

FULL LINE POCKET CATALOG

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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 Intertek (ETL).
2. All Electric Water Heaters are listed by Intertek (ETL).
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 ¾" NPT on 8" centers (except where noted).
6. All Residential and Light Duty Gas Models have ½" 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. All dimensions are in inches (unless otherwise noted). Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.
10. All products manufactured by Bradford White Water Heaters are designed, fabricated and assembled in Middleville, MI. All raw materials and component parts are sourced from American companies for the highest level of American made content and manufacture, whenever possible.

CSA International

National Sanitation Foundation

American Society of Mechanical Engineers Heating Boilers

American Society of Mechanical Engineers Lined Potable Water Heaters

National Board of Boiler and Pressure Vessel Inspectors

Compliance, Safety, Accountability

LLC – Low Lead Content

Intertek

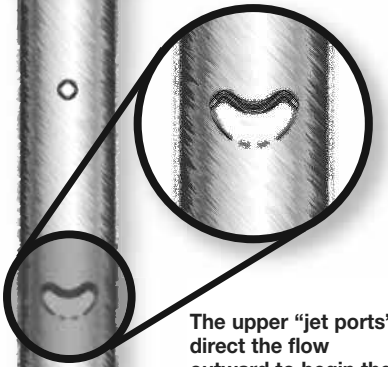
Underwriters Laboratories

Air-Conditioning, Heating, and Refrigeration Institute

Hydronics Institute

The Family of Hydrojet® Systems
This Is *Technology That Works!*

The Hydrojet® System jet ports create a churning outflow that puts sediment into suspension. This turbulent action helps reduce sediment and prevent its accumulation.

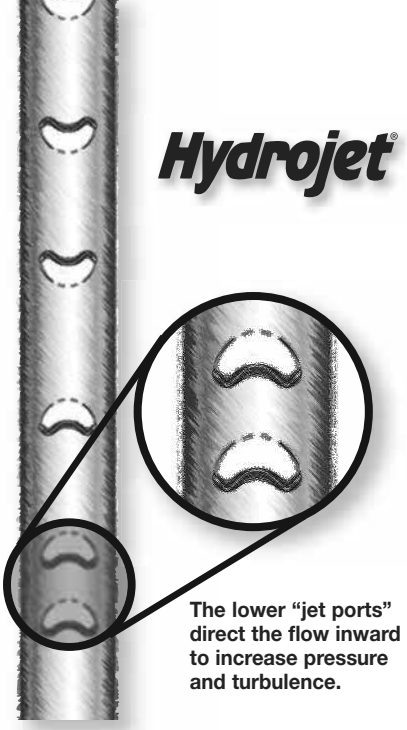


The upper "jet ports" direct the flow outward to begin the dynamic mixing action.

Hydrojet® Total Performance System

The Hydrojet® Total Performance System is a cold-water delivery tube that reduces sediment buildup and thoroughly mixes incoming water with stored water reducing thermal stratification. The secret is a series of flow altering "jet ports". These ports create counter-rotation and dynamic turbulence that effectively blasts sediment into suspension and prevents its accumulation.

The Hydrojet Total Performance System also causes more efficient temperature mixing inside the tank. Heating efficiency and usable hot water delivery are greatly increased thereby saving energy and money.



The lower “jet ports” direct the flow inward to increase pressure and turbulence.

Hydrojet®

Commercial Hydrojet® Sediment Reduction System

The commercial Hydrojet® was designed to block the build-up of harmful sediment in commercial units by increasing turbulence with accelerated water current inside the tank. It incorporates up to two inlet tubes. One is the traditional top connect version and the other is a front connection configuration.

Hydrojet®2 Total Performance System

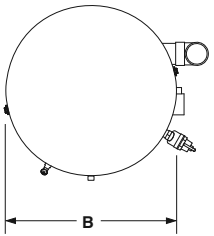
Much like the original Hydrojet® Total Performance System, this cold water inlet device minimizes sediment build up, increases delivery and reduces thermal stratification. The Hydrojet®2 is specifically designed for higher input applications. It utilizes additional jetports to initiate beneficial temperature mixing higher in the tank thereby increasing usable hot water.

“Make the Switch to Bradford White”

Residential Gas Energy Saver Ultra High Efficiency Water Heater

EF SERIES ICON HD THE BRADFORD WHITE COMMERCIAL CONTROL SYSTEM

- ICON HD™—Intelligent proven design combines temperature control, diagnostic codes and system ignition functions into a single control board with a digital LCD display
- 95% thermal efficiency
- Low NOx premix power burner
- Self compensating negative pressure combustion system
- 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 rods
- T&P relief valve installed
- Low restriction brass drain valve



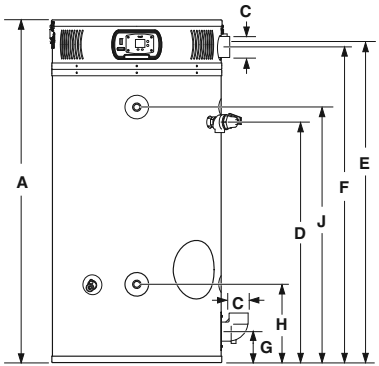




Photo of
EFR-1-60T1206EN

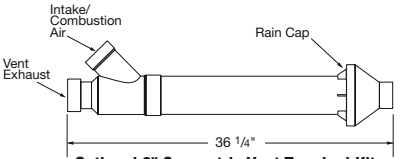
eF Series® Energy Saver Model

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

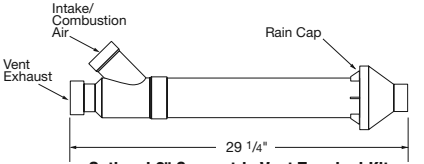
DIMENSIONS IN INCHES

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	1	25 ft.	55 ft.
of	2	20 ft.	50 ft.
90° Elbows†	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	1	55 ft.	115 ft.
of	2	50 ft.	110 ft.
90° Elbows†	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	1	80 ft.	165 ft.
of	2	75 ft.	160 ft.
90° Elbows†	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 90º elbow.
†Consult I&O Manual when using four or more elbows.

Residential Gas Energy Saver FVIR Water Heaters

DEFENDER SAFETY SYSTEM™ ICON System™

- 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 T&P opening **(Must specify when ordering)**
- Low restriction brass drain valve

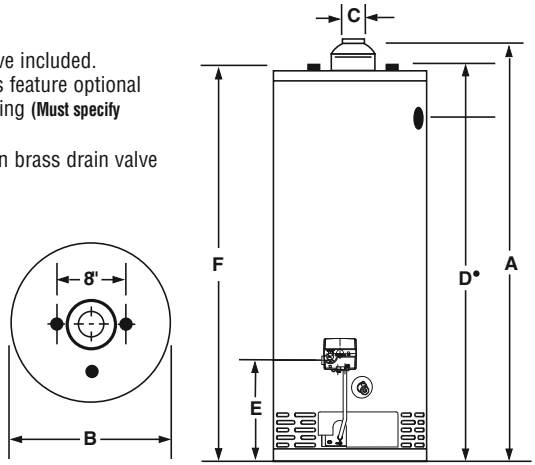




Photo of M-I-40T6FBN

Atmospheric Vent Energy Saver Models

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

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-I-30T6FBN•	30	32,000	58	33	59 1/8	16	3x4	49 3/4 / 56 3/8	13	57 1/2	104
M-I-30S6FBN	30	30,000	56	31	48 3/8	18	3x4	38 3/4	13	46 3/4	100
M-I-303T6FBN•	29	40,000	68	42	58	16	3x4	49 3/4 / 55 1/4	13	56 1/2	109
M-I-40T6FBN•	40	40,000	76	42	59 3/8	18	3x4	50 / 56 5/8	13	57 3/4	120
M-I-403S6FBN•	40	40,000	74	42	50	20	3x4	41 / 47 1/4	13	48 1/2	128
M-I-404T6FBN•	40	50,000	87	53	60 3/4	18	4	51 1/2 / 58	13	58 1/2	127
M-I-5036FBN•	50	40,000	89	42	59 5/8	20	3x4	50 / 57	13	58	145
M-I-50L6FBN	48	40,000	88	42	49 3/4	22	3x4	40 1/2	13	48 1/4	153
M-I-504S6FBN•	50	50,000	93	53	58 1/2	20	4	50 / 55 3/4	13	57	150
M-I-60T6FBN	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 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.

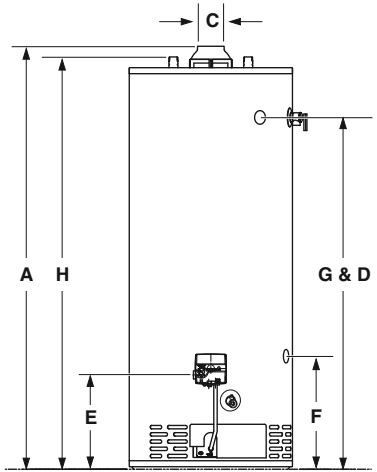
(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
M-I-30T6FSX	31,000 BTU/Hr.	32
M-I-30S6FSX	26,000 BTU/Hr.	27
M-I-303T6FSX	35,000 BTU/Hr.	37
M-I-40T6FSX	36,000 BTU/Hr.	38
M-I-403S6FSX	38,000 BTU/Hr.	40
M-I-404T6FSX	48,000 BTU/Hr.	50
M-I-5036FSX	36,000 BTU/Hr.	38
M-I-50L6FSX	38,000 BTU/Hr.	40
M-I-504S6FSX	48,000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

Residential Gas Energy Saver High Input Water Heaters

10/11

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 tappings
- 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



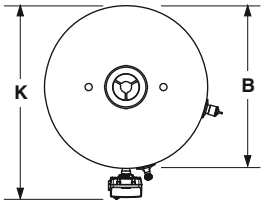




Photo of
M-I-75S6BN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Thermal 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-I-75S6BN	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	100	85,000	92	69 1/32	28 1/4	4	59 3/8	15 17/32	17 3/4	50 23/32	67 23/32	32 1/4	420

* Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel 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.

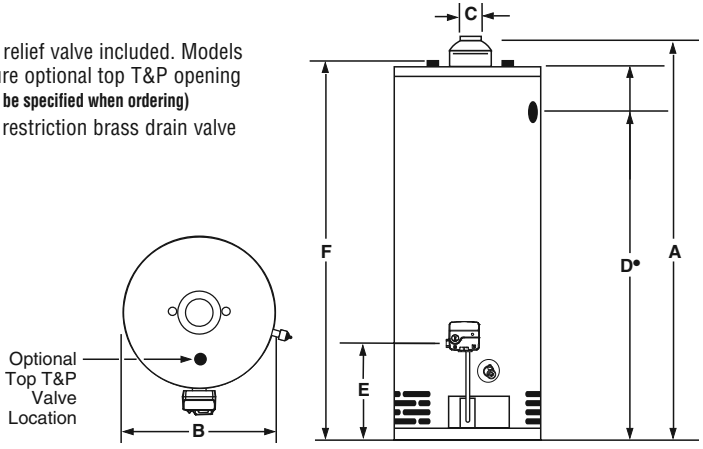
(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
M-I-75S6SX	76,000 BTU/Hr.	82
M-I-100T6SX	88,000 BTU/Hr.	95

Residential Gas Energy Saver FVIR High EF Water Heaters

12/13

DEFENDER SAFETY SYSTEM™ ICON 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 T&P opening **(Must be specified when ordering)**
- Low restriction brass drain valve



•Optional Dimension



Photo 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•	30	32,000	58	34	59 1/8	18	3x4	49 3/4 / 56 3/8	13	57 1/2	114
M-4-40T6FBN•	40	40,000	76	43	59 3/8	20	3x4	50 / 56 5/8	13	57 3/4	128
M-4-403S6FBN•	40	40,000	74	43	50	22	3x4	41 / 47 1/4	13	48 1/2	133
M-4-5036FBN•	50	40,000	89	43	59 5/8	22	3x4	50 / 57	13	58	151
M-4-60T6FBN	60	40,000	101	43	60 3/4	24	3x4	50 1/2	13	58 1/4	192

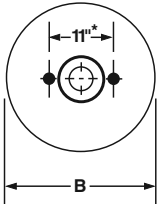
*Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel burner. For propane (LP) models change suffix "BN" to "SX".
For "10" year models, change suffix from "6" to "10".
• Models feature optional top T&P location. **Must be specified when ordering**. "D" dimension listed as side/top.
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

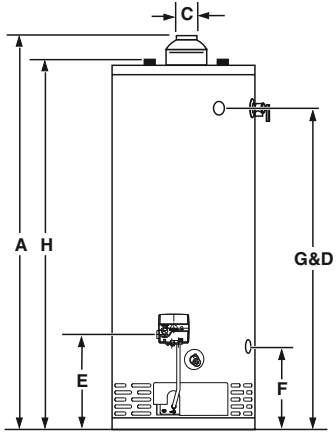
(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
M-4-30T6FSX	31,000 BTU/Hr.	33
M-4-40T6FSX	36,000 BTU/Hr.	38
M-4-403S6FSX	38,000 BTU/Hr.	40
M-4-5036FSX	36,000 BTU/Hr.	38
M-4-60T6FSX	38,000 BTU/Hr.	40

Residential Gas Energy Saver FVIR Extra Recovery Water Heaters

DEFENDER SAFETY SYSTEM® ICON System™

- 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



Photo 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	40	40,000	74	43	50	20	3x4	41	13	13 1/2	41	48 1/2	126
M-2-XR504T6FBN	48	65,000	103	69	59 1/4	22	4	50	13	13 1/2	50	57	164
M-2-XR65T6FBN	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 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 Heater

16/17

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 tappings
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- 4" "Snap Lock" draft diverter
- T&P relief valve included
- Low restriction brass drain valve

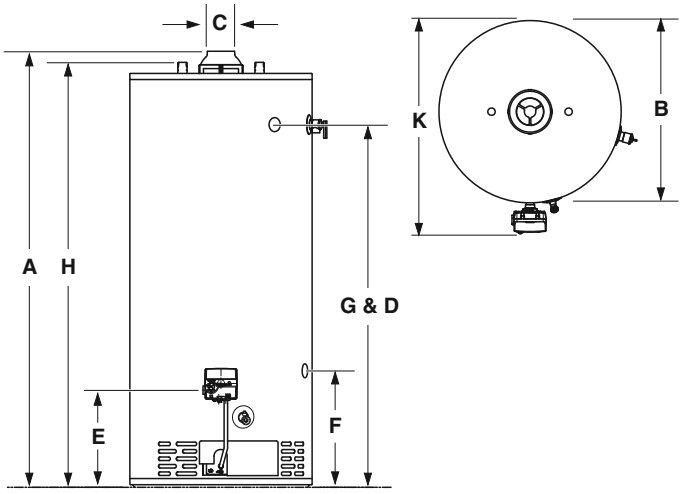




Photo of
M-2-XR75S6BN

Atmospheric Vent Energy Saver Model

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

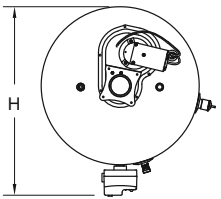
* Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel burner. For propane (LP) models change suffix "BN" to "SX".
For 10 year models, change suffix from "6" to "10".

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

Residential Atmospheric Vent Super High EF Energy Saver Gas Water Heaters 18/19

DEFENDER SAFETY SYSTEM® BRADFORD WHITE ICON System™

- ENERGY STAR® Qualified—These models qualify for the September 1st, 2010 minimum ENERGY STAR® EF requirement, as well as most utility rebate programs
- Bradford White ICON System™
- High efficiency blower
- Advanced ScreenLok® Technology Flame Arrestor Design
- Flammable vapor sensor
- 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 included
- Low restriction brass drain valve



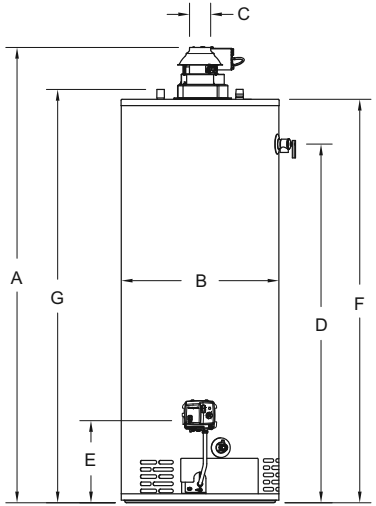




Photo of
HE-4-40S6FBN

Super High EF 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	
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)
HE-4-40S6FBN	40	38,000	72	40	55 3/8	22	3x4	40 3/16	11 3/4	47 5/8	48 1/2	26 3/4	145
HE-4-50S6FBN	50	38,000	86	40	56 1/8	24	3x4	40 3/4	11 3/4	48 3/8	49 1/4	28 3/4	176

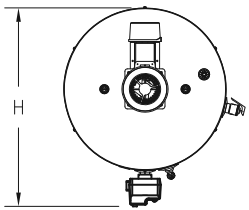
*Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel burner. For propane (LP) models change suffix “BN” to “SX”.
For “10” year models, change suffix from “6” to “10”.
115V, 60Hz. 1 Amp.
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
HE-4-40S6FSX	38,000 BTU/Hr.	40
HE-4-50S6FSX	38,000 BTU/Hr.	40

Residential Gas Damper Energy Saver High EF Water Heaters

20/21

- ENERGY STAR® Qualified—These models qualify for the September 1st, 2010 minimum ENERGY STAR® EF requirement, as well as most utility rebate programs
- Bradford White ICON System™
- Advanced ScreenLok® Technology Flame Arrestor Design
- Flammable vapor sensor
- 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



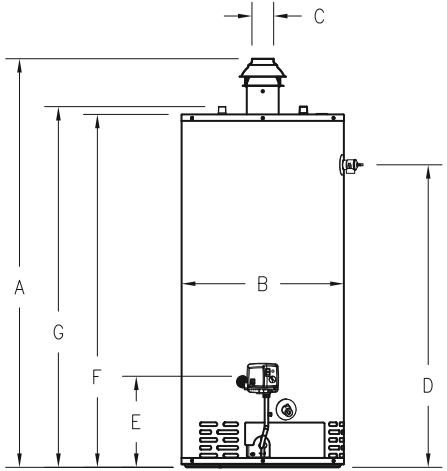




Photo of
D-4-403S6FBN

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	
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	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	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 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 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
- 4" "Snap Lock" draft diverter
- 3/4" NPT side tappings for space heating
- T&P relief valve installed
- Low restriction brass drain valve

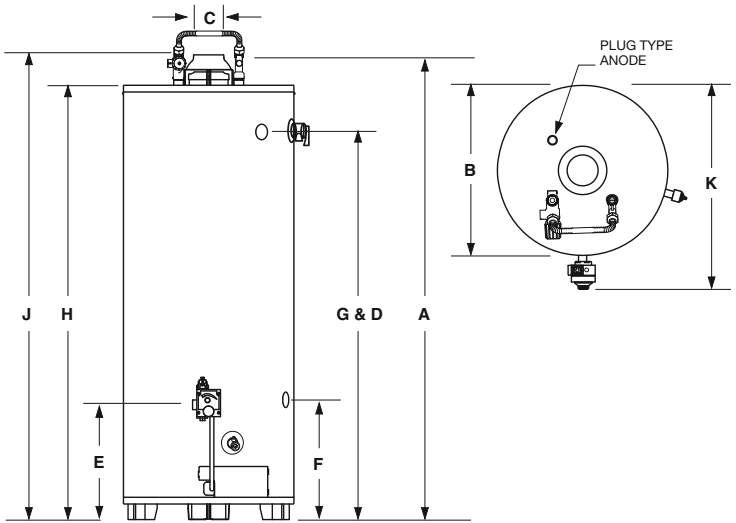




Photo of GX-2-25S6BN

Atmospheric Vent Energy Saver Models

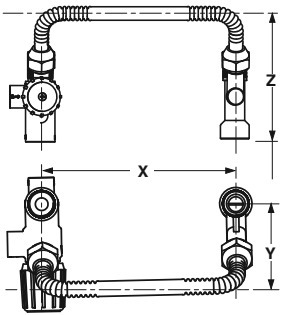
Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
82% Thermal Efficiency

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	25	78,000	155	84	58 1/2	18	4	50	14 13/16	15 7/16	50	54 5/8	58 5/8	22	150
GX-1-55S6BN	55	80,000	200	86	59 5/8	22	4	50	14 13/16	15 7/16	50	56	60	26 1/4	200

All propane models feature a Titanium Stainless Steel 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	2 1/2	6
GX-1-55S6BN	8	2 1/2	6

Residential Gas Energy Saver TTW® High Performance Water Heaters

24/25

BRADFORD WHITE ICON System™

- Bradford White ICON System™
- 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)
- Electronic ignition
- Horizontal and vertical venting
- 3/4" NPT side tappings for space heating
- T&P relief valve installed
- Low restriction brass drain valve

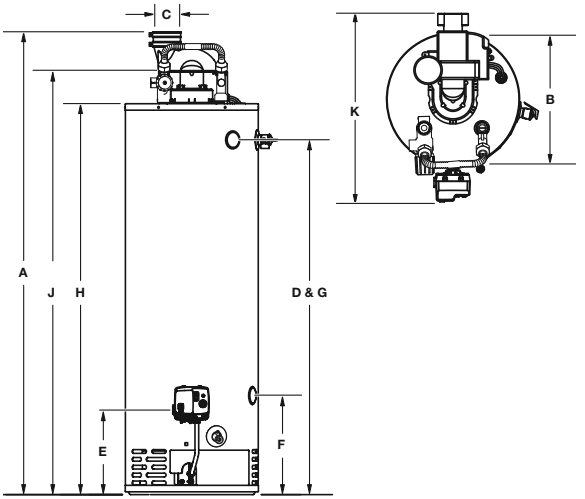




Photo of
GX-2-TW-25S6BN

Power Vent Energy Saver Models

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

DIMENSIONS IN INCHES

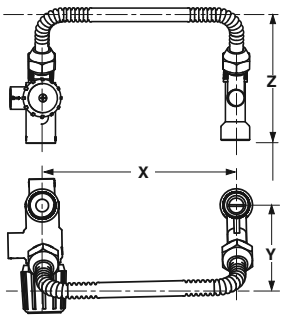
NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour†† Delivery Rating	GPH Recovery 90°F Rise*	Floor to Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Heater Top	Floor to Water Conn.†	Depth	Approx. Shipping Weight (lbs)
GX-2-TW-25S6BN	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	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 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 ½".

(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

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	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows	3	45 ft.	165 ft.

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



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

DEFENDER SAFETY SYSTEM® ICON System™

- Bradford White ICON System™
- Advanced ScreenLok® Technology Flame Arrestor Design
- Flammable vapor sensor
- Powerful blower motor
- Electronic ignition
- 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

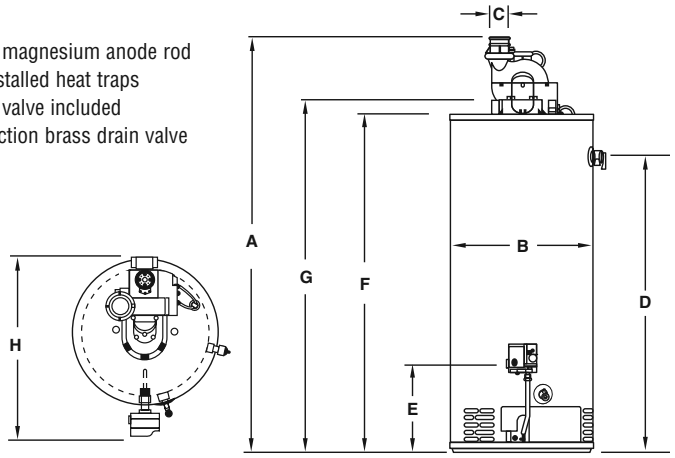




Photo of
M-1-TW-40S6FBN

Power 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 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	40	40,000	72	43	56 1/2	20	2 or 3	40 1/2	11 3/4	46 1/2	48	24 7/8	135
M-1-TW-50S6FBN	50	40,000	86	43	57 3/8	22	2 or 3	40 7/8	11 3/4	47 1/8	49 1/4	26 3/4	160
M-1-TW-60T6FBN	60	42,000	100	45	68	22	2 or 3	50 7/8	11 3/4	57 3/4	58 1/2	27 1/4	193

*Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel 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	1	45 ft.	115 ft.
of	2	40 ft.	110 ft.
90° Elbows†	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 Water Heaters

DEFENDER SAFETY SYSTEM® ICON 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
- Bradford White ICON System™
- Advanced ScreenLok® Technology Flame Arrestor Design
- Flammable vapor sensor
- Powerful blower motor
- 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

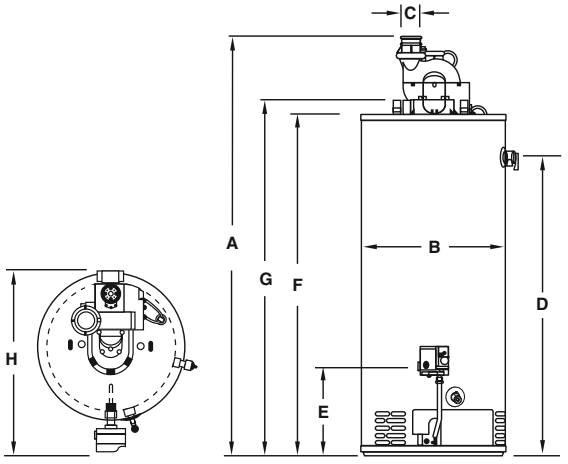




Photo of
M-4-TW-40T6FBN

Power 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	
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	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	50	40,000	86	43	67	22	2	50	11 3/4	57	58	26 3/4	175
M-4-TW60T6FBN	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 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	1	45 ft.	115 ft.
of	2	40 ft.	110 ft.
90° Elbows†	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

DEFENDER SAFETY SYSTEM® ICON 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:

- Bradford White ICON System™
- Powerful blower motor
- Electronic ignition
- 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

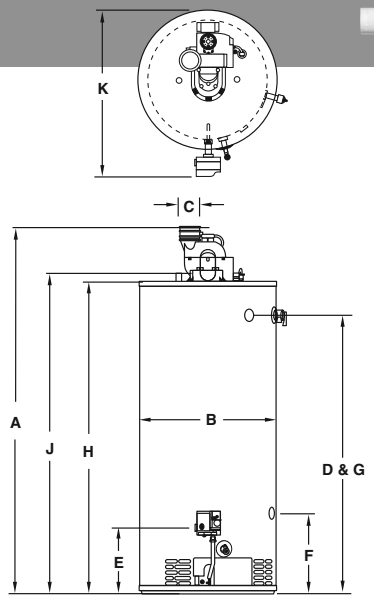




Photo of M-2-TW-50T6FBN

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	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	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	75	76,000	—	82	68 3/8	26	3 or 4	53	15	17 3/4	53	60 1/4	61 1/2	31	257

*Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel 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	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows†	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 TTW® XR High EF Water Heaters

DEFENDER SAFETY SYSTEM® ICON 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
- Bradford White ICON System™
- Advanced ScreenLok® Technology Flame Arrestor Design
- Flammable vapor sensor
- Powerful blower motor
- 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

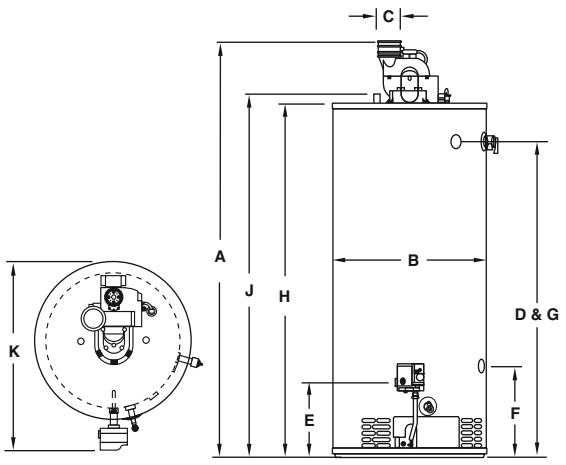




Photo of
M-4-XRTW-50T6FBN

Power 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 Vent Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heat. Return	Floor to Space Heat. Outlet	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
M-4-XRTW50T6FBN	50	65,000	108	70	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
M-4-XRTW65T6FBN	65	67,000	120	72	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

*Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel 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-XRTW50T6FBN	58,000 BTU/Hr.	63
M-4-XRTW65T6FBN	60,500 BTU/Hr.	65

M-4-XRTW50 M-4-XRTW60		3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length		†60 ft.**	†180 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows	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

DEFENDER SAFETY SYSTEM® ICON System™

- Bradford White ICON System™
- Closed combustion venting system
- Flammable vapor sensor
- Powerful blower motor
- Electronic ignition
- 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

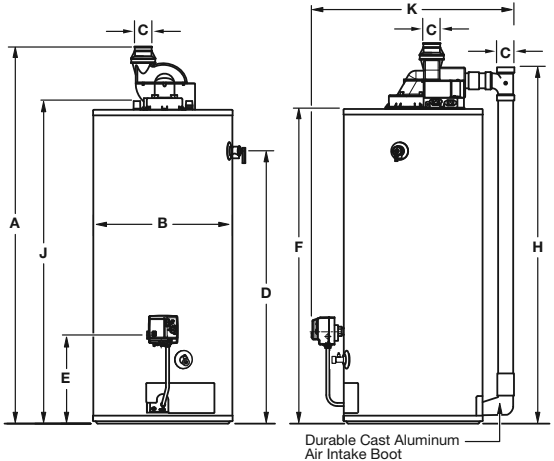




Photo of
PDX1-40S6FBN

Power Direct Vent Energy Saver Models

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

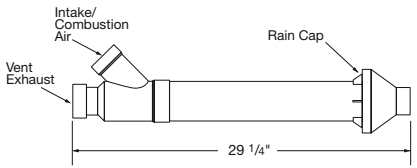
DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					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 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
Max. Intake Length		35 ft.
Max. Exhaust Length		35 ft.
Min. Vent Length		7 ft.
Number	1	30 ft.
of	2	25 ft.
90° Elbows†	3	20 ft.

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

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

Residential Gas Energy Saver FVIR PDX4 Water Heaters

DEFENDER SAFETY SYSTEM® · BRADFORD WHITE ICON System™

- ENERGY STAR® Qualified—These models qualify for the September 1st, 2010 minimum ENERGY STAR® EF requirement, as well as most utility rebate programs
- Bradford White ICON System™
- Closed combustion venting system
- Flammable vapor sensor
- Powerful blower motor
- Electronic ignition
- 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
- 2" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve included
- Low restriction brass drain valve

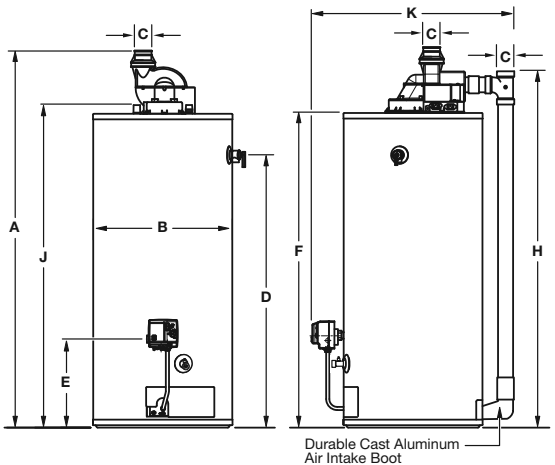




Photo of
PDX4-40S6FBN

Power Direct Vent Energy Saver Models

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

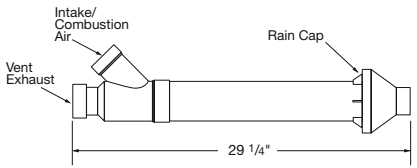
DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					A	B	C	D	E	F	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)
PDX4-40S6FBN	40	40,000	70	43	59	22	2 or 3	42 1/2	14	49	55 7/8	50 3/8	31 1/2	154
PDX4-50S6FBN	50	40,000	85	43	60	24	2 or 3	42 7/8	14	50	56 3/4	51	33 3/8	185

*Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel 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
PDX4-40S6FSX	38,000 BTU/Hr.	41
PDX4-50S6FSX	38,000 BTU/Hr.	41

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



2" Vent Pipe		PDX4-40S PDX4-50S
Max. Intake Length		35 ft.
Max. Exhaust Length		35 ft.
Min. Vent Length		7 ft.
Number	1	30 ft.
of	2	25 ft.
90° Elbows†	3	20 ft.

3" Vent Pipe		PDX4-40S PDX4-50S
Max. Intake Length		85 ft.
Max. Exhaust Length		85 ft.
Min. Vent Length		7 ft.
Number	1	80 ft.
of	2	75 ft.
90° Elbows†	3	70 ft.

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

Residential Gas Energy Saver FVIR PDX2 Water Heaters

DEFENDER SAFETY SYSTEM® ICON System™

- Bradford White ICON System™
- Closed combustion venting system
- Flammable vapor sensor
- Powerful blower motor
- Electronic ignition
- 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

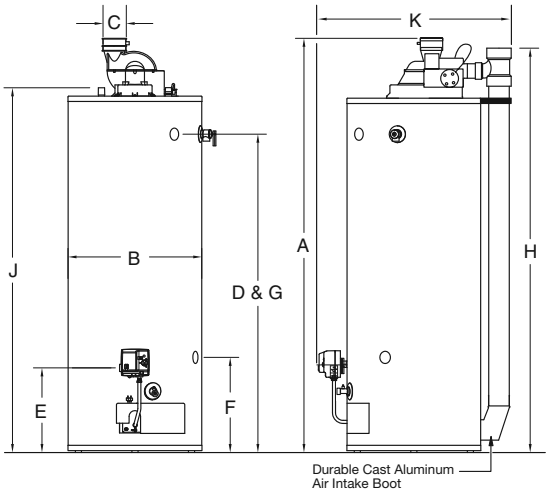




Photo of
PDX2-50T6FBN

Power Direct Vent Energy Saver Models

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

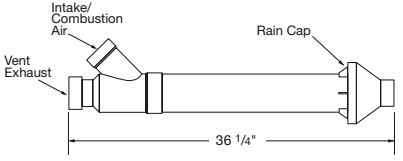
DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS					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	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	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	34 1/8	330
PDX2-75T6FBN	75	70,000	140	75	71	26	3 or 4	54 1/4	16 1/4	19	54 1/2	69 3/8	62 3/4	36	375

*Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel 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	1	55 ft.	45 ft.
of	2	50 ft.	40 ft.
90° Elbows†	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	1	95 ft.	85 ft.
of	2	90 ft.	80 ft.
90° Elbows†	3	85 ft.	75 ft.

