

## Wood-Burner Keeps Trough Ice-Free

Hauling water to the cow herd in winter is standard practice for Tony Smude. To keep it from freezing in minus 20-degree weather, he developed his own unique device based on a South Dakota farmer's idea.

Smude's trough was originally a heavy-duty steel boiler he bought from the mines and cut in half.

To keep the water from freezing without a traditional source of energy, he designed a metal wood-burning stove to place inside his trough.

"I started with a 4 by 8-ft. sheet of 1/4-in. steel, sheared it down to 4 by 7, and then cut that piece in half," says Smude. "I bent the two 2 by 7-ft. pieces lengthwise into a 90-degree angle and welded them together to make a 12-in. square hollow tube."

At the tube's 4-ft. mark, he cut it at 22 1/2 degrees, turned the pieces 180 degrees, and welded everything together. He used a 5-in., 11-gauge pipe for the chimney. From the leftover 1 by 4-ft. metal, he cut 12 in. for the wood access door, 12 in. for the end, and bent the remaining 24-in. piece for a chimney cap.

"I had to fasten it down as it floats like a boat when you fill the trough," Smude says. "I fill it from the neck that comes up out of the water with about a wheelbarrow full of wood which burns for 5 or 6 hours. As it burns, the wood slides down into the bottom to keep the fire going."

He uses pine as it creates less ash. On a 20-degree below zero day, it takes about 2



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hrs. to heat the water to 60 degrees F, just right for the cows to drink.

"The cows usually drink it down to the top of the stove every day, so when I'm out there, I just refill it, light it, and it's good for another day."

Contact: FARM SHOW Followup, Tony Smude, Brainerd, Minn. 56401 (ph 218-764-2091).

## Sawdust "Bricks" For Woodstoves

Mervin Borntreger of Hillpoint, Wis., sells sawdust "bricks" for use as a fuel source in woodstoves. He started his business, known as Borntreger's True Heat, after buying a large-scale wood brick maker from a neighbor.

Wood bricks offer a lot of appeal as an indoor heat source. They are easy to stack and take up less room than traditional wood logs. Borntreger's bricks are shrink-wrapped in bundles of sixteen for extra storage convenience. Though stoves and heating needs differ, most users can expect each bundle to burn for 10 to 12 hrs. And, as each bundle weighs just 32 lbs., they are an ideal heating option for the elderly and disabled. Clean-up is another positive, as the bricks produce about 60 percent less ash than regular wood. There's also far less smoke produced as they burn.

While the bricks can be used in both wood and coal stoves, they tend to work best in wood stoves. True Heat bricks reach about 8600 Btu per pound. This means that a ton of bricks provide the heating equivalent of 140 gals. of heating oil or 185 gals. of propane. They can also be used in outdoor grills for an easy charcoal alternative.

Part of Borntreger's motivation for taking on the business was to provide work for his mother, who lives on the property. Since purchasing the machinery, he's made multiple upgrades to further automate the process.

The bricks themselves are produced in a 60 by 60 facility. They are made from kiln-dried sawdust that is compacted into bricks through 135 tons of pressure. This helps the sawdust adhere into bricks without glue or other adhesives. Extreme care is taken to keep the sawdust dry before compaction, as any moisture can ruin the final bricks.

Borntreger sources his sawdust from local woodworking shops and receives it by the semi-load, each containing approximately 22 tons of sawdust. Unloading the sawdust takes 4 hrs. with a forklift.

His machine can produce one brick every 6.5 seconds, forming a pallet of bricks (the



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equivalent of one cord of wood) in a little over 2 hrs.

Looking forward, Borntreger plans to add many improvements to the base machine. He wants an upgrade that allows the sawdust to reach it automatically, sensors in the sawdust hoppers to track the amount and moisture level, and an automatic stacker for the bricks as they come off the assembly line.

However, finding ways to speed up the brick-making process itself would add the highest value, as it's the most significant limiting factor for how many orders Borntreger can take on.

