turbulent action” yields up to a 10% increase in first hour deliverability. And, according to The Gas Appliance Manufacturer’s Association (GAMA) First Hour Delivery is the primary consideration when selecting a water heater.

5. The Hydrojet system provides up to a 3% reduction in energy consumption, based on testing by the Department of Energy. Better mixing of stored water yields a greater output of hot water at the desired temperature with respect to the tank capacity.

6. The turbulent action puts dissolved solids (sediment) into suspension, while the first series of jet ports also create a path for sediment to enter the tank at a higher level than the end of the delivery tube. Both of these factors help delay the settling process and reduce sediment build-up.

7. Minimizing sediment build up results in more effective heat transfer, reduced energy costs and higher operating efficiency. And because the Hydrojet system suspends sediment that would otherwise accumulate on the bottom of the tank, maintenance requirements are drastically reduced and the life of the water heater is extended.

8. The Hydrojet system greatly reduces thermal stratification or “temperature stacking” (up to 17% reduction in peak temperatures). Stacking occurs when the water in the tank lacks thorough mixing. This occurrence will lower operating efficiency and increase the chance of a scalding accident.

9. GAMA publishes data comparing the first hour delivery (FHD) of the five largest water heater manufacturers. The data shows that Bradford White models with the Hydrojet Total Performance System produce more hot water, in equal size tanks, than any of the competition.

10. Because the Hydrojet system enables water to be heated more efficiently, it provides more hot water for the money.





Residential Gas Energy Saver FVIR Water Heaters

6/7

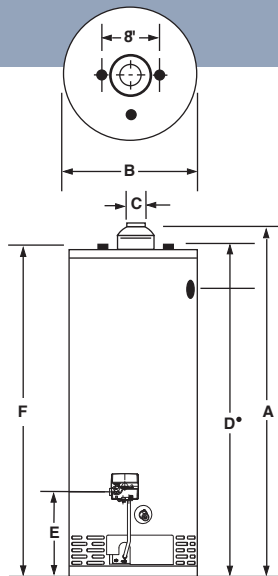


DEFENDER
SAFETY SYSTEM®

BRADFORD WHITE
ICON
System™

The FVIR Defender Safety System® Models Feature

- Bradford White ICON System™
 - Advanced ScreenLok® Technology Flame Arrestor Design
 - Resettable thermal switch
 - Pedestal base
 - Vitraglas® lining
 - Factory installed Hydrojet® Total Performance System
 - Water Connections – 3/4" NPT factory installed true dielectric fittings
 - 1" Non-CFC foam insulation
 - Protective magnesium anode rod
 - Factory installed heat traps
 - 3"x4" "Snap Lock" draft diverter (On models 40,000 BTU/Hr. or less)
- T&P relief valve included. Some models feature optional top opening (**Must specify when ordering**)
 - Low restriction brass drain valve



Photograph is of M-I-40T6FBN



Presenting the New **BRADFORD WHITE** **ICON** System™

High-Tech Innovation Meets Intelligent Simplicity

The NEW Bradford White ICON System™ is so much more than a gas valve. It's a revolutionary advance in water heating control technology available only to the professional installer and wholesaler.

The Bradford White ICON System™ offers numerous energy and timesaving benefits to the homeowner, contractor and wholesaler and sets a new standard in gas water heater control technology. The Bradford White ICON System™ is standard equipment on Bradford White Residential and Light Duty Commercial products* at no extra cost!

Why has Bradford White invested in such an advanced control technology?
In a word...Customers. Our customers asked for a sophisticated yet simple control, one that gives them performance enhancements and diagnostic capabilities. Our customers asked for it...and we are proud to deliver the Bradford White ICON System™.



*All Atmospheric Vent and Direct Vent Residential and Light Duty Models except High Performance and Mobile Home Models. *Continued on back >>*

The Perfect Choice In Gas Control Technology

- **Advanced Temperature Control System** - Microprocessor constantly monitors and controls burner operation to maintain consistent and accurate water temperature levels.
- **Exclusive Performance Software** - Proprietary algorithms provide enhanced First Hour Delivery ratings and tighter temperature differentials.
- **Intelligent Diagnostics** - An exclusive green LED light prompts the installer during start-up and provides ten different diagnostic codes to assist in troubleshooting.
- **Pilot-On-Indication** - Flashing green LED provides positive indication that pilot is on.

- **Millivolt Powered** - An off-the-shelf thermopile converts heat energy from the pilot flame into electrical energy to operate the gas valve and electronics. No external electricity required.
- **Separate Immersed Thermowell** - High strength advanced polymer composite thermowell provides isolation between electronic temperature sensor and surrounding water. No need to drain the tank when removing, or replacing the gas valve.
- **Integrated Piezo Igniter** - Built into the control itself, the igniter eliminates the need to open the combustion chamber to light the pilot.

BRADFORD WHITE
ICON
System™

- **Universal Replacement** - The Bradford White ICON System™ service kits are available for direct replacement, or for the replacement of Robertshaw or White-Rodgers gas valves on most older Bradford White models.
- **Proven Technology** - Over 150,000 units installed over the past 3 years have proven the durability, reliability and simplicity of this technology.



Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
Recovery Efficiency ranging up to 79%

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS

Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Water Conn.	Approx. Shipping Weight (lbs)
M-I-30T6FBN (LP)•	30	32,000	58	33	59 1/8	16	3x4	49 3/4 / 56 3/8	13	57 1/2	104
M-I-30S6FBN (LP)	30	30,000	56	31	48 3/8	18	3x4	38 3/4	13	46 3/4	100
M-I-303T6FBN (LP)•	29	40,000	68	41	58	16	3x4	49 3/4 / 55 1/4	13	56 1/2	109
M-I-40T6FBN (LP)•	40	40,000	76	41	59 3/8	18	3x4	50 / 56 5/8	13	57 3/4	120
M-I-403S6FBN (LP)•	40	40,000	74	41	50	20	3x4	41 / 47 1/4	13	48 1/2	128
M-I-404T6FBN (LP)•	40	50,000	87	53	60 3/4	18	4	51 1/2 / 58	13	58 1/2	127
M-I-5036FBN (LP)•	50	40,000	89	41	59 5/8	20	3x4	50 / 56 7/8	13	58	145
M-I-50L6FBN (LP)	48	40,000	88	41	49 3/4	22	3x4	40 1/2	13	48 1/4	153
M-I-504S6FBN (LP)•	50	50,000	93	53	58 1/2	20	4	50 / 55 3/4	13	57	150
M-I-60T6FBN (LP)	60	40,000	101	42	60 3/4	22	3x4	50 1/2	13	58 1/4	166

* Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix “BN” to “SX”.

For 10 year models, change suffix from “6” to “10”.

• Models feature optional top T&P location. **Must be specified when ordering.** “D” dimension listed as side/top.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

(LP) Propane Gas Inputs

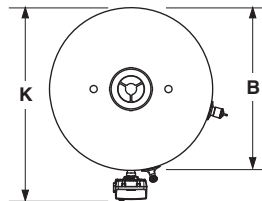
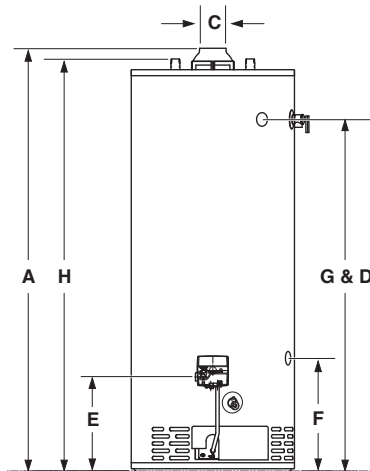
		GPH Rec. 90°F Rise
M-I-30T6FSX	31,000 BTU/Hr.	32
M-I-30S6FSX	26,000 BTU/Hr.	27
M-I-303T6FSX	35,000 BTU/Hr.	37
M-I-40T6FSX	36,000 BTU/Hr.	38
M-I-403S6FSX	38,000 BTU/Hr.	40
M-I-404T6FSX	48,000 BTU/Hr.	50
M-I-5036FSX	36,000 BTU/Hr.	38
M-I-50L6FSX	38,000 BTU/Hr.	40
M-I-504S6FSX	48,000 BTU/Hr.	50
M-I-60T6FSX	38,000 BTU/Hr.	40



Residential Gas Energy Saver High Input Water Heaters

BRADFORD WHITE
ICON
System™

- Bradford White ICON System™
- Vitraglas® lining
- Factory installed Hydrojet 2™ Total Performance System
- Water Connections – 1" NPT (M-I-75T) and 1¼" (M-I-100T) factory installed true dielectric fittings
- Side connections - 3/4" NPT tapings
- Pedestal base (M-I-75S only)
- Non-CFC foam insulation
- Protective magnesium anode rod
- 4" "Snap Lock" draft diverter
- T&P relief valve included.
- Low restriction brass drain valve



8/9



Photograph is of
M-I-75S6BN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
Recovery Efficiency ranging up to 80%

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
M-I-75S6BN (LP)	75	76,000	82	62 ³ / ₈	24	4	51 ³ / ₄	15	16 ⁵ / ₈	51 ³ / ₄	59	28 ³ / ₈	238
M-I-100T6BN (LP)	100	85,000	92	68 ¹¹ / ₁₆	28 ¹ / ₄	4	59 ⁵ / ₁₆	15 ⁵ / ₁₆	17 ⁵ / ₈	50 ⁵ / ₈	69 ¹¹ / ₁₆	32 ¹ / ₄	420

* Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix “BN” to “SX”.
For 10 year models, change suffix from “6” to “10”.
Hand hole cleanout standard on M-I-100T models.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
M-I-75S6SX	76,000 BTU/Hr.	82
M-I-100T6SX	88,000 BTU/Hr.	95



Residential Gas Energy Saver FVIR Extra Recovery Water Heaters

10/11



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SAFETY SYSTEM™

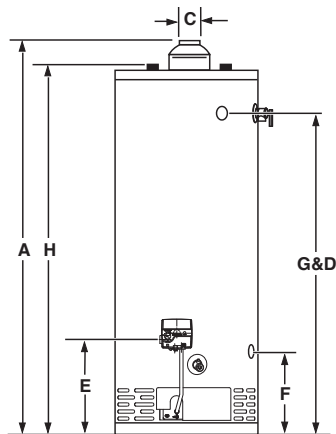
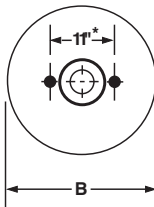
BRADFORD WHITE
ICON
System™

The XR FVIR Defender Safety System®

Models Feature:

- Bradford White ICON System™
- Advanced ScreenLok® Technology Flame Arrestor Design
- Resettable thermal switch
- Pedestal base
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation (M-1-XR403S has 1")
- Protective magnesium anode rod
- Factory installed heat traps

- 3/4" NPT side connections for space heating
- 4" "Snap Lock" draft diverter (M-1-XR403 has 3"x4" draft diverter)
- T&P relief valve included
- Low restriction brass drain valve



*Centers are 8" on M-1-XR403S



Photograph is of
M-2-XR504T6FBN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
79% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Water Conn.	Approx. Shipping Weight (lbs)
M-1-XR403S6FBN (LP)	40	40,000	74	43	50	20	3x4	41	13	13 ^{1/2}	41	48 ^{1/2}	126
M-2-XR504T6FBN (LP)	48	65,000	103	69	59 ^{1/4}	22	4	50	13	13 ^{1/2}	50	57	164
M-2-XR65T6FBN (LP)	65	65,000	127	69	63	24	4	53 ^{1/2}	12 ^{3/16}	13 ^{1/2}	53 ^{1/2}	60 ^{3/4}	205

* Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

For 10 year models, change suffix from "6" to "10".

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

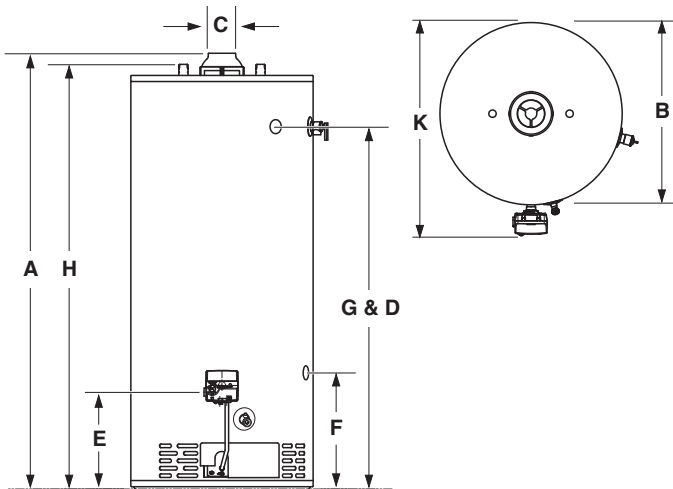
(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
M-1-XR403S6FSX	38,000 BTU/Hr.	40
M-2-XR504T6FSX	61,000 BTU/Hr.	65
M-2-XR65T6FSX	63,000 BTU/Hr.	67



Residential Gas Energy Saver Extra Recovery Water Heaters

BRADFORD WHITE
ICON
System™

- Bradford White ICON System™
- Vitraglas® lining
- Factory installed Hydrojet 2™ Total Performance System
- Water Connections – 1" NPT factory installed true dielectric fittings
- Side connections - 3/4" NPT tapings
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- 4" "Snap Lock" draft diverter
- T&P relief valve included
- Low restriction brass drain valve



12/13



Photograph is of
M-2-XR75S6BN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
M-2-XR75S6BN (LP)	75	76,000	82	62 ³ / ₈	26	4	51 ³ / ₄	13 ⁷ / ₈	16 ⁵ / ₈	51 ³ / ₄	59	30 ³ / ₈	247

* Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix “BN” to “SX”.

For 10 year models, change suffix from “6” to “10”.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
M-2-XR75S6SX	76,000 BTU/Hr.	82



Residential Gas Damper Energy Saver High EF Water Heaters

14/15

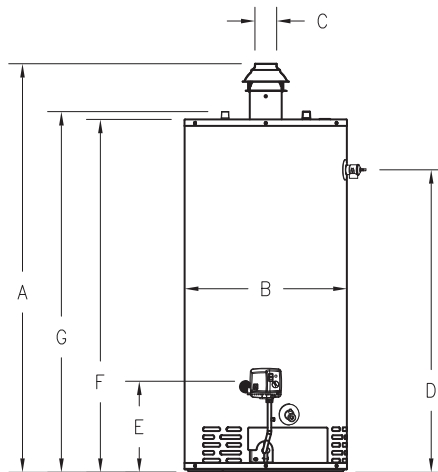
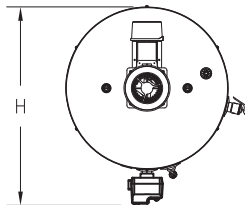


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SAFETY SYSTEM®



- ENERGY STAR® Qualified—These models qualify for the September 1st, 2010 minimum ENERGY STAR® EF requirement, as well as most utility rebate programs
- Advanced ScreenLok® Technology Flame Arrestor Design
- Resettable thermal switch
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps

- 3"x4" "Snap Lock" draft diverter
- T&P relief installed
- Low restriction brass drain valve



Photograph is of
D-4-403S6FBN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
D-4-403S6FBN (LP)	40	38,000	72	40	55 ³ / ₄	22	3x4	41 ¹ / ₂	11 ³ / ₄	48	49	26 ³ / ₄	151
D-4-504S6FBN (LP)	50	40,000	86	42	64 ¹ / ₂	22	3x4	50	11 ³ / ₄	57	57 ³ / ₄	26 ³ / ₄	170

*Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

For "10" year models, change suffix from "6" to "10".

115V, 60Hz. 12 Amps.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
D-4-403S6FSX	38,000 BTU/Hr.	40
D-4-504S6FSX	40,000 BTU/Hr.	42



Residential Gas Energy Saver FVIR High EF Water Heaters

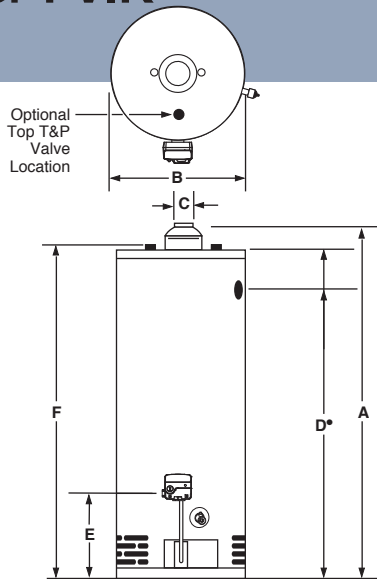
16/17



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SAFETY SYSTEM™

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System™

- Bradford White ICON System™
- Advanced ScreenLok® Technology Flame Arrestor Design
- Resettable thermal switch
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps
- 3"x4" "Snap Lock" draft diverter
- T&P relief valve included. Models feature optional top opening (Must be specified when ordering)
- Low restriction brass drain valve



•Optional Dimension



Photograph is of
M-4-40T6FBN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
79% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Water Conn.	Approx. Shipping Weight (lbs)
M-4-30T6FBN (LP)•	30	32,000	58	34	59 1/8	18	3x4	49 3/4 / 56 3/8	13	57 1/2	114
M-4-40T6FBN (LP)•	40	40,000	76	43	59 3/8	20	3x4	50 / 56 5/8	13	57 3/4	128
M-4-403S6FBN (LP)•	40	40,000	74	43	50	22	3x4	41 / 47 1/4	13	48 1/2	133
M-4-5036FBN (LP)•	50	40,000	89	43	59 5/8	22	3x4	50 / 57	13	58	151
M-4-60T6FBN (LP)	60	40,000	101	43	60 3/4	24	3x4	50 1/2	13	58 1/4	192

*Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix “BN” to “SX”.

For “10” year models, change suffix from “6” to “10”.

• Models feature optional top T&P location. **Must be specified when ordering.** “D” dimension listed as side/top.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
M-4-30T6FSX	31,000 BTU/Hr.	33
M-4-40T6FSX	36,000 BTU/Hr.	38
M-4-403S6FSX	38,000 BTU/Hr.	40
M-4-5036FSX	36,000 BTU/Hr.	38
M-4-60T6FSX	38,000 BTU/Hr.	40



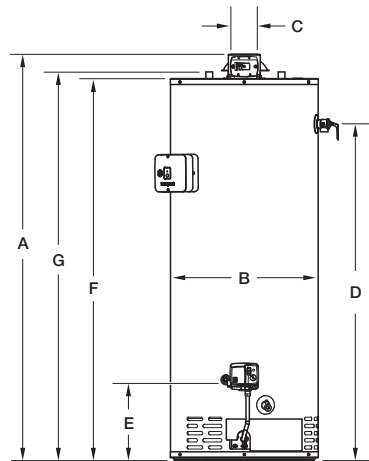
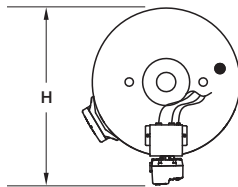
Residential Gas Energy Saver Programmable Efficiency Water Heaters

18/19



DEFENDER SAFETY SYSTEM®

- Advanced ScreenLok® Technology Flame Arrestor Design
 - Honeywell self diagnostic electronic gas control
 - Flammable vapor sensor
 - Resettable thermal switch
 - Vitraglas® lining
 - Factory installed Hydrojet® Total Performance System
 - Fully programmable LCD digital control
 - 2" Non-CFC foam insulation
 - Protective magnesium anode rod
 - Factory installed heat traps
 - 3"x4" "Snap Lock" draft diverter
- T&P relief valve included
 - Low restriction brass drain valve



Photograph is of
PE-4-40T6FBN

Atmospheric Vent Energy Saver Models

DIMENSIONS IN INCHES

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed. 80% Recovery Efficiency

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
PE-4-403S6FBN (LP)	40	40,000	74	42	50 ³ / ₄	22	3 x 4	41	11 ¹ / ₄	47	48	26 ¹ / ₄	148
PE-4-40T6FBN (LP)	40	40,000	76	42	60 ¹ / ₄	20	3 x 4	50	11 ¹ / ₄	56 ¹ / ₂	57 ¹ / ₂	24 ¹ / ₄	140
PE-4-5036FBN (LP)	50	40,000	89	42	60 ³ / ₄	22	3 x 4	50	11 ¹ / ₄	56 ¹ / ₂	57 ¹ / ₂	26 ¹ / ₄	161
PE-2-XR504T6FBN (LP)	48	65,000	103	69	60 ¹ / ₄	22	4	50	11 ¹ / ₄	56 ¹ / ₂	57 ¹ / ₂	26 ¹ / ₄	178

All propane models feature a Titanium Stainless Steel propane burner.

For propane (LP) models change suffix "BN" to "SX".

*Based on manufacturers rated recovery efficiency.

††When tested to the industry standard residential first hour delivery procedure.

PE-2-XR504 has 3/4" NPT side connections.

Requires two 120VAC outlets. One outlet is for the 24VAC plug-in transformer and the other is the line cord that powers the water heater.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
PE-4-403S6FSX	38,000 BTU/Hr.	40
PE-4-40T6FSX	36,000 BTU/Hr.	38
PE-4-5036FSX	36,000 BTU/Hr.	38
PE-2-XR504T6FSX	61,000 BTU/Hr.	65

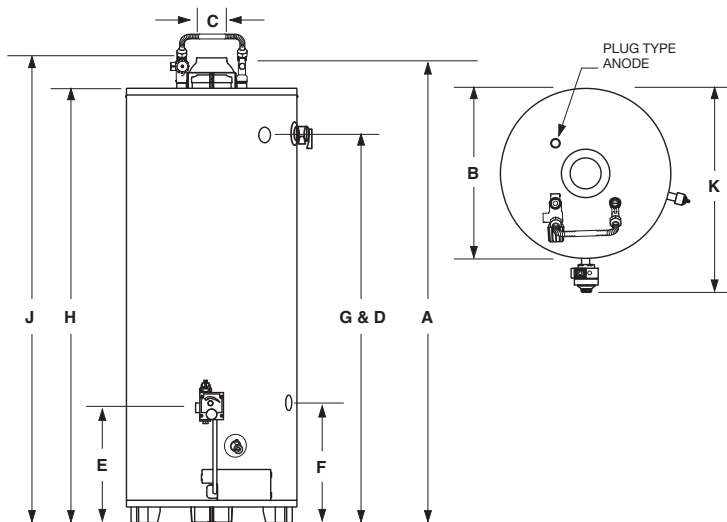


Residential Gas Energy Saver High Performance Water Heaters

20/21



- High input combustion system
- Integrated Mixing Device
- Helical fin flue
- Vitraglas® lining
- Factory installed Hydrojet® 2™ Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- Non-CFC foam insulation
- Two protective magnesium anode rods
- 4" "Snap Lock" draft diverter
- 3/4" NPT side tapplings for space heating
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
GX-2-25S6BN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
82% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour†† Delivery Rating	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Heater Top	Floor to Water Conn.†	Depth	Approx. Shipping Weight (lbs)
GX-2-25S6BN (LP)	25	78,000	155	84	58½	18	4	50	14 ¹³ / ₁₆	15 ⁷ / ₁₆	50	54 ⁵ / ₈	58 ⁵ / ₈	22	150
GX-1-55S6BN (LP)	55	80,000	200	86	59 ⁵ / ₈	22	4	50	14 ¹³ / ₁₆	15 ⁷ / ₁₆	50	56	60	26¼	200

All propane models feature a Titanium Stainless Steel propane burner.

For propane (LP) models change suffix "BN" to "SX".

*Based on manufacturers rated recovery efficiency.

††When tested to the industry standard residential first hour delivery procedure.

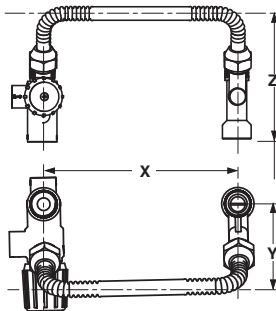
†Dimension to top of installed mixing device.

GX-2 has 2" of insulation.

GX-1 has 1" of insulation.

Gas connections are ½".

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
GX-2-25S6SX	76,000 BTU/Hr.	82
GX-1-55S6SX	78,000 BTU/Hr.	84



Integrated Mixing Device
(Installation required for operation)

Model Number	X Distance Between Centers in.	Y Depth of Mixing Device in.	Z Height to Center of Pipe in.
GX-2-25S6BN	8	2½	6
GX-1-55S6BN	8	2½	6

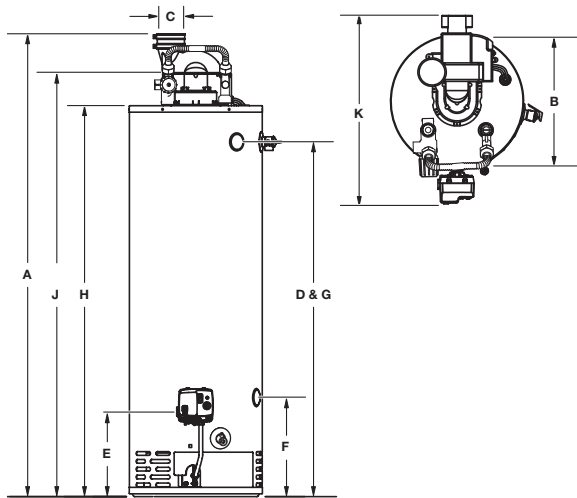


Residential Gas Energy Saver TTW® High Performance Water Heaters

22/23



- High input combustion system
- Integrated Mixing Device
- Helical fin flue
- Vitraglas® lining
- Factory installed Hydrojet®2™ Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- Non-CFC foam insulation
- Two protective magnesium anode rods
- Powerful blower motor
- Honeywell self diagnostic electronic gas control
- Flammable vapor sensor (not FVIR compliant)
- Spark-to-pilot ignition
- Horizontal and vertical venting
- 3/4" NPT side tapings for space heating
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
GX-2-TW-25S6BN

Power Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
82% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour†† Delivery Rating	GPH Recovery 90°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Heater Top	Floor to Water Conn.†	Depth	Approx. Shipping Weight (lbs)
GX-2-TW-25S6BN (LP)	25	76,000	155	82	62 ⁵ / ₈	18	3 or 4	48	11 ¹ / ₂	13 ³ / ₈	48	52 ⁷ / ₈	56 ⁷ / ₈	25 ³ / ₈	170
GX-1-TW-55S6BN (LP)	55	78,000	200	84	63 ³ / ₄	22	3 or 4	48	11 ¹ / ₂	13 ³ / ₈	48	54	58	27 ³ / ₈	215

All propane models feature a Titanium Stabilized Stainless Steel propane burner.

For propane (LP) models change suffix "BN" to "SX".

*Based on manufacturers rated recovery efficiency.

†Dimension to top of installed mixing device.

††When tested to the industry standard residential first hour delivery procedure.

GX-2 has 2" of insulation.

GX-1 has 1" of insulation.

Gas connections are 1/2".

GX-2-TW-25S6BN GX-1-TW-55S6BN		3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length		†60 ft.	†180 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number of 90° Elbows	1	55 ft.	175 ft.
	2	50 ft.	170 ft.
	3	45 ft.	165 ft.

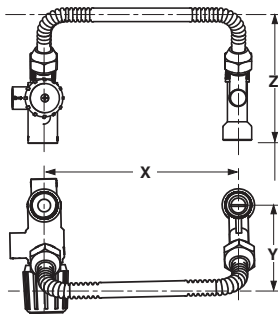
†Consult I&O manual when using four or more elbows.

Subtract 5ft. for each additional 90° elbow.

(LP) Propane Gas Inputs

		GPH Rec. 90°F Rise
GX-2-TW25S6SX	76,000 BTU/Hr.	82
GX-1-TW55S6SX	78,000 BTU/Hr.	84

Integrated Mixing Device
(Installation required for operation)



Model Number	X Distance Between Centers in.	Y Depth of Mixing Device in.	Z Height to Center of Pipe in.
GX-2-TW25S6BN	8	2 ¹ / ₂	6
GX-1-TW55S6BN	8	2 ¹ / ₂	6



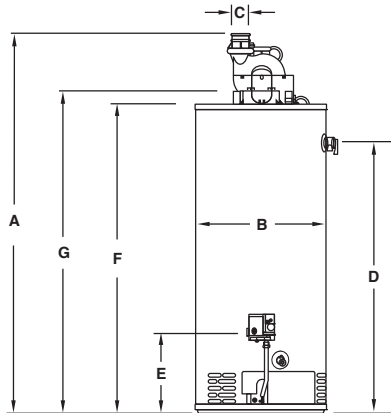
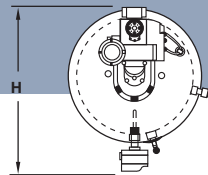
Residential Gas Energy Saver FVIR TTW®1 Water Heaters

24/25



DEFENDER
SAFETY SYSTEM®

- Advanced ScreenLok® Technology Flame Arrestor Design
- Flammable vapor sensor
- Powerful blower motor
- Honeywell self diagnostic electronic gas control
- Spark-to-pilot ignition system
- Horizontal and vertical venting
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
M-1-TW-40S6FBN

Power Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
M-1-TW-40S6FBN (LP)	40	40,000	72	43	56½	20	2 or 3	40½	11¾	46½	48	24⅞	135
M-1-TW-50S6FBN (LP)	50	40,000	86	43	57¾	22	2 or 3	40⅞	11¾	47⅞	49¼	26¾	160
M-1-TW-60T6FBN (LP)	60	42,000	100	45	68	22	2 or 3	50⅞	11¾	57¾	58½	27¼	193

*Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix “BN” to “SX”.

For 10 year models, change suffix from “6” to “10”.

110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
M-1-TW-40S6FSX	38,000 BTU/Hr.	41
M-1-TW-50S6FSX	38,000 BTU/Hr.	41
M-1-TW-60T6FSX	40,000 BTU/Hr.	43

M-1-TW-40S M-1-TW-50S M-1-TW-60T	2" Vent Pipe	3" Vent Pipe
Max. Equivalent Length	50 ft.	120 ft.
Min. Equivalent Length	7 ft.	15 ft.
Number of 90° Elbows†	1 2 3	45 ft. 115 ft. 110 ft. 105 ft.

†Consult I&O manual when using four or more elbows.

Subtract 5ft. for each additional 90° elbow.



Residential Gas Energy Saver TTW® High EF Water Heaters

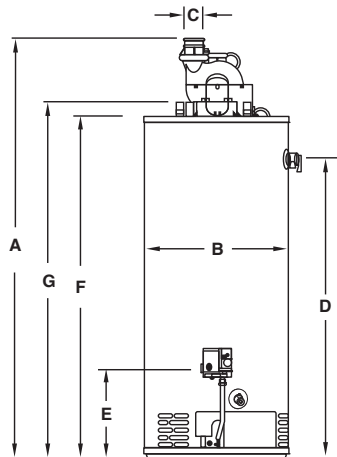
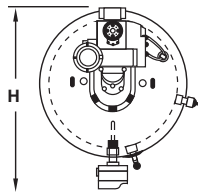
26/27



DEFENDER
SAFETY SYSTEM®



- High Energy Factor (EF) – These models qualify for most energy rebate programs as well as the September 1, 2010 minimum ENERGY STAR® EF requirement
- Advanced ScreenLok® Technology Flame Arrestor Design
- Flammable vapor sensor
- Powerful blower motor
- Honeywell self diagnostic electronic gas control
- Horizontal and vertical venting
- Vitraglas® Lining
- Factory installed Hydrojet® Total Performance System
- Water Connections 3/4" NPT factory installed true dielectric fittings
- Pedestal base
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
M-4-TW-40T6FBN

Power Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
M-4-TW40T6FBN (LP)	40	40,000	72	43	67	20	2	50	11 ³ / ₄	56 ³ / ₄	57 ³ / ₄	24 ⁷ / ₈	152
M-4-TW50T6FBN (LP)	50	40,000	86	43	67	22	2	50	11 ³ / ₄	57	58	26 ³ / ₄	175
M-4-TW60T6FBN (LP)	60	40,000	98	43	68	24	2	50 ¹ / ₂	11 ³ / ₄	57 ³ / ₄	58 ³ / ₄	28 ³ / ₄	210

*Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix “BN” to “SX”.

For 10 year models, change suffix from “6” to “10”.

110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
M-4-TW-40T6FSX	38,000 BTU/Hr.	41
M-4-TW-50T6FSX	38,000 BTU/Hr.	41
M-4-TW-60T6FSX	38,000 BTU/Hr.	41

M-4-TW-40 M-4-TW-50 M-4-TW-60		2" Vent Pipe	3" Vent Pipe
Max. Equivalent Length		50 ft.	120 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number of 90° Elbows†	1	45 ft.	115 ft.
	2	40 ft.	110 ft.
	3	35 ft.	105 ft.

†Consult I&O manual when using four or more elbows.

Subtract 5ft. for each additional 90° elbow.



Residential Gas Energy Saver FVIR TTW®2 Water Heaters

28/29

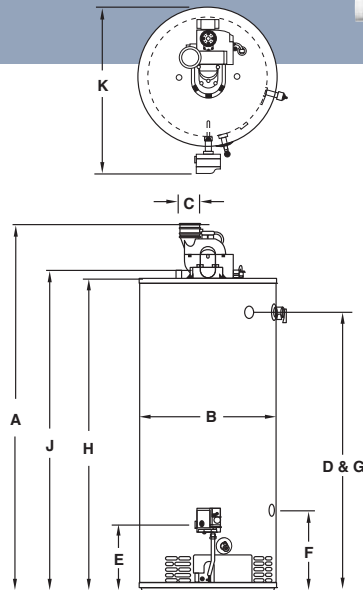


DEFENDER
SAFETY SYSTEM®

**The TTW®2 FVIR Defender Safety System®
Models Feature (Except M-2-TW75):**

- Advanced ScreenLok®
Technology Flame
Arrestor Design
 - Flammable vapor sensor
- All TTW®2 Models Feature:**
- Powerful blower motor
 - Honeywell self diagnostic
electronic gas control
 - Spark to pilot ignition system
 - Horizontal and vertical venting
 - Vitraglas® Lining
 - Factory installed Hydrojet® Total
Performance System

- Water Connections 3/4" NPT
factory installed true dielectric
fittings
- 3/4" NPT side connections
- Pedestal base
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
M-2-TW-50T6FBN

Power Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Heater Top	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
M-2-TW-50T6FBN (LP)	48	67,000	108	72	65 ⁷ / ₈	22	3 or 4	50 ¹ / ₈	11 ³ / ₄	13 ¹ / ₂	50 ¹ / ₈	56 ³ / ₈	57 ³ / ₄	26 ³ / ₄	188
M-2-TW-65T6FBN (LP)	65	70,000	126	75	69	24	3 or 4	53 ¹ / ₂	11 ³ / ₄	13 ¹ / ₂	53 ¹ / ₂	59 ¹ / ₂	60 ³ / ₄	28 ³ / ₄	222
M-2-TW-75T6BN (LP)	75	76,000	—	82	68 ³ / ₈	26	3 or 4	53	15	17 ³ / ₄	53	60 ¹ / ₄	61 ¹ / ₂	31	277

*Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix “BN” to “SX”.

For 10 year models, change suffix from “6” to “10”.

110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
M-2-TW-50T6FSX	60,000 BTU/Hr.	65
M-2-TW-65T6FSX	63,000 BTU/Hr.	68
M-2-TW-75T6SX	75,500 BTU/Hr.	81

M-2-TW-50T M-2-TW-65T M-2-TW-75T		3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length		60 ft.**	180 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number of 90° Elbows†	1	55 ft.	175 ft.
	2	50 ft.	170 ft.
	3	45 ft.	165 ft.

†Consult I&O manual when using four or more elbows.

Subtract 5ft. for each additional 90° elbow.

**M-2-TW-75 Max. 3" vent length is 50ft.



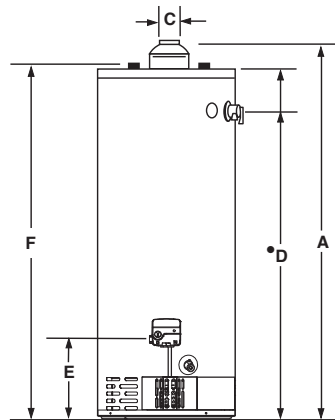
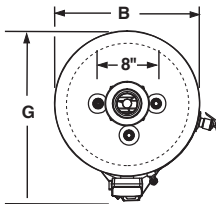
Residential Gas Energy Saver FVIR Ultra Low NOx Water Heaters

30/31



DEFENDER
SAFETY SYSTEM™

- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- Honeywell self diagnostic gas control
- Millivolt powered control with built-in piezo igniter
- No electricity required
- Digital thermal sensor and resettable thermal switch
- Pedestal base
- Water Connections 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC Foam Insulation
- Factory installed heat traps
- Protective magnesium anode rod
- 3x4 "Snap Lock" draft diverter
- T&P relief valve included
- Low restriction brass drain valve
- Meets SCAQMD Rule 1121 (10ng/J)



•Optional T&P Location Dimension.
"D" dimension listed as side/top.



Photo is of
U1-5036FRN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
78% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS MODELS					A	B	C	D	E	F	G	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating*	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
U1-30S6FRN	30	30,000	54	31	48 ³ / ₈	18	3x4	38 ³ / ₄	11 ⁵ / ₈	46 ³ / ₄	22 ¹ / ₄	110
U1-30T6FRN•	30	32,000	56	33	59 ¹ / ₈	16	3x4	49 ³ / ₄ / 56 ³ / ₈	11 ⁵ / ₈	57 ¹ / ₂	20 ¹ / ₄	113
U1-403S6FRN•	40	40,000	72	42	50	20	3x4	41 / 47 ¹ / ₄	11 ⁵ / ₈	48 ¹ / ₂	24 ¹ / ₄	137
U1-40T6FRN•	40	40,000	77	42	59 ³ / ₈	18	3x4	50 / 56 ⁵ / ₈	11 ⁵ / ₈	57 ³ / ₄	22 ¹ / ₄	130
U1-404T6FRN•	40	50,000	86	53	60 ³ / ₄	18	4	51 ¹ / ₂ / 58	11 ⁵ / ₈	58 ¹ / ₂	22 ¹ / ₄	137
U1-5036FRN•	50	40,000	90	42	59 ⁵ / ₈	20	3x4	50 / 56 ⁷ / ₈	11 ⁵ / ₈	58	24 ¹ / ₄	154
U1-50L6FRN	48	40,000	86	42	49 ³ / ₄	22	3x4	40 ¹ / ₂	11 ⁵ / ₈	48 ¹ / ₄	26 ¹ / ₄	163
U1-60T6FRN	60	40,000	96	42	60 ³ / ₄	22	3x4	50 ¹ / ₂	13	58 ¹ / ₄	26 ¹ / ₄	166

*Based on manufacturers rated recovery efficiency.

Available in natural gas only.

For 10 year models, change suffix from “6” to “10”.

• Models feature optional top T&P location and must be specified when ordering.

All models meet SCAQMD rule 1121 requirement of 10ng/J, or less, NOx emissions.

Identical dimensions - same diameter, height and connections as standard units for ease of installation.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.



Residential Gas Energy Saver FVIR Ultra Low NOx Extra Recovery Water Heaters

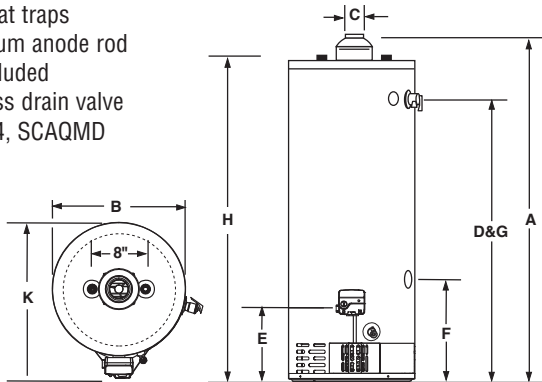
32/33



DEFENDER
SAFETY SYSTEM™

- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- Honeywell self diagnostic gas control
- Millivolt powered control with built-in piezo igniter
- No electricity required
- Digital thermal sensor and resettable thermal switch
- Pedestal base
- Water Connections 3/4" NPT factory installed true dielectric fittings

- 3/4" NPT side connections
- 2" Non-CFC Foam Insulation (U1-XR has 1")
- Factory installed heat traps
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve
- Meets C.E.C Title 24, SCAQMD Rule 1121 (10ng/J)



Photograph is of
U2-XR-504T6FRN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
78% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
U1-XR-403S6FRN	40	40,000	72	43	50	20	3 x 4	41	11 ⁵ / ₈	13 ¹ / ₂	41	48 ¹ / ₂	24 ¹ / ₄	137
U2-XR-504T6FRN	48	55,000	91	57	59 ¹ / ₄	22	4	50	11 ⁵ / ₈	13 ¹ / ₂	50	57	26	174
U2-XR-65T6FRN	65	55,000	116	57	63	24	4	53 ¹ / ₂	11 ⁵ / ₈	13 ¹ / ₂	53 ¹ / ₂	60 ³ / ₄	28	213

*Based on manufacturers rated recovery efficiency.

Available in natural gas only.

For 10 year models, change suffix from “6” to “10”.

All models meet SCAQMD rule 1121 requirement of 10ng/J, or less, NOx emissions.

Identical dimensions - same diameter, height and connections as standard units for ease of installation.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.



Residential Gas Energy Saver FVIR Ultra Low NOx High EF Water Heaters

34/35

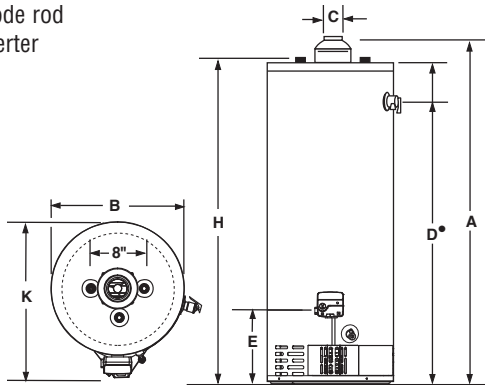


DEFENDER
SAFETY SYSTEM™

- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- Honeywell self diagnostic gas control
- Millivolt powered control with built-in piezo igniter
- No electricity required
- Digital thermal sensor and resettable thermal switch
- Pedestal base
- Water Connections 3/4" NPT factory installed true dielectric fittings

- 2" Non-CFC Foam Insulation
- Factory installed heat traps
- Protective magnesium anode rod
- 3x4 "Snap Lock" draft diverter
- T&P relief valve included
- Low restriction brass drain valve
- Meets C.E.C
Title 24, SCAQMD
Rule 1121 (10ng/J)

•Optional T&P Location Dimension.
"D" dimension listed as side/top.



Photograph is of
U4-5036FRN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS MODELS					A	B	C	D	E	H	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
U4-30T6FRN•	30	32,000	56	34	59 ¹ / ₈	18	3x4	49 ³ / ₄ /56 ³ / ₈	13	57 ¹ / ₂	22 ¹ / ₄	123
U4-40T6FRN•	40	40,000	77	43	59 ³ / ₈	20	3x4	50/56 ⁵ / ₈	13	57 ³ / ₄	24 ¹ / ₄	137
U4-403S6FRN•	40	40,000	72	43	50	22	3x4	41 / 47 ¹ / ₄	13	48 ¹ / ₂	26 ¹ / ₄	143
U4-5036FRN•	50	40,000	90	43	59 ⁵ / ₈	22	3x4	50/57	13	58	26 ¹ / ₄	160
U4-60T6FRN	60	40,000	96	43	60 ³ / ₄	24	3x4	50 ¹ / ₂	13	58 ¹ / ₄	28 ¹ / ₄	192

*Based on manufacturers rated recovery efficiency.

Available in natural gas only.

For 10 year models, change suffix from “6” to “10”.

•Models feature optional top T&P location and must be specified when ordering.

All models meet SCAQMD rule 1121 requirement of 10ng/J, or less, NOx emissions.

Identical dimensions - same diameter, height and connections as standard units for ease of installation.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.



