



High-speed aeration fan pulls poisonous gases out of silo through chute before workers enter. It can be moved from silo to silo, as needed.

Home-Built Silo Gas Exhaust System

"We wanted a way to suck gases out of silos before we had to go in," say Max and Vicki Lass who designed and built a silo exhaust system that pulls poisonous gases out of the silo through the chute.

"After thinking about such a system for a number of years, we finally came up with a workable design and put one together last year," says Max.

The New Hamburg, Ontario, farmer and his wife's system consists of a commercial 3/4 hp, 12-in. dia., high-speed aeration fan from a feed bin, a commercial adapter to attach ductwork to the bottom of the chutes on their silos and 25 ft. of industrial ductwork.

The fan sucks gases out of the silo and blows them away before workers enter. They use the one system on all four of their 70-ft. tall by 20-ft. dia. structures.

"We use it twice per silo, once as they're being filled and once as they're being leveled," Max says. "The first time I flipped the switch a big cloud of orange chlorine gas was drawn out so I knew it worked. It takes only about a minute of operation to clear the silo of gas."

The Lassés already had the aeration fan, which cost about \$300 (Canadian). They purchased the commercial flex adapter and ductwork for \$100 and \$120, respectively.

Max's cousin, Doug Mueller, of R. Mueller Heating, helped locate and obtain the other components (Box 38, St. Agatha, Ontario, Canada N0B 2L0; ph 519 747-1333).

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Inverter was made out of an IH 2400 round baler. Two hydraulic cylinders raise the machine, providing up to 2 ft. of ground clearance to easily pass over end windrows.

Old Baler Makes Great Windrow Inverter

"I put up only about 400 tons of hay a year. But my area's pretty wet and it's usually hard to get finished before my hay gets rained on," says Randy Barta who built a windrow inverter out of an old baler. It flips the windrows to reduce drying time to three days instead of five or six. "It works better than any commercial unit I've ever seen," he says.

The Lewistown, Mont., farmer started with an IH 2400 round baler, stripping it down to the frame and salvaging many parts for the project.

"It's built like a New Holland inverter," Barta says. "The big difference is, when you drive over windrows with my unit at the end of the field it doesn't make such a mess of the hay."

That's because he built the inverter so it pivots up and down on the axle. Two hydraulic cylinders raise the machine and pickup at the same time, providing up to 2 ft. of ground clearance to easily pass over end windrows.

Barta made a horizontal belt out of a 30-in. wide draper belt off an old New Holland windrower. The pickup drops the hay on the belt which then carries it over to an inverter chute made of tin. A 5-in. "elevator" belt mounts between the pickup and the large horizontal belt. "It gives us more lift," says Barta. "We lift the windrow up 12 in. higher than any commercial inverter I've seen, which helps reduce plugging in heavy hay."

To solve the problem of plugging when hay comes around the corner of the horizontal belt onto the outfeed chute, Barta mounted a 1-in. dia. vertical shaft fitted with rake teeth just inside the shield at the corner. He cut slots



An "elevator" belt mounts between pickup and large horizontal belt. Note slotted tin above belt where rotating fingers extend through to push hay around corner of inverter.

in the shield so the rake teeth extend through them. The shaft is belt-driven and, as it turns, assists the hay around the corner.

The inverter handles windrows up to 5-ft. wide and is pulled by Barta's Deere 4020, although any 45 hp tractor with hydraulics could be used to pull it, he says.

"Most of the parts I needed for the inverter were extras I removed from the baler when I stripped it down," he says. "The whole project cost me only around \$300, compared with \$4,000 or more for a commercial model. What's best is, from what I can see, it outperforms commercial models."

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Hay comes around the corner of the horizontal belt and onto the outfeed chute. Inverter handles windrows up to 5 ft. wide.

He Built "One-Arm" 3-Pt. Mounted Bucket

"It takes only 10 minutes to put it on and take it off," says Roy Pipo, who built a rear-mount self-leveling bucket to fit the 3-pt. hitch on his Long 2610 tractor. He uses it to haul rocks, dirt, gravel and other materials around his farm.

Before constructing the rear bucket, the Kensington, Minn., farmer used a conventional front end loader but didn't like the amount of time it took to put the loader on and take it off. He used 2 by 4-in. tubing for the frame which attaches to the 3-pt. and made the 40-in. wide bucket out of 3/16-in. thick plate steel. Length of bucket and frame together is 3 ft.

The bucket trips with the hydraulic cylinder off an old front end loader, while tractor hydraulics keep it self-leveling at all times.

The loader lifts to 4 ft. high.

Out-of-pocket expense was about \$200. Pipo is looking for a manufacturer.

He also built a rock picker and snow bucket for the 3-pt. on his Long tractor.

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Photo courtesy Farm & Ranch Guide

Pipo made the bucket out of 3/16-in. thick plate steel. Bucket trips with the hydraulic cylinder off an old front-end loader.



Rear-mount, self-leveling bucket fits the 3-pt. hitch on his Long 2610 tractor.