


BRADFORD WHITE
CORPORATION

Introducing
The Bradford White

DEFENDER

Safety System™

Maintenance Free
Protection Featuring
ScreenLok™ Technology



The Bradford White **DEFENDER Safety System™**

Beginning July 1, 2003

Bradford White is proud to introduce its Defender Safety System™, a new combustion technology that resists the ignition of flammable vapors that can occur outside of the water heater. The introduction is scheduled for July 1, 2003 to meet the new American National Standards Institute's (ANSI) standard for residential gas water heaters.

The Bradford White Defender Safety System™ maintains outstanding efficiency, a long service life and very low NOx emissions. Best of all, it provides maintenance free operation while meeting the stringent ANSI standard for residential gas water heaters.

How The Safety System Works

During normal operation, air for combustion is drawn into the water heater through the opening in the jacket. This air travels down and around the combustion chamber and enters through holes in the very bottom of the corrosion-resistant combustion chamber. The air then travels up through the oriented flame arrestor plate louvers, where the velocity of the air is increased and its direction altered. The air then mixes in a normal manner with the supplied gas and is efficiently combusted, producing very low NOx emissions.

In the case where trace amounts of flammable vapors are present in the air flowing into the combustion chamber, the vapors are harmlessly ignited by the burner/pilot flame. If flammable vapors are in sufficient quantity to prevent normal combustion the burner/pilot flame is shut down.

Should the flammable vapors continue to the burner, the flame arrestor plate prevents the flames from traveling backwards and igniting vapors outside of the combustion chamber.

The calibrated, multipurpose thermal switch recognizes this and shuts down the pilot and main burner. This switch also deactivates the burner and pilot in the unlikely event of restricted airflow caused by severe lint, dust or oil accumulation on the arrestor plate.



Do not store or use gasoline or other flammable, combustible, or corrosive vapors and liquids in the vicinity of a water heater or any other appliance.

Maintenance Free Protection Featuring

The Technology behind the Bradford White *Defender* Safety System™

The heart of Bradford White Defender Safety System™ is the flame arrestor design of the patented ScreenLok™ Technology. This precisely engineered and manufactured component is made of 304L alloy stainless steel and contains up to eighteen thousand, geometrically oriented louvers. These micro dimensioned louvers increase the velocity of incoming air to the system. If flammable vapors enter this uniquely designed system and are ignited, a vector effect occurs inside of the combustion chamber.