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

Residential Gas Energy Saver FVIR Direct Vent Water Heaters

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

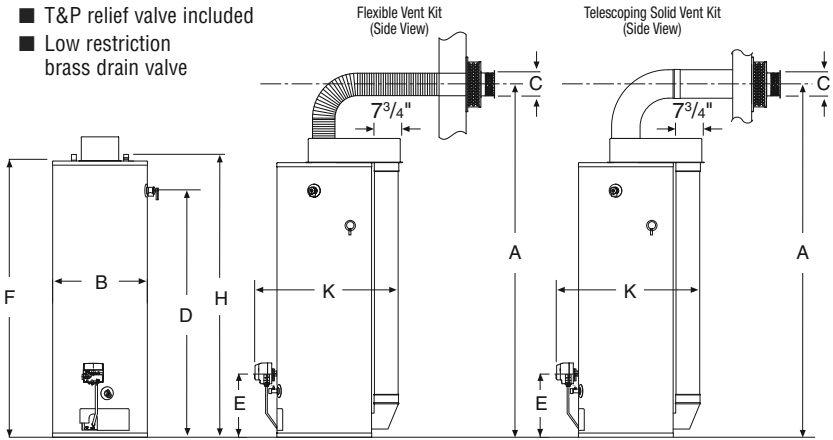




Photo of DS1-50S6FBN

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					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	40	38,000	73	41	63 1/4 min.	20	3 I.D., 5 O.D.	43 1/2	15	49 3/4	50 3/4	31 1/8	169
DS1-50S6FBN	50	42,000	90	45	72 1/4 min.	20	3 I.D., 5 O.D.	52 1/4	15	58 3/4	59 3/4	31	186

*Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel 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.

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

Optional solid vent kit :

Kit "A"	**Telescopes from 4 3/4" to 5 11/16"**	**Part No. 239-41260-00**
Kit "B"	**Telescopes from 6 1/2" to 9 3/16"**	**Part No. 239-41331-00**
Kit "C"	**Telescopes from 13 3/4" to 23 11/16"**	**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.

Residential Gas Energy Saver FVIR High Input Direct Vent Water Heaters

DEFENDER SAFETY SYSTEM™ 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 tappings for space heating
- Cast aluminum intake boot
- 1" Non-CFC foam insulation
- Protective magnesium anode rod
- Factory installed heat traps
- T&P relief valve included
- Low restriction brass drain valve

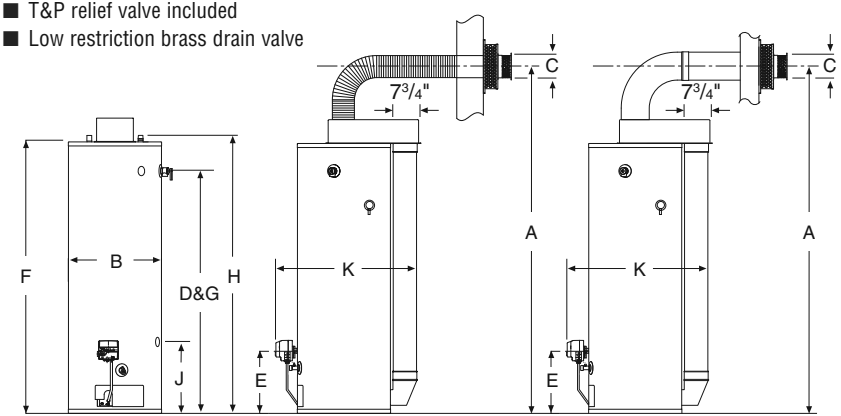




Photo of DH1-504T6FBN

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	48	50,000	93	53	75 1/4	20	4 I.D.,6 O.D.	52 1/4	15	58 3/4	52 1/4	59 3/4	15 3/4	31 3/4	190
DH1-65T6FBN	65	55,000	113	58	78 1/4	22	4 I.D.,6 O.D.	56	15	62	56	63	15 3/4	34 1/4	226
DH1-75S6FBN	75	60,000	125	63	75 1/2	24 1/2	4 I.D.,6 O.D.	52	15	59	52	60	16 1/2	35 1/4	261

*Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel 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 seperately 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 13¾" to 23 11/16".
All models come standard with side connections for space heating 3/4" NPT.

(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

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 4¾" to 5 11/16" Part No. 239-42516-00
Kit "G" Telescopes from 6½" to 9 3/16" Part No. 239-42517-00
Kit "H" Telescopes from 13¾" 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.

Residential Gas Energy Saver Manufactured Home Water Heaters

44/45

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

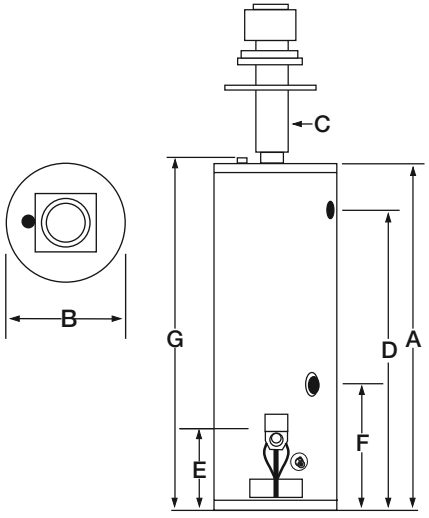




Photo of
M-I-MS30T6LX

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	
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

DEFENDER SAFETY SYSTEM®

- 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 trap (On hot water outlet)
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve

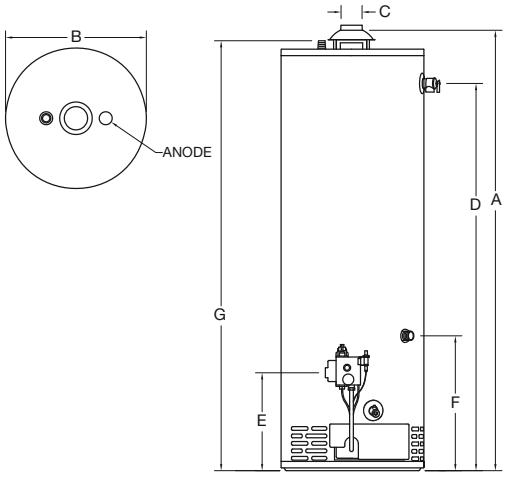




Photo of
M-I-MH30T6FLX

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		
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	59	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

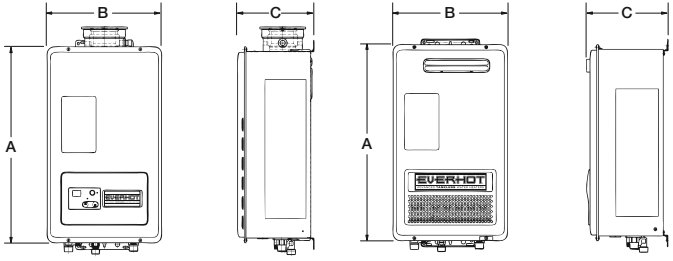
EVERHOT® Gas Tankless Water Heater

48/49

- **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 239-47806-00) 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

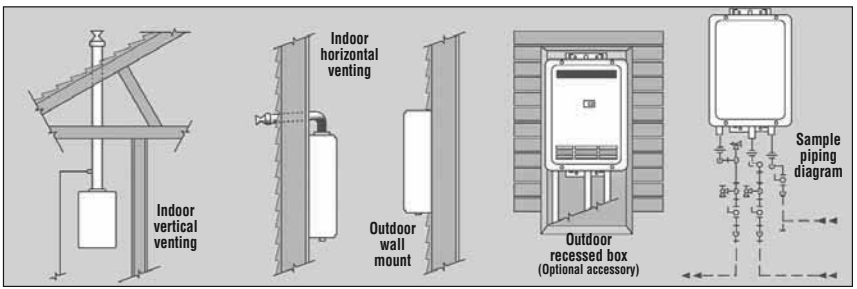
Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

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 35°F	65°F	100°F	EF Rating Nat. and LP	GPM Flow Rate Min.	Max.	Comm. Control Maximum Temperature Setting	A Height	B Width	C Depth	Approx. Shipping Weight (lbs.)
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.



EVERHOT® HE Gas Tankless Water Heater

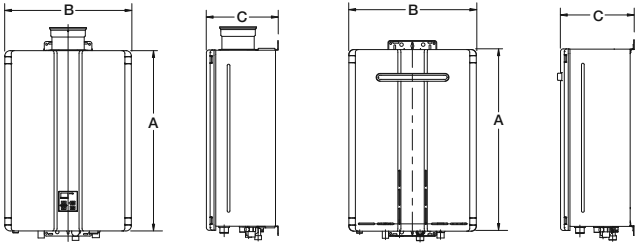
LEARN MORE AT energystar.gov

50/51



Interior Exterior

- **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 157,000-199,000.
- **Digital Main Controller**— Interior models have a digital controller integrated into the front panel of the water heater with a default temperature range of 98°F-120°F (140°F maximum). Exterior models are shipped with a primary remote controller with a default temperature range of 98°F-120°F (140°F maximum). An optional Main Controller/Residential (p/n 239-48788-00) can be wired remotely and provides a default temperature range of 98°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/Hydronic Controller**—An optional Main Controller/Commercial (239-48789-00) 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.
- **Dual Heat Exchanger**—Maximizes 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).



EVERHOT® HE Tankless Gas Water Heater

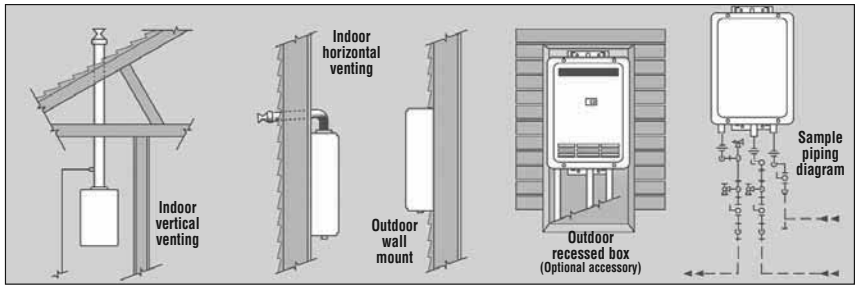
Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS										A	B	C	
Model Number	Installation	Nat. BTU/Hr. Input	GPM Flow Rate at °F Temperature Rise 35°F	65°F	100°F	EF Rating Nat. and LP	GPM Flow Rate Min.	Max.	Comm. Control Maximum Temperature Setting	Height	Width	Depth	Approx. Shipping Weight (lbs.)
TGHE-160I-N	Indoor	9,500-157,000	8.0	4.6	3.0	0.96	0.4	8.0	185°F	26 13/32	18 1/2	10 7/64	64
TGHE-160E-N	Outdoor	9,500-157,000	8.0	4.6	3.0	0.96	0.4	8.0	185°F	26 13/32	18 1/2	10 7/64	64
TGHE-199I-N	Indoor	9,500-199,000	9.8	5.8	3.8	0.94	0.4	9.8	185°F	26 13/32	18 1/2	10 7/64	71
TGHE-199E-N	Outdoor	9,500-199,000	9.8	5.8	3.8	0.94	0.4	9.8	185°F	26 13/32	18 1/2	10 7/64	71

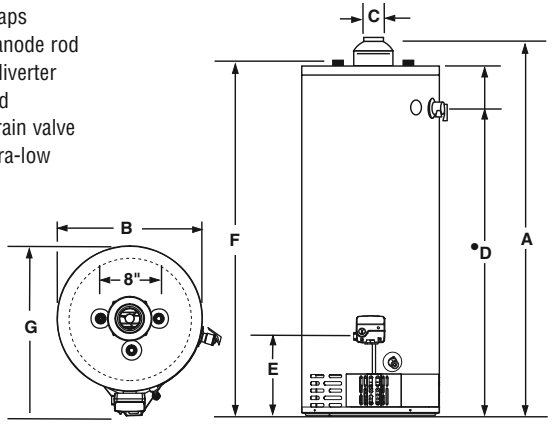
*LP Input is 190,000.
For LP Models change suffix “N” to “X”.
Low Nox emissions less than 40 ppm.
Note: Not recommended for use as a booster.
Requires 120 volt service and a 15 amp breaker.

(LP) Propane Gas Inputs	
TGHE-160I-N	10,300 - 157,000 BTU/Hr.
TGHE-160E-N	10,300 - 157,000 BTU/Hr.
TGHE-199I-N	10,300 - 199,000 BTU/Hr.
TGHE-199E-N	10,300 - 199,000 BTU/Hr.



Residential Gas Energy Saver FVIR Ultra Low NOx Water Heaters

- Bradford White ICON System™
- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)



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



Photo of U1-5036FRN

Atmospheric Vent Energy Saver Models

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

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
U1-504S6FRN•	50	50,000	92	53	58 1/2	20	4	50 / 55 3/4	11 5/8	57	24 1/4	160
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.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
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

- Bradford White ICON System™
- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)

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

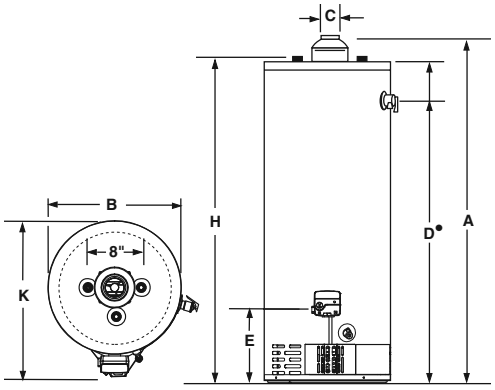




Photo of
U4-5036FRN

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
79% 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	55	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.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
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

- Bradford White ICON System™
- Defender® combustion chamber (except 75 gallon)
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)

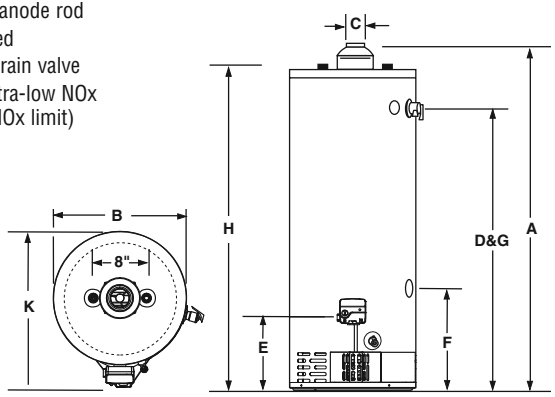




Photo of
U2-XR-504T6FRN

Atmospheric Vent Energy Saver Models

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

DIMENSIONS IN INCHES

NATURAL GAS 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
U2-XR-75S6RN	75	76,000	N/A	82	64 1/16	26	4	53 3/8	14 3/4	16 1/2	53 3/8	61 3/8	29 1/8	269

*Based on manufacturers rated recovery efficiency.
Available in natural gas only.
For 10 year models, change suffix from “6” to “10”.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit), (75 gallon complies with 14 ng/J NOx limit).
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 Ultra Low NOx Extra High Input Water Heaters

BRADFORD WHITE ICON System

- Bradford White ICON System™
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- Digital thermal sensor and resettable thermal switch
- Pedestal base
- Water Connections NPT factory installed true dielectric fittings
- 3/4" NPT side connections
- Non-CFC Foam Insulation
- “Snap Lock” draft diverter
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve
- Complies with latest ultra-low NOx requirement (14 ng/J NOx limit)

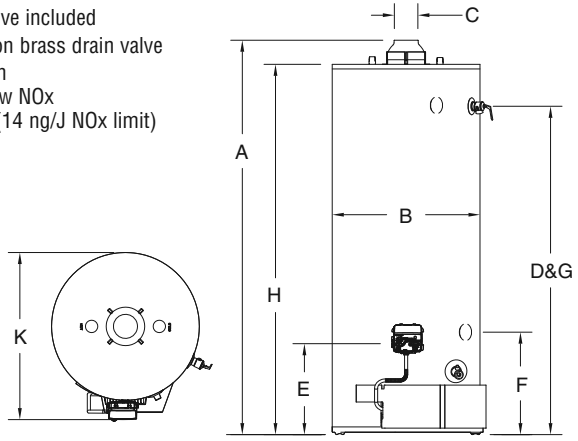




Photo of
U-1-75S6FRN

Ultra Low NOx High Input Energy Saver Models

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

DIMENSIONS IN INCHES

NATURAL 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)
U-1-75S6RN	75	76,000	82	64 1/8	24	4	53 3/8	14 3/4	16 1/2	53 3/8	61 3/8	25 7/8	269
U-100T6RN	100	85,000	92	69 13/16	28 1/4	4	60 5/8	16 3/4	19 1/8	51 15/16	67 7/8	31 1/2	401

Available in Natural Gas only.
*Based on manufacturers rated recovery efficiency.
For 10 year models, change suffix from “6” to “10”.
Complies with the latest ultra-low NOx requirement (14 ng/J NOx limit).
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

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

60/61

- Bradford White ICON System™
- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)

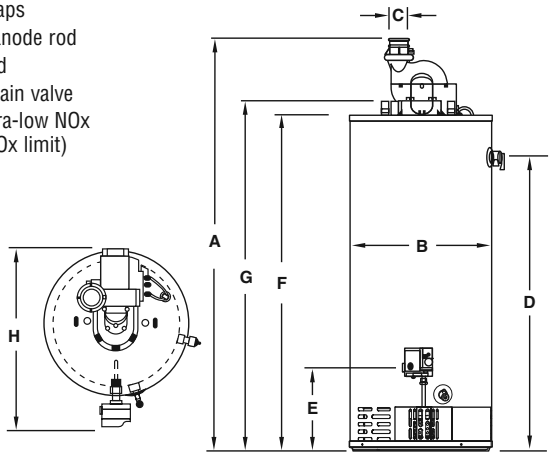




Photo of
U-1-TW-40S6FRN

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.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**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	1	45 ft.	115 ft.
of	2	40 ft.	110 ft.
90° Elbows†	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

62/63

- High Energy Factor (EF) – These models qualify for most energy rebate programs as well as the September 1, 2010 minimum ENERGY STAR® EF requirement
- Bradford White ICON System™
- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)

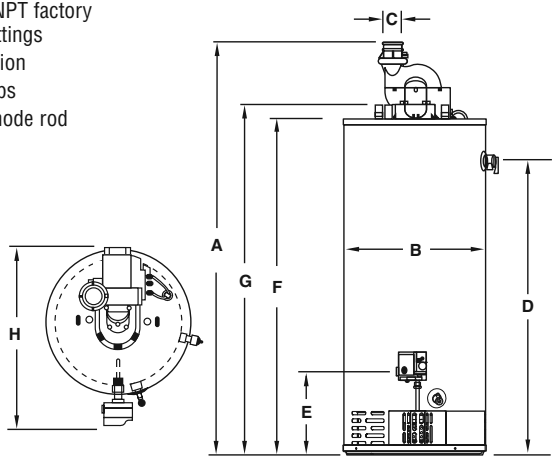




Photo of U-4-TW-40T6FRN

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	
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	72	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.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**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	1	45 ft.	115 ft.
of	2	40 ft.	110 ft.
90° Elbows†	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

- Bradford White ICON System™
- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)

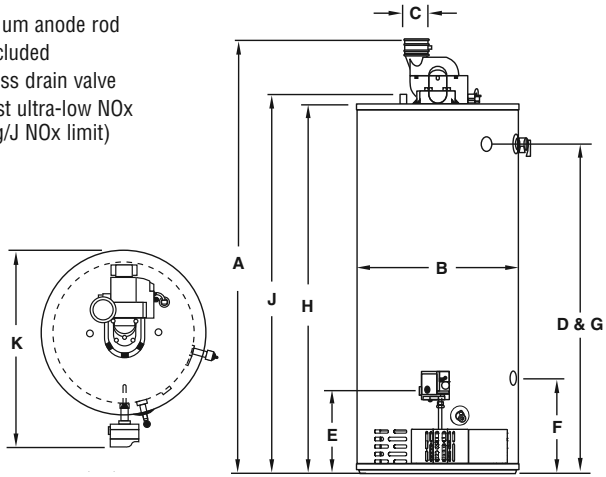




Photo of
U-2-TW-50T6FRN

Power Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
79% 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.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**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	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows†	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 TTW® XR High EF Ultra Low NOx Water Heaters

66/67

- High Energy Factor (EF) – These models qualify for most energy rebate programs as well as the September 1, 2010 minimum ENERGY STAR® EF requirement
- Bradford White ICON System™
- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)

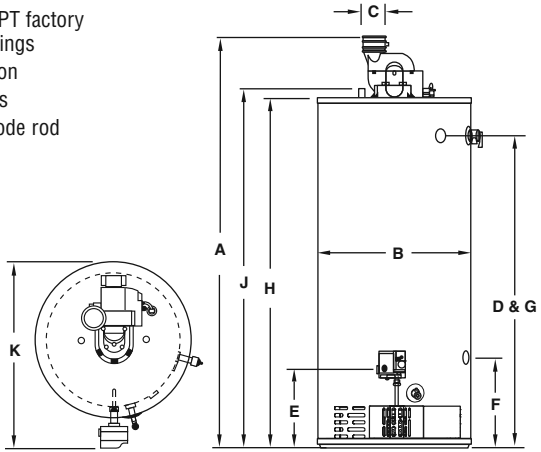




Photo of
U-4-XRTW-50T6FRN

Power Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
79% 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 Heat. Return	Floor to Space Heat. Outlet	Floor to Top of Heater	Floor to Water Conn.	Depth	Approx. Shipping Weight (lbs)
U-4-XRTW-50T6FRN	48	56,000	99	60	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-4-XRTW-65T6FRN	65	56,000	110	60	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

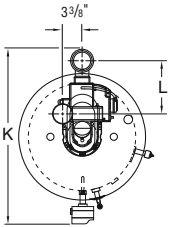
Available in Natural Gas only.
*Based on manufacturers rated recovery efficiency.
For 10 year models, change suffix from "6" to "10".
110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

U-4-XRTW-50 U-4-XRTW-65		3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length		†60 ft.	†180 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows	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 Ultra Low NOx UPDX2 Water Heaters

- Bradford White ICON System™
- Closed combustion venting system
- Flammable vapor sensor
- Powerful blower motor
- Electronic ignition
- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)



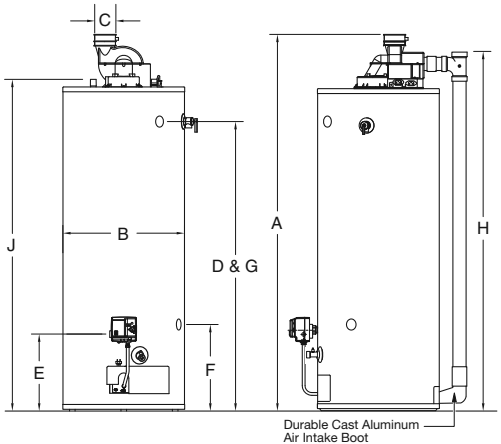




Photo of
UPDX2-50T6FBN

Power Direct Vent Energy Saver Models

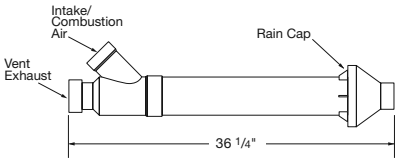
Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
79% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS MODELS					A	B	C	D	E	F	G	H	J	K	L	
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	Distance From Intake to Exhaust	Approx. Shipping Weight (lbs)
UPDX2-50T6FRN	48	50,000	92	53	68	22	3 or 4	52 1/4	13 5/8	15 3/4	52 1/4	67	59 3/4	32	9 1/4	303
UPDX2-65T6FRN	65	55,000	106	58	71 1/4	24	3 or 4	55 5/8	13 5/8	15 3/4	55 5/8	69 1/2	63	34 1/8	9 1/4	330
UPDX2-75T6FRN	75	55,000	122	58	71	26	3 or 4	54 1/4	16 1/4	19	54 1/4	69 3/8	62 3/4	36	11 11/16	375

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.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

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



3" Vent Pipe		UPDX2-50T UPDX2-65T	UPDX2-75T
Max. Intake Length		60 ft.	50 ft.
Max. Exhaust Length		60 ft.	50 ft.
Min. Vent Length		7 ft.	7 ft.
Number	1	55 ft.	45 ft.
of	2	50 ft.	40 ft.
90° Elbows†	3	45 ft.	35 ft.

4" Vent Pipe		UPDX2-50T UPDX2-65T	UPDX2-75T
Max. Intake Length		100 ft.	90 ft.
Max. Exhaust Length		100 ft.	90 ft.
Min. Vent Length		7 ft.	7 ft.
Number	1	95 ft.	85 ft.
of	2	90 ft.	80 ft.
90° Elbows†	3	85 ft.	75 ft.

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

Residential Gas Energy Direct Vent Ultra Low NOx Water Heaters

- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)

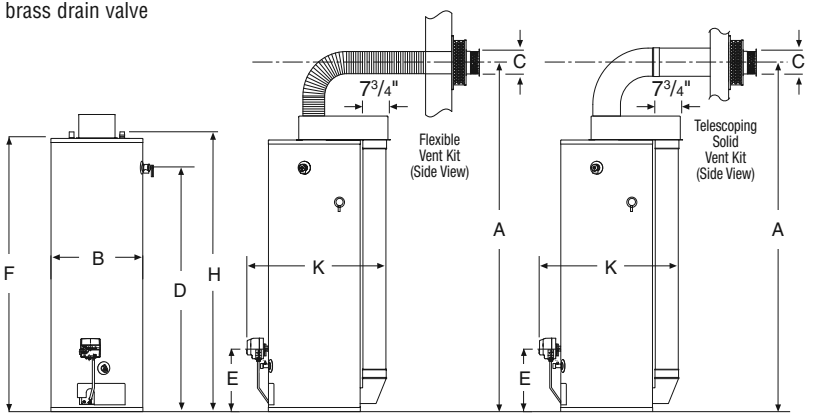




Photo of UDS1-50S6FBN

Direct 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	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)
UDS1-40S6FRN	40	38,000	73	41	63 1/4 min.	20	3 I.D., 5 O.D.	43 1/2	15	49 3/4	50 3/4	31 1/8	169
UDS1-50S6FRN	50	38,000	84	41	72 1/4 min.	20	3 I.D., 5 O.D.	52 1/4	15	58 3/4	59 3/4	31	186

Available in Natural Gas only.
*Based on manufacturers rated recovery efficiency.
For 10 year models, change suffix from "6" to "10".
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**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 4¾" to 5 11/16"**	**Part No. 239-41260-00**
Kit "B"	**Telescopes from 6½" to 9 3/16"**	**Part No. 239-41331-00**
Kit "C"	**Telescopes from 13¾" to 23 11/16"**	**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.

Residential Gas Energy Saver High Input Direct Vent Ultra Low NOx Water Heaters

- 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

- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)

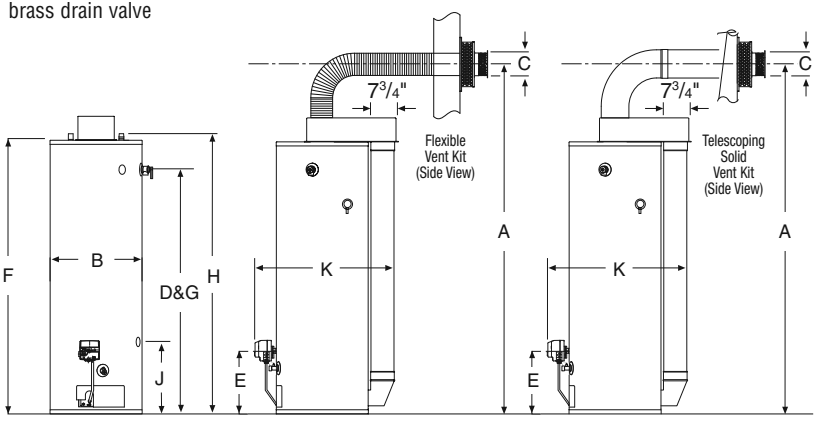




Photo of UDH1-504T6FBN

Direct 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 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)
UDH1-504T6FRN	48	45,000	88	46	75 1/4	20	4 I.D.,6 O.D.	52 1/4	15	58 3/4	52 1/4	59 3/4	15 3/4	31 3/4	190
UDH1-65T6FRN	65	45,000	101	46	78 1/4	22	4 I.D.,6 O.D.	56	15	62	56	63	15 3/4	31 1/4	226
UDH1-75S6FRN	75	50,000	110	53	75 1/2	24	4 I.D.,6 O.D.	52	15	59	52	60	16 1/2	35 1/4	261

Available in Natural Gas only.
*Based on manufacturers rated recovery efficiency.
For 10 year models, change suffix from “6” to “10”.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.
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.

Optional solid 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 3/16"**	**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.

Residential Electric Energy Saver Water Heaters

General

All models are ETL 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 or 30 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 and 12 gallon tall utility models is 3000W. Maximum wattage for 10, 12 and 15 gallon utility models is 6000W. Maximum wattage 6 gallon wall hung is 3000W. Maximum wattage for 12, 20 and 30 gallon wall hung models is 6000W.

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-**1**NCWW

Operation		
	N	Non-simultaneous
	S	Simultaneous

EX: M240T6DS-1**N**CWW

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

EX: M240T6DS-1N**C**WW

*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	yes**	yes**
6000W / 6000W	6000W	no	yes	yes	yes	yes

**Incoloy element only.

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-1NC**WW**

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

76/77

- 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

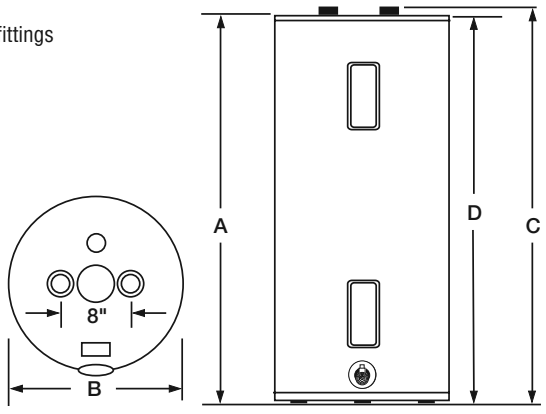




Photo of
M-2-50T6DS

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	21	46 7/8	18	48 1/8	47 3/16	85
M-2-40S6DS	40	56	21	46 7/8	20	47 7/8	46 7/8	103
M-2-40T6DS	40	56	21	59 3/4	18	60 3/4	59 3/4	110
M-2-50S6DS†	50	67	21	46 1/2	22	47 1/2	46 1/2	130
M-2-50T6DS	50	67	21	57 1/2	20	58 1/2	57 1/2	123
M-2-65R6DS	65	77	21	59 1/4	22	60 1/4	59 1/4	156
M-2-80R6DS	80	92	21	59 1/4	24	60 1/4	59 1/4	183
M-2-120R6DS	119	118	21	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 74/75 for general notes.

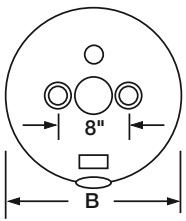
	Recovery ▲ GPH Temperature Rise °F				
Wattage	**60**	**80**	**90**	**100**	**120**
1500	10	8	7	6	5
2000	14	10	9	8	7
2500	17	13	11	10	9
3000	21	15	14	12	10
3500	24	18	16	14	12
4000	28	21	18	16	14
4500	31	23	20	19	15
5000	34	26	23	21	17
5500	38	29	25	23	19
6000	41	31	28	25	21

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

Residential Electric Energy Saver High Efficiency Water Heaters

78/79

- 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



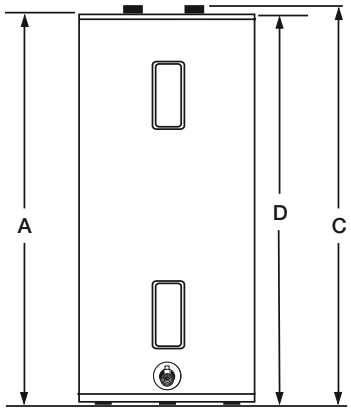




Photo of
M-2-HE50S6DS

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	21	47 7/8	20	48 7/8	47 7/8	118
M-2-HE50S6DS	50	67	21	47 1/2	22	48 1/2	47 1/2	131
M-2-HE65R6DS	65	77	21	60 1/4	22	61 1/4	60 1/4	160
M-2-HE80R6DS	80	92	21	60 1/4	24	61 1/4	60 1/4	191

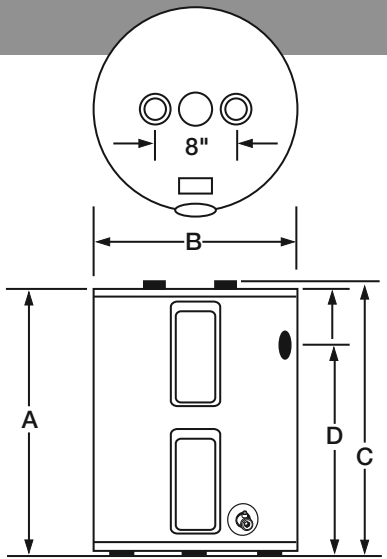
*Based on 4500 W/4500 W non-simultaneous operation.
For single element change suffix letter "D" to "S".
For 10 year models, change suffix number from "6" to "10".
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.
Refer to page 74/75 for general notes.

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

- 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



Photo 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	—	21	24 3/4	18	26	19 1/4 / 24 7/8	58
M-1-30L6DS	30	47	21	29 3/4	20	31	24 / 29 3/8	86
M-2-30L6DS	30	47	21	30	22	31	24 1/8 / 31 1/4	96
M-1-40L6DS	40	58	21	31 1/4	22	32 7/8	24 1/8 / 31 3/4	115
M-2-40L6DS	40	58	21	32 1/8	24	33 1/8	24 1/8 / 33 3/8	121
M-1-50L6DS	47	67	21	31 3/4	24	33 1/8	24 1/8 / 31 3/4	140
M-2-50L6DS	47	67	21	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.

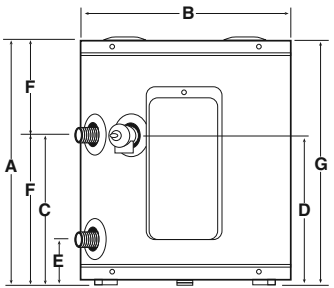
Refer to page 74/75 for general notes.

	Recovery ▲ GPH Temperature Rise °F				
Wattage	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

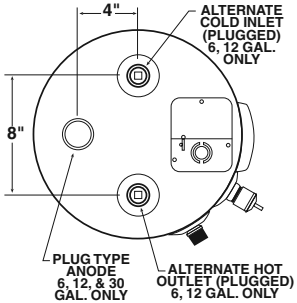
▲(GPH based on Non-Simultaneous operation, when Simultaneous operation the GPH will approximately double.)

