

He Put Together His Own Grain Handling System

Kevin Cohrs, Glencoe, Minn., turned an 11 by 22-ft. diesel fuel tank into a 1,200-bu. underground dump pit that can take a semi load of grain at a time.

A 6-in. auger at the bottom of the dump pit lifts wet grain up to a nearby 2,700-bu. holding bin that he made out of an old storage bin and a home-built hopper bottom.

The fuel tank dump pit is buried in the ground at a 45-degree angle. It sets 22 ft. deep in the ground and is weighted down with 3-ton cement anchors because otherwise the freezing and thawing of the ground would cause it to work its way up out of the ground.

"I can dump an entire semi load of grain into the dump pit at a time and go right back to the field," says Cohrs.

He paid \$200 for the fuel tank which he got from a local bulk petroleum plant. He used a pressure washer to clean out the tank, then cut a 4-ft. sq. hole out at the top and installed a metal grate in it. The tank is supported by angle iron uprights.

To anchor the tank, he used a big form to make 2-ft. thick, 6-ft. sq. chunks of cement which he buried deep in the ground 10 ft. off to either side of the tank. He then welded a 5/8-in. dia. shaft into the tank and anchored

it in the cement slab to hold the tank down. He also installed drain tile 10 ft. deep all around the entire area and installed a sump pump as well.

To waterproof the auger, he mounted it inside a 1/4-in. thick metal pipe that's welded into the top of the tank. He also welded steel plating on top of the tank to collect moisture that would otherwise condense on top of the tank. "About 10 to 15 gal. of moisture collects on top of the plating. Every fall I use a wet vac to remove the water," notes Cohrs.

An automated system complete with built-in relay-delays keeps grain flowing into the above-ground holding bin as needed.

He made the 2,700-bu. grain holding bin by using the sides and roof off an old 15-ft. dia., 18-ft. high bin and mounting it on top of a cone that he made from new sheet metal. The 25-ft. tall unit mounts on homemade steel legs that are embedded in a cement slab.

The bin bolts to a circular-shaped angle iron that's welded onto a steel ring made out of 8-in. wide, 1/4-in. thick flat rolled steel. The ring is welded to seven steel legs made out of 5 by 5, 1/8-in. thick wall tubing.

Cohrs had a local machine shop use 1/8-in. steel plate to make the cone, which has a

45-degree angle. They sheared the plating into pie-shaped pieces which were then curved and welded together. The cone's bottom outlet was made out of a length of 16-in. dia. steel pipe. A homemade slide gate is used to control grain flow.

"I probably built the cone much heavier than I needed to, but I wanted to make sure it would withstand the pressure of all that corn without buckling," says Cohrs.

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This 2,700-bu. holding bin has a home-built hopper bottom. It's filled by grain from a 1,200-bu. underground dump pit made from an 11-ft. dia. diesel tank.



Universal attachment hooks on to nearly any 4-wheel ATV, allowing you to use it as a log skidder, forklift, backhoe, grader, dump bucket, etc.



Several options are available including this 44 by 38-in. dump box.

By Jim Ruen

Attachment Transforms ATV Into A Bigger Machine

You can turn your ATV into a log skidder, forklift, backhoe, grader and more with the ATV MultiMate L-1500 from Norwood Industries, Inc.

Norwood founder Peter Dale came up with a universal attachment that hooks on to nearly any 4-wheel ATV.

The base unit consists of a simple straight axle with a supporting frame and a vertical lift mast just behind the axle. To attach to an ATV, the driver backs over a supporting frame that matches his vehicle length. A pin secures the frame to an adapter available for most ATV front cargo racks. The support hitches the ATV's rear hitch plate.

"A carriage with two horizontal steel tubes slides up and down the mast and is the receiver for all tools," explains Dale. "The carriage can apply downward pressure great enough to lift the back of the ATV off the ground."

Being able to exert down pressure is important for several attachments such as a grader blade, log skidder, dump bucket and backhoe. Attachments include 42-in. long forks which turn into a 1,500-lb. forklift.

The standard mast offers a vertical lift of 26 in. An optional taller mast provides a lift of 36 inches. Both are powered by an electronic winch, which runs off the ATV battery.

The backhoe uses the mast for transport and downward pressure on the four indepen-

dently adjustable outrigger feet. A separate 5 hp Honda engine powers a hydraulic pump to produce a breakout force of 1,850 lbs., a lifting capacity of 500 lbs. at extended reach and 2,000 lbs. at close reach.

The backhoe arm has a reach of more than 7 feet horizontally through an arc of 180°. It can dig to a depth of 5 ft. and be used to tamp and fill as well as excavate.

Operator controls are to the side and behind the mast offering excellent visibility and safety. To move the backhoe forward or backward, all the operator has to do is raise the mast to release downward pressure on the outrigger feet and use the bucket to move the ATV to the new position.

An optional 2,000-lb. skidding winch allows the skidding plate to be used to retrieve logs even where the ATV can't go. Applying downward pressure on the skid plate digs it in to the soil, anchoring the ATV better than brakes ever could.

An optional front weight plate is available for use with the skidder and other attachments. In most cases, the weight is borne by the MultiMate axle.

Other options include a 44 by 38 in. dump box, a 2-cu. ft. dump bucket that works like a rear mounted mini loader, and a 3-pt hitch. "The 3-pt hitch opens up the ATV to use with a whole line of category 1 and 0 farm implements," says Dale.

The MultiMate with standard mast sells for



Backhoe arm has a reach of more than 7 ft. and can dig to a depth of 5 ft. It can be used to tamp and fill as well as to excavate.

\$1,595. Most other attachments are under \$400 with the exception of the backhoe at \$4,295.

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