After looking at a lot of different dryers, Tim Kelly built his own continuous flow grain dryer.

Farm-Built Continuous Flow Grain Dryer

By Lorn Manthey

Tim Kelly is one of those farmers who, if he can't buy something at the right price, will make it himself. His grain drying system is a prime example.

"I looked at a lot of different dryers and heard the same stories from all the salesmen," Kelly says. "They promised a few things, fudged on a few others, and always came back with a hefty price tag. The more I looked at what was out there, the more confidence I had that I could build my own dryer and save money in the process."

Kelly drew up a thorough set of plans and verified the design with friends in the construction business who knew engineering tolerances. He worked with a local welding shop to build the extra-sturdy main box frame. Then he integrated several used components from drying equipment suppliers, had a local manufacturing business build the drying chambers, and assembled it with the help of his son, who is a licensed electrician.

Kelly's dryer has 3 custom-built chambers that dry grain quickly and efficiently, removing up to 5 percentage points of moisture from 875 bushels an hour. The control panel has built-in time delay switches so clutches will energize slowly and gradually bring the augers to speed. He built his own augers with an oversized main shaft and oversized flighting. The 8-in. augers run at 178 rpm's and move as much corn as a 6-in. auger would at 440 rpm's. "Moving grain slowly preserves the quality and reduces cracking," Kelly says. "I've dried 32 percent corn and never had any problems."

Kelly's dryer has special fluted feed rolls built by a local business. They have a 90-degree twist so grain is lifted evenly and not forced against sidewalls where kernels could be crushed. As corn is dried, sensors trigger unloading and re-loading. If the dryer doesn't have more wet corn coming in, another sensor reduces heat in the drying units and gradually shuts them down.

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Kelly built a gas injection system that adjusts pressure to compensate for ambient air temperature. "If the outside air temperature is warm, the gas flow pinches down and I don't use as much gas," Kelly says, "and that saves money on fuel." Buying a factory-made sensor would have cost $1,600 to $1,800, but Kelly's system was less than a hundred dollars.

Kelly is a strong believer in "steeping" his grain rather than drying it to 13 percentage moisture in the dryer. He puts 16 percent moisture warm corn in the storage bin where he aerates it with ambient air. "I've never had spoiled corn with this system and I've been doing it this way for 10 years," Kelly says.

Building the dryer was a year-long project and Kelly figured his cost was less than half what he would have paid for a similar sized commercial dryer. "The toughest part was putting 23,000 nuts and bolts in the drying chambers," Kelly says. "If we add two more chambers on this unit, which it's set up to handle, I'm going to make sure we use rivets instead of bolts."

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New International CXT has pickup styling with monster truck impact. It's bigger than a semi tractor, yet it's street legal.

World's Largest Street Legal Pickup

The world's largest street legal 4-WD pickup was recently unveiled in Denver, Colo. The modified International CXT has pickup styling with monster truck impact.

"The CXT is the largest production truck ever built. We made it even bigger," says Dan Delasantos, Magicmotor Sports, LLC. "It's bigger than a semi tractor cab; yet it's street legal. It meets all the interstate requirements."

CXT trucks were built from 2004 through 2008. They were built on an International 7300 Chassis used for dump trucks and snowplows. Delasantos and his partners have gone the original better in nearly every regard.

"People build trucks up, and some states let them get away with it, but ours meets all street legal rules," says Delasantos. "We had special bumpers and light systems designed to make our truck totally legal."

After stripping the CXT down and rebuilding, the cab now tops out at 10 ft., 2 in. It reaches 11 ft., 6 in. at the top of the exhaust pipe, just 6 in. short of the 12-ft. allowable maximum. Total length is 22 ft., just 1/10 in. short of the maximum allowed. Curb weight comes in at 16,800 lbs., more than twice that of a commercial Hummer.

The turbo-charged diesel IH DT466 engine delivers 40 percent more power at 310 hp. It also delivers nearly twice the original torque, coming in at 1,000 lbs./ft. Even the tires on the custom-built wheels are up-sized with a height of 54.5 in. It's equipped with an Allison 3000 Series 5-speed transmission.

The truck is equipped with a Warn 16,500-lb. winch on front and a Mile Marker 12,000-lb. winch at the rear. It has 12 KC Daylighter lights, 2 PIAA driving lamps, 4 Hella driving lights, 6 Hella floods, two 9-in. and two 4-in. Warn lights and 17 LED accent and running lights. The rear bumper has a height of 27 in., and the front is 29 in.

Pickup cab tops out at 10 ft. 2 in., and reaches 11 ft. 6 in. at top of exhaust pipe.

"This truck can do a lot off road, too," says Delasantos. "While it isn't designed to compete with the Monster Trucks, it will do some interesting things in the sand and mud."

Delasantos and his partners plan to use the truck as a marketing tool, leasing it out to businesses for special events, conventions and other major events.

"We drove it back from Florida to Colorado, and it gathered crowds every time we stopped," says Delasantos.

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To make low-cost mineral and salt feeders, Alan Easley cuts sections out of discarded pickup mats and bolts them to old tires.

Low-Cost Mineral, Salt Feeders

Alan Easley, Columbia, Mo., puts together low-cost mineral and salt feeders using old tires and discarded pickup bed mats.

"I cut sections out of discarded pickup mats and bolt them to old tires with 4 1/2-in. bolts. The bolt-together feeders are easy to move from place to place. Or, I can just flip the units upside down to keep rain out and leave them where they are until I need them again," says Easley.

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