

Front sensor uses wand to sense position of plants in row.



Steerable rear discs (coulters) provide automatic guidance.

Automatic Guidance System For Planters And Cultivators

"It's catching on fast, especially for rowcrop cultivators," says Lincoln Creek Mfg., Phillips, Neb., of its new automatic guidance system for 3 pt. or pull type planters, and 3 pt. cultivators.

"We convert stabilizer discs and residue cutting discs so they hinge and steer to provide automatic guidance of planting and cultivating equipment, explain Jay and Ned Groelz, manufacturers.

To date, Lincoln Creek Mfg. has adapted hydraulically-actuated hinges to spring-loaded Orthman and Lilliston stabilizer discs, Buffalo discs (4630 and 4640), and Hiniker ridge-till coulters. Similar conversions for other make and model coulters are being developed, says Groelz.

On cultivators, a front-mounted sensor uses a wishbone-type wand to sense the position of small corn or soybean plants. It then sends steering signals back to the hinge assembly in the steerable disc or coulter to provide automatic guidance at speeds up to 7.5 mph.

"Because of its steering accuracy at high speeds, the guide system lets you cultivate close to the row with 3 pt. equipment, to use narrower herbicide bands to cut costs, and to improve cultivation results on sidehills. There's also less operator fatigue and different operators of the same machine achieve identical results," Jay Groelz points out.

The system uses wand, sled, bullet or other type sensors for automatic guidance of 3 pt. or pull type planters, primarily those used for ridge-till where precise steering is required to keep on top the ridges.

Dealer-installed cost of the system ranges from \$2,200 to \$2,600, depending on whether it's being adapted to a closed or open center hydraulic system. "Farmers can save money by installing it themselves," says Groelz. The basic kit includes a control box that mounts in the cab, a front-mounted sensor assembly with wands, a front sensor mount, an electro-hydraulic valve assembly, and two disc or coulter hinge assemblies.

"We're also working on a kit that will convert Case crab steer tractor models 4490, 4690 and 4890 to automatic guidance for row-crop planting and cultivation," Groelz told FARM SHOW. "It feeds information from a wand into the electronic brain already built into the tractor, causing the rear wheels to steer left or right, as needed, to keep the cultivator guided. This kit will be inexpensive because it makes use of the electronics and hydraulics already built into these tractors. All that's needed to have automatic guidance on a planter, cultivator, sprayer or other equipment is to move the wand assembly from one implement to the other."

For more information, contact: FARM SHOW Followup, Lincoln Creek Mfg., Rt. 1, Box 41, Phillips, Neb. 68865 (ph 402 886-2483)

Hydrostatic drive on steerable single rear drive wheel powers the

"IT'LL EASILY LAST A LIFETIME"

"No Maintenance" Mower

You've never seen a home-built mower like this hydrostatic "no-maintenance" machine built by Christopher Tull, Lafavette, Ind.

Tull's father Ted, who passed away before the mower was completed, played a big part in planning the design of the mower before building started. "We were tired of replacing drive belts, pulleys, sprockets and maintaining all the other parts on our riding mowers. Except for changing oil in the engine, putting air in the tires, and sharpening the blades, this is a completely maintenance-free machine that does the job twice as fast as our old mowers," says Tull, noting that it used to take two riding mowers 4 hrs. apiece to mow their 5 acres of lawn, which is covered with trees. He now does the same job in 4 hrs. with his speedy home-built mower, which moves at speeds from 0 to 15 mph.

The mower's efficiency is due to its hydrostatic, single-drive wheel design that makes it easy to maneuver around trees and other obstacles - no hand trimming required. The wheel is fitted with a 26-in. "ag tire" and turns 90° in either direction. "It's got plenty of power and one wheel digs up the lawn less." says Tull, noting that it also made the mower more economical to build since it only required one hydraulic drive motor.

Front wheels are wide ATV 21-in. tires. Tull used the big tires for better flotation. He says they also give an excellent ride. The 50-in. shaft-driven mower deck is a Deere that was purchased new from a dealer. Tull mounted a hydraulic motor directly on the deck to eliminate potential problems with the gearbox. He speeded up rpm's of the blades from 2,200 to 2,500 which he

says resulted in a better cut and more vacuum. He used the Deere deck on the mower because the same mountings can be used for a blade, snowblower and other attachments.

The mower steers with a conventional steering wheel rather than levers for convenience. Steering valves control an 8-in. slave cylinder connected to a jackshaft at the rear of the tractor. The jackshaft is geared down 2:1 through a pair of pulleys-connected by the only chain on the machine - to allow for the 180° range of motion of the drive wheel.

A 19-hp. twin cylinder Kohler gas engine provides power to the hydraulics. It runs at a constant 2,800 rpm's at 3/4 throttle and burns fuel at a rate of 1 gal. per hour. A 7-gal. fuel tank mounts on one side of the mower and a matching 7-gal. hydraulic reservoir mounts on the other side. The frame is built out of heavy 3-in. channel iron.

"I wouldn't change a thing. This mower should last my lifetime and when some of the parts do wear out they can all be easily rebuilt. It's as good or better than the most expensive commercial mowers that cost \$10,000 or more. I spent about \$4,500 for parts, including the deck which cost \$1,400," says Tull. He works for Carter Manufacturing in Brookston, Ind., a company that builds custom combines and other harvesting equipment for seed corn companies and universities. He says he'd be willing to custom-build the mower for about \$8,700.

For more information, contact: FARM SHOW Followup, Christopher M. Tull 7510 N. 1000 E. Lafayette, Ind. 47905 (ph 317 564-6023).

Bale Wagon Dumps Its Load

"I built the first one for myself about 6 years ago. I load it with my kicker baler and when back at the barn, just open the back of the wagon and dump the load by the elevator. I no longer have to wrestle tightly packed bales out of the wagon door like on conventional bale wagons," says Andrew Vos, Hagersville, Ont., designer of the "Handy Dump" hay trailer that's sloped to self-unload bales.

"It'll dump a load of 140 bales in 30seconds, allowing you to get by with only two wagons--instead of the four or five that it normally takes to keep up with the baler," Vos points out.

The dual-axle, 8 by 24 ft. wagon 'quick-hitches' to a special hitch mounted on the tractor's 3-pt., allowing you to hitch/unhitch without getting off the tractor. The wagon doesn't have an axle on the front like conventional wagons.

In the field, it hitches to a 2-wheeled dolly which, in turn, is hitched to the baler. The dolly takes the load off the baler and allows for shorter turns in the field.

To unload the wagon, you open the chain tailgate by releasing one pin. Bales will slide right out and the wagon will completely empty as you pull ahead, says Vos, adding that despite the wagon's 7 ft. height at the front, loading bales into it from kicker balers isn't a problem. By enclosing the sides, the wagon can be used to haul grain.

Handy Dump sells for \$4,200 (Canadian), including the dolly and tractor hitch.

For more information, contact: FARM SHOW Followup, Andrew Vos, R.R. 5, Hagersville, Ont. Canada NOA 1HO (ph 416 768-3606 after 6 pm).



"Handy Dump" is sloped to self-unload 140 bales in 30 seconds.