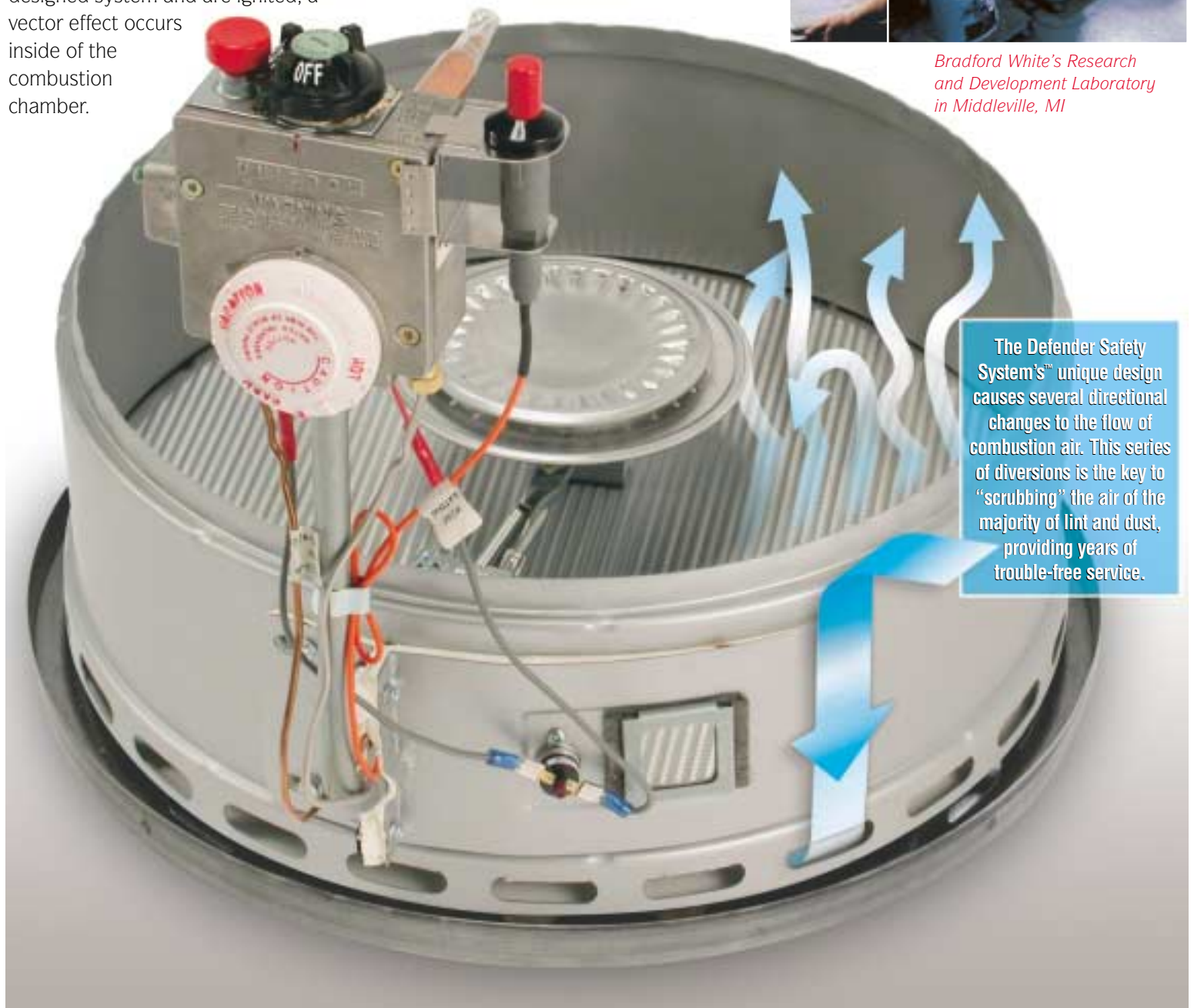
The combination of high velocity air entering the chamber and the vector effect caused by combustion will prevent any flames present in the chamber from traveling backwards through the flame arrestor plate and outside of the water heater.

The Bradford White Defender Safety System™ was engineered to be the safest, most reliable flammable vapor resistant system in the industry. This design has been life-cycle tested in

Bradford White's state-of-the-art R&D facility, an independent laboratory, and has also undergone extensive field testing.



Bradford White's Research and Development Laboratory in Middleville, MI



The Defender Safety System's™ unique design causes several directional changes to the flow of combustion air. This series of diversions is the key to "scrubbing" the air of the majority of lint and dust, providing years of trouble-free service.

ScreenLok™ Technology

The Bradford White *Defender* Safety System™ Features

- 1. Piezo Igniter** - Easy and quick lighting of the pilot burner by push button.
- 2. Advanced ScreenLok™ Technology Flame Arrestor Design** - Constructed of 304L stainless steel for outstanding impact, heat, crack, and corrosion resistance. 304L stainless steel is a non-rusting alloy. Tested in the harshest simulated environment, and continued to operate properly over the normal life expectancy of the product. If it becomes necessary because of an extreme environment, the system can be easily cleaned using a shop vacuum and/or compressed air.
- 3. Resettable Thermal Switch** - Proven and reliable bimetallic switch prevents burner or pilot operation in case of ongoing flammable vapor burn inside of the combustion chamber or restricted air flow caused by lint, dust and/or oil buildup. Allows simplified, quick and easy service.
- 4. Proven Burner Design** - Used for many years to allow off-the-shelf replacement if necessary.
- 5. Low NOx Standard** - Efficient and clean combustion on all models and sizes, meets or exceeds strict California SCAQMD emission regulations.
- 6. Standard Thermocouple** - Conventional off-the-shelf replacement parts for quick service.
- 7. No Increase in Height or Diameter** - Same compact and efficient dimensions.
- 8. Pedestal Base** - Rugged and durable base allows easy transport and positioning, corrosion resistant contact with floor.
- 9. Controlled Combustion System** - Added strength, lower noise. Assures combustion air is directed through the ScreenLok™ Technology flame arrestor.
- 10. Maintenance Free** - No regular cleaning of air inlet openings or flame arrestor is required under normal conditions.
- 11. Sight Window** - Offers a view into the combustion chamber to observe the operation of the pilot and burner.

