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## Compression Rack Builds Better Bales

Livestock producers can make more tightly packed large round cornstalk bales by installing the Extreme Duty Compression Rack from The Fine Twine Company. Owners Rick and Tony Kellen say extra weight provided by the large roller and the long metal rods behind it press fluffy stalks down into the baler teeth for more aggressive feeding.

The rack has a machined steel tube that offers greater strength and bulk than similar products made of plastic. The 8-in. dia. roller is 4 in. larger than OEM models. The long bar is mounted on a solid shaft rather than

a hollow pipe like the OEM. Fine Twine's model also has 10 compressor rods rather than 6 found on the original equipment.

Farmers who've used the Fine Twine attachment say they get more material into heavier and more compact bales so there are less bales to haul from a field, saving fuel and labor. The bales are also easier to handle and hold up better in storage.

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## He Made His Sap Pump Portable

"Every spring I pump maple tree sap from my gathering tank to the holding tank near my sugar shack, so I built a sturdy carrying box to hold the pump and hoses," says Minnesota handyman Tom Hohl. "By having the pump and hoses portable I can easily carry them inside when I'm not using them so they don't freeze."

Hohl's carrying box looks like an old time woodworker's tool box, made from spare wood pieces and held together with wood screws. The 18-in. long base is a piece of green-treated 1 by 12. The sides and ends are made from 3/4-in. thick finish grade plywood. Each of the inside corners are reinforced with short pieces of 2 by 4's. The carry handle is a wood closet pole mortised into the end pieces.

"I made the box strong because the Shurflo pump that moves sap from my portable tank to the holding tank has a fair amount of torque," Hohl says. "I bolted the pump to the wood base and the weight of the box keeps it level when it pumps. A 6-ft. inlet hose goes from the pump to the portable tank and the 20-ft. outlet hose goes to the holding tank." Hohl runs the pump with power from his sugar shack. He mounted a switch inside the box to turn the pump on and off. An inline filter on the intake removes any residue that might be in the liquid carried in the portable tank.

Like most property owners who produce maple syrup, Hohl's operation is a fun hobby that he and his family and neighbors enjoy every year. They collect sap in bags from about 120 trees several times during a two



Carry box made to hold and secure a pump used for moving Maple sap to a holding tank.

week timeframe in late March. Bags are emptied into the portable tank and hauled to his sugar shack, which he built with the help of neighbors. Sap is pumped into the holding tank, which is mounted on a sturdy base that he built outside the shack. It empties by gravity into the boiling pan that sits on a fire chamber. "Over the past few years I've tweaked a few things to make the operation run smoother, which continues to make it a fun hobby rather than work," Hohl says.

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Logs up to 35 ft. long and 5 ft. in diameter can be cut using an 8-ft. chainsaw bar.

## Massive Processor Handles Really Big Logs

Howard Ewen feeds his railroad tank car furnace with logs he processes with his massive, home-built firewood processor. Its 8-ft. chainsaw bar, 300-cu. in. Ford diesel engine, and log feeding system made from 3 sets of tracks all sit on a 40-ft. chassis. A hitch at the front end lets him move it as needed.

"I can cut logs and crowns up to 5 ft. in diameter and more than 35 ft. long," says Ewen. "I've been using it for about 20 years, and it still works great."

The tracks and much of the rest of the processor came from a crane built to lift modular homes. Ewen shortened a 60-ft. lowboy to make the chassis, moving part of the trimmings to the rear to mount the motor, hydraulic pump and cab, all from the crane.

Everything about the processor seems oversized, from the diesel that powers the main hydraulic pump to a set of 10 spool valves (also from the crane) housed in the operator's cab.

Each of the 3 tracks that make up the 24-ft. long log transport is driven by its original hydraulic motor. The tracks sit inside a V-shaped cradle of I-beams and steel panels.

Logs longer than the transport can be loaded with the smaller end sticking out over the gooseneck, which rides on a dolly made from an old semi tractor turntable.

Once Ewen has loaded a log in place, he climbs into the cab that overlooks the entire process and starts the log forward. As the log nears the chainsaw bar, it passes through 2 sets of grabber arms, also fashioned from I-beams.

Each arm consists of 6-ft. long twin I-beams joined by a shaft at their midpoint and to a hydraulic cylinder rod clevis at their top. The cylinder's base is mounted to the top of one leg of a V-shaped steel framework that angles out from the chassis to either side of the log transport track.

A lift cylinder with a 30-in. reach runs from the base of the V to a rocker arm on the shaft connecting the I-beams. The other end of the rocker arm is attached to 2 steel plates that are hinged to the upper end of the V. The plates are identical except in length, as one is about a foot shorter than the other. The second grabber arm is a mirror image of the first.

Ewen can open the gap for even the largest

log by extending both sets of cylinders at the same time. This lifts the verticals up while swinging their bases apart.

Once a log is in place, he can retract all 4 cylinders, which presses the lower ends of the arms against a log as small as 10 in. in diameter and also presses the fingers down on top of it.

Ewen also has a cylinder under the end of the track section. "If a log gets stuck, I can raise the track about 8 in.," says Ewen. "If that isn't enough, I can use the arms to lift the log up. I can even rotate a log by raising one arm and lowering the other."

Once the log is in place, Ewen lowers the chainsaw bar. It is a Pond and Deck Saw that came with a drive sprocket in the bar and a chain.

"It was designed to be belted to a 35 hp electric motor, but I adapted it to use with a hydraulic motor," says Ewen. "The bigger the log, the faster I run the engine and the faster the chain cuts."

When faced with the OEM cost of an idler sprocket on the end of the blade, Ewen chose to make his own. He machined a pulley with a groove chain and mounted it in the bar with alternator bearings and 3/8-in. threaded rod on either side to stretch the chain.

A power steering pump raises and lowers

the bar. Ewen uses the steering wheel for a valve. It allows him to feather the chainsaw bar into the log as gradually as he wants.

"I have a pressure gauge on it, but basically listen to the engine and watch the chips," says Ewen. "If I feed it too hard, I blow the relief valve, and it stalls."

When a section of log has been cut loose, it drops onto a steel table. The table is hinged at one end with a wagon hoist under the other end. As sections pile up, Ewen tips them off to be hauled away.

Other than the chainsaw and I-beams, which were salvaged from utility towers, nearly all the components came from the original crane. Ewen bought it after it sat unused for years. The engine needed considerable work, including recalibration of the fuel pumps feeding each cylinder. He also had to replace the head gasket.

"The spool valves were locked up," recalls Ewen. "I set them up in my shop, and every morning and night I would spray them with some penetrating oil and tap them with a hammer. It took 2 weeks for the first one to loosen up, but when they were all loose, I found they didn't even leak."

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Most of Ewen's firewood processor came from a crane built to lift modular homes.