# Farm-Built High Clearance Sprayer Uses Combine Drive

Bernie Denis of Vonda, Sask., likes his home-built field sprayer because it works so well and saved him many thousands of dollars as compared to a commercial high-clearance sprayer.

He built the unit himself using a combine drive and a 1981 Chevy half-ton with a 350 automatic. He has used it for 6 years to cover 2,400 acres two to three times per year.

Denis built the sprayer's frame from scratch, using 4 by 6-in. tubing. He mounted the truck on the frame.

"To drive the rigs hydraulics, the engine's crankshaft has a gear belt pulley on it, that drops down to drive a jackshaft just under the bumper," he explains. "From there, we have another jackshaft for the sprayer pump. The hydraulic pump is mounted right in front of that shaft."

The sprayer's hydraulic steering and boom lift control valves were salvaged from a Gleaner combine, while the back wheels are driven by the final drive off a White 5542 combine.

In order to make his system work, Denis flipped the truck rear end over to reverse the drive.

**Closeup shows steering mechanism and hydraulic pump.**

"Because of the way the final drive gears met up, the back wheels would have turned backward when you drove forward, if I hadn't flipped the rear end," he says.

The 600-gal. imperial tank and cradle came from an old pull-type sprayer he had on the farm. Denis installed air bag shocks between the tank cradle and the sprayer frame,

The 80-ft. boom frame is 4 by 4-in. light wall tubing, with 2 by 2-in. tube bracing on top. Thanks to 18.4 by 26 tires, there's 48 in. of clearance under the sprayer frame.

Independent hydraulic cylinders on each side mean that Denis can lift either boom to avoid obstacles. A parallel link system provides height adjustment from 18 in. to 6 ft. The booms are each equipped with 10-ft. break-aways and springs for cushioning.

**Bernie Denis built this sprayer using a combine drive and a 1981 Chevy 1/2-ton pickup, which he mounted on a home-built frame. It's equipped with an 80-ft. boom.**

Although he also uses a Peacock foamer for a backup marking system, Denis points out that he's usually able to follow his 40-ft. drill tracks because they line up nicely with each pass of his 80-ft. booms.

The rig works well at 9 to 12 mph per hr.

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# Portable Sand And Gravel Separator

"My homebuilt sand and gravel separator sorts out the sand and then bags it. I can pull it behind my pickup to any location and, best of all, I spent only about $12,000 to build it," says Patrick Cusack, Muir, Mich.

He used mostly scrap steel to build the four-legged machine, which looks something like a gravity wagon. It rides on a 20-ft. long tandem axle trailer that Cusack built out of an old mobile home. The machine has a metal hopper on top that measures 8 ft. sq. and 12 ft. high. The hopper is equipped with a screen that sets at an angle and has 1/32-in. dia. holes. Power to vibrate the screen is supplied by a 2 hp electric motor, which belt-drives a commercial vibrating device that he bought from a pickle processing company. It vibrates the screen about 1,000 times per minute.

A front-end loader is used to drop material into the hopper. Sand drops through the screen and falls onto the hopper's slanted floor, then exits through a door on one side of the machine, where a portable bagging machine is used to bag it up.

Gravel flows down a 20-in. wide, 10-in. deep, plastic-lined chute on the other side of the machine and out onto the ground.

A key feature of the machine is the use of springs on all four legs. Each leg sets inside a 4-in. dia. pipe that's welded to a metal base. The pipe is enclosed by a 16-in. long, 4-in. wide spring off a heavy duty truck. Collectively, the springs absorb the shock of the vibrating screens and keeps the machine from shaking up and down too much.

"It works fast and does the work of commercial machines that sell for $100,000 or more," says Cusack. "I was told by some people who work with stationary sand and gravel separators that it couldn't be done, but it runs beautifully. I use it to bag up sand at my own sand and gravel pit. The sand is used to build dikes by local people who live in flood plain areas. I have two bagging machines, one for 25-lb. bags and the other for 50-lb. bags.

"The secret to this machine's success is the use of the springs. The entire upper part of the machine vibrates, but the legs almost float inside the springs. I can hold my hand under the trailer and not even feel it vibrate.

"I think the same idea could be used by farmers to process any gravel they may have on their farms. For example, dairy farmers could use the sand for bedding. The hopper can hold up to 1 1/2 yards of sand and gravel at a time. I can bag up to 1,000 bags per day which is a lot of capacity for its size. The door can be raised or lowered by a wheel in order to control the rate at which sand flows through the door. Or, you could process your own play sand or weight sand and sell it commercially. I get about $1.50 to $2 for each bag of sand I sell."

**Home-built sand and gravel separator sorts out sand and then bags it. It's equipped with a screen that vibrates at 1,000 times per minute, and has springs on all four legs.**

Cusack says the most expensive part of the project was the screens, which have to be specially made. "They're very expensive but they're designed to last a long time," he says.

He uses a big portable generator to operate the electric motor.

The baggers were custom built for him at a cost of $340 apiece. They're open at the top. One person hangs the bags on the bagging machine while another one ties the bags and stacks them on pallets.

Cusack says he's willing to build separator machines for 10 percent over cost.

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**Some of the best new ideas we hear about are "made it myself" inventions born in farmers' workshops. If you've got a new idea or favorite gadget you're proud of, we'd like to hear about it. Send along a photo or two, and a description of what it is and how it works. Is it being manufactured commercially? If so where can interested farmers buy it? Are you looking for manufacturers, dealers or distributors? Send to FARM SHOW, P.O. Box 1029, Lakeville, Minn. 55044 or call toll-free 800 834-9665. Or you can submit an idea at our Website at www.farmshow.com.**

*Mark Newhall, Editor*

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"Made It Myself"

# "Poor Man's" Automatic Bale Kicker

"Case IH never offered an automatic bale kicker for my 3650 round baler, so I always had to back up before I could eject the bale. Then I had to close the door before I could go ahead again. I don't like to shift gears on my tractor that much, so I built my own simple, low-cost bale kicker," says Buzz Kutzler, Huron, S. Dak.

The bale kicker consists of a 3-ft. wide, 4-ft. long metal bracket that bolts onto the baler's frame, under the door. The bracket is attached to three big springs of f a spring tooth drag. When the bale falls onto the bracket, the bracket lowers to the ground. Once the bale rolls off the bracket, it automatically raises up off the ground again.

"It forces the bale to roll out of the way just far enough that I can close the door without having to back up," says Kutzler, who notes that he has units for sale.

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**Automatic bale kicker consists of a 3-ft. wide, 4-ft. long metal bracket attached to three big springs. When bale falls onto bracket, bracket lowers to ground. Once bale rolls off, bracket automatically raises up off the ground again.**