Progressive Farmer — Winter

Planting Gets Some Juice

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Electric drives make any planter precision capable and could replace older technologies on the farm.

Three generations have used this 1991 JD 7200 12-row planter. Dale (yellow shirt) bought it new. Bill updated it with electric drives in 2012, and his son August helped plant with it. The family has since upgraded a 1996 Deere MaxEmerge 24-row unit with electric drives.

Farmers driving past Bill Kessler's planter in the field this spring may do a double-take. The Henderson, Minn., grower will be planting with his "new" 1996 John Deere MaxEmerge Plus 24-row planter. But before smirking, remember you can't judge a book by its cover.

THE GREAT FRONTIER. Kessler's old planter will be equipped with new electric drives. Retrofit electric drives like his are a whole new world, and Kessler is a pioneer.

He recently purchased the 30-year-old planter and then removed the hydraulics, chains and row markers. He updated it with the latest electric planter drives from Graham Equipment for variable-rate seeding by the row and individual row shutoffs. A 12-volt motor runs each seed meter, and an Android tablet controls the motors by sending wireless signals to antennas embedded inside each motor box. Kessler's planter/tractor has its own robust Wi-Fi network to handle the wireless communications.

In the last few years, more and more farmers have explored the advantages of electric versus hydraulic or chain drives. They see reliability, speed and versatility in electric. For some farmers, electric will make older technologies passé.

The 24-row planter Kessler just converted is not his first experience with electric planter drives. He purchased one of the first electric drive kits sold by Graham in early 2012 and installed it on his dad's 1991 JD 7200 12-row planter. He planted with those drives for four years without problems.

"It is plant and go," Kessler says. "The drives are very accurate, and there's no lag time in response. With the cost of production getting tighter and tighter, these save me 10 to 15% on seed cost in some fields with highly variable soils. I think all planters will be this way in the future."

TRENDING NOW. The electric planter drive market has taken off since Kessler bought his first electric drives. Graham started selling kits in 2011 and has sold more than 6,000 electric drives. The kits have been used on nearly every brand of planter in the U.S.

Several other manufacturers offer electric planter drives either as a retrofit kit or on new planters. Last fall, John Deere introduced ExactEmerge retrofit kits for several lines of its planters. Precision Planting (recently acquired by Deere) markets vDrive for installation on any brand of planter. The retrofit unit has seen strong demand since its introduction

three years ago, reports Luke Stuber, Precision Planting vDrive insecticide engineer.

CONVENIENCE FACTOR. A big advantage of electric drives is ease of maintenance compared to mechanical drives. Stuber says problems are simple to troubleshoot and components easy to swap out when needed. And retrofitting planters with the drives involves minimal work.

“It really opens up the market for older planters,” he says. “In 10 years, every planter built will have electric drives.”

New planters equipped with electric drives are available from Horsch, Kinze Manufacturing and John Deere.

One of the biggest differences among electric planter drives is the size of electric motor used to power each row.

“We use a 12-volt motor so we can run power off the tractor to run them,” Stuber adds. “This keeps things simple and costs down. The larger planters need to add an alternator.”

NO GOING BACK. After four years using the electric drives, Kessler is sold on this technology. He farms 1,500 acres and can keep the planter running without stopping to make seeding adjustments.

“I could not go back to hydraulic or chain drives,” he says. “This offers so many benefits, having variable rate and shutoffs. The neighbors even noticed how much nicer the end rows look. They weren’t a tangled up mess.

“Plus, you can get a lot more out of older and smaller planters with this technology,” Kessler adds. His 1991 planter with the first set of Graham drives could vary seeding rate on the go. He used a Trimble controller and Farm Works software to vary rates based on soil type and yield history.

While he could vary seeding rates by the planter sections with his new/old planter, Kessler usually kept rates consistent across all 12 rows.

“But with 24-rows on our latest planter, we cover a 60-foot width. We have enough variable soils that one end of the planter will be different than the other,” he adds. Kessler purchased a Graham controller to operate his newest planter drive system for by-the-row variable-rate planting.

ELECTRIC DRIVE OPTIONS. Most new electric planter drives include features like turn compensation, variable-rate seeding by section and individual row shutoff. Here’s a closer look at manufacturer options:

• Graham: Colorado grower Jerry Graham and his son Toby started Graham Farm Equipment after they developed electric planter drives for Jerry’s twin-row planter. Today, Graham offers two electric planter w/Drives packages. The Graham Lite EPD System, which Kessler previously used, works with third-party monitors, as well as their own tablet monitor. The ready-to-plant cost is about $1,000 per row and includes the tablet.

The wireless system Kessler will use this spring is called Grand Pro Command for by-the-row variable-rate seeding. It features built-in wireless control from the cab, so many harnesses, cabling and wires are eliminated. The ready-to-plant price is $1,600 per row and includes the Graham Command Tablet monitor. Two upgrades include a seed sensor on

each row and variable-rate fertilizer application. Visit grahamelectricplanter.com.

• John Deere: In 2014, John Deere introduced the ExactEmerge planter equipped with a dual electric drive system. And recently, the company announced the sale of ExactEmerge retrofit kits for several lines of Deere planters.

Deere's electric planter drives use two 56-volt electric motors per row unit to operate the electric meter and the brush belt needed for high-speed seeding. Visit www.johndeere.com.

• Precision Planting: The company's vDrive units offer single-row control of the company's vSet seed meters. Cost for vDrive is $850 per row, which includes control modules and harnessing to run the system. The units are compatible with John Deere, Kinze and Case IH planter models with 1.6-bushel hoppers and mini hoppers and White 8000/9000 mini hoppers only.

Precision Planting also will offer an electric-drive insecticide applicator in 2016. For more information, visit www.precisionplanting.com.

• Horsch: German manufacturer Horsch brought its Maestro SW planter equipped with electric planter drives to the U.S. in 2012. Maestro planters vary seeding rate on-the-go but not by the row. Each brushless, 12-volt sealed motor is controlled by its own ECU, which is integrated on top of the motor. Visit www.horsch2.com.

• Kinze Manufacturing: Electric planter drives were first available in 2014 on Kinze's 4900 planters. The drives offered independent, row-by-row seeding control using a 24-volt motor on each row. A separate alternator and hydraulic circuit powered the motors.

The next year, the company announced the development of a multi-hybrid planter. The multi-hybrid planter was released commercially for the 2015 planting season. It is equipped with two seed meters on each row, one for each hybrid. Visit www.kinze.com.

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