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He Built His Own Grain Vacuum

"It works as well as any commercial grain vac on the market and lets me suck grain from almost anywhere. Best of all it cost less than \$1,000 to build so I saved a lot of money," says Victor Larson, Freesoil, Mich., about his 3-wheeled, home-built grain vacuum.

The grain vac's components sit on a channel iron frame that mounts above the axle off an old Volvo car. Power is supplied by a 3-cyl. diesel engine mounted at one end of the frame. The engine clutch-drives the blower which is a "super charger" off a Cummins truck engine. A 4-in. dia. steel pipe leads from the blower down to a rotary valve at the bottom of the unit. Another 4-in. dia. pipe leads from the blower to the top of a big tank. A cyclone mounted on the end of a 5-in. dia. swing-out pipe is used to load grain.

To suck grain out of a bin, Larson hooks a pipe on the tank up to a pipe that mounts permanently at the bottom of the bin. Then he turns a crank to swing the cyclone out over whatever he wants to fill. He pushes a button to start the engine and engages a clutch

lever to start the grain flowing. A throttle is used to control engine speed.

"I've used it for five years on wheat, oats, and corn and it hasn't been in the shop yet," says Larson. "It'll move 350 to 400 bu. per hour. I use it to fill everything from gravity wagons to grinder-mixers to semi trucks. I pull it with my pickup. One time I used it to clean up a big spill at a local grain elevator. I may install a hydraulic pump on it so I can use hydraulic motors to drive the rear wheels and make it self-propelled.

"I used a water well tank to make the big tank and a 'bladder' water tank to make the cyclone. The cyclone telescopes vertically up and down 5 ft. by means of a crank, allowing me to reach over the top of a semi trailer and fill it.

"I use augers to fill my bins and have no sweep augers in them - I just go into the bins and suck the grain out."

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Fifteen years ago, Roger Datisman of Sherrill, Iowa, designed and built this low-cost grain vacuum using an old silage blower and his 200-bu. grain wagon (Vol. 7, No. 6). His "reversed" silo blower sucks air out of the sealed-up wagon, pulling grain up the 8-in. flexible metal tubing used as a vacuum hose. He converted the wagon into a giant vacuum

chamber by installing a layer of perforated flooring across the top and built a 1-ft. high plywood extension above the flooring. He then sealed the wagon shut with a sheet of plywood across the top, cutting an 8-in. dia. hole in one end of the plywood sheet and another the same size in the side of the wagon below the perforated floor.



Tailgate is mounted at height of animals' backs so when they approach, they lower their heads and push up on U-shaped, rubber-covered bar.

Livestock "Tailgate" Helps Handle Cattle Safely

By Janis Schole

In the short-term, it may seem cheaper and easier to slide a fence post across alley planks as a make-shift cattle-spacer, and this is what most cattlemen have done over the years. However, there is a gadget on the market that's much safer, more convenient and less stressful for the cattle and operator.

Dave Stoneman and Todd Mazur of Fisher Branch, Manitoba collaborated to create what they call simply, "The Livestock Tailgate," a device that silently and safely improves cattle flow through the handling system. It prevents them from backing up in the alleyway.

Once installed, the relatively small, see-through mechanism saves labor by doing its job automatically. There's no need for manual blocking of cattle. Animals are no longer spooked by the person trying to hold them in the alley using the old pole method.

Stoneman is an experienced cattleman who has worked with cattle all his life. He came up with the idea for the tailgate in January, 1997 and enlisted the help of Todd Mazur who operates a local welding shop. The two worked together to refine the idea and built some automated equipment for punching and bending the devices. What resulted was a simple tool that can fit any type of wood or metal alley (or chute) measuring 20 to 36 in. wide.

"The tailgate is mounted at the height of the animals' backs so that when they approach, they lower their heads and push up the U-shaped, rubber-covered bar," Stoneman explains. "The bar is held up by their backs until they pass through and then it falls silently into place, preventing them from backing out. Because it is counter-balanced, the device actually applies pressure to the cow's tailhead and encourages her to move forward before it drops down behind her."

Because the device is open and "see-through", it doesn't intimidate the cattle, and they can't get stuck in it even if they slip while passing underneath. It can be locked in the open position if the need arises to back cattle through the alley.

The entrepreneurs recommend that the first Livestock Tailgate be positioned one animal length back from the squeeze. The second should be 3 to 4 ft. inside the beginning of the alley where the cattle first enter.

Because the mounting brackets swivel, there are 16 possible combinations to mount the tailgate to an existing cattle handling fa-



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cility. This makes it possible to mount the unit on vertical posts (wood or metal) or horizontal planks (rails or pipes).

So far, the pair has sold about 250 units, but is slowly building a stronger following as they sign up dealers.

"We're looking for more dealers in both Canada and the U.S. and we will also sell direct if there is no dealer near by," Stoneman says. "The suggested retail price for the tailgate is \$159 Canadian. It comes with a powder coated durable finish and a lifetime guarantee. If installed correctly and it ever breaks, we will replace it but that's not likely. Our farm operation has run more than 5,000 cattle through it and it's just like new. It's maintenance free since there's nothing on it to wear out."

The Livestock Tailgate is also being used on dairy farms where cows travel through alleys leading from the loose housing barn into the milking parlor. Dairymen have found the device useful for preventing cows from blocking the parlor exit alley by entering it from the wrong end.

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