

## Design of the ClearFire Boiler Heralded as Highly Efficient

### The Pre-mix Burner and Modulating Controls Catapult Boiler Above the Competition

Tom Ustanik, co-owner of Lansing Cleaners, based in Lansing Ill., is tapped frequently to share his expertise about the dry cleaning industry and the environmental responsibility of businesses today. He is well versed on both topics, having owned Lansing Cleaners along with his wife Sandy since 1982. Lansing Cleaners is a two-time winner of the Illinois State Drycleaner of the Year award and also a three-time winner of the Governor's Pollution Prevention Award.

When Ustanik was in the market for a new boiler, he knew he wanted one with a modulating burner to continuously match fuel and air ratios to demand, thereby improving boiler efficiency. In addition, Ustanik sought advice from colleagues at the Gas Technology Institute, who encouraged him to purchase a boiler with a pre-mix burner due to its high efficiency and inherently low NOx. The only boilers that met these criteria were the ClearFire-H (horizontal) and Clearfire-V (vertical) from Cleaver-Brooks.

The Cleaver-Brooks name was familiar to Ustanik but only in the context of big boilers. He was delighted to discover that the company manufactures models specifically for the laundry and dry cleaning industries.

#### Designed for Efficiency

At the Clean Show 2009, Ustanik recalled that he spent a total of four hours talking to Cleaver-Brooks representatives about the ClearFire line. He liked the fact that the models have modulating controls and a pre-mix burner. "Nobody else in the industry with a small boiler has a pre-mix burner. It's one of the best burners there is," he declared.

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Ustanik was also impressed by the boiler's design. He explained, "It's a single-pass, so there are no extra components, like back plates, that you have to worry about. To achieve the optimal efficiency level, I thought I would have to purchase a three-pass boiler, but didn't want the maintenance that goes along with it. I would eventually have to open it up and look at where the hot gasses are hitting to check it. I would have to unbolt the panels, and there would be insulation, so I'd have to be careful that I put it all back in place. With a single-pass design, all of that nonsense is gone."

In July 2010, Ustanik installed the single-pass Cleaver-Brooks CFH-50 with economizer and said he was pleased with the unit's efficiency right out of the box. It was running between 82.9 and 83.1 percent, without the economizer. With the addition of the economizer, the unit is achieving an efficiency rating of 86.2 percent. As a result, Ustanik expects to decrease his gas consumption by 8 to 9.5 percent.



The ClearFire-H boiler utilizes a patented AluFer® heat transfer technology that helps increase efficiencies to 85 percent while achieving low NOx <20 PPM emissions.

#### LANSING CLEANERS

##### LOCATION

Lansing, IL

##### PROFILE

When in the market for a new boiler, Tom Ustanik desired a boiler that would yield high efficiency and low emissions

##### CHALLENGE

Replace an existing boiler with a more efficient model to cut the cost of escalating energy bills.

##### SOLUTION

Install a Cleaver-Brooks ClearFire-H boiler high efficiency boiler to decrease emissions and fuel consumption.

##### RESULTS

The boiler's efficiency increased to 86.2 percent

An estimated 9 percent reduction in gas consumption



According to Ustanik, the installation of the CFH-50 was quick, completed over a weekend, so it was business as usual on Monday.

“The ClearFire line is able to achieve such a high efficiency level due to its variable speed motor that modulates the burner to precisely match steam production to demand, thereby reducing fuel usage and essentially eliminates burner cycling,” said Howard Hill, manager of the Cleaver-Brooks Laundry and Dry Cleaning Group. “In addition, the line incorporates patented AluFer® technology that ensures superior heat transfer and efficiency unrivalled by other conventional tube and tubeless boilers.”

The single-pass design of the ClearFire-H boiler is engineered so that all of the heat from the burner goes directly into the boiler. On his previous boiler, Ustanik noted that the burners were underneath the system. He said, “The first pass was just heating the shell from the bottom, and when you have heat radiating back down to the floor and heat radiating through the refractory, even though it’s supposed to be insulated, it’s not efficient.

“With the ClearFire-H model, all the heat from the burner goes directly into the water, so there is a lot more efficiency and less heat loss,” said Ustanik. “Our boiler room is a lot cooler now and the Clearfire boiler stack temperature is 200-250 degrees cooler than the competition.”

### **Engineered to Last**

According to Ustanik, the installation of the CFH-50 was quick, completed over a weekend, so it was business as usual on Monday. He remarked about how quiet his unit is when it’s running, comparing it to a colleague’s boiler, manufactured by another company, that “shakes, rattles and rolls” when it fires up in the morning.

In addition, the competitive unit only achieves 81 percent efficiency and is not engineered for a long life. “Theirs has dampers and all of this mechanical linkage to control and modulate the burner, and I don’t think it’s going to last because of all of the mechanical adjustments like turnbuckles and locking screws. It’s all going to wear out because the parts move back and forth all of the time.”

By contrast, the ClearFire line is built for dependability, void of excess mechanical parts. Its advanced water-cooled design dramatically reduces the amount of sludge and scale buildup and eliminates the need for classic refractory for increased operational reliability.

Although he expects the ClearFire-H boiler to last a long time, Ustanik said, “Something will eventually break, and the question is always ‘How quickly can I fix it?’” When that time comes and something goes wrong on his CFH-50 boiler, Ustanik said he will rely on the integrated electronic Falcon control, equipped with smart technology. “The computer will make it easy to diagnose and quickly fix the problem,” he concluded.

### **About Cleaver-Brooks, Inc.**

Cleaver-Brooks, a world-renowned provider of boiler-room products and systems, is committed to providing efficient solutions that help its customers and the industry reduce energy usage, cost, and environmental impact. As the pioneer of packaged firetube and watertube boilers, Cleaver-Brooks is the only manufacturer in the world to offer an entirely integrated boiler-room solution for any size application. Its products are backed by a world-class representative network offering superior aftermarket service and solutions. Visit [laundryanddrycleaningboilers.com](http://laundryanddrycleaningboilers.com) for more information.

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