



Firebox is big enough to handle 8-ft. logs, which are automatically fed into furnace by a modified Farmhand stack mover that's hydraulic-powered and handles up to 3 cords of wood at a time.

Home-Built Furnace Burns 8-Ft. Logs

George Lumax, Swan River, Manitoba, has heated houses and farm buildings with wood-fired boilers since the early 1990's, but was never really satisfied with the commercial furnaces he could buy.

The problem was that he kept heating more and more buildings with a couple of outside wood stoves. A local logger provided 8-ft. logs which they would then cut into 4-ft. lengths to fit into the furnaces.

Lumax decided they needed a "whole log" furnace that could handle the big 8-footers but he couldn't find anything on the market. He decided to build one from scratch.

The furnace he built is 10 ft. long, by 4 ft. square. To make it, Lumax started with 3 by 3-in. square tubing for the framework. He then welded 3/16-in. thick steel plating inside and outside the frame to form the firebox. Inside the burning chamber, he added vertical 3/8 by 2-in. flat steel bars, to keep the wood away from the steel walls.

The 3-in. space between the inside and outside plates serves as the waterjacket for the boiler. To allow water to circulate properly, he drilled holes in the 3 by 3 frame before welding on the plating.

The stove is located next to Lumax's garage, which houses a 150-gal. reservoir for the boiler. The entire system, including reservoir and lines to the buildings and radiators, contains about 600 gal. of a 70-30 water-antifreeze mixture. A wall inside the reservoir assures that cool water coming back in from the various buildings is not mixed with already-heated water.

Cool water from the reservoir is pumped into the bottom of the water jacket where it travels up the sides of the firebox and across the top of the furnace. Then it goes into the burning chamber through a grid of 2 by 6 steel tubing, which he used to make a grate for the logs to sit on in the stove. From there, the heated water travels to the reservoir. He tries to maintain a steady 160-degrees F. hot water temperature in the boiler.

Intake air to the stove is drawn from inside the garage, so it's preheated. He put 8 blower tubes into the firebox, so there's plenty of air for the fire. The fan for this simple air injection system was salvaged from an old air seeder.

A separate pump for each heated building circulates water from the reservoir to the building, with flow regulated by thermostats in the building.

Lumax says he uses 200 to 300 cords of



Ramp drops logs into furnace. Note ash cleanout door on end of furnace.



Blower, hydraulic pump, temperature controls, water pumps and reservoir are located in the building next to furnace.

wood each year. Feeding all those 8-ft. long logs into the furnace could be a problem if done by hand. He made it simple by adapting a conveyor from an old Farmhand stack mover to drop logs into the stove. The converted stacker holds up to three cords of wood. He added a hydraulic motor and controls to convey logs into the stove. He loads logs onto the conveyor with a log grapple on a tractor.

The firebox has a cleanout at one end to remove ash. Lumax says the stove usually goes two weeks or more between clean-outs, and the total ash removed each time is not enough to completely fill a skid-steer bucket.

All temperature controls, water pumps, blower, and hydraulic pump and reservoir are located in the garage near the water reservoir. "This keeps all the equipment out of the weather," Lumax says.

In total, the boiler provides heat for four houses, a bunkhouse, the garage, a 40 by 100-ft. shop, a 35 by 85-ft. shop, an office, and an indoor swimming pool.

Contact: FARM SHOW Followup, George Lumax, Box 935, Swan River, Manitoba, Canada R0L 1Z0 (ph 204 525-4991; E-mail: pongo@mb.sympatico.ca.).



An orbit motor at top of auger plugs into outlets on tractor that Reed uses to pull his grain drill.

Truck-Mounted Gravity Box Hauls Bulk Soybean Seed At Highway Speeds

"It's nothing fancy but it works great to haul bulk soybean seed at highway speeds," says Rick Reed, Zearing, Iowa, who mounted a 250-bu. gravity box off a wagon running gear on his truck frame. A hydraulic-powered auger is used to deliver bean seed into his grain drill.

Reed started with a 1983 GM 6500 2-ton, single axle truck that he already had been using to haul livestock. He removed the livestock box and bolted a Schultz gravity box onto the frame in its place. He bolted the auger mounting brackets onto the box. An orbit motor mounts on top of the auger and plugs into the remote hydraulic outlets of the tractor that Reed uses to pull his grain drill.

"I use it every spring to fill our grain drill

with bulk soybean seed. I drive the truck to my seed dealer about five miles away, who dumps 50-bu. bulk containers into the gravity box. To unload, I use a control valve on the auger to regulate auger speed.

"My total cost was less than \$1,000. Comparable pull-type capacity commercial seed tenders sell for up to \$4,000 and can't go at highway speeds.

"A length of truck frame extends behind the box. I just never bothered to cut it off. Someday I might mount a cargo platform on it."

Contact: FARM SHOW Followup, Rick Reed, 71941 120th St., Zearing, Iowa 50278 (ph 641 487-7869).

"Built From Scratch" Front-Mount Tractor Blade

William Miller, Mansfield, Pa., built a 10-ft. snow blade that mounts on front of his Deere 3010 tractor. The blade hydraulically raises both up and down as well as from side to side.

The 18-in. high, 5/8-in. thick blade was made from a piece of salvaged steel. It's connected to the tractor by a pair of 4-in. dia., heavy (3/8-in. wall) steel pipes that bolt to both sides of the rear axle and come together at the front of the tractor where they attach to the blade. The blade pivots on a 2-in. dia. kingpin.

The 8-in. hydraulic cylinder that raises or lowers the blade attaches to a steel bracket that bolts on in place of the tractor's front weights. The top part of the bracket supports a 1-ft. long hinged steel piece which is connected to a 3/8-in. dia. steel cable. The cable attaches to the frame just behind the blade. Another 8-in. cylinder mounted horizontally on the steel pipe frame tilts the blade from side to side.

"I didn't have to modify the tractor at all," says Miller. "I use it to grade my driveway and to clear away snow. It works like a bull dozer and will cut right through dirt and hard packed snow. The bottom of the blade is equipped with steel 'shoes' that keep the blade about a half inch off the ground. The blade can be tilted up to 28 degrees from side to side. That's not quite as much as I'd like because I often have to go to the side of the driveway in order to dump off material. I kept the angle to 28 degrees because I was worried that a sharper angle might cause too much stress on the tractor's front end."



Blade is held to tractor by a pair of 4-in. dia. pipes that run back to rear axle. An 8-in. cylinder raises the blade.



Contact: FARM SHOW Followup, William K Miller, 532 Aumick Rd., Mansfield, Pa. 16933 (ph 570 549-6001).