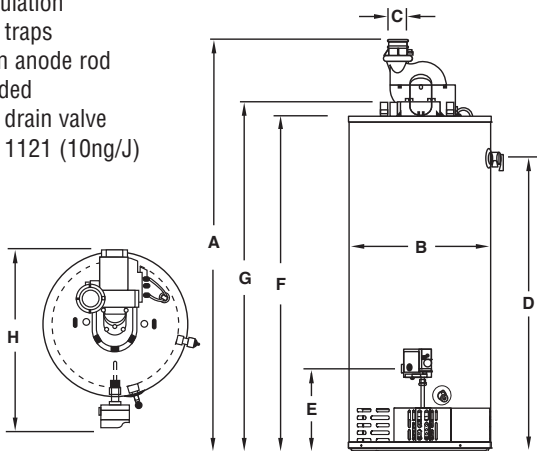
Residential Gas Energy Saver TTW[®]1 Ultra Low NOx Water Heaters

36/37



DEFENDER
SAFETY SYSTEM[™]

- Defender[®] combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas[®] Lining
- Factory Installed Hydrojet[®] Total Performance System
- Honeywell self diagnostic gas control
- Flammable vapor sensor
- Powerful blower motor
- Horizontal and vertical venting
- Sight window
- Pedestal base
- Water Connections 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC Foam Insulation
- Factory installed heat traps
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve
- Meets SCAQMD Rule 1121 (10ng/J)



Photograph is of
U-1-TW-40S6FRN

Power Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS MODELS					A	B	C	D	E	F	G	H	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
U-1-TW-40S6FRN	40	40,000	72	43	56 ¹ / ₂	20	2	40 ¹ / ₂	11 ³ / ₄	46 ¹ / ₂	48	24 ⁷ / ₈	139
U-1-TW-50S6FRN	50	40,000	86	43	57 ³ / ₈	22	2	40 ¹ / ₂	11 ³ / ₄	47 ¹ / ₈	49 ¹ / ₄	26 ³ / ₄	160
U-1-TW-60T6FRN	60	42,000	100	45	68	22	2	50 ⁷ / ₈	11 ³ / ₄	57 ³ / ₄	58 ¹ / ₂	27 ¹ / ₄	192

Available in Natural Gas only.

*Based on manufacturers rated recovery efficiency.

For 10 year models, change suffix from “6” to “10”.

110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

U-1-TW-40 U-1-TW-50 U-1-TW-60		2" Vent Pipe	3" Vent Pipe
Max. Equivalent Length		†50 ft.	†120 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number of 90° Elbows†	1	45 ft.	115 ft.
	2	40 ft.	110 ft.
	3	35 ft.	105 ft.

†Consult I&O manual when using four or more elbows.
Subtract 5ft. for each additional 90° elbow.



Residential Gas Energy Saver TTW[®] High EF Ultra Low NOx Water Heaters

38/39

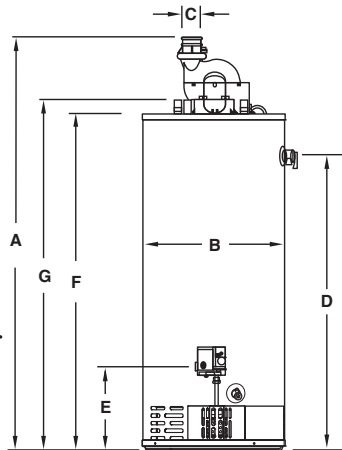
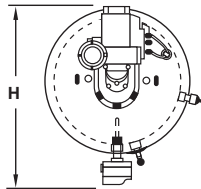


DEFENDER
SAFETY SYSTEM[™]



- High Energy Factor (EF) – These models qualify for most energy rebate programs as well as the September 1, 2010 minimum ENERGY STAR[®] EF requirement
- Defender[®] combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas[®] Lining
- Factory Installed Hydrojet[®] Total Performance System
- Honeywell self diagnostic gas control
- Flammable vapor sensor
- Powerful blower motor
- Horizontal and vertical venting

- Sight window
- Pedestal base
- Water Connections 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC Foam Insulation
- Factory installed heat traps
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve
- Meets SCAQMD Rule 1121 (10ng/J)



Photograph is of
U-4-TW-40T6FRN

Power Vent Energy Saver Models

DIMENSIONS IN INCHES

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed. 80% Recovery Efficiency

NATURAL GAS MODELS					A	B	C	D	E	F	G	H	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
U-4-TW-40T6FRN	40	40,000	67	43	67	20	2	50	11 ³ / ₄	56 ³ / ₄	57 ³ / ₄	24 ⁷ / ₈	152
U-4-TW-50T6FRN	50	40,000	86	43	67	22	2	50	11 ³ / ₄	57	58	26 ³ / ₄	175
U-4-TW-60T6FRN	60	40,000	98	43	68	24	2	50 ¹ / ₂	11 ³ / ₄	57 ³ / ₄	58 ³ / ₄	28 ³ / ₄	210

Available in Natural Gas only.

*Based on manufacturers rated recovery efficiency.

For 10 year models, change suffix from “6” to “10”.

110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

U-4-TW-40 U-4-TW-50 U-4-TW-60		2" Vent Pipe	3" Vent Pipe
Max. Equivalent Length		†50 ft.	†120 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number of 90° Elbows†	1	45 ft.	115 ft.
	2	40 ft.	110 ft.
	3	35 ft.	105 ft.

†Consult I&O manual when using four or more elbows.
Subtract 5ft. for each additional 90° elbow.



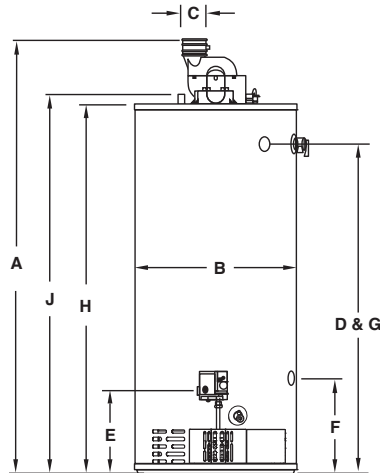
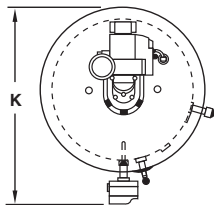
Residential Gas Energy Saver TTW[®]2 Ultra Low NOx Water Heaters

40/41



DEFENDER
SAFETY SYSTEM[™]

- Defender[®] combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas[®] Lining
- Factory Installed Hydrojet[®] Total Performance System
- Honeywell self diagnostic gas control
- Flammable vapor sensor
- Powerful blower motor
- Horizontal and vertical venting
- Sight window
- Pedestal base
- Water Connections 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC Foam Insulation
- Factory installed heat traps
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve
- Meets SCAQMD Rule 1121 (10ng/J)



Photograph is of
U-2-TW-50T6FRN

Power Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS MODELS					A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
U-2-TW-50T6FRN	48	60,000	101	65	65 ^{7/8}	22	3	50 ^{1/8}	11 ^{3/4}	13 ^{1/2}	50 ^{1/8}	56 ^{3/8}	57 ^{3/4}	26 ^{3/4}	184
U-2-TW-65T6FRN	65	60,000	116	65	69	24	3	53 ^{1/2}	11 ^{3/4}	13 ^{1/2}	53 ^{1/2}	59 ^{1/2}	60 ^{3/4}	28 ^{3/4}	215

Available in Natural Gas only.

*Based on manufacturers rated recovery efficiency.

For 10 year models, change suffix from "6" to "10".

110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

U-2-TW-50 U-2-TW-65		3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length		†60 ft.	†180 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number of 90° Elbows†	1	55 ft.	175 ft.
	2	50 ft.	170 ft.
	3	45 ft.	165 ft.

†Consult I&O manual when using four or more elbows.
Subtract 5ft. for each additional 90° elbow.



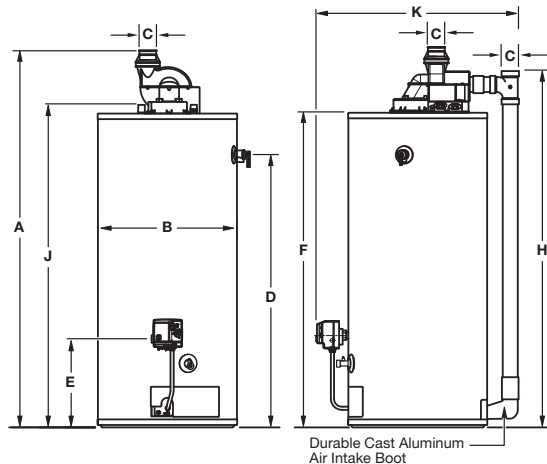
Residential Gas Energy Saver FVIR PDX1 Water Heaters

42/43



DEFENDER SAFETY SYSTEM®

- Closed combustion venting system
- Flammable vapor sensor
- Powerful blower motor
- Honeywell self diagnostic electronic gas control
- Spark-to-pilot ignition system
- Horizontal and vertical venting
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Cast aluminum intake boot
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
PDX1-40S6FBN

Power Direct Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Exhaust Outlet	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Top of Heater	Floor to Air Intake	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
PDX1-40S6FBN	40	40,000	72	43	58 ³ / ₄	20	2 or 3	42 ³ / ₄	14	48 ³ / ₄	55 ³ / ₈	50 ¹ / ₈	30 ¹ / ₂	146
PDX1-50S6FBN	50	40,000	88	43	59 ⁵ / ₈	22	2 or 3	43 ¹ / ₈	14	49 ⁵ / ₈	56 ³ / ₈	51	32 ³ / ₈	171

*Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

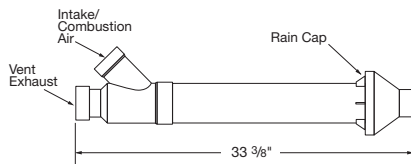
For 10 year models, change suffix from "6" to "10".

110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
PDX1-40S6FSX	38,000 BTU/Hr.	41
PDX1-50S6FSX	38,000 BTU/Hr.	41

Optional
2" Concentric Vent
Terminal Kit
P/N 239-44069-02



2" Vent Pipe		PDX1-40S PDX1-50S	3" Vent Pipe		PDX1-40S PDX1-50S
Max. Intake Length		35 ft.	Max. Intake Length		85 ft.
Max. Exhaust Length		35 ft.	Max. Exhaust Length		85 ft.
Min. Vent Length		7 ft.	Min. Vent Length		7 ft.
Number of 90° Elbows†	1	30 ft.	Number of 90° Elbows†	1	80 ft.
	2	25 ft.		2	75 ft.
	3	20 ft.		3	70 ft.

Note: Subtract 5ft. for each additional 90° elbow. †Consult I&O Manual when using four or more elbows.



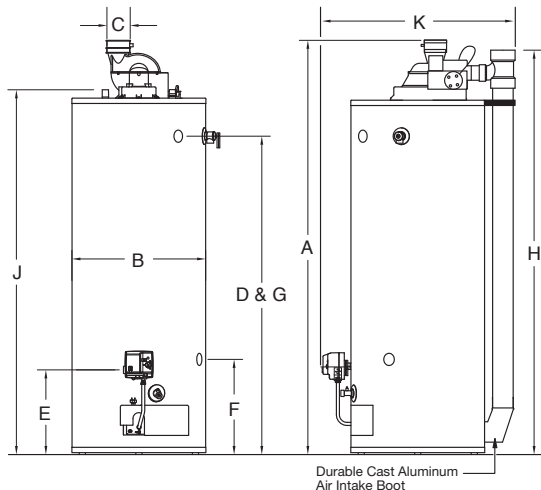
Residential Gas Energy Saver FVIR PDX2 Water Heaters

44/45



DEFENDER SAFETY SYSTEM®

- Closed combustion venting system
- Flammable vapor sensor
- Powerful blower motor
- Honeywell self diagnostic electronic gas control
- Spark-to-pilot ignition system
- Horizontal and vertical venting
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Cast aluminum intake boot
- 3/4" NPT side connections for space heating
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
PDX2-50T6FBN

Power Direct Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Exhaust Outlet	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Supply	Floor to Air Intake	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
PDX2-50T6FBN (LP)	48	60,000	105	65	68	22	3 or 4	52 ¹ / ₄	13 ⁵ / ₈	15 ³ / ₄	52 ¹ / ₄	67	59 ³ / ₄	32	303
PDX2-65T6FBN (LP)	65	65,000	120	70	71 ¹ / ₄	24	3 or 4	55 ⁵ / ₈	13 ⁵ / ₈	15 ³ / ₄	55 ⁵ / ₈	69 ¹ / ₂	63	32 ¹ / ₈	330
PDX2-75T6FBN (LP)	75	70,000	140	75	71	26	3 or 4	54 ¹ / ₄	16 ¹ / ₄	19	54 ¹ / ₂	69 ³ / ₈	63 ³ / ₄	36	375

*Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

For 10 year models, change suffix from "6" to "10".

110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

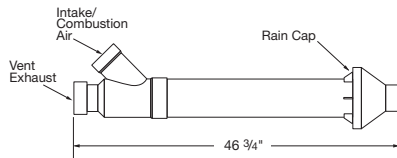
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

(LP) Propane Gas Inputs

GPH Rec.
90°F Rise

PDX2-50T6FSX	60,000 BTU/Hr.	65
PDX2-65T6FSX	60,000 BTU/Hr.	65
PDX2-75T6FSX	65,000 BTU/Hr.	70

Optional
3" Concentric Vent
Terminal Kit
P/N 239-44069-01



3" Vent Pipe		PDX2-50T PDX2-65T	PDX2-75T
Max. Intake Length		60 ft.	50 ft.
Max. Exhaust Length		60 ft.	50 ft.
Min. Vent Length		7 ft.	7 ft.
Number of 90° Elbows†	1	55 ft.	45 ft.
	2	50 ft.	40 ft.
	3	45 ft.	35 ft.

4" Vent Pipe		PDX2-50T PDX2-65T	PDX2-75T
Max. Intake Length		100 ft.	90 ft.
Max. Exhaust Length		100 ft.	90 ft.
Min. Vent Length		7 ft.	7 ft.
Number of 90° Elbows†	1	95 ft.	85 ft.
	2	90 ft.	80 ft.
	3	85 ft.	75 ft.

Note: Subtract 5ft. for each additional 90° elbow. †Consult I&O Manual when using four or more elbows.



Residential Gas Energy Saver FVIR Direct Vent Water Heaters

46/47

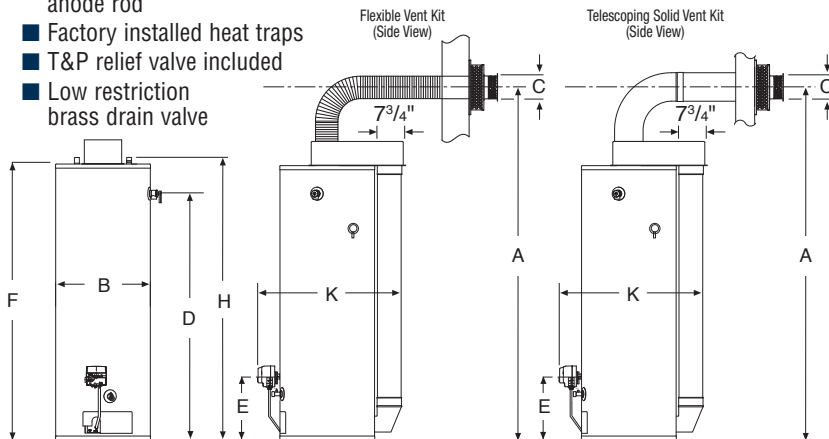


DEFENDER
SAFETY SYSTEM™

BRADFORD WHITE
ICON
System™

- Bradford White ICON System™
- Reinforced seals
- Closed combustion—Co-axial Vent System—outer pipe takes air in from the outside. Inner pipe vents combustion gases directly back to the outside
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- Cast aluminum intake boot
- 1" Non-CFC foam insulation
- Optional flex vent kit

- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
DS1-50S6FBN

Direct Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	H	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Center Line of Vent	Jacket Dia.	Vent Dia.	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
DS1-40S6FBN (LP)	40	38,000	71	41	63 ¹ / ₄ min.	20	3 I.D., 5 O.D.	43 ¹ / ₂	14 ⁷ / ₈	49 ³ / ₄	50 ³ / ₄	31 ³ / ₄	162
DS1-50S6FBN (LP)	50	42,000	99	45	72 ¹ / ₄ min.	20	3 I.D., 5 O.D.	52 ¹ / ₄	14 ⁷ / ₈	58 ³ / ₄	59 ³ / ₄	31 ³ / ₄	181

*Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

For 10 year models, change suffix from "6" to "10".

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

Telescoping Solid Vent Kit (239-47810-00) or Flexible Vent Kit (239-47812-00) can be ordered and shipped with water heater, or ordered and shipped separately For vent kit components and venting instructions, refer to Installation and Operating Manual.

Optional solid vent kit :

Kit "A"	Telescopes from 4 ³ / ₁₆ " to 5 ¹ / ₁₆ "	Part No. 239-41260-00
Kit "B"	Telescopes from 6 ¹ / ₁₆ " to 9 ¹ / ₁₆ "	Part No. 239-41331-00
Kit "C"	Telescopes from 13 ³ / ₁₆ " to 23 ¹ / ₁₆ "	Part No. 239-41029-00
Kit "D"	Telescopes from 49 ¹³ / ₁₆ " to 95 ¹³ / ₁₆ "	Part No. 239-41424-00

Horizontal vent termination only.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
DS1-40S6FSX	36,000 BTU/Hr.	39
DS1-50S6FSX	40,000 BTU/Hr.	43



Residential Gas Energy Saver FVIR High Input Direct Vent Water Heaters

48/49



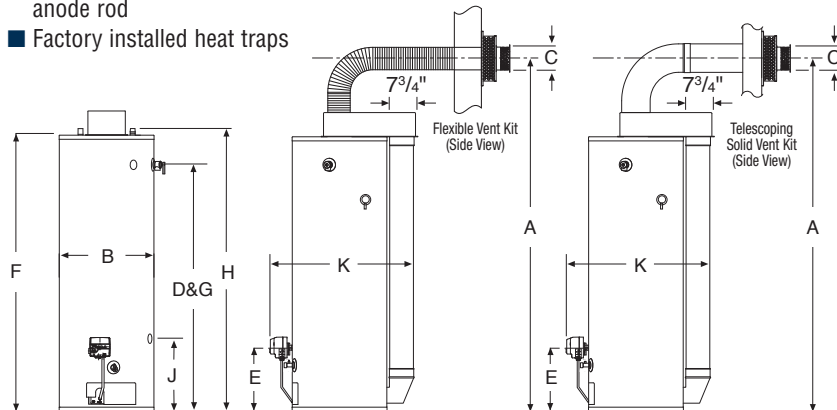
DEFENDER
SAFETY SYSTEM™

Bradford White
ICON
System™

- Bradford White ICON System™
- Reinforced seals
- Closed combustion-Co-axial Vent System-outer pipe takes air in from the outside. Inner pipe vents combustion gases directly back to the outside
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 3/4" NPT side tapping for space heating
- Cast aluminum intake boot
- 1" Non-CFC foam insulation

- Optional flex vent kit
- Protective magnesium anode rod
- Factory installed heat traps

- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
DH1-504T6FBN

Direct Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
78% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Center Line of Vent	Jacket Dia.	Vent Dia.	Floor to T&P	Floor to Gas Conn.	Floor to Top of Heater	Space Heating Outlet	Floor to Water Conn.	Space Heating Inlet	Depth	Approx. Shipping Weight (lbs)
DH1-504T6FBN (LP)	48	50,000	93	52	75 ¹ / ₄	20	4 I.D., 6 O.D.	52 ¹ / ₄	15 ¹ / ₄	58 ³ / ₄	52 ¹ / ₄	59 ³ / ₄	15 ³ / ₄	31 ³ / ₄	197
DH1-65T6FBN (LP)	65	55,000	113	56	78 ¹ / ₄	22	4 I.D., 6 O.D.	56	15 ¹ / ₄	62	56	63	15 ³ / ₄	31 ³ / ₄	243
DH1-75S6FBN (LP)	75	60,000	125	61	75 ¹ / ₂	24 ¹ / ₂	4 I.D., 6 O.D.	52	15 ¹ / ₄	59	52	60	16 ¹ / ₂	35 ¹ / ₂	281

*Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

For 10 year models, change suffix from "6" to "10".

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

The Standard Vent Kit (239-42979-00) is ordered and shipped separately and the components are as follows:

4" vent tube, 6" Air Intake Tube, Vent Terminal, Inner Wall Term. Mounting Flange, Outer Wall Term.

Mounting Flange, Vent Terminal Hardware, RTV Silicone Sealant, 4" Vent Elbow and a 6" Air Intake Elbow.

The Vent Tube and Air Intake Tube provided in the same standard vent kit telescopes from 13³/₄" to 23¹/₆".

All models come standard with side connections for space heating 3/4" NPT.

Circulating Loop Installation Kit (Optional — Not included with the water heater)

265-43103-00 (Dielectric Unions, Isolation Valves and Extended Nipples)

Telescoping Solid Vent Kit (239-47810-00) or Flexible Vent Kit (239-47812-00) can be ordered and shipped with water heater, or ordered and shipped separately. For vent kit components and venting instructions, refer to Installation and Operating Manual.

Optional solid vent kit : Kit "F" Telescopes from 4³/₄" to 5¹/₆" Part No. 239-42516-00

Kit "G" Telescopes from 6¹/₂" to 9³/₈" Part No. 239-42517-00

Kit "H" Telescopes from 13³/₄" to 23¹/₆" Part No. 239-42514-00

Kit "I" Telescopes from 49¹/₁₆" to 95¹/₁₆" Part No. 239-42512-00

Horizontal Vent Termination Only.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
DH1-504T6FSX	48,000 BTU/Hr.	50
DH1-65T6FSX	55,000 BTU/Hr.	58
DH1-75S6FSX	57,000 BTU/Hr.	60



EVERHOT® Gas Tankless Water Heater



50/51



- **ENERGY STAR® Qualified**—These models qualify for the September 1st, 2010 minimum ENERGY STAR® EF requirement, as well as most utility rebate programs.
- **Interior and Exterior Models**—Twelve units (Natural Gas and Propane Gas) with self regulating maximum BTU/hr. inputs ranging from 150,000-199,000.
- **Digital Main Controller**—Interior models have a digital controller integrated into the front panel of the water heater with a default temperature range of 96°F-120°F (140°F maximum). Exterior models are shipped with a primary remote controller with a default temperature range of 96°F-120°F (140°F maximum). An optional Main Controller/Residential (p/n 239-44509-00) can be wired remotely and provides a default temperature range of 96°F-120°F (140°F maximum).
- **Commercial Conversion Capability**—For application flexibility, all models can be converted to a commercial model with the use of a commercial controller.

- **Commercial Controller**—An optional Main Controller/Commercial (p/n 239-47805-00) is available for commercial and hydronic applications (maximum temperature setting for each model on reverse side).
- **Continuous Flow**—Supplies hot water continuously at the temperature set point.
- **Heat Exchanger**—Nine pass design to maximize heat transfer and efficiency.
- **Direct Electronic Ignition**—No standing pilot.
- **Fully Automatic Controls**—Outgoing water temperature is monitored by a built-in sensor. Burner and combustion blower modulate between minimum and maximum input to maintain setpoint temperature.
- **Diagnostic Capabilities**—Error messages in numerical codes are displayed on primary control.
- **Space Saving Installation**—Compact size for tight installations (mounts on the wall).
- **Lime Accumulation Sensor**—Built into the heat exchanger to alert of build-up.

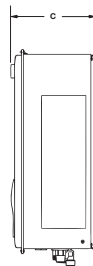
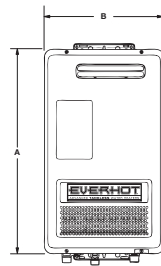
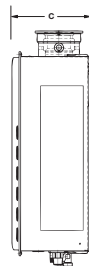
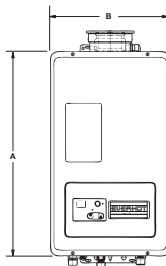
- **Co-Axial Venting**—Interior models can be vented horizontally through a wall or vertically through the roof. Maximum equivalent vent length is 41ft. Interior models have dedicated venting system components that must be ordered separately (see I&O manual for specific venting components).



Interior



Exterior



EVERHOT® Tankless Gas Water Heater

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS

Model Number	Installation	Nat. and LP BTU/Hr. Input	GPM Flow Rate at °F Temperature Rise			EF Rating Nat. and LP	GPM Flow Rate		Comm. Control Maximum Temperature Setting	A	B	C	Approx. Shipping Weight (lbs.)
			35°F	65°F	100°F		Min.	Max.		Height	Width	Depth	
TG-150I-N	Indoor	15,000-150,000	5.0	4.2	2.5	0.82	0.6	5.0	160°F	23	14	9½	50
TG-150E-N	Outdoor	15,000-150,000	5.0	4.2	2.5	0.82	0.6	5.0	160°F	20	14	7	37
TG-180I-N	Indoor	15,000-180,000	7.5	4.6	3.0	0.82	0.6	7.5	160°F	23	14	9½	50
TG-180E-N	Outdoor	15,000-180,000	7.5	4.6	3.0	0.82	0.6	7.5	160°F	23	14	10	46
TG-199I-N	Indoor	15,000-199,000	9.4	5.0	3.3	0.82	0.6	9.4	180°F	23	14	9½	50
TG-199E-N	Outdoor	15,000-199,000*	9.4	5.0	3.3	0.82	0.6	9.4	180°F	23	14	10	46

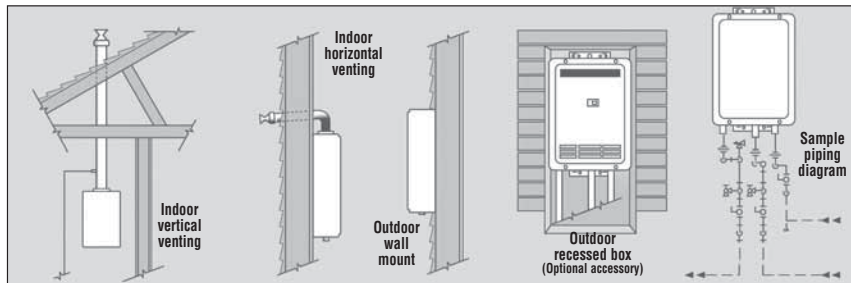
*LP Input is 190,000.

For LP Models change suffix "N" to "X".

Low Nox emissions less than 40 ppm.

Note: Not recommended for use as a booster.

Requires 120 volt service and a 15 amp breaker.





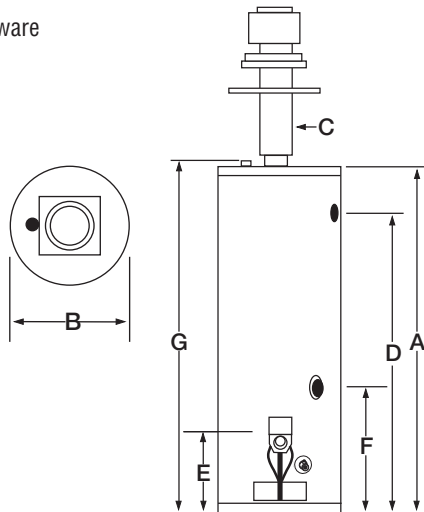
Residential Gas Energy Saver Manufactured Home Water Heaters

52/53



Direct Vent:

- Closed combustion vent package including air intake tube, roof jack and hardware
(Must be ordered with heater, not included in heater carton.)
- Vitraglas® Lining
- Convertible control for use with propane or natural gas
- Water Connections 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps (on hot water outlet side)
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
M-I-MS30T6LX

Direct Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
76% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	
Model Number	Gal. Cap.	Nat./LP Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Top of Heater	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Cold Water Inlet	Floor to Hot Water Outlet	Approx. Shipping Weight (lbs)
M-I-MS30T6LX	30	30,000	52	31	57 ³ / ₈	16	3	50	13 ³ / ₄	22 ¹ / ₂	58 ³ / ₈	106
M-I-MS40T6LX	40	30,000	59	31	57 ⁷ / ₈	18	3	50	13 ³ / ₄	22 ¹ / ₂	58 ⁷ / ₈	126

To order Natural Gas heaters change "X" to "N".

Design evaluated in accordance with the H.U.D. Manufactured Home Construction and Safety Standards, Title 24 CFR, Part 3280.707(d)(2) for energy efficiency.

For 10 year models, change suffix from "6" to "10".

The cold water inlet is on the side and the hot water outlet is on the top.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory

* Based on manufacturers rated recovery efficiency.



Residential Gas Energy Saver FVIR Manufactured Home Water Heaters

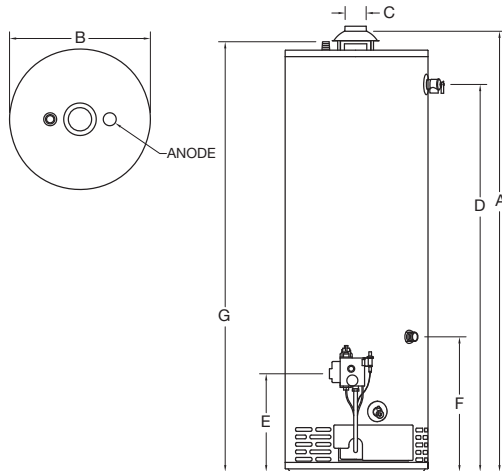
54/55



DEFENDER SAFETY SYSTEM®

Atmospheric Vent:

- Advanced ScreenLok® Technology Flame Arrestor Design
- Resettable thermal switch
- Piezo igniter
- Roof jack package for installation flexibility.
(Must be ordered with heater, not included in heater carton.)
- Vitraglas® Lining
- Convertible control for use with propane or natural gas.
- Water Connections 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC foam insulation
- Factory installed heat traps (On hot water outlet side)
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
M-I-MH30T6FLX

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
77% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G		
Model Number	Gal. Cap.	Nat./LP Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Dia.	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Cold Water Inlet	Floor to Hot Water Outlet	Depth	Approx. Shipping Weight (lbs)
M-I-MH30T6FLX	30	32,000	56	33	59 ¹ / ₈	16	3x4	50	13	22 ¹ / ₄	57 ¹ / ₂	20	104
M-I-MH40T6FLX	40	34,000	60	35	59 ³ / ₈	18	3x4	50	13	22 ¹ / ₄	57 ³ / ₄	22	120

* Based on manufacturers rated recovery efficiency.

To order Natural Gas heaters change "X" to "N".

For 10 year models, change suffix from "6" to "10".

Not approved for installation where a direct vent/closed combustion system is required.

Design evaluated in accordance with the H.U.D. Manufactured Home Construction and Safety Standards, Title 24 CFR, Part 3280.707(d)(2) for energy efficiency.

The cold water inlet is on the side and the hot water outlet is on the top.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory



Residential Gas Energy Saver Ultra High Efficiency Water Heaters

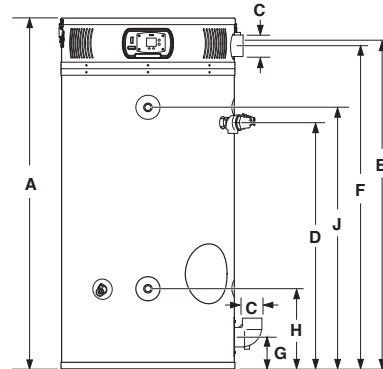
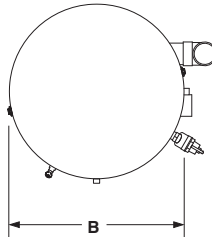
56/57



- 95% thermal efficiency
- Low NOx premix power burner
- Self compensating negative pressure combustion system
- Honeywell integrated control
- Two different digitally displayed operation modes
- Can vent vertically or horizontally
- Supplemental heating capability—two 1" NPT side connections
- Factory installed Hydrojet® Total Performance System
- Vitraglas® Lining
- Direct spark ignition
- Water connections 1" NPT factory installed true dielectric fittings
- 1" Non-CFC foam insulation

- Optional concentric vent kit termination
- Thermostatic mixing device included

- 4 protective magnesium anode rod
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
EFR-1-60T1206EN

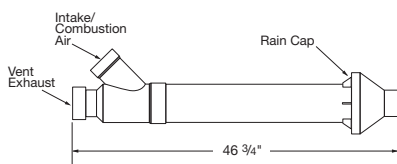
eF Series® Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
95% Thermal Efficiency

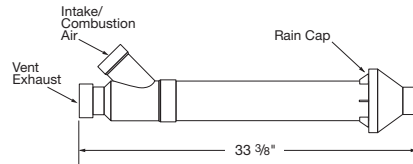
DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	J	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Heater Top	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Air Intake Conn.	Floor to Exhaust Vent Conn.	Floor to Cold Water Inlet	Floor to Hot Water Outlet	Approx. Shipping Weight (lbs)
EFR-1-60T1206EN	60	120,000	154	57	28 ¹ / ₄	3	40	53 ¹ / ₂	52 ¹ / ₂	5	13	42 ¹ / ₂	570

* Based on manufacturers rated recovery efficiency.
For propane (LP) models change suffix "EN" to "SX".



Optional 3" Concentric Vent Terminal Kit
P/N 239-44069-01



Optional 2" Concentric Vent Terminal Kit
P/N 239-44069-02

2" Vent Pipe		Power Direct Vent	Power Vent
Max. Intake Length		30 ft.	N/A
Max. Exhaust Length		30 ft.	60 ft.
Min. Vent Length		7 ft.	7 ft.
Number of 90° Elbows†	1	25 ft.	55 ft.
	2	20 ft.	50 ft.
	3	15 ft.	45 ft.

3" Vent Pipe		Power Direct Vent	Power Vent
Max. Intake Length		60 ft.	N/A
Max. Exhaust Length		60 ft.	120 ft.
Min. Vent Length		7 ft.	7 ft.
Number of 90° Elbows†	1	55 ft.	115 ft.
	2	50 ft.	110 ft.
	3	45 ft.	105 ft.

4" Vent Pipe		Power Direct Vent	Power Vent
Max. Intake Length		85 ft.	N/A
Max. Exhaust Length		85 ft.	170 ft.
Min. Vent Length		7 ft.	7 ft.
Number of 90° Elbows†	1	80 ft.	165 ft.
	2	75 ft.	160 ft.
	3	70 ft.	155 ft.

Note: Air intake cannot exceed exhaust by more than 30 ft. in any venting situation. Subtract 5ft. for each additional 90° elbow.

†Consult I&O Manual when using four or more elbows.



Residential Electric Energy Saver Water Heaters

58/59



General

All models are UL listed. All water connections are ¾" NPT factory installed true dielectric fittings (M-2-120R has 1" dielectric waterway fittings). All electrical connections are ¾". All models are certified at 300 PSI test pressure and 150 PSI working pressure. All models come equipped with two installed heat traps (except Utility, Wall Hung models, M-1-20L and M-2-120R).

Note: The **Upright** and **Lowboy** heaters will be wired single phase interlocking (non-simultaneous) 240 volt with 4500 watt elements, unless otherwise specified. Other wattages are available up to 6000 watts (208, 240, 277 and 480 volt). (Reference chart on following page for non-simultaneous and simultaneous limitations). 4500 watt/240 volt elements require a 25 amp circuit breaker. For 120 volt (non-simultaneous), all models have a maximum wattage of 3000. (120 and 277 volt can only be wired single phase.)

Note: The **Utility** and **Wall Hung** Heaters will be wired for 120 volt with a 1500 watt element. 1500 watt/120 volt element requires a 20 amp breaker. Other wattages are available. Maximum wattage for 6, 10, 12 and 15 gallon capacities is 3000 watt. (Reference chart on following page for single element limitations).

Maximum wattage for 19 and 30 gallon sizes is 6000 watt (208, 240, 277 and 480 volt). For 120V (non-simultaneous), all models have a maximum wattage of 3000 watts. (120 and 277 volt can only be wired single phase.)

Incoloy Element Availability Chart

Watts	120V	208V	240V	277V	480V
1500	yes	yes	yes	no	no
2000	no	yes	yes	yes	yes
2500	no	yes	yes	no	no
3000	no	yes	yes	yes	yes
3500	no	yes	yes	no	no
4000	no	yes	yes	yes	yes
4500	no	yes	yes	yes	yes
5000	no	yes	yes	yes	yes
5500	no	yes	yes	yes	yes
6000	no	yes	yes	yes	yes

Phase	1	Single Phase
	3	Three Phase

EX: M240T6DS-1NCWW

Operation	N	Non-simultaneous
	S	Simultaneous

EX: M240T6DS-1NCWW

Designator	A	C	E	H	J	L*
Voltage	120	208/240	277	480	600	208

EX: M240T6DS-1NCWW

*Use “L” voltage designator if wiring 208V with 5000, 5500 or 6000 watt.

Wattage Limitations for Simultaneous Operation	Voltage				
	120V	208V	240V	277V	480V
1500W / 1500W	yes	yes	yes	yes	yes
2000W / 2000W	no	yes	yes	yes	yes
2500W / 2500W	no	yes	yes	yes	yes
3000W / 3000W	no	yes	yes	yes	yes
3500W / 3500W	no	yes	yes	no	no
4000W / 4000W	no	yes	yes	yes	yes
4500W / 4500W	no	yes	yes	yes	yes
5000W / 5000W	no	yes	yes	yes	yes
5500W / 5500W	no	no	yes	no	no
6000W / 6000W	no	no	no	yes	yes

Wattage Limitations for Non-Simultaneous Operation	Wattage Limitations for Single Element Operation	Voltage				
		120V	208V	240V	277V	480V
1500W / 1500W	1500W	yes	yes	yes	yes	yes
2000W / 2000W	2000W	yes	yes	yes	yes	yes
2500W / 2500W	2500W	yes	yes	yes	yes	yes
3000W / 3000W	3000W	yes	yes	yes	yes	yes
3500W / 3500W	3500W	no	yes	yes	no	no
4000W / 4000W	4000W	no	yes	yes	yes	yes
4500W / 4500W	4500W	no	yes	yes	yes	yes
5000W / 5000W	5000W	no	yes	yes	yes	yes
5500W / 5500W	5500W	no	yes	yes	no	no
6000W / 6000W	6000W	no	yes	yes	yes	yes

For 120V, 277V, 480V, and 600V operation

Designator	J	K	L	M	N	P	R	S	T	W	X	Y	Z
Watt	1000	1250	1500	2000	2500	3000	3500	3800	4000	4500	5000	5500	6000

EX: M240T6DS-1NCWW

For 240V and 208V operation (Dual rated elements show a value for both 240V and 208V)

Designator	J	K	L	M	N	P	R	S	T	W	X	Y	Z	X**	Y**	Z**
240V Wattage	1000	1250	1500	2000	2500	3000	3500	3800	4000	4500	5000	5500	6000	—	—	—
208V Wattage	—	—	1000	1500	2000	—	2500	—	3000	3500	—	4000	4500	5000	5500†	6000†

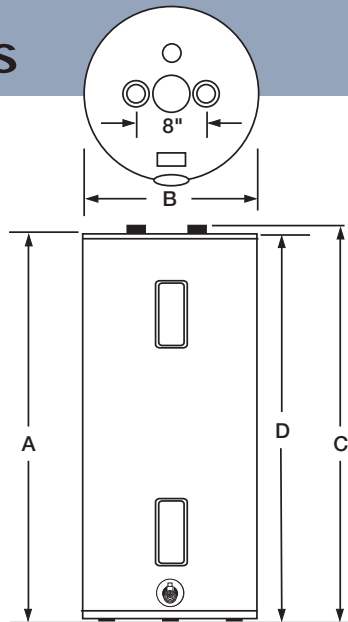
EX: M240T6DS-1NCWW, will give 240V with 4500W/4500W. This same heater can also be energized at 208V with reduced wattage of 3500W/3500W.

**Use “L” voltage designator if wiring 208V with 5000, 5500 or 6000 watt.

†Available in non-simultaneous only.

Residential Electric Energy Saver Water Heaters

- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings (M-2-120R has 1" NPT dielectric fittings)
- 2" Non-CFC foam insulation
- Fully automatic controls
- Direct heat transfer with immersed screw-type elements
- Protective magnesium anode rod
- Factory installed heat traps (Except M-2-120R)
- T&P relief valve included
- Low restriction brass drain valve



60/61



Photograph is of
M-2-50T6DS

Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

DIMENSIONS IN INCHES

ELECTRIC				A	B	C	D	
Model Number	Gallon Capacity	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Heater Top	Jacket Diameter	Floor to Water Conn.	Floor to T&P Conn.	Approx. Shipping Weight (lbs)
M-2-30R6DS	30	50	20	47 ³ / ₁₆	18	48 ³ / ₁₆	47 ³ / ₁₆	85
M-2-40S6DS	40	56	20	46 ⁷ / ₈	20	47 ⁷ / ₈	46 ⁷ / ₈	103
M-2-40T6DS	40	56	20	59 ³ / ₄	18	60 ³ / ₄	59 ³ / ₄	110
M-2-50S6DS†	50	67	20	46 ¹ / ₂	22	47 ¹ / ₂	46 ¹ / ₂	130
M-2-50T6DS	50	67	20	57 ¹ / ₂	20	58 ¹ / ₄	57 ¹ / ₂	123
M-2-65R6DS	65	77	20	59 ¹ / ₄	22	60 ¹ / ₄	59 ¹ / ₄	156
M-2-80R6DS	80	92	20	59	24	60 ¹ / ₄	59 ¹ / ₄	183
M-2-120R6DS	119	118	20	62 ³ / ₄	28	64 ¹ / ₄	62 ¹ / ₄	305

*Based on 4500 W/4500 W non-simultaneous operation.

For single element models change letter "D" to "S".

For 10 year models change suffix from "6" to "10".

†Available with Optional Hand Hole Cleanout.

T&P relief valve opening on the top of the tank.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

Refer to page 58/59 for general notes.

Wattage	Recovery ▲ GPH Temperature Rise °F				
	60	80	90	100	120
1500	10	8	7	6	5
2000	14	10	9	8	7
2500	17	13	11	10	9
3000	21	15	14	12	10
3500	24	18	16	14	12
4000	28	21	18	16	14
4500	31	23	20	19	15
5000	34	26	23	21	17
5500	38	29	25	23	19
6000	41	31	28	25	21

▲(GPH based on Non-Simultaneous operation, when Simultaneous operation the GPH will approximately double.)

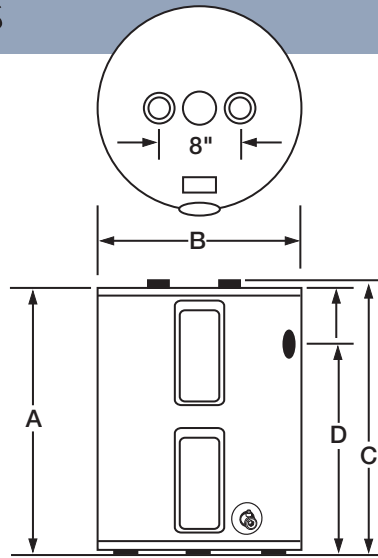


Residential Electric Energy Saver Lowboy Water Heaters

62/63



- Lowboy models are offered with optional side/top T&P relief valve location (**Must be specified when ordering**)
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation (except M-1 models)
- Fully automatic controls
- Direct heat transfer with immersed screw-type elements
- Protective magnesium anode rod
- Factory installed heat traps (Except M-1-20L)
- T&P relief valve included
- Low restriction brass drain valve



"D" Dimension listed as Side/Tap



Photograph is of
M-2-40L6DS

Lowboy Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

DIMENSIONS IN INCHES

ELECTRIC				A	B	C	D	
Model Number	Gallon Capacity	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Heater Top	Jacket Diameter	Floor to Water Conn.	Floor to T&P Conn.	Approx. Shipping Weight (lbs)
M-1-20L6DS	19	—	20	24 ⁷ / ₈	18	25 ⁷ / ₈	19 ¹ / ₄ /24 ⁷ / ₈	58
M-1-30L6DS	30	47	20	30	20	30 ⁵ / ₈	24/29 ³ / ₈	86
M-2-30L6DS	30	47	20	30	22	31	24 ¹ / ₈ /31 ¹ / ₄	96
M-1-40L6DS	40	58	20	31 ¹ / ₄	22	32 ⁷ / ₈	24 ¹ / ₈ /31 ³ / ₄	115
M-2-40L6DS	40	58	20	32 ¹ / ₈	24	33 ¹ / ₈	24 ¹ / ₈ /33 ³ / ₈	121
M-1-50L6DS	47	67	20	31 ³ / ₄	24	33 ¹ / ₈	24 ¹ / ₈ /31 ³ / ₄	140
M-2-50L6DS	47	67	20	32 ¹ / ₈	26	33 ¹ / ₈	24 ¹ / ₈ /33 ³ / ₈	143

M-1-30L, M-1-40L and M-1-50L models supplied with insulation jacket in order to meet efficiency requirements of the Department of Energy.

*Based on 4500 W/4500 W non-simultaneous operation.

For single element models change letter “D” to “S”.

For 10 year models, change number from “6” to “10”.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

Refer to page 58/59 for general notes.

