

## Residential Direct Vent Energy Saver Gas Water Heater



Photo is of  
DS1-50S6FBN

### The Direct Vent FVIR Defender Safety System<sup>®</sup> Models Feature:

- **Closed Combustion**—All air for combustion is taken directly from the outside. The co-axial vent pipe (pipe inside a pipe) draws combustion air in through the outer pipe (5"), and exhausts the products of combustion air through the inner pipe (3"). The co-axial vent pipe at the top of the unit can be rotated for venting flexibility.
- **Reinforced Seals**—Seals surround the closed combustion chamber and the FVIR inner door, preventing the ignition of flammable vapors outside of the water heater.
- **Piezo Igniter**—Easy and quick lighting of the pilot burner by push button.
- **Pedestal Base**—Rugged and durable base allows easy transport and positioning, corrosion resistant contact with floor.
- **Maintenance Free**—The co-axial vent piping and the closed combustion chamber with reinforced seals do not require regular cleaning under normal operating conditions.
- **Sight Window**—Offers a view into the combustion chamber to observe the operation of the pilot and burner.
- **No Electrical Power Necessary.**
- **Factory installed Hydrojet<sup>®</sup> Total Performance System**—Cold water inlet sediment reducing device. Helps prevent sediment build up in tank. Increases first hour delivery of hot water while minimizing temperature build up in tank.
- **Vitraglas<sup>®</sup> Lining**—Bradford White water heater tanks are protected from the corrosive effects of hot water by an exclusive ceramic porcelain-like coating. The Bradford White high silica Vitraglas<sup>®</sup> lining provides a tough interior surface for our water heater tanks.
- **Fully Automatic Controls**—Built-in gas pressure regulation and energy cut-off switch.
- **Optional Vent Kits**—Allow for up to 8 foot max vertical and 8 foot max horizontal (2.4 meters). All DS models must be terminated horizontally.
- **1" Non-CFC Foam Insulation**—Surrounds the tank surface, saving energy by retarding loss of heat.
- **Water Connections**—3/4" NPT factory installed true dielectric fittings extend water heater life and eases installation.
- **Factory Installed Heat Traps**—Design incorporates a flexible disk that reduces heat loss in piping and eliminates the potential for noise generation.
- **Protective Magnesium Anode Rod**—Provides added protection against corrosion for long trouble-free service.
- **Flue Baffle**—Maximizes the amount of heat absorbed by the tank and reduces heat loss during standby periods.
- **Steel Tank**—Heavy gauge steel automatically formed, rolled and welded.
- **T&P Relief Valve**—Included.
- **Brass Drain Valve.**
- **Design Certified by CSA International (formerly AGA and CGA).**



### 6 or 10-Year Limited Tank Warranties / 6-Year Limited Warranty on Component Parts.

For more information on warranty, please visit [www.bradfordwhite.com](http://www.bradfordwhite.com)

For products installed in USA, Canada and Puerto Rico. Some states do not allow limitations on warranties. See complete copy of the warranty included with the heater.

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. Defender Safety System<sup>®</sup>, Vitraglas<sup>®</sup> and Hydrojet<sup>®</sup> are registered trademarks of Bradford White<sup>®</sup> Corporation.

## Direct Vent Energy Saver Models

NATURAL GAS AND LIQUID PROPANE GAS

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

Model Number	Capacity		Recovery at 90°F Rise*				A Floor to Center Line of Vent in.	B Jacket Dia. in.	C Vent Size in.	D Floor to T&P Conn. in.	E Floor to Gas Conn. in.	F Floor to Top of Heater in.	H Floor to Water Conn. in.	K Depth in.	Approx. Shipping Weight lbs.		
	U.S. Gal.	Imp. Gal.	Nat. BTU/Hr. Input	LP BTU/Hr. Input	Nat. U.S. Imp. GPH	LP U.S. Imp. GPH											
DS1-40S6FBN	40	33	38,000	36,000	41	34	39	32	63 <sup>1</sup> / <sub>4</sub> min.	20	3-5	43 <sup>1</sup> / <sub>2</sub>	14 <sup>7</sup> / <sub>8</sub>	49 <sup>3</sup> / <sub>4</sub>	50 <sup>3</sup> / <sub>4</sub>	29 <sup>9</sup> / <sub>16</sub>	162
DS1-50S6FBN	50	42	42,000	40,000	45	37	43	36	72 <sup>1</sup> / <sub>4</sub> min.	20	3-5	52 <sup>1</sup> / <sub>4</sub>	14 <sup>7</sup> / <sub>8</sub>	58 <sup>3</sup> / <sub>4</sub>	59 <sup>3</sup> / <sub>4</sub>	29 <sup>9</sup> / <sub>16</sub>	181

Model Number	Capacity		Recovery at 50°C Rise*				A Floor to Center Line of Vent mm.	B Jacket Dia. mm.	C Vent Size mm.	D Floor to T&P Conn. mm.	E Floor to Gas Conn. mm.	F Floor to Top of Heater mm.	H Floor to Water Conn. mm.	K Depth mm.	Approx. Shipping Weight kg.
	Liters	Liters	Nat. kW Input	LP kW Input	Nat. Liters/Hour	LP Liters/Hour									
DS1-40S6FBN	151	123	11.1	10.5	155	148	1607	508	76-127	1105	378	1264	1289	737	73
DS1-50S6FBN	189	142	12.3	11.7	170	163	1835	508	76-127	1327	378	1492	1518	737	82

All Propane models feature a Titanium Stainless Steel propane burner. For Propane (LP) models change suffix "BN" to "SX".  
For 10 year models, change suffix from "6" to "10".

\*Based on manufacturers rated recovery efficiency.

