

“Pto Reverser” Powers Rear Snowblower



Pto reverser uses tractor’s factory pto shaft to chain-drive a second pto mounted below.

“It lets me operate a front-mount 50-in. snowblower on back of my Deere subcompact diesel 4-WD tractor equipped

with a 3-pt. hitch,” says Lynn Olds, Lima, Ohio, who came up with a slick way to reverse the pto shaft on the tractor.

“Directly connecting the snowblower to the tractor’s rear pto shaft would have resulted in the snowblower rotating the wrong way,” says Olds, who credits his brother-in-law for the idea.

The pto reverser uses the tractor’s factory pto shaft to chain-drive a second pto mounted below. The entire reverser unit is attached to a steel mounting plate that’s bolted to the tractor.

Olds welded a bearing collar onto the end of each pto shaft and also mounted a hub and gear onto both shafts. The add-on pto has a slide-on hub welded onto it and is driven by a no. 60 roller chain. The chain runs around a pair of sprockets and an idler sprocket, and causes the add-on pto to rotate counterclockwise.

“I use it on Deere 4100 20 hp., 4-WD tractor. I wasn’t sure I could operate a 50-in. snowblower with such a small tractor, but it works great. I built it without using any

special tools, at a total cost of less than \$300,” says Olds. “I used it last January for the first time and it blew powdery snow 25 ft. out.

“I wanted to use the snowblower on front of the tractor, but it wasn’t compatible with the Deere and, in any case, the tractor doesn’t have enough ground clearance to hook up the front pto to the snowblower.

“When I tried mounting the snowblower on back of the tractor I found out the snowblower ran backwards. That’s why I had to reverse the pto shaft.

“There isn’t a lot of space on back of a subcompact tractor with a 3-pt. hitch, and I ended up having to remove the tractor’s drawbar to make room.”

The add-on pto is off a Massey Ferguson 35 tractor. “The pto shaft was 28 in. long, so I cut it down to the length needed. The no. 60 roller chain I used is overkill, but I used it because I knew it would hold up.”

Olds also uses his homemade pto reverser to clean soybeans out of a 6-in. grain auger before he puts it away for the season. “It saved me 2 hrs. spent using a pipe wrench to



Reverser lets Olds mount a front-mount snowblower on back of his Deere tractor.

clean out the auger by hand,” he says.

Contact: FARM SHOW Followup, Lynn Olds, 4477 N. Cool Rd., Lima, Ohio 45801 (ph 567 204-3539).

Century-Old Self-Propelled Combine Returns To Its Home State

By Lorn Manthey, Contributing Editor

A rare 100-year-old Holt self-propelled combine caught the eye of Iowa machinery and toy collector Larry Maasdam in 1997. “I bought it from a guy in Oklahoma and immediately hauled it to the Ageless Iron machinery show in Ankeny, Iowa,” Maasdam says. “With the help of a farmer/mechanic in the audience that afternoon, who happened to have two spark plugs in his pocket, we got the engine running smoothly and the spectators loved it.”

Maasdam stored the machine inside a shed at the Heartland Museum in Belmond, Iowa for the next two decades, where visitors were amazed by its design and wondered how it could possibly harvest grain. He started and ran the engine occasionally to keep it lubricated. Eventually he decided to sell the combine and 4 Holt tractors to a collector in California. “They were a nice investment that I enjoyed owning, but now they’re back in the state where they were built,” Maasdam says.

The new owner is Josh Stephenson, a 3rd generation contractor who collects rare tracked machines, including Holt tractors. “The Holt company is well known for producing equipment in California

that were used by early farmers, loggers and road construction crews,” Stephenson says. “The combine has a 55-hp. Holt 4-cyl. tractor engine and runs on one shortened version of a 15-in. wide tractor track similar to that on a 45-hp. Holt crawler powered by chain, with an opposing rear wheel that’s also chain-driven. It has a single tiller wheel in front for steering, similar to that on a 75 hp. Holt tractor. The harvester cut grain with a sicklebar and carried it by reel to the conveyor and elevator into a 24-in. cylinder, then through a 36-in. separator, all driven by dozens of chains and belts riding over pulleys and sprockets. The machine traveled at about 2 1/2 mph in high gear and harvested about 25 to 40 acres a day.”

Stephenson says the Holt company, which likely imported much of the oak wood used to build the combines from Eastern states, built about 300 of the machines between 1911 and 1921. His machine is one of only 4 or 5 of the surviving original operable Senior Self-Propelled Harvesters in existence, and he thinks it’s probably the only one that’s survived in such excellent condition.

Stephenson says from a historical standpoint the Holt is extremely rare.



It took a crew of 5 men to operate this rare 100-year-old Holt self-propelled, tracked combine, which is now owned by Josh Stephenson in California.

“Early harvesters were pulled by teams of several mules or horses, and this one is a self-propelled machine that could be adjusted and kept level for hillside use with a rack and pinion leveling mechanism. A crew of 5 men ran it, including the driver, a person manning the gearshift and drive clutch, another one adjusting wheels to level the harvesting platform, one or two reel operators, and another who sacked the grain. It must have been quite a sight to see it working,” Stephenson says. The combine

runs well, even after being re-assembled from its Iowa-to-California trip.

As Holt Manufacturing faded with the illness and subsequent passing of company president Benjamin Holt in the early 1920’s, the company merged with the C.L. Best Tractor Company and was eventually renamed the Caterpillar Tractor Company.

Contact: FARM SHOW Followup, Larry Maasdam, Clarion, Iowa 50525 Josh Stephenson, P.O. Box 89156, Temecula, Calif. 92592 (ph 909 938-8600).

New Robots Inspect Growing Crops



Researchers gather crop data from this robotic, wheel-mounted buggy that’s fitted with cameras and uses artificial intelligence.

Prototype robots developed by Alphabet, the parent company of Google, are being used to inspect individual growing plants in the field, collecting data via a wheel-mounted buggy fitted with cameras and using artificial intelligence (AI).

The Small Robot Company in England says it’s “re-imagining farming with robotics and artificial intelligence.” The Alphabet project’s buggy robot was designed “to see how plants were actually growing and responding to their environment.” The company says that over the past few years, its plant buggy has trundled through strawberry fields in California and soybean fields in Illinois, gathering high-quality images of each plant and counting and classifying every berry and every bean.

The robot has the imaging capability to count how many soybean plants are growing in a field and has been used to collect a “sprout-to-harvest dataset” on melons, berries, lettuce, oilseeds, oats and barley. Alphabet developers describe their project as “a whole new field of technology called computational agriculture, which could unlock new opportunities such as growing new crops that aren’t currently cultivated and intercropping, even growing multiple crops together.



These 3 different types of robots are named Tom, Dick and Wilma. If Wilma identifies the plant as a weed, then Dick is dispatched to zap it.

The Small Robot Company, founded in 2017, has developed three types of robots they call Tom, Dick and Wilma. Tom is a battery-powered scanning robot that specializes in crop monitoring and mapping. It can cover 20 hectares per day and collect 6 terabytes per day of information.

Dick is the world’s first non-chemical robotic weeding machine. It uses electricity rather than chemicals to zap weeds.

Wilma is described as “the boss.” The Wilma robot provides “per-plant intelligence” using precise information gleaned by Tom (the scouting robot) on the health of the plant. If Wilma identifies the plant as a weed, then Dick is dispatched to zap it.

Contact: FARM SHOW Followup, Alphabet (<https://x.company/projects/mineral/>) or Small Robot Company (www.smallrobotcompany.com).