"I spent only $6,000 to build it, not counting my labor," says Mitch Kolanko about his 2-wheeled, home-built, pto-powered grain vacuum.

A 15-ft. long, 10-in. dia. transfer auger hydraulically folds out behind fan and delivers grain into a wagon or semi truck. Vacuum hose attaches to inlet pipe (see arrow).

He Built His Own High Volume Grain Vacuum

"I built it because I didn't want to spend the money for a conventional grain vac and I wanted a simpler design with less maintenance. Best of all, it cost only a fraction as much as a commercial unit," says Mitch Kolanko, Hubbard, Sask., about his 2-wheeled, home-built, pto-operated grain vacuum.

The unit uses a fan instead of a positive displacement pump and a transfer auger instead of an air lock. Grain is sucked up through a flexible rubber hose into a steel pipe mounted on one side of a separator. The 28-in. dia. fan turns at 5,000 rpm's and creates enough vacuum in the pipe to transfer as much as 6,000 bu. per hour. A 15-ft. long, 10-in. dia. transfer auger hydraulically folds out behind the fan and delivers grain into a wagon or semi truck. Air from the fan exits through an exhaust pipe on top of the unit. The pto-operated unit requires only a 75 hp tractor.

"I spent less than $6,000 to build it, not counting my labor. The cheapest grain vac on the market with comparable capacity sells for $16,000," says Kolanko. "And my grain vac is built a lot stronger. I've used it on a variety of crops and haven't had any problems yet," says Kolanko. "I have no sweep augers in my bins - I just go into them and suck the grain out. The 15-ft. auger is high enough to load directly into the biggest semi grain trailers."

He says the hardest part of the project was building the fan, which has to be dynamically balanced to exact tolerances. "Each individual blade has to be cut in the exact same proportion. I built the fan in our welding shop and had it dynamically balanced at a specialized balancing facility."

He says he'd be willing to build grain vacs for others if there's interest.

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Starting with a 3/4-ton Ford pickup, David Brockhoff built this self-propelled, articulated ditcher.

Cutter drum has heavy 1/2-in. decking chains with grader blades bolted onto outer ends.

Big Self-Propelled Ditcher Makes 7-Ft. Waterways

By Janis Schole, Contributing Editor

David Brockhoff built one of the world's most unusual-looking machines to do a professional-looking job of draining water off soft, wet peat-like fields.

The amazing self-propelled, articulated machine makes ditches measuring 3 1/2 ft. deep by 7 ft. wide. Depth can be easily changed by shortening or lengthening chains on the cutter drum.

Brockhoff uses the ditcher on his own place as well as for custom work.

"We've done quite bit of ditching in about a 70-mile radius of where we live," he says. "I got the idea for it from a tractor-pulled ditcher I saw. It worked well but was too small. I wanted to make a bigger ditch that would last longer."

Brockhoff says he thought building a self-propelled unit would be cheaper than having to buy a big hydro drive tractor, which would have been necessary to pull a large trailer-type ditcher slowly enough. Articulated steering was easier to make, he says, and as a result it's easier to follow an existing ditch with it. The front and back axle trail fairly close to each other, which is helpful if he ever wants to retrace his path or clean out or widen someone's old ditches. It's nicer for making curves, too, he notes.

Brockhoff started with a 4-speed 3/4-ton Ford pickup with a 390 motor. He cut the box off and mounted a 45-gal. drum that he uses as an oil reservoir for the hydrostatic drive. There's another oil tank beside that, which he uses for steering and lifting.

"The articulated steering joint is between the truck frame and the ditcher," he says. "The cab and frame sit on top of a JD '95 combine axle with the original 4-speed transmission. To change its direction, I used a Massey 405 combine drive."

A hydrostatic pump and motor, driven off the front of the truck engine, drives another 4-speed transmission.

To power the cutter drum, the original truck 4-speed drives another large 5-speed transmission which connects directly to the cutter drum.

To this drum, Brockhoff fastened long pieces of heavy 1/2-in. decking chains with sections of grader blade bolted on to the outer ends. If the blades get smashed up, he says you just unbolt them and put on new ones.

When the ditcher is working, and the cutting drum is spinning, the displaced dirt can be thrown either to the right or left, depending on the direction the drum is spun.

"I prefer to throw it to the right, but you can change into reverse if you need to throw the dirt to the left for some reason," he explains. "The inside wheels on the ditcher are about 7 ft. apart, and straddle the ditch. On the combine axle, I have 23.1 by 30 dualled rice tires to give extra traction in mud."

The shallower the ditch is, the further out into the field the machine throws the dirt. For example, creation of a 2-ft. deep ditch will throw dirt 50 plus ft. off to the side and spread it out evenly. You can chew through stumps and logs if your cutters are sharp, Brockhoff says.

Machine makes ditches measuring 3 1/2 ft. deep by 7 ft. wide. Depth can be easily changed by shortening or lengthening chains on the cutter drum.

An important aspect of the ditcher's design is that it's light-weight so it's virtually impossible to get stuck.

"When I was building it with a 390 motor, a lot of people said it'll never have enough power and will shake itself to pieces because it's too light," he explains. "It probably has about 250-hp and although I have had to reinforce the frame in places, it has worked great."

The cab interior consists of bucket seats, a hydrostatic drive stick on the floor for forward or reverse and two hydraulic control levers, one for steering and the other for raising and lowering the ditching unit to adjust the cutting drum depth. The back axle has a pivot in it, and this provides flex for the complete unit.

Operating the rig takes patience because digging large ditches is time consuming. According to the Alberta farmer, a 1/2-mile of ditch that's 2-ft. feet deep and 5-ft. wide, could take anywhere from 3-hrs. to 8-hrs., depending on conditions.

To transport his rig, Brockhoff put side extensions on a low-boy trailer.

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