Residential Electric Energy Saver Utility Water Heaters

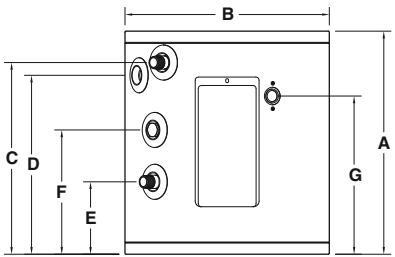
- Side connections for cold water inlet and hot water outlet allows installation in tight places
- 6 and 12 gallon models come equipped with alternate water connections tappings on top
- Vitraglas® lining
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC foam insulation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



6, 12, 20 & 30 Gallon Models



Top View
6, 12, 20 & 30 Gallon Models



10 & 15 Gallon Models


Photo 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	16 1/2	14	10 1/8	10 1/8	3 1/8	16 1/2	16 1/2	33
M-1-10U6SS†	10	—	7	17 1/2	16	15	14	5 11/16	9 11/16	12	48
M-1-12U6SS	12	—	7	16 7/8	18	10 1/4	10 1/4	3	16 1/2	16 7/8	48
M-1-12UT6SS†	12	—	7	27 3/4	14	21 1/8	21 1/8	3	27 3/4	27 3/4	48
M-1-15U6SS	15	—	7	20 1/4	18	17 3/4	16 3/4	6 1/8	10 1/8	12 11/16	55
M-1-20U6SS	19	—	7	24 3/4	18	18 1/4	18 1/4	3	10 1/4	24 3/4	59
M-2-30U6SS	30	19	7	30	22	23 1/2	23 1/2	4 1/2	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".
†Maximum wattage at any voltage is 3000W.
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.
Refer to page 74/75 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

Residential Electric Energy Saver Powerful Compact Water Heater

84/85

- Ideal for use wherever remote hot water is needed – in offices, stores, work stations, etc.
- Compact Design (12¼" H x 9⅞" Dia.) and easy to install
- Operates on ordinary house current (110-120 volts - 1500 watts)
- Temperature range of 90°-140°F
- 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



Photo of
M1-2U6SS

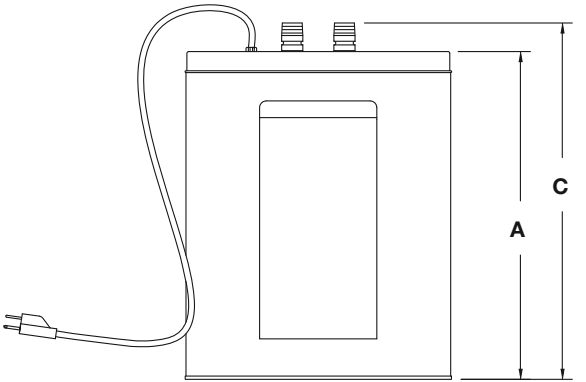
Powerful Compact Electric Model

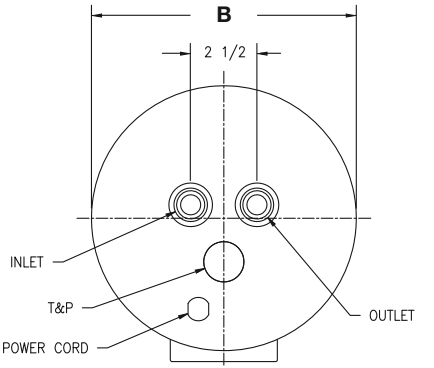
Meet or exceed ASHRAE 90.1b (current standard) CEC Listed

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	12 1/4	9 7/8	13 5/16	12

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





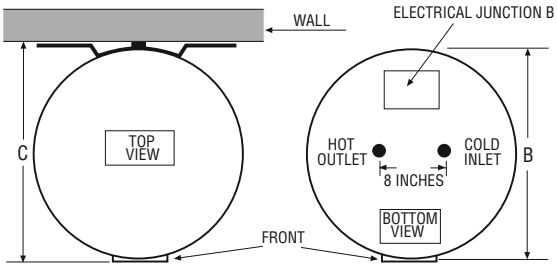
Residential Electric Energy Saver Wall Hung Water Heaters

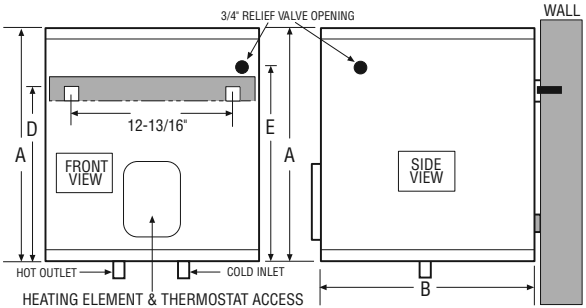
86/87

- 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



Photo 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	48
M-1-WH20L6SS	19	—	7	24 3/8	18	18 5/8	18 1/4	21	59
M-2-WH30L6SS	30	19	7	29 1/4	22	22 5/8	23	25 3/4	82

*Based on 1500 W element operation.
Suffix letter "S" indicates single element.
For 10 year models, change suffix number from "6" to "10".
†Maximum wattage at any voltage is 3000W.
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.
Refer to page 74/75 for general notes.

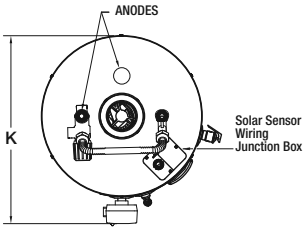
	Recovery GPH Temperature Rise °F				
Wattage	60	80	90	100	120
1500	10	8	7	6	5
2000	14	10	9	8	7
2500	17	13	11	10	9
3000	21	15	14	12	10
3500	24	18	16	14	12
4000	28	21	18	16	14
4500	31	23	20	19	15
5000	34	26	23	21	17
5500	38	29	25	23	19
6000	41	31	28	25	21

EcoStor2™ SC Solar Indirect System
Single Coil Gas Backup Models

88/89

DEFENDER SAFETY SYSTEM®

- Heat exchanger – Double wall 1½" O.D. enamel coated (Vitraglas®) steel coil
- Self diagnostic Honeywell gas control
- Backup Low NOx Burner
- Sensor wires for solar thermistor connections
- Integrated Mixing Device
- Factory Installed Hydrojet® Total Performance System
- Vitraglas® 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



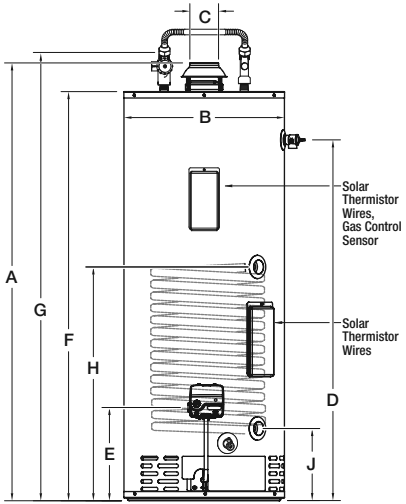




Photo of
S-DW2-504T6FBN

EcoStor™ Double-Wall Solar Indirect Models

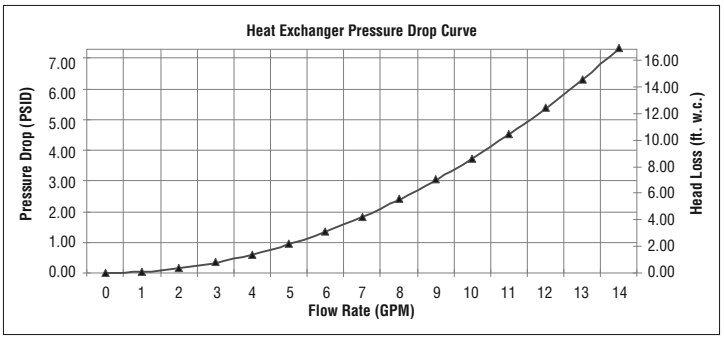
Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

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	45	65,000	69	59 1/4	22	4	50	11 3/8	56	60	32 1/4	10 1/8	26	223
S-DW2-65T6FBN	60	65,000	69	63	24	4	53 1/2	11 3/8	59 1/2	63 1/4	32 1/4	10 1/8	28	264
S-DW2-75S6BN	75	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	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-DW2-6ST6FSX	63,000 BTU/Hr.	67
S-DW2-75S6SX	76,000 BTU/Hr.	82

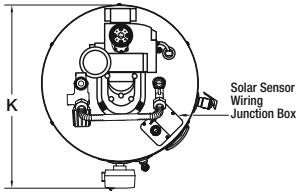


EcoStor2™ SC Solar Indirect System
Single Coil Power Vent Gas Backup Models

90/91

DEFENDER SAFETY SYSTEM®

- Heat exchanger – Double wall 1½" O.D. enamel coated (Vitraglas®) steel coil
- Self diagnostic electronic Honeywell gas control
- Backup Low NOx Burner
- 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—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
- S-DW2-TW-75 is not FVIR compliant



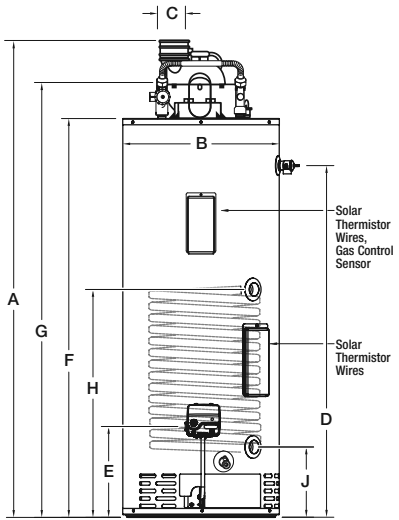




Photo of S-DW2-TW-65T6FBN

EcoStor2™ Double-Wall Solar Indirect Models

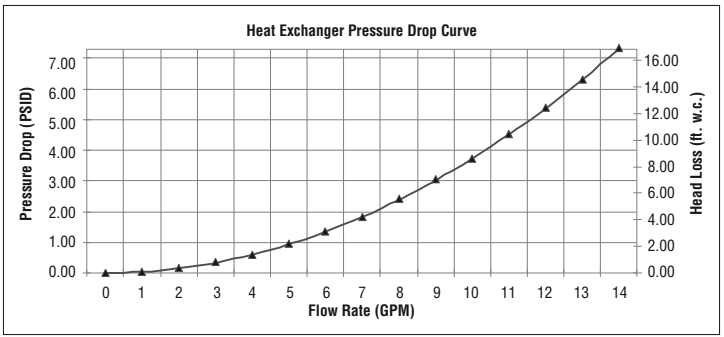
Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Recovery Efficiency

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	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	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	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	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows†	3	45 ft.	165 ft.

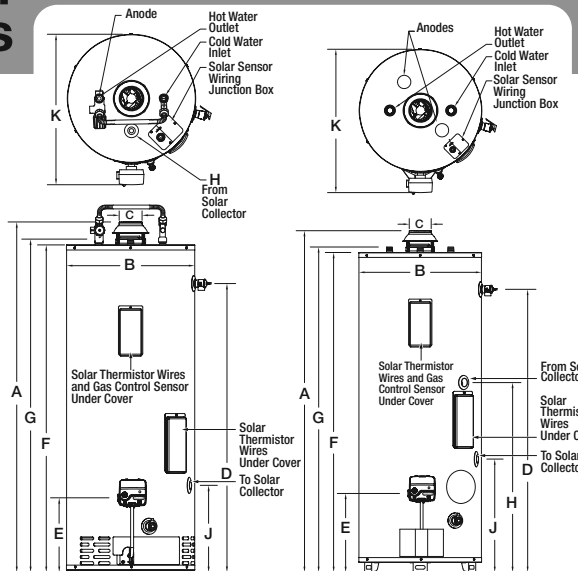
†Consult I&O manual when using four or more elbows. Subtract 5ft. for each additional 90° elbow.
**S-DW2-TW-75 Max. 3" vent length is 50ft.

EcoStor™ Open Loop Solar Gas Backup Models

92/93

DEFENDER SAFETY SYSTEM®

- Heat exchanger – Double wall 1½" O.D. enamel coated (Vitraglas®) steel coil
- Self diagnostic electronic Honeywell gas control
- Backup Low NOx Burner
- 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 (65 gallon), 1" NPT (75 gallon) and 1¼" NPT (100 gallon) factory installed true dielectric fittings
- Protective anode rods—65 and 75 gallon models (1 Anode Rod), 100 gallon model (2 Anode Rods)
- T&P relief valve included
- Low restriction brass drain valve
- S-2-75S6BN and S-2-100T6BN are not FVIR compliant



65 /75 Gallon Capacity

100 Gallon Capacity



Photo of S-2-65T6FBN

Gas Backup 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-2-65T6FBN	65	65,000	69	63	24	4	53 1/2	11 3/8	59 1/2	60 1/4	60 1/4	10 1/8	28	215
S-2-75S6BN	75	76,000	82	62 3/8	26	4	52	14 1/8	59	59 3/4	59 3/4	12 1/2	30 3/8	250
S-2-100T6BN	100	85,000	92	63 11/16	28 1/4	4	39 1/4	14 1/4	65 1/2	67 1/2	38 3/4	17 1/2	32 1/4	400

* Based on manufacturers rated recovery efficiency.
Propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".

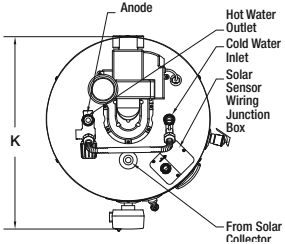
(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
S-2-65T6FBN	63,000 BTU/Hr.	67
S-2-75S6BN	76,000 BTU/Hr.	82
S-2-100T6BN	88,000 BTU/Hr.	95

EcoStor™ Open Loop Solar Vent Gas Backup Models

94/95

DEFENDER SAFETY SYSTEM®

- 3/4" NPT solar collector supply and return connections (no internal heat exchanger)
- Self diagnostic electronic Honeywell gas control
- Backup Low NOx Burner
- 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—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
- S-2-TW75T6BN is not FVIR compliant



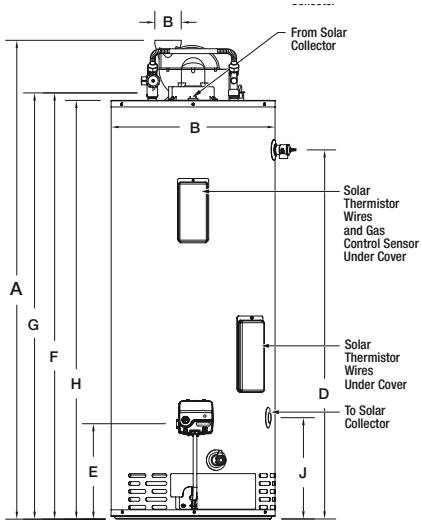




Photo of S-2-TW65T6FBN

Gas Backup 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-2-TW65T6FBN	65	70,000	75	63	24	3	53 1/2	11 3/8	59 1/2	60 1/4	32 1/4	10 1/8	28	225
S-2-TW75T6BN	75	76,000	82	62 3/8	26	3	52	14 1/8	59	59 3/4	34 5/8	12 1/2	30 3/8	260

* Based on manufacturers rated recovery efficiency.
Propane models feature a Titanium Stainless Steel propane burner. For propane (LP) models change suffix "BN" to "SX".
120 V.A.C. required for power venting.
120 V.A.C. 60HZ 3.1 Amperes.

(LP) Propane Gas Inputs		GPH Rec. 90°F Rise
S-2-TW65T6FBN	63,000 BTU/Hr.	68
S-2-TW75T6BN	75,500 BTU/Hr.	81

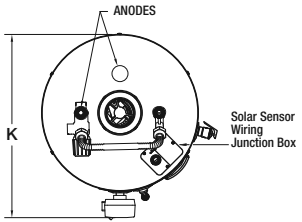
S-2-TW65T6FBN S-2-TW75T6BN		3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length		†60 ft.**	†180 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows†	3	45 ft.	165 ft.

†Consult I&O manual when using four or more elbows. Subtract 5ft. for each additional 90° elbow.
** S-2-TW-75 Max. 3" vent length is 50 ft. (15.24 m).

EcoStor2™ SC Solar Indirect System
Single Coil Eco-Defender Gas Backup Models

96/97

- Heat exchanger – Double wall 1½" O.D. enamel coated (Vitraglas®) steel coil
- Self diagnostic Honeywell gas control
- Eco-Defender Safety System®
- Backup Ultra Low NOx Burner
- 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



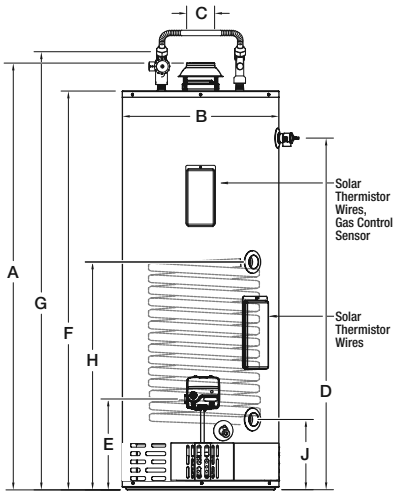




Photo of
S-DW4-U5036FRN

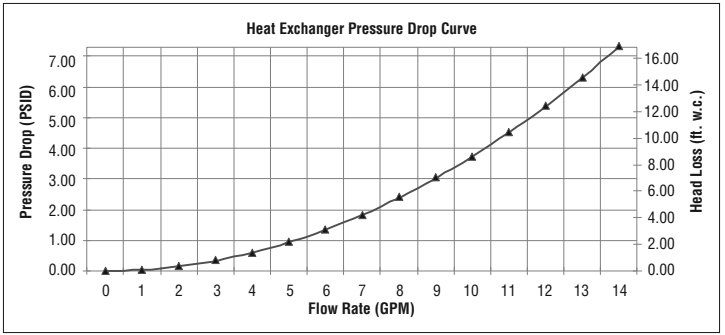
EcoStor2™ Double-Wall Solar Indirect Models

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

DIMENSIONS IN INCHES

NATURAL GAS				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	59 1/4	22	3	50	11 5/8	56 1/4	60	32 1/4	10 1/8	26	233
S-DW2-U65T6FRN	60	55,000	57	63	24	4	53 1/2	11 5/8	59 1/2	63 1/4	32 1/4	10 1/8	28	272

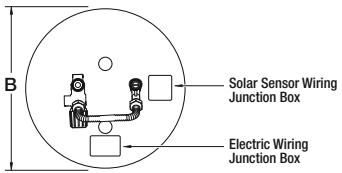
*Based on manufacturers rated recovery efficiency.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).



EcoStor™ DC Solar Indirect System Dual Coil Heat Exchanger Backup Models

98/99

- 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
- Applications—Dual heat exchangers located inside the tank may be connected to a variety of different heating systems
- 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



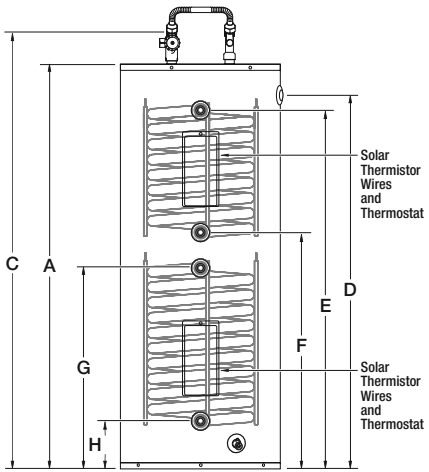


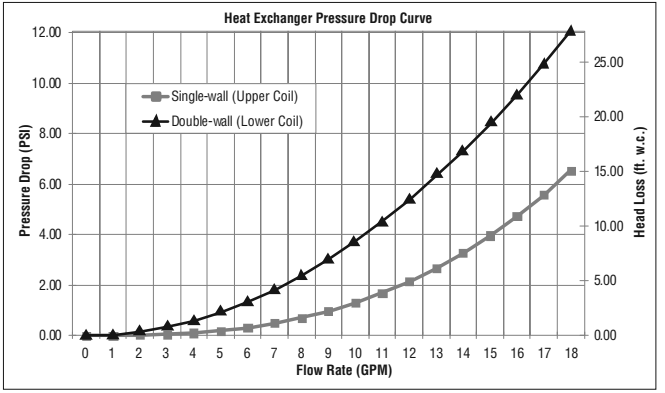


Photo of S-DC-DW2-55R6SW

EcoStor™ Solar Indirect Models

DIMENSIONS IN INCHES

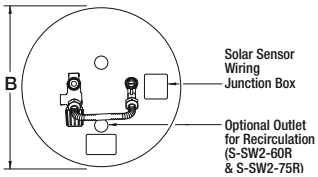
SOLAR		A	B	C	D	E	F	G	H	
Model Number	Gal. Cap.	Floor to Heater Top	Jacket Dia.	Floor to Water Conn.	Floor to T&P Conn.	Floor to Upper Coll. Supply	Floor to Upper Coll. Return	Floor to Lower Coll. Supply	Floor to Lower Coll. Return	Approx. Shipping Weight (lbs)
S-DC-DW2-55R6SW	50	59 1/4	22	62 3/4	53	56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



EcoStor™ SC Solar Indirect System Single Coil With Electric Backup Models

100/101

- Heat exchanger – Single wall 1½" O.D. enamel coated (Vitraglas®) 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
- Vitraglas® 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



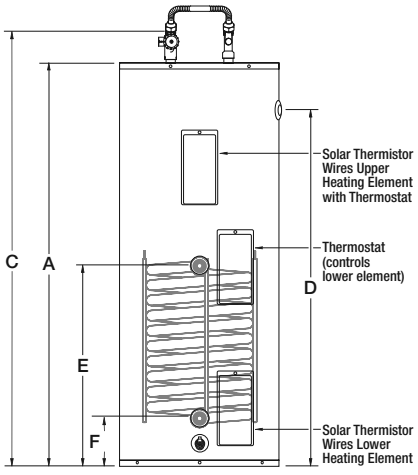




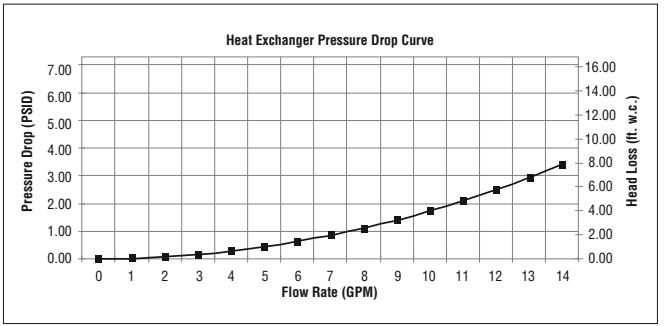
Photo of S-SW2-60R6DS

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 1/4	66 3/4	55 3/4	29 1/2	7 3/8	340

For single element models change "D" to "S".
(Ex. S-SW2-60R6**S**S)



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 Models

102/103

- Heat exchanger – Double wall 1½" O.D. enamel coated (Vitraglas®) 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
- Vitraglas® 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

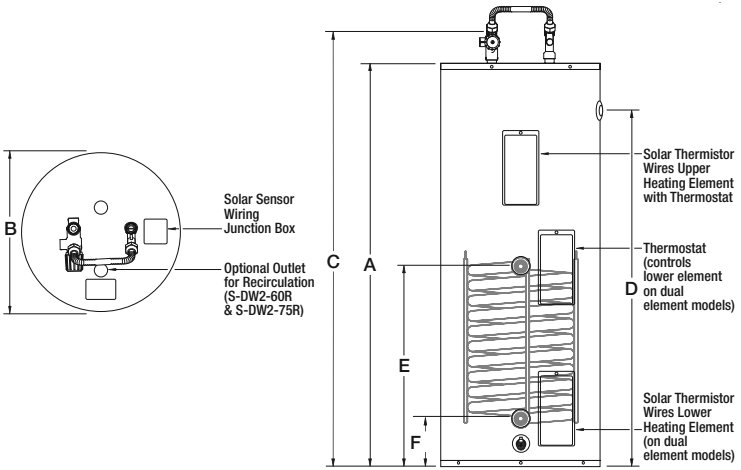




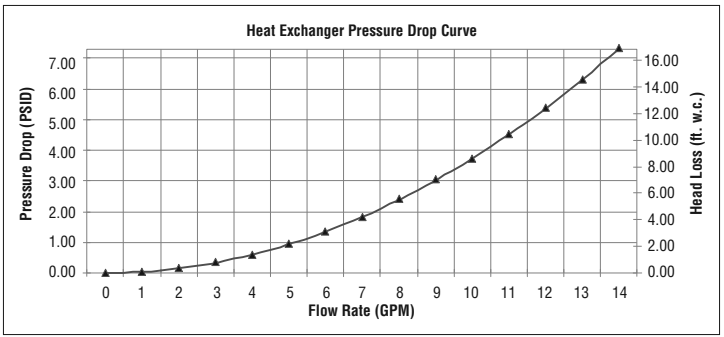
Photo of S-DW2-60R6DS

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 1/4	53	29 1/2	7 3/8	217
S-DW2-75R6DS	75	59 1/4	24	63 1/4	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-DW2-60R6**S**S)



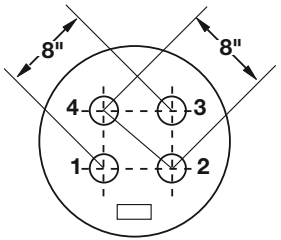
Electric Backup Water Heating Ratings

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

Solar Saver® Series – Electric Solar Water Heaters

104/105

- 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

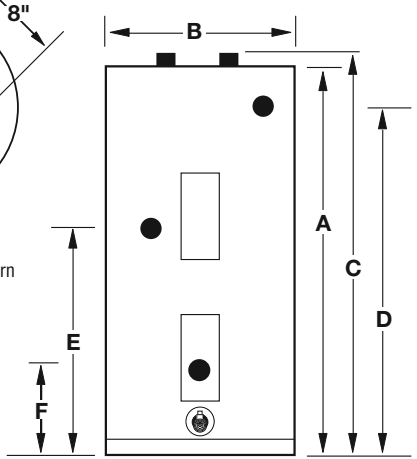




Photo of MS80R6SS

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	52 1/2	—	—	168
MS80R6SS†	80	59	24	60	52 1/2	38	7 7/8	210
MS120R6SS†	119	62 1/2	28	63 1/2	56	38 1/4	7 7/8	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.

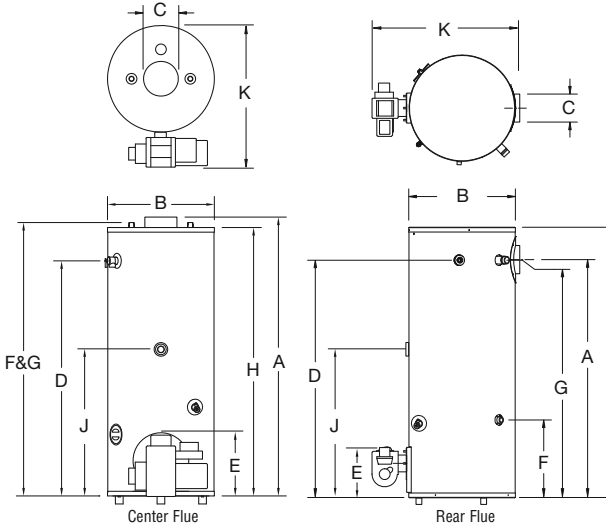
†Models offer optional pump suction and collector return connections.

Residential Oil-Fired Energy Saver Series Water Heaters

SUGGESTED BURNER

106/107

- Single immersion aquastat (supplied with burner) for precise, easy water temperature regulation and safety
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- Vitraglas® lining
- 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)
- High density fiberglass insulation
- Low restriction brass drain valve
- T&P relief valve included



Center Flue

Rear Flue



Photo of CF-32-6

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	96/111	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 1/2	215
CF-50-6	50	111/126	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	33	275
RF-30-6	30	123	119	0.85	47 7/8	23 3/16	6	48 3/8	13 1/8	18 11/16	48 3/8	56	24 3/8	32 13/16	250
RF-30SX-6	30	123	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	33 3/8	210
RF-50-6	50	182/197	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 1/8	360

†MBTUH = Thousand BTU/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	228-49641-01**	Carlin Burner with single Aquastat @ 0.65 GPH
CF-32	228-49641-08	Carlin Burner with single Aquastat @ 0.75 GPH
CF-50	228-49641-12	Carlin Burner with single Aquastat @ 0.75 GPH
CF-50	228-49641-03	Carlin Burner with single Aquastat @ 0.85 GPH
RF-30(SX)	228-49641-03	Carlin Burner with single Aquastat @ 0.85 GPH
RF-50	228-49641-06	Carlin Burner with single Aquastat @ 1.25 GPH
RF-50	228-49641-17	Carlin Burner with single Aquastat @ 1.35 GPH

* All burners are 1-stage, 120V.
** Standard burner and firing rate for model listed.

The Bradford White MAGNUM Series®

BRADFORD WHITE MAGNUM SERIES

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 complement 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® Sizing Software

RightSpec® commercial sizing and specifying guide offers many unique features and upgrades. You'll find it easy 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®, available on the web, you'll have the sizing solution you need in a fraction of the time it took before.

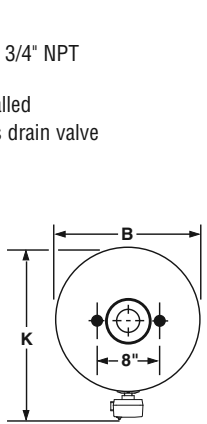
Visit Bradford White's Interactive sizing and cross reference program at:
www.bradfordwhite.com

Commercial Gas Energy Saver FVIR Light Duty Water Heaters

110/111

DEFENDER SAFETY SYSTEM® ICON System™

- Bradford White ICON System™
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Advanced ScreenLok® Technology Flame Arrestor Design
- Resettable thermal switch
- Pedestal base
- More precise temperature control can be adjusted up to 180°F
- 3/4" NPT Side tappings 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



TOP VIEW

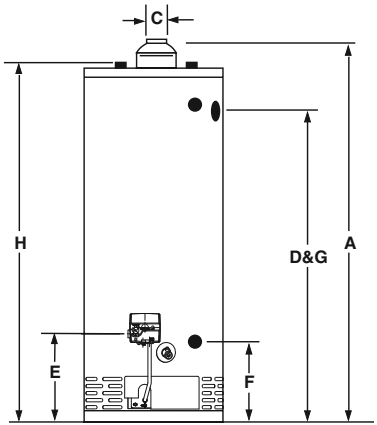




Photo of
65T-65FB-3N

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	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	48	65,000	103	156	62	44	59 1/4	22	4	50	13	13 1/2	50	57	26	164
65T-65FB-3N	65	65,000	127	156	62	44	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 burner. For propane (LP) models change suffix “B” to “S” and “N” to “X”.
For 5 year models change suffix “3” to “5”.

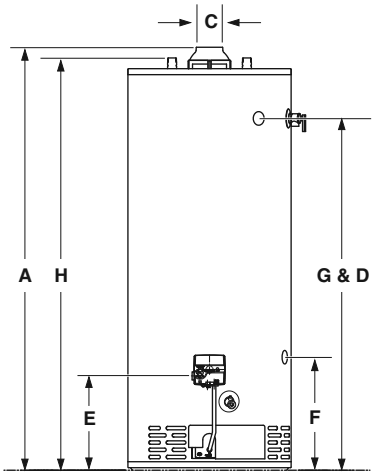
(LP) Propane Gas Inputs		GPH Rec. 100°F Rise
50T-65FS-3X	61,000 BTU/Hr.	58
65T-65FS-3X	63,000 BTU/Hr.	60

Commercial Gas Energy Saver Light Duty High Input Water Heaters

112/113

BRADFORD WHITE ICON System™

- Bradford White ICON System™
- Vitraglas® lining
- Factory installed Hydrojet 2™ Total Performance System
- More precise temperature control can be adjusted up to 180°F
- NSF construction available
- Water Connections – 1" NPT (75T) and 1¼" (100T) factory installed true dielectric fittings
- Side connections - 3/4" NPT tappings
- 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



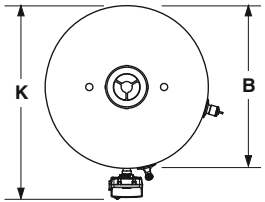




Photo of
100T-88B-3N

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
80% Thermal 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	75	76,000	127	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	100	85,000	152	206	82	59	69 1/32	28 1/4	4	59 3/8	15 17/32	17 3/4	50 23/32	67 23/32	32 1/4	420

*Based on manufacturer recovery rate.
All propane models feature a Titanium Stainless Steel 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 Heaters

114/115

- 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 tappings for space heating
- Fully automatic controls
- T&P relief valve installed
- Low restriction brass drain valve

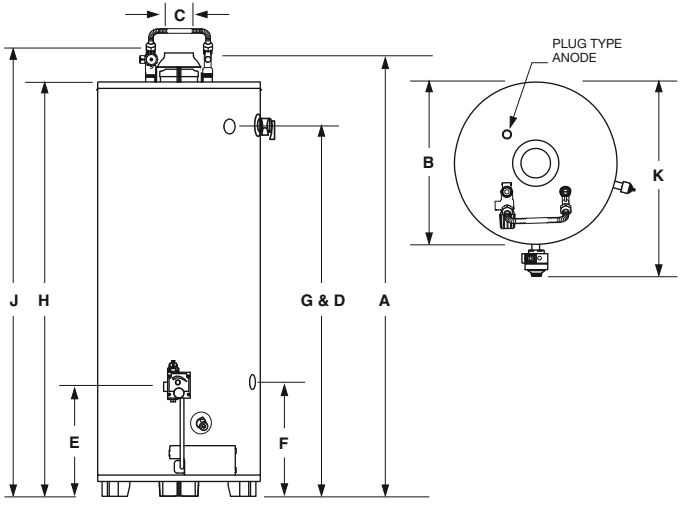




Photo of 25X-78B-3N

Atmospheric Vent Energy Saver Models

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

DIMENSIONS IN INCHES

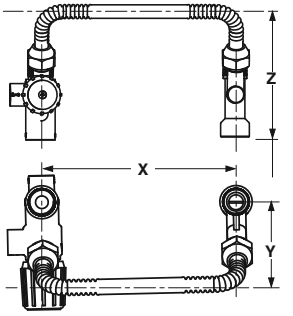
NATURAL GAS AND LIQUID PROPANE MODELS				A	B	C	D	E	F	G	H	J	K	
Model Number	Gal. Cap.	Input BTU/Hr.	GPH Recovery 100°F Rise*	Floor to Flue Conn.	Jacket Dia.	Vent Size	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Space Heating Return	Floor to Space Heating Outlet	Floor to Heater Top	Floor to Water Conn.†	Depth	Approx. Shipping Weight (lbs)
25X-78B-3N	25	78,000	76	58 1/2	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	26 1/4	200

*Based on manufacturers rated recovery efficiency.
All propane models feature a Titanium Stainless Steel 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

Model Number	X Distance Between Centers in.	Y Depth of Mixing Device in.	Z Height to Center of Pipe in.
25X-78B-3N	8	2 1/2	6
55X-80B-3N	8	2 1/2	6

Integrated Mixing Device



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

116/117

BRADFORD WHITE ICON System™

- Bradford White ICON System™
- 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
- Flammable vapor sensor (not fully FVIR compliant)
- Electronic ignition
- Horizontal and vertical venting
- 3/4" NPT side tappings for space heating
- T&P relief valve installed
- Low restriction brass drain valve

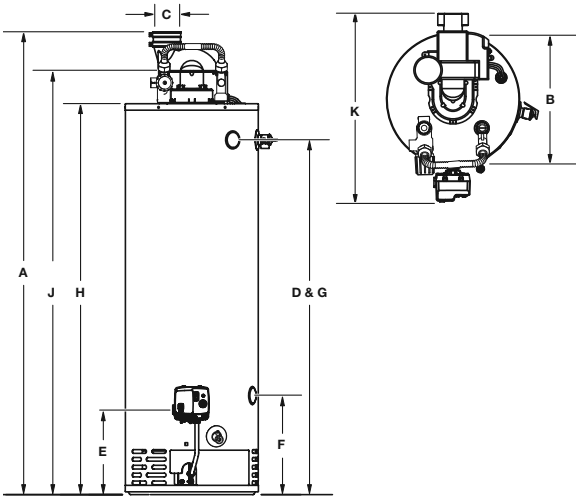




Photo of TW-55X-78B3N

Power Vent Energy Saver Models

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

DIMENSIONS IN INCHES

NATURAL GAS				A	B	C	D	E	F	G	H	J	K	
Model Number	**Gal. Cap.**	**Input BTU/Hr.**	**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-76B-3N	25	76,000	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-78B-3N	55	78,000	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 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".

