



John Standley and his father Calvin built this one-of-a-kind "tillage cart" by adapting the disk and shank components from a 15-ft. chisel plow onto the reconstructed frame of a 750-bu. grain cart.

"Tillage Cart" Hauls Grain And Tills Field At The Same Time

By Lorn Manthey, Contributing Editor

"We designed this machine to collect grain from a combine and do tillage in a single pass so we can save trips across a field and minimize the time that it takes to complete fall field work," says John Standley of Princeton, Ill. Standley and his father, Calvin, built their one-of-a-kind rig by adapting the disk and shank components from a 15-ft. chisel plow onto the reconstructed frame of a 750-bu. J&M cart behind a 9370 Case IH 4-WD tractor in the fall of 2012.

"The tillage cart worked real well handling 15 ft. of primary fall tillage while running alongside the combine at 3 to 4 mph," Standley says. "When we built the machine we were concerned about how much horsepower it would take to pull it, but the 9370 didn't have a problem."

The Standleys worked with McHenry's Ag Leader in Princeton, Ill. to design, engineer and build their tillage cart in the spring and summer of 2012. They looked at different grain carts to modify and settled on a 750-bu. model because of its frame strength and ground clearance. "We started by removing the pto shaft, then cutting apart the frame and tubing from the hitch to the wheels," Standley says. "Then we built a heavy-duty reinforced bridge section out of 4 by 8 by 1/2-in. channel tubing. Its "U" shape supports the machine and allows the disk gangs to raise completely out of the ground when they're not in use."

Two disk gangs from the coultter chisel are mounted under the bridge frame at an 18-degree cutting angle. The gangs mount on hinges that allow 16 in. of up and down travel. The 24-in. disk blades are bolted to C-spring mounts spaced 15 in. apart. Standley says they like the disk configuration because blades are mounted individually, there's ample clearance between the gangs for residue flow, and the gang angle produces an aggressive disking action to cut residue and move soil. "The gangs are mounted to the bridge section on a hinge-type mechanism," Standley says. "Lowered to the ground the disks can penetrate 2 to 5 in. into the soil and in the raised position the blades clear the ground by 8 to 12 in." A spring pack on the mounting frame produces almost 200 lbs. of down force per blade on the disk gangs.

The center of the tillage cart carries the grain tank and unloading auger on the machine's 4 by 8-in. main frame. The pto shaft that runs the grain cart auger was extended and a carrier bearing was added

to account for the added framing that holds the disk. The tillage cart rides on 30.5 x 32 12-ply tires, but Standley says duals or tracks would also work on the machine.

At the rear of the cart the Standleys built a reinforced frame out of 4 by 8 by 1/2-in. tube steel to pull the tillage shanks. Five parabolic shanks, including the spring and trip mechanisms, are mounted to this main frame. Shanks are spaced 30 in. on center. Two hydraulic cylinders lower the shanks to a working depth of 14 in. and raise them out of the ground with 16 in. of clearance.

Two of the five tillage shanks run directly behind the wheels of the cart to break up field compaction as it occurs. "We think that's one of the key benefits of this machine," Standley says. "Other benefits include reducing trips across the field during harvest, saving time, fuel, equipment and manpower."

Even though the tillage cart is designed to collect grain and handle tillage at the same time, each operation can also be done independently. "If the cart isn't being used to haul grain, the machine can be used for straight tillage," Standley says. "On the other hand, it can also be used just to collect or transfer grain like a normal grain cart."

The Standleys have a provisional patent on the machine as a tillage cart, a disk cart, a shredder cart and for use with other combination tools, including strip tillage and fertilizer application. John says, "This concept increases efficiency during harvest and can save a farmer more as his operation gets larger. If an operation has two carts, one of the carts can be unloading the combine and the other cart can be tilling. Being able to do more than one job at once nearly eliminates any idle time for the combine and increases the number of acres that farmers can cover in one day. Shortly after a combine finishes a field the tillage and fertilizer application can also be done."

Standley says their goal in developing the tillage cart was to save money and labor while minimizing the environmental impact of wasted fuel that's currently being used to harvest, chop stalks and do fall tillage.

Contact: FARM SHOW Followup, John and Calvin Standley, Tillage Carts, LLC, 1019 N. Main St., Apt. A, Princeton, Ill. 61356 (ph 815-326-0898, jstandley@cin.net).



Rig collects grain from a combine and does tillage in a single pass to save trips across the field, minimizing the time it takes to complete fall field work.



This fall they pulled the 32-ft. long tillage cart behind a Case IH 9370 4-WD tractor.



Two disk gangs from the chisel plow mount under cart's bridge frame at an 18-degree cutting angle. Gangs mount on hinges that allow 16 in. of up and down travel.