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By Lorn Manthey, Contributing Editor

## Giant Bale Grinder Adapted To Semi Tractor

Bryant Noot and his father Jay from Marion, N. Dak., beefed up their custom hay grinding operation by converting a pull-type Mighty Giant tub grinder into a truck-mounted unit. They repowered the semi tractor with the 410 hp Cummins diesel that originally powered the grinder, so now it supplies power for both the truck and the grinder.

"We decided to make the conversion because during the winter and spring, when a lot of our grinding is done, I was always having to chain up the truck before pulling into a yard for grinding," Bryant says. "I decided if the weight of the grinder was on the truck instead of being towed behind, it would be a lot easier to get in and maneuver around yards.

"Installing the Cummins engine was the easiest part," says Bryant. "We had that done in just a couple days." Designing and adapting a drive line that would run both the semi and the grinder was more difficult.

"Originally I thought I'd use a dropbox from a firetruck, because they power the

truck and the pumping system," Bryant says. "Turns out those dropboxes are only rated for about 200 hp, and we needed something that would handle twice that much power." They eventually found a dropbox and transfer case with 3 gears on an old Steiger Bearcat tractor.

Bryant thought he'd be able to just remove one gear and install it, but after dismantling the gearcase he found that the middle gear was an idler. "I needed to cut a keyway, and the only way to do that was with a Wire EDM (electrical discharge machine). One guy told me that might cost \$500 or \$600 just to turn the machine on." Bryant, however, drove to Fergus Falls, Minn., and West Tool did the work he needed in less than an hour for \$90.

With the drive system figured out, the Noots extended the tractor frame between the back of the driver and the rear end about 4 1/2 ft. They also added about 12 ft. of double frame to strengthen the bed so it would carry the grinder. They removed the grinder's hitch, wheels and chassis and mounted the grinder on the extended semi-tractor frame.

The grinder originally weighed about 14,000 lbs. when it was on wheels, and now the whole setup weighs about 31,000 lbs. The added weight on the truck provides plenty of traction in muddy and slippery conditions.

"Now when I get into a customer's yard I manually engage a coupler that powers the grinder, and that uses the standard gears in the truck," says Bryant. "I put the truck in 8<sup>th</sup> gear and the mill spins at 2,100 rpm's. A wet kit on the tractor moves the whole rig forward as needed during grinding. It also runs the hydraulics on the discharge elevator, lifting it up and down and moving it side to side, and it lifts the tub to change the screen."

Bryant said the whole conversion went smoothly, except for a minor glitch with 2 hoses that weren't hooked up correctly, and a seal that leaked in the dropbox. With those problems fixed, the machine grinds several bales an hour, just like it did when it was a pull-type model driven by the independent engine.

"The machine takes 15 to 20 gal. an hour

for fuel, depending on how hard a grind it is. It's definitely more economical than with two engines," says Bryant.

He's the third generation of North Dakota Noots to be involved in the hay business, and says their new rig should keep the business growing. They have about 100 customers in the combined hay moving and grinding business that his grandpa started. His father also builds stack and bale moving beds, and now Bryant is a big part of the business with the custom-built grinder.

"Adapting the grinder to the semi probably took me and my dad 5 weeks and cost about \$12,000," says Bryant, "but it was way less than buying a custom-built rig like this. As far as I know there's only one other setup like this, and that one's in Canada." Check out the video of the machine working at [www.farmshow.com](http://www.farmshow.com).

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## Willsie Has Everything For Small Market Gardeners

Market gardeners can improve efficiency and reduce hard labor with equipment to plant, weed, harvest and wash in a \$10,910 Market Garden Package sold by Willsie Equipment Sales. The Ontario-based company knows what works when it comes to growing fruits and vegetables to sell at farmers markets, restaurants and from on-farm stores. Back in the 1950's, the Willsie family struggled to find the right equipment and parts to run their vegetable farm. So they started finding suppliers and making their own equipment. Now they manufacture about 85 percent of the items they sell.

"We make our equipment heavier with thicker gauge metal so it's long-lasting," says Tim Willsie, who handles sales for the company.

The Market Garden Package is a good starter option for two people with a small tractor and cultivator who want to grow up to 20 acres of produce. The manual JP-1 precision 1-row seeder plants the full spectrum of common vegetable seeds. The Hydroweeder is pulled by a tractor and allows a person to sit and operate rotating digging heads around plants. The Standard 3-Point Hitch Digger digs any row crops up to 8 in. deep, and is compact and turns easily at the end of rows. Finally, an Electric Batch Washer cleans half a bushel of vegetables in 3 to 5 min.

The Hydroweeder, which starts at \$4,331, is very popular, Willsie says. So is the upgraded 26-in. model drum washer capable of washing 60 lbs. of produce at a time.

Much of Willsie's equipment is customized to meet customers' needs.

"We can modify the digger to go up to 18 in. deep for sweet potatoes, for example,"

Willsie says. "We tend to do more customizations of that model."

Willsie also takes trade-ins and consigns equipment for customers that are posted on the used equipment page on the business's website. With the majority of their customers in the U.S., they have a U.S. warehouse in addition to their main business in Thedford, Ont., which is near the border.

Though this year's growing season is over, Willsie suggests that growers start planning for next year because they can save money with a 5 percent discount on items ordered now.

To learn more about the equipment and the available options, go to the website and check out the videos showing the weeder and digger in action.

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Willsie Equipment's 3-pt. mounted Hydroweeder allows a person to sit and operate rotating digging heads around plants.



Hitch Digger digs up row crops for harvest, and the Electric Batch Washer quickly cleans vegetables.

