

Corn Header Kit Reduces Shatter Loss

Corn kernels are gently lifted up and into the header with this new header attachment designed to reduce shatter loss.

The "Operation Harvest Sweep" system replaces existing deck plates and gathering chains in corn headers with patent-pending components designed to reduce shatter loss. The company says field tests show the product can reduce shatter loss by 80 to 85 percent.

"In a year when inputs are high and commodity prices are low, that can add up to huge savings," says inventor Shawn Gengerke of Leading Edge Industries, Groton, S. Dak. "Farmers can expect a full return on their investment as soon as one year."

Kits are available for most popular makes and models of corn headers. Each kit contains deck plates, specially designed gathering chains, impact pads with nylon bristle sweeps, and hardware for one row units. Unlike standard plates, the deck plates included in the kits are lipped to retain shattered kernels rather than letting them fall to the ground. The impact pads and sweeps form one-piece units that bolt onto the gathering chains, with the sweeps bringing the shattered kernels from the deck plates up to the auger.

The system takes about 15 min. per row to install.

"The first corn head went on the market in 1954," Gengerke says, "and it really hasn't

been changed in more than 60 years. There will always be shatter loss, so instead of trying to stop it, we're focusing on how to retain it.

"I came up with the idea 3 years ago when I was harvesting corn on my farm. It was a dry fall, and there was terrible shatter loss of the grain as it flowed into the combine. I figured I was losing 8 to 9 bushels of corn per acre. That was when corn was worth \$7 a bushel. In a 100-acre field, that meant a loss of \$4,000 to \$5,000. And then I would have to battle volunteer corn the following year in my soybeans. So I decided to do something about it."

According to Gengerke, shatter loss is getting worse because seed companies are breeding new varieties that dry down faster in order to reduce drying costs. "That's a good thing, but at the same time it's causing more shatter problems because farmers are harvesting earlier in the season, trying to finish harvest before the corn dries down too much and shatter losses get too bad. An early harvest means the corn has a higher moisture content, which results in higher drying costs."

Made from a unique blend of polyurethane for retention and flexibility, the impact pads cover the top part of the paddles on the gathering chain paddles for gentler grain handling. "High speed camera tests show that a lot of shatter loss on conventional gathering chains comes from cobs hitting the paddles,



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which are high, narrow and hard. The impact pads soften the impact so the cob slides off with less shatter loss," notes Gengerke.

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Energy-Free, No-Freeze Waterer

Matt Eby's home-built cattle waterer rarely freezes and requires no energy to run. Even when the temperature drops to 0 degrees or colder, the valve at the bottom of the water stays thawed, and Eby only has to break the ice to water his cows.

"Commercial energy-free waterers cost about \$1,000 but I built mine for less than \$150," says Eby. "The most ice I've ever broken through was 2 in. thick, and that was in driving north winds at 0 degrees."

He adds that with 10 cows using it, he rarely has to break ice above 10 degrees. It all depends on the wind and how much the cows drink.

"The more or less cows you have, the better or worse it will work," says Eby.

His first idea was to use a 40-gal. Tuff Stuff feed bin surrounded by foam insulation inside a 55-gal. drum. He cut the top and bottom from the drum and made notches in it so the lip of the feed bin sat solidly against the rim of the barrel.

"I put a giant garbage bag over the feed bin so the foam wouldn't stick to it, inserted it in the drum and foamed the gap between them," recalls Eby.

Thanks to the garbage bag, Eby would be able to remove the feed bin. The idea was to plumb a buried water line into the feed bin and then return it to the insulated barrel.

"I decided I would rather have less water in the tank and more insulation," says Eby. "I found a plastic 20-gal. tub that would fit inside the 40 and foamed the gap between the two."

After cutting away the bottom of the 40-gal. bin, he was able to plumb the inner 20 gal. tub. He then cut away the bottom from a second 40-gal. barrel and placed it upside down in the hole over the water line outlet. He ran the connecting line up and through the two tubs to the 20-gal. tank.

After reinserting the double tank in the foamed 55-gal. barrel, he lowered it into the hole over the inverted feed bin, filled in the hole around it and graded the surrounding surface.

"The top of the waterer sits about 14 in. above grade with the bottom of the barrel about 42 in. below grade," says Eby.

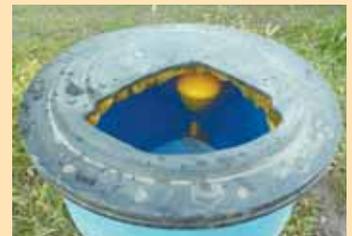
After one false start with another float valve, he went with a Jobe (\$50) valve. "The



Waterer sits on top of a 40-gal. barrel placed upside down over water line.



Inside the double tank is a 40-gal. feed bin surrounded by foam insulation and covered by plastic to keep foam from sticking to bin.



Top of waterer sits about 14 in. above grade, with the bottom about 42 in. below grade.

Jobe valve is the only way to go," says Eby.

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Graham Robertson replaced the old wood rack on his pickup with one made from cattle panels. It results in much less wind resistance.

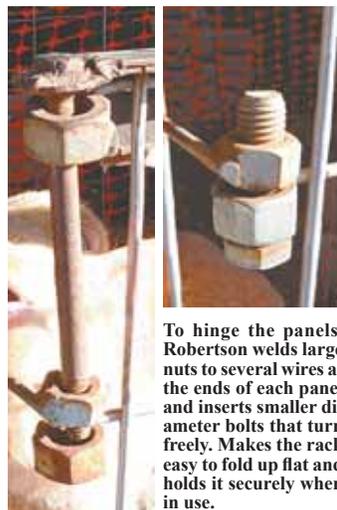
Simple Pickup Cargo Rack

"When it came time to replace the old wood rack on my pickup, I decided I wanted a rack with less wind resistance," says Graham Robertson, Westminster, Md.

"My solution was to make a rack from leftover pieces of cattle panels. To make it easy to install and remove, I welded 1/2-in. nuts on the ends of each wire panel. The side panels connect by dropping a 1/4-in. steel rod through the nuts. In place of hinges for the door, I used 1/2 and 5/8-in. nuts. A 1/2-in. bolt runs down through the 5/8-in. nut, not tightened. A piece of scrap U-channel metal runs across the top rear panel to stiffen it. The cage stands inside the pickup box cut to fit around wheel wells.

"We do petting zoos for local children so we can just take the cage out and set it upside down to hold a lamb or other animal."

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To hinge the panels, Robertson welds large nuts to several wires at the ends of each panel and inserts smaller diameter bolts that turn freely. Makes the rack easy to fold up flat and holds it securely when in use.