

European Speed Tillage Catches On

A new-style tillage machine with a proven record in Europe was recently introduced in North America and has been demonstrated in six states and two Canadian provinces. Farmers like what they see, says Jeremy Hughes, sales manager, Horsch Anderson.

"The Joker compact disc combines speed with effective shallow tillage, whether in conservation tillage or as part of a full tillage program," says Hughes. "Growers like the combination of high speed, excellent residue sizing and great incorporation of residue."

The Joker is ideal not just for shallow (up to 4-in. depths) tillage, but also for incorporating a cover crop, fertilizer, residue or manure before planting. It is available in 13, 17, 20 and 25-ft. working widths. Pull the 25-ft. Model 8RT at 12 mph, and you will eat up the ground at more than 35 acres per hour. Power requirements vary from 120 to 320 hp.

The secret to the Joker's design is the

small, but numerous ¼-in. thick, 18-in. dia., notched blades. The small blades turn faster for better mixing. Spade discs at each end of the blade sections eliminate soil ridging, leaving a level seedbed.

Each pair of blades is mounted on a single arm torsion bar for independent action on rocks and flexing over uneven terrain. Instead of a gang axle, a rubber torsion bar ensures that the blades maintain blade angle and uniform depth. High residue that can plug up a gang axle flows through. If a disk is damaged, it can be replaced by removing only five bolts, not an entire gang.

Instead of greasable bearings, the Joker uses oil-filled bearings more common in European disc tillage systems. The oil filled technology means lower wear and less maintenance.

The Roll Flex system at the rear of the Joker completes the tillage pass, smoothing the surface. It also lightly packs or consolidates the soil for an ideal seedbed. Col-



Joker compact disc combines speed with shallow tillage. It has 18-in. dia. notched blades on front and a RollFlex system at rear that smoothes the surface.

ored spacers on the packer assembly make depth settings for the tillage tool easy.

Thanks to a vertical fold mechanism, the Joker folds up to 10 ft. or less for highway transit. Prices range from \$30,000 to

\$62,000.

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Hot Water Furnace Burns Hay Pellets

Hay pellets burn far more efficiently than wood pellets and aren't difficult to make. So why isn't everyone burning hay pellets in their wood burning stoves?

Because when hay burns at high temps the ashes fuse into clinkers. The clinkers quickly build up in the firepot and can smother the fire in only a few hours. You have to clean the firepot too often to be practical.

Gus Swanson says his new hay pellet burning stove and hot water boiler will solve the problem. The multi-purpose furnace burns hay and wood pellets as well as corn.

The stove's key feature is a patent pending ash remover, which reduces naturally forming clinkers into a fine powder ash. The ash removal system works automatically and continuously during the burning process. It consists of a rotating bar with built-in flutes that stirs the clinkers and pushes them to the outside of the firepot, where they break down into fine ashes. An auger then automatically dumps them into a 5-gal. pail.

Swanson's company, LST Energy, has been working with Cornell University. His test model burns 4 lbs. of hay pellets per hour and has an output of 40,000 btu's. Wood pellet making companies in Canada made the hay pellets that they used in their tests.

"It's a clean burning system that's virtually maintenance-free," says Swanson. "The fire isn't disturbed and there is complete combustion of all pellets. The operator never has to touch the ash."

According to Swanson, heating a building with hay pellets costs about half as much as oil.

"Last winter I used the furnace to heat a 3-unit apartment building and used 4 lbs. of hay pellets per day, at a cost of about \$300 per month. I had been heating with oil at a cost of about \$700 per month.

"We use another hay pellet hot water furnace to heat our shop every day and will test two more stoves in farm greenhouses this fall. And this winter the Department of Agriculture in Truro, Nova Scotia, will test one of our furnaces."

He says hay pellets have an ash content about 10 times as high as wood pellets.

More than trying to build a business, Swanson says he's trying to build an industry across North America and boost the market for hay. "Our ultimate goal is to make hay pellets and deliver them by truck to the homeowner. At the time of delivery, the



LST pellet stove and hot water boiler burns hay and wood pellets, as well as corn. It eliminates naturally forming clinkers that might smother fire.



Typical clinker formed while burning hay pellets (left). Stove's ash remover reduces such clinkers into a fine powder ash (right).

truck will pick up the ashes which the homeowner has stored in a bin and haul them away. The homeowner won't have to handle ashes if they don't want to.

"We think the same idea might work with straw pellets made from wheat, oats or barley or even weeds, although we haven't done any tests on those materials yet. The key is to get the moisture content down to 13 percent."

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Snowmobile or ATV is driven out the side of bus through a 6-ft. wide, hinged door, which is raised and lowered by an electric boat winch.

School Bus Hauler Doubles As A Camper

When Steve Rossiter, Lewiston, Idaho, wants to haul his snowmobiles or ATV's somewhere, he goes in the comfort of an old 60-passenger school bus that doubles as a camper.

The bus holds four snowmobiles abreast front and back. Homemade ramps hook onto the rear bumper so the machines can be loaded through homemade double doors at the back. They can be driven out the side of the bus through a 6-ft. wide, hinged door that Rossiter installed. The door is raised and lowered by a 2-in. nylon strap attached to an electric boat winch, and is held secure by a pair of 12-in. long stabilizer legs. A solar panel on top of the bus keeps the winch battery charged.

Inside, the bus is fitted with plush bucket seats that can be swiveled around to face backward. And there's a propane cooking stove for camping.

"I paid \$1,500 for the bus and sold all the seats that I removed from the bus to a metal scrap yard. It was a lot of work to get all the seats out, but it had to be done. The bus is now classified as a conversion van so insurance for it is unbelievably cheap," says Rossiter.

To make the side door, he first cut the bottom out and welded the hinges on. Then he

cut out the rest of the door. He also welded 1-in. sq. tubing onto the edges of the door to reinforce it.

Wheel wells stuck up about 10 in. on each side of the bus and were in the way of the snowmobiles and ATV's. To solve the problem he welded together a frame made out of 1 ½-in. tubing. The frame gradually rises from the rear double doors up to the top of the wheel wells. He had a length of steel rolled out of 1/8-in. thick diamond plate to contour off the wheel wells back onto the floor. Then he bolted ½-in. thick plywood on top of the frame.

He replaced the driver's seat with a swivel bucket seat and installed a double passenger airplane seat behind it, which can be reversed to face backward. Another swivel bucket seat out of a van is mounted across from the airplane seat.

"I plan to replace the bus's existing 360 cu. in. gas engine with a more fuel efficient engine. And I plan to add fold-down beds on the walls and attach a propane heater to one wall," notes Rossiter.

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Homemade ramps hook onto bus's rear bumper, allowing machines to be loaded through double doors at back. Driver's seat was replaced with a swivel bucket seat and behind it is a reversible, double passenger airplane seat.