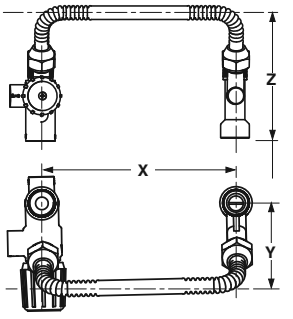
(LP) Propane Gas Inputs		**GPH Rec. 100°F Rise**
TW-25X-76S-3X	76,000 BTU/Hr.	74
TW-55X-78S-3X	78,000 BTU/Hr.	76

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

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

Model Number	**X Distance Between Centers in.**	**Y Depth of Mixing Device in.**	**Z Height to Center of Pipe in.**
TW-25X-76B-3N	8	2 1/2	6
TW-55X-78B-3N	8	2 1/2	6

Integrated Mixing Device



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

118/119

DEFENDER SAFETY SYSTEM® ICON 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:

- Bradford White ICON System™
- Vitraglas® Lining
- Factory installed Hydrojet® Total Performance System
- Powerful blower motor
- More precise temperature control can be adjusted up to 180°F
- Electronic ignition
- Horizontal and vertical venting
- 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

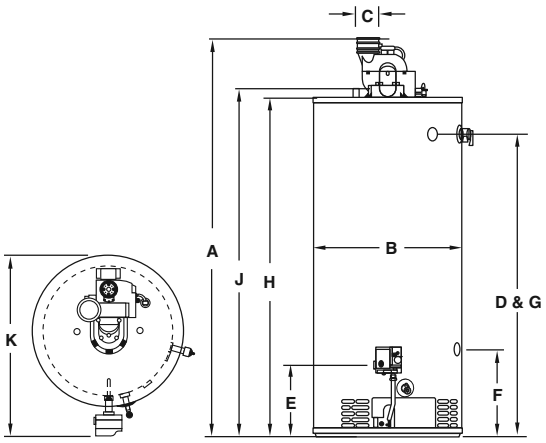




Photo of TW4-50S-67FB-3N

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	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	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	75	76,000	–	184	74	57	68 3/8	26	3	53	15	17 3/4	53	60 1/4	61 1/2	31	257

*Based on manufacturer recovery rate.
All propane models feature a Titanium Stainless Steel 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	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows†	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 FVIR Light Duty Power Direct Vent Water Heaters

120/121

DEFENDER SAFETY SYSTEM™ ICON System™

- Bradford White ICON System™
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Closed combustion venting system
- Flammable vapor sensor
- Powerful blower motor
- More precise temperature control can be adjusted up to 180°F
- Electronic ignition
- Horizontal and vertical venting
- 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

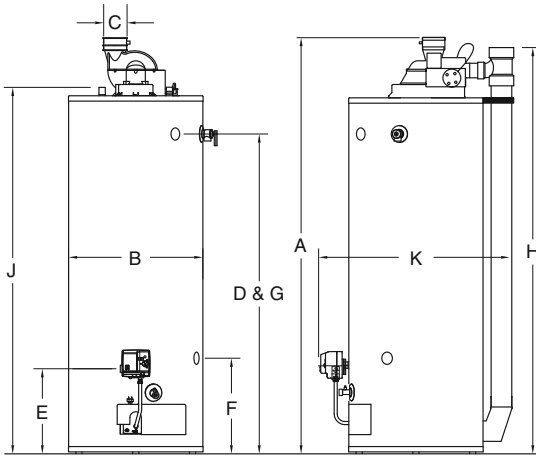




Photo of PDX-50S-60FB-3N

Power 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							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 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	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	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	34 1/8	9 1/4	330
PDX-75S-70FB-3N	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 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.

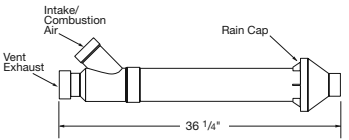
3" Vent Pipe		PDX-50S PDX-65S	PDX-75S
Max. Intake Length		60 ft.	50 ft.
Max. Exhaust Length		60 ft.	50 ft.
Min. Vent Length		7 ft.	7 ft.
Number	1	55 ft.	45 ft.
of	2	50 ft.	40 ft.
90° Elbows†	3	45 ft.	35 ft.

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

122/123

DEFENDER SAFETY SYSTEM™ ICON System™

- Bradford White ICON System™
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- 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
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 3/4" NPT side tappings for space heating
- 1" Non-CFC foam insulation
- Co-axial 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

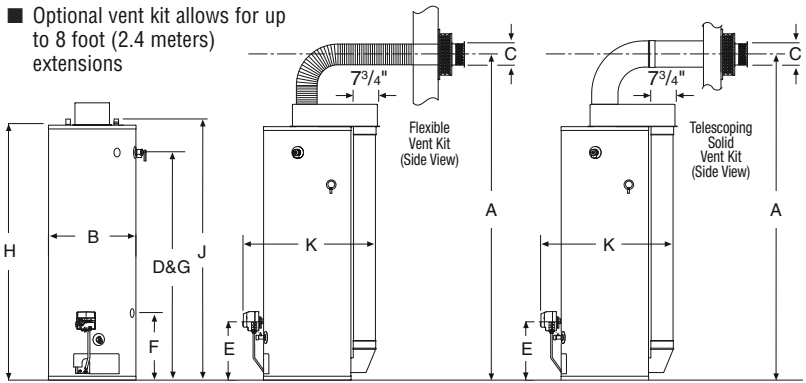




Photo of
DH-50T-50FB-3N

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 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	48	50,000	93	118	47	34	75 1/4	20	4 I.D., 6 O.D.	52 1/4	15	15 3/4	52 1/4	58 3/4	59 3/4	31 1/4	190
DH-65T-55FB-3N	65	55,000	113	130	52	47	78 1/4	22	4 I.D., 6 O.D.	56	15	15 3/4	56	62	63	34 1/4	226
DH-75T-60FB-3N	75	60,000	127	132	57	51	75 1/2	24 1/2	4 I.D., 6 O.D.	52	15	16 1/2	52	59	60	35 1/4	261

* Based on manufacturer recovery rate.
All propane models feature a Titanium Stainless Steel 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
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

Horizontal Termination Only
The Standard Vent Kit (239-42979-00) may be 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 13¾" to 23 1/16".

NSF Construction available.

Optional vent kit :

Kit “F”	**Telescopes from 4¾" to 5 1/16"**	**Part No. 239-42516-00**
Kit “G”	**Telescopes from 6½" to 9⅜"**	**Part No. 239-42517-00**
Kit “H”	**Telescopes from 13¾" to 23 1/16"**	**Part No. 239-42514-00**
Kit “I”	**Telescopes from 49 1/16" to 95 1/16"**	**Part No. 239-42512-00**

Horizontal Vent Termination Only.

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 Ultra High Efficiency Water Heaters

124/125

EF SERIES · THE BRADFORD WHITE ICON HD COMMERCIAL CONTROL SYSTEM · ON GUARD RMT

- ICON HD™—Intelligent proven design combines temperature control, diagnostic codes and system ignition functions into a single control board with a digital LCD display
- Up to 99.1% thermal efficiency
- ASME construction available
- Electronic controls
- Low-NOx Premix Power Burner
- Three pass flue system
- Flexible venting options
- 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)
- Two powered anode rods and one non-powered anode rod in the EF-100T-399
- Hand hole cleanout
- Zero inch clearance to combustibles
- NSF construction available
- T&P relief valve installed
- Low restriction brass drain valve
- Complies with the latest ultra-low NOx requirement (14 ng/J NOx limit)

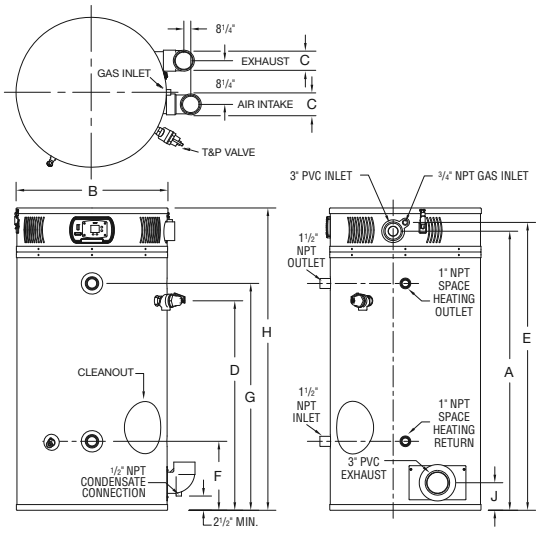




Photo of EF-60T-199E-3N

eF Series® Energy Saver Models

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

DIMENSIONS IN INCHES

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 40°	100°	140°	A Floor to Air Intake	B Jacket Dia.	C Vent & Air Intake Size	D Floor to T&P Valve Conn.	E Floor to Gas Conn.	F Cold Water Inlet Conn.	G Hot Water Outlet Conn.	H Floor to Top of Heater	J Floor to Vent Conn.	Water Conn.	Gas Conn. Dia.	Relief Valve Open	Approx. Shipping Weight (lbs)
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 1/2	57	5	1 1/2	3/4	3/4	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 1/2	57	5	1 1/2	3/4	3/4	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 1/2	57	5	1 1/2	3/4	3/4	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	62 1/2	77 5/8	5	1 1/2	3/4	3/4	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	62 1/2	77 5/8	5	1 1/2	3/4	3/4	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	62 1/2	77 5/8	5	1 1/2	3/4	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	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.

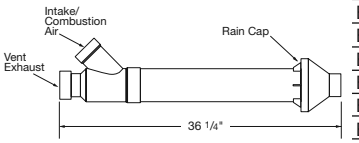
NSF Compliance Kit—p/n 265-44542-04.

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.

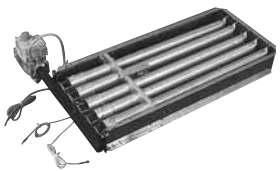
Commercial Gas Energy Saver Electronic Ignition Water Heaters

126/127

THE BRADFORD WHITE ICON HD COMMERCIAL CONTROL SYSTEM

ON GUARD RMT

- ICON HD™—Intelligent 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



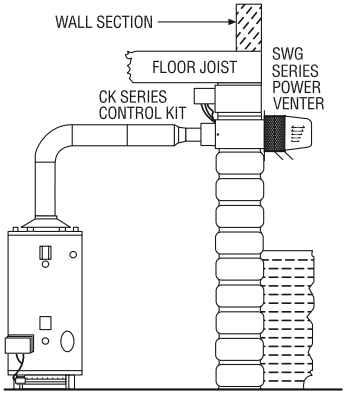
Commercial Gas Burner

- 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



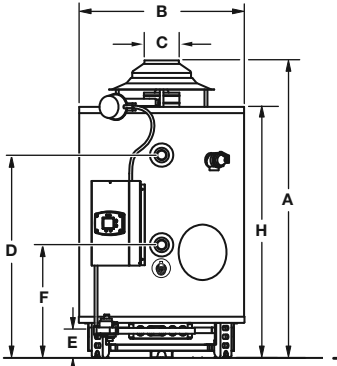
Photo of
D-80T-180-3N

Typical Applications

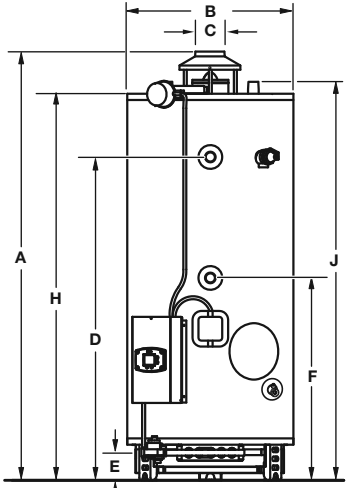


Optional Power Vent Kits – available for inputs from 125,000 to 505,000.

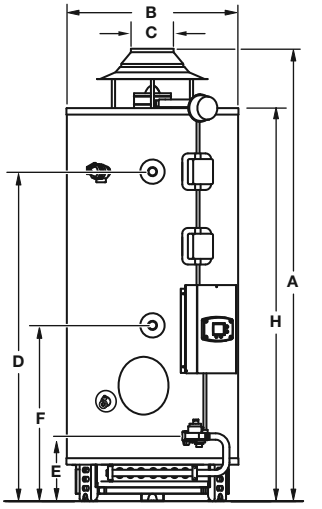
BTU Input Range	Kit Number
125,000 to 290,000 BTU's:	239-81764-00
300,000 to 399,999 BTU's:	239-81766-00
425,000 to 505,000 BTU's:	239-82148-00



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)

Electronic Ignition Models

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

DIMENSIONS IN INCHES

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	35	4 5/8	19 3/8	43 1/2	–	1 1/2 (F)	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	67 1/8	1 1/2 (T&F)	3/4	3/4	520	–
D-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 (T&F)	3/4	3/4	520	–
D-80T-180-3N	80	180,000	231	436	175	124	71 7/8	28 1/4	6	56	4 3/4	19 1/2	64 1/2	66 1/4	1 1/2 (T&F)	3/4	3/4	540	–
D-80T-199-3N	80	199,999	250	485	194	139	71 7/8	28 1/4	6	56	4 3/4	19 1/2	64 1/2	66 1/4	1 1/2 (T&F)	3/4	3/4	540	–
D-80T-250-3N(A)	80	250,000	298	606	242	173	71 7/8	28 1/4	6	56	4 3/4	19 1/2	64 1/2	66 1/4	1 1/2 (T&F)	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 (T&F)	3/4	3/4	610	–
D-100T-250-3N(A)	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 (T&F)	3/4	1	610	690
D-75T-300-3N(A)	75	300,000	344	727	291	208	74 3/8	28 1/4	7	54 1/8	10 1/2	29	65 3/4	–	1 1/2 (F)	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 1/8	10 1/2	29	64 3/4	–	1 1/2 (F)	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 1/8	10 1/2	29	64 3/4	–	1 1/2 (F)	1(N)	1	665	720
D-80T-425-3N(A)	80	425,000	468	1030	412	294	82	28 1/4	10	64 1/2	10 1/2	29	75 1/2	–	1 1/2 (F)	1(N) 3/4 (LP)	1	750	800
D-80T-505-3N(A)	80	505,000	527	1178	471	337	82 3/4	28 1/4	10	64 1/2	10 1/2	29	75 1/2	–	1 1/2 (F)	1(N) 3/4 (LP)	1	750	800

Electronic Ignition Models

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

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*			A Top Vent Height	B Jacket Dia.	C Vent Dia.	D Front Hot Water Conn.	E Floor to Gas Conn.	F Front Cold Water Conn.	H Floor to Top of Heater	J 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	194	139	76 3/4	28 1/4	6	60 3/8	4 5/8	20 3/4	67 7/8	70	1 1/2 (T&F)	3/4	3/4	667	–
D-100S-250-3N(A)	100	250,000	312	606	242	173	76 3/4	28 1/4	6	60 3/8	4 5/8	20 3/4	67 7/8	70	1 1/2 (T&F)	3/4	1	667	702
D-100L-199-3N	100	199,999	264	485	194	139	75	30 1/4	6	56 1/2	4 1/2	23 1/2	64 3/4	67	1 1/2 (T&F)	3/4	3/4	725	–
D-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	64 3/4	67	1 1/2 (T&F)	3/4	1	725	765
D-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	64 3/4	67	1 1/2 (T&F)	3/4	1	725	765
D-100L-300-3N(A)	100	300,000	361	727	291	208	75 3/8	30 1/4	7	56 1/2	4 1/2	23 1/2	64 3/4	67	1 1/2 (T&F)	3/4	1	725	765
D-80L-399-3N(A)	80	399,999	444	970	388	277	71 1/2	30 1/4	8	51 1/2	10 1/2	23 1/2	60 1/4	–	1 1/2 (F)	1(N) 3/4 (LP)	1	800	835
D-80L-450-3N(A)	80	450,000	492	1091	436	312	69	30 1/4	10	51 1/2	10 1/2	23 1/2	60 1/4	–	1 1/2 (F)	1(N) 3/4 (LP)	1	800	835
D-80L-505-3N(A)	80	505,000	545	1224	489	350	69	30 1/4	10	51 1/2	10 1/2	23 1/2	60 1/4	–	1 1/2 (F)	1(N) 3/4 (LP)	1	800	835

(A) = ASME Code Available
(F) = Front 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 80% Thermal Efficiency .
Low NOx models are not available for inputs over 399,999
For Low NOx compliance 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

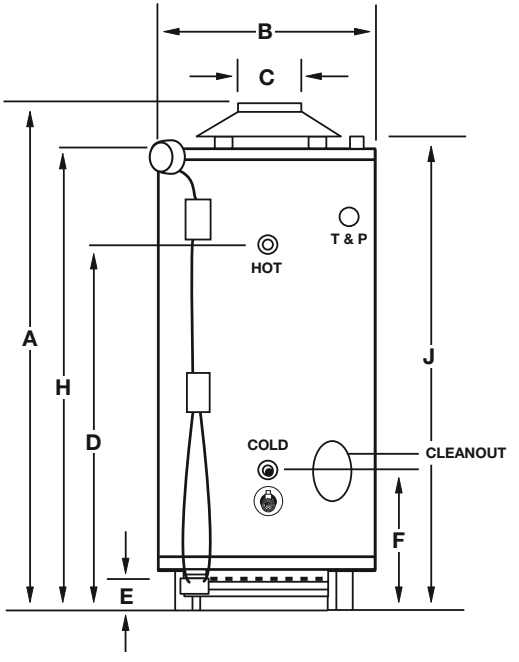
130/131

- No electricity required
- 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
- 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

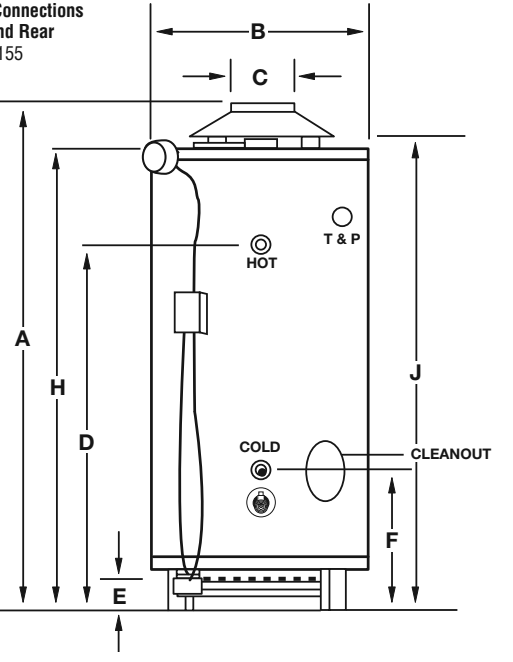


Photo of
DM-75T-125-3N

Water Connections
Top and Front
DM80T180, 199, 250
DM100T199, 250
DM75T125, 160
Top Front
DM100L199, 250, 270
DM100S199, 250



Water Connections
Front and Rear
DM38T155



Millivolt Models

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

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*			A Top Vent Height	B Jacket Dia.	C Vent Dia.	D R/F Hot Water Conn.	E Floor to Gas Conn.	F R/F Cold Water Conn.	H Floor to Top of Heater	J 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)	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	264	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)	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	1 1/2 (T&F)	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	1 1/2 (T&F)	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	1 1/2 (T&F)	3/4	1	725	765
DM-100S-199-3N	100	199,999	264	485	194	139	76 3/4	30 1/4	6	60 1/2	4 1/2	20 3/4	72 7/8	75	1 1/2 (T&F)	3/4	3/4	667	–
DM-100S-250-3N(A)	100	250,000	312	606	242	173	76 3/4	30 1/4	6	60 1/2	4 1/2	20 3/4	72 7/8	75	1 1/2 (T&F)	3/4	1	667	702

(A) = ASME Code Available
(F) = Front Water Connection
(T) = Top Water Connection
** = Available in Natural Gas Only
For Propane Gas models change suffix "N" to "X".

(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

For LowNOx compliance, 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%.

Commercial Gas Energy Saver Electronic Ignition Fan Induced Water Heaters

134/135

THE BRADFORD WHITE ICON HD COMMERCIAL CONTROL SYSTEM

ON GUARD RMT

- ICON HD™—Intelligent 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
- T&P relief valve installed
- Low restriction brass drain valve

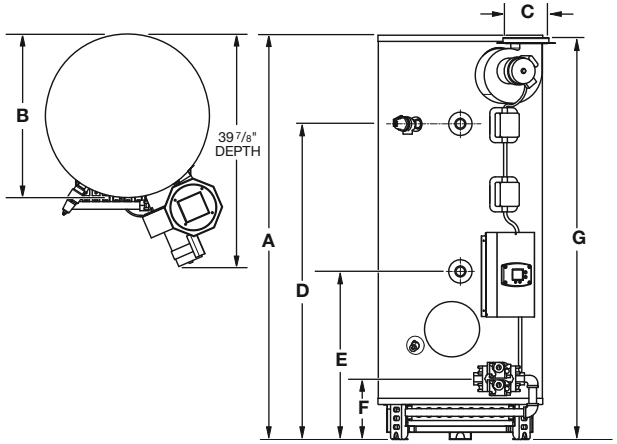




Photo of D-65T-625-3NA

Induced Draft Energy Saver Models

These models meet or exceed both Thermal Efficiency and Standby Loss Requirements of ASHRAE 90.1b (Current Edition).
80% Thermal 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 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	69 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 Power Direct Vent with Independent Vent System Water Heaters

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THE BRADFORD WHITE ICON HD COMMERCIAL CONTROL SYSTEM

ON GUARD RMT

- ICON HD™—Intelligent 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 models (73.2 kW)
- Low NOx construction available
- T&P relief valve installed
- Low restriction brass drain valve

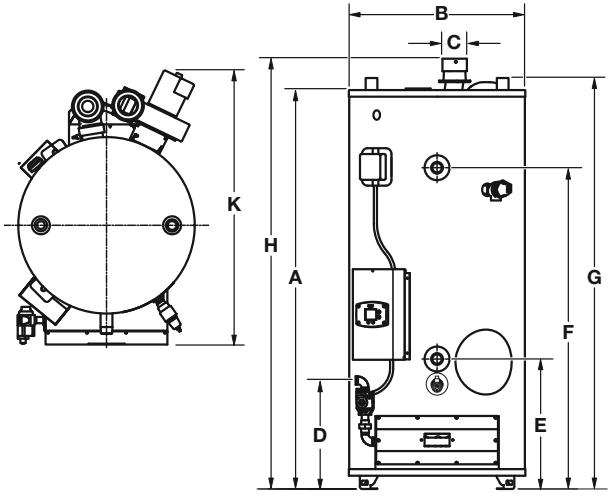




Photo of PDV-80S-150-3N

Power Direct Vent Energy Saver Models

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

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* 40°	100°	140°	A Floor to Heater Top	B Jacket Dia.	C Vent Size	D Floor to Gas Conn.	E Front Cold Water Conn.	F Front Hot Water Conn.	G Floor to Top Water Conn.	H Floor to Vent Conn.	K Depth	Water Conn.	Gas Conn. Dia.	Relief Valve Open	Approx. Shipping Weight (lbs) 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)	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)	3/4	3/4	645	–
PDV-80S-250-3N(A)	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)	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)	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)	3/4	3/4	735	–
PDV-100S-250-3N(A)	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)	3/4	1	735	815

(A) = ASME Code Available

(T) = Top (F) = Front

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 LowNOx compliance, place an "E" following the BTU Input identifier of the model number. Example: PDV-100S-200E-3N

Commercial Gas Energy Saver Power Direct Vent with Co-axial Vent System Water Heaters

138/139

THE BRADFORD WHITE ICON HD COMMERCIAL CONTROL SYSTEM

ON GUARD RMT

- ICON HD™—Intelligent 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

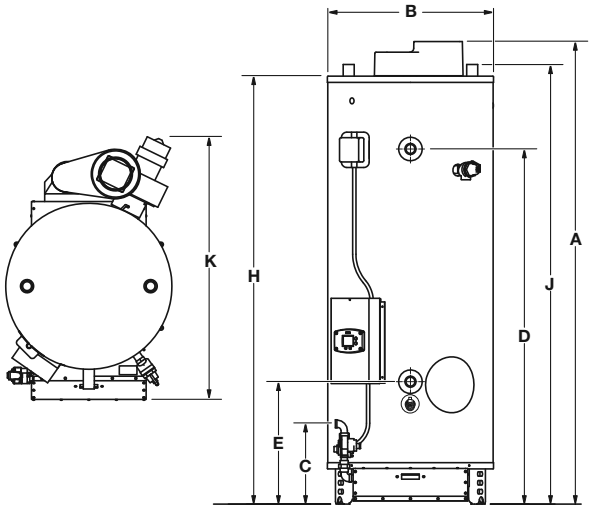




Photo of
PDV-80T-300-3NA

Power Direct Vent Energy Saver Models

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

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE GAS MODELS							A	B	C	D	E	H	J	K					
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)	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)	3/4	1	735	815

(A) = ASME Code Available
(F) = Front 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, place an "E" following the BTU Input identifier of the model number.

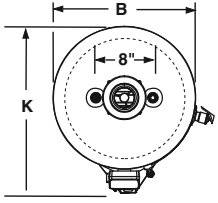
(E) Low NO_X Burners		1st Hr. Del. Rating	GPH Rec. 40°	100°	140°
PDV-80T-300E-3N(A)	280,000 BTU/Hr.	328	679	272	194
PDV-100T-360E-3N(A)	335,000 BTU/Hr.	395	812	325	232

****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 Light Duty Ultra Low NOx Water Heaters

140/141

- Bradford White ICON System™
- Ultra low NOx burner with primary and secondary air distribution devices
- Defender® combustion chamber
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- 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
- Factory installed heat traps
- Protective magnesium anode rod
- T&P relief valve included
- Low restriction brass drain valve
- Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit)



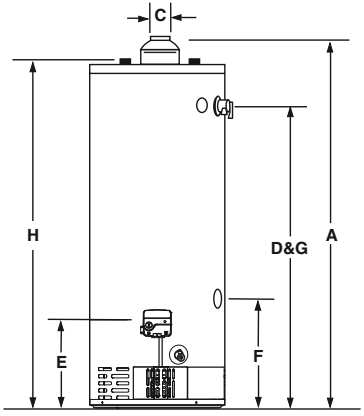




Photo of
U-50T-55FR-3N

Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
79% 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	91	53	59 1/4	22	4	50	11 5/8	13 1/2	50	57	26	174
U-65T-55FR-3N	65	55,000	116	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”.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

Commercial Gas Energy Saver Light Duty High Input Ultra Low NOx Water Heaters

142/143

BRADFORD WHITE ICON System

BRADFORD WHITE ECO-MAGNUM SERIES

- Bradford White ICON System™
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet® Total Performance System
- Pedestal base
- Water Connections NPT factory installed true dielectric fittings (75T has 1" NPT and 100T has 1¼" NPT)
- 3/4" NPT side connections
- Non-CFC Foam Insulation
- "Snap Lock" draft diverter
- Protective magnesium anode rod
- Hand Hole Cleanout (optional on 75T models)

- T&P relief valve included
- Low restriction brass drain valve
- Complies with the latest ultra-low NOx requirement (14 ng/J NOx limit)

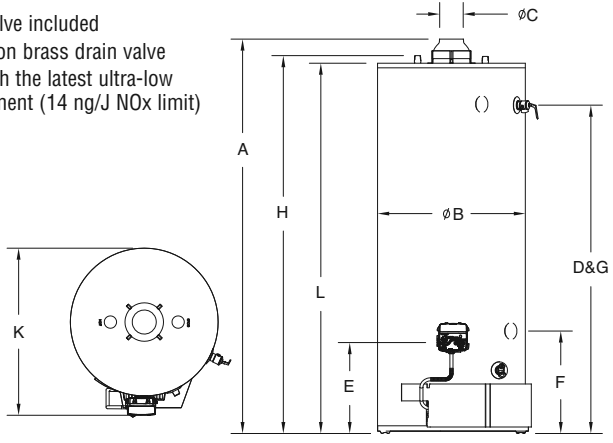




Photo of U-75T-80R-3N

Ultra Low NOx High Input Energy Saver Models

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

DIMENSIONS IN INCHES

NATURAL GAS MODELS					A	B	C	D	E	F	G	H	K	L	
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**	**Floor to Heater Top**	**Approx. Shipping Weight (lbs)**
U-75T-80R-3N	75	76,000	127	74	64 1/8	24	4	53 3/8	14 3/4	16 1/2	53 3/8	61 3/8	25 7/8	60 1/8	269
U-100T-88R-3N	100	85,000	152	82	69 13/16	28 1/4	4	60 5/8	16 3/4	19 1/8	51 13/16	67 7/8	31 1/2	66 5/8	401

Available in Natural Gas only.
*Based on manufacturers rated recovery efficiency.
For 5 year models, change suffix from “3” to “5”.
Complies with the latest ultra-low NOx requirement (14 ng/J NOx limit).
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

Commercial Gas Energy Saver High Input Ultra Low NOx Water Heaters

144/145

- Bradford White ICON System™
- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)

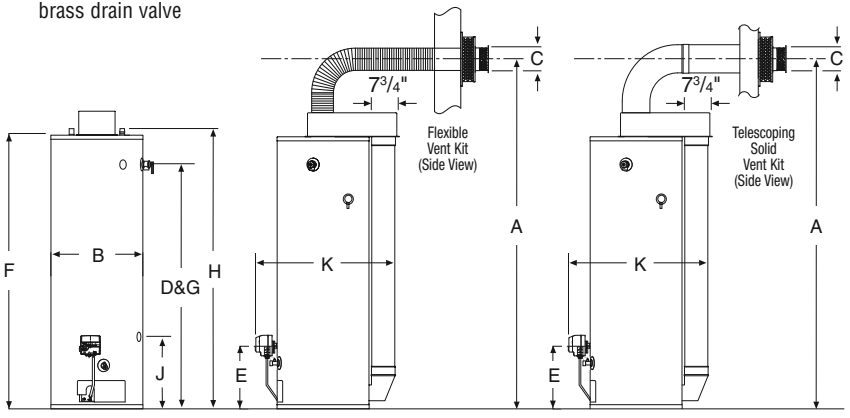




Photo of UDH-50T-45FR-3N

Direct 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 Center Line of Vent	Jacket Dia.	Vent Dia.	Floor to T&P Conn.	Floor to Gas Conn.	Floor to Top of Heater	Space Heating Outlet	Floor to Water Conn.	Space Heating Inlet	Depth	Approx. Shipping Weight (lbs)
UDH-50T-45FR-3N	48	45,000	88	43	75 1/4	20	4 I.D.,6 O.D.	52 1/4	15	58 3/4	52 1/4	59 3/4	15 3/4	31 1/4	190
UDH-65T-45FR-3N	65	45,000	101	43	78 1/4	22	4 I.D.,6 O.D.	56	15	62	56	63	15 3/4	34 1/4	226
UDH-75T-50FR-3N	75	50,000	110	48	75 1/2	24	4 I.D.,6 O.D.	52	15	59	52	60	16 1/2	35 1/4	261

Available in Natural Gas only.
*Based on manufacturers rated recovery efficiency.
For 5 year models, change suffix from "3" to "5".
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.
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.

Optional solid vent kit :

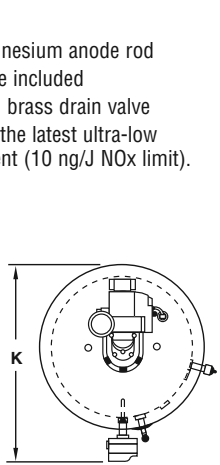
Kit "F"	**Telescopes from 4¾" to 5 11/16"**	**Part No. 239-42516-00**
Kit "G"	**Telescopes from 6½" to 9 3/16"**	**Part No. 239-42517-00**
Kit "H"	**Telescopes from 13¾" to 23 11/16"**	**Part No. 239-42514-00**
Kit "I"	**Telescopes from 49 13/16" to 95 13/16"**	**Part No. 239-42512-00**

Horizontal vent termination only.

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

146/147

- Bradford White ICON System™
- Defender® combustion chamber
- Ultra low NOx burner with primary and secondary air distribution devices
- Vitraglas® Lining
- Factory Installed Hydrojet®2™ Total Performance System
- 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
- Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).



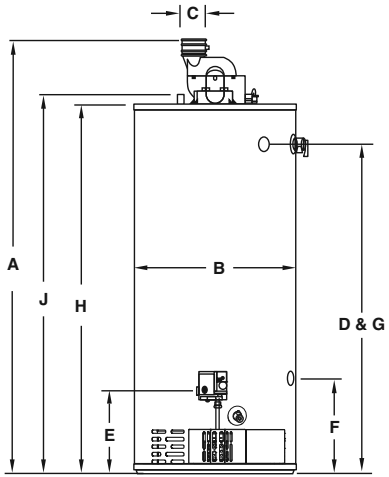




Photo of
U-TW4-50S-60FR-3N

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	101	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	116	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.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

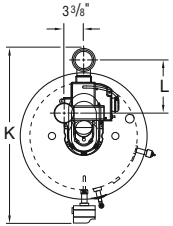
U-TW4-50 U-TW4-65		3" Vent Pipe	4" Vent Pipe
Max. Equivalent Length		†60 ft.	†180 ft.
Min. Equivalent Length		7 ft.	15 ft.
Number	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows†	3	45 ft.	165 ft.

