

“Smokeless” Wood Burners Imported From Europe

Dean Zook of Smokeless Heat, a distributor of high efficiency wood burners imported from Europe, says, “By combining a modern gasification burner with thermal water storage tanks, sometimes called “water batteries” you can produce clean heat efficiently and economically without smoke.”

Smokeless Heat is the North American importer for Varmebaronen boilers. They feature high efficiency wood gasification boilers including models that operate via natural draft, induced draft and computer Lambda controlled. The Viking Bio jet blast pellet burner and boiler combo complete the Varmebaronen product line. The company also sells the Chipmunk 300K BTU small commercial chip/pellet heating systems made near their location in Pennsylvania.

The key to smokeless technology is gasification, which is a chemical reaction that occurs at temperatures around 700 degrees F between the wood and limited amounts of oxygen. In this environment the gases in the wood release in the form of carbon monoxide, hydrogen and carbon dioxide. The wood gas mixture along with just the right amount of extra air is introduced in the combustion tunnel. This allows these gasses to burn at temperatures approaching 2,000 degrees F. After this mixture is burned, the hot flue gasses transfer into the

water thru a very unique exchanger design inside the boiler body. Any left over emissions, mostly water vapor exhaust up the chimney. The pleasant side effect of effective gasification is little or no smoke leaving the chimney. The hot water continues into the storage tank where it is held until a heat demand calls. The water storage allows the boiler to run at full output with no need for inefficient idling found on non storage systems.

“Smokeless’ wood boilers fully use the energy in wood or biomass products with an efficiency two times greater than traditional single chamber firewood boilers,” Zook says.

Heat generated by the boilers can be integrated into any hot water heating system or a forced air system using a heat exchanger.

Unlike the good old days when stoking or re-loading the fire in the middle of the night was a common occurrence, these modern boilers can easily be sized to give 8 to 24 hrs. on one fuel load. Prices for the firewood boilers range from about \$6,500 for the smallest size up to \$12,000 for the largest units plus the costs of the water storage tanks.

“Varmebaronen boilers are very efficient and reliable,” Zook says. “Any high wear combustion tunnel parts are made to be



Imported “smokeless” wood boilers use the energy available in wood twice as effectively when compared to traditional wood boilers, say manufacturers.

consumable and are easily owner replaceable.” “A closer look at this unique boiler design will show why it is so easy to clean and maintain.”

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Reader Inquiry No. 127

Hydraulic Hose Wrap “Cheaper And Better”

A few years ago FARM SHOW ran a story on an Arkansas man who made his own hand-operated cutter to make hydraulic hose protectors from plastic pipe (Vol. 34, No. 1).

Steve Raguse thought the idea was so good that he got permission from the inventor to commercialize the idea and built his own cutting machine. He uses it to make hydraulic hose protectors for sale. His Hose Savers are available in 1/2, 3/4, 1 1/4, and 1 1/2-in. dia. sizes.

“They sell for about 25 percent less than other hose protectors on the market, and are also much more abrasion resistant for longer life,” says Raguse. “I use common underground water hose, which has thicker sidewalls than ordinary plastic pipe and therefore provides a more durable shield. It results in better abrasion resistance and a longer useful life. My Hose Savers work great for protecting wires, cables, and hoses and will retain their strength under repeated flexing and bending.”

The new hose cutting machine is belt and

chain-driven and uses a knife blade inserted into a specially machined pipe to make the cuts.

“The hardest part in building the machine was to get everything timed right, so that 1-in. of hose goes through every time the knife makes a revolution,” says Raguse. “The spiral wrap allows for wire, cable and hose breakouts in any orientation, making it ideal for use on long continuous runs where many leads, or breakouts, are required.”

Raguse also offers Canvas Hose Protectors for hard-to-reach areas, which are secured with velcro or plastic tie-straps.

Spiral wrap hose protectors are available in lengths from 100 to 400 ft., with custom cut lengths available upon request.

Raguse says he’s looking for dealers.

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Steve Raguse built his own hose cutting machine to make hydraulic hose protectors from common underground water hose. Sells for about 25 percent less than others on the market and is also more abrasion resistant.