Wattage	Recovery ▲ GPH Temperature Rise °F				
	60	80	90	100	120
1500	10	8	7	6	5
2000	14	10	9	8	7
2500	17	13	11	10	9
3000	21	15	14	12	10
3500	24	18	16	14	12
4000	28	21	18	16	14
4500	31	23	20	19	15
5000	34	26	23	21	17
5500	38	29	25	23	19
6000	41	31	28	25	21

▲(GPH based on Non-Simultaneous operation, when Simultaneous operation the GPH will approximately double.)

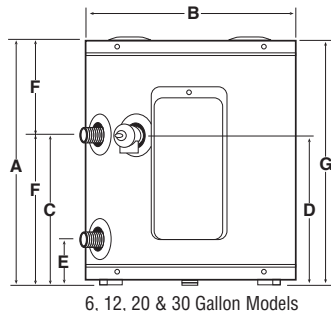


Residential Electric Energy Saver Utility Water Heaters

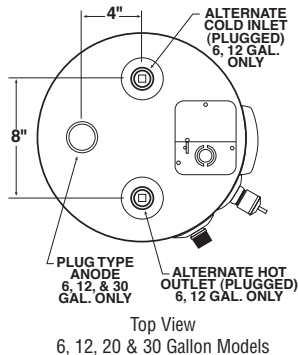
64/65



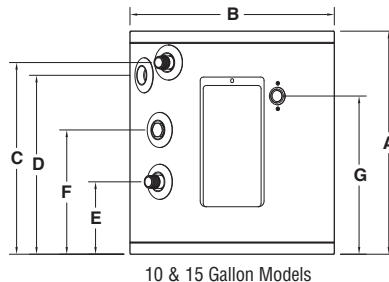
- Side connections for cold water inlet and hot water outlet allows installation in tight places
- 6 and 12 gallon models come equipped with alternate water connections tappings on top
- Vitraglas® lining



- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC foam insulation (M-2-30 has 2" of insulation)



- Direct heat transfer with immersed screw-type elements
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
M-1-12UT6SS

Utility Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

DIMENSIONS IN INCHES

ELECTRIC				A	B	C	D	E	F	G	
Model Number	Gallon Capacity	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Heater Top	Jacket Diameter	Floor to Hot Water Conn.	Floor to T&P Conn.	Floor to Cold Water Conn.	Floor to Anode Rod	Floor to Electrical Access	Approx. Shipping Weight (lbs)
M-1-6U6SS†	6	—	7	16½	14	10⅛	10⅛	3⅛	16½	16½	33
M-1-10U6SS†	10	—	7	17½	16	15	14	5⅛	9⅛	12	48
M-1-12U6SS†	12	—	7	16⅞	18	10¼	10¼	3	16½	16⅞	48
M-1-12UT6SS†	12	—	7	27¾	14	21⅛	21⅛	3	27¾	27¾	48
M-1-15U6SS†	15	—	7	20¼	18	17¾	16¾	6⅛	10⅛	12⅛	55
M-1-20U6SS	19	—	7	24¾	18	18¼	18¼	3	10¼	24¾	59
M-2-30U6SS	30	19	7	30	22	23½	23½	4½	30	30	82

* Based on 1500 W element operation.

First suffix letter “S” indicates single element.

For 10 year models, change number from “6” to “10”.

Refer to page 58/59 for general notes.

†Maximum wattage at any voltage is 3000W.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

Wattage	Recovery GPH Temperature Rise °F				
	60	80	90	100	120
1500	10	8	7	6	5
2000	14	10	9	8	7
2500	17	13	11	10	9
3000	21	15	14	12	10
3500	24	18	16	14	12
4000	28	21	18	16	14
4500	31	23	20	19	15
5000	34	26	23	21	17
5500	38	29	25	23	19
6000	41	31	28	25	21

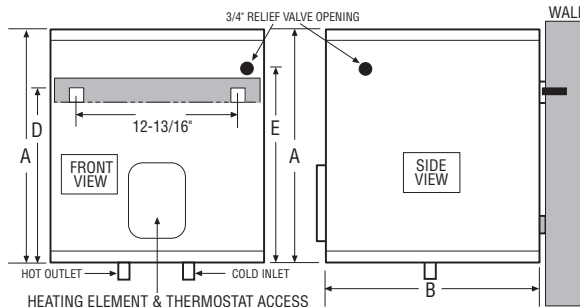
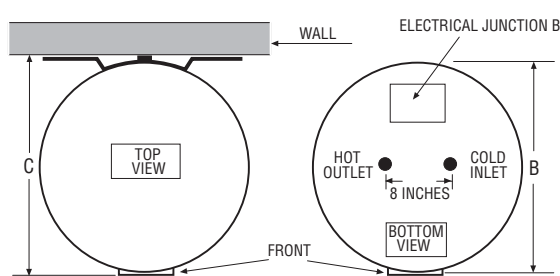


Residential Electric Energy Saver Wall Hung Water Heaters

66/67



- Vitraglas® lining
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- Factory installed heavy duty wall mounting bracket
- 1" Non-CFC foam insulation – surrounds the tank surface (the M-2-WH30 has 2" Non-CFC foam insulation)
- Fully automatic controls
- Direct heat transfer with immersed screw-type elements
- Protective magnesium anode rod
- T&P relief valve included



Photograph is of
M-1-WH20L6SS

Wall Hung Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

DIMENSIONS IN INCHES

ELECTRIC				A	B	C	D	E	
Model Number	Gallon Capacity	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Heater Top	Jacket Diameter	Wall to Front	Floor to Bracket	Floor to T&P Conn.	Approx. Shipping Weight (lbs)
M-1-WH6U6SS†	6	—	7	15 ³ / ₄	14	14 ⁵ / ₈	11 ³ / ₄	11 ⁷ / ₈	33
M-1-WH12U6SS†	12	—	7	16 ³ / ₈	18	18 ⁵ / ₈	12 ³ / ₄	12 ¹ / ₂	47
M-1-WH20L6SS	19	—	7	24 ³ / ₈	18	18 ⁵ / ₈	18 ¹ / ₄	21	58
M-2-WH30L6SS	30	19	7	29 ¹ / ₄	22	20 ⁵ / ₈	23	25 ³ / ₄	86

*Based on 1500 W element operation.

Suffix letter “S” indicates single element.

For 10 year models, change suffix number from “6” to “10”.

Refer to page 58/59 for general notes.

†Maximum wattage at any voltage is 3000W.

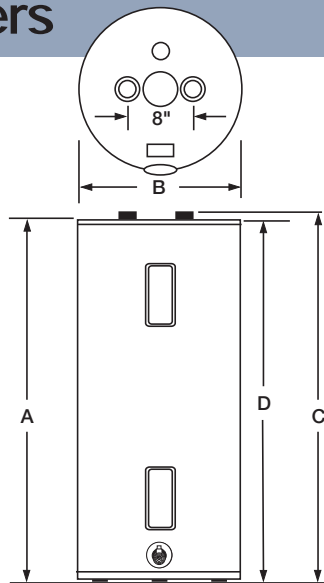
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

Wattage	Recovery GPH Temperature Rise °F				
	60	80	90	100	120
1500	10	8	7	6	5
2000	14	10	9	8	7
2500	17	13	11	10	9
3000	21	15	14	12	10
3500	24	18	16	14	12
4000	28	21	18	16	14
4500	31	23	20	19	15
5000	34	26	23	21	17
5500	38	29	25	23	19
6000	41	31	28	25	21



Residential Electric Energy Saver High Efficiency Water Heaters

- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation
- Fully automatic controls
- Direct heat transfer with Immersion elements
- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve included
- Low restriction brass drain valve



68/69



Photograph is of
M-2-HE50S6DS

High Efficiency Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

DIMENSIONS IN INCHES

ELECTRIC				A	B	C	D	
Model Number	Gallon Capacity	1st Hour** Delivery Rating	GPH Recovery 90°F Rise*	Floor to Heater Top	Jacket Diameter	Floor to Water Conn.	Floor to T&P Conn.	Approx. Shipping Weight (lbs)
M-2-HE40S6DS	40	57	20	47 ⁷ / ₈	20	48 ⁷ / ₈	47 ⁷ / ₈	118
M-2-HE50S6DS	50	67	20	47 ¹ / ₂	22	48 ¹ / ₂	47 ¹ / ₂	131
M-2-HE65R6DS	65	77	20	60 ¹ / ₄	22	61 ¹ / ₄	60 ¹ / ₄	160
M-2-HE80R6DS	80	92	20	60 ¹ / ₄	24	61 ¹ / ₄	60 ¹ / ₄	191

*Based on 4500 W/4500 W non-simultaneous operation.

For single element change suffix letter "D" to "S".

For 10 year models, change suffix number from "6" to "10".

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

Refer to page 58/59 for general notes.

Wattage	Recovery ▲ GPH Temperature Rise °F				
	60	80	90	100	120
1500	10	8	7	6	5
2000	14	10	9	8	7
2500	17	13	11	10	9
3000	21	15	14	12	10
3500	24	18	16	14	12
4000	28	21	18	16	14
4500	31	23	20	19	15
5000	34	26	23	21	17
5500	38	29	25	23	19
6000	41	31	28	25	21

▲(GPH based on Non-Simultaneous operation, when Simultaneous operation the GPH will approximately double.)



Residential Electric Energy Saver Powerful Compact Water Heater

70/71



- Ideal for use wherever remote hot water is needed – in offices, stores, work stations, etc.
- Compact Design – (12¼" H x 9⅞" Dia.), handsome and easy to install
- Operates on ordinary house current (110-120 volts - 1500 watts)
- Temperature range of 110°-160°F
- Deep-drawn steel tank with exclusive Vitraglas® lining
- Fully-automatic controls
- 4' cord includes 3-prong, grounded plug
- T&P relief valve included
- Steel Jacket – with special coating that inhibits rust and corrosion

Optional Features:

- Wall mounting brackets
- Aluminum anode rod
- NC compliant



Photograph is of
M1-2U6SS

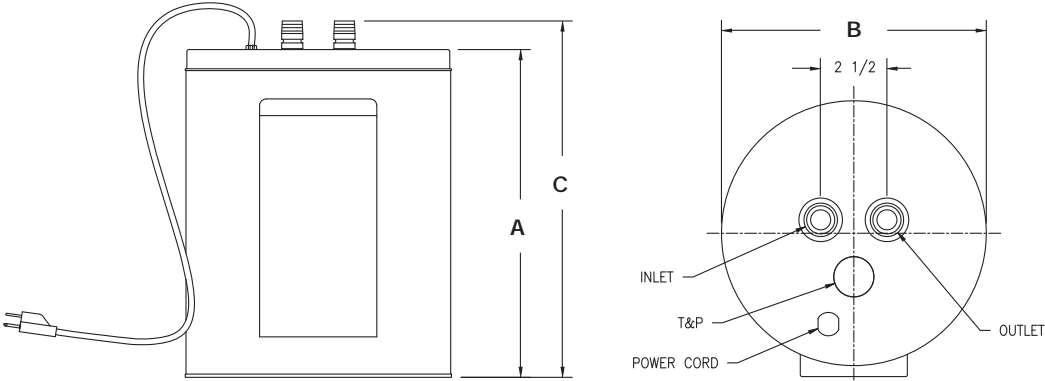
Powerful Compact Electric Model

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

DIMENSIONS IN INCHES

ELECTRIC				A	B	C	
Model Number	Gallon Capacity	GPH Recovery 90°F Rise*	Style	Floor to Heater Top	Jacket Diameter	Floor to Water Conn.	Approx. Shipping Weight (lbs)
M1-2U6SS	2	7	Utility	12¼	9⅞	13 ⁵ / ₁₆	14

*Based on 1500 W element operation.
For 10 year models, change number “6” to “10”.
Water connections are 3/4” NPT.



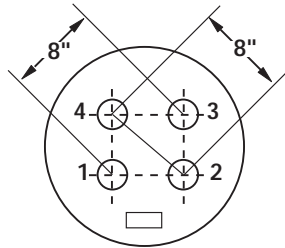


Solar Saver® Series – Electric Solar Water Heaters

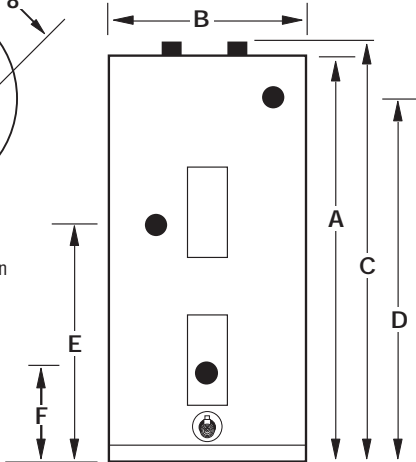
72/73



- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Equipped with a 4500 watt element and automatic thermostat – where a back up system is desired. If storage only is desired do not connect the unit to the electrical service.
- Top of tank access for wiring and water connections
- Pre-wired sensor lead
- Thermal feet
- Water connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- Consult factory for other wattages
- T&P relief valve included
- Low restriction brass drain valve



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



Photograph is of
MS80R6SS

Solar Models

DIMENSIONS IN INCHES

Meet or exceed ASHRAE 90.1b (current standard)

SOLAR		A	B	C	D	E	F	
Model Number	Gal. Cap.	Floor to Heater Top	Jacket Dia.	Floor to Water Conn.	Floor to T&P Conn.	Fl. to Alt. Coll. Return Conn.	Fl. to Alt. Coll. Supply Conn.	Approx. Shipping Weight (lbs)
MS65R6SS	65	59	22	60	52½	—	—	168
MS80R6SS†	80	59	24	60	52½	38	7⅞	210
MS120R6SS†	119	62½	28	63½	56	38¼	7⅞	310

NOTE: Suffix letter “S” denotes single element and surface mounted thermostat.

If requirements are for storage only, do not use element connections.

Second suffix letter “S” denotes Screw-Type Element. Meets California Energy Commission requirements.

†Models offer optional pump suction and collector return connections.



EcoStor™ SC Solar Indirect System

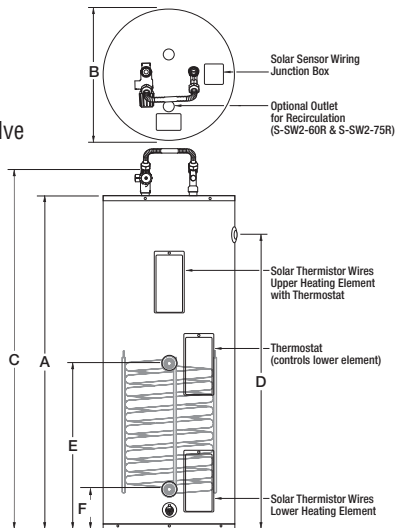
Single Coil With Electric Backup Water Heaters

74/75



- Heat exchanger – Single wall 1½" O.D. glass coated (Vitrage®) steel coil
- Supplied sensor wires for solar thermistor connections
- Integrated Mixing Device
- Element backup – Single or dual 4500W heating elements
- Factory installed Hydrojet® Total Performance System
- Vitrage® lining
- 1" NPT female connections on front for supply and return
- Potable water connections – 3/4" NPT factory installed true dielectric fittings

- 2" Non-CFC foam insulation
- Two protective anode rods
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
S-SW2-60R6DS

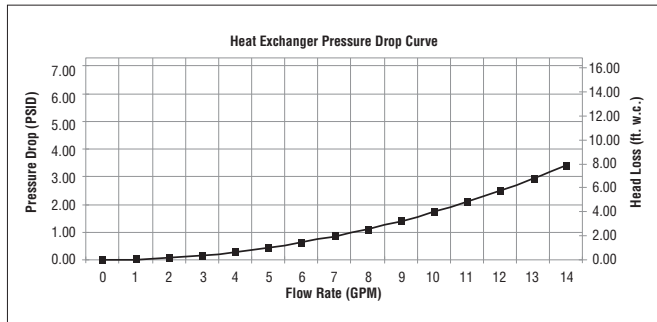
EcoStor™ Single-Wall Solar Indirect Models

DIMENSIONS IN INCHES

SOLAR		A	B	C	D	E	F	
Model Number	Gal. Cap.	Floor to Heater Top	Jacket Dia.	Floor to Water Conn.	Floor to T&P Conn.	Floor to Solar Coll. Supply	Floor to Solar Coll. Return	Approx. Shipping Weight (lbs)
S-SW2-60R6DS	60	59 ¹ / ₄	22	63 ¹ / ₄	53	29 ¹ / ₂	7 ³ / ₈	210
S-SW2-75R6DS	75	59 ¹ / ₄	24	63 ¹ / ₄	53	29 ¹ / ₂	7 ³ / ₈	236
S-SW2-115R6DS	115	62 ³ / ₄	28 ¹ / ₂	66 ¹ / ₂	55 ³ / ₄	29 ¹ / ₂	7 ³ / ₈	340

For single element models change "D" to "S".

(Ex. S-SW2-60R6SS)



Electric Backup Water Heating Ratings

Model Number	First Hour Supply (Gal.)		Standby Heat Loss Rating (°F/Hr.)
	Single Element	Dual Element	
S-SW2-60R6DS	46	84	1.1
S-SW2-75R6DS	53	97	0.9
S-SW2-115R6DS	83	124	0.7



EcoStor2™ SC Solar Indirect System

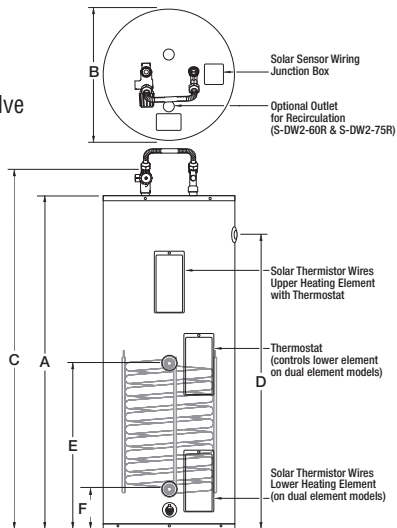
Single Coil With Electric Backup Water Heaters

76/77



- Heat exchanger – Double wall 1½" O.D. glass coated (Vitrage®) steel coil
- Supplied sensor wires for solar thermistor connections
- Integrated Mixing Device
- Element backup – Single or dual 4500W heating elements
- Factory installed Hydrojet® Total Performance System
- Vitrage® lining
- 3/4" NPT female connections on front for supply and return
- Potable water connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation

- Two protective anode rods
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
S-DW2-60R6DS

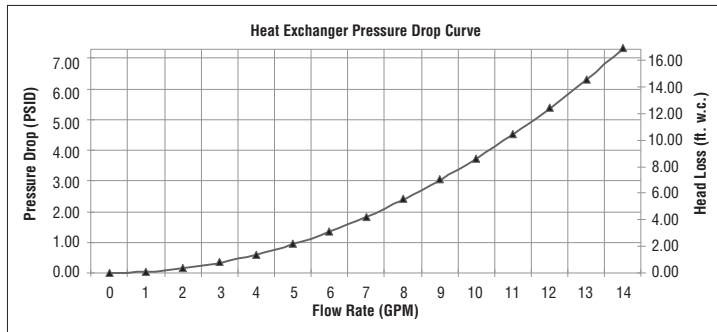
EcoStor2™ Double-Wall Solar Indirect Models

DIMENSIONS IN INCHES

SOLAR		A	B	C	D	E	F	
Model Number	Gal. Cap.	Floor to Heater Top	Jacket Dia.	Floor to Water Conn.	Floor to T&P Conn.	Floor to Solar Coll. Supply	Floor to Solar Coll. Return	Approx. Shipping Weight (lbs)
S-DW2-60R6DS	60	59 ¹ / ₄	22	63 ¹ / ₂	53	29 ¹ / ₂	7 ³ / ₈	217
S-DW2-75R6DS	75	59 ¹ / ₄	24	63 ¹ / ₂	53	29 ¹ / ₂	7 ³ / ₈	241
S-DW2-115R6DS	115	62 ³ / ₄	28 ¹ / ₄	66 ³ / ₄	55 ³ / ₄	29 ¹ / ₂	7 ³ / ₈	345

For single element models change "D" to "S".

(Ex. S-DW2-60R6SS)



Electric Backup Water Heating Ratings

Model Number	First Hour Supply (Gal.)		Standby Heat Loss Rating (°F/Hr.)
	Single Element	Dual Element	
S-DW2-60R6DS	46	84	1.1
S-DW2-75R6DS	53	97	0.9
S-DW2-115R6DS	83	124	0.7

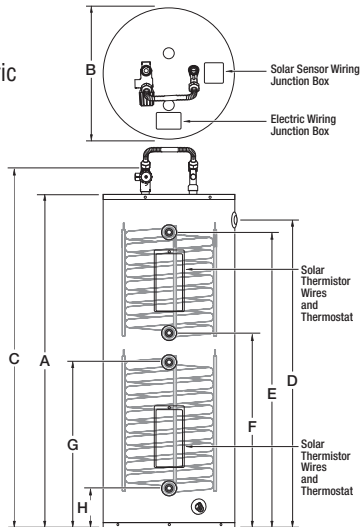


EcoStor™ DC Solar Indirect System Dual Coil Heat Exchanger Backup Water Heaters

78/79



- Applications—Dual heat exchangers located inside the tank may be connected to a variety of different heating systems
- Dual coil design—A single wall heat exchanger is located in the upper portion of the tank. A double wall heat exchanger is located in the lower portion of the tank
- Sensor wires for solar thermistor connections
- Integrated Mixing Device
- Factory Installed Hydrojet® Total Performance System
- Vitraglas® lining
- Supply and return connections—1" NPT upper coil, 3/4" NPT lower coil
- 2" Non-CFC Foam Insulation
- Potable water connections—3/4" NPT factory installed true dielectric fittings extend water heater life and eases installation
- Two protective anode rods
- T&P relief valve included
- Low restriction brass drain valve

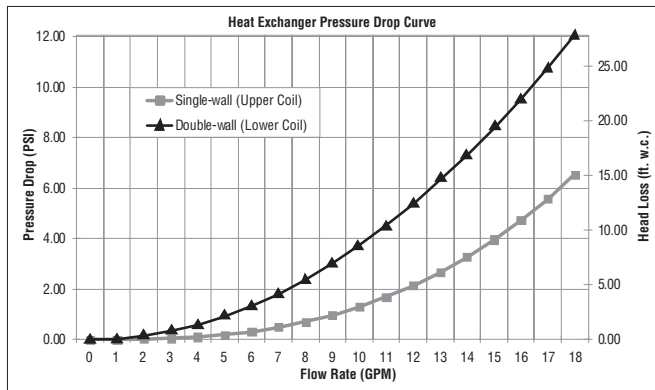


Photograph is of
S-DC-DW2-55R6SW

EcoStor™ Solar Indirect Models

DIMENSIONS IN INCHES

SOLAR		A	B	C	D	E	F	G	H	
Model Number	Gal. Cap.	Floor to Heater Top	Jacket Dia.	Floor to Water Conn.	Floor to T&P Conn.	Floor to Upper Coll. Supply	Floor to Upper Coll. Return	Floor to Lower Coll. Supply	Floor to Lower Coll. Return	Approx. Shipping Weight (lbs)
S-DC-DW2-55R6SW	50	59 ¹ / ₄	22	63 ¹ / ₄	53	56	37 ¹ / ₂	27 ¹ / ₂	5 ³ / ₈	282
S-DC-DW2-70R6SW	70	59 ¹ / ₄	24	63 ¹ / ₄	53	56	37 ¹ / ₂	27 ¹ / ₂	5 ³ / ₈	313
S-DC-DW2-110R6SW	110	62 ¹ / ₂	28 ¹ / ₄	66 ¹ / ₂	55 ³ / ₄	57 ³ / ₄	39 ¹ / ₄	27 ¹ / ₂	5 ³ / ₈	442





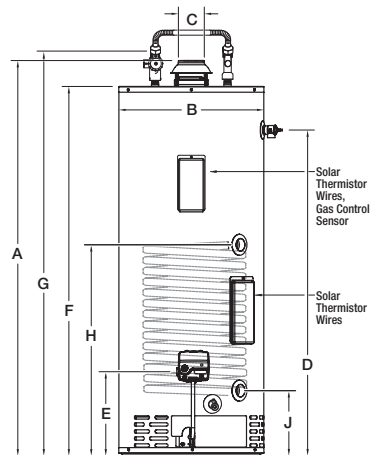
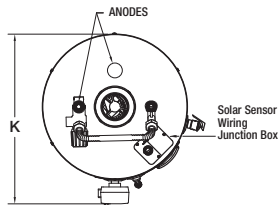
EcoStor2™ SC Solar Indirect System Single Coil Gas Backup Models

80/81



DEFENDER SAFETY SYSTEM™

- Backup Low NOx Burner
- Heat exchanger – Double wall 1½" O.D. glass coated (Vitrage®) steel coil
- Self diagnostic Honeywell gas control
- Sensor wires for solar thermistor connections
- Integrated Mixing Device
- Factory Installed Hydrojet® Total Performance System
- Vitrage® lining
- 3/4" NPT female connections on front for supply and return
- 2" Non-CFC Foam Insulation
- Potable water connections—3/4" NPT factory installed true dielectric fittings
- Two protective anode rods
- T&P relief valve included
- Low restriction brass drain valve
- S-DW2-75 is not FVIR



Photograph is of
S-DW2-504T6FBN

EcoStor™ Double-Wall Solar Indirect Models

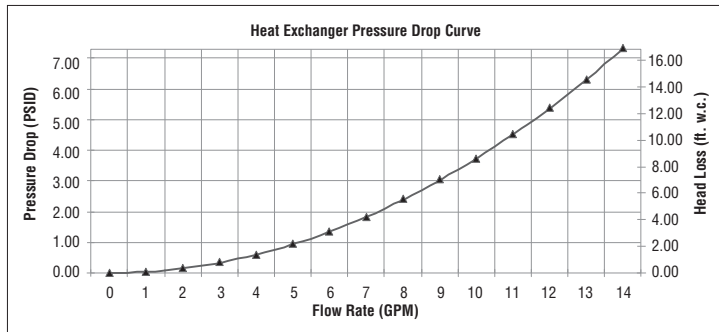
Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Heater Top	Floor to Water Conn.	Floor to Solar Collector Supply	Floor to Solar Collector Return	Depth	Approx. Shipping Weight (lbs)
S-DW2-504T6FBN(LP)	45	65,000	69	59¼	22	4	50	11¾	56	60	32¼	10⅛	26	150
S-DW2-65T6FBN(LP)	60	65,000	69	63	24	4	53½	11¾	59½	63¼	32¼	10⅛	28	200
S-DW2-75S6BN(LP)	75	76,000	82	62¾	26	4	52	14¾	59	63	34⅝	12½	30¾	306

* Based on manufacturers rated recovery efficiency.

Propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".



(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
S-DW2-504T6FSX	61,000 BTU/Hr.	65
S-DW2-65T6FSX	63,000 BTU/Hr.	67
S-DW2-75S6SX	76,000 BTU/Hr.	82

EcoStor2™ SC Solar Indirect System Single Coil Power Vent Gas Backup Models

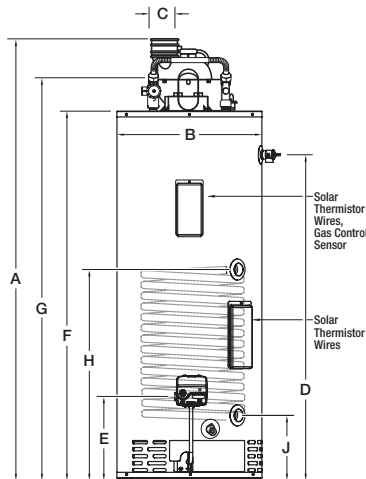
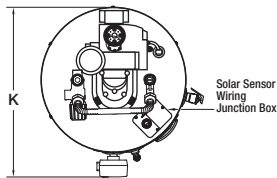
82/83



DEFENDER
SAFETY SYSTEM™

- Backup Low NOx Burner
- Heat exchanger – Double wall 1½" O.D. glass coated (Vitraglas®) steel coil
- Self diagnostic electronic Honeywell gas control
- Sensor wires for solar thermistor connections
- Horizontal and vertical venting
- Powerful blower motor
- Integrated Mixing Device
- Factory Installed Hydrojet® Total Performance System
- Vitraglas® lining
- Supply and return connections—¾" NPT
- 2" Non-CFC Foam Insulation

- Potable water connections—¾" NPT factory installed true dielectric fittings
- Two protective anode rods
- T&P relief valve included
- Low restriction brass drain valve
- S-DW2-TW-75 is not FVIR



Photograph is of
S-DW2-TW-65T6FBN

EcoStor2™ Double-Wall Solar Indirect Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

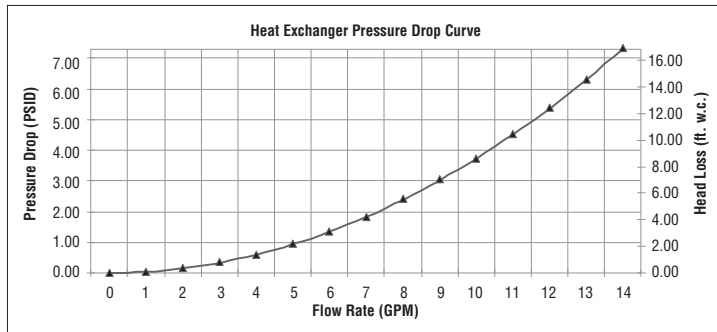
DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Heater Top	Floor to Water Conn.	Floor to Solar Collector Supply	Floor to Solar Collector Return	Depth	Approx. Shipping Weight (lbs)
S-DW2-TW-50T6FBN(LP)	45	67,000	72	59 ¹ / ₄	22	3 or 4	50	11 ³ / ₈	56	60	32 ¹ / ₄	10 ¹ / ₈	26	247
S-DW2-TW-65T6FBN(LP)	60	70,000	75	63	24	3 or 4	53 ¹ / ₂	11 ³ / ₈	59 ¹ / ₂	63 ¹ / ₄	32 ¹ / ₄	10 ¹ / ₈	28	281
S-DW2-TW-75T6BN(LP)	70	76,000	82	62 ³ / ₈	26	4	52	14 ³ / ₈	59	62 ³ / ₄	34 ⁵ / ₈	12 ¹ / ₂	30 ³ / ₈	336

* Based on manufacturers rated recovery efficiency.

Propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
S-DW2-TW-50T6FSX	60,000 BTU/Hr.	65
S-DW2-TW-65T6FSX	63,000 BTU/Hr.	68
S-DW2-TW-75T6SX	75,500 BTU/Hr.	81



S-DW2-TW-50T6FBN S-DW2-TW-65T6FBN S-DW2-TW-75T6FBN		3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length		†60 ft.**	†180 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number of 90° Elbows†	1	55 ft.	175 ft.
	2	50 ft.	170 ft.
	3	45 ft.	165 ft.

†Consult I&O manual when using four or more elbows. Subtract 5ft. for each additional 90° elbow.

**S-DW2-TW-75 Max. 3" vent length is 50ft.



EcoStor2™ SC Solar Indirect System

Single Coil Eco-Defender Gas Backup Models

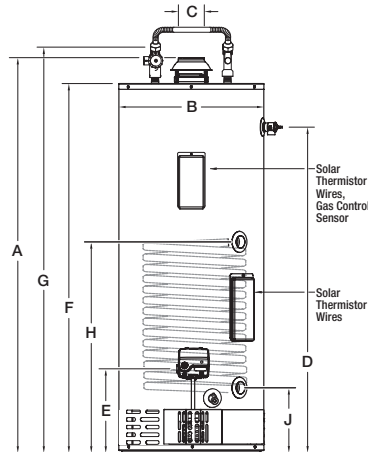
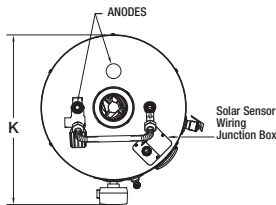
84/85



DEFENDER
SAFETY SYSTEM™

- Eco-Defender Safety System®
- Backup Low NOx Burner
- Heat exchanger – Double wall 1½" O.D. glass coated (Vitraglas®) steel coil
- Self diagnostic Honeywell gas control
- Sensor wires for solar thermistor connections
- Integrated Mixing Device
- Factory Installed Hydrojet® Total Performance System
- Vitraglas® lining
- Supply and return connections—3/4" NPT
- 2" Non-CFC Foam Insulation

- Potable water connections—3/4" NPT factory installed true dielectric fittings
- Two protective anode rods
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
S-DW4-U5036FRN

EcoStor2™ Double-Wall Solar Indirect Models

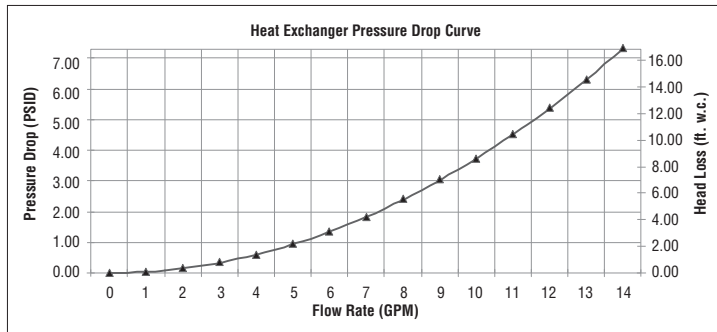
Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Heater Top	Floor to Water Conn.	Floor to Solar Collector Supply	Floor to Solar Collector Return	Depth	Approx. Shipping Weight (lbs)
S-DW4-U5036FRN	45	40,000	43	59¼	22	3	50	11⅝	56¼	60	32¼	10⅛	26	233
S-DW2-U65T6FRN	60	55,000	57	63	24	4	53½	11⅝	59½	63¼	32¼	10⅛	28	272

*Based on manufacturers rated recovery efficiency.

All models meet SCAQMD rule 1121 requirement of 10ng/J, or less, NOx emissions.



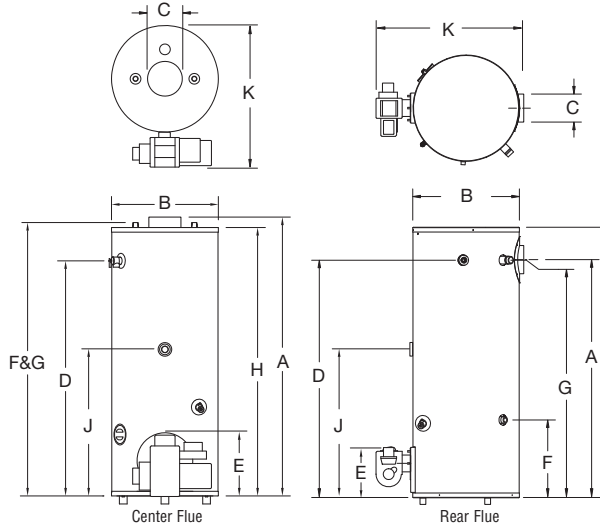


SUGGESTED BURNER



Residential Oil-Fired Energy Saver Aero® Series Water Heaters

- Oil heats water 3 to 4 times faster than other fuels, resulting in high recovery rates
- Electronic Aquastat controller with 7-segment trouble-shooting LED display
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- Factory installed Hydrojet® Total Performance System (center flue models only)
- Flexible stainless steel flue baffle (center flue models only)
- Two magnesium anode rods (rear flue has one)
- Easy, space-saving installation
- High density fiberglass insulation
- Low restriction brass drain valve
- T&P relief valve included



86/87



Photograph is of
CF-32-6

Aero® Series Energy Saver Oil-Powered Models

DIMENSIONS IN INCHES

					A	B	C	D	E	F	G	H	J	K	
Model Number	Gallon Capacity	GPH Recovery 90°F Rise*	MBTUH† Input	Min./Max. Firing Rate No. 2 Oil GPH	Floor to Flue Conn.	Jacket Dia.	Flue Size	Floor to T&P Conn.	Floor to Burner Top	Floor to Water Conn.	Floor to Hot Water Conn.	Floor to Heater Top	Floor to Aquastat	Depth	Approx. Shipping Weight (lbs)
CF-32-6	32	98/113	91/105	0.65/0.75	51 ¹ / ₈	20	6	42 ¹⁵ / ₁₆	11 ³ / ₁₆	50 ¹ / ₈	50 ¹ / ₈	49 ³ / ₁₆	27 ⁷ / ₁₆	26 ⁹ / ₁₆	215
CF-50-6	50	113/128	105/119	0.75/0.85	60 ³ / ₁₆	22	6	51 ¹⁵ / ₁₆	11 ³ / ₁₆	58 ³ / ₄	58 ³ / ₄	57 ¹³ / ₁₆	31 ⁵ / ₈	28 ¹ / ₂	275
RF-30-6	30	128	119	0.85	47 ⁷ / ₈	24 ¹ / ₄	6	48 ³ / ₈	13 ¹ / ₈	18 ¹¹ / ₁₆	48 ³ / ₈	56	24 ³ / ₈	34	250
RF-30SX-6	30	128	119	0.85	42 ³ / ₁₆	24 ³ / ₄	6	41 ³ / ₁₆	13 ³ / ₈	18 ¹¹ / ₁₆	42 ³ / ₁₆	49	24 ³ / ₈	34 ¹ / ₁₆	210
RF-50-6	50	188/203	175/189	1.25/1.35	60 ⁷ / ₈	26 ¹ / ₂	7	60 ³ / ₄	13 ³ / ₁₆	21	60 ³ / ₄	68 ¹⁵ / ₁₆	28 ⁷ / ₈	36 ³ / ₄	360

†MBTUH = Thousand BTU's/Hr.

* Based on manufacturers rated recovery efficiency.

Note: Does not include burner and controls.

T&P Valve Included.

CF - Center Flue

RF - Rear Flue

Model Number	Part Number	Description**
CF-32	228-44392-01	Beckett Burner with single Aquastat @ 0.65 GPH
CF-32	228-44392-03	Beckett Burner with single Aquastat @ 0.75 GPH
CF-50	228-44392-03	Beckett Burner with single Aquastat @ 0.75 GPH
CF-50	228-44392-05	Beckett Burner with single Aquastat @ 0.85 GPH
RF-30(SX)	228-44392-07	Beckett Burner with single Aquastat @ 0.85 GPH
RF-50	228-44392-09	Beckett Burner with single Aquastat @ 1.25 GPH
RF-50	228-44392-11	Beckett Burner with single Aquastat @ 1.35 GPH

** All burners are 1-stage, 120V.

The Bradford White MAGNUM Series®

88/89



*Everything you need
to build magnum
profits*

for your business.

If you're selecting the water heating equipment for an apartment complex, restaurant, laundromat, hotel, school, manufacturing plant or any other business with a constant high demand for hot water, the Bradford White Magnum Series of commercial water heaters can fill all your requirements. Bradford White offers an extensive and comprehensive selection of water heating products for commercial applications. Our commercial and industrial models, known as the MAGNUM Series, include gas and electric light-duty versions, a full compliment of high input Energy Saver units, Ultra High Efficiency unit (eF Series®), instantaneous models, booster units and storage tanks. Each and every one is designed and built to the most exacting quality specifications for durability, energy-efficiency and top performance.



RightSpec® - Interactive Sizing and Cross Reference



RightSpec® commercial sizing and specifying guide offers many unique features and upgrades. You'll now find it easier to use with complete specifications on the entire Residential and Magnum series line of commercial water heaters. The program enables you to determine the correct commercial model for any application including restaurants, apartment complexes and laundromats.

This interactive program includes a comprehensive cross reference guide that makes replacing any commercial or residential water heater with a Bradford White model quick and easy. You simply enter the model you wish to replace and the software will provide a Bradford White solution.

With RightSpec®, now available on the web, you'll have the sizing solution you need in a fraction of the time it took before.

***Visit Bradford White's Interactive sizing and cross reference program at:
www.bradfordwhite.com***

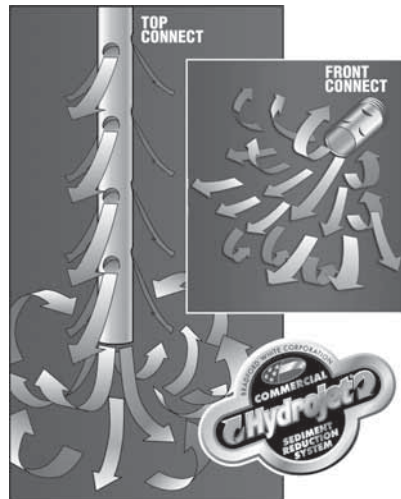
Hydrojet® Sediment Reduction System.

High Efficiency, High Deliverability, Highly Effective Self-Cleaning System From Bradford White.

Bradford White Introduces the Commercial Hydrojet® System

The Commercial Hydrojet® System incorporates up to two inlet tubes. One is a traditional top connect version and the other is a front connection. Both rely on the patented “jetport” concept that proved extremely effective in the residential Hydrojet system. In the top connect version, patented jetports built into the inlet tube are used to create turbulence inside the tank.

The turbulence helps reduce sediment build-up. Each jetport forces incoming water out into the tank before it reaches the end or outlet of the tube. Unique jetport positioning generates an increase in turbulence by creating accelerating water current inside the tank.



With the front connect Hydrojet inlet tube, only one dynamic jetport is needed to cause the extreme turbulence that is the Hydrojet systems claim to fame. This jetport is placed on the underside of the tube centered a short distance from the end of outlet. Water becomes pressurized, fans out and is sprayed with force. This single jetport acts as a flow disrupter increasing turbulence and extending the effective scouring action across the bottom of the tank. Two alignment notches in the water connection end of the tube help the installer ensure that the front connect Hydrojet tube is positioned for maximum performance. Both versions of the Hydrojet system are installed at the factory free of charge providing flexibility at the time of installation.



Improved Dielectric Waterway Connections

While creating the Commercial Hydrojet models, Bradford White also developed truly dielectrically isolated waterway connections that counteract both water velocity erosion and electric current corrosion. The key is a plastic fitting or nipple liner that extends beyond both ends of the metal portion of the fitting. During the manufacturing process, the plastic is rolled and formed over the edges of the fitting to create a barrier eliminating dissimilar metal contact at the tank connection and the field connection. The plastic liner also protects the fittings from flow friction or erosion as water enters and exits the tank. At the connections, the plastic liner is the only material to have contact with the high velocity water. The top and front connect Hydrojet tubes and their dielectric waterway fittings are factory installed standard equipment on Bradford White commercial models. Just as important, all waterways, both inlets and outlets incorporate the new design fitting free of charge. This saves the installer time and money.



Commercial Gas Energy Saver FVIR Light Duty Water Heaters

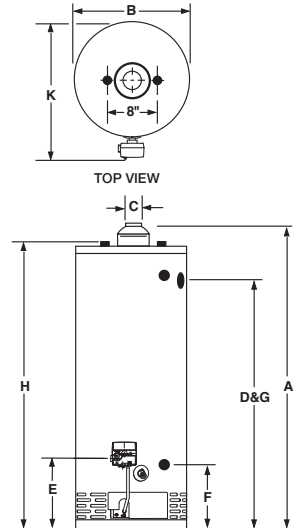
92/93



DEFENDER
SAFETY SYSTEM®

BRADFORD WHITE
ICON
System™

- Bradford White ICON System™
- Advanced ScreenLok® Technology Flame Arrestor Design
- Resettable thermal switch
- Pedestal base
- More precise temperature control can be adjusted up to 180°F
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- 3/4" NPT Side tapings for space heating
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- NSF construction available
- Water Connections – 3/4" NPT factory installed
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
65T-65FB-3N

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS							A	B	C	D	E	F	G	H	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Floor to Flue Conn.	Jacket Dia.	Vent Dia.	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
				40°	100°	140°										
50T-65FB-3N (LP)	48	65,000	100	150	63	43	59 ¹ / ₄	22	4	50	13	13 ¹ / ₂	50	57	26	164
65T-65FB-3N (LP)	65	65,000	122	150	63	43	63	24	4	53 ¹ / ₂	12 ³ / ₁₆	13 ¹ / ₂	53 ¹ / ₂	60 ³ / ₄	28	205

*Based on manufacturer recovery rate.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix “B” to “S” and “N” to “X”.

For 5 year models change suffix “3” to “5”.

