



Jason Brown made his own shields to keep crop residue from building up near the muffler on his Deere 8410T tracked tractor.

## Deere Tracked Tractor Fitted With Trash Shield

Jason Brown, Winchester, Illinois, likes his John Deere 8410T tracked tractor but says it had just one problem.

"It's great for tillage and general farm work, but when you move the tracks to their narrowest setting, crop residue builds up along the tractor frame near the muffler," he says. "This doesn't seem to be a problem with wider tracks, but since our 16-in. tracks are the same width as the drive wheels, crop residue gets pinched between the track and wheel as it comes around at the bottom. Where the track and wheel separate at the top, the trash drops off and makes a pile. The pile forms right next to where the muffler runs up along the cab."

Brown found himself stopping often to clean out corn stalks. Then he heard that another farmer with an 8140T lost his tractor to a fire.

So he contacted his dealer to see what could be done to prevent the problem. "I had an idea on how to make a shield that would deflect the stalks," he says. "I called Deere engineers to see if they had already put something together."

He was presented with a couple of ideas. "The first shields they sent out were rubber belts that mounted on the idler wheels. They worked fine when they were there, but every time I turned, the track chewed off a piece of them. They only lasted a couple of days," he says.

The second shields were made of steel. "They sent the blueprints for them to the dealer and the dealer had them made in a local metal shop. When they brought them out, they were too heavy to handle easily and then we couldn't figure out how to mount them on the tractor. I sent them back," Brown tells.

Convinced his original idea was better, Brown made his own shields. "I was going to make them out of heavy polyethylene, but



Plywood shield goes under top of belt and down 45 degrees from fender toward axle. It catches most of the residue and deflects it down, away from tractor frame.

decided to try plywood first to make sure the idea works," he says.

Before putting them together, he first decided how he was going to mount them on the tractor. When he'd finished building them, they fit just right and worked great.

"My design goes under the top of the belt and down 45 degrees from the fender toward the axle," he explains. "It catches most of the residue and deflects it down, so it doesn't drop on the frame. You still get a little buildup, but not enough to cause a problem."

Brown figures other farmers with 16 in. belts on their 8410T's may have the same problem. "I'm applying for a patent on my design and if enough people are interested, I'll make them for sale," he says.

He figures they could be molded in one piece from a rugged plastic material. "I'm not sure what they might cost at this time, but I think we could get them manufactured for less than the cost of the steel ones the Deere people designed," he says.

Contact: FARM SHOW Followup, Jason Brown, 473 Brown Road, Winchester, Ill. 62694 (ph 217 742-5242; E-mail: chiefs@wincoinet.com).

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## Remote-Controlled Deere 8400 Tractor

Cotton harvest is no longer a three-person job for Ray Albertson, South Mills, North Carolina.

"We used to need one person on the cotton picker, one to run the boll buggy, and a third in the module builder to tramp down the cotton as it's dumped in," he says.

Quite often, though, Albertson had to get by with two people running the three machines so someone had to continually get on and off the tractor.

"I thought if I could just control tractor hydraulics by remote control, I could dump the buggy a little at a time without ever having to climb down from the module builder," he says.

Albertson contacted Deere to see if such a thing was possible with his 8400 tractor. "The controls are all electronic," he says. "The company doesn't have any type of remote control system for the tractors and wasn't anxious to share anything about the electronics in it, either."

Convinced that it could be done, Albertson got a service manual for his 8400 and went through the tractor's circuits, figuring out how to "talk" to its computer.

Once he'd figured out which circuits he needed for the hydraulics and the throttle, he built an interface box so he could send signals to the tractor from a 4-channel Futaba remote control used for radio controlled model airplanes.

"Deere uses potentiometers to tell the computer what position the hydraulic control levers are in. I bought some of the same

potentiometers and wired them into my interface box, so I could reproduce exactly what the potentiometers tell the computer," he says.

He also had to install a rectifier in the 12-volt power supply from the tractor, so he could step the voltage down to just 5 volts for his electronic interface box.

He installed a toggle switch on the tractor's control panel that turns the interface box on or off. "When the switch is on, I can control the hydraulics and the throttle with the remote control. It automatically cuts off the tractor controls, so the hydraulic levers and throttle in the cab no longer work," he says. "When the switch is off, the tractor controls work, but the remote does not."

He also built some safeguards into the system so errant radio signals can't accidentally trigger the tractor controls.

Albertson's interest in and knowledge of electronics was key to making the modification, but he says it wasn't extremely difficult to do. "The hard part was figuring out which of the tractor's circuits I needed to use and how to tap into them," he says.

Albertson spent about \$200 on the Futaba controller and another \$300 on parts and supplies to put the system together. He says it has paid for itself in the time and effort it saved.

Contact: FARM SHOW Followup, Ray Albertson, 117 Bass Lake Road, South Mills, North Carolina 27976-9761 (ph 252 771-2479; E-mail: ralbertson61@home.com).

## Dump Trailer Powered By Drill

Hauling and dumping heavy loads of dirt, sand or gravel is a breeze for Bill Trettin, Superior, Wisconsin, thanks to the handy dump trailer he put together in his shop.

The 6 by 8 by 3-ft. deep trailer easily hauls 2 1/2 tons. What makes it unique is that he uses a cordless drill to power the dump box.

He built the trailer on floating rear axle from a 3/4-ton Dodge pickup. He cut out the differential and left the hydraulic shoe brakes in place.

On top of the axle, he built a fixed frame of 4-in. channel iron. The dump box was made from 3-in. channel iron, reinforced with 12 gauge sheet metal in the front corners. He built the hinges for the box by welding 1-in. round stainless steel pins to steel plates on the box and mounting them in greasable bushings in the frame.

The box sides are made of 1 1/2-in. sq. steel tubing uprights, topped with 12 gauge sheet metal that Trettin bent into an L shape and welded in place. The box is lined with 1/2-in. treated plywood.

The tailgate, made just like the box sides, is hinged at the top and latched at the bottom. "It works just like the tailgate on a dump truck," he says.

The dumping mechanism consists of a ball screw drive which consists of a ball screw nut that moves back and forth along a screw shaft. Ball bearings rather than threads inside the nut keep it on the shaft.

Trettin put a reducer on front of the shaft to gear it down enough so he can dump a heavy load with either a hand crank or a small cordless drill. A tongue jack built into the trailer's 4-in. sq. tongue can also be raised or lowered with a cordless drill.

He hooked the hydraulic brakes into a surge brake controller so the trailer has working



Trettin's home-built trailer can be dumped using either a hand crank or small cordless drill.



Dumping mechanism consists of a ball screw nut that moves back and forth along a screw shaft.

brakes.

Contact: FARM SHOW Followup, William Trettin, 1630 E. 10th St., Superior, Wis. 54880 (ph 715 398-3018).