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

Commercial Gas Energy Saver Light Duty Ultra Low NOx Power Direct Vent Heaters

148/149

- Bradford White ICON System™
- Ultra low NOx burner with primary and secondary air distribution devices
- Closed combustion venting system
- Flammable vapor sensor
- Powerful blower motor
- Electronic ignition
- 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
- Complies with latest ultra-low NOx requirement (10 ng/J NOx limit)



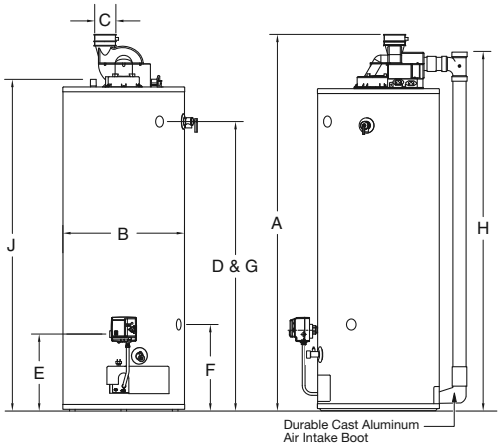




Photo of
UPDX-65S-55FR-3N

Power Direct Vent Energy Saver Models

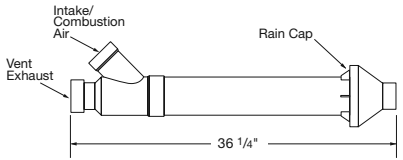
Meet or exceed ASHRAE 90.1b (current standard) CEC Listed
79% Recovery Efficiency

DIMENSIONS IN INCHES

NATURAL GAS MODELS					A	B	C	D	E	F	G	H	J	K	L	
Model Number	Gal. Cap.	Input BTU/Hr.	1st Hour** Delivery Rating	GPH Recovery 100°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	Distance From Intake to Exhaust	Approx. Shipping Weight (lbs)
U-PDX-50S-50FR-3N	48	50,000	92	48	68	22	3	52 1/4	13 5/8	15 3/4	52 1/4	67	59 3/4	32	9 1/4	303
U-PDX-65S-55FR-3N	65	55,000	106	53	71 1/4	24	3	55 5/8	13 5/8	15 3/4	55 5/8	69 1/2	63	34 1/8	9 1/4	330
U-PDX-75S-55FR-3N	75	55,000	122	53	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 manufacturers rated recovery efficiency.
Available in Natural Gas only.
For 5 year models, change suffix from "3" to "5".
110 V.A.C. Required for Power Venting / 110 V.A.C., 60HZ, 3.1 Amperes.
Complies with the latest ultra-low NOx requirement (10 ng/J NOx limit).
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

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



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

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

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

Commercial Gas Energy Saver Atmospheric Vent Ultra Low NOx Heaters

150/151

ICON HD COMMERCIAL CONTROL SYSTEM — ON GUARD RMT

- ICON HD™ – Intelligent proven design combines temperature control, diagnostic codes, and system functions and status into a single control with a digital LCD display
- Ultra low NOx burner with primary and secondary air distribution devices
- 84% thermal efficiency
- Premix power burner
- Direct Spark Ignition
- Integrated Exhaust System
- Sanitizing capability
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- Non-CFC foam insulation
- Horizontally Configured Magnesium Anode Rods – Can easily be serviced from the side of the water heater (65 gallon has 3 anodes; 100 gallon has 5 anodes)
- T&P relief valve installed
- Low restriction brass drain valve
- Complies with latest ultra-low NOx requirement (14 ng/J NOx limit)

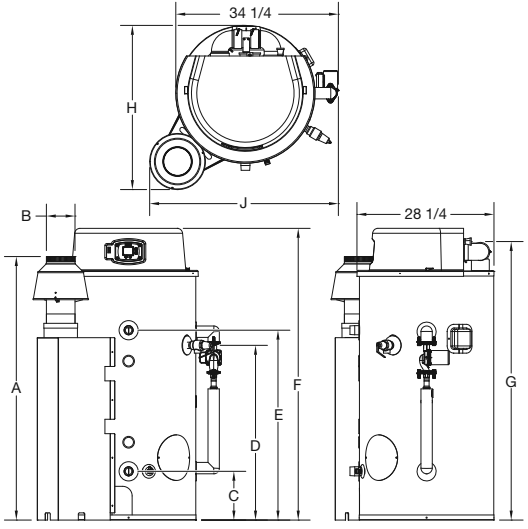




Photo of
U-65L-155E-3N

Ultra Low NOx Energy Saver Models

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

DIMENSIONS IN INCHES

NATURAL GAS MODELS					**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**				
Model Number	**Gal. Cap.**	**Input BTU/Hr.**	**1st Hour** Delivery Rating**	**GPH Recovery 100°F Rise***	**Floor to Top of Vent**	**Vent Size**	**Floor to Cold Water Inlet**	**Floor to T&P Conn.**	**Floor to Hot Water Outlet**	**Floor to Top of Heater**	**Floor to Gas Conn.**	**Depth**	**Width**	**Water Conn. Dia.**	**Gas Conn. Dia.**	**Relief Valve Open**	**Approx. Shipping Weight (lbs)**
U-65L-155E-3N	65	155,000	203	158	56	6	10 1/2	37	39 1/2	61	58	34 1/4	39 1/2	1 1/2	3/4	3/4	605
U-65L-199E-3N	65	199,999	249	204	56	6	10 1/2	37	39 1/2	61	58	34 1/4	39 1/2	1 1/2	3/4	3/4	605
U-65L-270E-3N	65	270,000	320	275	56	6	10 1/2	37	39 1/2	61	58	34 1/4	39 1/2	1 1/2	3/4	3/4	605
U-100L-199E-3N	100	199,999	274	204	56	6	10 1/2	53 1/4	55 3/4	77 1/4	74 1/2	34 1/4	39 1/2	1 1/2	3/4	3/4	700
U-100L-270E-3N	100	270,000	345	275	56	6	10 1/2	53 1/4	55 3/4	77 1/4	74 1/2	34 1/4	39 1/2	1 1/2	3/4	1	700
U-100L-300E-3N	100	300,000	375	305	61	7	10 1/2	53 1/4	55 3/4	77 1/4	74 1/2	37 1/4	42 1/2	1 1/2	3/4	1	700
U-100L-399E-3N	100	399,999	477	407	62 3/4	8	10 1/2	53 1/4	55 3/4	77 1/4	74 1/2	38 1/4	43 1/2	1 1/2	1	1	700

*Based on manufacturers rated recovery efficiency.
Available in Natural Gas only.
For 5 year models, change suffix from “3” to “5”.
Amp Draw range = 1.0 to 2.6 amps.
Gas Pressure: 14.0" w.c. maximum static, 4.5" w.c. minimum running (recommend 7.0" w.c. minimum running)
Complies with the latest ultra-low NOx requirement (14 ng/J NOx limit).
**First Hour Delivery Rating is based on the March 2010 AHRI Directory.

Commercial Electric Energy Saver Water Heaters

Specify voltage and wattage when ordering.

All models are ETL 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 wattage for 6 and 12 gallon tall utility models is 3000W. Maximum wattage for 10, 12 and 15 gallon utility models is 6000W. Maximum wattage 6 gallon wall hung is 3000W. Maximum wattage for 12, 20 and 30 gallon wall hung models is 6000W. All models have a maximum wattage of 3000 watts at 120 Volt. Incoloy elements available for most inputs.

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
	3*	Three Phase Non-simultaneous

EX: LD-65R-3-**3**C090,
Three Phase Non-simultaneous, 240V, 4500 W/4500 W.

Designator	A	B	C	D	F	G
Voltage	120	208	240	277**	415	480

EX: LD-65R-3-3**C**090

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

EX: LD-65R-3-3C**090**
*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

EX: LD-20U-3-**1**A015
Single Phase Non-simultaneous, 120V, 1500 W.

Designator	A	B	C	D	G
Voltage	120	208	240	277	480

EX: LD-20U-3-1**A**015

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-3-1A**015**

Single and Unbalanced Three 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 Water Heaters

154/155

- 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)
- NSF construction available
- Low restriction brass drain valve

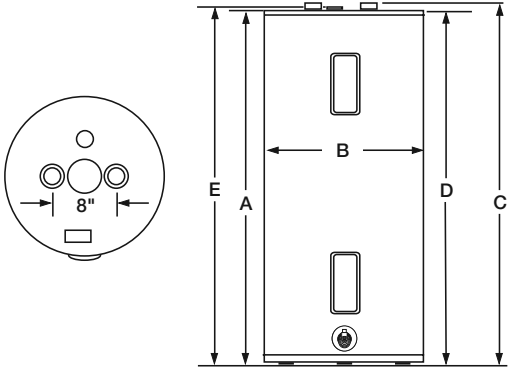




Photo of
LD-50S3-3

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 7/8	18	48 1/8	47 3/16	48 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 1/4	59 1/4	60 1/2	156
LD-80R3-3	80	59 1/4	24	60 1/4	59 1/4	60 1/2	183
LD-120R3-3	119	62 3/4	28	64 1/4	62 1/4	64	305

Specify voltage, phase and input when ordering.

NSF Compliance Kit Part No. 265-44542-04.

NOTE: Refer to pages 152/153 for technical information and pages 166/167 for GPH recovery information.

Wattage Limitations for Simultaneous and Non-Simultaneous Operation

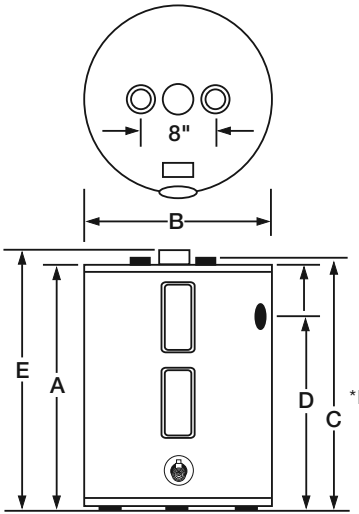
Wattage	120V	208V	240V	277V	480V
1500 / 1500	yes	yes	yes	yes	yes
2000 / 2000	no	yes	yes	yes	yes
2500 / 2500	no	yes	yes	yes	yes
3000 / 3000	no	yes	yes	yes	yes
3500 / 3500	no	yes	yes	no	no
4000 / 4000	no	yes	yes	yes	yes
4500 / 4500	no	yes	yes	yes	yes
5000 / 5000	no	yes	yes	yes	yes
5500 / 5500	no	no	yes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

**Incoloy elements only.

Commercial Electric Energy Saver Light Duty Lowboy Water Heaters

156/157

- 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
- NSF construction available
- Low restriction brass drain valve
- T&P relief valve included
- *Can be offered with optional side/top T&P relief valve



*D = Optional Dimension



Photo 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 3/4	18	26	19 1/4 / 24 7/8	29 1/8	58
LD-30L3-3	30	29 3/4	20	31	24 / 29 3/8	31 1/4	86
LD-40L3-3	40	31 1/4	22	32 7/8	24 1/8/ 31 3/4	32 1/2	115
LD-50L3-3	47	31 3/4	24	33 1/8	24 1/8/ 31 3/4	33	140

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.

NSF Compliance Kit Part No. 265-44542-04.

NOTE: Refer to pages 152/153 for technical information and pages 166/167 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

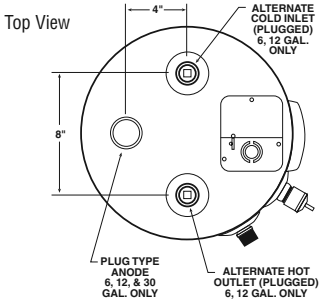
Commercial Electric Energy Saver Light Duty Utility Water Heaters

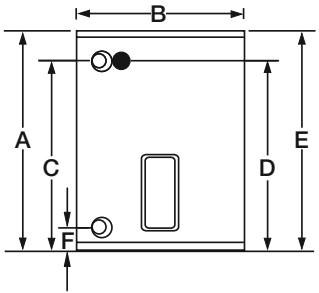
158/159

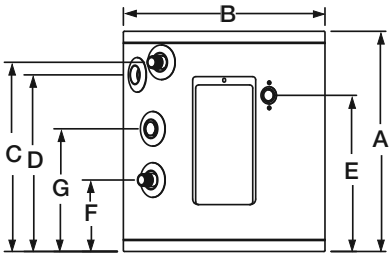
- Side connections for cold water inlet and hot water outlet allowing installation in tight places
- 6 and 12 gallon models come equipped with alternate water connecton tappings on top
- Vitraglas® lining
- Water Connections – 3/4" NPT factory installed true dielectric fittings
- 1" Non-CFC foam insulation (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
- NSF construction available
- T&P relief valve installed



Photo of LD-20U3-1







10 & 15 Gallon Models

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	16 1/2	14	10 1/8	10 1/8	17 3/4	3 1/8	16 1/2	33
LD-10U3-1	10	17 1/2	16	15	14	12	5 11/16	9 11/16	48
LD-12UT3-1†	12	27 3/4	14	21 1/8	21 1/8	29	3	27 3/4	48
LD-15U3-1	15	20 1/4	18	17 3/4	16 3/4	12 11/16	6 1/8	10 1/8	55
LD-20U3-1	19	24 3/4	18	18 1/4	18 1/4	26	3	10 1/4	59
LD-30U3-1	30	30	22	23 1/2	23 1/2	31	4 1/2	30	82

Specify voltage, phase and input when ordering.
†Maximum wattage at any voltage is 3000 W.
NSF Compliance Kit Part No. 265-44542-04.
NOTE: Refer to pages 152/153 for technical information and pages 166/167 for GPH recovery information.

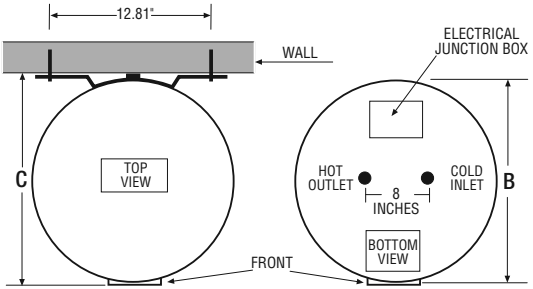
Wattage Limitations

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

160/161

- 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
- 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
- NSF construction available
- T&P relief valve included



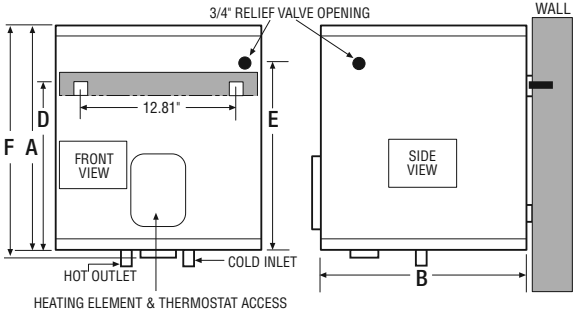




Photo of
LD-WH6U3-1

Wall Hung Energy Saver Models

DIMENSIONS IN INCHES

ELECTRIC		A	B	C	D	E	F	
Model Number	**Gallon Capacity**	**Height to Heater Top**	**Jacket Diameter**	**Wall to Front**	**Height to Bracket**	**Height to T&P Conn.**	**Top of Heater to Electrical Access**	**Approx. Shipping Weight (lbs)**
LD-WH6U3-1†	6	15 3/4	14	14 5/8	11 3/4	11 7/8	17	33
LD-WH12U3-1	12	16 3/8	18	18 5/8	12 3/4	12 1/2	19 7/8	48
LD-WH20L3-1	19	24 3/8	18	18 5/8	18 1/4	21	19 7/8	59
LD-WH30L3-1	30	29 1/4	22	22 5/8	23	25 3/4	23 7/8	82

Specify voltage, phase and input when ordering.
†Maximum wattage at any voltage is 3000 W.
NSF Compliance Kit Part No. 265-44542-05.
NOTE: Refer to pages 152/153 for technical information and pages 166/167 for GPH recovery information.

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

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

LDCE Voltage and Wattage Conversion Kits for Utiility, 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
*265-46409-02, -03, -04, -46, -47 and -48 contain only one element.
** Incoloy element only.
These are non-simultaneous kits only.

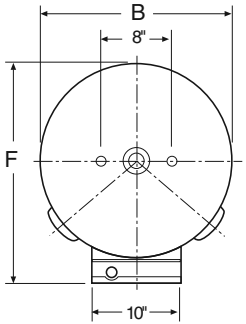
Commercial Electric Energy Saver TriFlex™ 164/165 Medium Duty 3 Element Water Heaters

- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 1¼" 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.



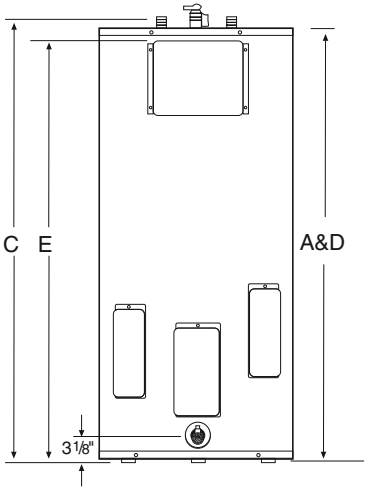




Photo of E32-80R-3

TriFlex™ 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	46 1/2	22	47 1/2	47 5/8	44 7/8	24 5/8	137
E32-80R-3	80	59	24	60	60 1/8	57 3/8	26 3/4	190
E32-120R-3	119	63	28 1/4	64	64 1/8	61 3/8	30 7/8	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 152/153 for technical information and pages 166/167 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

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

168/169

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)

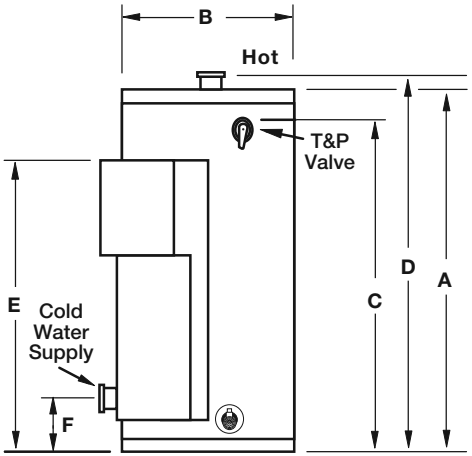




Photo of M-II-50-36-3SF

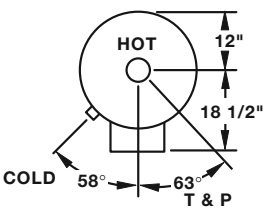
Energy Saver Models

DIMENSIONS IN INCHES

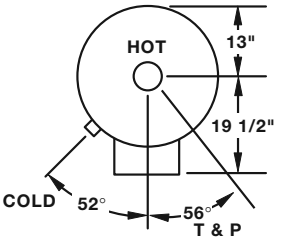
ELECTRIC MODELS		A	B	C	D	E	F		
Model Number	Gal. Cap.	Floor to Heater Top	Jacket Dia.	Floor to T&P Conn.	Floor to Hot Water Outlet	Floor to Top of Control Box	Floor to Cold Water Inlet	Approx. Shipping Weight (lbs) Std.	ASME
M-II-50-kW-3SF	50	47 3/4	24	41	49 1/4	46 1/2	6 3/4	270	302
M-II-80-kW-3SF	80	60 1/4	26	52 1/2	61 3/4	46 1/2	6 3/4	335	378
M-II-120-kW-3SF	119	64 1/2	30 1/4	55	66	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 152/153 for technical information and pages 166/167 for GPH recovery information.

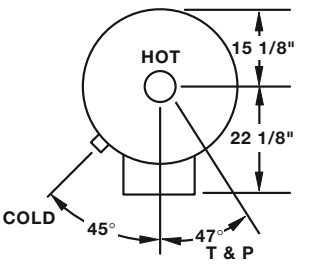
M-II-50



M-II-80



M-II-120



Commercial Electric Energy Saver ASME Water Heaters

170/171

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
- Non-CFC foam insulation
  2" for 6-40 gallon
  3" for 50-119 gallon
- 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

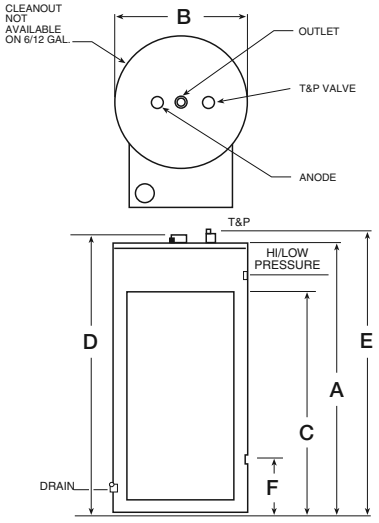




Photo of 30A-36-3

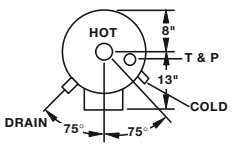
ASME Energy Saver Models

DIMENSIONS IN INCHES

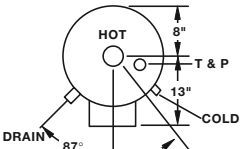
ELECTRIC			A	B	C	D	E	F		
Model Number	Gal. Cap.	Max. kW Input	Floor to Heater Top	Jacket Dia.	Floor to Top of Control Box	Floor to HW Outlet	Floor to T&P Valve	Floor to CW Inlet	Water Conn.	Approx. Shipping Weight (lbs)
6A-kW-3	6	3	17 1/4	16	17	18 1/4	18 1/16	6 1/4	3/4	83
12A-kW-3	12	9	28	16	28	29	28 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 166/167 for GPH recovery information.

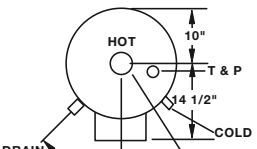
6A



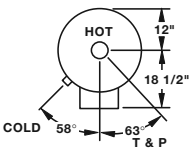
12A



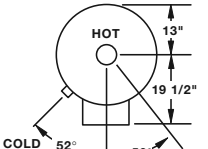
20A, 30A, 40A



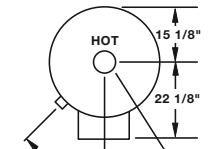
50A



80A



120A



Commercial Electric Energy Saver Booster Water Heaters

172/173

Standard Features:

- 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
- 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



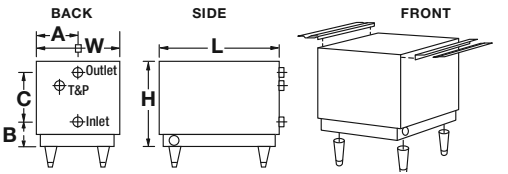
Photo of
L-I-6-6-5CF

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 40°F	70°F	Length	Width	Height				Water Conn.	Approx. Shipping Weight (lbs)
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	6	2	8	3/4	142
L-I-6-30-5CF	6	102,390	30	310	177	24	18	12	6	2	8	3/4	142
L-I-6-36-5CF	6	122,868	36	372	213	24	18	12	6	2	8	3/4	142
L-I-6-45-5CF	6	153,585	45	465	266	24	18	12	6	2	8	3/4	142
L-I-6-54-5CF	6	184,302	54	558	316	24	18	12	6	2	8	3/4	142
L-I-6-57-5CF	6	194,484	57	573	326	24	18	12	6	2	8	3/4	142

Electrical Connections: 6—18kW—Either side or bottom 24—57kW-Left side or bottom.
NOTE: Refer to pages 166/167 for GPH recovery information.



Commercial Energy Saver Electric Brute Vertical Round Water Heaters

174/175

Standard Features:

- 125 PSI ASME code enamel 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

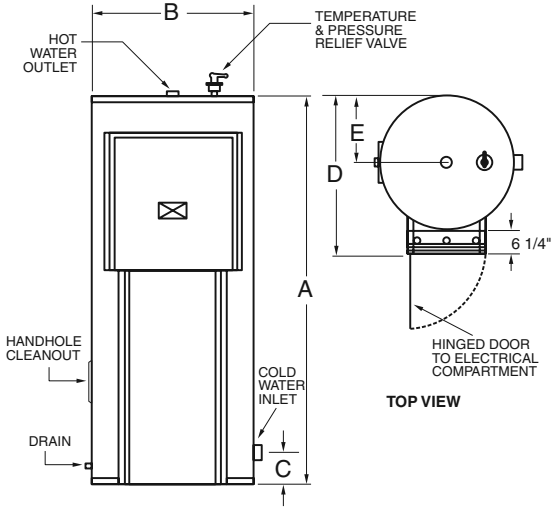




Photo of VR-200-36

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	162	162	72	65 1/2	32	7 3/4	38 3/4	16	1 1/2	650
VR-200-kW	200	162	162	90	78	32	7 3/4	38 3/4	17	1 1/2	750
VR-250-kW	250	162	162	90	92	34	19 1/2	40 3/4	17	1 1/2	1165
VR-300-kW	300	162	162	90	80	40	21	46 3/4	20	2	1350
VR-400-kW	400	360	162	90	80	46	22 1/2	52 3/4	23	2	1590
VR-500-kW	500	396	162	90	92	46	22 1/2	52 3/4	23	2	1700
VR-600-kW	600	396	162	90	92	54	24 1/2	60 3/4	27	2 1/2	2010
VR-800-kW	800	396	162	90	104	54	24 1/2	60 3/4	27	2 1/2	2450
VR-1000-kW	1000	396	162	90	128	54	24 1/2	60 3/4	27	2 1/2	3160

On 250 gallon model and larger dimensions: include channel iron legs (not shown).
NOTE: Refer to pages 166/167 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

176/177

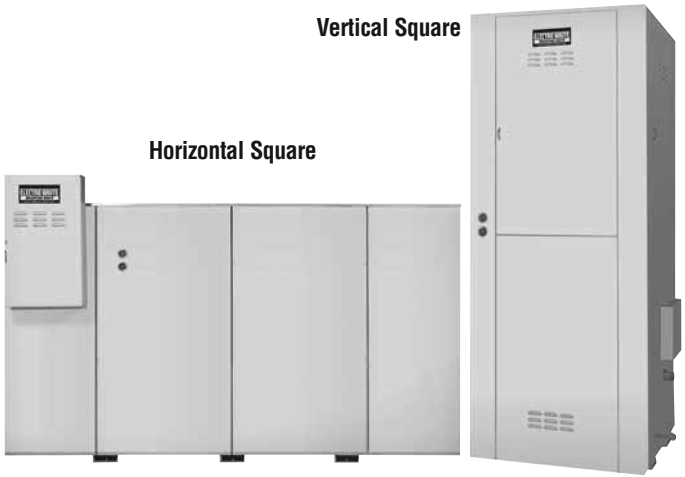
- Meets ASHRAE 90.1b (Current Edition) energy efficiency standards
- Immersion thermostats
- Incoloy elements
- Internal fusing
- Enamel lined tank
- Built-in safety drain pan
- Magnesium anode rods
- Galvanized jacket
- Key hinged door with lock
- Temperature and pressure relief valve
- 180°F temperature operation
- Hand hole cleanout
- Channel iron skid base
- 125 PSI ASME construction
- UL listed
- Three year limited warranty

Optional Features

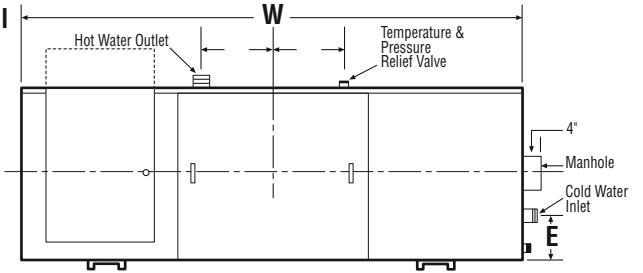
- Alarm bell
- Time clock (separate mounting)
- Electronic Sequencer
- Combination temperature and pressure gauge
- Low or high pressure switch
- Pilot lights
- Manual limiting switches
- Safety door interlock
- Low water cut-off
- Shunt trip disconnect
- Man hole cleanout (250 gallons and larger)
- 150 PSI ASME construction

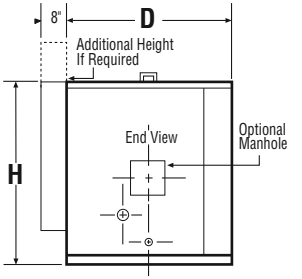
Vertical Square

Horizontal Square



Horizontal Models

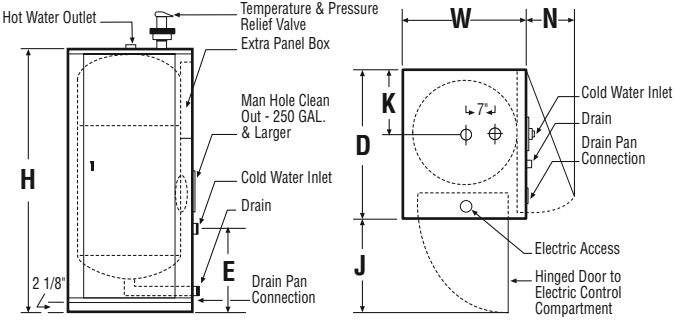




1,000-2,500 GALLONS

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

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-200-(kW)	200	180	78	34 1/4	37	12	2	2	1370
H-250-(kW)	250	225	90 1/4	36 1/4	39	13	2	2	1450
H-300-(kW)	300	270	78 1/4	42 1/4	45	14 3/4	2	2	1530
H-400-(kW)	400	360	78 1/4	48 1/4	52	16	2	2	1750
H-500-(kW)	500	450	90 3 1/4	48 1/4	52	16	2	2	1860
H-600-(kW)	600	540	90 3 1/4	54 1/4	58	13 1/2	2 1/2	2	2340
H-800-(kW)	750	720	102 1/4	54 1/4	58	13 1/2	2 1/2	2	2850
H-1000-(kW)	1000	900	138 1/4	54 1/4	57 1/2	12 3/4	2 1/2	2	3040
H-1250-(kW)	1250	900	130 1/4	60 1/4	63 1/2	13	3	3	3750
H-1500-(kW)	1500	900	126 1/4	66 1/4	72 1/2	12 1/2	3	3	4340
H-2000-(kW)	2000	900	138 1/4	72 1/4	75 1/2	13 1/2	3	3	4580
H-2500-(kW)	2500	900	144 1/4	78 1/4	81 1/2	13 3/4	3	3	6060

Vertical Square Electric Models

DIMENSIONS IN INCHES

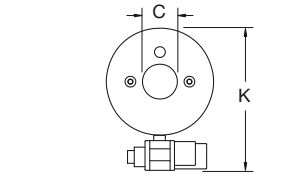
ELECTRIC			W	D	H	E	J	K	N		
Model Number	Gal. Cap.	Max. kW Load								Water Connections	Approx. Shipping Weight (lbs)
V-1250-(kW)	1250	900	64 1/2	64 1/2	132 1/2	23 1/4	48	32 3/16	48	3	3560
V-1500-(kW)	1500	900	70 1/2	70 1/2	128 1/2	25 1/4	46	35 3/16	46	3	4120
V-2000-(kW)	2000	900	76 1/2	76 1/2	140 1/2	27 1/4	60	38 3/16	60	3	4350
V-2500-(kW)	2500	900	82 1/2	82 1/2	146 1/2	29	66	41 3/16	66	3	5750

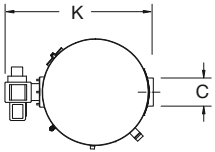
NOTE: Refer to pages 166/167 for GPH recovery information.

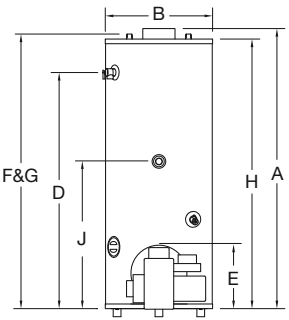
Commercial Energy Saver Oil-Powered Water Heaters

180/181

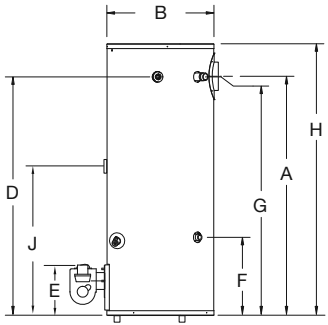
- Vitraglas® lining
- Hydrojet® Total Performance System (CF-70 model only)
- Factory installed dielectric waterway fittings
- Non-CFC foam insulation
- Ceramic Fiber Combustion Chamber
- Protective magnesium anode rod (CF-70 has 2 anode rods)
- Carlin burner
- T&P relief valve installed
- Low restriction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







Center Flue



Rear Flue



Photo 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	56 15/32	11 13/16	64 3/8	64 3/8	63 7/16	32 31/32	34	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	37 7/8	410

NOTE: Does not include burner and controls.
Water connections are 1" NPT for CF-70 and 1¼" 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

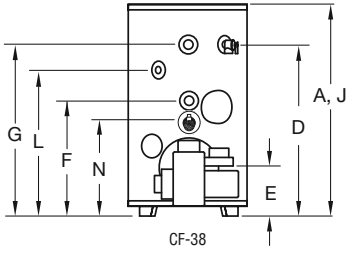
Model Number	Part Numbers	Description*
CF-70-3	228-49641-03	Carlin burner with single Aquastat @ 0.85 GPH
RF-70-3	228-49641-07**	Carlin burner with single Aquastat @ 1.50 GPH
RF-70-3	228-49641-18	Carlin burner with single Aquastat @ 1.75 GPH

*All burners are 1-stage, 120V.
**Standard burner and firing rate for model listed.

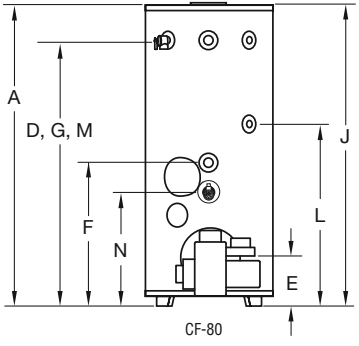
Commercial Energy Saver Multi-Flue Oil-Powered Water Heaters

182/183

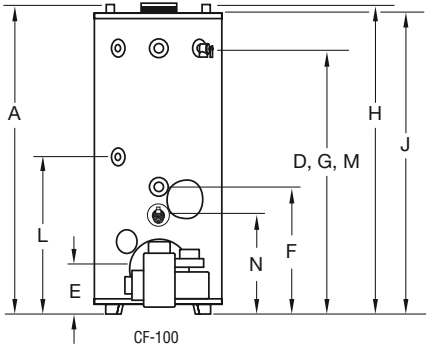
- Fiberglass insulation
- Vitraglas® lining
- Factory installed Hydrojet® Sediment Reduction System
- Magnesium anode rods
- Hand hole cleanout
- Immersion Aquastat
- ASME construction available (80 & 100 models only)
- T&P relief valve installed
- Low restriction brass drain valve



CF-38



CF-80



CF-100


Photo 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 Cold Water Conn.**	**Front 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	35 13/16	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	43 5/8	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	39 3/8	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 are 23" on center.

The Top Hot Water Connection is (76½"), 1" higher than the Cold Water Connection (75½").

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

CF - Center Flue
RF - Rear Flue
T - Top Water Conn.
F - Front Water Conn.

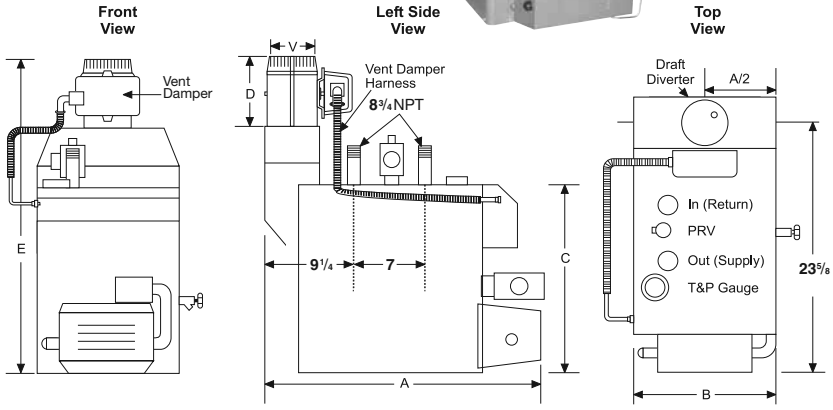
Model Number	Firing Rate GPH	BTU/Hr. Input
CF-38-3	1.75	245,000
	2.00	280,000
	2.25	315,000
	2.50	350,000
CF-80-3	3.50	490,000
	4.00	560,000
	4.50	630,000
	5.00	700,000
CF-100-3	2.50	350,000
	3.00	420,000

Residential Gas Brute™ Mini Hydronic Boilers

184/185



- 6 sizes, 50-225 MBH input
- 85% AFUE, Category I Chimney Venting
- Natural or LP Gas models
- ASME Certified “Wet Wall” copper heat Exchanger with cast iron headers
- Built-in draft diverter
- Electronic Spark Ignition
- Integrated boiler reset control
- Adjustable reset curve
- Heat & DHW demand terminals
- Status / diagnostic LED's
- Boiler Circulator Pump (50-125 Models)
- Includes Vent Damper
- 2-stage firing (100-225 models only) can adjust boiler firing rate to match smaller heat demands - reducing boiler cycling, for improved comfort & system efficiency.
- Lightweight & compact size
- Top mounted Vent & piping and vent connections



Brute™ Mini Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS						A	B	C	D	E	
Indoor Model Number	Input BTU/Hr.	Output BTU/Hr.	Gas Conn.	Water Conn.	Vent Conn.						Approx. Shipping Weight (lbs)
BJVS050	50,000	42,000	1/2	1 1/4	4	26 1/2	13 3/8	18	21 3/4	27 3/4	120
BJVS075	75,000	63,000	1/2	1 1/4	5	27 1/2	13 3/8	18	21 3/4	27 3/4	126
BJVS100	100,000	82,000	1/2	1 1/4	5	27 1/2	16 7/8	18	22 3/4	28 3/4	134
BJVS125	125,000	105,000	1/2	1 1/4	6	27 1/2	16 7/8	18	22 3/4	28 3/4	138
BJVS160	160,000	134,000	1/2	1 1/4	6	27 1/2	20 3/8	18	22 3/4	28 3/4	164
BJVS225	225,000	189,000	1/2	1 1/4	7	27 1/2	25 5/8	20	24 3/4	31 1/2	181

For LP Models, change “N” to “P”.
Pump supplied are sized for normal water (7-17 Grain Hardness). For hard or soft water pumps please consult factory.