(LP) Propane Gas Inputs		GPH Rec. 100°F Rise
50T-65FS-3X	61,000 BTU/Hr.	59
65T-65FS-3X	63,000 BTU/Hr.	61



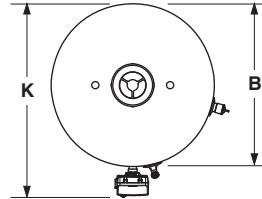
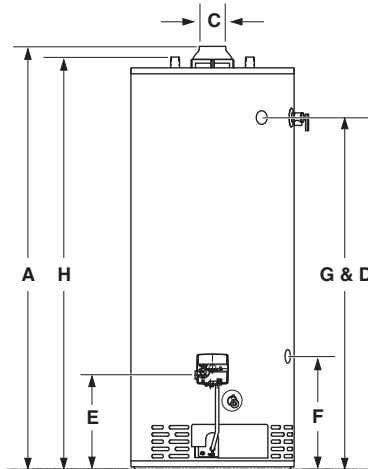
Commercial Gas Energy Saver Light Duty High Input Water Heaters

94/95



BRADFORD WHITE
ICON
System

- Bradford White ICON System™
- More precise temperature control can be adjusted up to 180°F
- Vitraglas® lining
- Factory installed Hydrojet 2™ Total Performance System
- NSF construction available
- Water Connections – 1" NPT (75T) and 1¼" (100T) factory installed true dielectric fittings
- Side connections - 3/4" NPT tapings
- 2" Non-CFC foam insulation
- Pedestal base (75T-80 only)
- Protective magnesium anode rod
- 4" "Snap Lock" draft diverter
- T&P relief valve installed.
- Low restriction brass drain valve



Photograph is of
100T-88B-3N

The Brand Most Purchased by Contractors

Here's Why

- American Made
- Employee Owned
- Wholesale Only
- Support for the Trade
- Superior Features
- Eco-Friendly Solutions
- Constant Innovation
- Technology That Works
- Always a Premium Product at the Best Possible Price



The Perfect Choice

For three years now, the CLEARReport Water Heater Study by Clear Seas Research has shown Bradford White to be the water heater brand most purchased by contractors. Just as importantly, Bradford White came out number one again when contractors were asked what brand they most often recommended.*

*Ranking is based on the 2008 CLEARReport by Clear Seas Research. Please visit www.clearseasresearch.com for additional information. ©2009, Bradford White Corporation. All rights reserved.

MAKE MORE MONEY ON WATER HEATER INSTALLATIONS



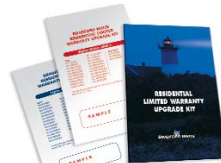
Now you have an incredible opportunity to increase your profits while providing an added value to the homeowner.

Instantly upgrade a water heater to 10 years during the installation – no anode rod or any other components needed.

Available on selected Bradford White residential water heaters from your Bradford White distributor.

BRADFORD WHITE
WATER HEATERS

www.bradfordwhite.com



LEVEL 1

GAS*	M-I-504S	U1-403S	U4-403S	ELECTRIC*	M-1-10U	M-2-50S
M-I-30T	M-I-60T	U1-40T	U4-503	M-1-20L	M-1-12U	M-2-50T
M-I-30S	M-4-30T	U1-404T	U4-60T	M-1-30L	M-1-12UT	M-2-65R
M-I-303T	M-4-403S	U1-503		M-1-40L	M-1-15U	M-1-WH6U
M-I-40T	M-4-40T	U1-50L		M-1-50L	M-1-20U	M-1-WH12U
M-I-403S	M-4-503	U1-504S		M-2-30L	M-2-30U	M-1-WH20L
M-I-404T	M-4-60T	U1-60T		M-2-40L	M-2-30R	M-2-WH30L
M-I-503	U1-30T	U4-30T		M-2-50L	M-2-40S	
M-I-50L	U1-30S	U4-40T		M-1-6U	M-2-40T	

LEVEL 2

GAS*	M-2-TW75T	DS-1-40S	M-2-XR75S	U2-TW-65T	ELECTRIC*	M-2-80R
M-I-75S	PDX1-40S	DS-1-50S	U1-XR-403S	PE-4-403S		M-2-120R
M-I-100T	PDX1-50S	DH-1-504T	U2-XR-504T	PE-4-40T		M-2-HE40S
M-1-TW40S	PDX2-50T	DH-1-65T	U2-XR-65T	PE-4-503		M-2-HE50S
M-1-TW50S	PDX2-65T	DH-1-75S	U1-TW-40S	PE-2-XR504T		M-2-HE65R
M-1-TW60T	PDX2-75T	M-1-XR403S	U1-TW-50S			M-2-HE80R
M-2-TW50T	D-4-403S	M-2-XR504T	U1-TW-60T			
M-2-TW65T	D-4-504S	M-2-XR65T	U2-TW-50T			

*This warranty upgrade includes all of the associated suffixes to the base model numbers above. The Upgrade Kit also applies to any corresponding new model numbers created due to the new regulatory changes.



Introducing the Bradford White ICON System™ Accessory Packages.

This incredible selection of water heater accessories allows you to offer your customers more hot water for their money, higher efficiency, greater energy savings, leak protection and full 7-day programmability. Build your business by making a great water heater even better!



- **Integrated Mixing Device**
- **Accessory Module**
- **Leak Detection Sensor**
- **Rubber Dam**
- **Inlet Shut-off Valve**
- **Energy Saving Programmable Control**



Bradford White's innovative line of water heaters now offer ENERGY STAR® qualified models for Atmospheric Vent, Power Vent, Ultra Low NOx Power Vent and Tankless applications.

QUALIFYING MODELS

Residential High-Efficiency Gas Storage Water Heaters

- Minimum Energy Factor (EF) of 0.67 as of September 1st, 2010
- Minimum First Hour Rating (FHR) of 67 gallons
- Annual energy savings of 14%*

Whole Home Gas Tankless Water Heaters

- Minimum Energy Factor (EF) of 0.82
- Minimum gallons per minute (GPM) of 2.5 at a 77°F rise
- Annual energy saving up to 29%*

Bradford White customers can expect many advantages from our ENERGY STAR® models

Consumers recognize the ENERGY STAR® label as representing energy saving products that result in a “greener” home • The tools to help sell a more energy efficient product • More extensive product offering than retail stores • Certain utility companies will issue rebates for ENERGY STAR® products

*Based on the National Gas Average Energy Cost and a comparison to a conventional gas water heater with an EF rating of 0.58.



ULTRA HIGH EFFICIENCY water heaters available in 60-Gallon and 100-Gallon models with Btu's ranging from 125,000 to 399,999

Bradford White's eF Series® water heaters have a Thermal Efficiency rating as high as 99.1%. eF Series® models are the only water heaters in their class with unbalanced direct venting capabilities — up to 120 equivalent feet using 3" ABS, PVC or CPVC piping and 170 equivalent feet using 4" ABS, PVC or CPVC piping. They use Stainless Steel Baffles, Glass Lined Flue Tubes, a Highly Durable Igniter and a Self Compensating Combustion System to put them above the competition. Add Quiet Operation and Low NOx compliance and you can see why eF Series® units are the leaders in energy efficient commercial water heating.



Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS							A	B	C	D	E	F	G	H	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Floor to Flue Conn.	Jacket Dia.	Vent Dia.	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Inlet	Floor to Space Heating Outlet	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
				40°	100°	140°										
75T-80B-3N (LP)	75	76,000	130	184	74	53	62 ³ / ₈	26	4	51 ³ / ₄	15	16 ⁵ / ₈	51 ³ / ₄	60 ⁵ / ₈	28 ³ / ₈	247
100T-88B-3N (LP)	100	85,000	155	206	82	59	68 ¹¹ / ₁₆	28 ¹ / ₄	4	59 ⁵ / ₁₆	15 ⁵ / ₈	17 ⁵ / ₈	50 ⁵ / ₈	69 ¹¹ / ₁₆	32 ¹ / ₄	420

*Based on manufacturer recovery rate.
All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix “B” to “S” and “N” to “X”.
For 5 year models change suffix “3” to “5”.

(LP) Propane Gas Inputs		GPH Rec. 100°F Rise
75T-80S-3X	76,000 BTU/Hr.	74
100T-88S-3X	88,000 BTU/Hr.	85

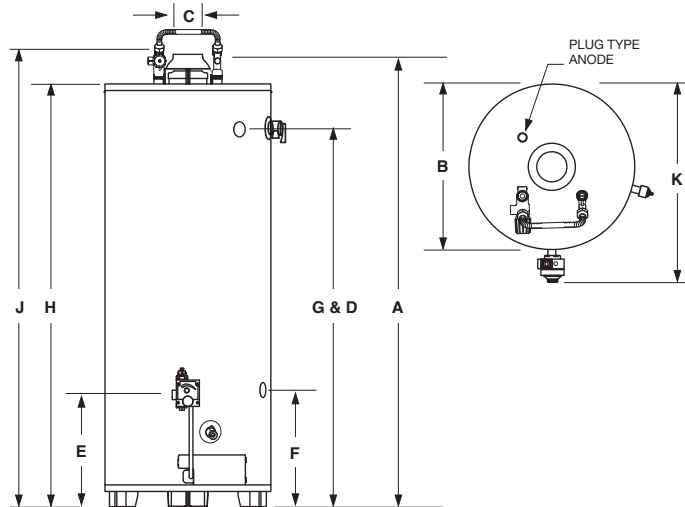


Commercial Gas Energy Saver Light Duty High Performance Water Heater

96/97



- High input combustion system
- Integrated Mixing Device
- Helical fin flue
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- Non-CFC foam insulation
- Two protective magnesium anode rods
- 4" "Snap Lock" draft diverter
- 3/4" NPT side tapplings for space heating
- Fully automatic controls
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
25X-78B-3N

Atmospheric Vent Energy Saver Models

DIMENSIONS IN INCHES

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed 82% Recovery Efficiency

NATURAL GAS AND LIQUID PROPANE MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 100°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Heater Top	Floor to Water Conn.†	Depth	Approx. Shipping Weight (lbs)
25X-78B-3N	25	78,000	76	58½	18	4	50	14 ¹³ / ₁₆	15 ⁷ / ₁₆	50	54 ⁵ / ₈	58 ⁵ / ₈	22	150
55X-80B-3N	55	80,000	78	59 ⁵ / ₈	22	4	50	14 ¹³ / ₁₆	15 ⁷ / ₁₆	50	56	60	26¼	200

*Based on manufacturers rated recovery efficiency.

All propane models feature a Titanium Stainless Steel propane burner.

For propane (LP) models change suffix "B" to "S" and "N" to "X".

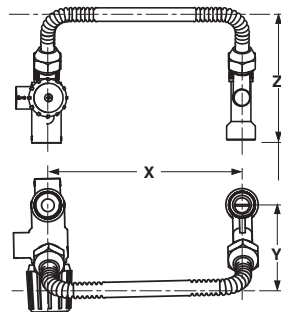
†Dimension to top of installed mixing device.

Gas connections are ½".

(LP) Propane Gas Inputs		GPH Rec. 100°F Rise
25X-78S-3X	76,000 BTU/Hr.	74
55X-80S-3X	78,000 BTU/Hr.	76

Integrated Mixing Device

Model Number	X Distance Between Centers in.	Y Depth of Mixing Device in.	Z Height to Center of Pipe in.
25X-78B-3N	8	2½	6
55X-80B-3N	8	2½	6



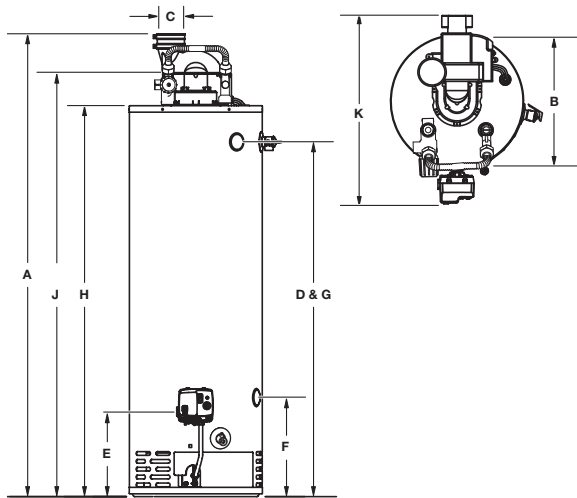


Commercial Gas Energy Saver Light Duty TTW® High Performance Water Heaters

98/99



- High input combustion system
- Integrated Mixing Device
- Helical fin flue
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- Non-CFC foam insulation
- Two protective magnesium anode rods
- Powerful blower motor
- Honeywell self diagnostic electronic gas control
- Flammable vapor sensor (not FVIR)
- Spark-to-pilot ignition
- Horizontal and vertical venting
- 3/4" NPT side tapings for space heating
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
TW-55X-78B3N

Power Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
82% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS					A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery 100°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Heater Top	Floor to Water Conn.†	Depth	Approx. Shipping Weight (lbs)
TW-25X-76B3N	25	76,000	155	74	62 ⁵ / ₈	18	3 or 4	48	11 ¹ / ₂	13 ³ / ₈	48	52 ⁷ / ₈	56 ⁷ / ₈	25 ³ / ₈	170
TW-55X-78B3N	55	78,000	200	76	63 ³ / ₄	22	3 or 4	48	11 ¹ / ₂	13 ³ / ₈	48	54	58	27 ³ / ₈	215

All propane models feature a Titanium Stabilized Stainless Steel propane burner.

For propane (LP) models change suffix "BN" to "SX".

*Based on manufacturers rated recovery efficiency.

†Dimension to top of installed mixing device.

TW-25X has 2" of insulation.

TW-55X has 1" of insulation.

Gas connections are ½".

(LP) Propane Gas Inputs

GPH Rec.
100°F Rise

TW-25X-76B3N 76,000 BTU/Hr.

74

TW-55X-78B3N 78,000 BTU/Hr.

76

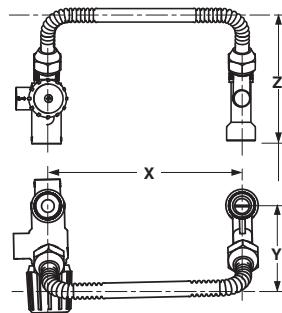
Integrated Mixing Device

Model Number	X Distance Between Centers in.	Y Depth of Mixing Device in.	Z Height to Center of Pipe in.
TW-25X-76B3N	8	2 ¹ / ₂	6
TW-55X-78B3N	8	2 ¹ / ₂	6

TW-25X-76B3N TW-55X-78B3N	3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length	†60 ft.	†180 ft.
Min. Equivalent Length	7 ft.	15 ft.
Number of 90° Elbows	1 55 ft. 2 50 ft. 3 45 ft.	175 ft. 170 ft. 165 ft.

†Consult I&O manual when using four or more elbows.

Subtract 5ft. for each additional 90° elbow.





Commercial Gas Energy Saver FVIR Light Duty Through-The-Wall Water Heaters

100/101

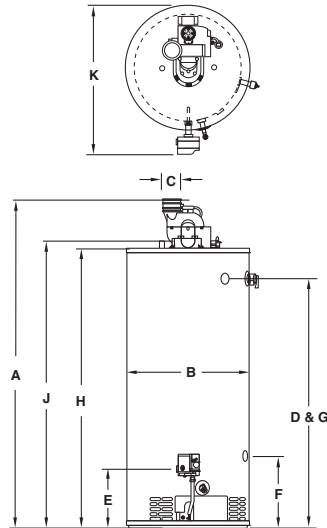


DEFENDER SAFETY SYSTEM®

The TTW®4 FVIR Defender Safety System® Models Feature (Except TW4-75S):

- Advanced ScreenLok® Technology Flame Arrestor Design
 - Flammable vapor sensor
- All TTW®4 Models Feature:**
- Powerful blower motor
 - Honeywell self diagnostic electronic gas control
 - More precise temperature control can be adjusted up to 180°F
 - Spark to pilot ignition system
 - Horizontal and vertical venting
 - Vitraglas® Lining

- Factory installed Hydrojet® Total Performance System
- Water Connections 3/4" NPT factory installed true dielectric fittings
- Pedestal base
- 3/4" NPT side connections for space heating
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
TW4-50S-67FB-3N

Power Vented Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS							A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Floor to Vent Conn.	Jacket Dia.	Vent Dia.	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
				40°	100°	140°											
TW4-50S-67FB-3N (LP)	48	67,000	108	162	65	46	65 ⁷ / ₈	22	3	50 ¹ / ₈	11 ³ / ₄	13 ¹ / ₂	50 ¹ / ₈	56 ³ / ₈	57 ³ / ₄	26 ³ / ₄	188
TW4-65S-70FB-3N (LP)	65	70,000	126	170	68	49	69	24	3	53 ¹ / ₂	11 ³ / ₄	13 ¹ / ₂	53 ¹ / ₂	59 ¹ / ₂	60 ³ / ₄	28 ³ / ₄	222
TW4-75S-76B-3N (LP)	75	76,000	140	184	74	57	69 ³ / ₄	26	3	53	15	17 ³ / ₄	53	60 ¹ / ₄	61 ¹ / ₂	31	277

*Based on manufacturer recovery rate.
All propane models feature a Titanium Stainless Steel propane burner.
For propane (LP) models change suffix “B” to “S” and “N” to “X”.
For 5 year models change suffix “3” to “5”.
110 V.A.C. required for power venting/110 V.A.C. 60 Hz 3.1 Amperes.
NSF construction available.

TW4-50S-67F TW4-65S-70F TW4-75S-76		3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length		60 ft. **	180 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number of 90° Elbows†	1	55 ft.	175 ft.
	2	50 ft.	170 ft.
	3	45 ft.	165 ft.

Subtract 5ft. for each additional 90° elbow
†Consult the I&O manual when using four or more elbows.
**TW4-75S-76 Max. 3" vent length is 50ft.

(LP) Propane Gas Inputs		GPH Rec. 100°F Rise
TW4-50S-67FS-3X	60,000 BTU/Hr.	58
TW4-65S-70FS-3X	63,000 BTU/Hr.	61
TW4-75S-76S-3X	75,500 BTU/Hr.	73



Commercial Gas Energy Saver Light Duty Ultra Low NOx Water Heater

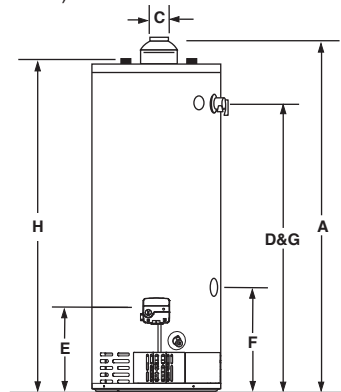
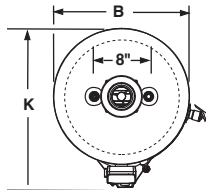
102/103



DEFENDER
SAFETY SYSTEM™

- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- Honeywell self diagnostic gas control
- Millivolt powered control with built-in piezo igniter
- No electricity required
- Digital thermal sensor and resettable thermal switch
- Pedestal base
- Water Connections 3/4" NPT factory installed true dielectric fittings

- 3/4" NPT side connections
- 2" Non-CFC Foam Insulation (U1-XR has 1")
- Factory installed heat traps
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve
- Meets C.E.C Title 24, SCAQMD Rule 1121 (10ng/J)



Photograph is of
U-50T-55FR-3N

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS MODELS					A	B	C	D	E	F	G	H	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 100°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
U-50T-55FR-3N	48	55,000	89	53	59 ¹ / ₄	22	4	50	11 ⁵ / ₈	13 ¹ / ₂	50	57	26	174
U-65T-55FR-3N	65	55,000	114	53	63	24	4	53 ¹ / ₂	11 ⁵ / ₈	13 ¹ / ₂	53 ¹ / ₂	60 ³ / ₄	28	213

*Based on manufacturers rated recovery efficiency.

Available in natural gas only.

For 10 year models, change suffix from “6” to “10”.

All models meet SCAQMD rule 1121 requirement of 10ng/J, or less, NOx emissions.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.



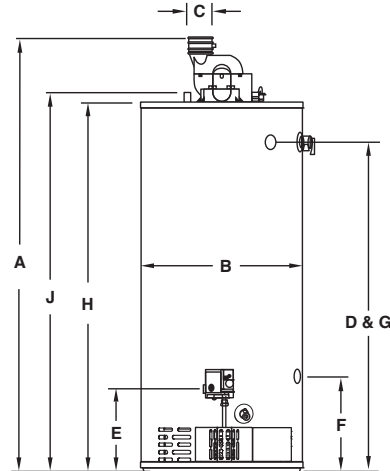
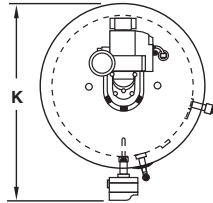
Commercial Gas Energy Saver Light Duty TTW® Ultra Low NOx Water Heater

104/105



DEFENDER
SAFETY SYSTEM™

- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet®2™ Total Performance System
- Honeywell self diagnostic gas control
- Flammable vapor sensor
- Powerful blower motor
- Horizontal and vertical venting
- Sight window
- Pedestal base
- Water Connections 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC Foam Insulation
- Factory installed heat traps
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve
- Meets SCAQMD Rule 1121 (10ng/J)



Photograph is of
U-TW4-50S-60FR-3N

Power Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
78% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS MODELS					A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 100°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
U-TW4-50S-60FR-3N	48	60,000	98	58	65 ⁷ / ₈	22	3	50 ¹ / ₈	11 ³ / ₄	13 ¹ / ₂	50 ¹ / ₈	56 ³ / ₈	57 ³ / ₄	26 ³ / ₄	184
U-TW4-65S-60FR-3N	65	60,000	114	58	69	24	3	53 ¹ / ₂	11 ³ / ₄	13 ¹ / ₂	53 ¹ / ₂	59 ¹ / ₂	60 ³ / ₄	28 ³ / ₄	215

Available in Natural Gas only.

*Based on manufacturers rated recovery efficiency.

For 10 year models, change suffix from “6” to “10”.

110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

U-TW4-50 U-TW4-65		3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length		†60 ft.	†180 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number of 90° Elbows†	1	55 ft.	175 ft.
	2	50 ft.	170 ft.
	3	45 ft.	165 ft.

†Consult I&O manual when using four or more elbows.
Subtract 5ft. for each additional 90° elbow.



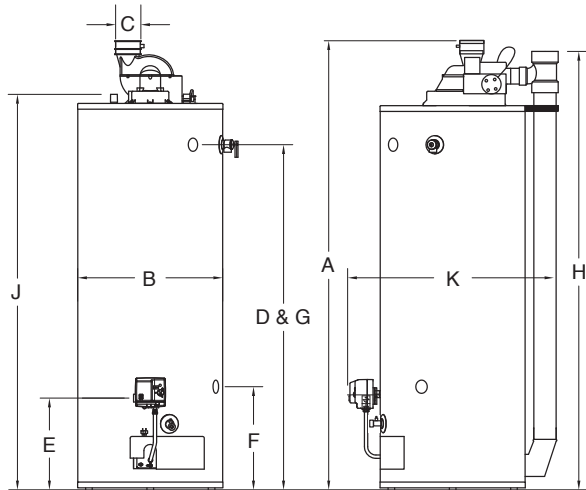
Commercial Gas Energy Saver FVIR Light Duty Power Direct Vent Water Heaters

106/107



DEFENDER SAFETY SYSTEM™

- Closed combustion venting system
- Flammable vapor sensor
- Powerful blower motor
- Honeywell self diagnostic electronic gas control
- More precise temperature control can be adjusted up to 180°F
- Spark-to-pilot ignition system
- Horizontal and vertical venting
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Optional concentric vent kit termination
- 3/4" NPT side connections for space heating
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
PDX-50S-60FB-3N

Power Direct Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS

Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Floor to Exhaust Outlet	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Supply	Floor to Air Intake	Floor to Water Conn.	Depth	Ct. Line Distance From Intake to Exhaust	Approx. Shipping Weight (lbs)
				40°	100°	140°												
PDX-50S-60FB-3N(LP)	48	60,000	105	145	58	42	68	22	3	52 ¹ / ₄	13 ⁵ / ₈	15 ³ / ₄	52 ¹ / ₄	67	59 ³ / ₄	32	9 ¹ / ₄	303
PDX-65S-65FB-3N(LP)	65	65,000	120	158	63	45	71 ¹ / ₄	24	3	55 ⁵ / ₈	13 ⁵ / ₈	15 ³ / ₄	55 ⁵ / ₈	69 ¹ / ₂	63	32 ¹ / ₈	9 ¹ / ₄	330
PDX-75S-70FB-3N(LP)	75	70,000	140	170	68	48	71	26	3	54 ¹ / ₄	16 ¹ / ₄	19	54 ¹ / ₄	69 ³ / ₈	62 ³ / ₄	36	11 ¹¹ / ₁₆	375

*Based on manufacturer recovery rate.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "B" to "S" and "N" to "X". For 5 year models change suffix "3" to "5".

110 V.A.C. required for power venting/110 V.A.C. 60 Hz 3.1 Amperes.

NSF construction available.

3" Vent Pipe			4" Vent Pipe		
	PDX-50S PDX-65S	PDX-75S		PDX-50S PDX-65S	PDX-75S
Max. Intake Length	60 ft.	50 ft.	Max. Intake Length	100 ft.	90 ft.
Max. Exhaust Length	60 ft.	50 ft.	Max. Exhaust Length	100 ft.	90 ft.
Min. Vent Length	7 ft.	7 ft.	Min. Vent Length	7 ft.	7 ft.
Number of 90° Elbows†	1 55 ft. 2 50 ft. 3 45 ft.	45 ft. 40 ft. 35 ft.	Number of 90° Elbows†	1 95 ft. 2 90 ft. 3 85 ft.	85 ft. 80 ft. 75 ft.

Subtract 5ft. for each additional 90° elbow.

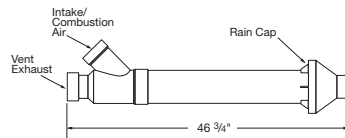
†Consult I&O manual when using four or more elbows.

(LP) Propane Gas Inputs

GPH Rec.
100°F Rise

PDX-50S-60FS-3X	60,000 BTU/Hr.	58
PDX-65S-65FS-3X	60,000 BTU/Hr.	58
PDX-75S-70FS-3X	65,000 BTU/Hr.	63

Optional 3" Concentric Vent Terminal Kit



P/N 239-44069-01



Commercial Gas Energy Saver FVIR Light Duty Direct Vent Water Heaters

108/109

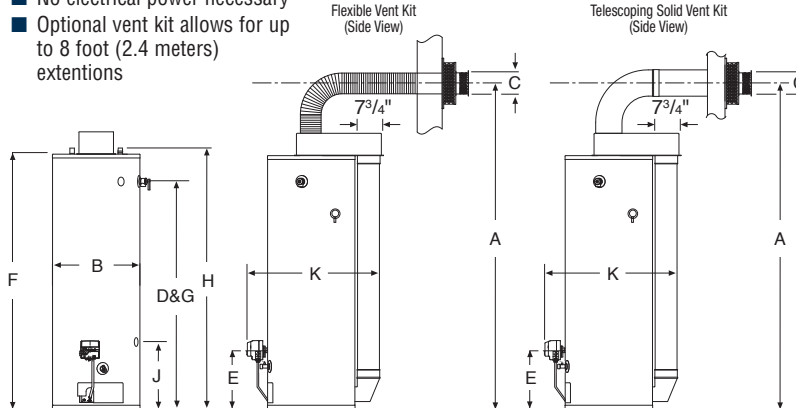


DEFENDER
SAFETY SYSTEM™

BRADFORD WHITE
ICON
System™

- Bradford White ICON System™
- Reinforced seals
- Closed combustion
- Co-axial Vent System-outer pipe takes air in from the outside. Inner pipe vents combustion gases directly back to the outside
- More precise temperature control can be adjusted up to 180°F
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 3/4" NPT side tapplings for space heating
- 1" Non-CFC foam insulation
- Co-axial rotational venting

- Protective magnesium anode rod
- Factory installed heat traps
- No electrical power necessary
- Optional vent kit allows for up to 8 foot (2.4 meters) extensions
- T&P relief valve included
- Low restriction brass drain valve



Photograph is of
DH-50T-50FB-3N

Direct Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
79% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS

Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Floor to Center Line of Vent	Jacket Dia.	Vent Dia.	Floor to T&P Valve	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Heater Top	Floor to Top Water Conn.	Depth	Approx. Shipping Weight (lbs)
				40°	100°	140°											
DH-50T-50FB-3N (LP)	48	50,000	81	118	47	34	75 ¹ / ₄	20	4 I.D., 6 O.D.	52 ¹ / ₄	15 ¹ / ₄	15 ³ / ₄	52 ¹ / ₄	58 ³ / ₄	59 ³ / ₄	30 ¹ / ₄	197
DH-65T-55FB-3N (LP)	65	55,000	97	130	52	47	78 ¹ / ₄	22	4 I.D., 6 O.D.	56	15 ¹ / ₄	15 ³ / ₄	56	62	63	34	243
DH-75T-60FB-3N (LP)	75	60,000	112	132	57	51	75 ¹ / ₂	24 ¹ / ₂	4 I.D., 6 O.D.	52	15 ¹ / ₄	16 ¹ / ₂	52	59	60	35	281

* Based on manufacturer recovery rate.

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "B" to "S" and "N" to "X".

For 5 year models change suffix "3" to "5".

Horizontal Installation Only

The Standard Vent Kit (239-42979-00) is ordered and shipped separately. The components for the standard vent kit are as follows: 4" vent tube, 6" Air Intake Tube, Vent Terminal, Inner Wall Term Mounting Flange, Outer Wall Term. Mounting Flange, Vent Terminal Hardware, RTV Silicone Sealant, 4" Vent Elbow and a 6" Air Intake Elbow.

The Vent Tube and Air Intake Tube provided in the standard vent kit telescopes from 13³/₄" to 23¹¹/₁₆".

NSF Construction available.

Optional vent kit :	Kit "F"	Telescopes from 4 ³ / ₄ " to 5 ¹¹ / ₁₆ "	Part No. 239-42516-00
	Kit "G"	Telescopes from 6 ¹ / ₂ " to 9 ⁹ / ₁₆ "	Part No. 239-42517-00
	Kit "H"	Telescopes from 13 ³ / ₄ " to 23 ¹¹ / ₁₆ "	Part No. 239-42514-00
	Kit "I"	Telescopes from 49 ¹³ / ₁₆ " to 95 ¹³ / ₁₆ "	Part No. 239-42512-00

Horizontal Vent Termination Only.

(LP) Propane Gas Inputs		GPH Rec. 100°F Rise
DH-50T-50FS-3X	48,000 BTU/Hr.	45
DH-65T-55FS-3X	55,000 BTU/Hr.	52
DH-75T-60FS-3X	57,000 BTU/Hr.	53

Telescoping Solid Vent Kit (239-47811-00) or Flexible Vent Kit (239-47813-00) can be ordered and shipped with water heater, or ordered and shipped separately. For vent kit components and venting instructions, refer to Installation and Operating Manual.

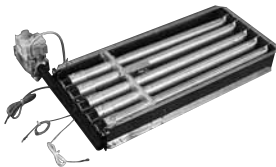


Commercial Gas Energy Saver Electronic Ignition Water Heaters

110/111



- Honeywell integrated control—Proven design combines temperature control, diagnostic codes and system ignition functions into a single control board with a digital LCD display
- Operation mode
- Service mode
- Electronic ignition
- Automatic flue damper
- Factory installed Hydrojet® Sediment Reduction System
- Vitraglas® Lining
- Non-CFC foam insulation
- Water connections—Factory installed true dielectric waterway fittings
- Hand hole cleanout
- Automatic re-set E.C.O.
- Magnesium anode rods
- Sanitizing Capability
- ASME code available on all models above 200,000 BTU/Hr.
- NSF construction available
- Low NOx construction available
- North Carolina code compliant
- T&P relief valve installed
- Low restriction brass drain valve



Commercial Gas Burner

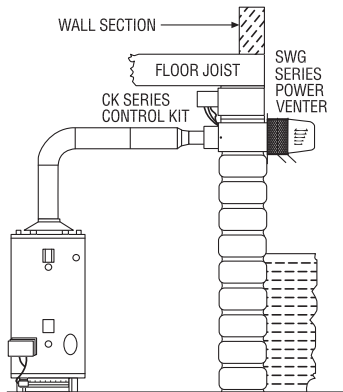
- Orifice alignment bracket for true injection
- Stainless steel pilot shield
- Stainless steel burner rack and mounting bracket
- Aluminized steel burner tubes with adjustable air shutter (Stainless steel burner tubes available)

- Opposing lance formed burner ports yield consistent performance to stabilize burner flame and promote better air gas mixture
- Standard on both “T” and “L” Commercial Energy Saver models



Photograph is of
D-80T-180-3N

Typical Applications



Optional Power Vent Kits – available for inputs from 125,000 to 505,000.

BTU Input Range

125,000 to 290,000 BTU's:

300,000 to 399,999 BTU's:

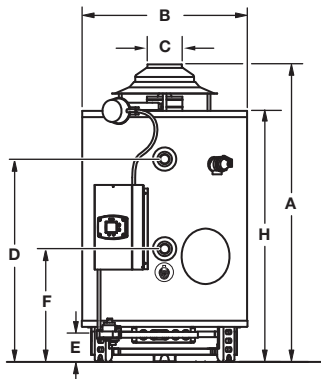
425,000 to 505,000 BTU's:

Kit Number

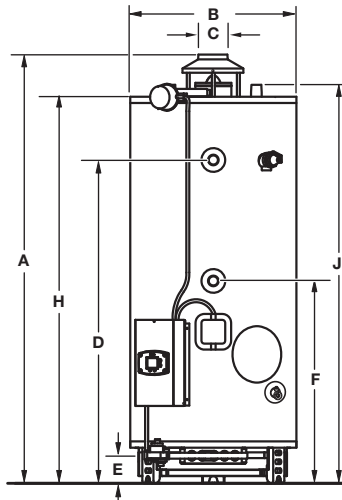
239-81764-00

239-81766-00

239-82148-00



D-38T-155



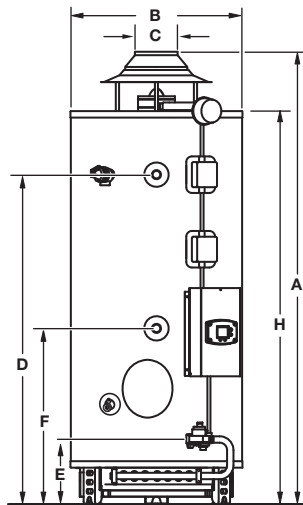
D-75T-(125, 160)

D-80T-(180, 199, 250)

D-100T-(199, 250)

D-100S-(199, 250)

D-100L-(199, 250, 270, 300)



D-75T-300

D-65T-(370, 399)

D-80T-(425, 505)

D-80L-(399, 450, 505)



Commercial Gas Energy Saver Electronic Ignition Water Heaters

112/113



Electronic Ignition Models

DIMENSIONS IN INCHES

These models meet or exceed both Recovery Efficiency
and Standby Loss Requirements of ASHRAE 90.1b (Current Edition).

NATURAL GAS AND LIQUID PROPANE GAS MODELS							A	B	C	D	E	F	H	J					
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Top Vent Height	Jacket Dia.	Vent Dia.	Front Hot Water Conn.	Floor to Gas Conn.	Front Cold Water Conn.	Floor to Top of Heater	Floor to Top Water Conn.	Water Conn.	Gas Conn. Dia.	Relief Valve Open.	Approx. Shipping Weight (lbs)	
				40°	100°	140°												Std.	ASME
D-38T-155-3N+	38	155,000	177	376	150	107	51	28 ¹ / ₄	6	34 ³ / ₄	4 ⁵ / ₈	19 ³ / ₈	43	—	1 ¹ / ₂	3/ ₄	3/ ₄	438	—
D-75T-125-3N	75	125,000	174	303	121	86	72 ¹ / ₄	28 ¹ / ₄	5	54 ¹ / ₂	4 ³ / ₄	34	65 ¹ / ₈	67 ¹ / ₈	1 ¹ / ₂	3/ ₄	3/ ₄	520	—
D-75T-160-3N(LP)	75	160,000	208	389	155	111	72 ¹ / ₄	28 ¹ / ₄	6	54 ¹ / ₂	4 ³ / ₄	34	65 ¹ / ₈	67 ¹ / ₈	1 ¹ / ₂	3/ ₄	3/ ₄	520	—
D-80T-180-3N	80	180,000	231	436	175	124	72 ³ / ₈	28 ¹ / ₄	6	56	4 ³ / ₄	19 ¹ / ₂	64 ³ / ₈	66 ¹ / ₄	1 ¹ / ₂	3/ ₄	3/ ₄	540	—
D-80T-199-3N	80	199,999	250	485	194	139	72 ³ / ₈	28 ¹ / ₄	6	56	4 ³ / ₄	19 ¹ / ₂	64 ³ / ₈	66 ¹ / ₄	1 ¹ / ₂	3/ ₄	3/ ₄	540	—
D-80T-250-3N(A)(LP)	80	250,000	298	606	242	173	72 ³ / ₈	28 ¹ / ₄	6	56	4 ³ / ₄	19 ¹ / ₂	64 ³ / ₈	66 ¹ / ₄	1 ¹ / ₂	3/ ₄	1	540	590
D-100T-199-3N	98	199,999	263	485	194	139	83 ³ / ₈	28 ¹ / ₄	6	67	4 ³ / ₄	19 ¹ / ₂	75 ¹ / ₂	77 ¹ / ₄	1 ¹ / ₂	3/ ₄	3/ ₄	610	—
D-100T-250-3N(A)(LP)	98	250,000	311	606	242	173	83 ³ / ₈	28 ¹ / ₄	6	67	4 ³ / ₄	19 ¹ / ₂	75 ¹ / ₂	77 ¹ / ₄	1 ¹ / ₂	3/ ₄	1	610	690
D-75T-300-3N(A)	75	300,000	344	727	291	208	74 ¹ / ₄	28 ¹ / ₄	7	54 ¹ / ₄	10 ¹ / ₂	29	64 ¹ / ₂	—	1 ¹ / ₂	3/ ₄	1	590	645
D-65T-370-3N(A)	65	370,000	405	897	359	256	73 ¹ / ₄	28 ¹ / ₄	8	54 ¹ / ₄	10 ¹ / ₂	29	64 ¹ / ₂	—	1 ¹ / ₂	1 ¹ / _N 3/4(LP)	1	665	720
D-65T-399-3N(A)**	65	399,999	424	970	388	277	73 ¹ / ₄	28 ¹ / ₄	8	54 ¹ / ₄	10 ¹ / ₂	29	64 ¹ / ₂	—	1 ¹ / ₂	1(N)	1	665	720
D-80T-425-3N(A)	80	425,000	468	1030	412	294	82 ⁵ / ₈	28 ¹ / ₄	10	64 ¹ / ₄	10 ¹ / ₂	29	75 ¹ / ₂	—	1 ¹ / ₂	1 ¹ / _N 3/4(LP)	1	750	800
D-80T-505-3N(A)	80	505,000	527	1178	471	337	82 ⁵ / ₈	28 ¹ / ₄	10	64 ¹ / ₄	10 ¹ / ₂	29	75 ¹ / ₂	—	1 ¹ / ₂	1 ¹ / _N 3/4(LP)	1	750	800

Electronic Ignition Models

DIMENSIONS IN INCHES

These models meet or exceed both Recovery Efficiency and Standby Loss Requirements of ASHRAE 90.1b (Current Edition).

NATURAL GAS AND LIQUID PROPANE GAS MODELS

Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Top Vent Height	Jacket Dia.	Vent Dia.	Front Hot Water Conn.	Floor to Gas Conn.	Front Cold Water Conn.	Floor to Top of Heater	Floor to Top Water Conn.	Water Conn.	Gas Conn. Dia.	Relief Valve Open.	Approx. Shipping Weight (lbs)	
				40°	100°	140°												Std.	ASME
D-100S-199-3N	100	199,999	264	485	94	139	76 ¹ / ₂	28 ¹ / ₄	6	60 ³ / ₈	4 ⁵ / ₈	20 ³ / ₄	67 ⁷ / ₈	70	1 ¹ / ₂ (T&F) 2 (R)	3/4	3/4	667	—
D-100S-250-3N(A)	100	250,000	312	606	242	173	76 ¹ / ₂	28 ¹ / ₄	6	60 ³ / ₈	4 ⁵ / ₈	20 ³ / ₄	67 ⁷ / ₈	70	1 ¹ / ₂ (T&F) 2 (R)	3/4	1	667	702
D-100L-199-3N	100	199,999	264	485	194	139	75	30 ¹ / ₄	6	56 ³ / ₈	4 ¹ / ₂	23 ¹ / ₂	65	67	1 ¹ / ₂ (T&F) 2 (R)	3/4	3/4	725	—
D-100L-250-3N(A)	100	250,000	312	606	242	173	75	30 ¹ / ₄	6	56 ³ / ₈	4 ¹ / ₂	23 ¹ / ₂	65	67	1 ¹ / ₂ (T&F) 2 (R)	3/4	1	725	765
D-100L-270-3N(A)**	100	270,000	332	655	262	187	75	30 ¹ / ₄	6	56 ³ / ₈	4 ¹ / ₂	23 ¹ / ₂	65	67	1 ¹ / ₂ (T&F) 2 (R)	3/4	1	725	765
D-100L-300-3N(A)	100	300,000	361	727	291	208	75 ⁵ / ₈	30 ¹ / ₄	7	56 ³ / ₈	4 ¹ / ₂	23 ¹ / ₂	65	67	1 ¹ / ₂ (T&F) 2 (R)	3/4	1	725	765
D-80L-399-3N(A)(LP)	80	399,999	444	970	388	277	71 ³ / ₈	30 ¹ / ₄	8	51 ¹ / ₂	10 ¹ / ₂	23 ¹ / ₂	64 ¹ / ₂	—	1 ¹ / ₂ (T&F) 2 (R)	1N 3/4 (LP)	1	800	835
D-80L-450-3N(A)(LP)	80	450,000	492	1091	436	312	71 ³ / ₈	30 ¹ / ₄	10	51 ¹ / ₂	10 ¹ / ₂	23 ¹ / ₂	64 ¹ / ₂	—	1 ¹ / ₂ (T&F) 2 (R)	1N 3/4 (LP)	1	800	835
D-80L-505-3N(A)(LP)	80	505,000	545	1224	489	350	71 ³ / ₈	30 ¹ / ₄	10	51 ¹ / ₂	10 ¹ / ₂	23 ¹ / ₂	64 ¹ / ₂	—	1 ¹ / ₂ (T&F) 2 (R)	1N 3/4 (LP)	1	800	835

(A) = ASME Code Available

(F) = Front Water Connection

(R) = Rear Water Connection

(T) = Top Water Connection

** = Available in Natural Gas Only

+ = Fiberglass Insulation

For (LP) Propane Gas models change suffix "N" to "X".

* Recoveries and First Hour Delivery Rating are based on Thermal Efficiencies ranging up to 80%.

Low NOx models are not available for inputs over 399,999

For Low NOx compliance to meet SCAQMD requirements place an "E" following the BTU input identifier of the model number.

Example: D-75T-125E-3N

Amperage Draw = .5 for damper models/less than 4 for induced draft models.

Power Vent Kits – available for inputs from 125,000 to 505,000.