While most customers load their woodstoves with the bricks by the bundle, Borntreger recommends new users start out using just a few at a time so they can monitor how their stove reacts. Contact him directly for pricing and purchase information.

Contact: FARM SHOW Followup, Mervin Borntreger, E3675 State Highway 154, Hillpoint, Wis. 53937 (ph 608-495-9079).



Stone collector uses pto to drive a pair of rakes on gauge wheels that run the opposite of ground direction in a 'V' pattern, extending on either side of the center tines and bucket.

## Heavy-Duty Picker Also Rakes Rocks

For farmers with extremely rocky fields, Pel Tuote, a Finland-based agricultural company, manufactures the Kivi-Pekka KP 6 stone collector.

Steve Schroeder, U.S. sales manager says, "They're designed to dump 9 ft. high. Most of our buyers have too many rocks to pile in the corner of their fields. They like the high dumping feature, which is perfect for trucks or carts to follow along, collect the stones in the field, and haul them away."

The KP 6 has a 20-ft. working width and is 540-rpm pto-driven. It picks rocks from 1 1/2 in. to 20 in. in diameter. The pto drives a pair of rakes on gauge wheels that run the opposite of ground direction in a 'V' pattern, extending on either side of the center tines and bucket. It also turns the fingers that toss the stones into the bucket.

"The center sieve height can be hydraulically controlled from the tractor cab and adjusted at a depth to match the rake's gauge wheels," Schroeder says. "As the rakes bring the rocks to the center, the tines grab them from over the sieve and throw them into the bucket. The speed relationship between the

rakes and tines is constant."

The hydraulically-controlled 3 cubic yard bucket also has a grated bottom to allow excess dirt to escape. Any retained soil slides into a separate container behind the rear of the bucket and is returned to the field during the dumping stage.

Rakes fold up hydraulically to a width of 9 ft. for road transport.

Schroeder says the KP 6 can be run by tractors as small as 100-hp. as the three hydraulic outlets don't require a constant flow of oil from the tractor.

Available options include Isobus control, a flex drum with extra-strong tines, pneumatic brakes, ball coupling, and larger tire sizes.

The KP 6 retails for about \$87,000 plus S&H and is available throughout North America from a dozen dealer groups located in the U.S.

Contact: FARM SHOW Followup, Steve Schroeder, County Line Equipment, 8446 County Road A, Edgerton, Ohio 43517 (ph 419-212-1024; steveschroeder1124@yahoo.com; www.pel-tuote.fi).

## Bin Port Allows For Easy Access

"If an unloading auger plugs or something breaks, most bins don't have any way other than the usual to get the grain out," says Matt Maertens. "Sometimes people will have to cut a hole in the side and let it run out until the door can be opened. That's time-consuming and costly."

Matt and his brother Mike own and operate Maertens Welding in Glenfield, N.D. One of their feature products is the "Bin Port", a single-piece unit that can be easily added to any steel bin.

The Bin Port allows access to the grain without crawling inside, damaging the walls, or risking a fire. It can receive an auger or vacuum hose or provide enough room to prod and loosen solid bridged grain.

The 16-gauge galvanized steel port consists of an 18-in. diameter, 24-in. long tube built at a 20-degree angle which extends into the bin. A watertight cover features an internal foam weather-proof seal to keep moisture out and is secured in place by a crossbar and wingnuts.

Maertens recommends two units for larger bins so they can be emptied evenly without risk of structural collapse.

He says they're easy to install in empty bins once location, height, length of auger, and overall size are considered.

"Cut a hole in the wall, and place the port inside," Maertens says. "They have an over-size flange that butts up against the corrugation of the wall. Just run silicone around the connection and fill the gaps with expanding foam for a good seal."



Bin Port has a watertight cover with a weather proof seal to keep moisture out.

He says it works best to pre-drill the holes and use self-threading bolts for a secure hold.

The Bin Ports are built from scratch in their Glenfield shop and sell for \$320 plus S&H. Sales throughout North America are made directly from Maertens Welding or a network of dealers throughout the upper Midwest.

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