Sizing Data

Model Number	Input NG/LP (BTU/Hr.)	Output NG/LP (BTU/Hr.)	AFUE%	Shipping Weight (lbs.)
BJVS050	50,000	42,000	85.0	120
BJVS075	75,000	63,000	85.0	126
BJVS100	100,000	82,000*	85.0	134
BJVS125	125,000	105,000	85.0	138
BJVS160	160,000	134,000	85.0	164
BJVS225	225,000	189,000	85.0	181

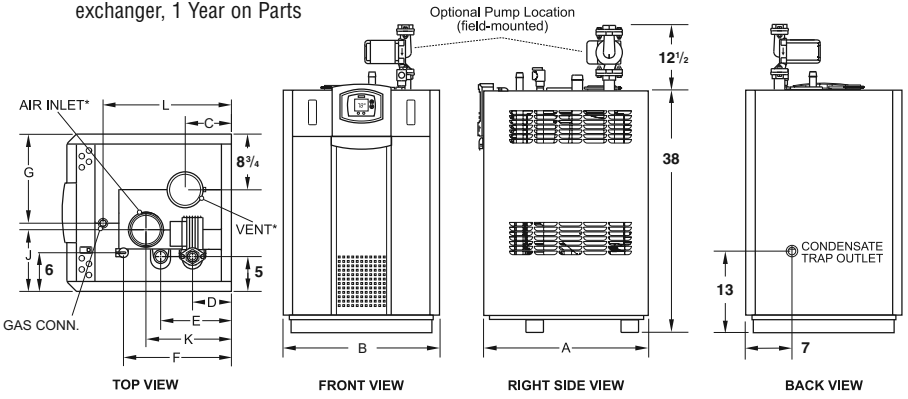
*LP model has 84,000 BTU/Hr. (24.6 kw)

Residential Gas Brute™ Elite Hydronic Boilers

186/187



- High efficiency, condensing design
- Up to 95% efficiency, Energy Star® certified
- Full-modulation, with 5:1 turndown
- Operates at low gas pressure
- Low NOx operation
- Direct vent and air pipe lengths of up to 100 equivalent feet each
- Certified for AL29-4C, CPVC, PVC, & rigid Polypropylene vent material
- Condensate trap with integrated float switch
- Full-text LCD display of control status, settings, diagnostic info, and error history
- Built-in cascade of up to 8 Brute Elite units
- 3 Built-in Pump Relays
- DHW tank sensor
- Separate low voltage and line voltage terminal strips
- Accepts external (4-20mA or 0-10VDC) modulation signal
- Top location of all vent, fuel, electrical, & piping connections
- 12 Year limited warranty on heat exchanger, 1 Year on Parts



Brute™ Elite Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS							A	B	C	D	E	F	G	J	K	L	
Indoor Model Number	NG/LP Input BTU/Hr.	NG/LP Output BTU/Hr.	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.*	Vent Conn.	Depth	Width									Approx. Shipping Weight (lbs)
BNTH080	80,000	76,160	1/2	1	2 or 3	2 or 3	19 3/8	24 1/2	9 1/2	7 1/2	11	10 3/4	13 3/4	3 1/2	11 3/4	13 1/2	160
BNTH105	105,000	100,065	1/2	1	2 or 3	2 or 3	19 3/8	24 1/2	8 1/4	6 1/4	11	9	14 1/8	3 1/2	11 3/4	13 1/2	185
BNTH150	150,000	142,800	1/2	1	3	3	19 3/8	24 1/2	5 1/2	3 1/4	11	7 1/2	14 1/8	5	7 1/2	13 1/2	210
BNTH210	210,000	200,340	1/2	1	3	3	26 5/8	24 1/2	5 1/2	3 1/4	18	11 3/4	14 1/8	5	7 1/2	20 1/2	235

For LP Models, change "N" to "P". Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.
*Brute Elite is shipped with adapters for the air and vent that accept standard pipe of the proper size and type.
Pump supplied are sized for normal water (7-17 Grain Hardness). For hard or soft water pumps please consult factory.

Water Flow Data

	Temperature Rise in °F									
	20°F		25°F		30°F		35°F		40°F	
Model Number	Flow GPM	H/L ft.	Flow GPM	H/L ft.	Flow GPM	H/L ft.	Flow GPM	H/L ft.	Flow GPM	H/L ft.
BNTH-080	7.6	14.9	6.1	10.1	5.1	7.1	4.3	5.8	3.8	4.6
BNTH-105	10.0	23.1	8.0	17.0	6.7	12.4	5.7	9.6	5.0	7.6
BNTH-150	14.3	28.5	11.4	19.0	9.5	13.6	8.1	11.2	7.1	8.8
BNTH-210	20.0	24.1	16.0	16.7	13.4	11.6	11.3	9.0	9.9	6.9

Note that pumps are sized for: a) 25 — 30°F temperature rise across the boiler; b) 30 feet of external boiler loop piping (1"); c) six 90° elbows.

Max. Equivalent* Vent Length PVC/CPVC (each intake and each exhaust)

Model Number	2 in. Dia.	3 in. Dia.
BNTH-080	40 ft.	100 ft.
BNTH-105	40 ft.	100 ft.
BNTH-150	N/A	100 ft.
BNTH-210	N/A	100 ft.

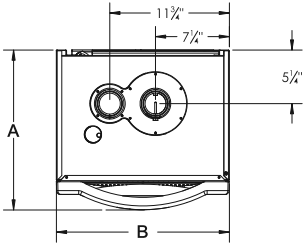
*To calculate equivalent length, measure the linear feet of the pipe, and add 5 feet (1.5m) for each elbow used. Intake (air) pipe may be PVC, CPVC, ABS or galvanized pipe.

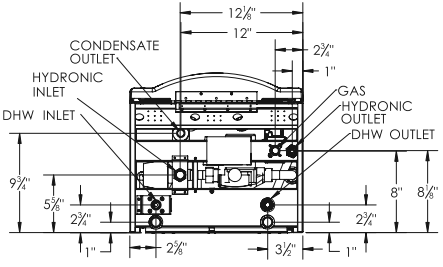
Residential Gas Brute™ Elite 125 Hydronic Boilers

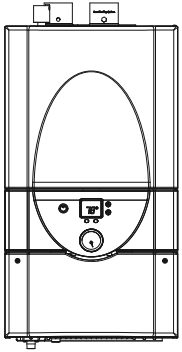
188/189

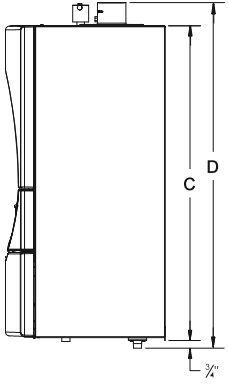


- 95% AFUE efficiency, Energy Star® certified
- Wall mounted, w/Heating and Combi models
- Full-modulation (5:1 turndown)
- Low NOx, less than 10ppm
- Horizontal or vertical direct vent up to 40'
- Horizontal vent and air terminals
- Stainless steel ASME heat exchanger with welded construction
- Up to 3.1 GPM DHW @ 75°F rise (Combi models)
- Factory-mounted Boiler pump, Expansion tank & air vent
- Multiple pump control
- Alarm output
- Accepts external (4-20mA or 0-10VDC) modulation signal
- Outdoor reset (sensor included)
- Lighted on/off toggle switch
- Wall mount template
- 12-Year limited warranty









Brute™ Elite 125 Models

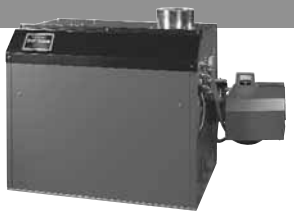
DIMENSIONS IN INCHES

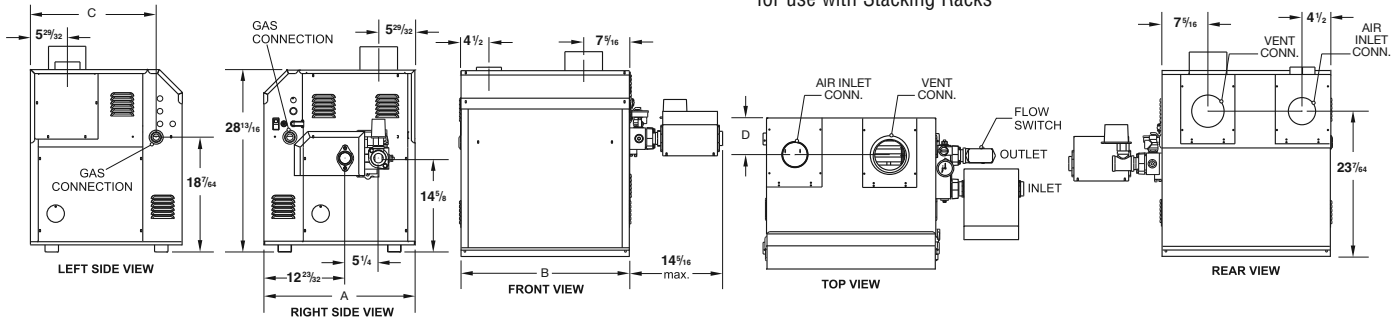
NATURAL GAS AND LIQUID PROPANE MODELS							A	B	C	D	
Indoor Model Number	NG/LP Input BTU/Hr.	NG/LP Output BTU/Hr.	NPT Gas Conn.	NPT Water Conn.		Vent Conn.	Depth	Width	Height	Height to Top of Vent	Approx. Shipping Weight (lbs)
BLMH125	125,000	112,500	1/2	3/4	2	2	15 3/4	17	31	33 1/4	148
BLMC125	125,000	112,500	1/2	3/4	2	2	15 3/4	17	31	33 1/4	158

Residential Gas Brute™ Deluxe Hydronic Boilers

190/191

- Efficiencies up to 85.1%
- Sealed indoor/outdoor cabinet
- Factory mounted & wired pump
- ASME finned copper tube heat exchanger
- Enamel lined headers with external gaskets
- Intake air filter
- Built-in draft fan
- Two-stage firing
- Simple 24V control system
- Integrated boiler reset control w/adjustable reset curve
- Heat & DHW demand terminals
- DHW set point
- Low NOx –less than 30ppm
- Convertible top or rear vent/intake connections (199-400 MBH Models) for use with Stacking Racks





Brute™ Deluxe Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS							A	B	C	D	
Model Number	NG/LP Input BTU/Hr.	NG/LP Output BTU/Hr.	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.	Vent Conn.	Depth	Width			Approx. Shipping Weight (lbs)
BMT2H200	199,900	172,000	3/4	1 1/2	4	5	23 13/16	20 1/2	19 29/32	5 29/32	290
BMT2H300	300,000	255,000	3/4	1 1/2	4	6	23 13/16	26 1/2	19 29/32	5 29/32	320
BMT2H400	399,900	339,915	3/4	1 1/2	6	7	23 13/16	33 1/2	19 29/32	5 29/32	350

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

Water Flow Data

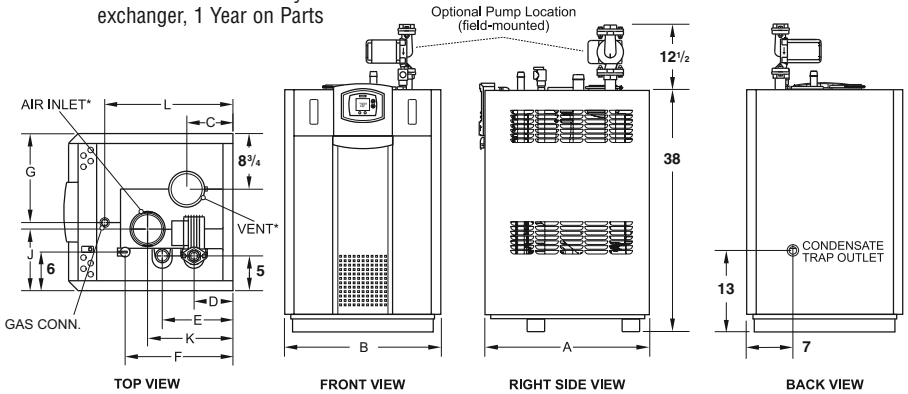
	Temperature Rise in °F			
	20°F	25°F	30°F	35°F
Model Number	Flow GPM	Flow GPM	Flow GPM	Flow GPM
BMT2H200	17	14	11	10
BMT2H300	26	20	17	15
BMT2H400	34	27	23	19

Commercial Gas Brute™ Elite Hydronic Boilers

192/193



- High efficiency, condensing design
- Up to 95% efficiency
- Full-modulation, with 5:1 turndown
- Operates at low gas pressure
- Low NOx operation
- Direct vent and air pipe lengths of up to 100 equivalent feet each
- Certified for AL29-4C, CPVC, PVC, & rigid Polypropylene vent material
- Condensate trap with integrated float switch
- Full-text LCD display of control status, settings, diagnostic info, and error history
- Built-in cascade of up to 8 Brute Elite units
- 3 Built-in Pump Relays
- DHW tank sensor
- Separate low voltage and line voltage terminal strips
- Accepts external (4-20mA or 0-10VDC) modulation signal
- Top location of all vent, fuel, electrical, & piping connections
- 10 Year limited warranty on heat exchanger, 1 Year on Parts



Brute™ Elite 285-500 Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS								A	B	C	D	E	F	G	J	K	L	
Indoor Model Number	NG/LP Input BTU/Hr.	NG/LP Output BTU/Hr.	AFUE %	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.	Vent Conn.	Depth	Width									Approx. Shipping Weight (lbs)
BNTH285	285,000	269,040	95.7	3/4	1 1/4	4 1/2	4 1/2	26	24 1/2	7	6	11	17	14	9 3/4	13 1/4	20 1/4	276
BNTH399	399,000	382,242	N/A	3/4	1 1/4	4 1/2	4 1/2	31	24 1/2	5	4 1/4	14 1/2	21 1/2	19 1/4	8 1/4	18 1/2	25	346
BNTH500	500,000	475,000	N/A	1	1 1/4	4 1/2	4 1/2	37	24 1/2	5	4 1/4	15	26	20 1/2	5 3/4	20	27 1/4	381

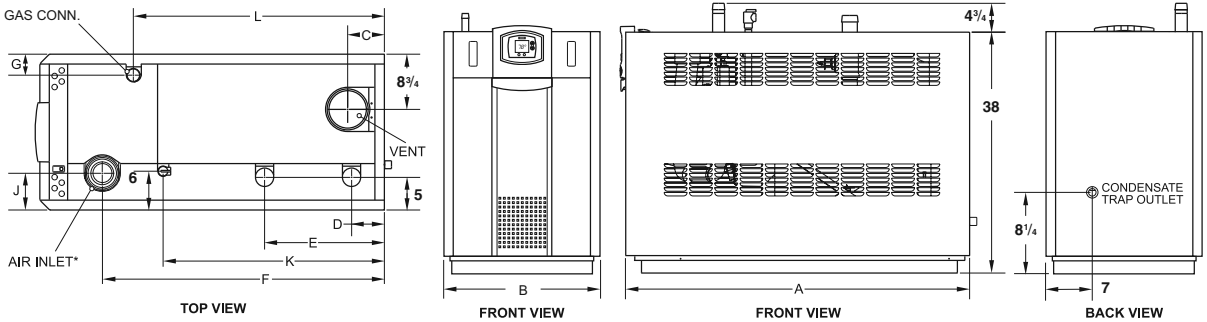
For LP Models, change “N” to “P”. Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.
*Brute Elite is shipped with adapters for the air and vent that accept standard pipe of the proper size and type.

Max. Equivalent* Vent Length PVC/CPVC (each intake and each exhaust)

Model Number	Air Intake Dia.	Ex. Vent Dia.	Max. Allowable Length
BNTH-285	3 in.	3 in.	20 ft.
	4 in.	4 in.	100 ft.
BNTH-399	4 in.	4 in.	100 ft.
BNTH-500	4 in.	4 in.	100 ft.

*To calculate equivalent length, measure the linear feet of the pipe, and add 5 feet (1.5m) for each elbow used. Intake (air) pipe may be PVC, CPVC, ABS or galvanized pipe.

Commercial Gas
Brute™ Elite Hydronic Boilers



Brute™ Elite 600-850 Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS								A	B	C	D	E	F	G	J	K	L	
Indoor Model Number	NG/LP Input BTU/Hr.	NG/LP Output BTU/Hr.	AFUE %	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.	Vent Conn.	Depth	Width									Approx. Shipping Weight (lbs)
BNTH600	600,000	576,000	N/A	1	1 1/2	4 1/2	4 1/2	38	24 1/2	5	4 1/4	15	20	3	5 3/4	26	29 3/4	394
BNTH750	750,000	723,000	N/A	1 1/2	2	4 1/2	6 1/2	51	24 1/2	5	5	19	40 1/2	3 1/4	5 3/4	30 1/2	35 1/2	469
BNTH850	850,000	810,900	N/A	1 1/2	2	4 1/2	6 1/2	55	24 1/2	5	5	19	44 1/2	3 1/2	5 3/4	35	39 3/4	502

For LP Models, change “N” to “P”. Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.
*Brute Elite is shipped with adapters for the air and vent that accept standard pipe of the proper size and type.

Max. Equivalent* Vent Length PVC/CPVC (each intake and each exhaust)

Model Number	Air Intake Dia.	Ex. Vent Dia.	Max. Allowable Length
BNTH-600	4 in.	4 in.	100 ft.
BNTH-750	4 in.	4 in.	40 ft.
	6 in.	6 in.	100 ft.
BNTH-850	4 in.	4 in.	40 ft.
	6 in.	6 in.	100 ft.

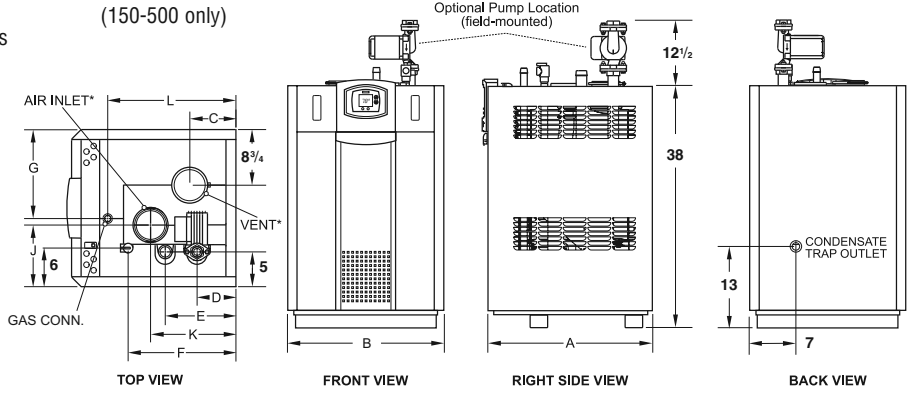
*To calculate equivalent length, measure the linear feet of the pipe, and add 5 feet (1.5m) for each elbow used. Intake (air) pipe may be PVC, CPVC, ABS or galvanized pipe.

Commercial Gas Brute™ Elite Volume Water Heaters

196/197



- 8 sizes, 150-850 MBH, up to 2,434 GPH recovery
- High efficiency, condensing design, 95%+ Efficiency
- Full-modulation, with 5:1 turndown
- Operates at low gas pressure
- Low NOx operation
- Direct vent and air pipe lengths of up to 100 equivalent feet each
- Certified for AL29-4C, CPVC, PVC, & rigid Polypropylene vent material
- Condensate trap with integrated float switch
- Full-text LCD display of control status, settings, diagnostic info, and error history
- Built-in cascade of up to 8 Brute Elite units
- 3 Built-in Pump Relays
- DHW tank sensor
- Separate low voltage and line voltage terminal strips
- Accepts external (4-20mA or 0-10VDC) modulation signal
- Top location of all vent, fuel, electrical, & piping connect
- 125 psi safety relief valve
- 1 Year limited warranty on parts
- Includes bronze circulator (150-500 only)



Brute™ Elite 150-500 Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS								A	B	C	D	E	F	G	J	K	L	
Indoor Model Number	NG/LP Input BTU/Hr.	NG/LP Output BTU/Hr.	Thermal Efficiency	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.	Vent Conn.	Depth	Width									Approx. Shipping Weight (lbs)
BNTV150	150,000	143,550	95.0	1/2	1 1/4	3	3	19 1/2	25	5 1/4	3 1/4	10 3/4	7 1/2	19 1/2	5 1/2	7 1/2	13 1/4	220
BNTV199	199,000	193,030	97.0	1/2	1 1/4	3	3	26 3/4	25	5 1/4	3 1/4	17 3/4	11 3/4	19 1/2	5 1/2	7 1/2	20 1/2	245
BNTV285	285,000	269,040	95.0	3/4	1 1/4	4 1/2	4 1/2	26	24 1/2	7	6	11	17	14	9 3/4	13 1/4	20 1/4	276
BNTV399	399,000	382,242	96.0	3/4	1 1/4	4 1/2	4 1/2	31	24 1/2	5	4 1/4	14 1/2	21 1/2	19 1/4	8 1/4	18 1/2	25	346
BNTV500	500,000	475,000	96.0	1	1 1/2	4 1/2	4 1/2	37	24 1/2	5	4 1/4	15	26	20 1/2	5 3/4	20	27 1/4	381

For LP Models, change “N” to “P”. Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.
*Brute Elite is shipped with adapters for the air and vent that accept standard pipe of the proper size and type.

Model Number	GPH Recovery at Degree Rise								
	40°F	50°F	60°F	70°F	80°F	90°F	100°F	120°F	140°F
BNTV 150	431	345	287	246	215	191	172	144	123
BNTV 199	579	463	386	331	290	257	232	193	166
BNTV 285	818	654	545	467	409	363	327	273	234
BNTV 399	1,153	923	769	659	577	513	461	384	329
BNTV 500	1,451	1,161	967	829	726	645	580	484	415

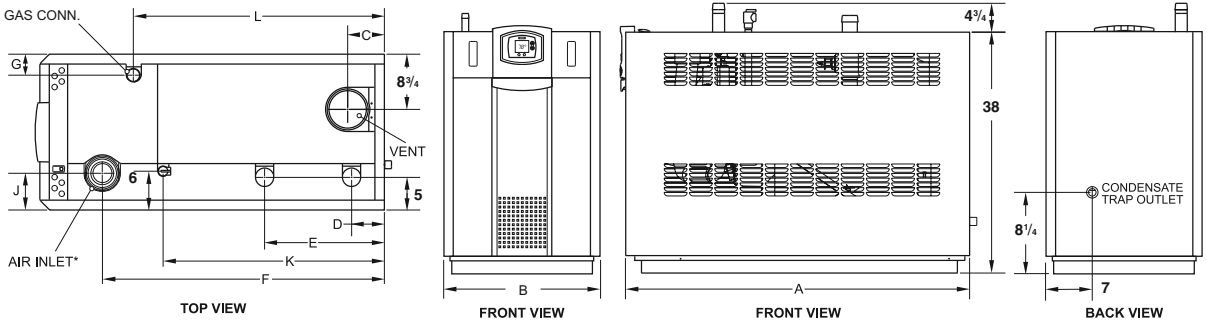
Vent System

Max. Equivalent* Vent Length PVC/CPVC (each intake and each exhaust)

Model Number	Air Intake Dia.	Ex. Vent Dia.	Max. Allowable Length
BNTV-150	3 in.	—	100 ft.
BNTV-199	3 in.	—	100 ft.
BNTV-285	3 in.	3 in.	20 ft.
	4 in.	4 in.	100 ft.
BNTV-150	4 in.	4 in.	100 ft.
BNTV-199	4 in.	4 in.	100 ft.

*To calculate equivalent length, measure the linear feet of the pipe, and add 5 feet (1.5m) for each elbow used. Intake (air) pipe may be PVC, CPVC, ABS or galvanized pipe.

Commercial Gas
Brute™ Elite Volume Water Heaters



Brute™ Elite 600-850 Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS								A	B	C	D	E	F	G	J	K	L	
Indoor Model Number	NG/LP Input BTU/Hr.	NG/LP Output BTU/Hr.	Thermal Efficiency	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.	Vent Conn.	Depth	Width									Approx. Shipping Weight (lbs)
BNTV600	600,000	576,000	97.0	1	1 1/2	4 1/2	4 1/2	38	24 1/2	5	4 1/4	15	20	3	5 3/4	26	29 3/4	394
BNTV750	750,000	723,000	94.0	1 1/2	2	4 1/2	6 1/2	51	24 1/2	5	5	19	40 1/2	3 1/4	5 3/4	30 1/2	35 1/2	469
BNTV850	850,000	810,900	96.0	1 1/2	2	4 1/2	6 1/2	55	24 1/2	5	5	19	44 1/2	3 1/2	5 3/4	35	39 3/4	502

For LP Models, change "N" to "P". Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.
*Brute Elite is shipped with adapters for the air and vent that accept standard pipe of the proper size and type.

Model Number	GPH Recovery at Degree Rise								
	40°F	50°F	60°F	70°F	80°F	90°F	100°F	120°F	140°F
BNTV 600	1,729	1,383	1,152	988	864	768	691	576	494
BNTV 750	2,170	1,736	1,447	1,240	1,085	964	868	723	620
BNTV 850	2,434	1,947	1,622	1,391	1,217	1,082	973	811	695

Vent System

Max. Equivalent* Vent Length PVC/CPVC (each intake and each exhaust)

Model Number	Air Intake Dia.	Ex. Vent Dia.	Max. Allowable Length
BNTV-600	4 in.	4 in.	40 ft.
	6 in.**	6 in.**	100 ft.**
BNTV-750	4 in.	4 in.	40 ft.
	6 in.	6 in.	100 ft.
BNTV-850	4 in.	4 in.	40 ft.
	6 in.	6 in.	100 ft.

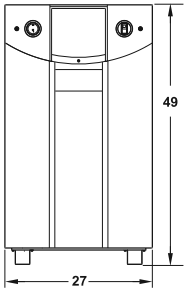
*To calculate equivalent length, measure the linear feet of the pipe, and add 5 feet (1.5m) for each elbow used. Intake (air) pipe may be PVC, CPVC, ABS or galvanized pipe. ** Allowed only if the vent pipe is no more that 20 equivalent feet longer than the air pipe.

Commercial Gas Brute™ Elite 1000 / 1700 Hydronic Boilers

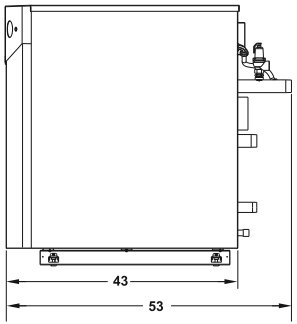
200/201



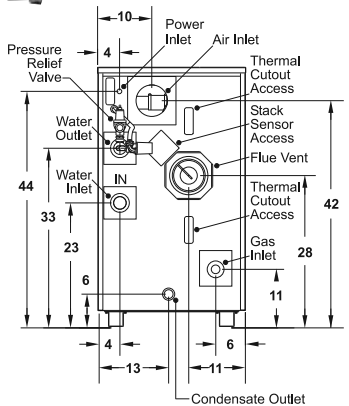
- Full fire thermal efficiencies as high as 96%
- Full modulation, 10:1 turndown
- Low 10ppm NOx
- Sealed combustion
- Pre-mix stainless steel burner
- Horizontal or vertical direct vent
- Built in condensate trap
- Indirect water heater priority
- Large color touch screen display
- Compact footprint
- Stainless steel, ASME, gasketless heat exchanger
- 160 psi max. working pressure
- Water Flow Switch
- Drain Valve
- Multiple pump control
- Cascading control for up to 4 boilers
- PVC, CPVC, Polypropylene or Stainless steel venting, up to 100ft,
- Piping and wiring connections on rear of unit
- Modbus Communications
- Indoor/Outdoor installations
- 10 year limited Boiler warranty



FRONT



RIGHT



BACK

Brute™ Elite 1000 / 1700 Models

DIMENSIONS IN INCHES

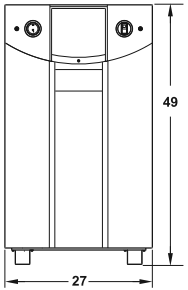
NATURAL GAS AND LIQUID PROPANE MODELS							A	B	
Indoor Model Number	NG/LP Input BTU/Hr.	NG/LP Output BTU/Hr.	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.*	Vent Conn.	Depth	Width	Approx. Shipping Weight (lbs)
BNTH1000	1,000,000	942,000	1½	2	6	6	27	43	620
BNTH1700	1,700,000	1,609,000	2	2½	8	8	27	43	885

Commercial Gas Brute™ Elite 1000 / 1700 Volume Water Heaters

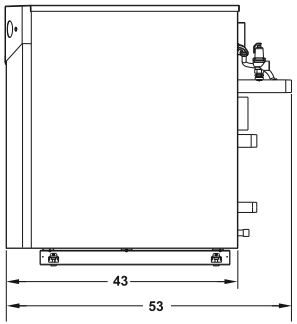
202/203



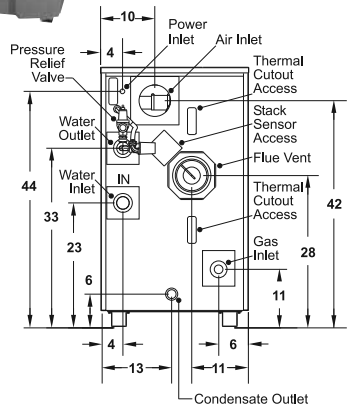
- Thermal efficiency up to 96%
- Up to 4,145 GPH Recovery
- Full modulation, 10:1 turndown
- Low 10ppm NOx
- Sealed combustion
- Pre-mix stainless steel burner
- Horizontal or vertical direct vent
- Built in condensate trap
- Indirect water heater priority
- Large color touch screen display
- Compact footprint
- Stainless steel, ASME, gasketless heat exchanger
- 160 psi max. working pressure
- Water Flow Switch
- Drain Valve
- Multiple pump control
- Cascading control for up to 4 boilers
- PVC, CPVC, Polypropylene or Stainless steel venting, up to 100ft,
- Piping and wiring connections on rear of unit
- Modbus Communications
- Indoor/Outdoor installations
- 10 year limited Boiler warranty



FRONT



RIGHT



BACK

Brute™ Elite 1000 / 1700 Models

DIMENSIONS IN INCHES

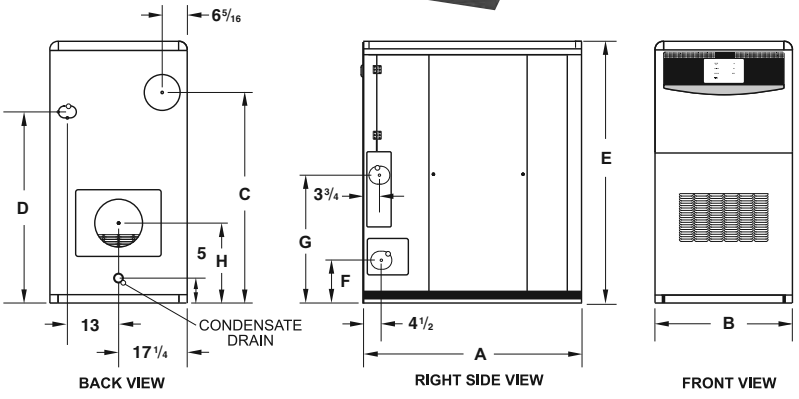
NATURAL GAS AND LIQUID PROPANE MODELS							A	B	
Indoor Model Number	NG/LP Input BTU/Hr.	NG/LP Output BTU/Hr.	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.*	Vent Conn.	Depth	Width	Approx. Shipping Weight (lbs)
BNTV1000	1,000,000	950,000	1½	2	6	6	27	43	620
BNTV1700	1,700,000	1,632,000	2	2½	8	8	27	43	885

Commercial Gas Brute™ Magnum Hydronic Boilers



204/205

- 4 sizes, 1,200-2,400 MBH input
- Efficiencies of up to 98%
- Low NOx operation, less than 10ppm
- Finned copper tube 2-pass heat exchanger with ASME 160 psi rating
- Secondary stainless steel condensing heat exchanger
- Stainless steel condensate collector
- Full modulation firing
- High & low gas pressure switches
- Redundant safety gas valve, manual shut off valve
- Leak test valve
- Low fire start with time delay
- Washable combustion air filter
- May use ducted outside air, or room air for combustion
- Low NOx – less than 10ppm
- Factory Supplied pump
- Diagnostic Indicator lights
- Internal/External 0-10VDC control selector
- Dry alarm contacts
- CSD-1 complaint
- Adjustable, manual reset high limit
- Water flow switch
- Manual reset low water cutoff with test switch
- Air pressure switch



Brute™ Magnum Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS									A	B	C	D	E	F	G	H	
Indoor Model Number	NG/LP Max.Input BTU/Hr.	NG/LP Min.Input BTU/Hr.	NG/LP Max.Output BTU/Hr.	NG/LP Min.Output BTU/Hr.	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.	Vent Conn.	Depth	Width							Approx. Shipping Weight (lbs)
BRHHH1200	1,200,000	300,000	1,080,000	270,000	1	2 1/2	6	6	55	34 1/2	53	48	65 3/4	8	34 1/4	18 1/4	1420
BRHHH1600	1,600,000	400,000	1,440,000	360,000	1 1/2	2 1/2	8	6	55	34 1/2	53	48	65 3/4	8	34 1/4	18 1/4	1465
BRHHH2000	1,999,000	499,750	1,799,000	449,750	1 1/2	3	8	7	55	34 1/2	53	48	65 3/4	8	34 1/4	18 1/4	1485
BRHHH2400	2,400,000	600,000	2,160,000	540,000	1 1/2	3	8	10	55	34 1/2	53	48	65 3/4	8	32	18 1/4	1550

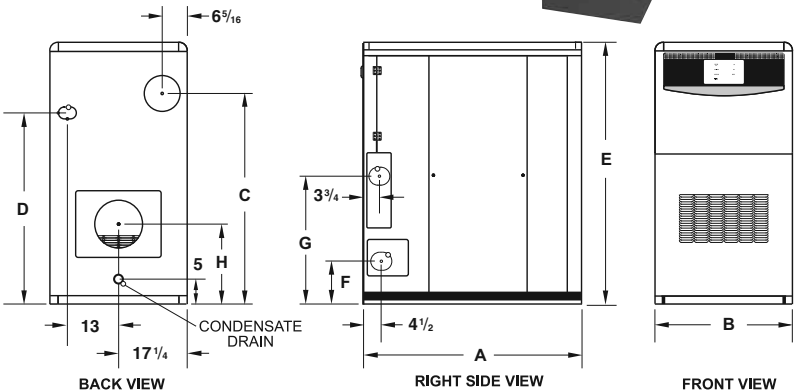
For LP Models, change “N” to “P”. Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.
Output shown is based on certification test standards. The efficiency of this unit will increase with lower return water temperature and/or lower modulating point, which will alter the output of the Brute Magnum.