(LP) Propane Gas Inputs		1st Hr. Del. Rating	GPH Rec.		
			40°	100°	140°
D-75T-160-3X	155,000 BTU/Hr.	199	376	150	107
D-80T-250-3X	235,000 BTU/Hr.	284	570	228	163
D-100T-250-3X	235,000 BTU/Hr.	297	570	228	163
D-80L-399-3X	375,000 BTU/Hr.	420	909	364	260
D-80L-450-3X	425,000 BTU/Hr.	468	1030	412	294
D-80L-505-3X	475,000 BTU/Hr.	517	1152	461	329



Commercial Gas Energy Saver Millivolt Water Heaters

114/115



- ASME code available on all models above 200,000 BTU/Hr.
- Continuous pilot-ignition
- Piezo Igniter - easy and quick lighting by the pilot burner by push button
- Millivolt controls
- Flue damper
- Vitraglas® lining
- Factory installed Hydrojet® Sediment Reduction System
- Factory installed dielectric fittings
- No electricity required
- Non-CFC foam insulation
- Hand hole cleanout (standard)
- NSF construction available
- T&P relief valve installed
- Low restriction brass drain valve
- 3 year limited tank warranty



Photograph is of
DM-75T-125-3N

Water Connections

Top and Front

DM80T180, 199, 250

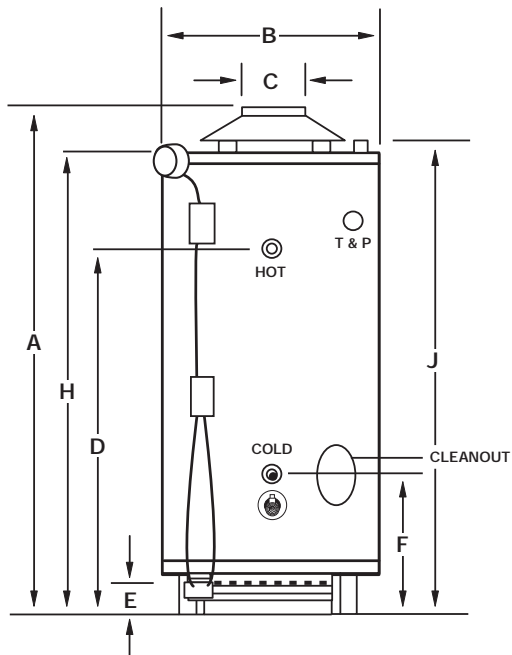
DM100T199, 250

DM75T125, 160

Top Front, Rear

DM100L199, 250, 270

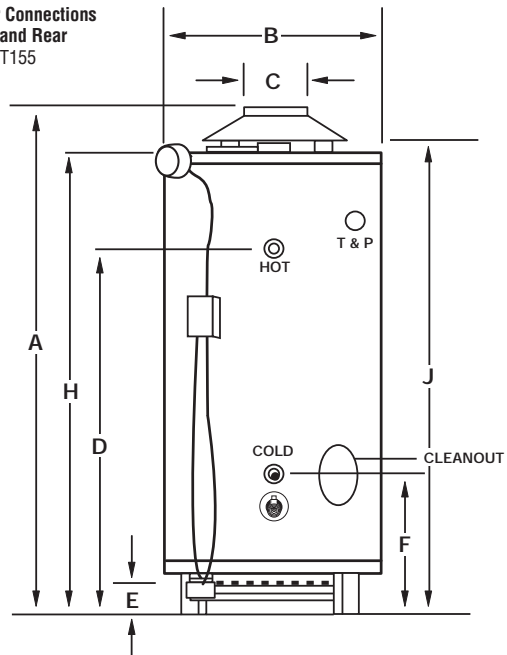
DM100S199, 250



Water Connections

Front and Rear

DM38T155





Commercial Gas Energy Saver Millivolt Water Heaters

116/117



Millivolt Models

DIMENSIONS IN INCHES

These models meet or exceed both Recovery Efficiency
and Standby Loss Requirements of ASHRAE 90.1b (Current Edition).

NATURAL GAS AND LIQUID PROPANE GAS MODELS							A	B	C	D	E	F	H	J					
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Top Vent Height	Jacket Dia.	Vent Dia.	R/F Hot Water Conn.	Floor to Gas Conn.	R/F Cold Water Conn.	Floor to Top of Heater	Floor to Top Water Conn.	Water Conn.	Gas Conn. Dia.	Relief Valve Open.	Approx. Shipping Weight (lbs)	
				40°	100°	140°												Std.	ASME
DM-38T-155-3N	38	155,000	174	376	150	107	51	28 ¹ / ₄	6	34 ¹ / ₂	4 ⁵ / ₈	19 ³ / ₈	43	—	1 ¹ / ₂	3/4	3/4	438	—
DM-75T-125-3N	75	125,000	174	303	121	86	72 ¹ / ₄	28 ¹ / ₄	5	54 ¹ / ₂	4 ³ / ₄	34	65	67 ¹ / ₈	1 ¹ / ₂	3/4	3/4	520	—
DM-75T-160-3N	75	160,000	208	389	155	111	72 ¹ / ₄	28 ¹ / ₄	6	54 ¹ / ₂	4 ³ / ₄	34	65	67 ¹ / ₈	1 ¹ / ₂	3/4	3/4	520	—
DM-80T-180-3N	80	180,000	231	436	175	124	72 ³ / ₈	28 ¹ / ₄	6	56	4 ³ / ₄	19 ¹ / ₂	64 ¹ / ₂	66 ¹ / ₄	1 ¹ / ₂	3/4	3/4	540	—
DM-80T-199-3N	80	199,999	250	485	194	139	72 ³ / ₈	28 ¹ / ₄	6	56	4 ³ / ₄	19 ¹ / ₂	64 ¹ / ₂	66 ¹ / ₄	1 ¹ / ₂	3/4	3/4	540	—
DM-80T-250-3N(A)(LP)	80	250,000	298	606	242	173	72 ³ / ₈	28 ¹ / ₄	6	56	4 ³ / ₄	19 ¹ / ₂	64 ¹ / ₂	66 ¹ / ₄	1 ¹ / ₂	3/4	1	540	590
DM-100T-199-3N	98	199,999	263	485	194	139	83 ³ / ₈	28 ¹ / ₄	6	67	4 ³ / ₄	19 ¹ / ₂	75 ¹ / ₂	77 ¹ / ₄	1 ¹ / ₂	3/4	3/4	610	—
DM-100T-250-3N(A)(LP)	98	250,000	311	606	242	173	83 ³ / ₈	28 ¹ / ₄	6	67	4 ³ / ₄	19 ¹ / ₂	75 ¹ / ₂	77 ¹ / ₄	1 ¹ / ₂	3/4	1	610	690
DM-100L-199-3N	100	199,999	264	485	194	139	75	30 ¹ / ₄	6	56 ¹ / ₂	4 ¹ / ₂	23 ¹ / ₂	65	67	11 ² / ₂ (T&F) 2(R)	3/4	3/4	725	—
DM-100L-250-3N(A)	100	250,000	312	606	242	173	75	30 ¹ / ₄	6	56 ¹ / ₂	4 ¹ / ₂	23 ¹ / ₂	65	67	11 ² / ₂ (T&F) 2(R)	3/4	1	725	765
DM-100L-270-3N(A)**	100	270,000	332	655	262	187	75	30 ¹ / ₄	6	56 ¹ / ₂	4 ¹ / ₂	23 ¹ / ₂	65	67	11 ² / ₂ (T&F) 2(R)	3/4	1	725	765
DM-100S-199-3N	100	199,999	264	485	194	139	76 ³ / ₄	28 ¹ / ₄	6	60 ¹ / ₂	4 ¹ / ₂	20 ³ / ₄	72 ⁷ / ₈	75	11 ² / ₂ (T&F) 2(R)	3/4	3/4	667	—
DM-100S-250-3N(A)	100	250,000	312	606	242	173	76 ³ / ₄	28 ¹ / ₄	6	60 ¹ / ₂	4 ¹ / ₂	20 ³ / ₄	72 ⁷ / ₈	75	11 ² / ₂ (T&F) 2(R)	3/4	1	667	702

(A) = ASME Code Available
(F) = Front Water Connection
(R) = Rear Water Connection
(T) = Top Water Connection
** = Available in Natural Gas Only

For Propane Gas models change suffix "N" to "X".

For LowNOx compliance to meet SCAQMD requirements, place an "E" following the BTU Input identifier of the model number. Example: DM-75T-125E-3N

* Recoveries and First Hour Delivery Rating are based on Thermal Efficiencies of 80%.

(LP) Propane Gas Inputs		1st Hr. Del. Rating	GPH Rec.		
			40°	100°	140°
DM-80T-250-3X	235,000 BTU/Hr.	284	570	228	163
DM-100T-250-3X	235,000 BTU/Hr.	284	570	228	163

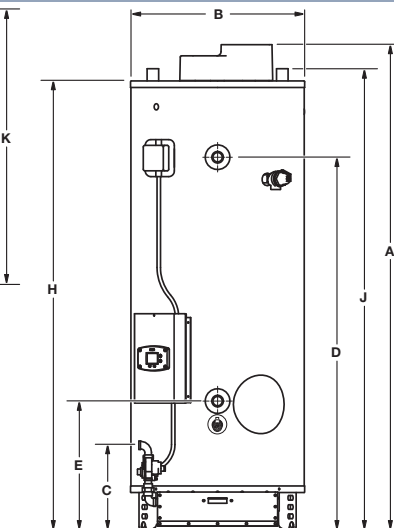
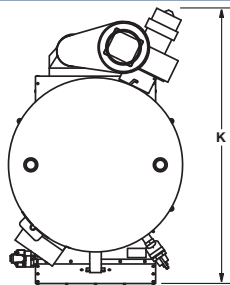


Commercial Gas Energy Saver Power Direct Vent Water Heater

118/119



- Honeywell integrated control—Proven design combines temperature control, diagnostic codes and system ignition functions into a single control board with a digital LCD display
- Operation mode
- Service mode
- Electronic ignition
- Automatic blower motor
- Factory installed Hydrojet® Sediment Reduction System
- Co-axial vent
- Vitraglas® lining
- Automatic re-set E.C.O.
- Non-CFC foam insulation
- Protective magnesium anode rods
- Hand hole cleanout
- Sanitizing capability
- NSF construction available
- Low NOx construction available
- ASME code available
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
PDV-80T-300-3NA

Power Direct Vent Energy Saver Models

These models meet or exceed both

DIMENSIONS IN INCHES

Recovery Efficiency and Standby Loss Requirements of ASHRAE 90.1b (Current Edition).

NATURAL GAS AND LIQUID PROPANE GAS MODELS

Model Number	Gal. Cap.	Nat. & LP Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Top Vent Height	Jacket Dia.	Floor to Gas Conn.	Floor to Hot Water Conn.	Floor to Cold Water Conn.	Floor to Heater Top	Floor to Top Water Conn.	Depth	Water Conn.	Gas Conn. Dia.	Relief Valve Open	Approx. Shipping Weight (lbs)	
				40°	100°	140°												Std.	ASME
PDV-80T-300-3N(A)	80	300,000	347	728	291	208	69 ⁵ / ₈	28 ¹ / ₄	13 ⁵ / ₈	51 ³ / ₈	20 ⁷ / ₈	63 ³ / ₄	65 ³ / ₄	44 ⁵ / ₈	1 ¹ / ₂ (T&F) 2 (R)	3/4	1	665	740
PDV-100T-360-3N(A)	100	360,000	419	873	349	249	78 ⁵ / ₈	28 ¹ / ₄	13 ⁵ / ₈	60 ³ / ₈	20 ⁷ / ₈	72 ³ / ₄	74 ³ / ₄	44 ⁵ / ₈	1 ¹ / ₂ (T&F) 2 (R)	3/4	1	735	815

(A) = ASME Code Available

(F) = Front Water Connection

(R) = Rear Water Connection

(T) = Top Water Connection

For Propane Gas models change suffix "N" to "X".

* Recoveries and First Hour Delivery Rating are based on Thermal Efficiencies of 80%.

For vertical venting please consult factory for optional vent components.

For LowNOx compliance to meet SCAQMD requirements, place an "E" following the BTU Input identifier of the model number.

(E) Low NO_x Burners

	1st Hr. Del. Rating	GPH Rec.		
		40°	100°	140°
PDV-80T-300E-3N(A)	280,000 BTU/Hr.	328	679	272
PDV-100T-360E-3N(A)	335,000 BTU/Hr.	395	812	325

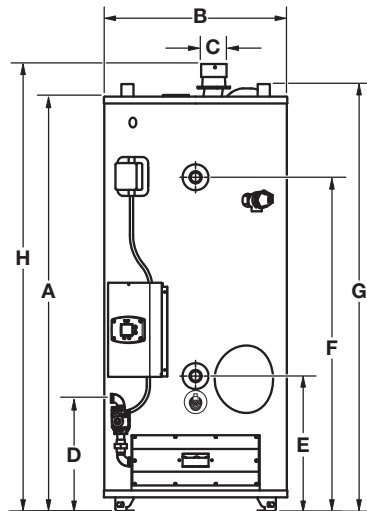
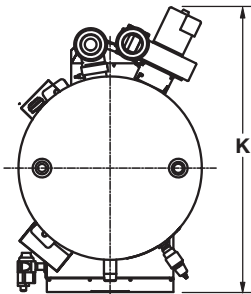
****Note:** The standard vent kit (p/n 243-41769-01) shipped with the heater, but in a separate carton includes: horizontal vent terminal, an elbow, condensate tee, vent connector clamps, and two 39" (990mm) straight sections of co-axial vent pipe. Can be cut for installation. Optional vent kits are available and will allow for extensions up to 21 feet. For further details please reference the installation instructions.



Commercial Gas Energy Saver Power Direct Vent 120/121 with Independent Vent System Water Heaters



- Honeywell integrated control—Proven design combines temperature control, diagnostic codes and system ignition functions into a single control board with a digital LCD display
- Operation mode
- Service mode
- Automatic blower motor
- Electronic ignition
- Factory installed Hydrojet® 2™ Sediment Reduction System
- Independent vent system
- Vitraglas® lining
- Automatic re-set E.C.O.
- Non-CFC foam insulation
- Water connections—1½" NPT top and front, 2" NPT rear factory installed true dielectric fittings
- Protective magnesium anode rods
- Hand hole cleanout
- Sanitizing capability
- NSF construction available
- ASME construction available on 250,000 BTU model (73.2 kW)
- Low NOx construction available
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
PDV-80S-150-3N

Power Direct Vent Energy Saver Models

These models meet or exceed both

DIMENSIONS IN INCHES

Recovery Efficiency and Standby Loss Requirements of ASHRAE 90.1b (Current Edition).

NATURAL GAS AND LIQUID PROPANE GAS MODELS

Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Floor to Heater Top	Jacket Dia.	Vent Size	Floor to Gas Conn.	Front Cold Water Conn.	Front Hot Water Conn.	Floor to Top Water Conn.	Floor to Vent Conn.	Depth	Water Conn.	Gas Conn. Dia.	Relief Valve Open	Approx. Shipping Weight (lbs)	
				40°	100°	140°													Std.	ASME
PDV-80S-150-3N	80	150,000	204	364	145	104	63 ⁷ / ₈	28 ¹ / ₄	3	17 ³ / ₈	20 ³ / ₄	51 ³ / ₈	65 ³ / ₄	68 ⁷ / ₈	43 ⁷ / ₈	1 ¹ / ₂ (T&F) 2(R)	3/4	3/4	645	—
PDV-80S-200-3N	80	199,999	253	485	194	139	63 ⁷ / ₈	28 ¹ / ₄	3	17 ³ / ₈	20 ³ / ₄	51 ³ / ₈	65 ³ / ₄	68 ⁷ / ₈	43 ⁷ / ₈	1 ¹ / ₂ (T&F) 2(R)	3/4	3/4	645	—
PDV-80S-250-3N(A)(LP)	80	250,000	301	606	242	173	63 ⁷ / ₈	28 ¹ / ₄	4	17 ³ / ₈	20 ³ / ₄	51 ³ / ₈	65 ³ / ₄	68 ⁷ / ₈	43 ⁷ / ₈	1 ¹ / ₂ (T&F) 2(R)	3/4	1	645	720
PDV-100S-150-3N	100	150,000	219	364	145	104	72 ⁷ / ₈	28 ¹ / ₄	3	17 ³ / ₈	20 ³ / ₄	60 ³ / ₈	74 ³ / ₄	77 ⁷ / ₈	43 ⁷ / ₈	1 ¹ / ₂ (T&F) 2(R)	3/4	3/4	735	—
PDV-100S-200-3N	100	199,999	266	485	194	139	72 ⁷ / ₈	28 ¹ / ₄	3	17 ³ / ₈	20 ³ / ₄	60 ³ / ₈	74 ³ / ₄	77 ⁷ / ₈	43 ⁷ / ₈	1 ¹ / ₂ (T&F) 2(R)	3/4	3/4	735	—
PDV-100S-250-3N(A)(LP)	100	250,000	312	606	242	173	72 ⁷ / ₈	28 ¹ / ₄	4	17 ³ / ₈	20 ³ / ₄	60 ³ / ₈	74 ³ / ₄	77 ⁷ / ₈	43 ⁷ / ₈	1 ¹ / ₂ (T&F) 2(R)	3/4	1	735	815

(A) = ASME Code Available

(T) = Top (F) = Front, (R) = Rear Connections

For Propane Gas models change suffix “N” to “X”.

For venting consult I&O manual.

* Recoveries and First Hour Delivery Rating are based on Thermal Efficiencies of 80%.

Model Number	3" Max. Intake	3" Max. Exhaust	4" Max. Intake	4" Max. Exhaust
PDV-80S-150,200	45 ft.	45 ft.	60 ft.	60 ft.
PDV-80S-250	N/A	N/A	60 ft.	60 ft.
PDV-100S-150,200	45 ft.	45 ft.	60 ft.	60 ft.
PDV-100S-250	N/A	N/A	60 ft.	60 ft.

(LP) Propane Gas Inputs		1st Hr. Del. Rating	GPH Rec.		
			40°	100°	140°
PDV-80S-250-3X(A)	225,000 BTU/Hr.	274	545	218	156
PDV-100S-250-3X(A)	225,000 BTU/Hr.	288	545	218	156

(E) LowNO _x Burners		1st Hr. Del. Rating	GPH Rec.		
			40°	100°	140°
PDV-80S-150E-3N	150,000 BTU/Hr.	201	364	145	104
PDV-80S-200E-3N	180,000 BTU/Hr.	231	436	175	125
PDV-80S-250E-3N(A)	220,000 BTU/Hr.	269	533	213	152
PDV-100S-150E-3N	150,000 BTU/Hr.	215	364	145	104
PDV-100S-200E-3N	180,000 BTU/Hr.	245	436	175	125
PDV-100S-250E-3N(A)	220,000 BTU/Hr.	283	533	213	152

For LowNO_x compliance to meet SCAQMD requirements, place an “E” following the BTU Input identifier of the model number.
Example: PDV-100S-200E-3N



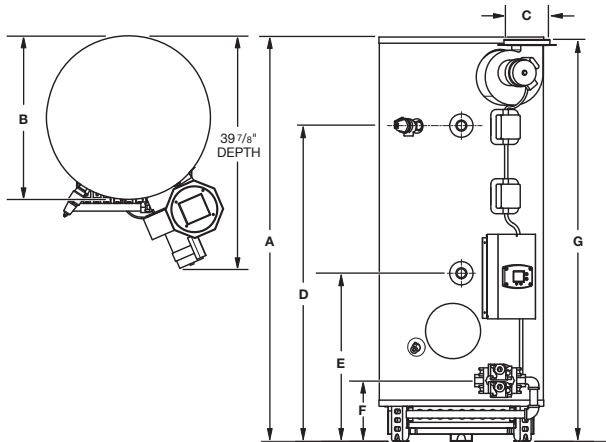
Commercial Gas Energy Saver Electronic Ignition Fan Induced Water Heaters

122/123



- Honeywell integrated control—Proven design combines temperature control, diagnostic codes and system ignition functions into a single control board with a digital LCD display
- Operation mode
- Service mode
- Automatic flue damper
- Electronic ignition
- Factory installed Hydrojet® Total Performance System
- Vitraglas® lining
- Automatic re-set E.C.O.
- Non-CFC foam insulation
- Water connections—1½" NPT front factory installed true dielectric fittings

- Protective magnesium anode rods
- Hand hole cleanout
- Sanitizing capability
- NSF construction available
- ASME construction available on 250,000 BTU model (73.2 kW)
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
D-65T-625-3NA

Induced Draft Energy Saver Models

DIMENSIONS IN INCHES

These models meet or exceed both Recovery Efficiency and Standby Loss Requirements of ASHRAE 90.1b (Current Edition).
80% Recovery Efficiency

NATURAL GAS AND LIQUID PROPANE GAS MODELS							A	B	C	D	E	F	G				
Model Number	Gal. Cap.	Nat. & LP Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise*			Floor to Heater Top	Jacket Dia.	Vent Dia.	Floor to Hot Water Conn.	Floor to Cold Water Conn.	Floor to Gas Conn.	Floor to Vent Height	Gas Conn. Dia.	Relief Valve Open	Approx. Shipping Weight (lbs)	
				40°	100°	140°										Std.	ASME
D-65T-625-3N(A)	65	625,000	651	1515	606	433	63 ³ / ₈	28 ¹ / ₄	8	54 ¹ / ₈	28 ⁷ / ₈	10 ¹ / ₂	68 ⁷ / ₈	1†	1	720	775
D-80T-725-3N(A)	80	725,000	759	1757	703	502	79 ⁵ / ₈	28 ¹ / ₄	8	64 ¹ / ₄	28 ⁷ / ₈	10 ¹ / ₂	79 ¹ / ₈	1†	1	800	880

(A) = ASME Code Available

For Propane Gas models change suffix "N" to "X".

†LP Gas connection 3/4".

* Recoveries and First Hour Delivery Rating are based on Thermal Efficiencies of 80%.

(LP) Propane Gas Inputs		1st Hr. Del. Rating	GPH Rec.		
			40°	100°	140°
D-65T-625-3N(A)	625,000 BTU/Hr.	651	1515	606	433
D-80T-725-3N(A)	725,000 BTU/Hr.	759	1757	703	502

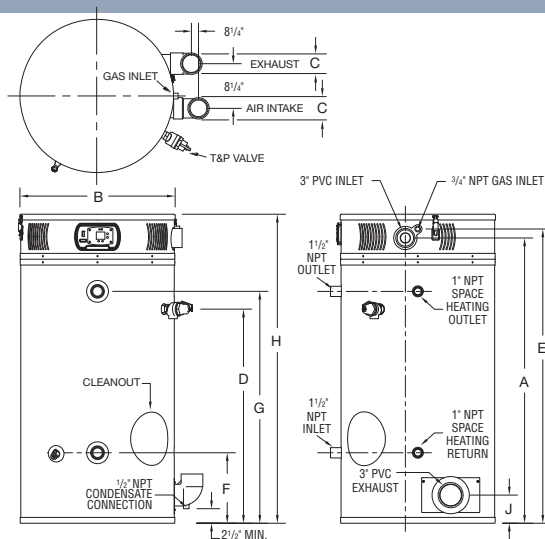


Commercial Gas Energy Saver Ultra High Efficiency Water Heater

124/125



- ASME construction available
- Up to 99.1% thermal efficiency
- Electronic controls
- Low-NOx Premix Power Burner
- Three pass flue system
- Flexible venting
- Vitraglas® lining
- Factory installed Hydrojet® Sediment Reduction System
- Factory installed dielectric fittings
- Non-CFC foam insulation
- Four protective magnesium anode rods (except EF-100T-399)
- Hand hole cleanout
- Zero inch clearance to combustibles
- Two powered anode rods and one non-powered anode rod in the EF-100T-399
- NSF construction available
- T&P relief valve installed
- Low restriction brass drain valve
- Complies with SCAQMD Low NOx requirements



Photograph of
EF-60T-199E-3N

eF Series® Energy Saver Models

DIMENSIONS IN INCHES

These models meet or exceed both
Recovery Efficiency and Standby Loss Requirements of ASHRAE 90.1b (Current Edition).

NATURAL GAS AND LIQUID PROPANE GAS MODELS

Model Number	Gal. Cap.	Therm. Eff. %	Input BTU/Hr.	1st Hour Delivery Rating	GPH Recovery at °F Rise			Floor to Air Intake	Jacket Dia.	Vent & Air Intake Size	Floor to T&P Valve Conn.	Floor to Gas Conn.	Cold Water Inlet Conn.	Hot Water Outlet Conn.	Floor to Top of Heater	Floor to Vent Conn.	Water Conn.	Gas Conn. Dia.	Relief Valve Open	Approx. Shipping Weight (lbs)
					40°	100°	140°													
EF-60T-125E-3N(A)	60	96.0	125,000	187	364	145	104	52 ¹ / ₂	28 ¹ / ₄	3	40	53 ¹ / ₂	12 ⁷ / ₈	42	57	5	1 ¹ / ₂	3 ⁴ / ₄	3 ⁴ / ₄	570
EF-60T-150E-3N(A)	60	93.0	150,000	211	423	169	121	52 ¹ / ₂	28 ¹ / ₄	3	40	53 ¹ / ₂	12 ⁷ / ₈	42	57	5	1 ¹ / ₂	3 ⁴ / ₄	3 ⁴ / ₄	570
EF-60T-199E-3N(A)	60	92.0	199,999	265	558	223	159	52 ¹ / ₂	28 ¹ / ₄	3	40	53 ¹ / ₂	12 ⁷ / ₈	42	57	5	1 ¹ / ₂	3 ⁴ / ₄	3 ⁴ / ₄	570
EF-100T-150E-3N(A)	100	99.1	150,000	250	450	180	128	73 ¹ / ₈	28 ¹ / ₄	3	60	74 ³ / ₄	12 ⁷ / ₈	63	77 ⁵ / ₈	5	1 ¹ / ₂	3 ⁴ / ₄	3 ⁴ / ₄	900
EF-100T-199E-3N(A)	100	98.5	199,999	309	597	239	171	73 ¹ / ₈	28 ¹ / ₄	3	60	74 ³ / ₄	12 ⁷ / ₈	63	77 ⁵ / ₈	5	1 ¹ / ₂	3 ⁴ / ₄	3 ⁴ / ₄	900
EF-100T-250E-3N(A)	100	97.0	250,000	364	735	294	210	73 ¹ / ₈	28 ¹ / ₄	3	60	74 ³ / ₄	12 ⁷ / ₈	63	77 ⁵ / ₈	5	1 ¹ / ₂	3 ⁴ / ₄	1	900
EF-100T-300E-3N(A)	100	92.0	300,000	405	836	335	239	73 ¹ / ₈	28 ¹ / ₄	3	60	74 ³ / ₄	12 ⁷ / ₈	63	77 ⁵ / ₈	5	1 ¹ / ₂	3 ⁴ / ₄	1	900
EF-100T-399E-3N(A)	100	93.0	399,999	518	1127	451	322	73 ¹ / ₈	28 ¹ / ₄	3	60	73 ¹ / ₄	13	63	77 ⁵ / ₈	5	1 ¹ / ₂	1	1	950

(A) = ASME Code Available

For Propane Gas models change suffix "N" to "X" and remove "E" from model number Example: EF-100T-150-3X.

Note: The weight is the same for both ASME and Non-ASME models.

NSF Compliance Kit—p/n 265-44542-04.

eF Series® Optional Equipment Features:

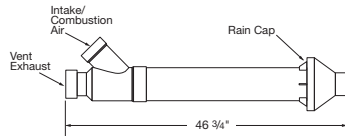
Maxitrol Gas Pressure Regulating valve—

Ensures proper supply pressure to eF unit of 7" to 11" W.C.

(provided incoming pressure is between 1/2 and 2 psi). This can be ordered as a separate part, or as part of the heater. For the separate part, please use p/n 243-45517-00 (not available for use with the EF-100T-399).

Low Gas Inlet Pressure Option—Pre-assembled to allow operation at lower inlet natural gas pressure.

Concentric Vent Terminal Kit—3" termination fitting provides for only one exit opening through wall or roof (p/n 239-44069-01).



Model Number	Max. 3" PVC, ABS & CPVC	Max. 4" PVC, ABS & CPVC
EF-60T-125	120 ft.	170 ft.
EF-60T-150	100 ft.	150 ft.
EF-60T-199	80 ft.	130 ft.
EF-100T-150	120 ft.	170 ft.
EF-100T-199	100 ft.	150 ft.
EF-100T-250	80 ft.	130 ft.
EF-100T-300	60 ft.	110 ft.
EF-100T-399	50 ft.	100 ft.

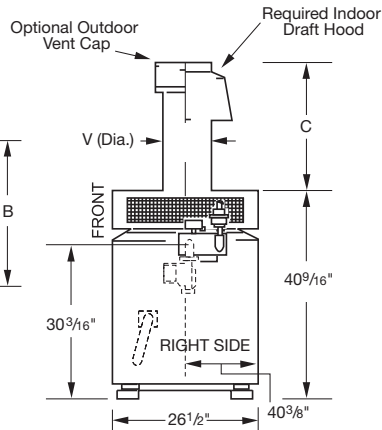
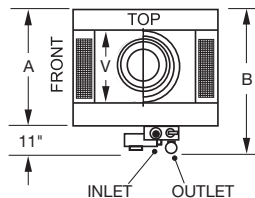


Commercial Gas Energy Saver Copper-Brute™ Water Heaters

126/127

175,000 Thru 399,000 BTU/Hr.

- Direct fired "Fin-Tube" design for maximum efficiency and fast response to demand
- Flexible design allows many installation options
- 160 PSI ASME heat exchanger construction assures safety and quality, provides better than 80% combustion efficiency
- Exceeds ASHRAE 90.1b (Current Edition)
- Heavy Inso Block refractory-precast in 2" thick inter-locking sections provides maximum heat retention
- Stainless steel burners with slide-out burner tray allows for easy inspection and service
- 24 volt control and safety circuit provides precise temperature and safety control
- Solid copper heat exchanger
- Includes relief valve, all bronze factory mounted pump, flow switch (mounted & wired); pump delay, and remote thermostat
- Energy Management Monitor (EM²) pump time delay



Copper-Brute™ Energy Saver Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS

Indoor Model Number	Input BTU/Hr.	Indoor Output BTU/Hr.	Temperature Rise Across Heater Gallons Per Hour Delivered		Gas Connection Size		Water Conn.	A	B	C	V	Approx. Shipping Weight (lbs)
			100°F	140°F	Natural	Propane						
B40175IN	175,000	142,000	170	122	3/4	1/2	1 1/2	18	26 1/2	23 1/2	6	275
B40250IN	250,000	204,000	245	175	3/4	1/2	1 1/2	22 1/2	31	24 3/4	7	305
B40325IN	325,000	263,000	316	226	3/4	1/2	1 1/2	26 3/4	35 1/4	25 7/8	8	345
B40400IN	399,000	324,000	389	278	3/4	1/2	1 1/2	31 3/4	40 1/4	26 7/8	9	380

For LP Models, change suffix "N" to "P". Indoor configuration includes the separate draft hood. All units feature: System 1 Standing Pilot; Pump Delay; All Bronze Pump; Flow Switch (mounted and wired); and Remote Aquastat (E-144)

NATURAL GAS AND LIQUID PROPANE MODELS

Outdoor Model Number	Input BTU/Hr.	Outdoor Output BTU/Hr.	Temperature Rise Across Heater Gallons Per Hour Delivered		Gas Connection Size		Water Conn.	A	B	C	V	Approx. Shipping Weight (lbs)
			100°F	140°F	Natural	Propane						
B40175EN	175,000	140,000	168	120	3/4	1/2	1 1/2	18	26 1/2	14 1/16	6	275
B40250EN	250,000	200,000	240	171	3/4	1/2	1 1/2	22 1/2	31	18 1/16	7	305
B40325EN	325,000	260,000	312	223	3/4	1/2	1 1/2	26 3/4	35 1/4	19 3/16	8	345
B40400EN	399,000	320,000	384	274	3/4	1/2	1 1/2	31 3/4	40 1/4	22 5/8	9	380

For LP Models, change suffix "N" to "P". Above models include: Standing Pilot Ignition; Flow Switch (mounted and wired); All Bronze Pump and Fittings; and Remote Aquastat (E-144). Pump supplied for units 175 to 1825 sized for normal water (7-17 Grain Hardness). For hard or soft water pumps please consult factory.

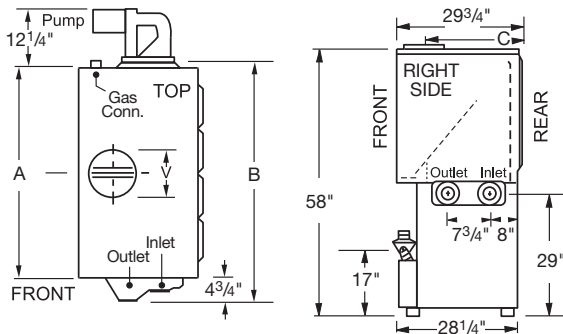


Commercial Gas Energy Saver Copper-Brute™ Water Heaters

128/129

500,000 Thru 1,825,000 BTU/Hr.

- Non-gasket “Copper-Fin” heat exchanger
- 82% thermal efficiency
- Ceramic tile combustion chamber
- 24 Volt controls
- Built-in draft hood
- Meets ASME Code, Section H
- 5 year warranty
- Includes relief valve, factory-mounted all bronze pump, flow switch, pump delay, and remote thermostat
- Options include intermittent pump controller, cupro-nickel heat exchanger, manual reset high limit, alarm bell
- 160 PSI ASME heat exchanger construction assures safety and quality
- Energy Management Monitor (EM²) pump time delay



Copper-Brute™ Indoor Energy Saver Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS

Indoor Model Number	Input BTU/Hr.	Indoor Output BTU/Hr.	Temperature Rise Across Heater Gallons Per Hour Delivered			Gas Connection Size		Water Conn.	A	B	C	V	Approx. Shipping Weight (lbs)
			90°F	100°F	140°F	Natural	Propane						
B40500IN	500,000	405,000	540	486	347	1	3/4 1	2	39 ⁵ / ₈	39 ⁵ / ₈	23 ⁵ / ₈	10	745
B40600IN	600,000	486,000	648	583	417	1	3/4 1	2	38 ¹ / ₂	44 ⁵ / ₈	22 ⁵ / ₈	12	835
B40715IN	715,000	579,000	772	695	496	1	3/4 1	2	44 ¹ / ₄	50 ¹ / ₄	22 ⁵ / ₈	12	905
B40850IN	850,000	689,000	918	826	590	1 1 ¹ / ₂	3/4 1 ³ / ₄	2	50 ⁵ / ₈	56 ⁵ / ₈	21 ⁵ / ₈	14	955
B41010IN	1,010,000	818,000	1091	982	701	1 ¹ / ₄	1 1 ¹ / ₄	2 ¹ / ₂	58	64	20 ⁵ / ₈	16	1075
B41200IN	1,200,000	972,000	1296	1166	833	1 ¹ / ₄	1 1 ¹ / ₄	2 ¹ / ₂	66 ¹ / ₄	72 ¹ / ₄	20 ⁵ / ₈	16	1200
B41430IN	1,430,000	1,158,000	1544	1390	993	1 ¹ / ₄	1 ¹ / ₄	2 ¹ / ₂	76	82	19 ⁵ / ₈	18	1345
B41670IN	1,670,000	1,353,000	1804	1623	1159	1 ¹ / ₄ 1 ¹ / ₂	1 ¹ / ₄	2 ¹ / ₂	85 ³ / ₈	91 ³ / ₈	19 ⁵ / ₈	18	1430
B41825IN	1,825,000	1,478,000	1971	1774	1267	1 ¹ / ₄ 1 ¹ / ₂	1 ¹ / ₄	2 ¹ / ₂	92 ¹ / ₄	98 ¹ / ₄	19 ⁵ / ₈	18	1480

For propane models, change “N” to “P”. Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.

Above models include: Hot Surface Ignition; Flow Switch (mounted and wired); All Bronze Fitted Pump; Pump Delay and Remote Sensor.

Pump supplied are sized for normal water (7-17 Grain Hardness). For hard or soft water pumps please consult factory.

No drafthood required on size 500-1825 outdoor units.

For outdoor units change “IN” to “EN”.



Commercial Gas Energy Saver Copper-Brute™ II Water Heaters

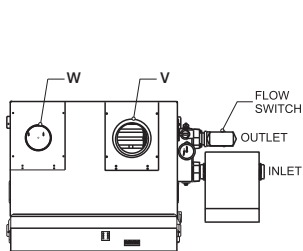
130/131

199,900 Thru 399,900 BTU/Hr.

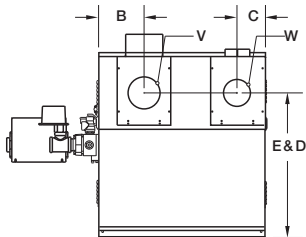
- 84% thermal efficiency
- NOx rate less than 30ppm
- Hot surface ignition
- Stainless steel burners

- Unique gasketless heat exchanger design
- Ceramic tile sealed combustion chamber
- 125 PSI ASME temperature and pressure relief valve

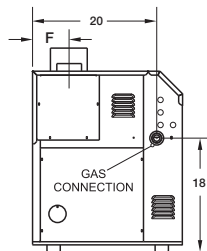
- ASME “H” stamp designated and certified for potable water use
- Glass lined headers



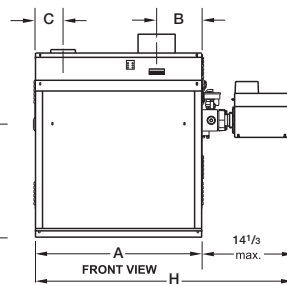
TOP VIEW



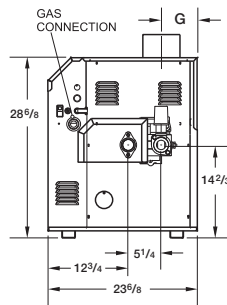
REAR VIEW



LEFT SIDE VIEW



FRONT VIEW



RIGHT SIDE VIEW

- 5 year limited warranty on heat exchanger
- Electronic PID staging control with LCD and touchpad

- Adjustable high limit with manual reset
- Pump and flow switch mounted and wired
- Temperature/pressure gauge

- 160 PSI ASME heat exchanger construction
- Energy Management Monitor (EM²) pump time delay

Copper-Brute™ II Energy Saver Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS

									A	B	C	D	E	F	G	H	
Indoor Model Number	Input BTU/Hr.	Output BTU/Hr.	GPH Recovery 100°F Rise	Gas Conn.	Water Conn.	Air Conn. W*	Vent Conn. V*	Horiz. Vent Pipe									Approx. Shipping Weight (lbs)
BWCV0200	199,900	169,900	204	3/4	1 1/2	4	5	4	20 1/2	7 1/3	4 1/2	23 1/8	23 1/8	5 7/8	5 7/8	34 4/5	290
BWCV0300	299,900	254,900	306	3/4	1 1/2	4	6	5	26 1/2	7 1/3	4 1/2	23 1/8	23 1/8	5 7/8	5 7/8	40 4/5	320
BWCV0400	399,900	339,900	408	3/4	1 1/2	6	7	6	33 1/2	7 1/3	4 1/2	23 1/8	23 1/8	5 7/8	5 7/8	47 4/5	350

* Air and vent connections may be on top or back of unit and are field convertible.

For LP Models, change "N" to "P". Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.

Above models include: Hot Surface Ignition; Flow Switch (mounted and wired); All Bronze Fitted Pump; Pump Delay and Remote Sensor.

Pump supplied are sized for normal water (7-17 Grain Hardness). For hard or soft water pumps please consult factory.



Commercial Gas Energy Saver Copper-Brute™ II Water Heaters

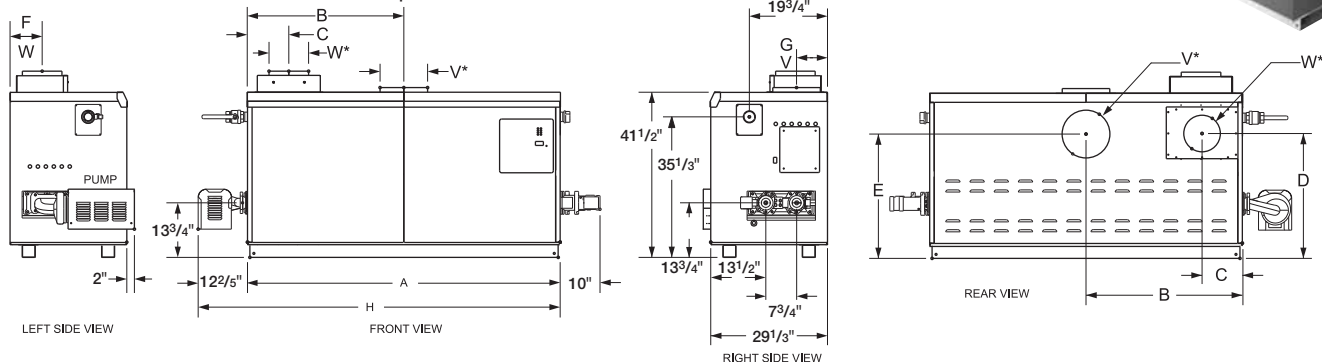
132/133

500,000 Thru 1,999,000 BTU/Hr.

- 84% thermal efficiency
- NOx rate less than 10ppm
- Hot surface ignition
- Stainless steel burners

- Unique gasketless heat exchanger design
- Ceramic tile sealed combustion chamber
- 125 PSI ASME temperature and pressure relief valve

- 24V control system
- ASME "H" stamp designed and certified for potable heating use
- Glass lined headers



- Electronic PID staging control with LCD and touch pad
- 5 year limited warranty on heat exchanger
- Pump and flow switch mounted and wired

- Adjustable high limit with manual reset
- Temperature/pressure gauge
- 160 PSI ASME heat exchanger construction

- Energy Management Monitor (EM²) pump time delay
- When ordering outdoor models, you must order outdoor vent kits

Copper-Brute™ II Energy Saver Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS

									A	B	C	D	E	F	G	H	
Indoor Model Number	Input BTU/Hr.	Output BTU/Hr.	GPH Recovery 100°F Rise	Gas Conn.	Water Conn.	Air Conn. W*	Vent Conn. V*	Horiz. Vent Pipe									Approx. Shipping Weight (lbs)
BWCV0500	500,000	425,000	510	1¼	2	6	6	6	33½	15¾	5¾	29¾	32¾	7¾	8¾	46	425
BWCV0750	750,000	638,000	765	1¼	2	8	10	6	45½	21¾	5¾	29¾	32¾	7¾	8¾	58	505
BWCV1000	999,000	849,000	1019	1½	2½	8	10	8	57½	28¾	5¾	29¾	32¾	7¾	7	70	615
BWCV1250	1,250,000	1,063,000	1276	2	2½	8	12	8	68	34	10⅞	30¾	29½	8¾	8¾	80	675
BWCV1500	1,500,000	1,275,000	1531	2	2½	8	12	8	78½	39¾	10⅞	30¾	29½	8¾	8¾	91	760
BWCV1750	1,750,000	1,488,000	1786	2	2½	8	14	8	89	44½	10⅞	30¾	29½	8¾	8¾	101	825
BWCV2000	1,999,000	1,699,000	2040	2	2½	12	14	12	99½	49¾	10⅞	30¾	29½	8¾	8¾	112	955

* Air and vent connections may be on top or back of unit and are field convertible.

For LP Models, change "N" to "P". Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.

Above models include: Hot Surface Ignition; Flow Switch (mounted and wired); All Bronze Fitted Pump; Pump Delay and Remote Sensor.

Pump supplied are sized for normal water (7-17 Grain Hardness). For hard or soft water pumps please consult factory.



Commercial Electric Energy Saver Water Heaters

134/135

Specify voltage and wattage when ordering.

All models are UL listed. All water connections are ¾" NPT (LD-120R has 1" NPT). All electrical connections are ¾". All models are certified at 300 PSI test pressure and 150 PSI working pressure. All models come equipped with two installed heat traps (except LD-120R, LD-20L, Utility and Wall Hung models). All models include an installed T&P Relief Valve.

Note: All **Upright** and **Lowboy's** will be wired 240 Volt with two 4500 watt elements, 3 phase non-simultaneous operation (except 277 volt, 277 volt is only available in single phase operation). Other wattages and voltages are available. These models are field convertible to single phase and simultaneous operation. All models have a maximum total wattage of 3000 watts at 120 Volt. Incoloy elements available for most inputs.

Note: All **Wall Hung** and **Utility's** will be wired 120 Volt with a 1500 watt element as single phase operation. 3 phase wiring not available on Wall Hung or Utility models (Single Element Units). Other wattages and voltages are available. Maximum total wattage for 6 and 12 gallon sizes is 3000 watts for all voltages. All models have a maximum wattage of 3000 watts at 120 Volt. Incoloy elements available for most inputs. **NSF Construction not available on Light Duty Energy Saver models.**

Incoloy Element Availability Chart

Watts	120V	208V	240V	277V	480V
1500	yes	yes	yes	no	no
2000	no	yes	yes	yes	yes
2500	no	yes	yes	no	no
3000	no	yes	yes	yes	yes
3500	no	yes	yes	no	no
4000	no	yes	yes	yes	yes
4500	no	yes	yes	yes	yes
5000	no	yes	yes	yes	yes
5500	no	yes	yes	yes	yes
6000	no	yes	yes	yes	yes

Commercial Light Duty Upright and Lowboy Model Number Suffix

Phase	1**	Single Phase Non-simultaneous	Designator	A	B	C	D	F	G
	3*	Three Phase Non-simultaneous	Voltage	120	208	240	277**	415	480

EX: LD-65R-3-3C090,

Three Phase Non-simultaneous, 240V, 4500 W/4500 W.

EX: LD-65R-3-3C090

Designator	030	040	050	060	070	080	090	100	110	120
Wattage	1500/	2000/	2500/	3000/	3500	4000/	4500/	5000/	5500/	6000/
	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000

EX: LD-65R-3-3C090

*All models are shipped from factory three phase. Can be converted to single phase and/or simultaneous operation in the field.

