

Dryer Takes Moisture Out Of Big Bales Fast

The Chinook Bale Dryer drops moisture in big square bales from 20 percent to 12 percent in as little as 10 min. The modular system injects heat into the bales using a 7,500 cfm fan and one of two heating systems.

"The heat is pushed through 2 banks of perforated metal needles inserted hydraulically in the bale," says Chris Martin, Chinook co-developer. "One bank is inserted from the bottom and the other from the top for a total of 350 needles feeding hot air into the bale. The controls are automated, so only one person is needed to operate it."

One heating system uses heat generated by the high-pressure fan (about 50 degrees F) and radiant heat from the diesel engine. It can dry around 5 tons per hour.

The second system is equipped with a 250 kW genset to power both the fan and a supplemental electric heater. It can dry 7 to 8 tons per hour, thanks to a total heat output of 220 to 240 degrees F. It also captures radiant heat.

Martin says the genset system is the most popular choice. The genset and a 21-bale cool

down zone are priced at \$200,000. Actual operating costs (fuel) are about a quarter cent per pound of hay. Martin estimates costs with labor and capital of about \$15 to \$20 per ton of hay.

"We put 3 large bales on at a time, and the apron with a pusher bar moves them through as each bale is dried," explains Martin. "Once all 3 have moved through, the apron and pusher bar automatically return to the starting point."

Bales move out of the dryer into the cool down zone, where they continue drying. "They lose a couple of additional points of moisture during cool down," says Martin.

The dryer is separate from the heating systems, which are installed in a shipping container. The heating system can be set up in an adjacent building and takes up an area about 30 ft. long and 12 ft. wide.

"The genset system also provides the operation with a back-up generator when not being used to dry hay," notes Martin.

The dryer is available in 2 models. The base unit is designed for 3 by 3-ft. square



Chinook dryer can dry big square bales from 20 percent moisture down to 12 percent in just 10 min. It injects heat into bales using a 7,500 cfm fan.

bales and has 20-in. long tubes. A second model is available with 30-in. tubes to penetrate 3 by 4-ft. bales set on edge and is priced at an additional \$10,000. It can also accommodate bundles of small square bales made by the Bale Baron.

Chinook Bale Dryers currently are all built to order, with a 6-month delay between order and delivery.

"We have a new manufacturer, so we will

pre-build some units," says Martin. "This has been a work in progress. We started developing it in the winter of 2015. We now have 7 in use in Ontario and 4 in the U.S."

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Hose Nozzle Delivers Instant Hot Water

If you've ever wished that a simple cold water hose nozzle would spray warm water, your wish has come true. The Rheem company has developed the hand held Hot-Wave™ hose sprayer that provides endless hot water from a standard 3/4-in. garden hose connection.

Rheem Innovation Manager Andy Zortman says the Hot Wave uses tankless water heating technology to instantly deliver warm water when the nozzle handle is squeezed. "The 30-ft. cord is plugged in to a standard 110-volt outlet. Uses for the HotWave nozzle are endless, such as bathing pets, washing vehicles, cleaning houses or decks, showering at a campsite, and many more."

The nozzle has four spray patterns (cone, flat, jet and shower) that are easily changed by a rotating dial. Each setting distributes cool, warm or hot water at a different pressure. A safety mechanism on the nozzle doesn't allow water to be heated beyond



Hot Wave hose sprayer instantly delivers warm water when the nozzle handle is squeezed. It hooks up to a standard 3/4-in. garden hose.

110 degrees Fahrenheit, which is child safe. The HotWave is expected to retail for \$150 when it comes on the market in the spring of 2020. It carries a 1-year warranty.

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Les Adelman and son Mark converted an old grain elevator into a firewood conveyor. A 5-speed transmission off a Ford Pinto lets them gear the conveyor down as needed.

Hay Elevator Moves Split Wood

Les Adelman and his son Mark use a 5-speed elevator to move chunks of wood away from his homemade splitter (Vol. 37, No. 3). The transmission was salvaged from a Ford Pinto. The forward gears are nice, but it is reverse that Adelman really appreciates.

"It's really handy when a chunk of wood gets jammed," says Adelman. "We use belt drives instead of chain drives. We can keep them a little loose, so they slip if the elevator jams. It gives us time to shift into neutral and then into reverse to clear the jam."

Adding a transmission to the old grain elevator drive was also an easy way to gear it down from the higher speed electric motor. Without it, he would have had to calculate pulley size or buy a lower speed, higher torque electric motor. The transmission allowed him to use various sized salvaged

pulleys and gave him the reverse option.

Adelman runs a belt from a small pulley on the motor to a slightly larger pulley on the transmission driveshaft that is mounted under the elevator. The shift lever is mounted on the opposite side of the elevator next to a small drive pulley. In turn it is belted to a large pulley on a shaft that transfers the drive back to the motor side of the elevator. There, a small pulley is belted to a slightly larger pulley on the elevator chain drive.

"The different pulley sizes combined with low gear in the transmission provide just the right speed for clearing wood away from the splitter," says Adelman. "It sure beats having to stack the wood by hand!"

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Winch spool assembly bolts to Farmall's drawbar and is chain-driven off tractor's pto.

Farmall Tractor Fitted With Home-Built Pto Winch

Retired farmer Niles Schulz built a heavy-duty winch that he uses on back of his 54-year-old Massey Harris 165 tractor. It can pull 2 big logs at a time with no problem, he says.

He built the winch using scrap steel and old farm equipment parts. A sprocket mounted on the tractor's pto shaft using no. 50 roller chain drives a gear attached to the cable drum.

"The tractor pto provides the winch with amazing power, even when the tractor is idling," says Schulz. "Cable wrapped on the

drum runs up through a pulley. I mounted 2 hooks on the cable so that if I want I can pull 2 logs at a time."

Schulz replaced the tractor's original drawbar with a shorter drawbar made from heavy channel iron. The spool assembly is welded to the drawbar.

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