

# Oilheating

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## Fuel Oil Management Study

2002-2003 Season:  
Costs are stable as  
margins and  
profits rise

**Also in this issue:**

- Oilfired Condensing Furnace  
Don't Wait to Flat Rate!**
- NAOHSM Installation Contest Winner**
- New Tax Cut: An Opportunity Comes Knocking**



## New Technology



*In operation, when there is a call for heat, the burner ignites under positive pressure. Combustion gases are pushed through the primary heat exchanger, through the header section and into the condensing coil. The coil cools the flue gas down to between 90° and 130° F, and under positive pressure, flue gases are vented to the outside (vertically or horizontally), using 3" PVC (visible at right in the center image). At the left side of the furnace is the matching 24 volt electronic air cleaner. In all, a condensing furnace's main components are an oilburner, primary heat exchanger, secondary heat exchanger (condensing coil) and circulating air blower.*

There are few oilfired condensing furnaces on the market, yet they show great promise in terms of efficiency and serviceability. Noting the pressing need to further the development of technologically advanced and efficient oilfired equipment, especially during times of high energy prices, NORA President John Huber has said that such advances are essential to the future viability of the product.

Earlier this year, responding to that impetus, the Alliance agreed to support development of a condensing furnace, one that would be ultra efficient and also simple enough to be easily serviced. NORA also wanted the industry to become familiar with this technology.

On July 22, 2003, representatives of NORA met with Cleveland, Ohio-based **Dornback** Manufacturing. The company had recently redesigned and improved the efficiency of its condensing furnace to the point where it showed promise in meeting the goal NORA had in mind.

According to Huber, "The condensing furnace which was in development by **Dornback** presented an opportunity to ensure that this technology reached American consumers, and [also to] allow oilheat to have the most efficient furnace in the market." After reviewing **Dornback** unit, NORA agreed to provide a technology grant to the company. The grant, said Huber, "is being used to further testing to ensure that this unit will serve oilheat consumers and develop a train-

## High-efficiency oilfired condensing furnace receives NORA grant



*On July 22, NORA met with **Dornback** personnel in the **Dornback** Engineering Laboratory to take a look at **Dornback** newly redesigned condensing furnace. Left to right: Jerry Stinson (**Dornback** VP Sales); Peter Carini (First Vice Chairman—NORA); Marty Schenberger Sr. (**Dornback** President); Don Allen (NORA Chairman); Robert Boltz (NORA—Education & Training); John Huber (NORA President).*



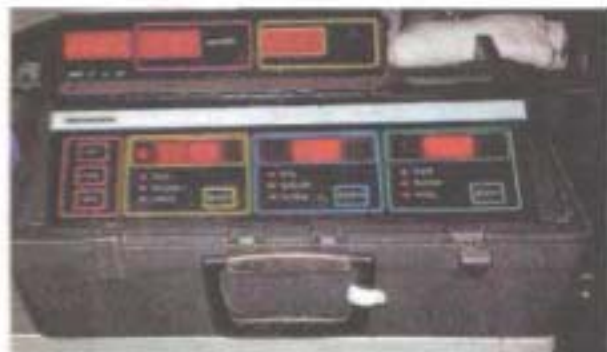
ing regime to ensure when this new technology enters the market, that the oilheat industry can install and service this equipment."

Condensing furnaces are highly efficient—the **Dorrback** unit showed a steady state efficiency of 98.2%. With furnaces that equal or surpass gas unit efficiencies, the oilheating industry has a perfect opportunity to meet competitive challenges from alternate fuels, especially when those other fuels are rising in price.

**Dorrback** furnace uses a relatively simple design employing standard controls, a spin-off oil filter and a positive venting flue. Typical for condensing furnaces, the stack temperatures are low enough (93°F) that no stainless steel flue is required. In fact, the flue products on the furnace are vented using 3-inch PVC pipe. The group estimated that the installed cost of the new furnace would be comparable or less than an equivalent 80% efficient model. The unit has been developed to the point where the company expects to ship the furnace this month. □



*John Huber (NORA), Don Allen (NORA), Ted Lamoureux and Jerry Stinson discuss the ease at which the nozzle assembly on the INTERburner can be changed. Stinson is VP Sales for **Dorrback**. Lamoureux is the company's Canadian Sales and Engineering Manager.*



*Although it is somewhat difficult to see in this photo, this digital Bacharach Combustion Analyzer routinely read a steady state efficiency for the **Dorrback** unit of 98.2% with 12.5% CO<sub>2</sub> and a stack temperature of 93°F; NO<sub>x</sub> was rated at 83 ppm.*

#### Condensing furnaces...

Highly efficient, Energy Star-rated furnaces and boilers for the home must have an Annual Fuel Utilization Efficiency (AFUE) rating of at least 89%. Condensing furnaces can go well beyond that. Residential condensing furnaces—commercial furnaces and boilers use a different arrangement—work by condensing the water vapor produced by the combustion process. Extracting heat from the exhaust gases to the point where water condenses out of the gas, they can utilize the additional heat that is released from the condensation process. The condensate is typically disposed of by a floor drain. Stack temperatures are usually quite low. Efficiencies typically run around 95% and, as in the case of the **Dorrback** unit, better than 98%.



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