**Can be ordered in 277V. 277V cannot be ordered as three phase operation.

Commercial Light Duty Utility and Wall Hung Model Number Suffix

Phase	1	Single Phase Non-simultaneous	Designator	A	B	C	D	G
			Voltage	120	208	240	277	480

EX: LD-20U-3-1A015

Single Phase Non-simultaneous, 120V, 1500 W.

EX: LD-20U-3-1A015

Designator	015	020	025	030	035	040	045	050	055	060
Wattage	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000

EX: LD-20U-3-1A015

Three Phase Amperes for Non-Simultaneous Operation

Element Wattage	120V	208V	240V	480V
1500W / 1500W	7.22	4.16	3.61	1.80
2000W / 2000W	9.62	5.55	4.81	2.41
2500W / 2500W	12.03	6.94	6.01	3.01
3000W / 3000W	14.43	8.33	7.22	3.61
3500W / 3500W	16.84	9.72	8.42	4.21
4000W / 4000W	19.25	11.10	9.62	4.81
4500W / 4500W	21.65	12.49	10.83	5.41
5000W / 5000W	24.06	13.88	12.03	6.01
5500W / 5500W	26.46	15.27	13.23	6.62
6000W / 6000W	28.87	16.65	14.43	7.22

Single Phase Amperes for Non-Simultaneous Operation

Element Wattage	120V	208V	240V	480V
1500W / 1500W	12.50	7.21	6.25	3.13
2000W / 2000W	16.67	9.62	8.33	4.17
2500W / 2500W	20.83	12.02	10.42	5.21
3000W / 3000W	25.00	14.42	12.50	6.25
3500W / 3500W	29.17	16.83	14.58	7.29
4000W / 4000W	33.33	19.23	16.67	8.33
4500W / 4500W	37.50	21.63	18.75	9.38
5000W / 5000W	41.67	24.04	20.83	10.42
5500W / 5500W	45.83	26.44	22.92	11.46
6000W / 6000W	50.00	28.85	25.00	12.50

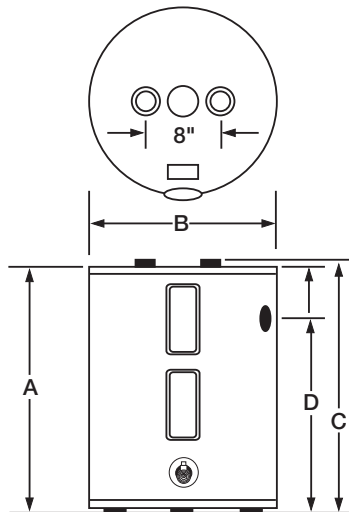


Commercial Electric Energy Saver Light Duty Lowboy Water Heaters

136/137



- Can be offered with optional side/top T&P relief valve
- Field Convertible – capable of being converted to single phase and/or simultaneous operation at the terminal block
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC foam insulation
- Fully automatic controls (160°F maximum)
- Direct heat transfer with immersed elements
- Protective magnesium anode rod
- Factory installed heat traps
- Low restriction brass drain valve
- T&P relief valve installed



*Optional Dimension



Photograph is of
LD-20L3-3

Lowboy Energy Saver Models

DIMENSIONS IN INCHES

ELECTRIC		A	B	C	D	E	
Model Number	Gallon Capacity	Floor to Heater Top	Jacket Diameter	Floor to Water Conn.	Floor to T&P Conn.	Floor to Junction Box	Approx. Shipping Weight (lbs)
LD-20L3-3	19	24 ⁷ / ₈	18	25 ⁷ / ₈	19 ¹ / ₄ /24 ⁷ / ₈	26 ¹ / ₈	58
LD-30L3-3	30	29 ¹ / ₂	20	30 ⁵ / ₈	24/29 ¹ / ₂	30 ⁵ / ₈	86
LD-40L3-3	40	31 ¹ / ₂	22	32 ⁷ / ₈	24 ¹ / ₈ /31 ¹ / ₂	33	115
LD-50L3-3	47	31 ³ / ₄	24	33 ¹ / ₈	24 ¹ / ₈ /31 ³ / ₄	33	143

Specify voltage, phase and input when ordering.

* All models feature side T&P location and must specify top T&P when ordering. "D" dimension listed as side/top.

NOTE: Refer to pages 134/135 for technical information and pages 148/149 for GPH recovery information.

Wattage Limitations for Simultaneous and Non-Simultaneous Operation

Wattage	120V	208V	240V	277V	480V
1500 / 1500	yes	yes	yes	yes	yes
2000 / 2000	no	yes	yes	yes	yes
2500 / 2500	no	yes	yes	yes	yes
3000 / 3000	no	yes	yes	yes	yes
3500 / 3500	no	yes	yes	no	no
4000 / 4000	no	yes	yes	yes	yes
4500 / 4500	no	yes	yes	yes	yes
5000 / 5000	no	yes	yes	yes	yes
5500 / 5500	no	no	yes	no	no
6000 / 6000	no	no	no	yes	yes

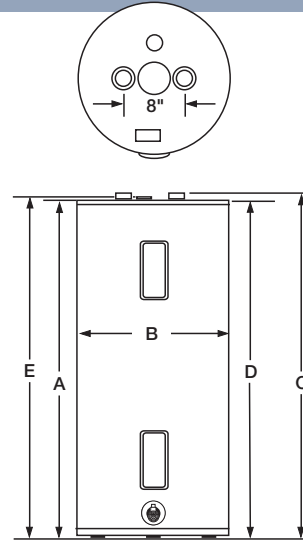


Commercial Electric Energy Saver Light Duty Water Heaters

138/139



- Field Convertible – capable of being converted to single phase and/or simultaneous operation at the terminal block
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings (LD-120R has 1" fittings)
- 2" Non-CFC foam insulation
- Fully automatic controls (160°F maximum)
- Direct heat transfer with immersed screw-type elements
- Protective magnesium anode rod
- Factory installed heat traps (except LD-120R)
- Low restriction brass drain valve



Photograph is of
LD-50S3-3

Energy Saver Models

DIMENSIONS IN INCHES

ELECTRIC		A	B	C	D	E	
Model Number	Gallon Capacity	Floor to Heater Top	Jacket Diameter	Floor to Water Conn.	Floor to T&P Conn.	Floor to Junction Box	Approx. Shipping Weight (lbs)
LD-30R3-3	30	46 ¹ / ₂	18	47 ¹ / ₄	46 ¹ / ₂	47 ³ / ₄	85
LD-40S3-3	40	46 ⁷ / ₈	20	47 ⁷ / ₈	46 ⁷ / ₈	48 ¹ / ₈	103
LD-50S3-3	50	46 ¹ / ₂	22	47 ¹ / ₂	46 ¹ / ₂	47 ³ / ₄	130
LD-65R3-3	65	59 ¹ / ₄	22	60 ³ / ₄	59 ¹ / ₄	60 ¹ / ₂	156
LD-80R3-3	80	59	24	60 ³ / ₄	59	60 ¹ / ₄	183
LD-120R3-3	119	62 ³ / ₄	28	64 ³ / ₈	62 ³ / ₄	64	305

Specify voltage, phase and input when ordering.

NOTE: Refer to pages 134/135 for technical information and pages 148/149 for GPH recovery information.

Wattage Limitations for Simultaneous and Non-Simultaneous Operation

Wattage	120V	208V	240V	277V	480V
1500 / 1500	yes	yes	yes	yes	yes
2000 / 2000	no	yes	yes	yes	yes
2500 / 2500	no	yes	yes	yes	yes
3000 / 3000	no	yes	yes	yes	yes
3500 / 3500	no	yes	yes	no	no
4000 / 4000	no	yes	yes	yes	yes
4500 / 4500	no	yes	yes	yes	yes
5000 / 5000	no	yes	yes	yes	yes
5500 / 5500	no	no	yes	no	no
6000 / 6000	no	no	no	yes	yes



Commercial Electric Energy Saver Light Duty Utility Water Heaters

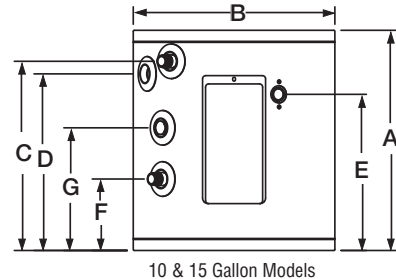
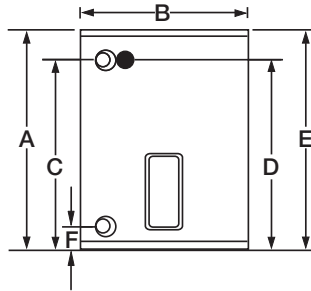
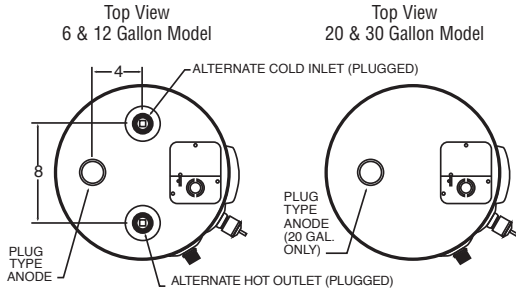
140/141

- Side connections for cold water inlet and hot water outlet allowing insulation in tight places
- 6 and 12 gallon models come equipped with alternate water connection tappings on top
- Vitraglas® lining
- Water Connections – 3/4" NPT factory installed true dielectric fittings

- 1" Non-CFC foam insulation (LD-30U has 2" Non-CFC insulation)
- Fully automatic controls (160°F maximum)
- Direct heat transfer with immersed screw-type element
- Protective magnesium anode rod
- T&P relief valve installed



Photograph is of
LD-20U3-1



Utility Energy Saver Models

DIMENSIONS IN INCHES

ELECTRIC		A	B	C	D	E	F	G	
Model Number	Gallon Capacity	Floor to Heater Top	Jacket Diameter	Floor to Hot Water Conn.	Floor to T&P Conn.	Floor to Junction Box	Floor to Cold Water Conn.	Floor to Anode Rod	Approx. Shipping Weight (lbs)
LD-6U3-1†	6	16½	14	10⅛	10⅛	17¾	3	16½	33
LD-10U3-1†	10	17½	16	15	14	12	5⅛	9⅛	48
LD-12UT3-1†	12	27¾	14	21⅛	21⅛	29	3	27¾	48
LD-15U3-1†	15	20¼	18	17¾	16¾	12⅛	6⅛	10⅛	55
LD-20U3-1	19	24¾	18	18¼	18¾	26	3	10¼	59
LD-30U3-1	30	29¾	22	23¼	23¼	31	4⅜	30	82

Specify voltage, phase and input when ordering.
NOTE: Refer to pages 134/135 for technical information and pages 148/149 for GPH recovery information.
†Maximum wattage at any voltage is 3000 W.

Wattage Limitations					
Wattage	120V	208V	240V	277V	480V
1500	yes	yes	yes	yes	yes
2000	yes	yes	yes	yes	yes
2500	yes	yes	yes	yes	yes
3000	yes	yes	yes	yes	yes
3500	no	yes	yes	no	no
4000	no	yes	yes	yes	yes
4500	no	yes	yes	yes	yes
5000	no	yes	yes	yes	yes
5500	no	yes	yes	no	no
6000	no	yes	yes	yes	yes

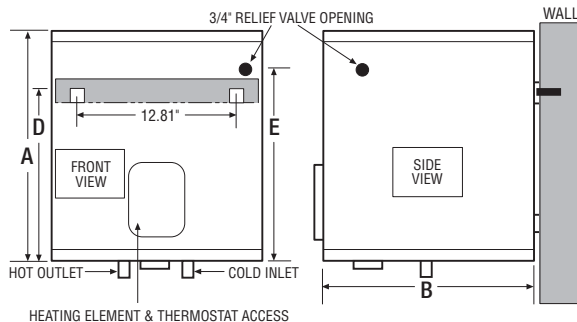
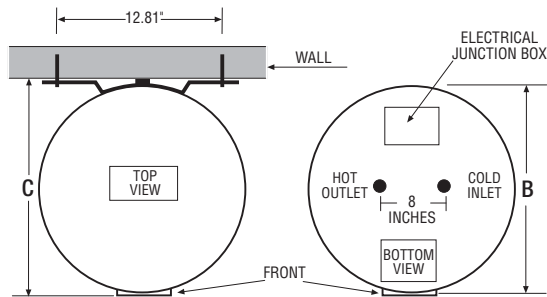


Commercial Electric Energy Saver Light Duty Wall Hung Water Heaters

142/143

- Vitraglas® lining
- Terminal block factory installed in junction box on all models
- Water Connections – 3/4" NPT factory installed true dielectric fittings are on bottom of heater for ease of installation

- 1" Non-CFC foam insulation
- Fully automatic controls (160°F maximum)
- Direct heat transfer with immersed screw-type element
- Factory installed heavy duty wall mounting bracket
- Protective magnesium anode rod



Photograph is of
LD-WH20L3-1

Wall Hung Energy Saver Models

DIMENSIONS IN INCHES

ELECTRIC		A	B	C	D	E	
Model Number	Gallon Capacity	Height to Heater Top	Jacket Diameter	Wall to Front	Height to Bracket	Height to T&P Conn.	Approx. Shipping Weight (lbs)
LD-WH6U3-1†	6	15 ³ / ₄	14	14 ⁵ / ₈	11 ³ / ₄	11 ⁷ / ₈	33
LD-WH12U3-1†	12	16 ³ / ₈	18	18 ⁵ / ₈	12 ³ / ₄	12 ¹ / ₂	47
LD-WH20L3-1	19	24 ³ / ₈	18	18 ⁵ / ₈	18 ¹ / ₄	21	58
LD-WH30L3-1	30	29 ¹ / ₄	22	20 ⁵ / ₈	23	25 ³ / ₄	86

Specify voltage, phase and input when ordering.
NOTE: Refer to pages 134/135 for technical information and pages 148/149 for GPH recovery information.
†Maximum wattage at any voltage is 3000 W.

Wattage Limitations					
Wattage	120V	208V	240V	277V	480V
1500	yes	yes	yes	yes	yes
2000	yes	yes	yes	yes	yes
2500	yes	yes	yes	yes	yes
3000	yes	yes	yes	yes	yes
3500	no	yes	yes	no	no
4000	no	yes	yes	yes	yes
4500	no	yes	yes	yes	yes
5000	no	yes	yes	yes	yes
5500	no	yes	yes	no	no
6000	no	yes	yes	yes	yes



Commercial Electric Energy Saver Light Duty Conversion Kits

144/145

LDCE Voltage and Wattage Conversion Kits for Upright and LowBoy Models

Simultaneous and Non-simultaneous	Voltage						
	120	208	240	277	380	415	480
1500 / 1500	265-46409-01	265-46409-05	265-46409-13	265-46409-16	265-46409-24	265-46409-41	265-46409-32
2000 / 2000	N/A	265-46409-06	265-46409-05	265-46409-17	265-46409-43	265-46409-24	265-46409-33
2500 / 2500	N/A	265-46409-07	265-46409-06	265-46409-18	265-46409-25	265-46409-43	265-46409-34
3000 / 3000	N/A	265-46409-08	265-46409-14	265-46409-19	265-46409-26	265-46409-25	265-46409-35
3500 / 3500	N/A	265-46409-09	265-46409-07	N/A	265-46409-27	265-46409-26	N/A
4000 / 4000	N/A	265-46409-10	265-46409-08	265-46409-20	265-46409-29	265-46409-27	265-46409-36
4500 / 4500	N/A	265-46409-11	265-46409-09	265-46409-21	265-46409-30	265-46409-28	265-46409-37
5000 / 5000	N/A	265-46409-12	265-46409-15	265-46409-22	265-46409-31	265-46409-29	265-46409-38
5500 / 5500	N/A	N/A	265-46409-10	265-46409-40**	265-46409-44	265-46409-30	265-46409-42**
6000 / 6000	N/A	N/A	N/A	265-46409-23	265-46409-45	265-46409-31	265-46409-39

Note: Above chart can be used to determine maximum wattage at certain voltages.

** Incoloy element only.

LDCE Voltage and Wattage Conversion Kits for Utility, Wall Hung and Single Element Models

Single Element Wattage	Voltage						
	120	208	240	277	380	415	480
1500	265-46409-01	265-46409-05	265-46409-13	265-46409-16	265-46409-24	265-46409-41	265-46409-32
2000	265-46409-02*	265-46409-06	265-46409-05	265-46409-17	265-46409-43	265-46409-24	265-46409-33
2500	265-46409-03*	265-46409-07	265-46409-06	265-46409-18	265-46409-25	265-46409-43	265-46409-34
3000	265-46409-04*	265-46409-08	265-46409-14	265-46409-19	265-46409-26	265-46409-25	265-46409-35
3500	N/A	265-46409-09	265-46409-07	N/A	265-46409-27	265-46409-26	N/A
4000	N/A	265-46409-10	265-46409-08	265-46409-20	265-46409-29	265-46409-27	265-46409-36
4500	N/A	265-46409-11	265-46409-09	265-46409-21	265-46409-30	265-46409-28	265-46409-37
5000	N/A	265-46409-12	265-46409-15	265-46409-22	265-46409-31	265-46409-29	265-46409-38
5500	N/A	265-46409-46*	265-46409-10	265-46409-40**	265-46409-44	265-46409-30	265-46409-42**
6000	N/A	265-46409-47*	265-46409-48*	265-46409-23	265-46409-45	265-46409-31	265-46409-39

Note: Above chart can be used to determine maximum wattage at certain voltages. 6, 10, 12, and 15 gallon models have a maximum wattage of 3000W at any voltage.

*265-46409-02, -03, -04, -46, -47 and -48 contain only one element.

** Incoloy element only.

These are non-simultaneous kits only.



Commercial Electric Energy Saver Medium Duty 3 Element Water Heaters

146/147

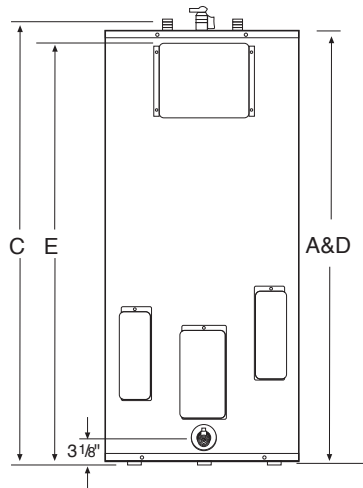
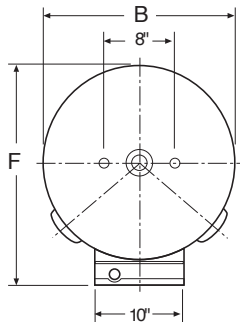


- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 1½" NPT factory installed dielectric waterway fittings
- 2" Non-CFC foam insulation
- Fully automatic controls (180°F maximum)
- Direct heat transfer with immersed elements
- Protective magnesium anode rod
- T&P relief valve factory installed
- Low restriction brass drain valve

Optional

Field Conversion Kits; see next page for part numbers.

NSF Construction Kits; see next page for part numbers.



Photograph is of
E32-80R-3

Medium Duty Energy Saver Models

DIMENSIONS IN INCHES

ELECTRIC		A	B	C	D	E	F	
Model Number	Gallon Capacity	Floor to Heater Top	Jacket Dia.	Floor to Water Conn.	Floor to T&P Conn.	Floor to Control Box	Control Box to Back of Heater	Approx. Shipping Weight (lbs)
E32-50S-3	50	46½	22	47⅛	47⅝	44⅞	24⅝	137
E32-80R-3	80	59	24	60	60⅛	57⅜	26¾	190
E32-120R-3	119	63	28¼	64	64⅛	61⅜	30⅞	312

All Medium Duty heaters are wired 240V/3 phase 18 kW.

Other voltages, wiring phase and kW are available and must be specified when ordering.

NOTE: Refer to pages 148/149 for GPH recovery information.

Conversion Kit Table

Required Total Heater Wattage	Element Wattage	Kit Part Numbers		
		208V	240V	480V
6000	2000	265-43942-13	265-43942-07	265-43942-01
9000	3000	265-43942-14	265-43942-08	265-43942-02
12000	4000	265-43942-15	265-43942-09	265-43942-03
13500	4500	265-43942-16	265-43942-10	265-43942-04
15000	5000	265-43942-17	265-43942-11	265-43942-05
18000	6000	265-43942-18	265-43942-12	265-43942-06

1,000 watts = 1kW

Full Load Amperes - (Single Phase / Three Phase) and 100°F Rise

Input kW	208V	240V	277V	380V	415V	480V	Recovery
18	86.5/50	75/43.4	64	28	25	37.5/21.6	74GPH
6	28.8/16.6	25/14.4	21.6	10	8.3	12.5/7.2	25GPH

NSF Construction Kit

Model Number	Kit Part Numbers
E32-50S	265-45446-01
E32-80R	265-45446-02
E32-120R	265-45446-03

GPH Recovery Table for kW Input

148/149

kW Input	Gallon Per Hour Recovery Capacities				
	40°F	60°F	90°F	100°F	140°F
1	10.3	6.9	4.6	4.1	2.9
1.5	15.5	10.3	6.9	6.2	4.4
2	20.7	13.8	9.2	8.3	5.9
2.5	25.8	17.2	11.5	10.3	7.4
3	31.1	20.7	13.8	12.4	8.9
3.5	36.2	24.1	16.1	14.5	10.3
4	41.4	27.6	18.4	16.5	11.8
4.5	46.5	31.1	20.7	18.6	13.3
5	51.7	34.5	23.1	20.7	14.7
5.5	56.9	37.9	25.3	22.7	16.2
6	62.1	41.4	27.6	24.8	17.7
9	93.1	62.1	41.4	37.2	26.5
12	124	83	55	50	35
13.5	140	93	62	56	40
15	155	103	69	62	44
18	186	124	83	74	53
24	248	165	110	99	71
27	279	186	124	112	80

GPH Recovery Table

kW Input	Gallon Per Hour Recovery Capacities				
	40°F	60°F	90°F	100°F	140°F
30	310	207	138	124	89
36	372	248	165	149	106
45	465	310	207	186	133
54	558	372	248	223	160
81	838	558	372	335	239
144	1489	993	662	596	425
162	1675	1117	744	670	479
180	1861	1241	827	744	532
225	2326	1550	1033	931	665
270	2792	1861	1241	1117	798
360	3722	2482	1654	1489	1063
396	4094	2730	1820	1638	1170
450	4653	3102	2068	1861	1329
540	5583	3722	2482	2233	1595
630	6514	4343	2895	2606	1861
720	7444	4963	3309	2978	2127
900	9306	6204	4136	3722	2659



Commercial Electric Energy Saver Surface and Immersion Thermostat Water Heaters

150/151



Immersion Thermostat with Contactors

- Immersion type thermostat for accurate temperature control from positive off up to 180°F

Surface Mounted Thermostats

- Thermostat step control can be accomplished by variable settings

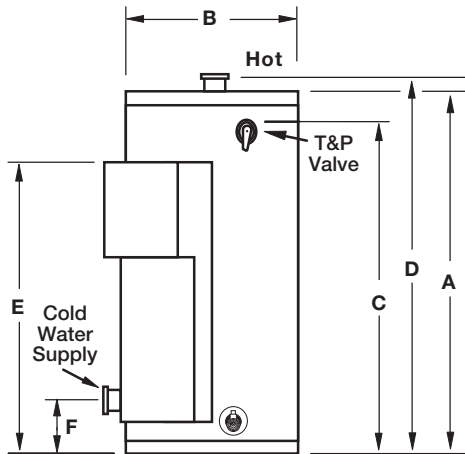
All Models Feature

- Vitraglas® lined tank
- Factory installed Hydrojet® Sediment Reduction System
- Completely pre-wired with pressure lug terminal or fuse block eliminating the need for splicing or taping wires

- Water Connections – 1½" NPT factory installed true dielectric fittings
- 3" Non-CFC foam insulation
- Two protective magnesium anode rods
- Hand-hole cleanout opening
- Low restriction brass drain valve
- T&P relief valve installed

Options

- ASME & NSF construction available on Immersion and Surface Thermostats
- Low temperature thermostat available (Range 80°F to 140°F)



Photograph is of
M-II-50-36-3SF

Energy Saver Models

DIMENSIONS IN INCHES

ELECTRIC MODELS

Model Number	Gal. Cap.	A	B	C	D	E	F	Approx. Shipping Weight (lbs)	
		Floor to Heater Top	Jacket Dia.	Floor to T&P Conn.	Floor to Hot Water Outlet	Floor to Top of Control Box	Floor to Cold Water Inlet	Std.	ASME
M-II-50-kW-3SF	50	48 ¹ / ₄	24	41	50 ¹ / ₂	46 ¹ / ₂	6 ³ / ₄	270	302
M-II-80-kW-3SF	80	60 ¹ / ₄	26	52 ¹ / ₂	63 ¹ / ₈	46 ¹ / ₂	6 ³ / ₄	335	378
M-II-120-kW-3SF	119	64 ¹ / ₂	30 ¹ / ₄	55	66 ¹ / ₂	50 ¹ / ₄	6 ³ / ₄	430	485

Model numbers shown are for Surface Mount thermostats. For Immersion thermostat change suffix "SF" to "CF".

Voltage and phase must be specified when ordering. Example: M-II-50-12-3SF, 240 Volt, 3 phase.

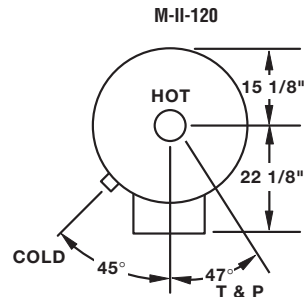
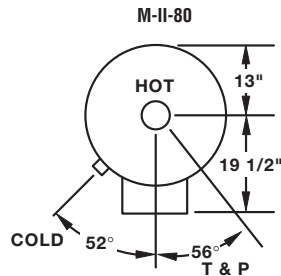
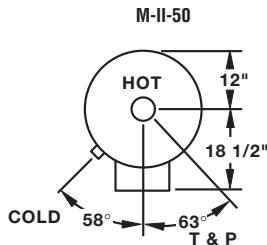
All models available in 208/240/277 and 480 volt.

(A) ASME Construction available.

For ASME construction add "A" to the model number.

Example: M-II-50A-12-3SF, 240 Volt, single phase.

NOTE: Refer to pages 148/149 for GPH recovery information.





Commercial Electric Energy Saver ASME Water Heaters

152/153



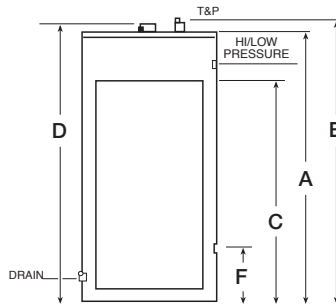
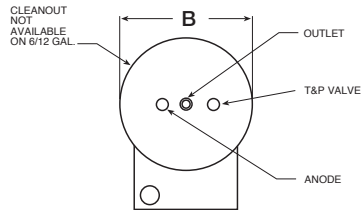
Standard Features:

- Immersion Thermostat with Contactors - Immersion type thermostat for accurate temperature control from positive off up to 180°F
- ASME code construction
- Vitraglas® lining
- Factory installed Commercial Hydrojet® Sediment Reduction System
- Completely pre-wired with pressure lug terminal or fuse block eliminating the need for splicing or taping wires
- Factory installed dielectric fittings
- 3" Non-CFC foam insulation

- Protective magnesium anode rod
- Hand-hole cleanout opening (20 thru 120 gallon models only)
- T&P relief valve installed
- Low restriction brass drain valve

Options:

- Low water cut-off switch
- Safety door interlock
- High and low pressure limit switches
- Alarm horn
- Temperature and pressure gauge
- Time delay step sequences (24kW and above)
- NSF construction



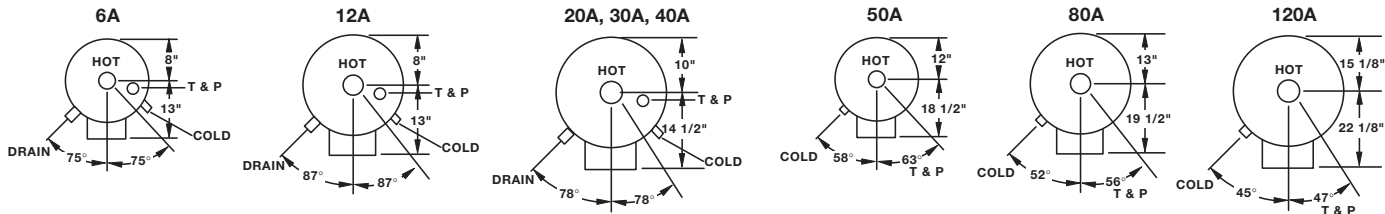
Photograph is of
30A-36-3

ASME Energy Saver Models

DIMENSIONS IN INCHES

ELECTRIC			A	B	C	D	E	F		
Model Number	Gal. Cap.	Max. kW Input	Floor to Heater Top	Jacket Dia.	Floor to Top of Control Box	Floor to HW Outlet	Floor to T&P Valve	Floor to CW Inlet	Water Conn.	Approx. Shipping Weight (lbs)
6A-kW-3	6	3	17 ¹ / ₄	16	17	18 ¹ / ₄	18 ¹ / ₁₆	6 ¹ / ₄	³ / ₄	83
12A-kW-3	12	9	28	16	28	29	28 ¹⁵ / ₁₆	6 ¹ / ₄	³ / ₄	118
20A-kW-3	20	18	27 ¹ / ₂	20	27	28 ¹ / ₂	28	6 ¹ / ₄	³ / ₄	145
30A-kW-3	30	36	38	20	38	39	40 ¹ / ₄	6 ¹ / ₄	³ / ₄	180
40A-kW-3	40	36	48 ¹ / ₄	20	38	49 ¹ / ₄	50 ¹ / ₂	6 ¹ / ₄	³ / ₄	220
50A-kW-3	50	81	47 ³ / ₄	24	46 ¹ / ₂	49 ¹ / ₄	50 ³ / ₈	6	1 ¹ / ₂	270
80A-kW-3	80	81	60 ¹ / ₄	26	46 ¹ / ₂	61 ³ / ₄	61 ⁷ / ₈	6	1 ¹ / ₂	335
120A-kW-3	119	81	64 ¹ / ₂	30 ¹ / ₄	50 ¹ / ₄	66	66 ⁵ / ₁₆	6	1 ¹ / ₂	430

NOTE: Refer to pages 148/149 for GPH recovery information.





Commercial Electric Energy Saver Booster Water Heaters

154/155

Standard Features:

- Glass-lined, 150 PSI working pressure, 6 gallon capacity
- Copper-sheathed, low watt density elements
- 6" legs are furnished
- Pilot switch; pilot light – hi limit control
- Attractive stainless steel front control cover
- Temperature/pressure gauge
- Low water cut-off
- Hinged Door
- UL listed, NSF approved. Meets fusing requirements of NEC
- Full 2" blanket insulation
- Magnesium anode rod

- Instantaneous response; continuous 180°F water for dishwashing
- Low-cost operation
- Immersion thermostat and hi-limit
- Magnetic contactor
- ASME temperature and pressure relief valve
- 120V circuitry

Optional Features

- Stainless steel legs
- 3/4" Shock absorber (water hammer arrestor)
- Pressure or reducing valve with built in bypass check
- Blended phosphate water treatment system



Photograph is of
L-I-6-6-5CF

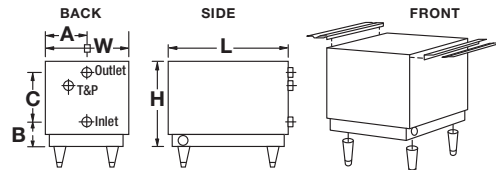
Booster Energy Saver Models

DIMENSIONS IN INCHES

ELECTRIC						L	W	H	A	B	C		
Model Number	Gal. Cap.	Input BTU/Hr.	kW	GPH Recovery at Degree Rise		Length	Width	Height				Water Conn.	Approx. Shipping Weight (lbs)
				40°F	70°F								
L-I-6-6-5CF	6	20,478	6	62	35	20 ³ / ₄	13	13 ³ / ₄	6 ¹ / ₂	3 ¹ / ₂	8	³ / ₄	118
L-I-6-9-5CF	6	30,717	9	93	53	20 ³ / ₄	13	13 ³ / ₄	6 ¹ / ₂	3 ¹ / ₂	8	³ / ₄	118
L-I-6-12-5CF	6	40,956	12	124	71	20 ³ / ₄	13	13 ³ / ₄	6 ¹ / ₂	3 ¹ / ₂	8	³ / ₄	120
L-I-6-15-5CF	6	51,195	15	155	89	20 ³ / ₄	13	13 ³ / ₄	6 ¹ / ₂	3 ¹ / ₂	8	³ / ₄	120
L-I-6-18-5CF	6	61,434	18	186	106	20 ³ / ₄	13	13 ³ / ₄	6 ¹ / ₂	3 ¹ / ₂	8	³ / ₄	120
L-I-6-24-5CF	6	81,912	24	248	142	24	18	12	8	2	8	³ / ₄	142
L-I-6-30-5CF	6	102,390	30	310	177	24	18	12	8	2	8	³ / ₄	142
L-I-6-36-5CF	6	122,868	36	372	213	24	18	12	8	2	8	³ / ₄	142
L-I-6-45-5CF	6	153,585	45	465	266	24	18	12	8	2	8	³ / ₄	142
L-I-6-54-5CF	6	184,302	54	558	316	24	18	12	8	2	8	³ / ₄	142
L-I-6-57-5CF	6	194,484	57	573	326	24	18	12	8	2	8	³ / ₄	142

Electrical Connections: 6—18kW—Either side or bottom 24—58kW—Left side or bottom.

NOTE: Refer to pages 148/149 for GPH recovery information.





Commercial Energy Saver Electric Brute Vertical Round Water Heaters

156/157

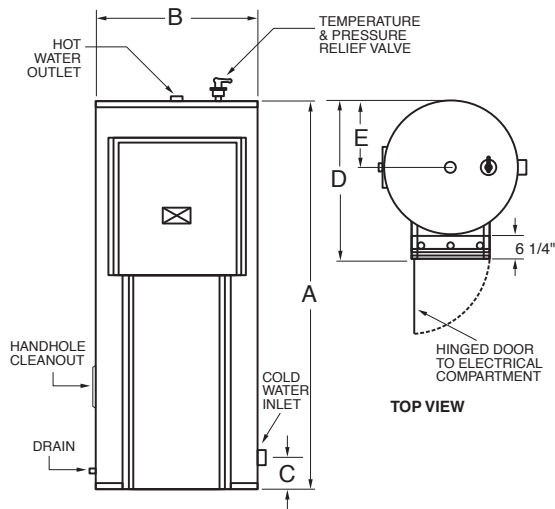
Standard Features:

- 125 PSI ASME code glass-lined tank
- Incoloy heating elements
- Internal fusing
- Galvanized steel jacket
- Magnesium anode rods
- Immersion thermostat
- Manual reset high limit
- Hinged door with keyed lock
- Temperature and pressure relief valve
- Channel iron skid base
- Hand-hole cleanout
- 180°F operation
- Three-year limited warranty
- Meets or exceeds ASHRAE 90.1b (Current Edition)

Optional Equipment Features:

- Low water cut-off
- Pilot lights
- Manual limiting switches
- Alarm bell
- Low or high pressure switch
- Time clock (7 day or 24 hour)[†]
- Safety door interlock
- Temperature and pressure gauge
- Manhole cleanout (250 gallons and larger)
- 150 PSI working pressure
- Electronic sequencer (36kW & higher)
- Shunt trip disconnect[†]

[†]Separate mounting



Photograph is of
VR-200-36

Vertical Round Energy Saver Models

DIMENSIONS IN INCHES

ELECTRIC					A	B	C	D	E		
Model Number	Gal. Cap.	Max. kW Load**	Max. kW Load @ 480V	Max. kW Load @ 208V/240V	Floor to Top of Heater	Jacket Diameter	Floor to Cold Water Inlet	Depth	Back of Heater to Cold Water Inlet	Water Conn.	Approx. Shipping Weight (lbs)
VR-150-kW	150	144	144	72	65½	32	7¾	38¾	16	1½	800
VR-200-kW	200	162	162	90	78	32	7¾	38¾	17	1½	900
VR-250-kW	250	162	162	90	92	34	19½	40¾	17	1½	1050
VR-300-kW	300	162	162	90	80	40	21	46¾	20	2	1150
VR-400-kW	400	360	162	90	80	46	22½	52¾	23	2	1300
VR-500-kW	500	396	162	90	92	46	22½	52¾	23	2	1500
VR-600-kW	600	396	162	90	92	54	24½	60¾	27	2½	1750
VR-700-kW	700	396	162	90	98	52	24½	60¾	27	2½	1875
VR-800-kW	800	396	162	90	104	54	24½	60¾	27	2½	2000
VR-1000-kW	1000	396	162	90	128	54	24½	60¾	27	2½	2300

On 250 gallon model and larger dimensions: include channel iron legs (not shown).

NOTE: Refer to pages 148/149 for GPH recovery information.

All horizontal models must be with square jackets.

**Vertical Round models above 90kW at 208v, 240v and 162kW at 480v exceed the capacity of a single control box and may require multiple control panels. Consult factory for specific details and optional construction.



Commercial Electric Energy Saver Brute Horizontal & Vertical Water Heaters

158/159

- Meets ASHRAE 90.1b (Current Edition) energy efficiency standards

- Immersion thermostats

- Incoloy elements

- Internal fusing

- Glass-lined tank

- Built-in safety drain pan

- Magnesium anode rods

- Galvanized jacket

- Key hinged door with lock

- Temperature and pressure relief valve

- 180°F temperature operation

- Hand hole cleanout

- Channel iron skid base

- 125 PSI ASME construction

- UL listed

- Three year limited warranty

Optional Features

- Alarm bell

- Time clock (separate mounting)

- Electronic Sequencer

- Combination temperature and pressure gauge

- Low or high pressure switch

- Pilot lights

- Manual limiting switches

- Safety door interlock

- Low water cut-off

- Shunt trip disconnect

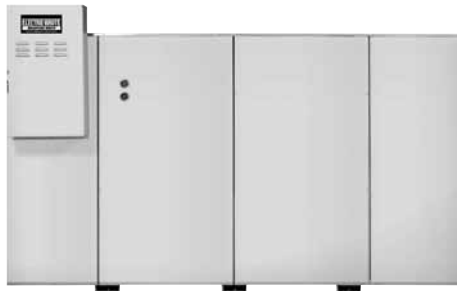
- Man hole cleanout (250 gallons and larger)

- 150 PSI ASME construction

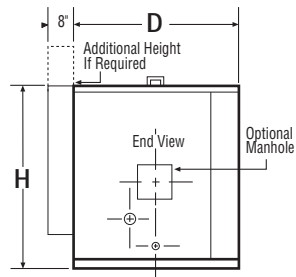
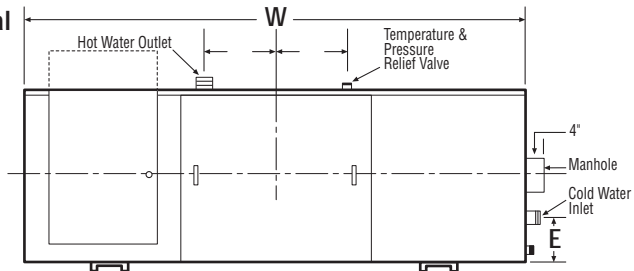
Vertical Square



Horizontal Square



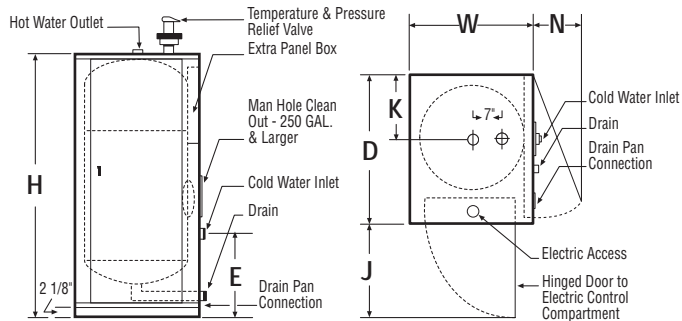
Horizontal Models



1,000-2,500 GALLONS

Extra panel box may be necessary for higher than 72 kW. Consult Factory

Vertical Models



1,000-2,500 GALLONS

Extra panel box may be necessary for 72kW and above on 208V and 144kW and above on 480V



Commercial Electric Energy Saver Brute Horizontal & Vertical Water Heaters

160/161

Horizontal Square Electric Models

DIMENSIONS IN INCHES

ELECTRIC			W	D	H	E			
Model Number	Gal. Cap.	Max. kW Load					Water Conn. Inlet	Water Conn. Outlet	Approx. Shipping Weight (lbs)
H-1000-(kW)	1000	900	138 ¹ / ₄	54 ¹ / ₄	57 ¹ / ₂	12 ³ / ₄	2 ¹ / ₂	2	4800
H-1250-(kW)	1250	900	130 ¹ / ₄	60 ¹ / ₄	63 ¹ / ₂	13	3	3	5600
H-1500-(kW)	1500	900	126 ¹ / ₄	66 ¹ / ₄	72 ¹ / ₂	12 ¹ / ₂	3	3	6200
H-2000-(kW)	2000	900	138 ¹ / ₄	72 ¹ / ₄	75 ¹ / ₂	13 ¹ / ₂	3	3	8000
H-2500-(kW)	2500	900	144 ¹ / ₄	78 ¹ / ₄	81 ¹ / ₂	13 ³ / ₄	3	3	8600

Vertical Square Electric Models

DIMENSIONS IN INCHES

ELECTRIC			W	D	H	E	J	K	N		
Model Number	Gal. Cap.	Max. kW Load								Water Connections	Approx. Shipping Weight (lbs)
V-1000-(kW)	1000	900	54	58 ³ / ₈	128	24 ¹ / ₂	42	29 ³ / ₁₆	42	2 ¹ / ₂	2300
V-1250-(kW)	1250	900	64 ¹ / ₂	64 ¹ / ₂	132 ¹ / ₂	23 ¹ / ₄	48	32 ³ / ₁₆	48	3	5600
V-1500-(kW)	1500	900	70 ¹ / ₂	70 ¹ / ₂	128 ¹ / ₂	25 ¹ / ₄	46	35 ³ / ₁₆	46	3	6200
V-2000-(kW)	2000	900	76 ¹ / ₂	76 ¹ / ₂	140 ¹ / ₂	27 ¹ / ₄	60	38 ³ / ₁₆	60	3	8000
V-2500-(kW)	2500	900	82 ¹ / ₂	82 ¹ / ₂	146 ¹ / ₂	29	66	41 ³ / ₁₆	66	3	8600

NOTE: Refer to pages 148/149 for GPH recovery information.

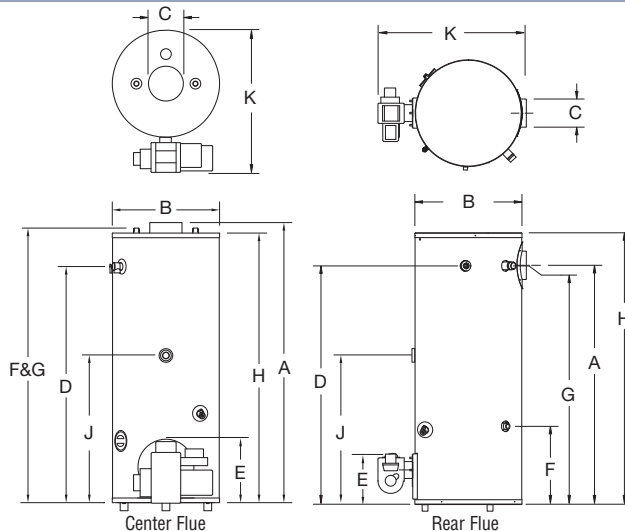


Commercial Energy Saver Oil-Powered Water Heaters

162/163



- Vitraglas® lining
- Hydrojet® Total Performance System (CF-70 model only)
- Factory installed dielectric waterway fittings
- Non-CFC foam insulation
- Ceramic Fiber Combustion Chamber
- Easy, space-saving installation
- Protective magnesium anode rod (CF-70 has 2 anode rods)
- Beckett burner
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
CF-70-3

Energy Saver Models

DIMENSIONS IN INCHES

OIL					A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	GPH Firing Rate	MBTUH† Input	Recovery at 100° F Rise*	Floor to Flue Conn.	Jacket Dia.	Flue Size	Floor to T&P Conn.	Floor to Burner Top	Floor to Cold Water Conn.	Floor to Hot Water Conn.	Floor to Top of Unit	Floor to Aquastat	Depth	Approx. Shipping Weight (lbs)
CF-70-3	70	0.85	119	114	65 ^{15/32}	24	6 ^{1/2}	56 ^{15/32}	11 ^{3/16}	64 ^{3/8}	64 ^{3/8}	63 ^{3/8}	32 ^{31/32}	30 ^{9/16}	290
RF-70-3	70	1.50/1.75	210/245	203/237	63 ^{11/16}	28 ^{1/4}	8	64	12 ^{3/16}	20 ^{7/8}	64	72 ^{1/16}	38 ^{1/8}	39 ^{7/16}	410

NOTE: Does not include burner and controls.

