



Toro conversion in process in Bertalotto's shop.

flex like a universal joint," says Bertalotto. "The tractor sounded like a Piper Cub ready to take off."

Bertalotto found a driveshaft with a universal joint from an unknown Deere garden tractor on eBay for \$30. To mate it to the motor and the pump required significant modifications, starting with cutting out part of the shaft to reduce the length.

He removed the pulley and shaft initially installed on the motor and broke apart the rag joint. He left one of the rag joint plates pinned to the hydro pump shaft. He'd already unbolted the control valves for the two

spools to make room for the switch.

"I had a pulley that fit the keyed shaft on the motor perfectly," says Bertalotto. "I fabricated a disc to fill the space between the pulley and the flange on one end of the new driveshaft. I drilled the adapter plate and the pulley to mate with the flange."

The other end of the driveshaft and universal joint was splined. To match it with the rag joint/flange on the hydro pump, Bertalotto used the second rag joint plate. He machined out pockets on the plate to match the bosses on the hydro pump flange and machined a splined end to a short shaft. With its slightly

larger head, it sat on the plate and mated with the splined driveshaft. A hole was drilled through the universal joint on the driveshaft, and the connecting shaft let Bertalotto pin them together.

When he bolted the plate on the driveshaft to the plate/flange on the hydro pump shaft, the pocket/boss combination relieved pressure on the two bolts.

To accommodate the rotation of the U-joint, Bertalotto had to cut away a chunk of the chassis. He discovered that the chassis had a bump out on later models with a U-joint. He also had to reposition the motor slightly to accommodate the longer driveshaft.

"I used hockey pucks as spacers," says Bertalotto. "The pucks also removed some of the vibration inherent to non-balanced driveshafts like this one."

With everything in place, he turned on the motor, only to discover that he had nicked a hydraulic line while cutting away the chassis. A temporary fix later, the reduced noise verified that the driveshaft had been the problem.

He went online and got tips on brazing hydraulic lines. After a few minutes with a torch and a 10,000-lb. brazing rod, the line was fixed.

Bertalotto put fatter, 18x9.50 tires on the front end. They required making spacers on the axle to keep them from rubbing on the steering mechanism.

The tractor can operate on either 36

volts or 48 volts. "On 48 volts, it's almost unmanageable," notes Bertalotto. "It'll pop wheelies, lifting the front end up if you're not careful."

He's more than satisfied with the tractor's performance. "I've used it extensively, hauling firewood with a trailer that weighs well over 1,500 lbs., with another 1,000 lbs. of wood," says Bertalotto.

He explains that the rear battery can be used as an auxiliary battery or connected to the other three for 48-volt power. It has its own voltage meter, as the tractor can sit for hours while the battery is in use.

Extensive details and images are available on Bertalotto's website, and videos are on his YouTube channel.

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Electric conversion diagram.



Class covers mill components, capacity and how to use a stone mill. Students also learn how to produce the flour they desire.

Take A Class On Stone Milling

At Northern Crop Institute's (NCI) Stone Milling Course, you can learn the basics of stone milling and get hands-on experience. The course even includes testing the milled flour in NCI's bake lab. Instructor Amrita Ray says the once-a-year course has been developed specifically for farmers and bakers.

"We schedule the class for November because we want to make it available to farmers," says Ray. "We want farmers in our

region to be able to make nutritious, whole grain flour from the crops they grow."

Ray believes the Stone Milling Class is unique in the coursework and hands-on experience it offers. First offered in 2024, surprising demand resulted in two classes that year, with 18 students in June and 12 in November.

"We had participants from North Dakota, Minnesota, Iowa, and as far away as New

York," says Ray. "There's a lot of interest in stone milling and making quality products from stone-milled grain. Students included farmers, millers and researchers working in the field."

Ray notes that a year and a half of planning went into developing the in-depth course. It's a three-day, in-person, hands-on course that includes the baking session. It has a registration fee of \$1,500. The class covers mill components, capacity and how to use a stone mill. Students also learn how to produce the flour they desire and discover its physical and chemical characteristics.

In addition to farmers who want to add value to the grain they grow, the course is designed for custom millers, artisan bakers, entrepreneurs and food scientists. Other likely students include buyers of stone mills and anyone passionate about traditional milling techniques and sustainable grain processing.

NCI also offers a Stone Milling Basics online course for \$250. It includes three modules with three lectures each, requiring one to two hours per module. The course provides an overview of how to use a stone mill and the history, principles, components and economics of stone milling. Participants can take the course at their own pace over a six-month period.

In addition to the courses, NCI has prepared a Stone Milling Handbook. It's used in the course but can also be purchased separately for \$125. Ray covers stone milling innovations and applications in a one-hour webinar. It's available at no cost on the NCI website.

While only a single hands-on course is planned for 2025, that may change according to demand, suggests Ray. "We're still learning the best time to offer the course for farmers," she says. "However, non-farmers want to take the course, too. Two people planning to start their own milling operation took a one-on-one version of the course in early April. It focused more specifically on what they were planning to do."

NCI is a collaborative effort among Minnesota, Montana, North Dakota and South Dakota. It supports the promotion and development of crops grown in the four-state region. It offers courses on a wide variety of subjects related to product procurement and processing of soybeans, corn and wheat. Other courses range from pasta production and baking to corn use for food, feed and fuel.

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Earth Anchors Secure Farm Structures

Farming relies on permanent or portable buildings to house livestock, equipment or feed. Securing these buildings to the ground is vital to protecting people, livestock and equipment from high winds, erosion or seismic activity.

American Earth Anchors developed their product group of securement anchors, including the Penetrators, heat-treated 356 aluminum anchors, to be driven or screwed into the ground either by hand, socket or square drive using an impact wrench. The anchors are attached to structures using specially designed brackets and cables.

Penetrator lengths range from 9 to 46 in. and provide up to 14,000 lbs. of holding power in sand, soil, hardpan, asphalt, and even underwater.

An American Earth Anchors website presentation outlines installation tips to clarify key considerations regarding the number of penetrators needed, spacing, classes of soil, and load capacity requirements. Real-time moisture content and compaction also affect choices.

Additionally, the company offers bullet and arrowhead anchors, which can be installed using a hammer and drive rod, demolition hammer or powered jackhammer. Bullet anchors are designed to provide support in hard, graveled or root-bound soils.

Arrowheads work best in compact, rocky soil. Once installed, they twist in the ground and don't release without cutting the securement cable or digging efforts to free them. Arrowheads come in 4, 6, 8 and 10-in. sizes

with standard 48, 60, 72 and 120-in. galvanized steel aircraft cables.

American Earth Anchors stresses that building codes and regulations often mandate anchoring for permanent, portable, and temporary structures. Failure to do so can result in safety risks, code violations, inventory and equipment losses, and property owner legal liability.

All its anchors are manufactured in the U.S. and are available throughout North America. Prices are available on the company website and depend on size, length and model.

Contact: FARM SHOW Followup, American Earth Anchors, 313 Pond St., Woonsocket, R.I. 02895 (ph 508-520-8511 or toll-free 866-520-8511; www.americanearthanchors.com).



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