The water heater is shipped with a standard vent kit. Vent Kit components are: 3" Vent tube and elbow, 5" Air Intake tube and elbow, Vent terminal and hardware, Inner and Outer wall terminal mounting flange, RTV silicone sealant.

		Length "X"				
		13 <sup>3</sup> / <sub>4</sub> " to 14 <sup>3</sup> / <sub>16</sub> "	15" to 17 <sup>1</sup> / <sub>16</sub> "	22 <sup>1</sup> / <sub>4</sub> " to 32 <sup>3</sup> / <sub>16</sub> "	36" to 55 <sup>7</sup> / <sub>8</sub> "	58 <sup>5</sup> / <sub>16</sub> " to 104 <sup>5</sup> / <sub>16</sub> "
Height "Y"	10"	Order Kit A	Order Kit B	No Add'l. Kit Req'd.	Order Kit C	Order Kit D
	14 <sup>3</sup> / <sub>4</sub> " to 15 <sup>1</sup> / <sub>16</sub> "	Order (2) Kit A	Order Kit A & B	Order Kit A	Order Kit A & C	Order Kit A & D
	16 <sup>1</sup> / <sub>2</sub> " to 19 <sup>3</sup> / <sub>16</sub> "	Order Kit A	Order (2) Kit B	Order Kit B	Order Kit B & C	Order Kit B & D
	23 <sup>3</sup> / <sub>4</sub> " to 33 <sup>1</sup> / <sub>16</sub> "	Order Kit A	Order Kit B	Order Kit C	Order (2) Kit C	Order Kit D
	37 <sup>1</sup> / <sub>2</sub> " to 57 <sup>3</sup> / <sub>8</sub> "	Order Kit C & A	Order Kit C & B	Order (2) Kit C	Order (3) Kit C	Order Kit C & D
	59 <sup>1</sup> / <sub>16</sub> " to 105 <sup>1</sup> / <sub>16</sub> "	Order Kit D & A	Order Kit D & B	Order Kit D	Order Kit D & C	Order (2) Kit D

The Vent tube and Air Intake tube provided with the heater telescopes from 13<sup>3</sup>/<sub>4</sub>" to 23<sup>3</sup>/<sub>16</sub>".

The kits found in the bold frame are needed **in addition** to the vent and air intake tube provided with the water heater (utilizes the vent tube provided).

The kits found outside the bold frame do not utilize the vent tube provided with the standard vent kit.

For vent distances not found in the selection chart above, please contact the Product Department for sizing recommendations.

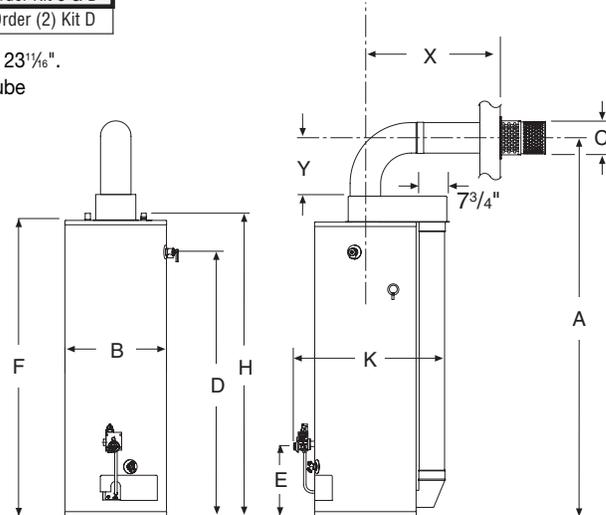
### Optional vent kit :

- Kit "A"** Telescopes from 4<sup>3</sup>/<sub>4</sub>" to 5<sup>1</sup>/<sub>16</sub>" Part No. 243-41260-00
- Kit "B"** Telescopes from 6<sup>1</sup>/<sub>2</sub>" to 9<sup>3</sup>/<sub>16</sub>" Part No. 243-41331-00
- Kit "C"** Telescopes from 13<sup>3</sup>/<sub>4</sub>" to 23<sup>3</sup>/<sub>16</sub>" Part No. 243-41029-00
- Kit "D"** Telescopes from 49<sup>3</sup>/<sub>16</sub>" to 95<sup>3</sup>/<sub>16</sub>" Part No. 243-41424-00

### Horizontal Vent Termination Only.

Please specify part number when ordering optional vent kit.

For additional information, please reference the installation instructions.



### Meets NAECA Requirements

#### General

All gas water heaters are certified at 300 PSI test pressure (2068 kPa) and 150 PSI working pressure (1034 kPa). All potable water connections are 3/4" NPT (19mm) on 8" (203mm) centers. All gas connections 1/2" (13mm).

All models design certified by CSA International (formerly AGA/CGA), ANSI Z-21.10.1 and peak performance rated.

**Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.**

#### Suitable for Water (Potable) Heating and Space Heating.

Toxic chemicals, such as those used for boiler treatment, shall NEVER be introduced into this system. This unit may NEVER be connected to any existing heating system or component(s) previously used with a non-potable water heating appliance.



Ambler, PA

For U.S. and Canada field service, contact your professional installer or local Bradford White sales representative.

Sales 800-523-2931 • Fax 215-641-1670 / Technical Support 800-334-3393 • Fax 269-795-1089 • Warranty 800-531-2111 • Fax 269-795-1089

International: Telephone 215-641-9400 • Telefax 215-641-9750 / [www.bradfordwhite.com](http://www.bradfordwhite.com)

**BRADFORD WHITE-CANADA** INC. Sales / Technical Support 866-690-0961 / 905-238-0100 • Fax 905-238-0105 / [www.bradfordwhite.com](http://www.bradfordwhite.com)

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