Water connections are 1" NPT for CF-70 and 1½" NPT for RF-70.

Power supply is 60 cycle, 120 Volt, single phase.

*Based on manufacturers rated recovery efficiency.

†MBTUH = Thousand BTU/Hr.

CF - Center Flue

RF - Rear Flue

Model Number	Part Numbers	Description**
CF-70-3	228-44392-05	BECKETT burner with single Aquastat @ 0.85 GPH
RF-70-3	228-44392-13	BECKETT burner with single Aquastat @ 1.50 GPH
RF-70-3	228-44392-15	BECKETT burner with single Aquastat @ 1.75 GPH

**All burners are 1-stage, 120V.

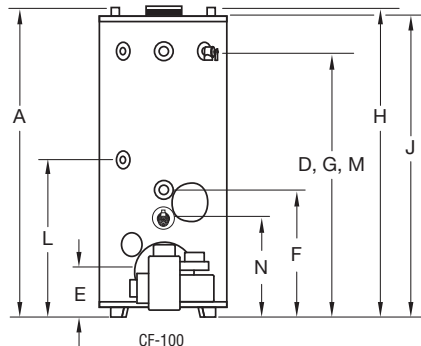
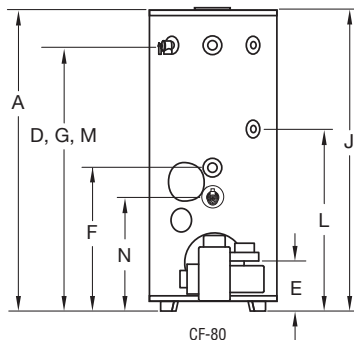
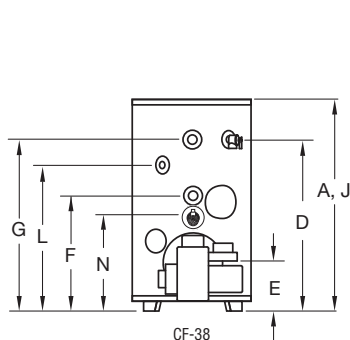


Commercial Energy Saver Multi-Flue Oil-Powered Water Heaters

164/165



- Fiberglass insulation
- Vitraglas® lining
- Factory installed Hydrojet® Sediment Reduction System
- Magnesium anode rods
- Hand hole cleanout
- Dual immersion Aquastat
- ASME construction available (80 & 100 models only)
- T&P relief valve installed
- Low restriction brass drain valve



Photograph is of
CF-80-3

Multi-Flue Energy Saver Models

DIMENSIONS IN INCHES

OIL		A	B	C	D	E	F	G	H	J	K	L	M	N		
Model Number	Gal. Cap.	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to C/L Burner Opening	Front / Rear Cold Water Conn.	Front / Rear Hot Water Conn.	Floor to Top Water Conn.	Floor to Heater Top	Depth**	Floor to Aquastat	Floor to Aquastat Avg Bulb	Floor to Drain Valve	Std. Shipping Weight* lbs.	ASME Shipping Weight* lbs.
CF-38-3	38	50 ³ / ₈	28 ¹ / ₄	8	40 ³ / ₄	12 ³ / ₈	26	41 ¹ / ₂	-	50 ³ / ₈	38 ⁵ / ₈	35	-	21 ³ / ₄	428	-
CF-80-3	80	72 ³ / ₄	30 ¹ / ₄	8	62 ³ / ₈	12 ⁵ / ₈	34 ¹ / ₄	62 ³ / ₈	-	72 ¹ / ₄	44 ⁷ / ₈	43 ³ / ₈	62 ³ / ₈	27 ⁷ / ₈	850	875
CF-100-3	100	73 ¹ / ₄	30 ¹ / ₄	8	62 ³ / ₈	11 ³ / ₈	29 ⁵ / ₈	62 ³ / ₈	72 ³ / ₄	72 ¹ / ₄	44 ¹ / ₈	36 ⁷ / ₈	62 ³ / ₈	29 ⁵ / ₈	760	798

BURNER AND CONTROLS MUST BE PURCHASED WITH PRODUCT

The Top Water Connections for the CF-100 is 23" on center.

The Top Hot Water Connection is (76¹/₂"), 1" higher than the Cold Water Connection (75¹/₂").

(A) ASME construction available. Example: CF-80-490-3A

CF - Center Flue

RF - Rear Flue

T - Top Water Conn.

R - Rear Water Conn.

F - Front Water Conn.

Model Number	Firing Rate GPH	BTU/Hr. Input
CF-38-3	1.75	245,000
	2.00	280,000
	2.25	315,000
	2.50	350,000
CF-80-3	3.50	490,000
	4.00	560,000
	4.50	630,000
	5.00	700,000
CF-100-3	2.50	350,000
	3.00	420,000

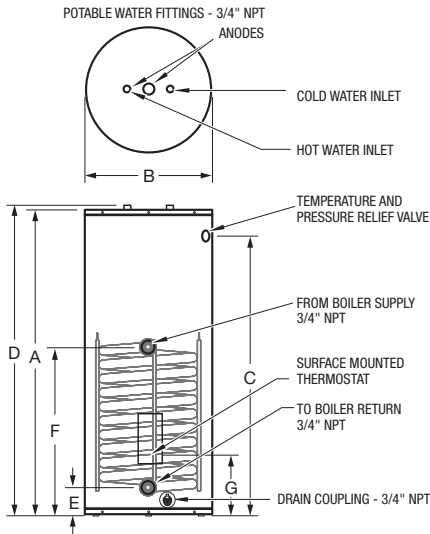


Residential Indirect Energy Saver PowerStor2™ Water Heaters

166/167



- Heat exchanger - double wall 1½" O.D. glass coated (Vitraglas®) steel coil
- Head loss - less than 5 ft. of head loss with flows up to 10 GPM
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation
- Surface-mount thermostat
- Two protective magnesium anode rods
- T&P relief valve installed
- Low restriction brass drain valve
- Limited lifetime warranty on tank and heat exchanger
- Hydronics Institute (I=B=R) rated
- Standard heat loss - less than 1/2°F per hour (ASHRAE 90.1b current standard)



Photograph is of
DW-2-50-L

PowerStor2™ Energy Saver Models

DIMENSIONS IN INCHES

		A	B	C	D	E	F	G	
Model Number	Gallon Capacity	Floor to Heater Top	Jacket Dia.	Floor to T&P Conn.	Floor to Water Conn.	Floor to Boiler Return	Floor to Boiler Supply	Floor to Thermostat	Approx. Shipping Weight (lbs)
DW-2-40-L	38	41	22	34 ³ / ₈	41 ⁷ / ₈	5 ³ / ₈	27 ¹ / ₂	11 ¹ / ₂	180
DW-2-50-L	48	46 ¹ / ₄	22	40 ¹ / ₈	47 ¹ / ₄	5 ³ / ₈	27 ¹ / ₂	11 ¹ / ₂	192
DW-2-65-L	64	59	22	53 ¹ / ₈	60	5 ³ / ₈	27 ¹ / ₂	11 ¹ / ₂	221
DW-2-80-L	75	59	24	52 ⁷ / ₈	59 ³ / ₄	5 ³ / ₈	27 ¹ / ₂	11 ¹ / ₂	246

I=B=R Water Heater Ratings

Model Number	First Hour Delivery	Continuous Draw Rating @ 135°F (Gal./Hr.)	Standby Heat Loss Rating (°F/Hr.)	Minimum Heat Req. Rate (BTU/Hr.)	Minimum Heat Source Flow Rate (Gal./Min.)
DW-2-40-L	123	98	1.1	65,000	8.0
DW-2-50-L	133	98	0.9	65,000	8.0
DW-2-65-L	148	98	0.7	65,000	8.0
DW-2-80-L	158	98	0.6	65,000	8.0

NOTES: These certified ratings were obtained with a heat source output rate and flow rate as specified and a 180° F boiler water supply temperature. Other results will be obtained under different conditions.

Heat Exchanger Head Loss

GPM	2	5	8	10	12
Ft. of Hd. Loss	0.34	2.15	5.51	8.61	12.40

DOE Water Heater Performance

Model Number	Maximum First Hour Rating (Gal.) @		Continuous Draw Rating (Gal./Min.) @		Approximate Boiler Output Needed For Ratings (BTU/Hr.)
	140°F	115°F	140°F	115°F	
DW-2-40-L	80	122	0.9	1.6	55,000
DW-2-50-L	87	129	0.9	1.6	55,000
DW-2-65-L	96	138	0.9	1.6	55,000
DW-2-80-L	106	148	0.9	1.6	55,000

NOTES: Based on 200° F boiler water temperature and 50°F potable water inlet temperature.



Residential Indirect Energy Saver PowerStor Series® Water Heaters

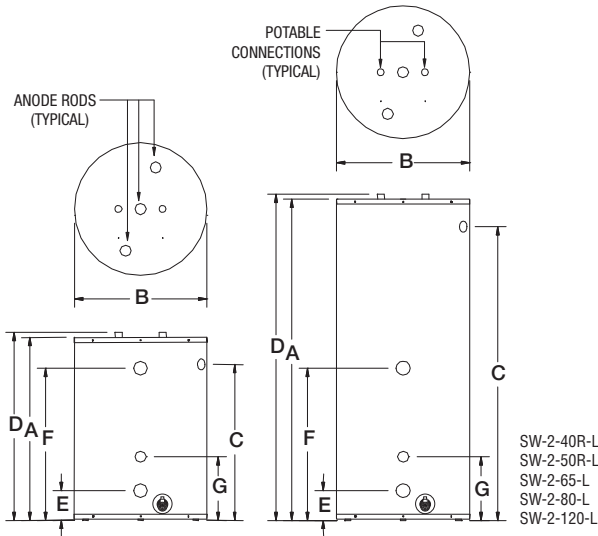
168/169



- Heat exchanger - single wall 1½" O.D. glass coated (Vitrage®) steel coil
- Vitrage® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – ¾" NPT factory installed true dielectric fittings (SW-2-120L has 1" NPT water connection)
- 1" NPT Connection for boiler supply and return
- 2" Non-CFC foam insulation

- Immersion type aquastat – accurate temperature control
- Three protective aluminum anode rods
- T&P relief valve included
- Low restriction brass drain valve
- Limited lifetime year tank and heat exchanger warranty
- Hydronics Institute (I=B=R) rated
- Stand-by heat loss is less than 1/2°F per hour (ASHRAE 90.1b current standard)

SW-2-30-L



Photograph is of a
SW-2-65-L

PowerStor Series® Energy Saver Models

DIMENSIONS IN INCHES

		A	B	C	D	E	F	G	
Model Number	Gallon Capacity	Floor to Heater Top	Jacket Dia.	Floor to T&P Conn.	Floor to Water Conn.	Floor to Exchanger Outlet	Floor to Exchanger Inlet	Floor to Aquastat	Approx. Shipping Weight (lbs)
SW-2-30-L	30	33 ⁵ / ₈	22	28 ¹ / ₄	34 ³ / ₈	5 ³ / ₈	27 ¹ / ₂	11 ¹ / ₂	164
SW-2-40R-L	38	41 ¹ / ₈	22	34 ³ / ₈	41 ⁷ / ₈	5 ³ / ₈	27 ¹ / ₂	11 ¹ / ₂	177
SW-2-50R-L	48	46 ¹ / ₄	22	40 ¹ / ₈	47	5 ³ / ₈	27 ¹ / ₂	11 ¹ / ₂	189
SW-2-65-L	60	59 ¹ / ₄	22	53 ¹ / ₈	60	5 ³ / ₈	27 ¹ / ₂	11 ¹ / ₂	218
SW-2-80-L	75	59	24	52 ⁷ / ₈	59 ³ / ₄	5 ³ / ₈	27 ¹ / ₂	11 ¹ / ₂	243
SW-2-120-L	116	62 ¹ / ₂	28 ¹ / ₄	55 ³ / ₄	63 ¹ / ₄	6 ³ / ₈	28 ¹ / ₂	11 ¹ / ₂	369

DOE Water Heater Performance

Model Number	Maximum First Hour Rating (Gal.) @		Continuous Draw Rating (Gal./Min.) @		Approximate Boiler Output Needed for Ratings (BTU/Hr.)
	140°F	115°F	140°F	115°F	
SW-2-30-L	279	429	4.2	6.7	220,000
SW-2-40R-L	288	438	4.2	6.7	220,000
SW-2-50R-L	297	447	4.2	6.7	220,000
SW-2-65-L	306	456	4.2	6.7	220,000
SW-2-80-L	321	470	4.2	6.7	220,000
SW-2-120-L	357	507	4.2	6.7	220,000

NOTES: Based on 200° F boiler water temperature and 50°F potable water inlet temperature.

I=B=R Water Heater Ratings

Model Number	First Hour Delivery	Continuous Draw Rating @ 135°F (Gal./Hr.)	Standby Heat Loss Rating (°F/Hr.)	Heat Req. Rate (BTU/Hr.)	Heat Source Flow Rate (Gal./Min.)
SW-2-30-L	255	235	1.2	157,000	13.7
SW-2-40R-L	260	235	1.1	157,000	13.7
SW-2-50R-L	265	235	0.9	157,000	13.7
SW-2-65-L	275	235	0.7	157,000	13.7
SW-2-80-L	295	235	0.6	157,000	13.7
SW-2-120-L	325	235	0.4	157,000	13.7

NOTES: These certified ratings were obtained with a heat source output rate and flow rate as specified and a 180° F boiler water supply temperature. Other results will be obtained under different conditions.

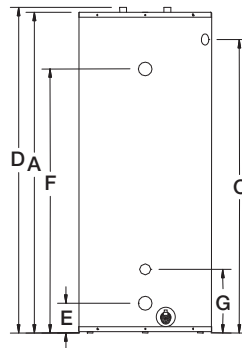
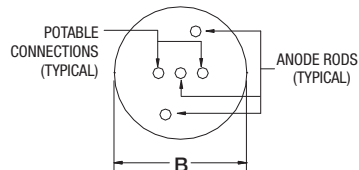


Commercial Indirect Energy Saver PowerStor Series® Water Heaters

170/171



- Heat exchanger - single wall 1½" O.D. glass coated (Vitraglas®) steel coil
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 1" NPT factory installed true dielectric fittings
- 1" NPT Connection for boiler supply and return
- 2" Non-CFC foam insulation
- Immersion type aquastat – accurate temperature control
- Three protective aluminum anode rods
- T&P relief valve included
- Low restriction brass drain valve
- 5 year tank and heat exchanger warranty
- Hydronics Institute (I=B=R) rated
- Stand-by heat loss is less than 1/2°F per hour (ASHRAE 90.1b current standard)



SW-65C-5
SW-80C-5
SW-120C-5



Photograph is of a
SW-65C-5

PowerStor Series® Energy Saver Models

DIMENSIONS IN INCHES

		A	B	C	D	E	F	G	
Model Number	Gallon Capacity	Floor to Heater Top	Jacket Dia.	Floor to T&P Conn.	Floor to Water Conn.	Floor to Exchanger Outlet	Floor to Exchanger Inlet	Floor to Aquastat	Approx. Shipping Weight (lbs)
SW-65C-5	58	59 ¹ / ₄	22	53 ¹ / ₁₆	60	5 ³ / ₈	47 ³ / ₄	11 ¹ / ₂	273
SW-80C-5	73	59	24	52 ⁷ / ₈	59 ³ / ₄	5 ³ / ₈	47 ³ / ₄	11 ¹ / ₂	300
SW-120C-5	114	62 ¹ / ₂	28 ¹ / ₄	55 ³ / ₄	63 ¹ / ₄	6 ³ / ₈	48 ³ / ₄	11 ¹ / ₂	422

DOE Water Heater Performance

Model Number	Maximum First Hour Rating (Gal.) @ 140°F 115°F		Approximate Boiler Output Needed for Rating (BTU/Hr.)
SW-65C-5	534	820	420,000
SW-80C-5	546	834	420,000
SW-120C-5	583	871	420,000

Note: Pressure Drop across commercial models is 2.6 ft w.c. at 12 gpm for 200°F Boiler Supply.

I=B=R Water Heater Ratings

Model Number	First Hour Delivery	Continuous Draw Rating @ 135°F (Gal./Hr.)	Standby Heat Loss (°F/Hr.)	Heat Req. Rate (BTU/Hr.)	Heat Source Flow Rate (Gal./Min.)
SW-65C-5	405	370	0.7	245,000	14.0
SW-80C-5	415	370	0.6	245,000	14.0
SW-120C-5	445	370	0.4	245,000	14.0

Note: Pressure Drop across commercial models is 5.0 ft w.c. at 14.0 gpm. These ratings were obtained with a heat source output rate of 245,000 BTU/hr at a heat source flow of 14.0 gpm. Other results will be obtained under different conditions.



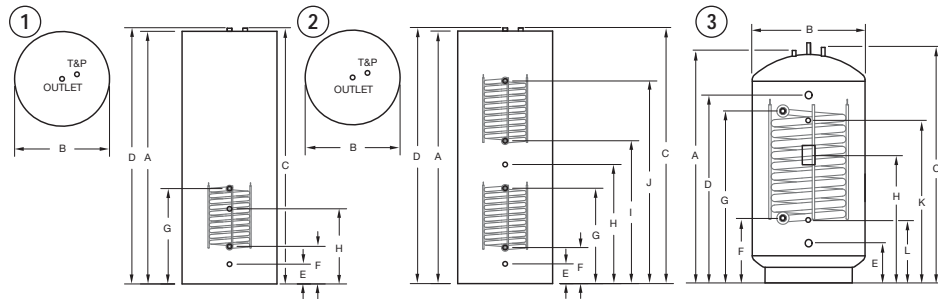
Indirect Energy Saver PowerStor SS® Water Heaters

172/173

- Stainless steel heat exchanger—Single-wall 1" O.D. stainless steel coil.
- Stainless steel tank and heat exchanger—Made from chromium molybdenum - titanium ferritic 444 stainless steel alloy.
- Immersed adjustable Honeywell aquastat—Fast acting immersion aquastat for automatic temperature control

- Supply and return connections—3/4" NPT female connections are located on the front for both the boiler supply and boiler return (1" NPT on RTV-119)
- 2" Non-CFC foam insulation
- Potable water connections—3/4" NPT factory installed dielectric fittings extend water heater life and eases installation (1/4" NPT on RTV-119)

- T&P relief valve included
- Steel jacket
- Low restriction brass drain valve
- I=B=R Certified



- ① RTV-40-L
RTV-52-L
RTV-75-L
 - ② RTV-75D-L
 - ③ RTV-120-L
- *Floor to Top Spare 3/4" NPT
Tank Connection is 41 3/4"
Floor to Bottom Spare 3/4" NPT
Tank Connection is 17"



Photograph is of
RTV-40-L

PowerStorSS® Energy Saver Models

DIMENSIONS IN INCHES

		A	B	C	D	E	F	G	H	I	J	K	K	
Model Number	Gal. Cap.	Floor to Heater Top	Jacket Dia.	Floor to T&P Conn.	Floor to Hot Water Conn.	Floor to Cold Water Conn.	Floor to Exchanger Outlet	Floor to Exchanger Inlet	Floor to Aquastat	Floor to Exchanger Outlet (Upper)	Floor to Exchanger Inlet (Upper)	Floor to Spare 3/4" Hot Water Conn.	Floor to Spare 3/4" Cold Water Conn.	Approx. Shipping Weight
RTV-40-L	40	35 ¹ / ₄	24	35 ¹ / ₂	35 ¹ / ₂	5	9 ¹ / ₂	24 ⁵ / ₈	19	—	—	—	—	83
RTV-52-L	52	45 ⁵ / ₈	24	45 ⁷ / ₈	45 ⁷ / ₈	5	9 ¹ / ₂	28 ³ / ₈	19	—	—	—	—	93
RTV-75-L	75	63 ⁷ / ₈	24	64 ¹ / ₈	64 ¹ / ₈	5	9 ¹ / ₂	28 ¹ / ₄	19	—	—	—	—	117
RTV-75D-L	75	63 ⁷ / ₈	24	64 ¹ / ₈	64 ¹ / ₈	5	9 ¹ / ₂	24 ¹ / ₈	30 ¹ / ₈	36 ¹ / ₈	51 ¹ / ₄	—	—	130
RTV-120-L	119	62	31	60	48 ¹ / ₂	10 ¹ / ₄	16 ¹ / ₄	44 ³ / ₈	36	—	—	42 ³ / ₄	17 ⁷ / ₈	315

I=B=R Water Heater Ratings

Model Number	First Hour Delivery	Continuous Draw @ 135°F (Gal./Hr.)	Standby Heat Loss Rating (°F/Hr.)	Min. Heat Required Rate (BTU/Hr.)	Min. Heat Source Flow Rate (Gal./Min.)
RTV-40-L	158	133	0.9	88,000	8.0
RTV-52-L	200	165	0.7	113,000	8.0
RTV-75-L	225	165	0.5	113,000	8.0
RTV-75D-L	270	215	0.5	150,000	14.5
RTV-120-L	360	280	0.6	195,000	11.0

Notes:

- 1) Inlet water temperature based on 50°F.
 - 2) RTV-75D has 2 coils.
 - 3) RTV-119 supplied with 2 extra plugged tapings (see manual).
Height to top spare plug is 41³/₄".
Height to bottom spare plug is 17".
 - 4) RTV-119 equipped with steel casing.
- All potable water connections are 3/4" NPT (1¹/₄" on RTV-119).
3/4" Aquastat tapping.
3/4" T&P valve tapping.

Note: These certified ratings were obtained with a heat output rate and flow rate as specified and a 180°F boiler water supply temperature. Other results will be obtained under different conditions.

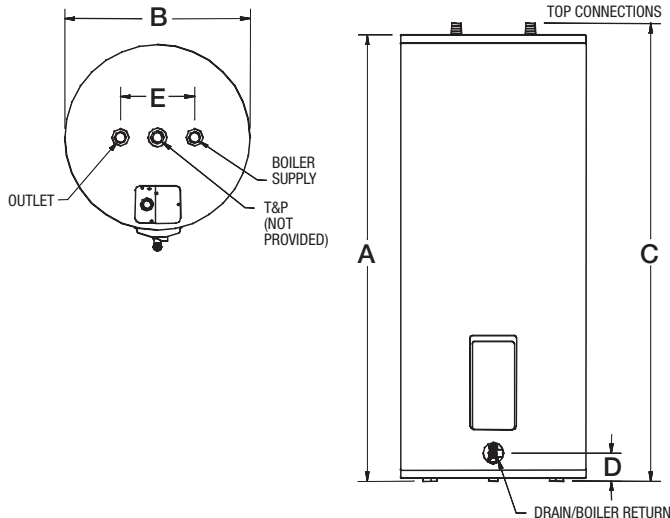


Residential Energy Saver Storage Tank Models

174/175



- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings (AST-120 has 1" NPT connections)
- 2" Non-CFC foam insulation
- Fully automatic controls
- Protective magnesium anode rod
- Boiler Return is 3/4"
- Thermal Feet
- T&P relief valve opening
- Brass drain/return valve (3/4")



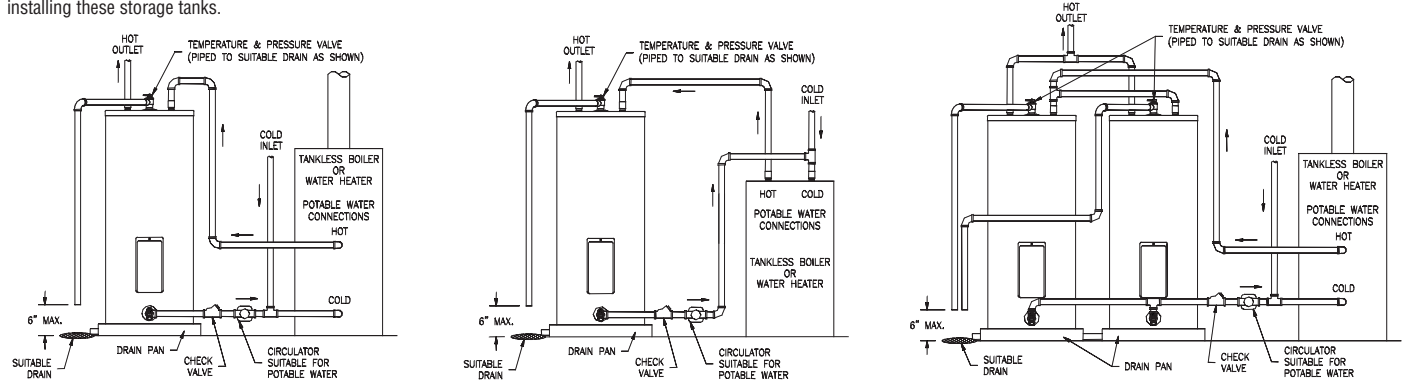
Photograph is of
AST-50-6

Energy Saver Models

DIMENSIONS IN INCHES

		A	B	C	D	E	
Model Number	Gallon Capacity	Floor to Heater Top	Jacket Dia.	Floor to Top Water Conn.	Floor to Drain/Boiler Return	Outlet to Boiler Supply	Approx. Shipping Weight (lbs)
AST-40-6	40	46 ⁷ / ₈	20	47 ⁷ / ₈	3 ¹ / ₁₆	8	103
AST-50-6	50	46 ⁵ / ₁₆	22	47 ⁵ / ₁₆	3 ¹ / ₁₆	8	130
AST-80-6	80	58 ⁷ / ₈	24	59 ⁷ / ₈	3 ¹ / ₁₆	8	183
AST-120-6	119	62 ⁷ / ₈	28 ¹ / ₄	63 ⁷ / ₈	3 ¹ / ₁₆	8	305

NOTES: Circulator pump and temperature pressure relief valve are NOT included. We recommend you use a stainless steel or bronze circulator pump and relief valve of your choice when installing these storage tanks.

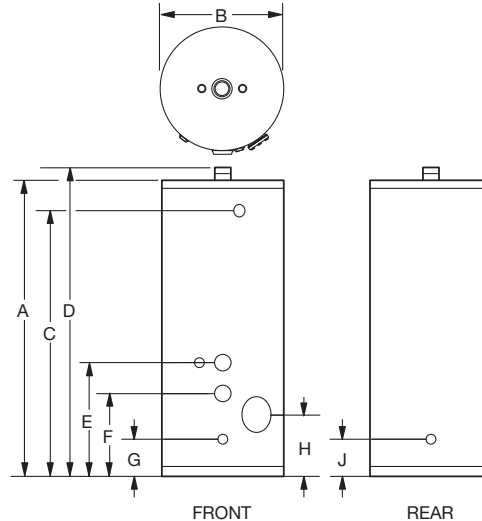




Commercial Energy Saver Storage Tank Models

176/177

- Vitraglas® lining
- Optional ASME construction available
- 2" Non-CFC Foam insulation
- Water Connections – 2" NPT factory installed true dielectric fittings (M-3-ST120R5A and M-3-ST200R5A have 2½" connections)
- Rear Connection – 2" NPT spud allows for rear water connection (M-3-ST120R5 and M-3-ST120R5A only)
- Hand hole cleanout (M-3-ST120R5 has optional hand hole cleanout)
- Two magnesium anode rods
- Steel tank
- 1" Side T&P valve opening
- 3/4" NPT Aquastat connection
- Low restriction brass drain valve



Photograph is of
M-3-ST80R5

Energy Saver Models

DIMENSIONS IN INCHES

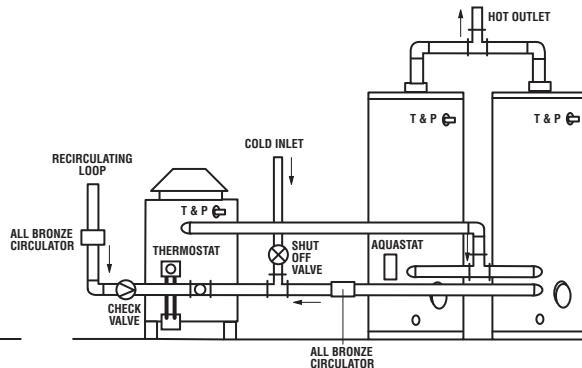
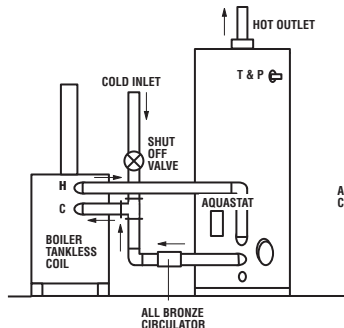
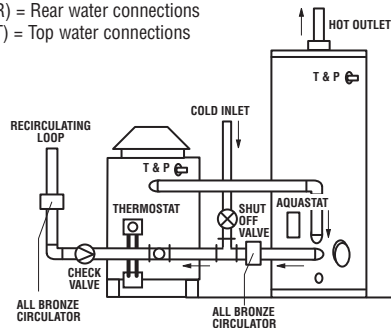
		A	B	C	D	E	F	G	H	J		
Model Number	Gallon Capacity	Floor to Heater Top	Jacket Dia.	Floor to T&P Valve	Floor to Hot Water Conn.	Floor to Aquastat Top Circ. Conn.	Floor to Bottom Circ. Conn.	Floor to Drain Valve	Floor to Hand Hole Cleanout	Floor to Rear Water Conn.	Water Conn. Size†	Approx. Shipping Weight (lbs)
M-3-ST80R5	80	58 ³ / ₄	24	52 ¹ / ₂	59 ³ / ₄	14 ¹ / ₄	9 ¹ / ₄	4 ³ / ₄	7 ¹ / ₄	—	2(F&T)	192
M-3-ST80R5A*	80	58 ³ / ₄	24	52 ¹ / ₂	59 ³ / ₄	14 ¹ / ₄	9 ¹ / ₄	4 ³ / ₄	7 ¹ / ₄	—	2(F&T)	192
M-3-ST120R5	119	62 ¹ / ₂	28	55 ³ / ₄	63 ¹ / ₂	14 ¹ / ₄	9 ¹ / ₄	5	—	5	2(F&T), 2(R)	312
M-3-ST120R5A*	119	62 ¹ / ₂	28	55 ³ / ₄	63 ¹ / ₂	14 ¹ / ₄	9 ¹ / ₄	5	7 ¹ / ₂	5	2 ¹ / ₂ (F&T), 2(R)	366
M-3-ST200R5A*	200	77	32	66	78	16 ¹ / ₄	11 ¹ / ₄	6 ³ / ₄	9 ¹ / ₄	—	2 ¹ / ₂ (F&T)	541

*Meets ASME Code

† (F) = Front water connections

(R) = Rear water connections

(T) = Top water connections



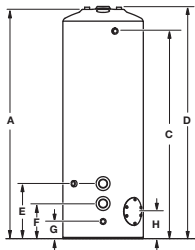
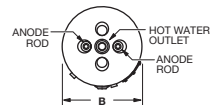


Commercial Bare Unjacketed Energy Saver Storage Tanks

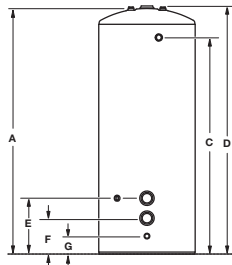
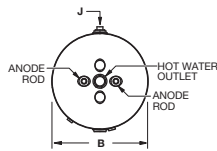
178/179



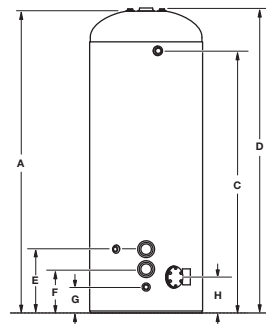
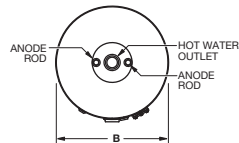
- Vitraglas® lining
- Optional ASME construction available (BST-200R5A only)
- Water Connections – 2" NPT factory installed true dielectric fittings (BST-200R5A have 2½" connections)
- Rear Connection – 2" NPT spud allows for rear water connection (BST-120R5 only)
- Hand hole cleanout (BST-120R5 has optional hand hole cleanout)
- Two magnesium anode rods
- 1" Side T&P valve opening
- 3/4" NPT Aquastat connection
- Low restriction brass drain valve



BST-80R5



BST-120R5



BST-200R5A



Photograph is of
BST-120R5

Bare Unjacketed Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

DIMENSIONS IN INCHES

		A	B	C	D	E	F	G	H	J		
Model Number	Gallon Capacity	Floor to Heater Top	Jacket Dia.	Floor to T&P Valve	Floor to Hot Water Conn.	Floor to Aquastat Top Circ. Conn.	Floor to Bottom Circ. Conn.	Floor to Drain Valve	Floor to Hand Hole Cleanout	Floor to Rear Water Conn.	Water Conn. Size†	Approx. Shipping Weight (lbs)
BST-80R5	80	58 ¹ / ₄	20	52 ¹ / ₂	58	13 ¹³ / ₁₆	8 ¹³ / ₁₆	4 ⁵ / ₁₆	6 ¹³ / ₁₆	—	2(F)	182
BST-120R5	119	62 ¹ / ₄	24	54 ⁵ / ₁₆	62 ¹ / ₄	14	9	4 ¹ / ₂	—	9	2(F), 2(R)	302
BST-200R5A*	119	76 ¹ / ₂	28	65 ³ / ₄	76 ¹ / ₂	16	11	6 ¹ / ₂	9	—	2 ¹ / ₂ (F)	531

*Meets ASME Code

† (F) = Front water connections

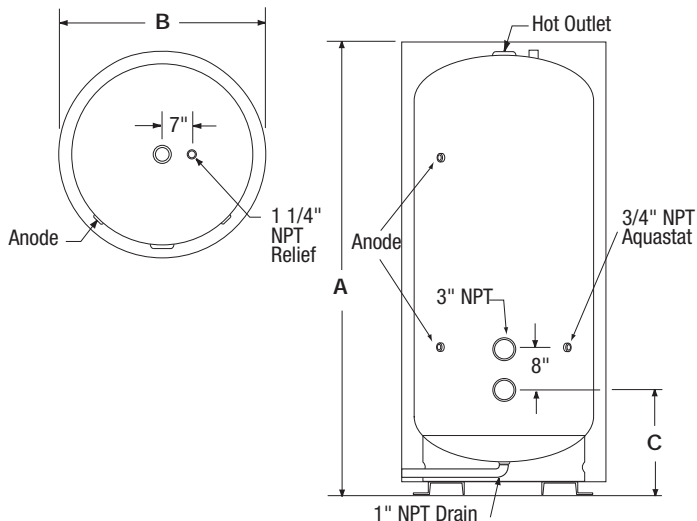
(R) = Rear water connections



Commercial Large Volume Energy Saver Jacketed & Insulated Storage Tank Models

180/181

- Vertical or horizontal construction
- Water Connections – two female 3" NPT fittings are located on the front for ease of service and installation
- ASME construction
- Vitraglas® lining
- Hydrojet® HC – optional
- 2" High density insulation
- Protective magnesium anode rod(s)
- ASME tested and certified to 125 PSI
- Steel jacket
- Designed for storage of potable water up to 180°F
- 5-year tank warranty



Photograph is of
NV310JG5A

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

Model Number	Actual U.S. Capacity Gal.	Nominal U.S. Capacity Gal.	A		B	C	Hot Water Outlet Conn.	Approx. Shipping Weight (lbs) @125 PSI
			Vert. Height	Horiz. Length	Jacket Dia.	Floor to Inlet		
N*240J†5A	240	260	91	89	34	19½	2½	539
N*310J†5A	310	344	84	82	40	21	2½	710
N*340J†5A	340	375	91	89	40	21	2½	760
N*465J†5A	465	502	120	118	40	21	2½	967
N*500J†5A	500	572	79	59	52	24	3	1176
N*765J†5A	765	846	114	59	52	24	3	1602
N*1040J†5A	1040	1128	147	145	52	24	3	2003

† = Tank Lining/Construction

G = Vitraglas®

D = Double Vitraglas®

E = Epoxy

S = Stainless Steel

Example of full model number when ordering (NV240JG5A)

* = Tank Orientation

V = Vertical

H = Horizontal

Saddles required for horizontal models.

Use Bare Tank Diameter for saddle sizes.

Factory Options Include:

- Epoxy Lining**
- Double Vitraglas®
- Manway (4" by 6")
- Hand hole (12" by 16")
- Extra Tappings
Sizes must be specified when ordering
- Stainless Steel construction
- 150 psi
- Hydrojet HC®

** Note: Manway inspection port is provided as standard equipment on epoxy lining.

Options must be specified when ordering



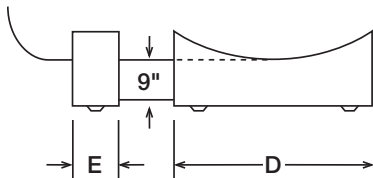
Commercial Large Volume Energy Saver 182/183

Unjacketed & Uninsulated Storage Tank Models

- ASME construction
- Glass lined interior
- Hydrojet® HC – optional
- Magnesium anode rod(s) – for protection and longer service life
- ASME tested and certified to 125 PSI
- Red Oxide Primer – completely covers exterior of tank
- 6" skirt height (vertical tank) allows for easier access to areas under the tank
- Lifting Lugs
- Designed for storage of potable water up to 180°F
- 5-year tank warranty

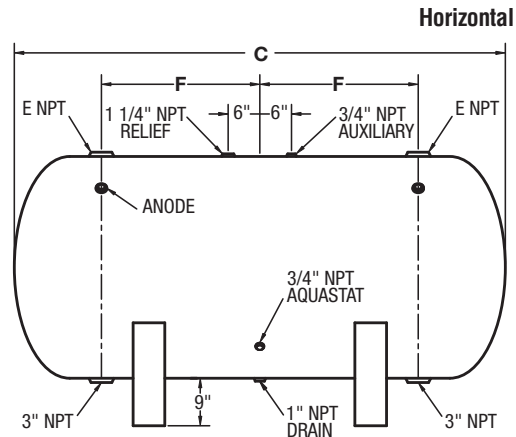
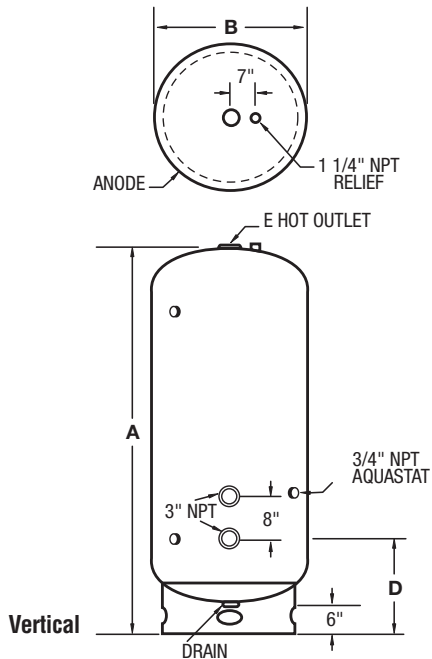


**TANK SADDLE
DIMENSIONAL DATA
for Horizontal Installations
(two or more required)**



Tank Diameter

Dimension	30	36	42	48
F	21	25	29	34
E	6	6	6	6





Commercial Large Volume Energy Saver 184/185 Unjacketed & Uninsulated Storage Tank Models

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

		A	B	C	D	Tappings			Approx. Shipping Weight (lbs) @125 PSI
Model Number	Gal. Cap.	Vert. Height	Bare Tank Dia.	Horz. Overall Length	Floor to Cold Water Inlet	Drain	E	F	
N*175N†5A	175	69	30	63	19½	1	2½	22½	284
N*210N†5A	210	81	30	75	19½	1	2½	28½	371
N*240N†5A	240	91	30	85	19½	1	2½	33½	408
N*280N†5A	280	105	30	99	19½	1	2½	40½	460
N*320N†5A	320	117	30	111	19½	1	2½	46½	504
N*310N†5A	310	84	36	78	21	1	2½	30	581
N*340N†5A	340	91	36	85	21	1	2½	33½	624
N*360N†5A	360	96	36	90	21	1	2½	36	655
N*415N†5A	415	108	36	102	21	1	2½	42	729
N*465N†5A	465	120	36	114	21	1	2½	48	802
N*515N†5A	515	132	36	126	21	1	2½	54	876

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

		A	B	C	D	Tappings			Approx. Shipping Weight (lbs) @125 PSI
Model Number	Gal. Cap.	Vert. Height	Dia.	Horz. OAL	Floor to Cold Water Inlet	Drain	E	F	
N*435N†5A	435	87	42	81	22½	1	3	31½	762
N*460N†5A	460	91	42	85	22½	1	3	33½	791
N*505N†5A	505	99	42	93	22½	1	3	37½	848
N*575N†5A	575	113	42	105	22½	1	3	43½	934
N*645N†5A	645	123	42	117	22½	1	3	49½	1020
N*720N†5A	720	135	42	129	22½	1	3	55½	1106
N*790N†5A	790	145	42	139	22½	1	3	61½	1192
N*500N†5A	500	79	48	73	24	1	3	27½	1025
N*580N†5A	580	90	48	84	24	1	3	33	1145
N*675N†5A	675	102	48	96	24	1	3	39	1275
N*765N†5A	765	114	48	108	24	1	3	45	1405
N*860N†5A	860	126	48	120	24	1	3	51	1535
N*1040N†5A	1040	147	48	141	24	1	3	63	1796

* = Tank Orientation

V = Vertical

H = Horizontal

Saddles required for horizontal models.

Use Bare Tank Diameter for saddle sizes.