Commercial Gas Brute™ Magnum Volume Water Heaters

206/207



- 4 sizes, 1,200-2,400 MBH input
- Efficiencies of up to 98%
- Up to 6,483 GPH recovery
- Low NOx operation, less than 10ppm
- Finned copper tube 2-pass heat exchanger with ASME 160 psi rating
- Secondary stainless steel condensing heat exchanger
- Stainless steel condensate collector
- Full modulation firing
- High & low gas pressure switches
- Redundant safety gas valve, manual shut off valve
- Leak test valve
- Low fire start with time delay
- Washable combustion air filter
- May use ducted outside air, or room air for combustion
- Factory Supplied pump
- Diagnostic Indicator lights
- Internal/External 0-10VDC control selector
- Dry alarm contacts
- CSD-1 complaint
- Adjustable, manual reset high limit
- Water flow switch
- Manual reset low water cutoff with test switch
- Air pressure switch



Brute™ Magnum Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS										A	B	C	D	E	F	G	H	
Indoor Model Number	NG/LP Max.Input BTU/Hr.	NG/LP Min.Input BTU/Hr.	NG/LP Max.Output BTU/Hr.	NG/LP Min.Output BTU/Hr.	GPH Recovery 100°F Rise	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.	Vent Conn.	Depth	Width							Approx. Shipping Weight (lbs)
BRHHV1200	1,200,000	300,000	1,068,000	267,000	1297	1	2 1/2	6	6	55	34 1/2	53	48	65 3/4	8	34 1/4	18 1/4	1420
BRHHV1600	1,600,000	400,000	1,424,000	356,000	1729	1 1/2	2 1/2	8	6	55	34 1/2	53	48	65 3/4	8	34 1/4	18 1/4	1465
BRHHV2000	1,999,000	499,750	1,799,110	444,775	2160	1 1/2	3	8	7	55	34 1/2	53	48	65 3/4	8	34 1/4	18 1/4	1485
BRHHV2400	2,400,000	600,000	2,140,000	535,000	2593	1 1/2	3	8	10	55	34 1/2	53	48	65 3/4	8	32	18 1/4	1550

For LP Models, change “N” to “P”. Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.
Output shown is based on certification test standards. The efficiency of this unit will increase with lower return water temperature and/or lower modulating point, which will alter the output of the Brute Magnum.

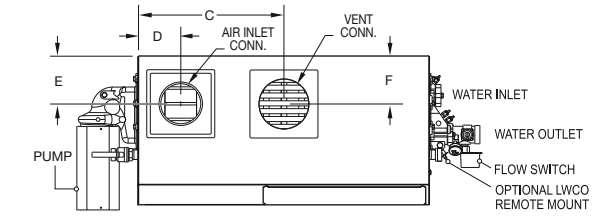
Model Number	GPH Recovery at Degree Rise								
	40°F	50°F	60°F	70°F	80°F	90°F	100°F	120°F	140°F
BRHHV1200	3,241	2,593	2,161	1,852	1,621	1,441	1,297	1,080	926
BRHHV1600	4,322	3,457	2,881	2,470	2,161	1,921	1,729	1,441	1,235
BRHHV2000	5,399	4,319	3,599	3,085	2,700	2,400	2,160	1,800	1,543
BRHHV2400	6,483	5,186	4,322	3,704	3,241	2,881	2,593	2,161	1,852

Commercial Gas Brute™ Deluxe Hydronic Boilers

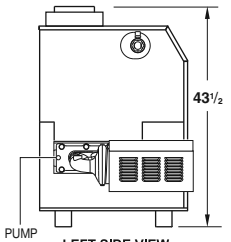
208/209

- Efficiencies up to 84.2%
- Sealed indoor/outdoor cabinet
- Factory mounted & wired pump
- ASME finned copper tube heat exchanger
- Enamel lined headers with external gaskets
- Intake air filter
- Built-in draft fan
- Two-stage firing
- Simple 24V control system
- Integrated boiler reset control w/adjustable reset curve
- Heat & DHW demand terminals
- DHW set point
- Low NOx –less than 10 ppm

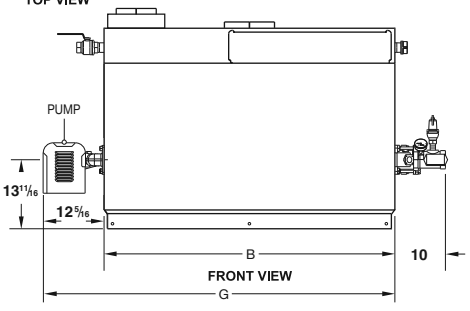




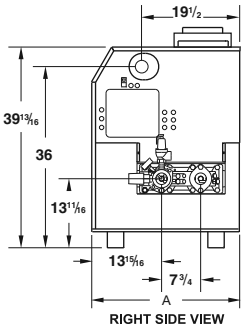
TOP VIEW



LEFT SIDE VIEW



FRONT VIEW



RIGHT SIDE VIEW

Brute™ Deluxe Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS							A	B	C	D	E	F	G	
Indoor Model Number	Input BTU/Hr.	Output BTU/Hr.	NPT Gas Conn.	NPT Water Conn.	Vent Conn.	Air Inlet Conn.	Depth	Width						Approx. Shipping Weight (lbs)
BMT2H500	500,000	425,000	1 1/4	2	8	6	29 7/16	33 3/4	16 3/4	6 1/2	10	8	46 1/4	480
BMT2H750	750,000	638,000	1 1/4	2	10	6	29 7/16	45 3/4	22 3/4	6 1/2	10	9 1/2	58 1/4	560
BMT2H1000	999,000	849,000	1 1/4	2 1/2	10	8	29 7/16	57 3/4	28 3/4	6 1/2	10	9 1/2	70 1/4	670
BMT2H1250	1,250,000	1,062,500	2	2 1/2	12	8	29 7/16	68 1/4	34 1/2	10 1/4	10	9	80 3/4	730
BMT2H1500	1,500,000	1,275,000	2	2 1/2	12	8	29 7/16	78 3/4	39 1/2	10 1/4	10	9	91 1/4	815
BMT2H1750	1,750,000	1,487,500	2	2 1/2	14	8	29 7/16	89 1/4	44 3/4	10 1/4	10	9	101 3/4	880
BMT2H2000	1,999,000	1,699,00	2	2 1/2	14	12	29 7/16	99 3/4	49 3/4	10 1/4	10	9	112 1/4	1010

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

Output shown is based on certification test standards. The efficiency of this unit will increase with lower return water temperature and/or lower modulating point, which will alter the output of the Brute Magnum.

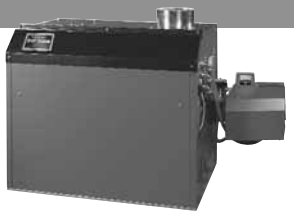
Water Flow Data

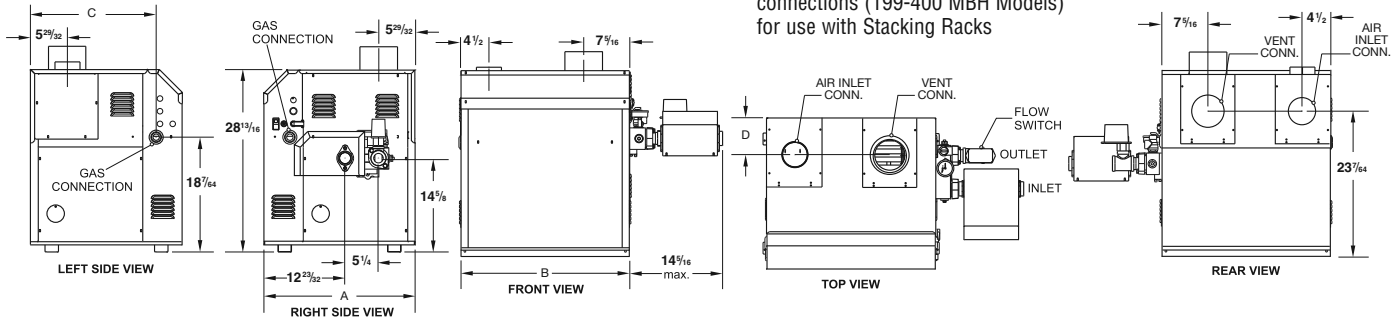
Model Number	Temperature Rise in °F			
	20°F Flow GPM	25°F Flow GPM	30°F Flow GPM	35°F Flow GPM
BMT2H0500	43	34	28	24
BMT2H0750	64	51	43	36
BMT2H1000	85	68	57	49
BMT2H1250	106	85	71	61
BMT2H1500	128	102	85	73
BMT2H1750	N/R	119	99	85
BMT2H2000	N/R	136	113	97

Commercial Gas Brute™ Deluxe Volume Water Heaters

210/211

- 10 sizes, 199–2,000 MBH input
- Efficiencies up to 85.5%
- Up to 5,099 GPH Recovery
- Sealed indoor/outdoor cabinet
- Factory mounted & wired non-ferrous pump
- ASME finned copper tube heat exchanger
- Enamel lined headers with external gaskets
- Intake air filter
- Built-in draft fan
- Two-stage firing
- Simple 24V control system
- Integrated boiler reset control w/adjustable reset curve
- Heat & DHW demand terminals
- DHW set point
- Low NOx –less than 30ppm
- Convertible top or rear vent/intake connections (199-400 MBH Models) for use with Stacking Racks





Brute™ Deluxe Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS								A	B	C	D	
Model Number	NG/LP Input BTU/Hr.	NG/LP Output BTU/Hr.	GPH Recovery 100°F Rise	NPT Gas Conn.	NPT Water Conn.	Air Inlet Conn.	Vent Conn.	Depth	Width			Approx. Shipping Weight (lbs)
BMT2V200	199,900	169,915	204	3/4	1 1/2	4	5	23 13/16	20 1/2	19 29/32	5 29/32	290
BMT2V300	300,000	255,000	306	3/4	1 1/2	4	6	23 13/16	26 1/2	19 29/32	5 29/32	320
BMT2V400	399,900	339,915	408	3/4	1 1/2	6	7	23 13/16	33 1/2	19 29/32	5 29/32	350

For LP Models, change “N” to “P”. Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.
Pump supplied are sized for normal water (7-17 Grain Hardness). For hard or soft water pumps please consult factory.

Model Number	GPH Recovery at Degree Rise								
	40°F	50°F	60°F	70°F	80°F	90°F	100°F	120°F	140°F
BMT2V0200	510	408	340	291	255	227	204	170	146
BMT2V0300	765	612	510	437	383	340	306	255	219
BMT2V0400	1,020	816	680	583	510	453	408	340	291

Model Number	Hard Water		Normal Water		Soft Water	
	Flow GPM	Temp. Rise °F	Flow GPM	Temp. Rise °F	Flow GPM	Temp. Rise °F
BMT2V200	45	8	35	10	23	15
BMT2V300	45	11	35	15	23	22
BMT2V400	45	15	35	19	23	30

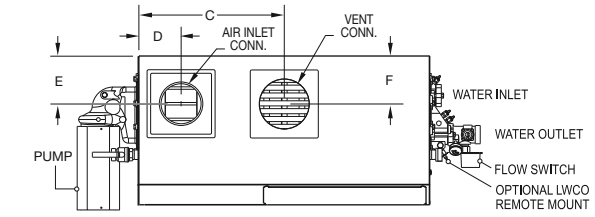
Note: Soft water: 1 to 7.5 grains per gallon. Normal water: 7.6 to 17 grains per gallon. Hard water: More than 17 grains per gallon.

Commercial Gas Brute™ Deluxe Volume Water Heaters

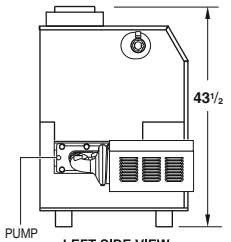
212/213

- Efficiencies up to 84.2%
- Sealed indoor/outdoor cabinet
- Factory mounted & wired pump
- ASME finned copper tube heat exchanger
- Enamel lined headers with external gaskets
- Intake air filter
- Built-in draft fan
- Two-stage firing
- Simple 24V control system
- Integrated boiler reset control w/adjustable reset curve
- Heat & DHW demand terminals
- DHW set point
- Low NOx –less than 10 ppm

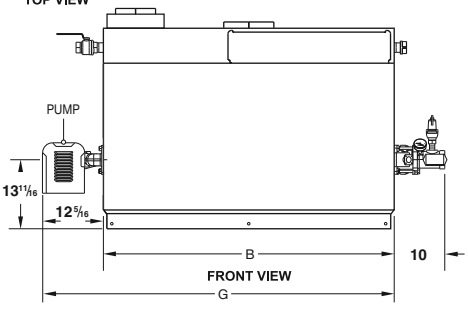




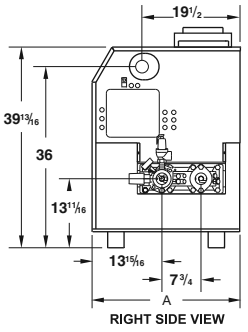
TOP VIEW



LEFT SIDE VIEW



FRONT VIEW



RIGHT SIDE VIEW

Brute™ Deluxe Models

DIMENSIONS IN INCHES

NATURAL GAS AND LIQUID PROPANE MODELS								A	B	C	D	E	F	G	
Indoor Model Number	Input BTU/Hr.	Output BTU/Hr.	GPH Recovery 100°F Rise	Gas Conn.	Water Conn.	Vent Conn.	Air Inlet Conn.	Depth	Width						Approx. Shipping Weight (lbs)
BMT2V500	500,000	425,000	510	1 1/4	2	8	6	29 7/16	33 3/4	16 3/4	6 1/2	10	8	46 1/4	480
BMT2V750	750,000	638,000	766	1 1/4	2	10	6	29 7/16	45 3/4	22 3/4	6 1/2	10	9 1/2	58 1/4	560
BMT2V1000	999,000	849,000	1019	1 1/4	2 1/2	10	8	29 7/16	57 3/4	28 3/4	6 1/2	10	9 1/2	70 1/4	670
BMT2V1250	1,250,000	1,062,500	1276	2	2 1/2	12	8	29 7/16	68 1/4	34 1/2	10 1/4	10	9	80 3/4	730
BMT2V1500	1,500,000	1,275,000	1531	2	2 1/2	12	8	29 7/16	78 3/4	39 1/2	10 1/4	10	9	91 1/4	815
BMT2V1750	1,750,000	1,487,500	1786	2	2 1/2	14	8	29 7/16	89 1/4	44 3/4	10 1/4	10	9	101 3/4	880
BMT2V2000	1,999,000	1,699,00	2040	2	2 1/2	14	12	29 7/16	99 3/4	49 3/4	10 1/4	10	9	112 1/4	1010

For LP Models, change "N" to "P". Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.
Output shown is based on certification test standards. The efficiency of this unit will increase with lower return water temperature and/or lower modulating point, which will alter the output of the Brute Magnum.

Model Number	GPH Recovery at Degree Rise								
	40°F	50°F	60°F	70°F	80°F	90°F	100°F	120°F	140°F
BMT2V0500	1,276	1,020	850	729	638	567	510	425	364
BMT2V0750	1,915	1,532	1,277	1,094	957	851	766	638	547
BMT2V1000	2,548	2,038	1,699	1,456	1,274	1,132	1,019	849	728
BMT2V1250	3,189	2,551	2,126	1,822	1,594	1,417	1,276	1,063	911
BMT2V1500	3,827	3,061	2,551	2,187	1,913	1,701	1,531	1,276	1,093
BMT2V1750	4,464	3,571	2,976	2,551	2,232	1,984	1,786	1,488	1,276
BMT2V2000	5,099	4,079	3,399	2,914	2,550	2,266	2,040	1,700	1,457

Note: Soft water: 1 to 7.5 grains per gallon. Normal water: 7.6 to 17 grains per gallon. Hard water: More than 17 grains per gallon.

Water Flow Data

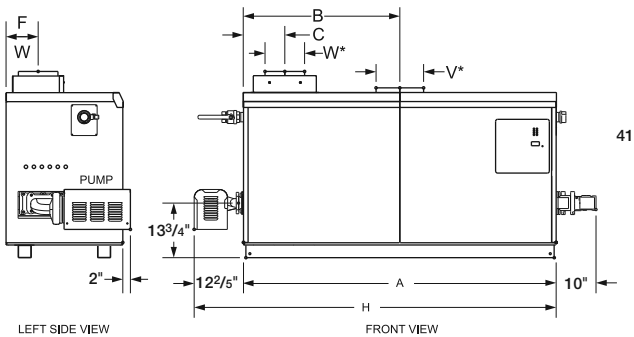
Model Number	Hard Water Flow GPM	Normal Water Flow GPM	Soft Water Flow GPM
BMT2V0500	90	68	45
BMT2V0750	90	68	45
BMT2V1000	90	68	45
BMT2V1250	90	68	68
BMT2V1500	90	68	68
BMT2V1750	90	68	68
BMT2V2000	112	112	112

Commercial Gas Copper-Brute™ II Hydronic Boilers

214/215

- 7 sizes 500-2,000 MBH
- Efficiencies of 84+%
- Up to 5,099 GPH Recovery
- Sealed indoor/outdoor cabinet
- Factory mounted & wired pump
- ASME finned copper tube heat exchanger
- Enamel lined headers with external gaskets
- Intake air filter
- Built-in draft fan
- Electronic PID staging control with touchpad and LCD display





- Firing Modes:
  2-Stage (500 & 750)
  3-Stage (1000)
  4-Stage (1250-2000)
- Less than 10ppm NOx
- Convertible top or rear vent/intake connections for use with Copper Brute II Stacking Racks

Copper-Brute™ II 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	Length	Ct. Line Vent Conn. to Side	Ct. Line Air Conn. to Side	Ct. Line Air Conn. to Floor	Ct. Line Vent Conn. to Floor	Ct. Line Air Conn. to Back	Ct. Line Vent Conn. to Back	Length Plus Pump	Approx. Shipping Weight (lbs)
BWCH0500	500,000	425,000	510	1 1/4	2	6	6	6	33 1/2	15 3/4	5 3/4	29 3/4	32 3/4	7 3/4	8 3/4	46	480
BWCH0750	750,000	638,000	765	1 1/4	2	8	10	6	45 1/2	21 3/4	5 3/4	29 3/4	32 3/4	7 3/4	8 3/4	58	560
BWCH1000	999,000	849,000	1019	1 1/2	2 1/2	8	10	8	57 1/2	28 3/4	5 3/4	29 3/4	32 3/4	7 3/4	7	70	670
BWCH1250	1,250,000	1,063,000	1276	2	2 1/2	8	12	8	68	34	10 1/8	30 3/4	29 1/2	8 3/4	8 3/4	80	730
BWCH1500	1,500,000	1,275,000	1531	2	2 1/2	8	12	8	78 1/2	39 3/4	10 1/8	30 3/4	29 1/2	8 3/4	8 3/4	91	815
BWCH1750	1,750,000	1,488,000	1786	2	2 1/2	8	14	8	89	44 1/2	10 1/8	30 3/4	29 1/2	8 3/4	8 3/4	101	880
BWCH2000	1,999,000	1,699,000	2040	2	2 1/2	12	14	12	99 1/2	49 3/4	10 1/8	30 3/4	29 1/2	8 3/4	8 3/4	112	1010

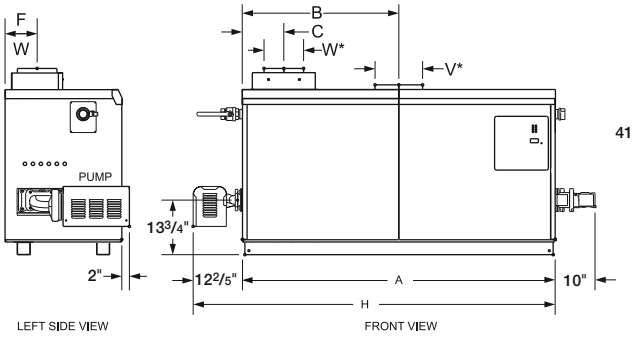
* Air and vent connections may be on top or back of unit and are field convertible.
For LP Models, change "N" to "P". Outdoor units include Outdoor Vent Terminal and Outdoor Combustion Terminal.
Above models include: Hot Surface Ignition; Flow Switch (mounted and wired); All Bronze Fitted Pump; Pump 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 Copper-Brute™ II Volume Water Heaters

216/217



- 7 sizes 500-2,000 MBH
- Efficiencies of 84+%
- Up to 5,099 GPH Recovery
- Sealed indoor/outdoor cabinet
- Factory mounted & wired non-ferrous pump
- ASME finned copper tube heat exchanger
- Enamel lined headers with external gaskets
- Intake air filter
- Built-in draft fan
- Electronic PID staging control with touchpad and LCD display



- Firing Modes:
  2-Stage (500 & 750)
  3-Stage (1000)
  4-Stage (1250-2000)
- Less than 10ppm NOx
- Convertible top or rear vent/intake connections for use with Copper Brute II Stacking Racks

Copper-Brute™ II Models

DIMENSIONS IN INCHES

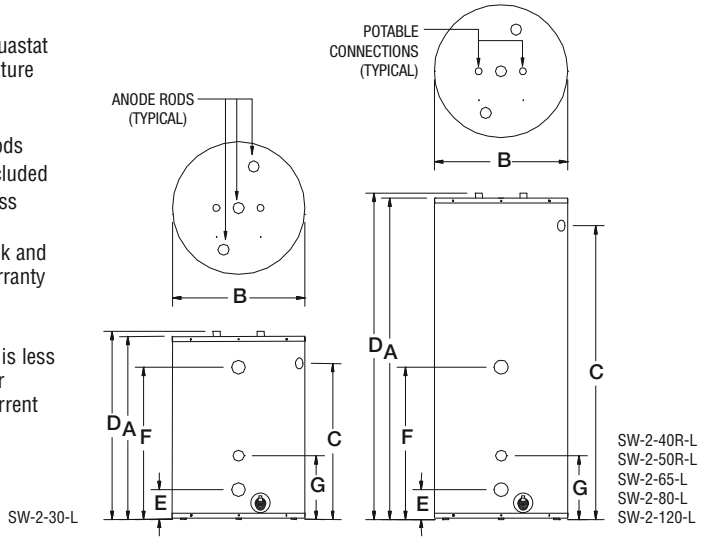
NATURAL GAS AND LIQUID PROPANE MODELS									A	B	C	D	E	F	G	H	
Indoor Model Number	Input BTU/Hr.	Output BTU/Hr.	GPH Recovery 100°F Rise	Gas Conn.	Water Conn.	Air Conn. W*	Vent Conn. V*	Horiz. Vent Pipe	Length	Ct. Line Vent Conn. to Side	Ct. Line Air Conn. to Side	Ct. Line Air Conn. to Floor	Ct. Line Vent Conn. to Floor	Ct. Line Air Conn. to Back	Ct. Line Vent Conn. to Back	Length Plus Pump	Approx. Shipping Weight (lbs)
BWCV0500	500,000	425,000	510	1 1/4	2	6	6	6	33 1/2	15 3/4	5 3/4	29 3/4	32 3/4	7 3/4	8 3/4	46	480
BWCV0750	750,000	638,000	765	1 1/4	2	8	10	6	45 1/2	21 3/4	5 3/4	29 3/4	32 3/4	7 3/4	8 3/4	58	560
BWCV1000	999,000	849,000	1019	1 1/2	2 1/2	8	10	8	57 1/2	28 3/4	5 3/4	29 3/4	32 3/4	7 3/4	7	70	670
BWCV1250	1,250,000	1,063,000	1276	2	2 1/2	8	12	8	68	34	10 1/8	30 3/4	29 1/2	8 3/4	8 3/4	80	730
BWCV1500	1,500,000	1,275,000	1531	2	2 1/2	8	12	8	78 1/2	39 3/4	10 1/8	30 3/4	29 1/2	8 3/4	8 3/4	91	815
BWCV1750	1,750,000	1,488,000	1786	2	2 1/2	8	14	8	89	44 1/2	10 1/8	30 3/4	29 1/2	8 3/4	8 3/4	101	880
BWCV2000	1,999,000	1,699,000	2040	2	2 1/2	12	14	12	99 1/2	49 3/4	10 1/8	30 3/4	29 1/2	8 3/4	8 3/4	112	1010

* 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.

Residential Indirect Energy Saver PowerStor Series® Water Heaters

218/219

- Heat exchanger - single wall 1½" O.D. enamel coated (Vitraglas®) steel coil
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Water Connections – 3/4" 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 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

SW-2-40R-L
SW-2-50R-L
SW-2-65-L
SW-2-80-L
SW-2-120-L



Photo of 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	185
SW-2-50R-L	48	46 1/4	22	40 1/8	47	5 3/8	27 1/2	11 1/2	195
SW-2-65-L	60	59 1/4	22	53 1/8	60	5 3/8	27 1/2	11 1/2	225
SW-2-80-L	75	59	24	52 7/8	59 3/4	5 3/8	27 1/2	11 1/2	250
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	370

DOE Water Heater Performance

Model Number	Maximum First Hour Rating (Gal.) @ 140°F	115°F	Continuous Draw Rating (Gal./Min.) @ 140°F	115°F	Approximate Boiler Output Needed for Ratings (BTU/Hr.)
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

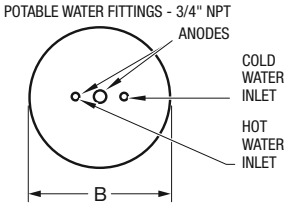
Model Number	First Hour Delivery	Continuous Draw Rating @ 135°F (Gal./Hr.)	Standby Heat Loss Rating (°F/Hr.)	Heat Req. Rate (BTU/Hr.)	Heat Source Flow Rate (Gal./Min.)
SW-2-30-L	255	235	1.2	157,000	13.7
SW-2-40R-L	260	235	1.1	157,000	13.7
SW-2-50R-L	265	235	0.9	157,000	13.7
SW-2-65-L	275	235	0.7	157,000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

Residential Indirect Energy Saver PowerStor2™ Water Heaters

220/221

- Heat exchanger - double wall 1½" O.D. enamel 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)



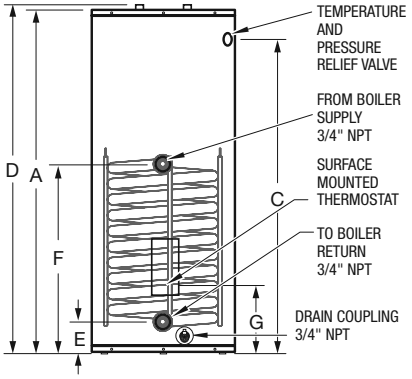




Photo of DW-2-50-L

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	195
DW-2-50-L	48	46 1/4	22	40 1/8	47 1/4	5 3/8	27 1/2	11 1/2	205
DW-2-65-L	64	59	22	53 1/8	60	5 3/8	27 1/2	11 1/2	235
DW-2-80-L	75	59	24	52 7/8	59 3/4	5 3/8	27 1/2	11 1/2	255

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.

DOE Water Heater Performance

Model Number	Maximum First Hour Rating (Gal.) @ 140°F	115°F	Continuous Draw Rating (Gal./Min.) @ 140°F	115°F	Approximate Boiler Output Needed For Ratings (BTU/Hr.)
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.

Commercial Indirect Energy Saver PowerStor Series® Water Heaters

222/223

- Heat exchanger - single wall 1½" O.D. enamel 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)

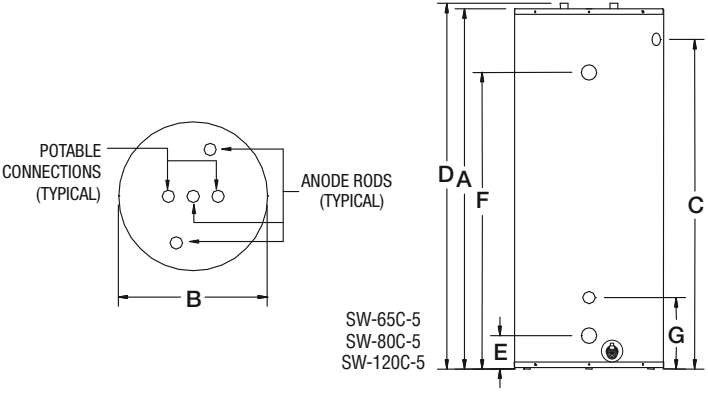




Photo of SW-65C-5

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 1/8	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 2.3 ft w.c. at 12 gpm for 200°F Boiler Supply.

I=B=R Water Heater Ratings

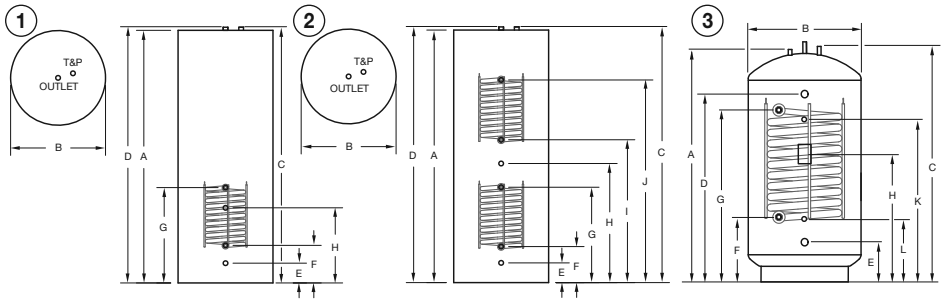
Model Number	First Hour Delivery	Continuous Draw Rating @ 135°F (Gal./Hr.)	Standby Heat Loss (°F/Hr.)	Heat Req. Rate (BTU/Hr.)	Heat Source Flow Rate (Gal./Min.)
SW-65C-5	405	370	0.7	245,000	14.0
SW-80C-5	415	370	0.6	245,000	14.0
SW-120C-5	445	370	0.4	245,000	14.0

Note: Pressure Drop across commercial models is 4.04 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

224/225

- 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 (1¼" 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 41¾"
Floor to Bottom Spare 3/4" NPT Tank Connection is 17"



Photo of RTV-40-L

PowerStorSS® Energy Saver Models

DIMENSIONS IN INCHES

Model Number	Gal. Cap.	A Floor to Heater Top	B Jacket Dia.	C Floor to T&P Conn.	D Floor to Hot Water Conn.	E Floor to Cold Water Conn.	F Floor to Exchanger Outlet	G Floor to Exchanger Inlet	H Floor to Aquastat	I Floor to Exchanger Outlet (Upper)	J Floor to Exchanger Inlet (Upper)	K Floor to Spare 3/4" Hot Water Conn.	K 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 1/8	24 1/8	30 1/8	36 1/8	51 1/4	—	—	130
RTV-120-L	119	60 5/8	30 1/4	61	49 1/2	11 1/4	17 7/8	45 1/2	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

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.

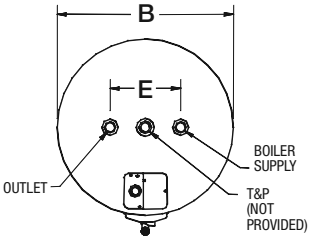
Notes:
1) Inlet water temperature based on 50°F.
2) RTV-75D has 2 coils.
3) RTV-119 supplied with 2 extra plugged tappings (see manual).
   Height to top spare plug is 41¾".
   Height to bottom spare plug is 17".
4) RTV-119 equipped with steel casing.

All potable water connections are 3/4" NPT (1¼" on RTV-119).
3⁄4" Aquastat tapping.
3⁄4" T&P valve tapping.

