Self-Propelled Feed Mixer Built Onto Military Truck

Dairyman Jay Boldt needed a better way to produce total mixed rations for his 150-cow herd. His solution was to build a self-propelled machine by combining parts from a military semi tractor and a pull-type feed mixer.

"It's built entirely from used equipment, and any parts like chains or sprockets were all purchased online at surplus prices. The entire project cost less than $25,000," says Boldt, of Manitowoc, Wis. "I saved a lot of money because the hydraulics alone on new commercial truck-mounted mixers cost about $40,000. And this rig eliminates the need for a $30,000 tractor to operate a pull-type mixer."

He paid $2,500 for the 5-ton, 6-WD military truck and stretched the frame 7 ft. to make room for the mixer. He bought a used 600 cu. ft., pto-operated Lucknow vertical mixer for $16,000 and removed the axle, mounting the mixer on the truck frame. He chain-drives the mixer with a Detroit 4-71, 150 hp engine equipped with a 4:1 gear reduction.

The engine is mounted "backward" behind the semi tractor's cab to get the proper direction to run the pto-operated mixer, via a double 120 chain. "A tractor's pto turns in the opposite direction as this engine, which is why I had to mount the engine backward," explains Boldt. "Chain-driving the mixer this way allows me to keep the feed mixer's speed independent of the truck's travel speed."

He bought the engine from a friend for $1,200. "The engine had just been rebuilt and had the clutch and gear reduction that I needed. I mounted the radiator on the other side of the mixer, and use belts and jackshafts to operate the radiator cooling fan.

"The Detroit 4-71 wasn't my first choice in engines mainly because it's noisy, but the price was right. If the engine ever fails I can lift the mixer off and convert it back to a pull-type model."

A hydraulic pump off an old combine is used to open and close the mixer's gate and to operate the unloading conveyor.

Boldt says he's a big believer in the value of surplus military equipment. "The truck I bought was a mid 1970's model but had only about 15,000 miles on it. It was in great shape - the tires were literally brand new when I got it. It's powered by a 250 cu. in. Cummins diesel engine that looked like it was put in yesterday. Often, you can find old military trucks that sell for little more than scrap price."

He says this is the fifth military truck he's bought over the years. "Military surplus is now sold online at govliquidation.com and other sites. You can find anything there from Cavalry horses to dentist chairs to locomotives, and more."

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Dairyman Jay Boldt built this self-propelled feed mixer by combining parts from a military semi tractor and a Lucknow pull-type feed mixer.

Home-built 3-pt. tool carrier rides on a pair of 15-in. wheels. An electric winch is used to raise and lower the 3-pt.

3-Pt. Tool Carrier Tows Behind ATV

"It lets me hook my ATV up to almost any kind of 3-pt. implement and saves a lot of wear and tear on my tractors," says Willie Thompson, Louisa, Ky., about the home-built 3-pt. tool carrier he tows behind his 4-wheeler.

The 3-pt. tool carrier rides on a pair of 15-in. wheels and an old house trailer axle. It's made mostly of 4-in. angle iron and sq. steel tubing. An electric winch, which operates off a 12-volt battery, is used to raise and lower the 3-pt.

"I use the 3-pt. to do everything from planting corn with a 2-row planter to leveling ground with a blade. I also use it with a boom pole to transport miscellaneous objects, and with a bale spear to move round bales," says Thompson. "I use the 3-pt.'s top link to level the planter when planting. I use a 3-pt. mounted bale spear to transport round bales and replace the 3-pt.'s top link with a chain that I wrap around the bale."

He bought the house trailer axle for $30 and a commercial hitch for $12. He paid $79 for the winch. "I already had the battery and most of the metal that I used to build the frame," notes Thompson.

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Electric winch is powered by a 12-volt car battery. Backup battery next to it is for emergency use. Boom pole is used to transport miscellaneous objects.

Post Puller Has Adjustable Leverage

Matt Baldwin combined his aerospace and farm experience to invent a low-tech device to accomplish a simple but important task-pulling up fence posts.

"The Bull Pull was born on our farm here in West Virginia," says Baldwin, who struggled with pulling posts on the hilly fields of his farm where he couldn't go with a tractor.

His post puller is made of aluminum tubing. Each unit weighs less than 25 lbs. including the chain and handle. A 2 by 6 can be slipped into the channel of the base plate to provide a solid base in sandy or wet soil, and holes in the plate provide the option of screwing it to the wood. The uprights have five U-shaped solid aluminum supports that hold the handle in place. A chain is hooked around the bottom of the post and to the bottom of the handle. The operator rests the handle on the lowest support and pushes the handle down to pry up the post, then raises the handle to the upper supports until the post is out of the ground. As one hand pushes the handle, the other hand steadies the top of the unit.

Baldwin paid attention to details on his simple device to make it effective, safe and easy on the body. The handle has rounded edges to make it easier on hands under extreme force. The unit stands up on its own, so no bending is required to pick it up between uses. And the choker chain is high quality Grade 120 chain made in Germany. The links have square edges for non-slip gripping.

The Bull Pull has been tested in a variety of situations such as pulling highway signs, telephone pole-type gate posts, and steel posts with concrete bases. Recently patented, it's ready for the market and will sell for $425 to $445.

The Bull Pull also pulls up shrubs from the roots. He has had interest from landscapers, fencing companies, highway sign crews and ranchers, and Baldwin believes his puller offers unique advantages.

"It's green (no hydraulics)," he says. "It's priced lower and U.S. made. It's the only one with a choker type chain - not a wrap chain. It's light. You can throw it on your shoulder and walk up a hill with it."

To see how it works, check out Baldwin's website and view the You-Tube video.

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As the post comes out of the ground, you move handle up higher supports.

Bull Pull can pull telephone pole size gate posts.