† = Tank Lining/Construction

G = Vitraglas®

D = Double Vitraglas®

E = Epoxy

S = Stainless Steel

Factory Options Include:

- Epoxy Lining**
- Double Vitraglas®
- Manway (4" by 6")
- Hand hole (12" by 16")

- Saddles
- Extra Tappings
- Sizes must be specified when ordering**

- Stainless Steel construction
- 150 psi
- Hydrojet HC®

Example of full model number when ordering (NV175NG5A)

** Note: Manway inspection port is provided as standard equipment on epoxy lining.

Options must be specified when ordering

Commercial Large Volume Energy Saver Topcoat Storage Tank Models

186/187

- ASME construction
- Bradford White tanks with sprayed-on rigid insulation with acrylic topcoat exceeds ASHREE 90.1 requirements with 2.25" of high-density polyurethane foam with an "R" value of R-16. SPF meets requirements for California Title 24. Bradford White spray foam insulation has the best fire spread rating with a class I foam with less than a 25-flame spread rating suitable for boiler room applications.
- The 100% acrylic topcoat is formulated for applications over spray polyurethane foam and is designed to withstand extreme weather and a full range of environmental conditions.
- The two component polyurethane foam is applied at ambient temperatures, directly to the vessel in the desired thickness. The 2-coat topcoat is then applied from a high-pressure spray gun and allowed to dry between applications.
- Alternative for insulated and steel jacket
- Any tank size or shape can be insulated
- Field repairable



Spray Polyurethane Foam:

Specific Gravity: 1.17 – 1.19
Viscosity: 800 – 1300
Density: @ 2" 2.10 – 2.35
@ 4" 1.88 – 1.99

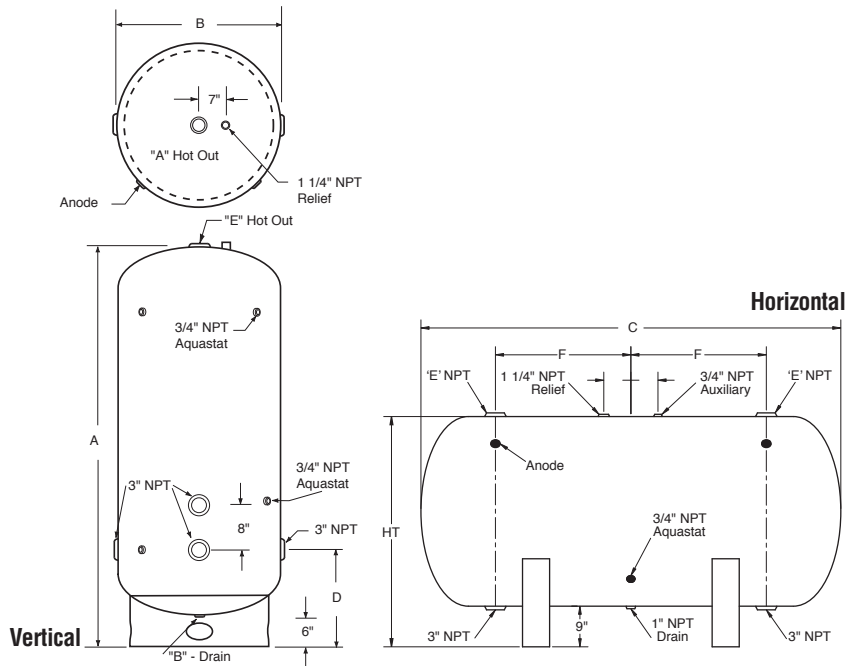
Closed Cell Content: >90%
K-Factor, initial: 0.155 – 0.170
Permeance: 2.91 (perms)
2.99 (perm inch)

Dimensional Stability: +3.3 to +8.2 - Dry Age 28 days (158°F, Dry)
-0.37 to -0.96 - Freeze 14 day (-20°F)

Flame Spread: 25 - ASTM E-84
Smoke Development: 450
R Value: 7.2/ inch
Max. Thickness: 4"

Acrylic Coating:

Topcoat: 2 coats white, 25 mils
Texture: Smooth
Grade: Spray or Roll
Base: 100% Acrylic
Solids by weight: 66% (+/-3)
Solids by volume: 55% (+/-3)
Weight per gallon: 11.65 (+/-2)
Tensile Strength: 300 psi (+/-25)
Elongation: 260% (+/-25)
Durometer hardness: 62 Shore A (+/-2)
Tear Resistance: 85 lbs/ in.
Permeance: 11 U.S. Perms @ 20 mils
Viscosity: 110 K.U. (+/-8)
Codes/ Approvals: Energy Star, ICC, UL, ASTM D6083
Reflectivity: New 85%, Aged 78%
Emmissivity: .89





Commercial Large Volume Energy Saver Topcoat Storage Tank Models

188/189

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

		A	B	C	D	Tappings				
Model Number	Gal. Cap.	Vert. Height	Overall Dia.	Horz. Length	Floor to Cold Water Inlet	Drain	E	F	Bare Tank Dia.	Glass Lined Weight 125 psi* ASME (lbs)
N*175T†5A	175	71½	35	68	19½	1	2½	22½	30	314
N*210T†5A	210	83½	35	80	19½	1	2½	28½	30	401
N*240T†5A	240	93½	35	90	19½	1	2½	33½	30	438
N*280T†5A	280	107½	35	104	19½	1	2½	40½	30	490
N*320T†5A	320	119½	35	116	19½	1	2½	46½	30	534
N*310T†5A	310	86½	41	83	21	1	2½	30	36	611
N*340T†5A	340	93½	41	90	21	1	2½	33½	36	654
N*360T†5A	360	98½	41	95	21	1	2½	36	36	685
N*415T†5A	415	110½	41	107	21	1	2½	42	36	759
N*465T†5A	465	122½	41	119	21	1	2½	48	36	832
N*515T†5A	515	134½	41	131	21	1	2½	54	36	906
N*435T†5A	435	89½	47	86	21	1	2½	31½	42	792

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

		A	B	C	D	Tappings				
Model Number	Gal. Cap.	Vert. Height	Overall Dia.	Horz. Length	Floor to Cold Water Inlet	Drain	E	F	Bare Tank Dia.	Glass Lined Weight 125 psi* ASME (lbs)
N*460T†5A	460	93½	47	90	22½	1	3	33½	42	821
N*505T†5A	505	101½	47	98	22½	1	3	37½	42	878
N*575T†5A	575	113½	47	110	22½	1	3	43½	42	964
N*645T†5A	645	125½	47	122	22½	1	3	49½	42	1050
N*720T†5A	720	137½	47	134	22½	1	3	55½	42	1136
N*790T†5A	790	147½	47	144	22½	1	3	61½	42	1222
N*500T†5A	500	81½	53	78	22½	1	3	27½	48	1055
N*580T†5A	580	92½	53	89	24	1	3	33	48	1175
N*675T†5A	675	104½	53	101	24	1	3	39	48	1305
N*765T†5A	765	116½	53	113	24	1	3	45	48	1435
N*860T†5A	860	128½	53	125	24	1	3	51	48	1565
N*1040T†5A	1040	149½	53	146	24	1	3	63	48	1826

* = Tank Orientation

V = Vertical

H = Horizontal

† = Tank Lining/Construction

G = Vitraglas®

D = Double Vitraglas®

E = Epoxy

S = Stainless Steel

Example of full model number when ordering (NV240TG5A)

Note: Please be advised that all tank sizes are available for this process.

Factory Options Include:

- Epoxy Lining**
- Double Vitraglas®
- Manway (4" by 6")
- Hand hole (12" by 16")
- Extra Tappings

Sizes must be specified when ordering

- Stainless Steel construction
- 150 psi

** Note: Manway inspection port is provided as standard equipment on epoxy lining.

Options must be specified when ordering



Residential Gas Energy Saver FVIR Combi1™ Water Heater System

190/191



DEFENDER
SAFETY SYSTEM™

BRADFORD WHITE
ICON
System™

The Combi1™ FVIR Defender Safety System® Models Feature:

- Bradford White ICON System™
- Advanced ScreenLok® Technology flame arrestor design
- Resettable thermal switch
- Pedestal base
- Heat Exchanger—Single wall 1½" O.D. glass coated (Vitrage®) steel coil
- Provides domestic hot water and space heating in one system
- Low Heat Exchanger Head Loss—Up to 10 GPM flow, with less than 5 ft. of head loss

- Vitrage® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 1" Front NPT supply and return connections
- 2" Non-CFC foam insulation
- Two protective anode rods
- Integrated Mixing Device
- T&P relief valve installed
- Low restriction brass drain valve

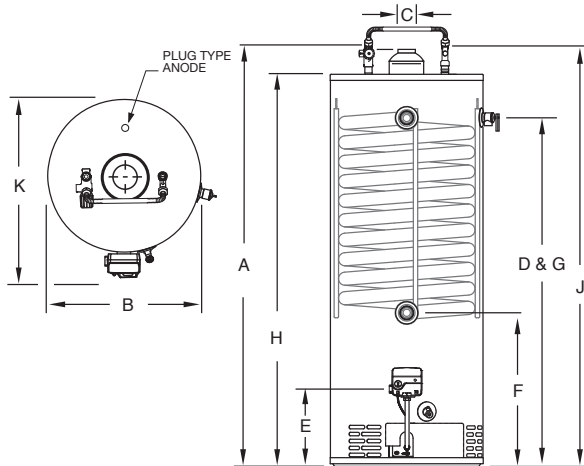


Photo is of
C-SW2-504T10FBN

Combi1™ Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b
(current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Exchanger Inlet	Floor to Exchanger Outlet	Floor to Top of Heater	Floor to Top Water Conn.	Depth	Approx. Shipping Weight (lbs)
C-SW2-504T10FBN(LP)	45	65,000	70	59 ¹ / ₄	22	4	50	13	31 ¹ / ₂	50	56 ³ / ₈	60 ³ / ₈	24 ¹ / ₂	236

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

*Based on manufacturers rated recovery efficiency.

CAEF is .55 and CAAFLUE % is 80.0.

(LP) LP Gas Inputs	GPH Rec. 90°F Rise
C-SW2-504T10FSX 61,000 BTU/Hr.	66

Heat Exchanger Values*

Supply Temperature	140°F	120°F	100°F
Return Temperature	120°F	100°F	80°F
Differential	20°F	20°F	20°F
Flow Rate	4.1 GPM	4.6 GPM	4.6 GPM
Net Output	35,500 BTU/Hr.	39,500 BTU/Hr.	39,500 BTU/Hr.

*These values were obtained using 180°F stored tank temperature.

Net Output is the space heating capacity based on normal piping and pickup allowance of 15%.

Actual values may vary based on circulator flow rate, number of zones, water and space heating demands. Numbers subject to change.

Heat Exchanger Head Loss

GPM	2	5	8	10	12
Feet of Head Loss	0.07	0.71	2.3	4.0	6.31



Residential Gas Energy Saver Combi1™ Water Heater System

192/193



BRADFORD WHITE
ICON
System™

The Combi1™ Models Feature:

- Bradford White ICON System™
- Heat Exchanger—Single wall 1½" O.D. glass coated (Vitrage®) steel coil
- Provides domestic hot water and space heating in one system
- Low Heat Exchanger Head Loss—Up to 10 GPM flow, with less than 5 ft. of head loss
- Vitrage® lining
- Factory installed Hydrojet2™ Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 1" Front NPT supply and return connections
- 2" Non-CFC foam insulation
- Two protective anode rods
- Integrated Mixing Device
- T&P relief valve installed
- Low restriction brass drain valve

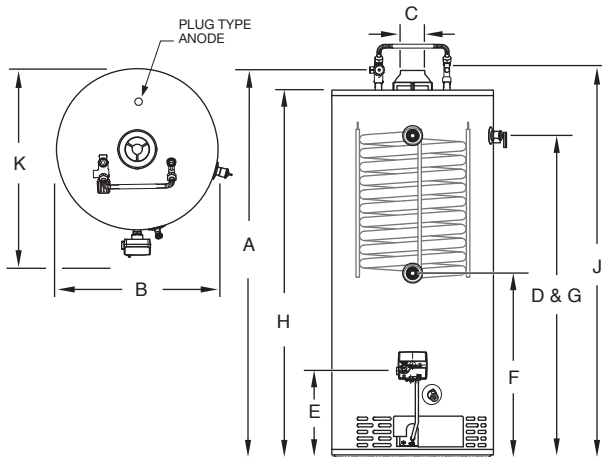


Photo is of
C-SW2-75T10BN

Combi1™ Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b
(current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Exchanger Inlet	Floor to Exchanger Outlet	Floor to Top of Heater	Floor to Top Water Conn.	Depth	Approx. Shipping Weight (lbs)
C-SW2-75T10BN(LP)	72	76,000	81	63¾	26	4	53	16	34½	53	60¼	64¼	28½	326

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

*Based on manufacturers rated recovery efficiency.

CAEF is .55 and CAAFLUE % is 80.0.

(LP) LP Gas Inputs		GPH Rec. 90°F Rise
C-SW2-75T10SX	76,000 BTU/Hr.	81

Heat Exchanger Values*

Supply Temperature	140°F	120°F	100°F
Return Temperature	120°F	100°F	80°F
Differential	20°F	20°F	20°F
Flow Rate	4.1 GPM	5.6 GPM	5.6 GPM
Net Output	35,500 BTU/Hr.	47,500 BTU/Hr.	47,500 BTU/Hr.

*These values were obtained using 180°F stored tank temperature.

Net Output is the space heating capacity based on normal piping and pickup allowance of 15%.

Actual values may vary based on circulator flow rate, number of zones, water and space heating demands. Numbers subject to change.

Heat Exchanger Head Loss

GPM	2	5	8	10	12
Feet of Head Loss	0.07	0.71	2.3	4.0	6.31



Residential Gas Energy Saver FVIR Combi2™ Water Heater System

194/195



DEFENDER

SAFETY SYSTEM®

BRADFORD WHITE
ICON
System™

The Combi2™ FVIR Defender Safety System® Models Feature:

- Bradford White ICON System™
- Advanced ScreenLok® Technology flame arrestor design
- Resettable thermal switch
- Pedestal base
- Heat Exchanger—Double wall 1½" O.D. glass coated (Vitrage®) steel coil ensures separation of potable water and heating fluid
- Provides domestic hot water and space heating in one system

- Low Heat Exchanger Head Loss—Up to 10 GPM flow, with less than 5 ft. of head loss
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 3/4" Front NPT supply and return connections
- 2" Non-CFC foam insulation
- Two protective anode rods
- Integrated Mixing Device
- T&P relief valve installed
- Low restriction brass drain valve

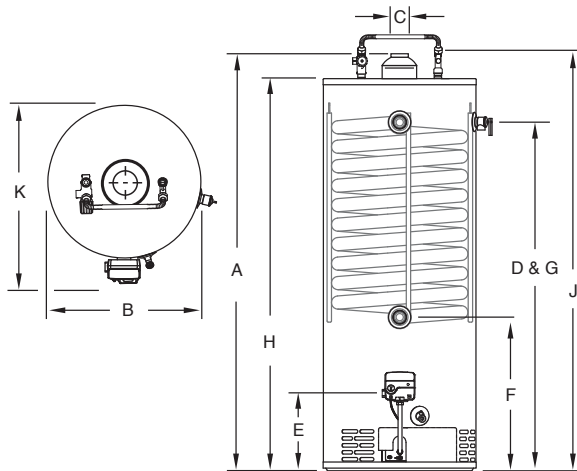


Photo is of
C-DW2-504T10FBN

Combi2™ Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b
(current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Exchanger Inlet	Floor to Exchanger Outlet	Floor to Top of Heater	Floor to Top Water Conn.	Depth	Approx. Shipping Weight (lbs)
C-DW2-504T10FBN(LP)	45	65,000	70	59 ¹ / ₄	22	4	50	13	27 ⁷ / ₈	50	56 ³ / ₈	60 ³ / ₈	24 ¹ / ₂	238

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

*Based on manufacturers rated recovery efficiency.

CAEF is .55 and CAAFLUE % is 80.0.

(LP) LP Gas Inputs	GPH Rec. 90°F Rise
C-DW2-504T10FSX 61,000 BTU/Hr.	66

Heat Exchanger Values*

Supply Temperature	140°F	120°F	100°F
Return Temperature	120°F	100°F	80°F
Differential	20°F	20°F	20°F
Flow Rate	2.3 GPM	3.4 GPM	4.4 GPM
Net Output	20,000 BTU/Hr.	29,000 BTU/Hr.	38,000 BTU/Hr.

*These values were obtained using 180°F stored tank temperature.

Net Output is the space heating capacity based on normal piping and pickup allowance of 15%.

Actual values may vary based on circulator flow rate, number of zones, water and space heating demands. Numbers subject to change.

Heat Exchanger Head Loss

GPM	2	5	8	10	12
Feet of Head Loss	0.34	2.15	5.51	8.61	12.40



Residential Gas Energy Saver Combi2™ Water Heater System

196/197



BRADFORD WHITE
ICON
System™

The Combi2™ Models Feature:

- Bradford White ICON System™
- Heat Exchanger—Double wall 1½" O.D. glass coated (Vitraglas®) steel coil ensures separation of potable water and heating fluid
- Provides domestic hot water and space heating in one system
- Low Heat Exchanger Head Loss—Up to 10 GPM flow, with less than 5 ft. of head loss
- Vitraglas® lining
- Factory installed Hydrojet2™ Total Performance System
- Water Connections – ¾" NPT factory installed true dielectric fittings
- ¾" Front NPT supply and return connections
- 2" Non-CFC foam insulation
- Two protective anode rods
- Integrated Mixing Device
- T&P relief valve installed
- Low restriction brass drain valve

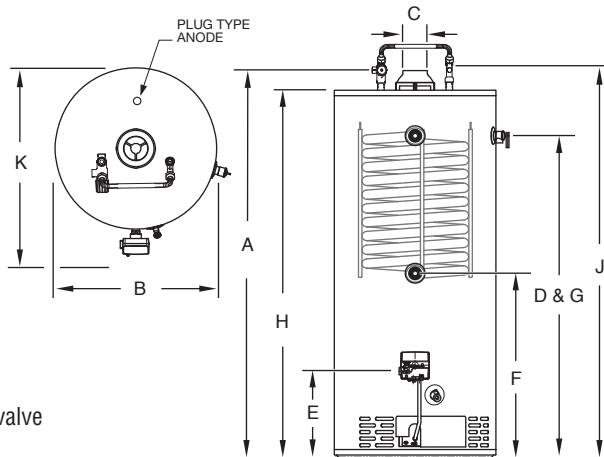


Photo is of
C-DW2-75T10BN

Combi2™ Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b
(current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Exchanger Inlet	Floor to Exchanger Outlet	Floor to Top of Heater	Floor to Top Water Conn.	Depth	Approx. Shipping Weight (lbs)
C-DW2-75T10BN(LP)	72	76,000	81	63 ³ / ₄	26	4	53	16	30 ⁷ / ₈	53	60 ¹ / ₄	64 ¹ / ₄	28 ¹ / ₂	328

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

*Based on manufacturers rated recovery efficiency.

CAEF is .55 and CAAFLUE % is 80.0.

(LP) LP Gas Inputs		GPH Rec. 90°F Rise
C-DW2-75T10SX	76,000 BTU/Hr.	81

Heat Exchanger Values*

Supply Temperature	140°F	120°F	100°F
Return Temperature	120°F	100°F	80°F
Differential	20°F	20°F	20°F
Flow Rate	2.3 GPM	3.4 GPM	4.4 GPM
Net Output	20,000 BTU/Hr.	29,000 BTU/Hr.	38,000 BTU/Hr.

*These values were obtained using 180°F stored tank temperature.

Net Output is the space heating capacity based on normal piping and pickup allowance of 15%.

Actual values may vary based on circulator flow rate, number of zones, water and space heating demands. Numbers subject to change.

Heat Exchanger Head Loss

GPM	2	5	8	10	12
Feet of Head Loss	0.34	2.15	5.51	8.61	12.40



Residential Gas Energy Saver Combi1™ TTW® Water Heater System

198/199

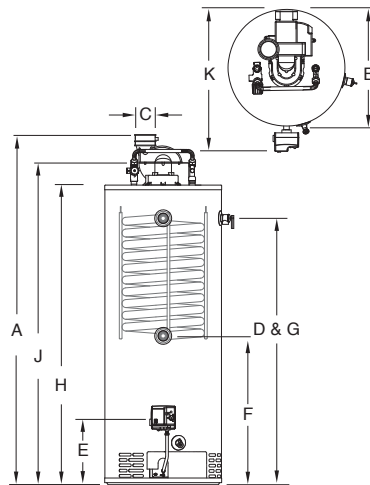


DEFENDER
SAFETY SYSTEM®

The Combi1™ TTW® FVIR Defender Safety System® Models Feature (50 gallon model only):

- Advanced ScreenLok® Technology flame arrestor design
 - Flammable vapor sensor
- All Combi1™ TTW® Models Feature:**
- Heat Exchanger—Single wall 1½" O.D. glass coated (Vitrage®) steel
 - Provides domestic hot water and space heating in one system
 - Low Heat Exchanger Head Loss—Up to 10 GPM flow, with less than 5 ft. of head loss
 - Vitrage® lining
 - Integrated Mixing Device
 - Factory installed Hydrojet® Total Performance System
 - Electronic gas control valve with spark to pilot ignition

- Power vented
- Horizontal venting
- Vertical venting
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 1" NPT front supply and return connections
- 2" Non-CFC foam insulation
- Two protective anode rods
- T&P relief valve installed
- Low restriction brass drain valve
- Pedestal base



Photograph is of a
C-SW2-TW50T10FBN

Combi1™ Power Vented Energy Saver Models

Meet or exceed ASHRAE 90.1b
(current standard) CEC Listed
80% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Exchanger Inlet	Floor to Exchanger Outlet	Floor to Top of Heater	Floor to Top Water Conn.	Depth	Approx. Shipping Weight (lbs)
C-SW2-TW50T10FBN (LP)	45	67,000	72	65 ⁷ / ₈	22	3 or 4	50 ¹ / ₈	11 ³ / ₄	31 ¹ / ₂	50	56 ³ / ₈	60 ³ / ₈	26 ³ / ₄	243
C-SW2-TW75T10BN (LP)	72	76,000	82	69 ³ / ₄	26	3 or 4	53	15	34 ¹ / ₂	53	60 ¹ / ₄	64 ¹ / ₄	31	333

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

*Based on manufacturers rated recovery efficiency.

110 V.A.C Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

Heat Exchanger Values*

Supply Temperature	140°F	120°F	100°F
Return Temperature	120°F	100°F	80°F
Differential	20°F	20°F	20°F
Flow Rate (TW50)	4.1 GPM	4.6 GPM	4.6 GPM
Net Output (TW50)	35,000 BTU/Hr.	39,500 BTU/Hr.	39,500 BTU/Hr.
Flow Rate (TW75)	4.1 GPM	5.6 GPM	5.6 GPM
Net Output (TW75)	35,000 BTU/Hr.	47,500 BTU/Hr.	47,500 BTU/Hr.

*These values were obtained using 180°F stored tank temperature.

Net Output is the space heating capacity based on normal piping and pickup allowance of 15%.

Actual values may vary based on circulator flow rate, number of zones, water and space heating demands. Numbers subject to change.

Heat Exchanger Head Loss

GPM	Ft. of Hd. Loss
2	0.07
5	0.71
8	2.3
10	4.0
12	6.31

(LP) LP Gas Inputs

GPH Rec.
90°F Rise

C-SW2-TW50T10FSX	60,000 BTU/Hr.	65
C-SW2-TW75T10SX	75,500 BTU/Hr.	81

C-SW2-TW50 C-SW2-TW75	3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length	60 ft.**	180 ft.
Min. Equivalent Length	7 ft.	15 ft.
Number of 90° Elbows†	1 2 3	175 ft. 170 ft. 165 ft.

Subtract 5ft. for each additional 90° elbow.

†Consult the I&O manual for Four or more elbows.

**C-SW2-TW75 maximum 3" vent length is 50ft.



Residential Gas Energy Saver Combi2™ TTW® Water Heater System

200/201

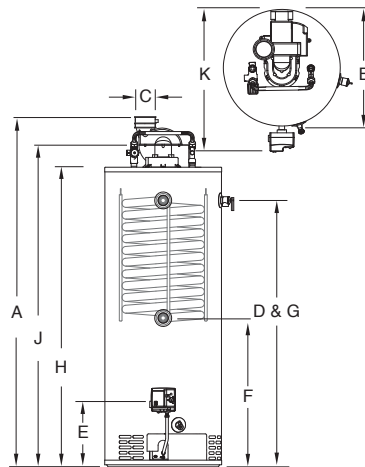


DEFENDER
SAFETY SYSTEM®

The Combi2™ TTW® FVIR Defender Safety System® Models Feature (50 gallon model only):

- Advanced ScreenLok® Technology flame arrestor design
 - Flammable vapor sensor
- All Combi2™ TTW® Models Feature:**
- Heat Exchanger—Double wall 1½" O.D. glass coated (Vitrage®) steel coil ensures separation of potable water and heating fluid
 - Provides domestic hot water and hydronic heating in one system
 - Low Heat Exchanger Head Loss—Up to 10 GPM flow, with less than 5 ft. of head loss
 - Integrated Mixing Device
 - Vitrage® lining
 - Factory installed Hydrojet® Total Performance System

- Electronic gas control valve with spark to pilot ignition
- Power vented
- Horizontal venting
- Vertical venting
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 3/4" Front supply and return connections
- 2" Non-CFC foam insulation
- Two protective anode rods
- T&P relief valve installed
- Low restriction brass drain valve
- Pedestal base



Photograph is of a
C-DW2-TW50T10FBN

Combi2™ Power Vented Energy Saver Models

Meet or exceed ASHRAE 90.1b
(current standard) CEC Listed

DIMENSIONS IN INCHES

Recovery Efficiency ranging up to 80% (Minimum)

NATURAL GAS AND LIQUID PROPANE GAS MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 90°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Exchanger Inlet	Floor to Exchanger Outlet	Floor to Top of Heater	Floor to Top Water Conn.	Depth	Approx. Shipping Weight (lbs)
C-DW2-TW50T10FBN (LP)	45	67,000	72	65 ⁷ / ₈	22	3	50 ¹ / ₂	11 ³ / ₄	28	50 ¹ / ₈	56 ³ / ₈	60 ³ / ₈	26 ³ / ₄	245
C-DW2-TW75T10BN (LP)	72	76,000	82	69 ³ / ₄	26	3	53	15	30 ⁷ / ₈	53	60 ¹ / ₄	64 ¹ / ₄	31	335

All propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

*Based on manufacturers rated recovery efficiency.

110 V.A.C Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.

Heat Exchanger Values*

Supply Temperature	140°F	120°F	100°F
Return Temperature	120°F	100°F	80°F
Differential	20°F	20°F	20°F
Flow Rate	2.3 GPM	3.4 GPM	4.4 GPM
Net Output	20,000 BTU/Hr.	29,000 BTU/Hr.	38,000 BTU/Hr.

*These values were obtained using 180°F stored tank temperature.

Net Output is the space heating capacity based on normal piping and pickup allowance of 15%.

Actual values may vary based on circulator flow rate, number of zones, water and space heating demands. Numbers subject to change.

Heat Exchanger Head Loss

GPM	Ft. of Hd. Loss
2	0.34
5	2.15
8	5.51
10	8.61
12	12.40

(LP) LP Gas Inputs

GPH Rec.
90°F Rise

C-DW2-TW50T10FSX 60,000 BTU/Hr. 65

C-DW2-TW75T10SX 75,500 BTU/Hr. 81

C-DW2-TW50 C-DW2-TW75	3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length	60 ft.**	180 ft.
Min. Equivalent Length	7 ft.	15 ft.
Number of 90° Elbows†	1	55 ft.
	2	50 ft.
	3	45 ft.

Subtract 5ft. for each additional 90° elbow.

†Consult the I&O manual for Four or more elbows.

**C-DW2-TW75 maximum 3" vent length is 50ft.



Residential Oil Energy Saver Combi2™ Water Heater System

202/203

- Heat exchanger – Double wall 1½" glass coated (Vitrage®) steel ensures separation of potable water and heating fluid
- Provides domestic hot water and hydronic heating in one system
- Low heat exchanger head loss - Less than 5ft. of head loss with flow up to 10GPM.
- Vitrage® lining
- Factory installed Hydrojet® Total Performance System
- Beckett burner with single aqua stat
- Water connections – 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC foam insulation
- Two protective aluminum anode rods
- Integrated Mixing Device
- T&P relief valve installed
- Low restriction brass drain valve

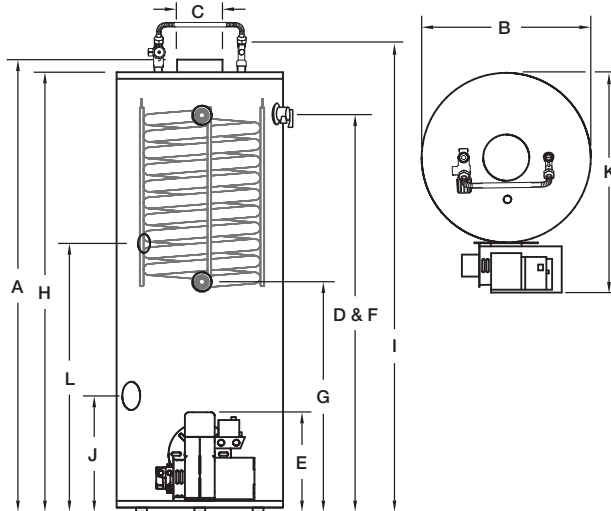


Photo is of
C-DW1-70L60F

Combi2™ Atmospheric Vent Energy Saver Model

DIMENSIONS IN INCHES

Meet or exceed ASHRAE 90.1b
(current standard) CEC Listed
Recovery Efficiency ranging up to 76%

				Recovery 90°F Rise*	A	B	C	D	E	F	G	H	I	J	K	L	
Model Number	Gal. Cap.	BTU/Hr. Input	GPH Firing Rate	U.S. GPH	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P	Floor to Top of Burner	Floor to Exchanger Outlet	Floor to Exchanger Inlet	Floor to Top of Water Heater	Floor to Top Water Conn.	Floor to C/L Combust. Chamber Sight Hole	Depth	Floor to Control Thermostat	Approx. Shipping Weight (lbs)
C-DW1-70L60F	68	119,000	0.85	127	66 ³ / ₄	24	6	57 ³ / ₈	10 ¹ / ₂	57 ³ / ₈	35 ¹ / ₄	64	68	13 ¹ / ₄	32 ¹ / ₂	33 ⁷ / ₈	299†

*Based on manufacturers rated recovery efficiency.

†Shipping weights do not include burner and controls.

	C-DW1-70L60F	
Input	119,000 BTU/Hr.	34.5 kW
Water Heating☼		
First Hour Rating	174 Gal.	
Space Heating		
CA _{AFUE} %	78	
Max. Heating Capacity◆	55,000 BTU/Hr.	16.1 kW

☼ Based on ANSI Z21.10.1 and 10.3 and DOE Test Methods.

◆ Based on ANSI/ASHRAE 124 Standard.

Actual values may vary based on circulator flow rate, number of zones, water and space heating demands. Numbers subject to change.

Heat Exchanger Head Loss

GPM	2	5	8	10	12
Feet of Head Loss	0.34	2.15	5.51	8.61	12.40

Part Numbers	Description**
228-44392-05	BECKETT burner with dual aqua stat @ 0.85 GPH

** Burner is 1-stage, 120V.



Speciality Products – Electric Energy Saver 204/205

Dairy Barn Deluxe Water Heater

- Vitraglas® lining
- Hydrojet® Total Performance System
- Water connections – 3/4" NPT factory installed true dielectric fittings
- 2" Non-CFC foam insulation
- Fully automatic controls (180°F maximum)
- Direct heat transfer with immersed elements
- Protective magnesium anode rod
- 4" leg kit
- T&P relief valve installed
- Low restriction brass drain valve

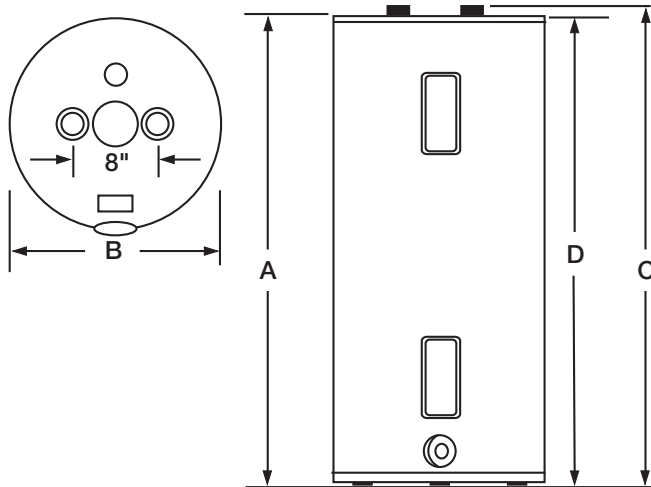


Photo is of
DB-80R3DS

Dairy Barn Deluxe Model

DIMENSIONS IN INCHES

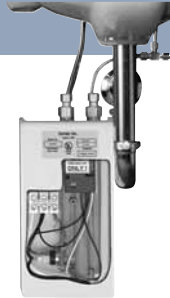
ELECTRIC			A	B	C	D	
Model Number	Gallon Capacity	GPH Recovery 100°F Rise	Floor to Heater Top	Jacket Diameter	Floor to Water Conn.	Floor to T&P Conn.	Approx. Shipping Weight (lbs)
DB-80R3DS	80	19	63	24	64 ⁵ / ₈	63	183

The Dairy Barn heater will be wired inter-locking (non-simultaneous) 240 volt with 4500 watt elements, unless otherwise specified. Other wattages are available up to 6,000 watts non-simultaneous and 11,000 watts simultaneous 240 volt. Suffix letter “S” indicates screw type element.

NOTE: **Not recommended for 180° sanitizing.**

NOTE: Refer to pages 134/135 for technical information and pages 148/149 for GPH recovery information.

Instantaneous Water Heaters



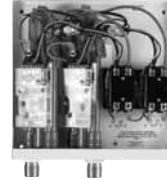
SINGLE
POINT



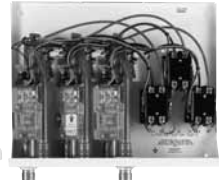
THERMOSTATIC



FLOW
CONTROLLED



TWIN HEATING
MODULE



THERMOSTATIC
THREE PHASE

- On Demand Hot Water – no delay
- Cut Energy Waste – flow switch activates heater only on demand (No stand-by heat loss)
- Continuous Hot Water – no storage capacity to run out
- No T&P relief valve needed – check local codes
- Integral Flow Restrictor – built-in to ensure proper temperature rise
- 10 Year Warranty on heater body/element assembly

- Easy Installation – mounts on wall – no sweat connections
- Ni Chrome Heating Element – a unique, patented flow path ensures optimum heat transfer and extended element life
- Reduces Calcification
- Space Saving Installation – compact size
- Field Serviceable Element – 1 year warranty

Single Point Single Phase Models

DIMENSIONS IN INCHES

ELECTRIC

Model Number*	kW Rating	Voltage	AMPS	Temp. Rise °F 0.5 GPM	Recommended Wire Size
ES-3000-1-S-10	3.0	120	25.0	41°	10 AWG
ES-3500-1-S-10	3.5	120	29.0	48°	10 AWG
ES-3500-4-S-10	3.5	240	14.6	48°	14 AWG
ES-4100-2-S-10	4.1	208	19.7	56°	12 AWG
ES-4100-5-S-10	4.1	277	14.8	56°	14 AWG
ES-5500-4-S-10	5.5	240	22.9	75°	10 AWG

Specifications

Dimensions: 10.75" x 5.25" x 2.875"

Weight: 3 lbs.

Materials:

Cover: ABS UL rated 94Vo.

Glass reinforced "NORYL†" Heater

Body and Ni Chrome Element

Color: White • Element: Replaceable cartridge insert

• Pipe-Fittings: 3/8" compression at top of unit

Thermostatic Single Phase Models

DIMENSIONS IN INCHES

ELECTRIC

Model Number*	kW Rating	Voltage	AMPS	Temp. Rise °F 0.5 GPM	Temp. Rise °F 0.75 GPM	Temp. Rise °F 1.0 GPM	Temp. Rise °F 1.5 GPM	Temp. Rise °F 2.0 GPM	Recommended Wire Size
EFT-7500-4-S-10	7.5	240	32.0	—	68°	51°	34°	25°	8 AWG
EFT-9500-4-S-10	9.5	240	40.0	—	86°	65°	43°	32°	8 AWG

*Additional voltages and wattages are available. For more information, please consult factory.

†Noryl™ is a registered trademark of General Electric Company.

Specifications

Dimensions: 10.75" x 5.25" x 2.875"

Weight: 3 lbs.

Materials:

Cover: ABS UL rated 94Vo.

Glass reinforced "NORYL†" Heater

Body and Ni Chrome Element

Color: White • Standard temperature range 100°F-140°F.

• Element: Replaceable cartridge insert. • Pipe-Fittings:

1/2" compression at bottom of unit.

U.L. Listed: E86887(M)



Electric Instantaneous Water Heaters (continued)

208/209

Flow Controlled Single Phase Models

DIMENSIONS IN INCHES

ELECTRIC

Model Number*	kW Rating	Voltage	Current Per Phase	Temp. Rise °F 0.5 GPM	Temp. Rise °F 0.75 GPM	Temp. Rise °F 1.0 GPM	Temp. Rise °F 1.5 GPM	Temp. Rise °F 2.0 GPM	Recommended Wire Size
EFC-5500-4-S-10	5.5	240	23.0	75°	50°	38°	25°	18°	10 AWG
EFC-6500-4-S-10	6.5	240	27.0	88°	59°	44°	30°	22°	10 AWG
EFC-7500-4-S-10	7.5	240	32.0	—	68°	51°	34°	25°	8 AWG
EFC-8300-2-S-10	8.3	208	39.0	—	76°	57°	38°	29°	8 AWG
EFC-9500-4-S-10	9.5	240	40.0	—	86°	65°	43°	32°	8 AWG

Series Two Single Phase Thermostatic Models

DIMENSIONS IN INCHES

ELECTRIC

Model Number*	kW Rating	Voltage	Current Per Phase	Temp. Rise °F 1.5 GPM	Temp. Rise °F 2.0 GPM	Temp. Rise °F 2.5 GPM	Temp. Rise °F 3.0 GPM	Recommended Wire Size
EFT-19000-4-D-10	19.0	240	2x40 Amps	87°	65°	52°	43°	10 AWG

*Additional voltages and wattages are available. For more information, please consult factory.

†Noryl™ is a registered trademark of General Electric Company.

Specifications

Dimensions: 10.75" x 5.25" x 2.875"

Weight: 3 lbs.

Materials:

Cover: ABS UL rated 94Vo.

Glass reinforced "NORYL†" Heater

Body and Ni Chrome Element

Color: White • Standard temperature range 100°F-140°F.

• Element: Replaceable cartridge insert. • Pipe-Fittings:

1/2" compression at bottom of unit.

Dimensions: 10" x 9" x 3"

Weight: 8 lbs.

Materials:

Cover: Enameled Steel.

Glass reinforced "NORYL†" Heater

Body and Ni Chrome Element

Color: White • Element: Dual replaceable cartridge inserts • Pipe-Fittings: 3/4" compression at bottom of unit.

U.S. Patent No.'s: 4,762,980 and 4,960,976

Series Three-Single Phase Thermostatic Models

DIMENSIONS IN INCHES

ELECTRIC

Model Number*	kW Rating	Voltage	Current Per Phase	Temp. Rise °F 1.5 GPM	Temp. Rise °F 2.0 GPM	Temp. Rise °F 2.5 GPM	Temp. Rise °F 3.0 GPM	Temp. Rise °F 4.0 GPM	Recommended Wire Size
EFT-28000-4-T-10	28.0	240	3x40 Amps	—	96°	76°	65°	47°	8 AWG Per Module
EFT-38000-4-F-10	38.0	240	4x40 Amps	—	130°	104°	86°	65°	8 AWG Per Module

This unit must have 3 independent electrical circuits using correctly valued wire and 3 circuit breakers.

Specifications

Dimensions: 12" x 12" x 3.5"

Weight: 12 lbs.

Dimensions: 15 1/4" x 12 1/4" x 4 1/4"

Weight: 15 lbs.

Materials:

Cover: Enameled Steel.

Glass reinforced Heater

Body and Ni Chrome Element

Color: White • Element: Triple replaceable cartridge inserts • Pipe-Fittings: 3/4" compression at bottom of unit.

U.S. Patent No.'s: 4,762,980 and 4,960,976

Series Three-Three Phase Thermostatic Models

DIMENSIONS IN INCHES

ELECTRIC

Model Number*	kW Rating	Voltage	Current Per Phase	Temp. Rise °F 1.5 GPM	Temp. Rise °F 2.0 GPM	Temp. Rise °F 2.5 GPM	Temp. Rise °F 3.0 GPM	Temp. Rise °F 3.5 GPM	Temp. Rise °F 4.0 GPM	Temp. Rise °F 5.0 GPM	Recommended Wire Size
EFT-18000-6-T-10	18.0	480 Y**	21.7 Amps	82°	61°	49°	41°	35°	32°	25°	6 AWG
EFT-24000-6-T-10	24.0	480 Y**	28.9 Amps	—	82°	65°	54°	47°	41°	34°	6 AWG
EFT-32000-6-T-10	32.0	480 Y**	38.5 Amps	—	—	87°	73°	62°	55°	45°	8 AWG

*Additional voltages and wattages are available. For more information, please consult factory.

†Noryl™ is a registered trademark of General Electric Company.

**Neutral leg required.

Voltage Identification Code For All Models

Voltage Code	Voltage
1	120
2	208
3	220
4	240
5	277
6	480

Example: EFT-28000-4-T-10

The 4 in the model number indicates 240 volt.

Warranty Information

Some states do not allow limitations on warranties. See copy of the Warranty included with the heater.

210/211

	Limited Tank Warranty	Limited Parts Warranty
Residential Gas Models		
Residential eF Series® Ultra High Efficiency Models.....	6 Year	6 Year
Residential Programmable Efficiency Models.....	6 or 10 Year	6 or 10 Year**
Residential Damper High EF Models.....	6 or 10 Year	6 or 10 Year**
Residential High EF Models.....	6 or 10 Year	6 or 10 Year**
Residential High Performance Models.....	6 Year	6 Year
Residential TTW® High Performance Models.....	6 Year	6 Year
Residential Extra Recovery Models.....	6 or 10 Year	6 or 10 Year**
Residential Upright Models.....	6 or 10 Year	6 or 10 Year**
Residential Power Vent Models.....	6 or 10 Year	6 or 10 Year**
Residential Power Direct Vent Models.....	6 or 10 Year	6 or 10 Year**
Residential Direct Vent Models.....	6 or 10 Year	6 or 10 Year**
Residential Ultra Low NOx Models.....	6 or 10 Year	6 or 10 Year**
Residential Manufactured Home Models.....	6 or 10 Year	6 Year
Residential Everhot® Tankless Models.....	12 Year*	5 Year
Residential Electric Models		
Residential High Efficiency, Upright, Lowboy Models.....	6 or 10 Year	6 or 10 Year**
Residential Utility, Wall Hung Models.....	6 or 10 Year	6 or 10 Year**
Residential Kwickshot® Models.....	10 Year†	1 Year
Solar Models		
Residential Solar Models.....	6 or 10 Year	6 Year
Residential Oil Models		
Residential Oil-Powered Models.....	6 Year	2 Year
Residential Hydronic/Space Heating		
Residential Combi1™ Models.....	10 Year	6 Year
Residential Combi2™ Models.....	10 Year	6 Year
Residential Indirect Models		
Residential PowerStor Series® Models.....	Limited Lifetime	6 Year
Residential PowerStor2 Series® Models.....	Limited Lifetime	6 Year
Residential PowerStor Series® SS Models.....	Limited Lifetime	6 Year
Residential Storage Tank		
Residential AST Models.....	6 Year	6 Year

	Limited Tank Warranty	Limited Parts Warranty
Commercial Gas Models		
Light Duty Commercial High Performance Models.....	3 Year	1 year
Light Duty Commercial TTW® High Performance Models.....	3 Year	1 year
Light Duty Commercial Upright Models.....	3 Year	1 year
Light Duty Commercial Power Vent Models.....	3 Year	1 year
Light Duty Commercial Power Direct Vent Models.....	3 Year	1 year
Light Duty Commercial Direct Vent Models.....	3 Year	1 year
Light Duty Commercial Ultra Low NOx Models.....	3 Year	1 year
Commercial Flue Damper Models.....	3 Year	1 year
Commercial Induced Draft Models.....	3 Year	1 year
Commercial Millivolt Models.....	3 Year	1 year
Commercial eF Series® Ultra High Efficiency Models.....	3 Year	1 year
Commercial Power Direct Vent Models.....	3 Year	1 year
Commercial Copper Brute Models.....	5 Year*	1 year
Commercial Electric Models		
Light Duty Commercial Upright, Lowboy Models.....	3 Year	1 year
Light Duty Commercial Utility, Wall Hung Models.....	3 Year	1 year
Commercial Medium Duty Models.....	3 Year	1 year
Commercial Surface Mount, Immersion Models.....	3 Year	1 year
Commercial ASME Models.....	3 Year	1 year
Commercial Dairy Barn Models.....	3 Year	1 year
Commercial Brute Models.....	3 Year	1 year
Commercial Booster Models.....	5 Year	1 year
Commercial Oil Models		
Commercial Oil-Powered Models.....	3 Year	1 year
Commercial Indirect-Fired		
Commercial PowerStor® Models.....	5 Year	1 year
Commercial Storage Tank		
Commercial Jacketed Models.....	5 Year	1 year
Commercial Bare Glass Coated Models.....	5 Year	1 year
Commercial Jacketed Large Volume Models.....	5 Year	1 year
Commercial Un-Jacketed Large Volume Models.....	5 Year	1 year
Commercial Top Coat Large Volume Models.....	5 Year	1 year

*Heat Exchanger Only. **10 year parts warranty on warranty upgrade kit models only. †Heater Body Element Assembly

Tank Type Serial Number Identification

FIRST LETTER - YEAR OF MANUFACTURE

K = 1993	S = 1998	Z = 2003	E = 2008
L = 1994	T = 1999	A = 2004	F = 2009
M = 1995	W = 2000	B = 2005	G = 2010
N = 1996	X = 2001	C = 2006	H = 2011
P = 1997	Y = 2002	D = 2007	I = 2012

SECOND LETTER - MONTH OF MANUFACTURE

A = JANUARY	E = MAY	J = SEPTEMBER
B = FEBRUARY	F = JUNE	K = OCTOBER
C = MARCH	G = JULY	L = NOVEMBER
D = APRIL	H = AUGUST	M = DECEMBER

Example:

FC1234567 = MARCH, 2009 Production

NA1234567 = JANUARY, 1996 Production

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