Liquid Manure "Fill Pipe"

"It's easy for one person to set up and take down and I can pull it behind my pickup," says John Miller, Rodney, Ontario, about the liquid manure "fill pipe" he made out of a 6-in. dia., 25-ft. long pipe riding on the frame of an old corn elevator.

Miller uses the "fill pipe" to load manure from a pit into his 2,000-gal. truck spreader. The 6-in. pipe had been part of an elevator leg used on grain bins. He made cuts and rewelded the upper end of the pipe so it runs horizontal to the ground and then bends down at a 90 degree angle for filling. A hand-cranked winch is used to raise or lower the pipe, which has a 10-ft. long steel fence post welded onto its bottom side. The fence post rides on a steel roller as the pipe is raised or lowered. A quick coupler at the bottom of the pipe connects to an 8-ft. long flexible rubber hose that hooks up to a manure pump.

"I've used it for the past five years to load hundreds of thousands of gallons of manure without any trouble," says Miller, who uses the fill pipe on his chicken farm and also does some custom work. "I can raise or lower it in seconds and it's easy to transport. I disconnect the rubber pipe and throw it over the 3-pt. mounted pump. I pull the fill pipe behind the spreader truck - an old GM 9500 with a Husky tank mounted on it. The unloading end of the pipe hangs out quite a ways so I can drive the truck right under it rather than having to back in."

The end of the pipe is supported by a cable attached to a steel bar welded onto the top of the pipe. Each end of the cable is attached to a chain link welded onto the pipe. A turnbuckle can be used to tighten the cable. Miller clamped a length of rubber hose on the end of the pipe to keep it from catching on the truck as it drives under.

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He Dries His Crops In A Gravity Wagon

If you're a smaller farmer with more wet grain than you have places to dry it, you'll be interested in how one farmer solved the same problem.

"I was putting my empty gravity wagons in the pole barn and decided I should try to find a way to use them to dry my crops," says Rudy Layher, Saline, Mich., who has no bins for on-farm storage.

Now Layher dries all his wet corn, soybeans, wheat and oats in his grain wagons.

"In the 1970's, some wagons were manufactured with false floors for this purpose," he says, "but the idea never caught on."

To make his natural air drying wagons, Layher first bolts 2 by 4's lengthwise every 14 in. along the bottom of his wagons. Then he alternates 12-in. wide boards with 19-in. wide sections of grain bin flooring across the top of the 2 by 4's.

Next, Layher cuts a hole about a foot in dia. in the side of the wagon opposite the unloading door and about a foot from the top of the wagon. A 1/2 or 3/4 hp electric fan inserted into the hole bolts to the outside of the wagon and the joint is sealed with felt and plastic.

On the same side of the wagon, inside, Layher builds a false wall using 2 by 4's covered by wood that forces air from the fan down into the wagon's false floor to aerate grain.

Layher has installed the system on his 300 bu. wooden gravity box and on his 250 bu., 185 bu. and 125 bu. metal gravity wagons, which he uses to aerate wet corn, wheat and oats.

Drying time ranges from 10 days for wet, 20 or 21% moisture, corn to as little as a day and a half for wet oats, he says.

Layher covers the wagons with a tarp when he's aerating grain and can tell if the fans are operating properly simply by noting whether the tarp's billowed up.

Since Layher developed the system, he's never had a load of spoiled grain, he says.

Layher has about $130 invested in his system, including $67 for the roll of flooring.

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Swather Repowered With Perkins Diesel

"Underpowered and overheated' was the usual operating condition of a 1970's Hesston 600 swather owned by a Kansas farmer who finally sold it to Bob Hasenkamp, Soldier, Kan., after the engine blew a head out for the second time.

Hasenkamp repowered the Hesston with a Perkins diesel engine and solved the engine problems - plus a couple of others - in one fell swoop.

"It's not overpowered but it's certainly not underpowered anymore," says the Soldier, Kan., farmer. "It hasn't overheated since I put the Perkins in it and I've cut as many as 60 acres of hay with only 30 gal. of fuel. I've never had a crimper roller plug up with hay like my neighbor always did because it's got more power now.

"There really wasn't anything difficult about repowering it," adds Hasenkamp, who has about $1,600 and 30 hours invested in the project.

Hasenkamp used a 4-cyl. Perkins diesel engine out of a 1968 Massey combine he'd junked. The engine was the only salvageable part of the combine.

In order to mount the Perkins engine in the swather's rear engine housing, Hasenkamp had a local machinist make an adapter plate out of 3/8-in. thick steel. "For just $45, he tapped four 3/8-in. dia. holes in a plate to match up with holes on the swather's universal drive," Hasenkamp says.

Hasenkamp had to move the rear castor wheel back 4 in. to make room for the bigger engine. He did so by simply cutting off the old welds on the frame, then rewelding the wheel bracket further back.

He found a radiator to fit the swather by accident. While examining his Massey Super 90 diesel tractor, Hasenkamp discovered that the radiator would fit perfectly in the swather. He got another from a salvage yard for $50 and popped it in.

"I used the combine's original fuel and return lines because the rubber hoses were just the right length to install in the swather," Hasenkamp says. "I hooked the fuel line up to the motor and sediment bowl. I took the drain plug out of the gas tank and fitted the return line into it."

To complete the conversion, Hasenkamp made a new hood out of sheet metal. It had to be longer than the original because the rear wheel had been moved back.

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Tracked Backhoe As Good As Factory-Built

"Ever since tracked backhoes came out I've been fascinated by them and was bound and determined to have one," says Gary Arnold, a machinist from rural Marietta, Ohio. "I started looking at commercial models to see what parts I'd need to build my own. Then I gathered the necessary parts, from junk yards mostly, and built it over about two years.

"I've used it to dig footings and septic tank holes. It works just as good as a commercial rig," Arnold says. "I don't think I've got more than $2,000 in it. A factory-built machine would have cost me at least $15,000."

An 18 hp. 2-cyl. Wisconsin engine out of an old trenching machine powers Arnold's backhoe, which is 48 in. wide and weighs 5,000 lbs.

Tracks on the vehicle are 60 in. long by 10 in. wide. Arnold made them from drive chains off a rock drill, used in coal mining, that someone gave him. Pads are made from bar steel with square stock welded on for cleats. Track frames were also made from bar steel and rollers are fabricated from tubing and plate steel.

"After first building the tracks and track frames, I built the rest of the machine to correspond with the tracks and undercarriage," Arnold says.

The center pin the machine turns on was built using a rear end and wheel hub from a 44-ton truck. The spindle is welded into the lower track frame and the cab frame bolts to the wheel hub. The machine pivots a full 360 degrees. The boom is made from 3/16-in. and 1/4-in. plate steel with gussets as needed. It has a digging depth of 100 in. and a reach of 144 in.

"The hardest part of building the backhoe was figuring out the boom - center points, proper travel, the correct pump, valve and cylinder capacity to push the bucket into the ground - of the boom," says Arnold. "I'm not an engineer, so I did it the old farm boy way. I made a model out of wood and tweaked it until it worked the way I wanted."

Arnold's design for the machine's hydraulic system, made from off-the-shelf parts, is about the only thing that differentiates it from a commercial backhoe. Arnold installed a single hydraulic pump with flow divider on the machine's motor. "That gives it two live oil circuits so I can do all the same operations a commercial unit does," notes Arnold.

Arnold chose the single pump because it doesn't require as much power as a double hydraulic pump. Arnold was concerned that his machine wouldn't have enough power if he used the double pump arrangement, but says if he were to build another backhoe he'd use the latter design since commercial backhoes don't have much bigger engines than his.

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