



Ken Rakoz removed one of the wheels from his IH 435 baler and mounted this car brake drum on the wheel hub. Brake keeps baler from skidding on hillsides.

“Brake” Keeps Baler From Skidding On Hillsides

Baling hay on a hillside can be a treacherous job, especially since modern tractors have been gaining horsepower while at the same time losing weight, which makes it difficult to control the baler's weight. On steep grades the baler can pull or push the tractor downhill. It can make for an exciting ride.

After experiencing a couple of hair raising rides with his International 435 baler, Ken Rakoz of Centralia, Wash., decided to solve the problem by mounting a brake on the baler. He uses a handheld control lever in the tractor cab to operate it.

He removed one of the wheels from the baler and mounted a brake drum from a 1994 Pontiac Grand Am on the wheel hub. The baler's wheel hub was much deeper and also bigger in diameter than the car's wheel hub so the brake drum wouldn't fit over it. To solve the problem, he used a lathe to turn a mounting ring and simply welded it, along with the brake drum, to the hub. He then unbolted the baler's stub axle and mounted the brake drum's backing plate and shoe assembly on it.

The hydraulic brake line for the brake was then routed along the outside of the bale chamber, through the tongue, and joined to a 6-ft. length of flexible brake line. The master cylinder off a 1200 cc motorcycle serves as a hand-operated control. The cylinder is mounted on an angle iron bracket that's clamped to the tractor cab's rollbar for quick and easy hookup and removal.

“When going down a steep grade I just use my free hand to operate the brake. The brake drum could use a little more power but it's enough to hold me back on a hill,” says Rakoz. “The motorcycle's master cylinder doesn't have a lot of volume, but it doesn't need a lot of volume because there's only one brake drum. I got all the parts I needed, except the hydraulic lines and fluid, from a couple of junk yards. My total cost was less than \$50.”

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“Bootsy” makes it easy to clean mud off the bottom and sides of boots before climbing into pickup.

Boot Scraper Fits Receiver Hitch

Here's a way to clean mud off your boots before getting into your pickup. It also doubles as a step to get into the pickup bed.

The “Bootsy” fits into the receiver hitch of most pickups. Available in black powder coat or rust and chip-resistant galvanized steel, it provides a 17-in. scraping bar that also serves as a step. A rounded vertical piece at each end of the bar fits into the grooves on the sides of your boot to clean off mud. Two adjustable pin positions (pin included) allow the unit to be used with the tailgate in either

the up or down position.

The unit has a coating on it so mud won't stick to it but instead just falls off as you drive. It's designed so you can still hook your trailer up to it.

Fits Dodge, Chevrolet and Ford pickups. Sells for \$39.95 including S&H.

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Chain Extenders Pull In Stalks

Thanks to stalk rot and wind last year, Buddy Itzen's corn was blown so flat his combine's gathering chains couldn't pull it in.

“I needed more aggressive gathering, so I put plastic extenders on the gathering chain paddles,” recalls Itzen. “I had to go slow, but with the extenders I was able to feed the corn into the combine, and it didn't plug up the head.”

The extenders provided the extra surface area needed to catch the stalks and keep them moving through. He was so impressed with how well they worked that he decided to make and market them, along with several other products, through his Elkhorn Equipment Co.

Itzen makes the extenders out of an extremely durable plastic. He went with the plastic rather than metal to help reduce the chance of fire.

Kits sell for \$25 per row and consist of 16 extenders plus connectors. Itzen says they should work with any header where the gathering chain paddles have two pre-drilled holes allowing an extender to be bolted in place.

“I include Nylock nuts with them so they will stay on,” says Itzen. “They work well, whether in good corn or bad.”

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Plastic extenders on gathering chain paddles feed corn into combine more aggressively, reducing plug-ups.



Extender kits sell for \$25 per row and consist of 16 extenders plus connectors.

Do-It-Yourself Forage Sample Dryer

The “Vortex” forage sample dryer is faster and easier than other methods used to determine moisture content, says Dennis Buckmaster, who designed the inexpensive, simple-to-build device.

Buckmaster is an Associate Professor of Agricultural Engineering at Penn State University. Using an ordinary hair dryer, plastic piping, round duct reducers, a furnace filter, some window screen, a couple pieces of wood and some fastening hardware, Buckmaster says farmers can make their own sample dryer for only about \$30 in materials. Alternately, they can order a pre-built one for \$85 from Penn State University Agricultural Engineering students who are building them as a fund-raiser.

By weighing the original sample, then alternately drying it in a microwave until there's no change in the weight, farmers can use the dry-to-wet weight ratio to calculate the percentage of moisture.

When using a microwave, it's necessary to dry the sample for two minutes at a time, stirring in between, then cutting back to one minute, or 45 seconds until the weight ceases to change.

“With the Vortex, samples will not burn because there's so much hot, dry air. The big advantage of this is that you don't have to baby-sit the Vortex dryer like you do a microwave oven,” he says. “Hay that's at 30 per cent moisture will be dry in 15 minutes. Silage or balage will be dry in an hour for sure, possibly less. If you're not sure, you just put it in for a little longer and check the weight again.”

While acknowledging that a microwave may produce results faster, the Vortex inventor says his inexpensive tester allows the farmer to possess three units and, in the same amount of time, triple the data they collect.

“People who sample in microwaves often don't take the time to do replicate or triplicate samples because they have to stand there,” he says. “Basing your decision to fill a whole silo on that one number can be risky.



“Vortex” forage sample dryer is faster and easier than other methods used to determine moisture content, says Dennis Buckmaster, who designed the inexpensive, simple-to-build device.

If there is only one sample, there is no clue whether it is a good or bad sample. With three numbers, you can take an average.”

If and when the hair dryer wears out, it's an easy and cheap component to replace.

Buckmaster points out that the Vortex is faster, less expensive and more accurate than a Koster tester, a popular brand of forage sample dryer on the market.

“The Vortex is 35 percent quicker than a Koster,” he says.

Plans to build one, or forms to order one, can be found at www.abe.psu.edu/vortex. Since the students are gone for the summer, orders will not be filled until August or later.

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