

“No Worry” Bin Cooler

Retired Iowa State ag engineer Dale Hull says his new “no worry” low level aeration system for grain bins is an easy and inexpensive way to eliminate “hot spots” and maintain grain quality in storage.

“I preached for years at Iowa State about keeping an eye on grain in storage. I came up with this idea on my own farm. When you’ve got a bin full of grain that isn’t dried real well, it gets you thinking,” says Hull.

His “no worry” system consists of a 1/40 hp. electric squirrel cage fan mounted on a plywood cover that fits over the blower fan on the bin. The small fan draws air out from the plenum chamber under the slatted drying floor at the bottom of the bin, providing at least two air changes per hour in the bin.

“It doesn’t dry the corn. It only keeps drawing cool air down through it to prevent air currents in the bin that can cause moisture migration and result in spoilage spots at the center. By keeping air circulating, you keep the temperature down in the bin,” says Hull.

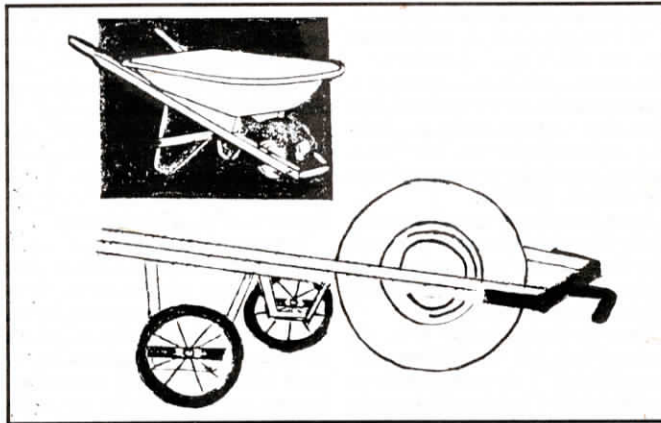
Hull simply covered the bin’s blower fan with a sheet of plywood and mounted the small blower fan at the center of it (Hull bought the 157 cfm fan from the mail order company W. W. Grainger - ph. toll-free 800 323-0620; in Ill., call 800 225-7149). He covered the fan with a sheet metal cover and then wired it up. Hull stresses that the fan

housing must be grounded to the dryer fan housing. The last step was to seal off all openings around the lower part of the bin. He sealed up the opening around the unloading auger with a metal cap and duct tape.

Hull’s objective was to change the air twice per hour in the 24-ft. bin. He came up with a simple formula for figuring out how big a fan he needed to do that. He says that about 40% of the space in a bin of corn is free air and a bushel of corn takes up about 1.25 cu. ft. That means a bushel of corn has $1/25 \times 0.4 = 0.5$ ft. of air space. In a 10,000 bu. bin there would be $0.5 \times 10,000 = 5,000$ cu. ft. of air space in the stored corn. To get two air changes per hour, you’d need a fan that would move 10,000 cu. ft. per hour. Since most fans are rated by cfm, or cubic feet per minute, you simply divide 10,000 cu. ft. by 60 min. to arrive at 167 cfm.

Hull spent only about \$50 to put the low level aeration system together. He recommends turning the small fan on as soon as you shut off the big blower in the fall, and let it run continuously. Electric costs run just \$10 to \$15 per month. He checks the condition of the corn every two weeks or so with a thermometer mounted on a steel rod.

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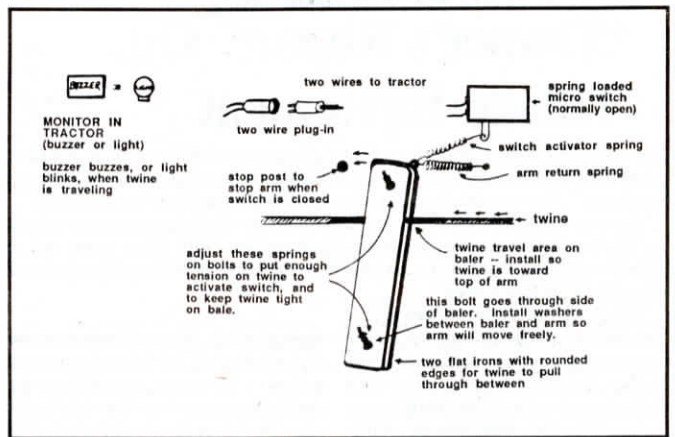
Tow-Behind Wheelbarrow

You can turn your wheelbarrow into a handy tow-behind cart for use behind ATV’s and garden tractors, says Robert C. Korte, Ottawa, Ohio.

