Tow-Behind Liquid Fertilizer Tank

"About 10 years ago I started trying to apply all my fertilizer at planting time, using liquid fertilizer at 50 to 60 gal. per acre. That meant mounting some big saddle tanks on the tractor," says Glen Ensz, Hillsboro, Kan.

"I didn't like having those tanks on the tractor because they tied up the tractor and were a pain to take off and put on. So I built brackets to mount the saddle tanks on my planter. That worked but made the planter too heavy so I started looking for a fertilizer cart that I could pull behind. But there was nothing on the market so I set out to build something myself. It worked so well it's now on the market," says Ensz.

He built the fertilizer cart totally from scratch. It's designed to hold a 1,400-gal. cone-bottom tank, which Ensz says has a low center of gravity and keeps sloshing to a minimum. He built a drop center axle fitted with 12,000-lb. hubs and spindles. He had custom rims made and fitted them with 38-in. tractor tires.

The planter is fitted with a gooseneck bridge hitch that hooks to a ball mounted on top of the planter toolbar. He sized the cart to fit his 8-row planter so the planter could turn under it. But he ended up using his first cart behind a Deere 12-row 7100 semi mount planter and says it worked fine. The bridge hitch could be made to any length, however.

One of his main goals was to keep it simple so Ensz equipped the pump with a ground drive diaphragm pump. A small wheel runs against the side of one of the big tires. The wheel is engaged by a small hydraulic cylinder. The cylinder is plumbed into the planter's hydraulics so that when the planter is raised, the pump automatically disengages.

"I've had a lot of interest from people who've seen it. We recently took it to a small show and got a number of inquiries," notes Ensz, who sells cart for $7,895.

Contact: FARM SHOW Followup, Glen Ensz, 878 – 130th, Hillsboro, Kan. 67063 (ph 316 9475727).

Cart is designed to hold a 1,400-gal. cone-bottom tank, which Ensz says has a low center of gravity and keeps sloshing to a minimum.

"Robot" Cannon Protects Huge Acreage

Propane cannons are a cheap way to protect crops from birds but you have to buy a bunch of them to protect big fields. A new "robot" scarecrow - shown for the first time at the World Ag Expo in Tulare, Calif. - lets you get a lot more use out of a single cannon.

It consists of a hydraulically-driven cart fitted with four narrow bicycle-type wheels. A cannon and tank mount on the bed of the cart. A small gas engine drives a hydraulic pump. Each wheel is fitted with a small hydraulic motor.

The wheels on the cart are fixed in place so it always moves straight ahead. In row crops, you can dig a small furrow for the wheels to run in but if the land is flat and even, the cart will run straight.

When it reaches the end of the field or path, a direction switch on the side is triggered by a pole which you put in the ground. The trigger switch hits the pole and automatically reverses direction of the cart.

The gas tank runs 8 hrs. on one tank of gas. When the cannon shoots off, it rotates 1/4-turn on its lazy susan platform.

Wheel spacing is adjustable from 36 to 66 in. and it has high clearance for full-grown row crops. Ground speed is 2 to 5 mph.

Pete Davey of Sutton Ag Enterprises, says the robot cannon was developed by a local farmer. The first working prototype was on display at the World Ag Expo in Tulare, Calif. No price has yet been determined but units should be on the market in a few months.

Contact: FARM SHOW Followup, Sutton Ag Enterprises, Inc., 746 Vertin Ave., Salinas, Calif. 93901 (ph 800 482-4240 or 831 422-9693; fax 831 422-4201).

"Robot" scarecrow consists of a hydraulically-driven cart fitted with four narrow bicycle-type wheels. A cannon and tank mount on bed of cart.

MF 860 Repowered By Cat 3208 Diesel

When the crankshaft broke in the 540 Perkins diesel that powered his Massey Ferguson 860 combine, custom harvester Pat Minahan found out that repairing or replacing the Perkins would be expensive. And he would still have the Perkins, which he had never liked that much.

Pat Minahan was about as familiar with the Perkins as you could be since he had worked 17 years as a mechanic in a Massey dealership and later started a custom harvesting business.

He decided to "upgrade" to a Caterpillar 3208 diesel rather than fix the Perkins. "I was surprised at how well it worked out. It took very little machine work and no changes to the sheet metal on the combine. I was able to use the original fan belts and pump belt. Best of all I ended up with an engine that's got a lot more power and uses less fuel," says Minahan.

The 3208 came out of a New Holland TR70 combine. One of the first jobs was figuring out motor mounts. He set the Perkins on the shop floor next to the Cat and started measuring. He made new mounts out of heavy strap iron. Then he had to machine an adapter plate to go between the Massey's bell housing and a flat plate on the end of the driveshaft coming out the back of the engine. He also had to machine a drive plate to go on the flywheel. He used the original Perkins starter but installed a Cat electric fuel pump. The only major change to the engine itself was making a new oil pan. He cut off the bottom of the existing pan, which was too deep on one end, and welded a new pan to the bottom of the old flange. The new pan runs 7 in. deep for the entire length of the engine, giving him significantly more oil capacity than before. "I like having more oil in the engine," Minahan notes.

He also installed dual exhaust, using manifolds off a White 4-WD tractor and oversized 3-in. dia. exhaust pipes that run to mufflers off 720 Deere tractors.

The extra power of this engine makes a big difference. It's 100 cubic inches bigger than the Perkins. One thing we had to deal with is that the engine runs about 200 rpm's faster, which speeds up all the cleaning components on the entire combine. I wanted the combine to run a bit faster but not that fast, so we had to machine down the main drive pulley on the separator. I worked with a friend who is a machinist to calculate how to do it. We took 1/8-in. off the circumference of the pulley, which slowed it down about 100 rpm, so it's still running about 100 rpm's faster than it did originally.

"That extra speed – plus the added power – really makes this combine perform. I run faster and do a better job and the machine doesn't bog down and throw crop over like it did before. I've used it for two harvest seasons now, running from Oklahoma to Minnesota with no problems," says Minahan, who notes that he would consider making the conversion for other farmers, or he could put together a do-it-yourself kit.

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Pat Minehan found out that repairing or replacing the 540 Perkins diesel engine in his Massey Ferguson combine would have been too expensive. He decided to "upgrade" to a Caterpillar 3208 diesel that came out of a New Holland TR70 combine..