Residential Energy Saver Storage Tank Models

226/227

- 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")



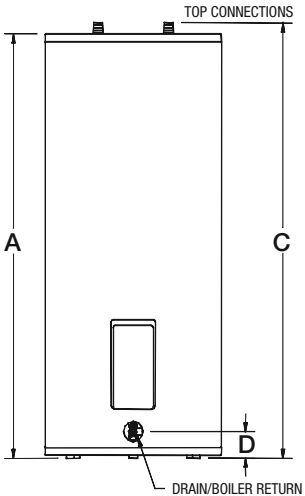




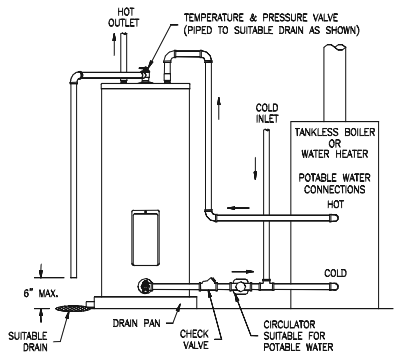
Photo of AST-50-6

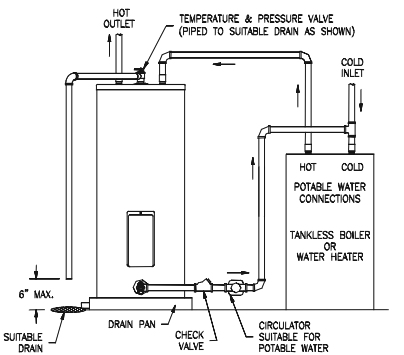
Energy Saver Models

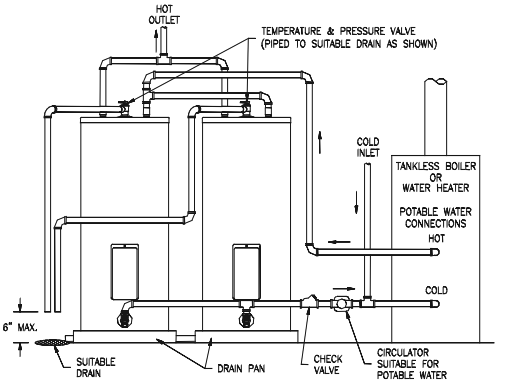
DIMENSIONS IN INCHES

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

228/229

- 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

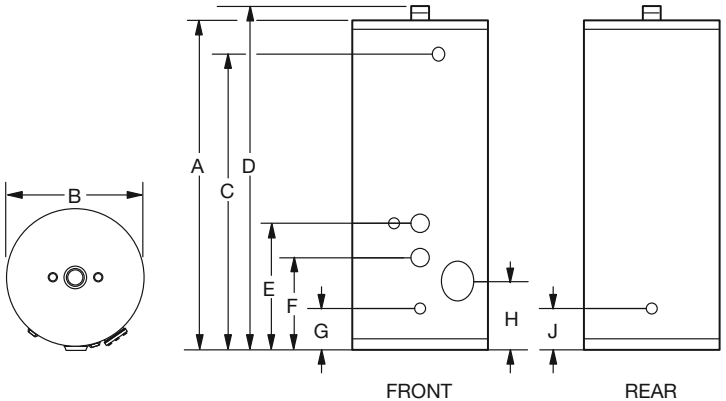




Photo of M-3-ST80R5

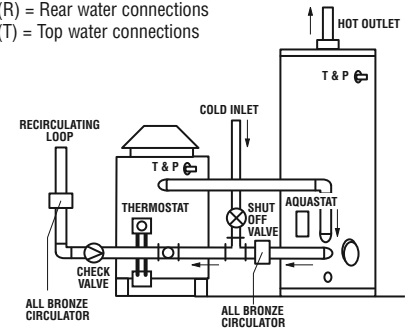
Energy Saver Models

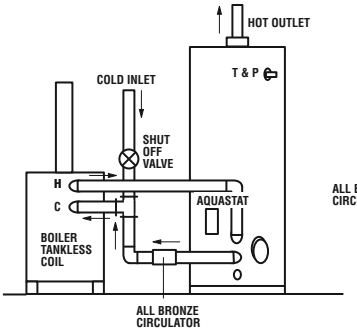
DIMENSIONS IN INCHES

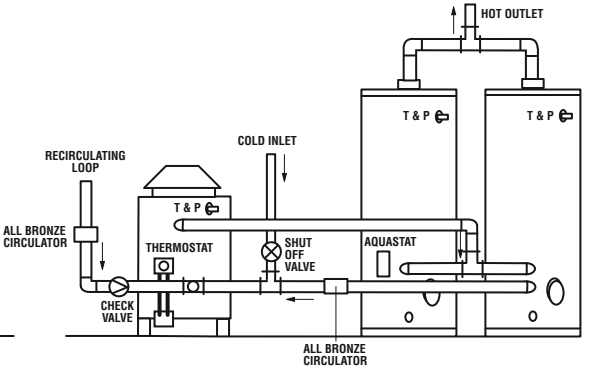
		A	B	C	D	E	F	G	H	J		
Model Number	**Gallon Capacity**	**Floor to Heater Top**	**Jacket Dia.**	**Floor to T&P Valve**	**Floor to Hot Water Conn.**	**Floor to Aquastat Top Circ. Conn.**	**Floor to Bottom Circ. Conn.**	**Floor to Drain Valve**	**Floor to Hand Hole Cleanout**	**Floor to Rear Water Conn.**	**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)	278
M-3-ST120R5	119	62 1/2	28	55 3/4	63 1/2	14 1/2	9 1/2	5	—	5	2(F&T), 2(R)	312
M-3-ST120R5A*	119	62 1/2	28	55 3/4	63 1/2	14 1/2	9 1/2	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

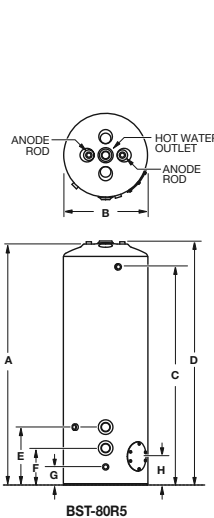




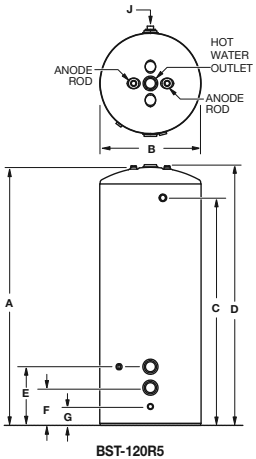


Commercial Vitraglas® Coated Unjacketed 230/231 Energy Saver Storage Tank Models

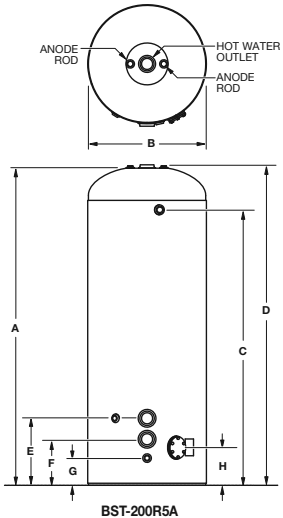
- Vitraglas® coated steel tank
- Vitraglas® lining
- ASME construction available (BST-200R5A only)
- Water Connections – 2" NPT factory installed true dielectric fittings (BST-200R5A have 2½" connections)
- Rear Connection – 2" NPT spud allows for rear water connection (BST-120R5 only)
- Hand hole cleanout (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


Photo of BST-120R5

Vitraglas® Coated 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*	200	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

232/233

- Vertical or horizontal construction
- Water Connections – two female 3" NPT fittings are located on the front for ease of service and installation
- ASME construction
- Available with Vitraglas® Lining, Double Vitraglas® Lining, Epoxy Lining, or Stainless Steel Tank
- 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

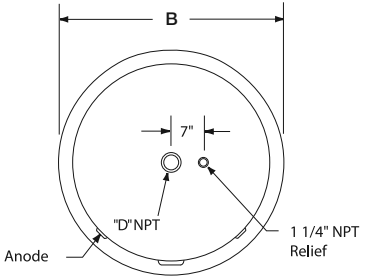


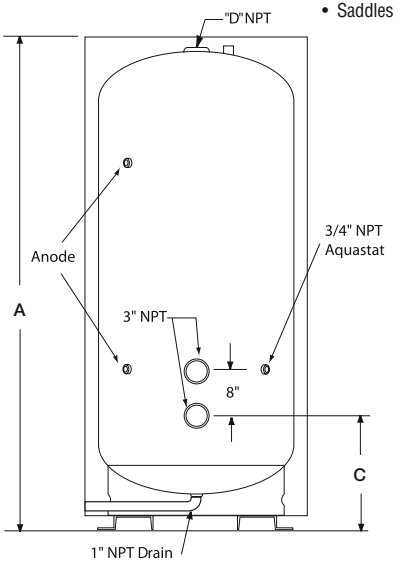
Photo of
NV310JG5A

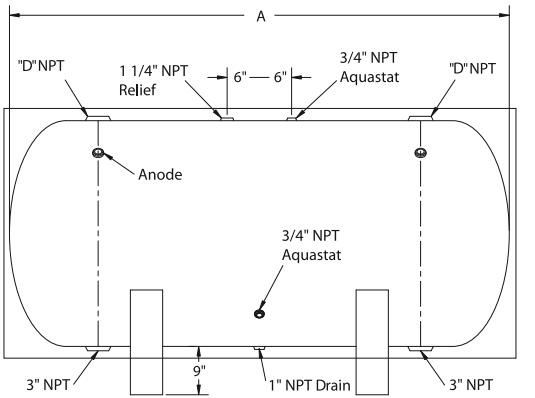
Factory Options Include:

- Manway (12" by 16")
- Hand hole (4" by 6")
- Saddles
- Extra Tappings (1"-4") **Sizes must be specified when ordering**
- Flanged Connections (3"-10")
- Stainless Steel construction
- 150 psi (add suffix -5)
- Hydrojet® HC (add suffix -1)

Manway inspection port is provided as standard equipment on epoxy lining.
Options must be specified when ordering







Commercial Large Volume Energy Saver Jacketed & Insulated Storage Tank Models

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

			A		B	C		
Model Number	**Actual U.S. Capacity Gal.**	**Nominal U.S. Capacity Gal.**	**Vert. Height**	**Horiz. Length**	**Jacket Dia.**	**Floor to Inlet**	**Hot Water Outlet Conn.**	**Approx. Shipping Weight (lbs) @125 PSI**
N†175J*5A	175	193	71	67	34	19½	2½	438
N†210J*5A	210	229	83	79	34	19½	2½	493
N†240J*5A	240	260	93	89	34	19½	2½	539
N†280J*5A	280	303	107	103	34	19½	2½	603
N†285J*5A	285	318	80	76	40	21	2½	667
N†310J*5A	310	344	86	82	40	21	2½	710
N†320J*5A	320	340	119	115	34	19½	2½	658
N†340J*5A	340	375	93	89	40	21	2½	760
N†360J*5A	360	397	98	94	40	21	2½	796
N†415J*5A	415	449	110	106	40	21	2½	881
N†435J*5A	435	486	89	85	46	22½	3	917
N†453J*5A	453	504	89	88	46	22½	3	942
N†465J*5A	465	502	122	118	40	21	2½	967

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

			A		B	C		
Model Number	**Actual U.S. Capacity Gal.**	**Nominal U.S. Capacity Gal.**	**Vert. Height**	**Horiz. Length**	**Jacket Dia.**	**Floor to Inlet**	**Hot Water Outlet Conn.**	**Approx. Shipping Weight (lbs) @125 PSI**
N†500J*5A	500	572	81	77	52	24	3	1176
N†505J*5A	505	558	101	97	46	22½	3	1017
N†515J*5A	515	555	134	130	40	21	3	1053
N†575J*5A	575	630	113	109	46	22½	3	1117
N†580J*5A	580	658	92	88	52	24	3	1310
N†645J*5A	645	702	125	121	46	22½	3	1217
N†675J*5A	675	752	104	100	52	24	3	1456
N†720J*5A	720	774	137	133	46	22½	3	1317
N†765J*5A	765	846	116	112	52	24	3	1602
N†790J*5A	790	846	147	143	46	22½	3	1400
N†840J*5A	840	940	128	124	52	24	3	1748
N†875J*5A	875	981	107	103	58	27½	3	1776
N†1040J*5A	1040	1128	149	145	52	24	3	2003
N†1245J*5A	1245	1395	124	120	64	29	3	3326
N†1530J*5A	1530	1689	148	144	64	27	3	3541

† = Tank Orientation
V = Vertcal
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

Ten Year Warranty with Double Vitraglas® Lining
One Year Warranty with Epoxy Lining

Example of full model number when ordering (NV240JG5A)

Commercial Large Volume Energy Saver Topcoat Storage Tank Models

236/237

- 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

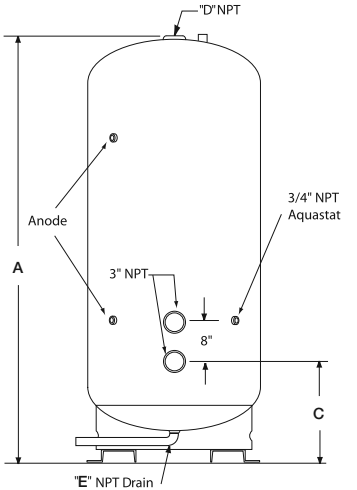


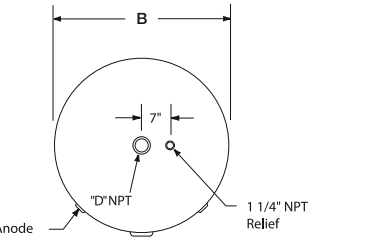
Spray Polyurethane Foam:

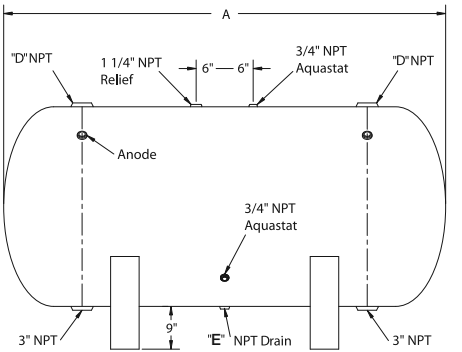
Specific Gravity:	1.17 – 1.19
Viscosity:	800 – 1300
Density:	@ 2" 2.10 – 2.35
	@ 4" 1.88 – 1.99
Closed Cell Content:	>90%
K-Factor, initial:	0.155 – 0.170
Permeance:	2.91 (perms)
	2.99 (perm inch)
Dimensional Stability:	+3.3 to +8.2 - Dry Age 28 days (158°F, Dry)
	-0.37 to –0.96 – Freeze 14 day (-20°F)
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%
Emmisivity:	.89







Commercial Large Volume Energy Saver Topcoat Storage Tank Models

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

			A		B	C	D	E	
Model Number	Actual U.S. Capacity Gal.	Nominal U.S. Capacity Gal.	Vert. Height	Horiz. Length	Jacket Dia.	Floor to Return Conn.	Hot Water Outlet Conn.	Drain Valve	Approx. Shipping Weight (lbs) @125 PSI
N†175T*5A	175	193	69	65	35	17½	2½	1	303
N†210T*5A	210	229	81	77	35	17½	2½	1	347
N†240T*5A	240	260	91	87	35	17½	2½	1	383
N†280T*5A	280	303	105	101	35	17½	2½	1	433
N†310T*5A	310	344	84	80	41	19	2½	1	527
N†320T*5A	320	340	117	113	35	17½	2½	1	476
N†340T*5A	340	375	91	87	41	19	2½	1	569
N†360T*5A	360	397	96	92	35	19	2½	1	559
N†415T*5A	415	449	108	104	41	19	2½	1	671
N†435T*5A	435	486	87	83	47	20½	3	1	695
N†465T*5A	465	502	120	116	41	19	3	1	743

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

			A		B	C	D	E	
Model Number	**Actual U.S. Capacity Gal.**	**Nominal U.S. Capacity Gal.**	**Vert. Height**	**Horiz. Length**	**Jacket Dia.**	**Floor to Return Conn.**	**Hot Water Outlet Conn.**	**Drain Valve**	**Approx. Shipping Weight (lbs) @125 PSI**
N†500T*5A	500	572	79	75	53	22	3	1	928
N†515T*5A	515	555	132	128	41	19	2½	1	815
N†575T*5A	575	630	111	107	47	20½	3	1	863
N†580T*5A	580	658	90	86	53	22	3	1	1045
N†645T*5A	645	702	123	119	47	20½	3	1	947
N†675T*5A	675	752	102	98	53	22	3	1	1173
N†720T*5A	720	774	135	131	47	20½	3	1	1031
N†765T*5A	765	846	114	110	53	22	3	1	1301
N†790T*5A	790	846	145	141	47	20½	3	1	1101
N†840T*5A	840	940	126	122	53	22	3	1	1428
N†1040T*5A	1040	1128	147	143	53	22	3	1	1652

† = Tank Orientation
V = Vertcal
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

Ten Year Warranty with Double Vitraglas® Lining
One Year Warranty with Epoxy Lining

Example of full model number when ordering (NV240TG5A)
Note: Please be advised that all tank sizes are available for this topcoat process.

Factory Options Include:

- Manway (12" by 16")
- Hand hole (4" by 6")
- Saddles
- Extra Tappings (1"-4") **Sizes must be specified when ordering**
- Flanged Connections (3"-10")
- Stainless Steel construction
- 150 psi (add suffix -5)
- Hydrojet® HC (add suffix -1)

Manway inspection port is provided as standard equipment on epoxy lining. **Options must be specified when ordering**

Commercial Large Volume Energy Saver 240/241
Unjacketed & Uninsulated Storage Tank Models

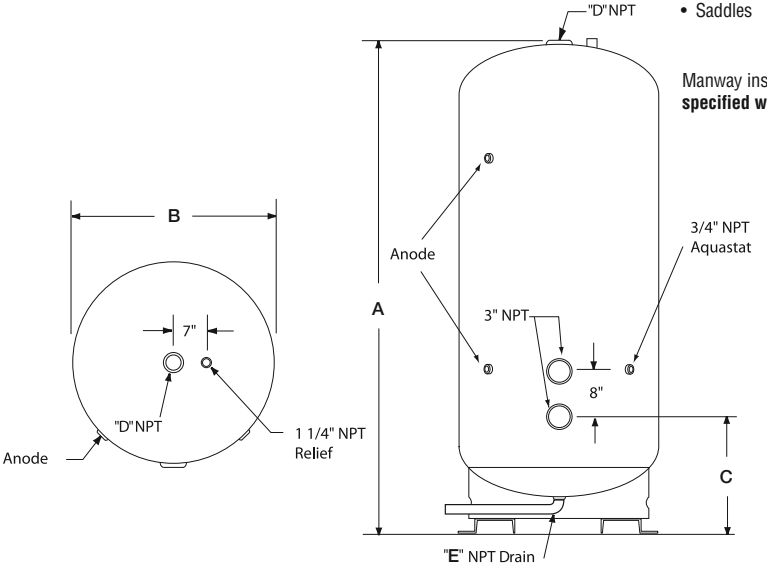
- ASME construction
- Available with Vitraglas® Lining, Double Vitraglas® Lining, Epoxy Lining, or Stainless Steel Tank
- Hydrojet® HC – optional
- Magnesium anode rod(s) – for protection and longer service life
- ASME tested and certified to 125 PSI
- Red Oxide Primer – completely covers exterior of 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

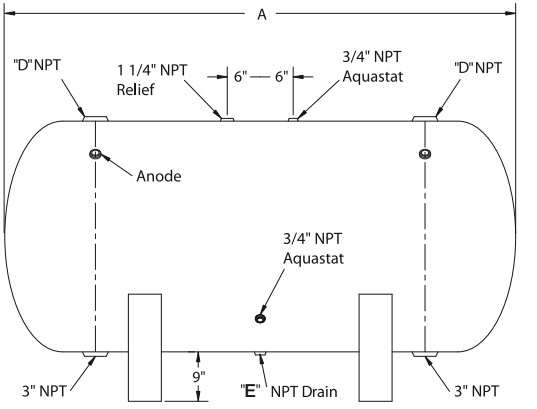


Factory Options Include:

- Manway (12" by 16")
- Hand hole (4" by 6")
- Saddles
- Extra Tappings (1"-4") **Sizes must be specified when ordering**
- Flanged Connections (3"-10")
- Stainless Steel construction
- 150 psi (add suffix -5)
- Hydrojet® HC (add suffix -1)

Manway inspection port is provided as standard equipment on epoxy lining. **Options must be specified when ordering**





Commercial Large Volume Energy Saver 242/243
Unjacketed & Uninsulated Storage Tank Models

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

			A		B	C	D	E	
Model Number	Actual U.S. Capacity Gal.	Nominal U.S. Capacity Gal.	Vert. Height	Horiz. Length	Jacket Dia.	Floor to Return Conn.	Hot Water Outlet Conn.	Drain Valve	Approx. Shipping Weight (lbs) @125 PSI
N†175N*5A	175	193	67	63	30	17½	2½	1	303
N†210N*5A	210	229	79	75	30	17½	2½	1	347
N†240N*5A	240	260	89	85	30	17½	2½	1	383
N†280N*5A	280	303	103	99	30	17½	2½	1	433
N†310N*5A	310	344	82	78	36	19	2½	1	527
N†320N*5A	320	340	115	111	30	17½	2½	1	476
N†340N*5A	340	375	89	85	36	19	2½	1	569
N†360N*5A	360	397	94	90	36	19	2½	1	559
N†415N*5A	415	449	106	102	36	19	2½	1	671
N†435N*5A	435	486	85	81	42	20½	3	1	695
N†465N*5A	465	502	118	114	36	19	3	1	743
N†500N*5A	500	572	77	73	48	22	3	1	928
N†515N*5A	515	555	130	126	36	19	2½	1	815
N†575N*5A	575	630	109	105	42	20½	3	1	863
N†580N*5A	580	658	88	84	48	22	3	1	1045

Vertical and Horizontal Energy Saver Models

DIMENSIONS IN INCHES

			A		B	C	D	E	
Model Number	**Actual U.S. Capacity Gal.**	**Nominal U.S. Capacity Gal.**	**Vert. Height**	**Horiz. Length**	**Jacket Dia.**	**Floor to Return Conn.**	**Hot Water Outlet Conn.**	**Drain Valve**	**Approx. Shipping Weight (lbs) @125 PSI**
N†645N*5A	645	702	121	117	42	20½	3	1	947
N†675N*5A	675	752	100	96	48	22	3	1	1173
N†720N*5A	720	774	133	129	42	20½	3	1	1031
N†765N*5A	765	846	112	108	48	22	3	1	1301
N†790N*5A	790	846	143	139	42	20½	3	1	1101
N†840N*5A	840	940	124	120	48	22	3	1	1428
N†1040N*5A	1040	1128	145	141	48	22	3	1	1652
N†1340N*5A	1340	1457	153	147	54	25½	3	1½	2182
N†1820N*5A	1820	1983	168	168	60	27	3	1½	3110
N†2395N*5A	2395	2570	216	210	60	27	3	1½	3922
N†3115N*5A	3115	3384	198	192	72	30	3	1½	4338
N†3530N*5A	3530	3807	222	216	72	30	3	1½	4825
N†4120N*5A	4120	4406	256	250	72	30	3	1½	5516
N†5695N*5A	5695	6141	262	256	84	33	3	1½	7994

† = Tank Orientation
V = Vertcal
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

Ten Year Warranty with Double Vitraglas® Lining
One Year Warranty with Epoxy Lining

Example of full model number when ordering (NV175NG5A)

Residential Gas Energy Saver FVIR Combi1™ Water Heater System

244/245

DEFENDER SAFETY SYSTEM™ 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. enamel coated (Vitraglas®) 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 0.80 ft. of head loss
- Vitraglas® 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

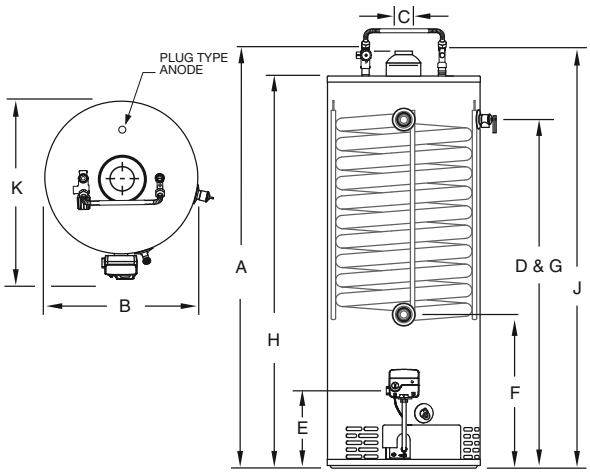




Photo of C-SW2-504T10FBN

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	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 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	0.03	0.20	0.51	0.80	1.15

Residential Gas Energy Saver Combi1™ Water Heater System

246/247

BRADFORD WHITE ICON System™

The Combi1™ Models Feature:

- Bradford White ICON System™
- Heat Exchanger—Single wall 1½" O.D. enamel coated (Vitraglas®) 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 0.80 ft. of head loss
- Vitraglas® 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

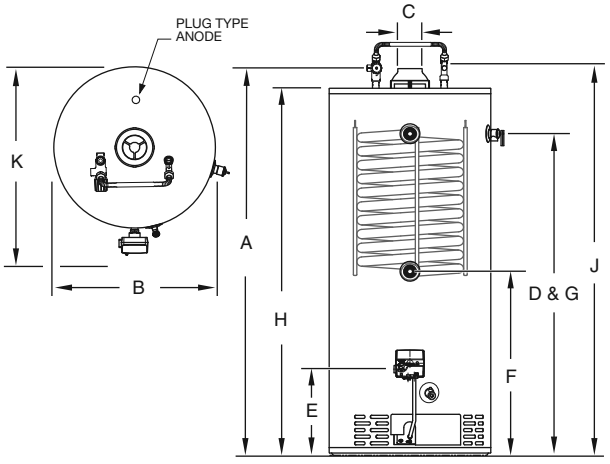




Photo of C-SW2-75T10BN

Combi1™ Atmospheric Vent Energy Saver Models

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed 80% Thermal 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	72	76,000	81	62 1/4	26	4	51 3/4	13 7/8	29 5/8	51 3/4	59	63	30 3/8	326

All propane models feature a Titanium Stainless Steel 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	0.03	0.20	0.51	0.80	1.15

Residential Gas Energy Saver Combi1™ TTW® Water Heater System

248/249

DEFENDER SAFETY SYSTEM® BRADFORD WHITE ICON 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:

- Bradford White ICON System™
- Heat Exchanger—Single wall 1½" O.D. enamel coated (Vitraglas®) steel
- Provides domestic hot water and space heating in one system
- Low Heat Exchanger Head Loss—Up to 10 GPM flow, with less than 0.80 ft. of head loss
- Vitraglas® lining
- Integrated Mixing Device
- Factory installed Hydrojet® Total Performance System
- 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

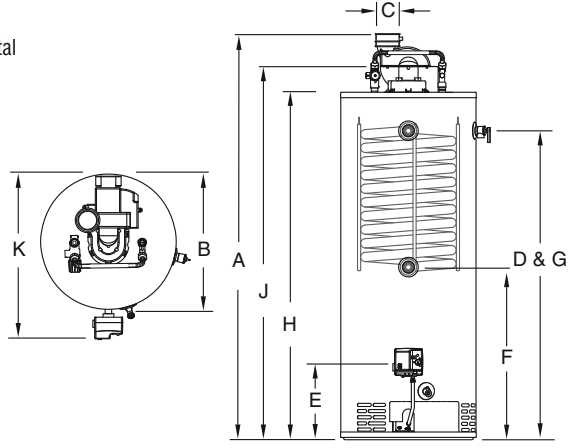




Photo of C-SW2-TW50T10FBN

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	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 3/4	26 3/4	243
C-SW2-TW75T10BN	72	76,000	82	68 3/8	26	3 or 4	53	15	34 1/2	53	60 1/4	64 1/4	31	313

All propane models feature a Titanium Stainless Steel 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.

(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

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	0.03
5	0.20
8	0.51
10	0.80
12	1.15

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	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows†	3	45 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 FVIR Combi2™ Water Heater System

250/251

DEFENDER SAFETY SYSTEM™ 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. enamel 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 3.75 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

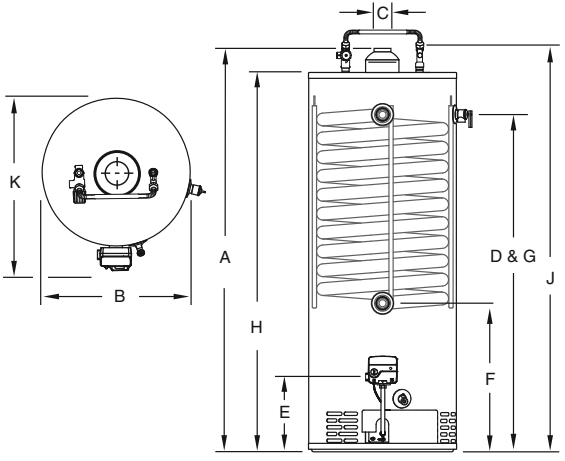




Photo of
C-DW2-504T10FBN

Combi2™ Atmospheric Vent Energy Saver Model

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed 80% Thermal 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	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 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	0.15	0.94	2.40	3.75	5.40

Residential Gas Energy Saver Combi2™ Water Heater System

252/253

BRADFORD WHITE ICON System™

The Combi2™ Models Feature:

- Bradford White ICON System™
- Heat Exchanger—Double wall 1½" O.D. enamel 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 3.75 ft. of head loss
- Vitraglas® lining
- Factory installed Hydrojet2™ 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

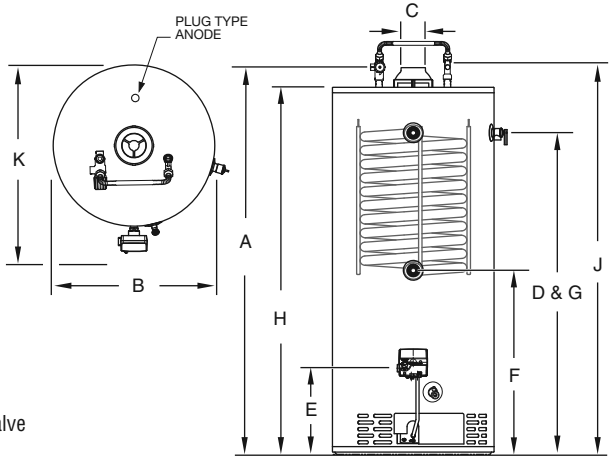




Photo of C-DW2-75T10BN

Combi2™ Atmospheric Vent Energy Saver Model

Meet or exceed ASHRAE 90.1b (current standard) CEC Listed 80% Thermal 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	72	76,000	81	62 1/4	26	4	51 3/4	13 7/8	29 5/8	51 3/4	59	63	30 3/8	302

All propane models feature a Titanium Stainless Steel 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	0.15	0.94	2.40	3.75	5.40

Residential Gas Energy Saver Combi2™ TTW® Water Heater System

254/255

DEFENDER SAFETY SYSTEM™ ICON 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:

- Bradford White ICON System™
- Heat Exchanger—Double wall 1½" O.D. enamel coated (Vitraglas®) 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 3.75 ft. of head loss
- Integrated Mixing Device
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- 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

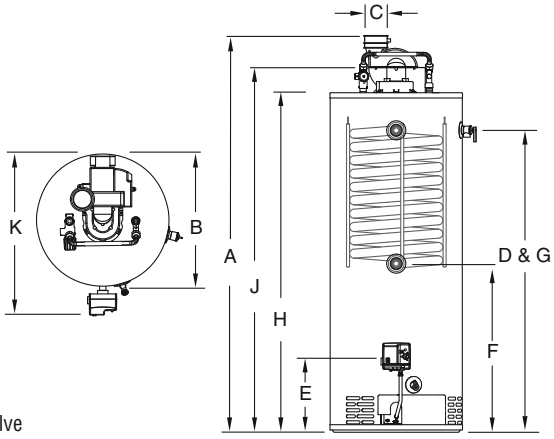




Photo of C-DW2-TW50T10FBN

Combi2™ Power Vented Energy Saver Models

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

Recovery Efficiency ranging up to 80% (Minimum)

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-DW2-TW50T10FBN	45	67,000	72	65 7/8	22	3	50 1/8	11 3/4	28	50 1/8	56 3/8	60 3/4	26 3/4	245
C-DW2-TW75T10BN	72	76,000	82	68 3/8	26	3	53	15	30 7/8	53	60 1/4	64 1/4	31	315

All propane models feature a Titanium Stainless Steel 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.

(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

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	0.15
5	0.94
8	2.40
10	3.75
12	5.40

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	1	55 ft.	175 ft.
of	2	50 ft.	170 ft.
90° Elbows†	3	45 ft.	165 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

256/257

- Heat exchanger – Double wall 1½" enamel coated (Vitraglas®) 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 3.75ft. of head loss with flow up to 10GPM.
- Vitraglas® lining
- Factory installed Hydrojet® Total Performance System
- Carlin 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

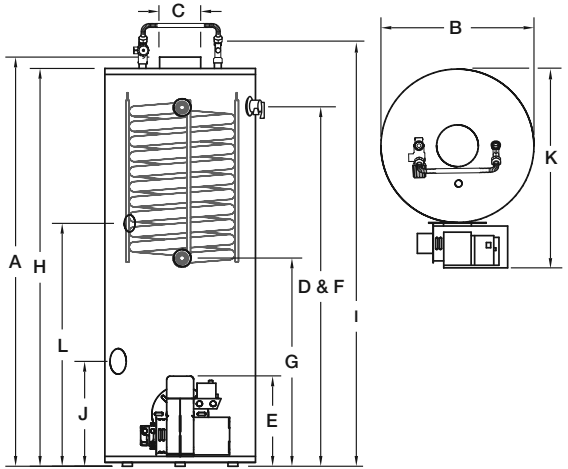




Photo of
C-DW1-70L6OF

Combi2™ Atmospheric Vent Energy Saver Model

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

DIMENSIONS IN INCHES

					A	B	C	D	E	F	G	H	I	J	K	L	
Model Number	**Gal. Cap.**	**BTU/Hr. Input**	**GPH Firing Rate**	**Recovery 90°F Rise* 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-DW1-70L6OF	68	119,000	0.85	127	66¾	24	6	57⅜	10½	57⅜	35¼	64	68	13¼	32½	33⅞	299†

*Based on manufacturers rated recovery efficiency.
†Shipping weights do not include burner and controls.

	C-DW1-70L6OF	
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	0.15	0.94	2.40	3.75	5.40

Part Numbers	Description*
228-49641-03	CARLIN burner with dual aqua stat @ 0.85 GPH

* Burner is 1-stage, 120V.

Speciality Products – Electric Energy Saver 258/259
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

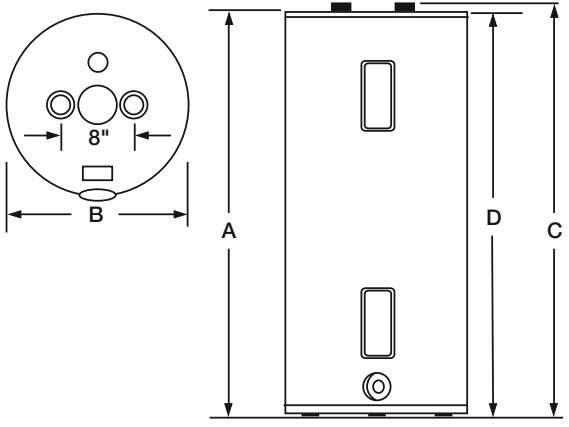




Photo of
DB-80R3DS

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	64⅝	63	190

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.

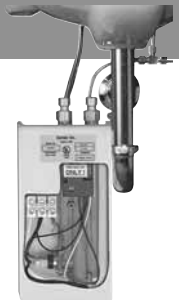
NOTE: **Not recommended for 180° sanitizing.**

NOTE: Refer to pages 182/183 for technical information and pages 196/197 for GPH recovery information.

Specialty Products Electric

260/261

Instantaneous Water Heaters



SINGLE POINT



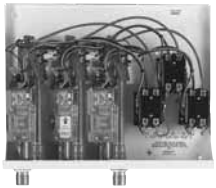
THERMOSTATIC



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 "Fortron®" 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.

Specifications
Dimensions: 10.75" x 5.25" x 2.875"
Weight: 3 lbs.
Materials:
Cover: ABS UL rated 94Vo.
Glass reinforced "Fortron®" 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)

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.

Specifications

Dimensions: 10.75" x 5.25" x 2.875"
Weight: 3 lbs.
Materials:
Cover: ABS UL rated 94Vo.
Glass reinforced "Fortron®" 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 "UDEL®" Heater Body and Ni Chrome Element
Color: White • Element: Dual replaceable cartridge inserts • Pipe-Fittings: 3/4" NPT 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
Single Phase Model Dimensions:
12.25" x 15.25" x 4.25"
Weight: 12 lbs.
Three Phase Model Dimensions:
12.125" x 20.1875" x 4.125"
Weight: 15 lbs.
Materials:
Cover: Enameled Steel.
Glass reinforced "UDEL®" Heater Body and Ni Chrome Element
Color: White • Element: Triple replaceable cartridge inserts • Pipe-Fittings: 3/4" NPT 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
EFTR-18000-6-T-10	18.0	480 Y**	21.7 Amps	82°	61°	49°	41°	35°	32°	25°	6 AWG
EFTR-24000-6-T-10	24.0	480 Y**	28.9 Amps	—	82°	65°	54°	47°	41°	34°	6 AWG
EFTR-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.
**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.

	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 or 10 Year	6 or 10 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 Vitraglas® Coated Unjacketed 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	K = 2013
L = 1994	T = 1999	A = 2004	F = 2009	L = 2014
M = 1995	W = 2000	B = 2005	G = 2010	
N = 1996	X = 2001	C = 2006	H = 2011	
P = 1997	Y = 2002	D = 2007	J = 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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