Korte mounted two wheels from an old push-type lawnmower on the two rear legs of his wheelbarrow by simply welding two flat iron bars across the legs and attaching the wheels. Then he mounted an L-shaped

pin on the front wheel framework. Pushing down on the wheelbarrow handles raises the front pin to insert in the ATV or tractor drawbar.

“We pull it around the yard and barn. When full, we just push down on the handles to disengage the hitch pin and use the wheelbarrow normally to dump,” says Korte.



Twine Travel Monitor

“I made my own twine travel monitor after I had problems with twine that didn’t cut off or got caught in the baler and continued to feed into the next bale being made. This is a big problem since I use plastic twine. Once it gets wrapped up in a bale it’s difficult to get it out to prevent cattle from eating it and dying. Now I know at a glance when the twine is feeding,” says Don Thompson, Sutherland, Neb.

“Many times there’s a lot of dust in front of the baler and it isn’t easy to see twine traveling. Since I installed this monitor, I haven’t made a bale with twine in it. The monitor also works as a twine tightener to keep twine tight on bales and keep loose

twine from catching in belts or rollers.”

The monitor consists of two small spring-tensioned pieces of flat iron that bolt to the side of the baler. Twine runs through the center of this monitor arm, which is connected by spring to a micro-switch. The switch is normally open but when twine is traveling, it pulls the switch closed, activating a blinking light in the tractor cab (he used an auto blinker). Tension on the monitor arm can be adjusted to keep twine tight. Thompson bought all parts he needed for less than \$10.

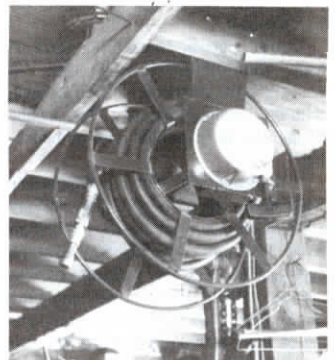
Contact: FARM SHOW Followup, Don Thompson, HC 72, Box 54, Sutherland, Neb. 69165 (ph 308 764-2329).

Starter Recoil Hose Retractor

Old starter rope recoil springs make fast hose rewinders. “We had about 250 ft. of air hose running into our barn from our stationary air compressor to run air tools and to blow dust off the pipeline and walls in our dairy barn. When hose gets that long, it’s got a mind of its own, making figure 8’s and causing all kinds of problems when you rewind,” says Duane Knuth, Baraboo, Wis.

“I decided to wind all the hose on a garden hose reel. We also happened to have a blown snowmobile motor lying around, so I took the recoil off the motor and mounted it to one end of the hose reel. Each 3-ft. pull on the recoil rope retrieves about 10 ft. of air hose. It lets you wind up much more hose than standard spring retract reels on the market.

“I’ve been using this recoil reel for three years and it’s worked so well that I made a second one that’s equipped with a water separator and lubricator. I built a frame around each reel with a bearing on both



sides and installed a snap coupler for the incoming air supply which lets the reel spin freely.”

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“Drip Cool” System For Hog House

When Lee Weber lost 10 sows to last year’s heat wave he decided he had to come up with a cooling system for his hog house. The problem was that he didn’t want to spend \$1,500 to \$2,000 on a commercial system. That’s when he decided to make his own “drip cool” system using ordinary garden hose, according to the Wisconsin State Farmer.

Weber, along with one other full-time herdsman, manages 350 sows and 40 boars for Bell Brook Farms near Brooklyn, Wis. He says it took just 4 hrs. to set up the complete sprinkling system.

Weber bought 450 ft. of garden hose and

a package of 1-in. long 20-ga. hypodermic-type needles. He hung the garden hose about 3 ft. above the sows and stuck the needles in the hose directly above each animal so water drips onto their heads between the ears. He leaves the needles in the hose.

“If I turn the water on real slow, it just drips out. If I turn it up a bit, it sprays out in a mist,” says Weber, noting that the needles stay in place in the hose without using anything to hold them.

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