

Smartphone-Controlled Load Sensors Help Fill Trucks

A South Dakota farmer's invention takes the job of filling grain trucks off the dirty jobs list. With electronic monitoring and sensors inside the truck box, just one person can do the job. The driver sits in the comfort of the truck's cab with a smartphone or tablet and watches the grain fill the trailer to the maximum weight. It also guides him when to pull ahead to even out the load.

The Load Judge, patent-pending and built in the U.S., is expected to be in full production by the end of the year at the Groton, S. Dak., business, Leading Edge Industries. The system's six sensors (easily attached with industrial double-sided tape), a moisture sensor, quick attach plug and the Wi-Fi box are easy to install and sell for \$6,000 to \$6,500.

Download the app and the system is ready to go, says Shawn Gengerke, who invented the Load Judge, because of his own frustration loading grain.

"It's uncomfortable climbing up and down the trailer. It's a hard job. You're breathing in dust. It's just a dirty job," Gengerke says.

The only other option has been cameras, but it doesn't take long for them to get filled with dust and become ineffective, he notes. He worked with electronics and computer

experts for a year and a half to develop Load Judge.

It also includes a moisture sensor when blending grain and a bushel estimator.

When the driver gets a certified weight when unloading at the elevator, he can calibrate the system and save the load level on his phone or device. By calibrating each grain such as wet corn, dry corn, beans, etc., the Load Judge maximizes every load – reducing loads that are too light wasting time and fuel or loads too heavy that incur a hefty, overweight fine.

"Once you set the load line, that never changes. That's going to make you more consistent," Gengerke says, adding that by increasing efficiency and avoiding fines for being overweight, the system can pay for itself quickly.

He adds that the best way to see how the system works is to watch the video on Leading Edge's website. Users don't need to be tech savvy to figure out the system, which has a 2-year warranty.

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Load Judge uses a smartphone app to monitor sensors that mount inside the truck box, so you can watch grain fill the cab without having to climb up and down.



Sensors attach with double-sided tape. System includes 6 sensors, a moisture sensor, bushel estimator, quick attach plug, and Wi-Fi box.

Ditch Cutting Lawn Mower Mounts On Loader Bucket

Mowing ditches and along the edges of creeks and fence lines is no longer a problem for Lloyd Cowan, Manotick, Ont., who made a hitch that mounts a 22-in. wide push mower alongside the bucket on his tractor loader, tying the mower handles to a metal bracket that extends out the side.

Cowan uses the loader-mounted mower to trim ditches on his property.

"It's simple to use and results in a nice even cut," says Cowan. "Using the bucket I can see what I'm doing without having to turn around. I use it to mow along the edge of a creek that runs across my property, and also to mow the steep banks along my driveways. So far I haven't bent anything and it has worked fine.

"I use my New Holland 3010 tractor to

operate it. I can raise or lower the bucket and also tilt it up or down to adjust the position of the mower."

He left the handle on the mower and removed the wheels. He then had a bracket made to hang the mower from a length of sq. tubing, which bolts to the top of 8-in. manure forks mounted on front of the bucket. Four metal legs are welded to brackets that bolt onto each corner of the mower deck. One end of the square tubing slides through a slot in a pair of metal brackets at the top of the legs and pins onto them. The other end bolts onto 2 of the forks, one close to the side of the bucket and the other back a ways.

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Lloyd Cowan uses a loader-mounted push mower to trim ditches on his property.

High Speed, German-Built Disc Harrow

"It mixes soil and residue better than any other disk harrow on the market and leaves the ground nice and smooth," says Jim Balstad, sales and marketing manager for the new Lemken Rubin 9 disc harrow. It was on display at the recent Big Iron Show in West Fargo, N. Dak.

The German-built tillage tool has been used in Europe for about 10 years and in Canada for a few years, but is just now entering the U.S. market. It's available in widths up to 40 ft. and is designed to operate at speeds up to 11 mph.

The Rubin 9 features 2 rows of individually attached, 24 1/2-in. dia. concave discs set at different angles and mounted on individual arms. The discs have a dual angle built into them, as they're angled 17 degrees from parallel to the direction of travel and 20 degrees from vertical to the ground. This combination guarantees intensive mixing across the full working width at depths as shallow as 3 in., says the company.

"The dual angle of the discs is unique and is key to the performance of the machine. They're the most aggressive disc cutting angles on the market," says Balstad. "At a 3-in. or greater working depth, the discs will cover every inch of the entire profile of the

soil. Compared to conventional disk harrows this machine does a better job of sizing and incorporating residue into the soil and also leaves a far smoother finish, while breaking up clods into finer pieces."

A row of rebound harrows follows behind each row of coulters. "The rebound harrows help break up clods and deflect residue back onto the ground so it can be worked over by the second row of discs. There are several different manufacturers of compact harrows in Europe, but Lemken is the only one with a rebound harrow," says Balstad.

Ring rollers at the back of the machine firm up the soil and push any residue down into it.

Balstad introduced the Rubin 9 in August 2012 and says customers have used it on everything from corn stalks to soybean residue to sugar beets and potato vines. "Some farmers make one pass into corn stalks in the fall and one more in the spring for seedbed preparation before planting soybeans."

He says the machine's high working speed results in better cutting and beating of plant material. "When hitting obstacles such as rocks, the unit's individually attached concave discs can move upward independently of each other, whereas on ordinary disc harrows half



Discs on the Lemkin Rubin 9 disc harrow have a dual angle built into them, a combination that guarantees intensive mixing across the full working width.

the machine will lift up."

The concave discs are attached individually using pre-tensioned spring elements. "The springs ensure that optimal pressure is always maintained on the discs," notes Balstad.

Retail prices for the Rubin 9 range from \$20,000 for a 3-pt. mounted, 10-ft. unit to

\$195,000 for a 40-ft. pull-type unit.

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